FOR CONTRACT NO.: 04-0A5354

INFORMATION HANDOUT

CAL-OSHA UNDERGROUND CLASSIFICATION

WEIGH-IN-MOTION (WIM) TABLES

WATER QUALITY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD (CRWQCB)
SECTION 401 WATER QUALITY CERTIFICATION

CIWQS Place No.: 719912 (BT)

STORM WATER INFORMATION HANDOUT

PERMITS

UNITED STATES ARMY CORPS OF ENGINEERS
NATIONWIDE 404 PERMIT

AGREEMENTS

CALIFORNIA DEPARTMENT OF FISH AND GAME
STREAMBED ALTERATION AGREEMENT
NOTIFICATION NO. 1600-2010-0120-R3

NOAA-NATIONAL MARINE FISHERIES SERVICES (Concurrence)

UNITED STATES FISH AND WILDLIFE SERVICE (Biological Opinion)

MATERIALS INFORMATION

HAZARDOUS MATERIALS DISCLOSURE DOCUMENT

AERIALLY DEPOSITED LEAD INVESTIGATION REPORT

PRIVATE PROPERTY INVESTIGATION REPORT

ASBESTOS AND DETERIORATED LEAD-CONTAINING PAINT SURVEY

INITIAL SITE ASSESSMENT

GEOTECHNICAL DESIGN AND MATERIALS REPORT

FOUNDATION REPORT FOR SUISUN CREEK BRIDGE
FOUNDATION REPORT FOR E80 / E12-E80 ON-RAMP SEPARATION STRUCTURE

FOUNDATION REPORT FOR RETAINING WALLS

FOUNDATION REPORT FOR COMMERCIAL VEHICLE ENFORCEMENT FACILITY

GEOTECHNICAL DESIGN AND MATERIALS REPORT

FINAL PROJECT REPORT

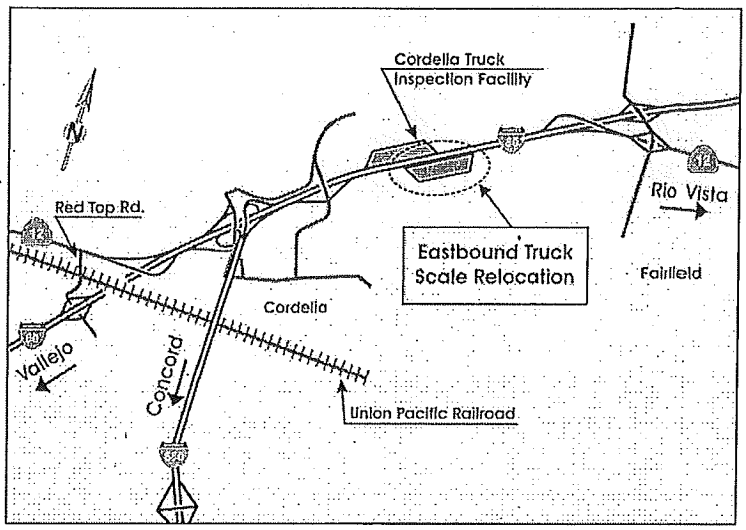
EXISTING EB CORDELIA CVEF INFORMATION

EXISTING EB CORDELIA CVEF AS-BUILT DRAWINGS

ROUTE: **04-SOL-12-L1.8/L2.0**
04-SOL-80-13.3/15.7

04-SOL-80
PM I-80 14.0-15.7 / PM SR12 L1.8 – L2.0
on Route 80 at
Cordelia Eastbound Truck Scales
04264 0A5350
HA11 Program

PROJECT REPORT



In Solano County on Interstate 80 from 0.5 mile east of Suisun Valley Road to 0.4 mile west of Abernathy Road and on State Route 12 (East) from Interstate 80 to 0.2 mile west of Chadbourne Road.

I have reviewed the right of way information contained in this Project Report and the Right of Way Data Sheet attached hereto, and find the data to be complete, current, and accurate:

R.A. MACPHERSON
DEPUTY DISTRICT DIRECTOR-RIGHT OF WAY

APPROVAL RECOMMENDED:

NICOLAS ENDRAWOS
PROJECT MANAGER

APPROVAL RECOMMENDED:

ZIAD ABUBEKR
DISTRICT OFFICE CHIEF, DESIGN NORTH

APPROVED:

HELENA "LENKA" CULIK-CARO 10/27/09
DEPUTY DISTRICT DIRECTOR - DESIGN *DATE*

04-SOL-80
PM I-80 14.0-15.7 / PM SR12 L1.8 – L2.0
On Route 80 at
Cordelia Eastbound Truck Scales
04264 0A535
HA11 Program

This Project Report has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

Michael J. Lohman
Registered Professional Engineer
Mark Thomas & Company, Inc.

10-5-09
Date

1. INTRODUCTION

The Department of Transportation (Caltrans) proposes to rebuild the eastbound Cordelia Truck Scales at a new location on Interstate 80 (I-80) in Solano County (at PM I-80 14.0-15.7/PM SR12 L1.8-L2.0), California. The I-80 Eastbound Cordelia Truck Inspection Facility Relocation Project (project) would consist of the construction of a larger truck inspection facility with more *capacity, a longer off-ramp, and braided highway on-ramps that provide access to eastbo*und (EB) I-80 and State Route 12 East (SR12E).

The existing truck inspection facility was constructed in 1958. It lacks sufficient capacity to accommodate the current volume of truck traffic, and trucks entering and exiting the existing facility at slow speeds increase congestion on I-80, increasing the potential for rear end accidents. Truck traffic on this stretch of I-80 is anticipated to increase dramatically over the next 30 years. As a result, the new truck inspection facility would be designed with increased capacity to accommodate future truck traffic, and to improve the enforcement of weight and safety requirements. The new off-ramp and braided on-ramps would address the issues related to weaving trucks and would improve safety along this stretch of I-80.

The eastbound Cordelia Truck Inspection Facility will be reconstructed approximately 2500 feet east of its present location. The new facility will be a Class B Commercial Vehicle Enforcement Facility (CVEF). The CVEF will utilize a racetrack configuration layout allowing for weighing and visual inspection in the front and detailed inspection in covered inspection areas in the back. The project will include the following improvements: a single lane exit ramp from I-80 widening (essentially in the existing location) to two lanes and then to four lanes to accommodate truck queuing; a new single-lane on ramp to eastbound I-80 and new single-lane on ramp to eastbound SR12E, and new Eastbound I-80 connector structure to Eastbound SR12E crossing over the proposed Truck Scale on ramp at I-80.

Cost was estimated at $99,600,000 on August 31, 2009, which includes $4,200,000 (escalated to year 2010) for right of way and utility relocation, $77,000,000 (escalated to year 2011) for construction and soft costs of $17,400,000. The project is proposed to be funded from the (TCIF) HA11 Program and with Regional Measure 2 (RM2) funds.

See Attachment A for a Project Location Map.

2. RECOMMENDATION

It is recommended that the project be approved using the build alternative and that the project proceed to the design phase. The Cooperative Agreement for PA/ED and Design between Caltrans and the Solano Transportation Authority (STA) (Attachment K) was executed on April 6, 2009.

The affected local agencies (City of Fairfield and Solano County) have been consulted with respect to the recommended plan, their views have been considered, and they are in

general accord with the plan as presented. The City of Fairfield and Solano County are on record in support of the project.

3. BACKGROUND

A. PROJECT HISTORY

This project is in recognition that the existing facility is currently undersized and need to be relocated to accommodate the anticipated growth in truck traffic forecast for this corridor.

The proposed reconstruction of the Eastbound I-80 Cordelia Truck Scales Facility is included in the Metropolitan Transportation Commission's (MTC's) Regional Transportation Plan (RTP), Transportation 2035, adopted April 22, 2009. The project is also part of the I-80/I-680/SR 12 Interchange project identified for partial funding in Regional Measure 2. Planning efforts that have led to the development of the project began in the late 1980s. The following is a summary of those efforts.

1989: The MTC and the Sacramento Area Council of Governments (SACOG) completed the Strategic Transportation Planning Study. The Strategic Planning Study was a joint study of the regional I-80 corridor that forecasted long-term congestion on I-80 in Solano County.

1996: The MTC completed the Interstate 80 Corridor Study, which advanced a long term multi-modal strategy and investment plan for improving mobility in the I-80 corridor.

2001: The STA completed the I-80/I-680/I-780 Major Investment Study (MIS), Segment 1 – I-80/I-680/SR 12 Tier 2 Evaluation Report. I-80/I-680/I-780 MIS provided a set of projects to improve traffic flow on all of the Solano County freeways.

2001: The California Highway Patrol (CHP) in cooperation with Caltrans prepared the Weigh Station Inventory of Needs report. This report identified the Cordelia Truck Scales as a candidate scale facility needing major improvements.

2003: The FHWA, Caltrans and the STA began scoping for the EIR/EIS for improvements to the I-80/I-680/SR 12 interchange. The three agencies also had initial discussions about the potential need for NEPA/Clean Water ACT (CWA) Section 404 integration, which is a formal effort to coordinate the review and approval of key EIS/EIR elements and how they address waters of the United States and associated sensitive species.

2004: The STA completed the I-80/I-680/I-780 Major Investments and Corridor Study, Final Report, which developed a long-range, multimodal transportation plan for the I-80, I-680 and I-780 corridors in Solano County. The study made recommendations for near-term (funded), mid-term, and long-term improvements, including the relocation of the Cordelia Truck Scales, along the I-80/I-680/I-780 corridors.

2005: The STA completed the Cordelia Truck Scale Relocation Study in cooperation with the CHP and Caltrans to identify potential sites along the I-80, I-505, SR 12 and SR113 corridors that could satisfactorily accommodate the relocation of the existing truck scales located in the I-80/I-680/SR 12 interchange. The study documented the screening of the various options and recommended that the truck scales be relocated within the I-80/I-680/SR 12 interchange approximately 0.5 miles east of the existing scale location. This study also served as Project Initiation Document (PID) for the Eastbound I-80 Truck Inspection Facility in Cordelia.

B. COMMUNITY INTERACTION

A public information open house meeting was held on March 6, 2003 at which the STA and Caltrans presented information regarding the I-80/I-680/SR 12 Interchange project, including the relocation of the Cordelia Truck Scale Facility. Approximately 100 interested parties participated and learned about the various projects in the vicinity of the Interchange. A Summary Report was prepared outlining the issues raised including general transportation and congestion concerns, project schedules, flood control in the area, environmental impacts, bicycle access and circulation. On May 12, 2003 an Informational Open House and Public Scoping Meeting was held on the I-80/I-680/SR 12 Interchange Project. Information about the relocation of the Cordelia Truck Scale Facility was included in that meeting. Approximately 55 interested parties attended and a comprehensive summary report was prepared outlining comments on alternatives under consideration, truck scales, construction detours, traffic, transit, noise/visual mitigation measures and funding. Two comments were related to the truck scales:

- Do not operate truck scales during commute hours; and
- The "Variable Message Sign" by the truck scales adversely impacts traffic as drivers slow to read it.

Also during this period, five informational newsletters (Winter 2004, Fall 2004, Spring 2006, Summer 2007 and Spring 2008) have been distributed to a project mailing list of approximately 5,000 properties. These newsletters include information about the various projects in the vicinity of the interchange, including the relocation of the Cordelia Truck Scale Facility.

On June 5, 2008 a Public Scoping Meeting was held for the EB Cordelia Truck Scales Relocation Project. Five members of the public attended the meeting. Comments included:

- The project design should incorporate a 500 foot safety zone around the buildings, to allow vehicles containing unknown and potential dangerous substances to be parked while further investigations are conducted, in accordance with U.S.D.O.T Emergency Response Guidelines;
- The buildings should be installed with sprinklers and supplied with a hydrant capable of 1250 gpm at a minimum of 20 psi residual for 120 minutes;

- The Cordelia Fire Protection District should be included in the planning process for the project; and
- An adjancent property is land-locked without formal access rights due to a previous land acquisition by the State of California and that this situation would be made worse by the project and requesting that the State purchase the remaining land prior to the relocation of the truck scales.

On February 2, 2009, Caltrans, in cooperation with the STA, issued a Notice of Availability (NOA) and released the Draft EIR/EA for a 45-day public review and comment period.

A public hearing was held on Thursday, February 26, 2009 at the Solano County Administration Building in Fairfield. Ten people signed in and approximately twenty people attended the meeting. Two attendees provided verbal comments and one written comment was submitted at the public hearing. Comments included:

- Concerns about threatened and endangered species
- Concerns about noise and particulates

See Section 7: **Public Hearing Process** for more details.

C. EXISTING FACILITY

The existing eastbound truck scales at Cordelia were constructed in 1958. The eastbound facility consists of two dynamic and one static scale, four inspection bays and provides limited parking.

There is a single lane exit ramp to the eastbound truck scales, without dedicated auxiliary lane. There is a single lane entrance ramp with a 705 foot acceleration lane. The right lane of Eastbound I-80 was added as an auxiliary lane from northbound I-680 to eastbound SR 12 in 2004. At that time the entire freeway width within that stretch was repaved.

The existing structures in the project vicinity are:

- The existing scales and inspection buildings.
- Suisun Creek BR 23-007R (I-80)
- 12/80 Connector Sep (I-80) BR 23-0199F.
- Chadbourne Road UC (SR12) BR 23-0200.

Existing I-80 West of SR 12E (Within and West of the Project Limits)

I-80 west of and adjacent to the existing and proposed eastbound truck scales and as far east as the eastbound connector to SR 12E, is a twelve lane freeway with fenced access control and a 3.3 foot to 6 foot paved median with a concrete barrier.

There are currently five eastbound lanes.

Adjacent to the existing eastbound truck scales, the right shoulder of the main eastbound lanes is 3.3 feet.

A contiguous HOV lane is being constructed in both directions. Monday through Friday, HOV lane traffic will be initially restricted to vehicles with two or more persons, and motorcycles and permitted fuel efficient vehicles during the AM peak traffic period in the westbound direction and during the PM peak traffic period in the eastbound direction. Outside of these periods HOV lanes are open to mixed flow traffic.

Once constructed the cross section will include a one foot left shoulder, 11.8 foot HOV lane, three 10.8 foot mixed flow lanes, two 11.8-foot lanes and a 9.8 to 11.1 foot right shoulder.

There is 1500 feet of weaving distance between the acceleration lane at the ramp from the eastbound truck scales and the connector to SR 12E.

The median concrete barrier is replaced with a double thrie beam barrier where the freeway crosses floodplains.

Existing I-80, East of the Eastbound Connector to SR 12E (Within and East of the Project Limits)

I-80 east of the project limits and also within the project limits east of the eastbound connector to SR 12E is a ten lane freeway with fenced access control and a 14-foot paved median with a concrete barrier.

There are currently five eastbound lanes.

A contiguous HOV lane is being constructed in both directions. Monday through Friday, HOV lane traffic will be initially restricted to vehicles with two or more persons, and motorcycles and permitted fuel efficient vehicles during the AM peak traffic period in the westbound direction and during the PM peak traffic period in the eastbound direction. Outside of these periods HOV lanes are open to mixed flow traffic.

Once constructed the cross section will include a four foot left shoulder, 11.8 foot HOV lane, five 11.8 foot lanes and a ten foot right shoulder.

Existing SR 12

The SR 12 east of the project limits is a four lane freeway with fenced access control and a paved 30-foot wide median with concrete barrier. It has a 14-foot left shoulder, two 12 foot wide lanes and a 10-foot right shoulder in each direction.

Within the project limits, SR 12 includes:

- A two lane connector from eastbound I-80 to eastbound SR 12E (with two 12-foot lanes, five-foot left shoulder and 10 foot right shoulder).
- A two lane connector from westbound SR 12E to westbound I-80, including a structure over I-80 (with two 12-foot lanes, five foot left shoulder and 10 foot right shoulder).

4. NEED AND PURPOSE

A. PROBLEM, DEFICIENCIES, JUSTIFICATION

The Cordelia Truck Scales are located within the I-80/I-680/SR 12 interchange, a point at which two major interstate freeways and one state highway converge. When the facility was constructed in 1958, the interchange and truck scales were located in a relatively rural setting immediately surrounded by agricultural lands, with mountains to the north and the vast Suisun Marsh to the south.

Since 1958, the San Francisco Bay Area (Bay Area) and northern California region have experienced rapid population growth. The Bay Area's population has increased by more than 86% during this time, and Solano County's population has more than tripled. This tremendous growth has resulted in substantial increases in truck and regional traffic passing through the interchange area, as well as substantial changes in the land uses immediately surrounding the interchange.

The truck scales significantly contribute to the congestion on I-80 because of the large number of trucks exiting and entering I-80 and the close proximity of the scales to both the Suisun Valley Road and I-680 interchanges. The location of the truck scales is ideal for monitoring and enforcing truck weight and safety requirements because it provides one location that can monitor truck traffic on I-80, I-680, and SR 12. However, because operation of the high volume of trucks within the corridor, it is frequently necessary for the California Highway Patrol (CHP) to close the scales as queuing trucks threaten to back up onto the mainline freeway. The large volume of trucks exiting and entering the highway creates a severe weaving problem, which is made worse by the size, limited maneuverability, and lower speeds of large trucks.

The project area is located adjacent to eastbound I-80 between the I-80 Suisun Valley Road interchange and the I-80/SR 12E interchange within Solano County, California. The project includes the relocation and reconstruction of the eastbound Cordelia Truck Scales and associated on- and off-ramps.

The purpose of the project is to accommodate anticipated growth in truck traffic in the corridor by 2035, to provide traffic congestion relief along this segment of I-80, to improve safety by reducing truck/auto weaving and queuing, and to improve the reliability of the system to enforce truck weight and safety requirements.

More specifically, the purpose of the project is to improve facility processing speed, throughput, reliability, and safety and to reduce congestion, as follows:

- Improve facility processing speed: The new truck scales would be able to process up to 1,000 trucks per hour consistent with the projected volumes from the I-80 Cordelia Truck Scale Relocation Study, compared with 500 per hour today.
- Improve throughput: With increased efficiency (speed) of truck processing, overall freight throughput would increase.
- Improve reliability: The new scales would improve goods movement reliability by processing trucks with more redundancy (weigh and inspection facilities) resulting in fewer unplanned closures of the facility. The project also would improve overall system drive time reliability by reducing congestion and improving safety in a section of the regional highway corridor known for its unpredictable drive times.
- Reduce congestion: Currently, extreme congestion in the corridor—significantly exacerbated by truck traffic—leads to regional trips diverting to local roadways within the project area. Conversely, congestion impedes vehicles making trips with local origins or destinations from accessing the system. The proposed project would reduce projected future congestion on I-80, making the regional freeway system more accessible for both regional through trips and regional trips with local origins or destinations.
- Improve safety: By reducing congestion and truck queuing, providing a longer weaving distance for trucks, and providing standard lane and shoulder widths the proposed project would reduce collisions and improve highway safety in the area.

B. REGIONAL AND SYSTEM PLANNING

1. Identify Systems

I-80 is a transcontinental Interstate facility that is critical to regional and interregional traffic in the San Francisco region. It is vital to commuting, freight, and recreational traffic and is one of the most congested freeway facilities in the region. I-80 serves as the single freeway connection between the San Francisco Bay Area and the Sacramento metropolitan region. It links the Bay Area with recreational destinations in the Sierra and points north via I-505 to I-5.

The Governor's Strategic Growth Plan (2006) (SGP) calls for an infrastructure improvement program that includes a major transportation component (GoCalifornia). The SGP is based on the premise that investments in mobility throughout the system will yield significant improvements in congestion relief. It calls for transportation infrastructure improvements that are designed to decrease congestion, improve travel times and safety, while accommodating growth in the economy and population.

The Strategic Growth Plan was supported by the passage of the transportation bond (Prop 1B) in the November 2006 election. The Corridor Mobility Improvement Account (CMIA) was developed as part of Prop 1B and includes funding for a project(s) in this corridor. The I-80 Eastbound Cordelia Truck Relocation Project is being funded through the Trade Corridor Improvement Fund (TCIF).

The 2009 Regional Transportation Plan 2035 (T-2035), identifies I-80 as a priority corridor and a major gateway designated as part of the Interregional Road System (IRRS) and as an Interstate is automatically a High Emphasis Route (HER). The RTP states that the "State should actively pursue improving the operating efficiency of the State's major gateways." The T-2035 plan, adopted on April 22, 2009 includes the project under Reference Number 230322: Rebuild and Relocate Eastbound Cordelia Truck Scales Facility (which includes a new 4-lane bridge across Suisun Creek and new ramps at eastbound SR 12 and eastbound I-80) with a project cost of $100.9 M.

In Search of projects within the vicinity of the proposed Truck Relocation Implementation Traffic Improvement project, a review of the RTP 2035, 10 Year SHOPP, STIP & Local Plans yields the following projects:

STIP PROJECTS:
1. Sol 80 interchange improvement (EA: 0A5300)
2. Sol 80 widen existing freeway (EA: 0A531)
3. Sol 80 highway planting (EA: 0T1631)

SHOPP PROJECTS:
4. Sol various mitigation project (EA: 25902K)
5. Sol 80 install overhead exit guide signs (EA: 271001)
6. Sol 80 replace weigh station message signs (EA: 3A8108)
7. Sol 80 improve weigh station (EA: 1A1101)
8. Sol 80 replace platform scales and other electrical equipment (EA: 4A4501)

2. State Planning

The portion of I-80 is identified as a High Emphasis Interregional Road System route and a "Transportation Gateway of Major Statewide Significance" by the 1998 Interregional Transportation Strategic Plan.

The reconstruction of the eastbound Cordelia Truck Inspection Facility is reflected in the 2007 – Business, Transportation and Housing (BT&H) Agency and California Environmental Protection Agency (CalEPA) sponsored Goods Movement Action Plan (GMAP).

On March 15, 2007, the CTC adopted Resolution CMIA-P-0607-02. In Sections 2.12 and 2.13 of the resolution, the CTC resolved that "...the Commission expects Caltrans and regional agencies to preserve the mobility gains of urban corridor capacity improvements over time that will be described in Corridor System Management Plans (CSMPs)..." A CSMP is a transportation planning document that will study the facility based on comprehensive performance assessments and evaluations. The strategies are phased and include both operational and more traditional long-range capital expansion strategies. The strategies take into account transit usage and projections and interactions with

arterial network and connection to State Highways. Each CSMP presents an analysis of existing and future traffic conditions and proposes traffic management strategies and capital improvements to maintain and enhance mobility within each corridor. While the eastbound Cordelia Truck Scales Project is being funded through a different source under proposition 1B, the Trade Corridor Improvement Fund (TCIF), this project will also be included in the analysis and development of the I-80 EAST CSMP.

The reconstruction of the eastbound Cordelia Truck Scales is reflected in the 2004 – Metropolitan Transportation Commission (MTC) sponsored Regional Goods Movement Study for the San Francisco Bay Area.

3. Regional Planning

The project was addressed by STA, in coordination with Caltrans and the CHP, with the completion of the *Cordelia Truck Scales Relocation Study (February 2005).* This study identified the need to construct replacement scales and evaluated several alternative locations. It was concluded from this study that the best location was within the existing I-80/I-680/SR 12 interchange complex. The proposed project is also included in the MTC's Transportation 2035 Plan for the San Francisco Bay Area.

The reconstruction of the eastbound Cordelia Truck Scales is reflected in the 2004 – Metropolitan Transportation Commission (MTC) sponsored Regional Goods Movement Study for the San Francisco Bay Area.

4. Local Planning

The STA has identified the project as part of the long-term recommendations for improving mobility in Solano County and is one of the recommended "mid term" projects recommended in the I-80/I-680/I-780 Major Investment & Corridor Study (July 14, 2004).

This area is primarily located within unincorporated Solano County. This area of the proposed Truck Scales is currently zoned agricultural.

5. Transit Operator Planning

This project has no direct effect on transit operations, other than improving general traffic operations on the adjacent freeway.

6. Other Relevant Planned and Programmed Highway Projects

There are several transportation projects being planned or recently completed in the general project area that are related to the proposed I-80 Eastbound Cordelia Truck Scale Relocation Project. Projects completed or expected to be completed by opening of the eastbound truck scales relocation:

- **I-80 HOV Project.** The I-80 HOV Project adds HOV lanes in each direction between Red Top Road and east of Air Base Parkway. The eastbound cross section adjacent to the truck scales will contain non-standard lane widths and shoulder widths. The Suisun Creek Bridge (BR 23-007R) is being widened for the HOV lane project. Construction started in 2008 and is scheduled for completion in 2009. The project also includes ramp metering improvements with construction scheduled to start in 2010. The EA for the I-80 Ramp Metering project is 04-0A5311. This is a child project to the I-80 HOV project and will construct various ramp metering improvements to interchanges within the limits of the HOV project (not including the Truck Scales).
- **Green Valley Creek Bridge:** The STA sponsored a construction project in 2007 to widen the Green Valley Creek Bridge (Bridge No. 23-0004) and necessary related road work. The project, completed in 2007 under encroachment permit, widened the westbound I-80 bridge to the outside to facilitate construction of the I-80 HOV project in 2008.
- **Benicia-Martinez Bridge Replacement Project**. The new Benicia-Martinez Bridge project, which provided a new I-680 crossing over the Carquinez Strait between Contra Costa and Solano Counties. The construction project includes the new five-lane bridge, a new 17-booth toll plaza, reconstruction of the I-680/I-780 and I-680/Marina Vista Road interchanges, and modifications to the existing bridge. The project was completed in 2009.
- **04-3A810:** Replace both Weigh Station Message Signs (WSMS) at the westbound and eastbound facilities. These are the OPEN-CLOSED signs located approximately 1/2 mile upstream on the mainline from each facility. The eastbound sign will be re-used at the new facility.
- **04-4A450:** Replace platform scales and other electrical equipment. This project is due to begin construction at the end of 2009.
- **State Route 12 (West) Truck Climbing Lane Project**. This project constructed a truck-climbing lane in the westbound direction on SR 12 (West) from I-80 to west of Red Top Road. The project reduces congestion on SR 12 (West) and the I-80/SR 12 (West) interchange by providing an additional lane for slow-moving trucks, thereby allowing other vehicles to pass. The Project was completed in December 2008.

Projects expected to be completed by 2015 (near term analysis year):

- **North Connector Project**. The North Connector project would construct a parallel route to the north of I-80 between Abernathy Road at I-80 on the east to SR 12 at Red Top Road on the west, except for a two-lane section from the Business Center Drive terminus to SR 12 West. The project is proposed to provide increased east-west capacity and provide an alternative to I-80 for local traffic. Construction of the first phase of the North Connector project is

expected to begin in the 2009/2010 timeframe. The EA for this project is 04-0A5200

- **Jameson Canyon (SR 12) Widening from I-80 to SR 29:** To provide a continuous 4 lane highway between I-80 and SR 29. The project is currently in the PS&E phase with construction planned to begin in 2011. The EA for this project is 04-264111.
- **I-80 Improvements through Fairfield:** Several projects are programmed in the RTP between SR 12 (East) and Air Base Parkway. They include construction of an eastbound auxiliary lane between Abernathy Road and Auto Mall Parkway, removal of existing hook ramps at Auto Mall Parkway, construction of an eastbound auxiliary lane between Beck Avenue and Travis Boulevard, construction of an eastbound auxiliary lane from Travis Boulevard to Air Base Parkway, construction of a westbound auxiliary lane from Waterman Boulevard/Air Base Parkway to Travis Boulevard and construction of a westbound auxiliary lane from West Texas Street to Abernathy Road. There is currently no EA for these improvements, nor has it been determined who will be the lead agency.

Projects expected to be completed by 2030:

- **I-80/I-680/SR 12 Interchange Project.** The I-80/I-680/SR 12 Interchange project would include numerous improvements to the interchange to address existing and future traffic operations and congestion, including the relocation of the westbound Cordelia Truck Inspection Facility. Proposed improvements are intended to add freeway capacity, reduce cut through traffic on local roads, improve local access to and from the freeway, accommodate current and future truck volumes, improve safety and increase the use of HOV lanes and ridesharing. The draft environmental document for the project is currently underway and is expected to be circulated to the public in early 2010. The EA for this project is 04-0A5300.

C. TRAFFIC

1. Current and Forecasted Truck Traffic

The existing facility is considerably undersized and inefficient with respect to the number of inspection bays and the length of truck ramps to accommodate existing and future demand for the truck scales.

Over the years, the volume of trucks traveling on the regional freeway and highway system has increased dramatically as the economy in Northern California has grown. Within the project area, trucks constitute about 5% of the total daily traffic volume. The total daily truck volume in 2003 passing through the interchange area was 11,800. Truck traffic is forecast to increase by 70% by 2025 and by 115% by 2040 (Solano Transportation Authority 2005). This will

result in more than 25,300 trucks passing through the interchange area each weekday.

The STA, Caltrans, and the CHP have recognized the need to reconstruct the scales to accommodate the current and projected volume of truck traffic. New scales within the interchange area are planned to process 1,000 trucks per hour, which—in combination with the forecasted use of the PrePass system—would accommodate the estimated increase in truck traffic over the next 30 years.

2. Accident Rates

I-80 within the project limits has lower accident rates than the statewide average. 43% of the accidents occur between 2:00 and 7:00 PM, with 58% of the accidents being rear-end collisions and 30% sideswipe, which is an indication of congested PM conditions adjacent to the existing Truck Scale Facility.

Accident History (October 1, 2005 to September 30, 2008)						
Location Post Mile	Actual Accident Rate (acc/million veh miles)			Average Accident Rate (acc/million veh miles)		
	Total	Fatal	F + I	Total	Fatal	F + I
I-80 Dan Wilson Creek to SR12E/I-80 Connector Structure (PM 14./15.7)	**0.66**	**0.000**	**0.20**	1.05	0.011	0.33

Source: TASAS data

Currently the Eastbound I-80 Cordelia Truck Scale facility can handle approximately 500 trucks per hour, but the peak can reach as much as 700 trucks per hour. The trucks back up on the offramp from I-80. In the past the CHP has then closed the facility to incoming trucks to prevent the queuing from extending back into the I-80 traveled way. This would occur several times a week, sometimes twice a day. Regardless, trucks still need to decelerate in the mainline lanes to get into the Truck Scale queue, resulting in increased congestion on I-80. The proposed project is expected to increase the processing capacity of the Truck Scales up to 1,000 trucks per hour and increase the queue capacity thereby reducing congestion. As a result the rear-end accidents in this section of I-80 would also be expected be less with the project than without the project.

5. ALTERNATIVES

A. VIABLE ALTERNATIVES

ALTERNATIVE No 1: Build Alternative (Preferred Alternative)

Specifics regarding relocation and removal of Solano Irrigation District lines were added in the discussion about utilities below, as the result of comments received during the

circulation of the draft environmental documents and at the public hearing held February 26, 2009:

- **Proposed Engineering Features**

New scales within the interchange area are planned to process 1,000 trucks per hour, which—in combination with the forecasted use of the PrePass system—would accommodate the estimated increase in truck traffic over the next 30 years.

1. Truck Inspection Facility

The eastbound Cordelia Truck Inspection Facility would be reconstructed approximately 2,500 feet east of its present location. The new facility would be a Class B Commercial Vehicle Enforcement Facility (CVEF), which is defined as an independent command facility of the California Highway Patrol (CHP) located along a major highway route. The new truck inspection facility will have the capacity to inspect all eastbound I-80 trucks passing the facility 24 hours per day, seven days a week with the primary focus on inspection of vehicle equipment and loads. The staffing of the facility will include a State Traffic Lieutenant in command and State Traffic Sergeants, State Traffic Officers, Commercial Vehicle Inspection Specialists (CVIS), clerical personnel, a janitor, and possibly an automotive technician. However, staffing levels are dependent upon budgetary constraints.

The CVEF will be constructed utilizing a racetrack configuration layout. The covered inspection areas will have seven bays, which will be able to accommodate long vehicle combinations. The inspection areas will have the capabilities to access the underside of low-clearance vehicles. Elevated structures will be provided to enable inspectors to check the domes and top portions of cargo tanks. One bay can be designated for truck re-inspection.

The CVEF facility features "Weight-In-Motion" scales. As a truck proceeds to the CVEF facility, it will pass over the "Weight in Motion" scales at speed of nearly 50 mph and decelerating. The computer inside the facility calculates each axle weight, the distance between axles, and the gross weight; separate sensors detect the truck's length and height. If the computer gives a green light, the truck proceeds ahead and no further action is required. State law does not allow tickets to be issued for "weigh-in-motion" violations; therefore a suspected violation must be checked by inspectors on the platform scale. So if the truck is suspected to be overweight, an alarm signals and the truck must circle back to an inside lane for a reading on the static scale. Weights are transmitted from the static scales to computers and when any axle-group weight exceeds 34,000 pounds, it triggers a loud alert and appropriate enforcement action is taken and axle group weight can exceed 34,000 pounds if the distance between the extremes of any group of 2 or more consecutive axles is greater than 8'6".

All the commercial vehicle parking spaces will have sufficient room to permit turning movements. Short-term and intermediate-term paved parking spaces will be constructed for commercial vehicles waiting for clearance. A holding area for commercial vehicles that need to be serviced or towed away for compliance of safety violations will be designated.

A load adjustment area will be provided to allow commercial vehicles carrying legal loads for redistribution to meet per axle limits. These parking spaces will have sufficient turning radii for the trucks to return to the weight stations. A parking area for the use by visitors, employees of CVEF and state vehicles will be constructed. Eight separate parking stalls for CHP enforcement vehicles will also be provided.

The facility would contain a minimum of four sets of scales to accommodate two lines of empty and loaded trucks.

2. Associated Eastbound I-80 Ramps

As part of the relocation project, a two-lane off-ramp providing access to the truck scale facility from eastbound I-80 and braided highway on-ramps that provide direct access to I-80 and State Route 12 East (SR 12E) would be constructed. The off-ramp to the new truck scale facility would utilize the existing off ramp location and geometry, which consists of a single lane exit. The new off-ramp would widen to a two lane facility through the existing truck scale site, and widen to four lanes immediately west of Suisun Creek. The new off-ramp would cross over Suisun Creek on a new bridge before entering the new Truck Scale Facility. Truck traffic would be sorted along the approach roadway into the appropriate lane by means of weigh-in-motion scales and signal bridges. Trucks leaving the facility would utilize a new two-lane eastbound roadway that splits approximately 1300 feet east of the facility with one lane merging onto eastbound I-80 and the other lane connecting to the EB I-80 to EB SR 12 E Connector.

3. I-80/SR 12E Connector

The EB I-80 connector to EB SR 12 E would be reconstructed as a two-lane ramp crossing over (braided with) the truck scale on-ramp to EB I-80. The connector bridge and associated retaining wall would be constructed to an ultimate three-lane width although the exit from I-80 proposed with this project would consist of a two lane connection (one dedicated SR 12 E lane and a shared through-exit lane) (the widened section would be protected from vehicles most likely via temporary concrete barrier (Type K). The new dedicated lane on I-80 would begin approximately 2500 feet west of the exit point to the connector. The two-lane connector would continue east becoming SR 12 E, with the truck scale on-ramp joining as an auxiliary lane that would end at the SR 12 E / Chadbourne Road Interchange off-ramp.

4. Removal of Existing Truck Scales

All above ground improvements will be removed. Caltrans has determined that the existing pavement will remain and will determine its ultimate use.

5. I-80 Mainline Lanes

After removal of the existing truck scales, including the barrier separating them from the main lanes of the freeway, the freeway will be widened. This will modify the nonstandard shoulder widths (1.6 foot inside shoulders and 7.9 foot outside shoulders), and lane widths (3 lanes 10.8 feet wide) to meet standard widths (10 feet for both inside and outside shoulders and 12 foot wide lanes). A Construction Change Order (CCO) to the I-80 HOV project (04-0A5314) will allow the Suisun Creek Bridge (BR 23-007R) to be widened to accommodate this eventual full standard mainline cross section.

The proposed truck scale facility will accommodate planned, future widening of I-80 contemplated by the I-80 / I-680 / SR 12 project (04-0A5300).

The eastbound truck scales and ramps are located such that the eastbound mainline lanes of the freeway, adjacent to the truck scales can be increased from 7 standard lanes plus 10 foot shoulders to 9 standard lanes plus 10 foot shoulders.

- **Nonstandard Mandatory and Advisory Design Features**

No nonstandard Mandatory design features have been identified within the project limits (eastbound only). This project does not propose any work adjacent to westbound lanes of I-80. Therefore nonstandard design features in the westbound direction were not addressed because they are outside of the project limits and not part of the proposed scope.

An exception to Advisory Design Standard 304.1 (Side Slope standards) was approved on January 22, 2009 for the embankment adjacent to the proposed SR12 connector bridge crossing over the Truck Scale on ramp and also along the conform of that connector onto EB SR12 E where the existing slope is 2:1.

- **Interim Features**

There are no interim features proposed for this project.

- **Ramp Metering**

Metering of the on ramps from the inspection facility is not required. The inspection operations themselves in effect meter the entrance of trucks onto the freeway.

Traffic Operations System (TOS) field elements will require to be modified or incorporated to accommodate the new lane configuration and new I-80/SR 12 connector. All existing TOS elements within the project limits will be kept operational through all phases of the construction.

- **CHP Enforcement Areas**

The inspection facility's primary purpose is enforcement. A 13.5 foot wide eastbound median HOV enforcement area being built by the HOV project will be widened to 21 feet by this project.

- **Highway Planting**

The landscape and irrigation improvements would be installed as a separate project after completion of the Truck Scales facility. Highway planting for this project is 19 acres. The estimate for this work is $1,235,000 in 2008/2009 fiscal year dollars.

Drought tolerant planting and associated irrigation will be installed along the south side of the truck scale ramp and along the I-80/SR 12 connector (both sides), within the parking area and the perimeter of truck scale facility. Planting will be used in front of the office portion of the building to provide privacy for building occupants and soften the appearance of the building. The landscaping will not interfere with the line of sight or other operational aspects of the truck scales facility.

Water is available for irrigation purposes. The City of Fairfield has a domestic water line adjacent to the project that can be used as a water source. The nearest reclaimed water line, from the Fairfield-Suisun Sanitation District is on Chadbourne Road, south of Busch Drive. The current termination point is approximately 12,000 feet from the proposed Truck Scale facility. Extension of this reclaimed water line to the project is not considered viable. The project is within the limits of the Solano Irrigation District (SID). SID has seasonal, gravity-fed non-potable water available near the site. The water would be delivered at a constant rate of 2-3 cubic feet per second (cfs) but would require a basin to store the water together with a pump to pressurize the irrigation system. This is not considered a viable irrigation source.

- **Erosion Control**

The project will comply with Caltrans' Statewide NPDES permit. A Storm Water Data Report (SWDR) was prepared for the project, which summarizes the actions taken in compliance with the permit. See Attachment F for copy of Storm Water Data Sheet cover sheet.

This project has a soil disturbance greater than 1 acre. To comply with the conditions of the Caltrans NPDES Permits, and address the temporary water

quality impacts resulting from the construction activities in this project, Standard Special Provision (SSP) 07-345 will be included in the PS&E. This SSP will address the preparation of the Storm Water Pollution Prevention Plan (SWPPP) document and the implementation of SWPPP during construction.

Erosion control consists of permanent treatments to slopes and disturbed soil areas. The usual treatments are mulch chips, blankets and mats, tree and shrub planting, and hydro-seed applications. Erosion control will be required for this project.

Water pollution control consists of various temporary measures implemented during construction to control sedimentation, erosion, and the discharge of pollutants. Water pollution control will be required for this project.

The project will need to comply with the conditions of the Caltrans statewide NPDES Permit CAS #000003, Order #99-06-DWQ, issued by the State Water Resources Control Board. This adheres to the compliance requirements of the General Permit CAS #000002, Order #99-08-DWQ, for General Construction Activities and the Resolution Number 2001-046 for additional monitoring requirements. These permits require addressing the potential for impacts to existing water quality resulting from temporary construction activities and permanent post-construction water quality conditions.

To address the temporary water quality impacts, special provisions for Water Pollution Control will be included in the contract provisions, which will require the contractor to prepare and implement a SWPPP.

To address post-construction water quality impacts, incorporation of Best Management Practices (BMPs) into the design and operations of all highway projects is also required under Section 4.4 of the Storm Water Management Plan (SWMP), which implements the Caltrans statewide NPDES permit. This consideration process will be documented and reportable in the Annual Report to the Regional Water Quality Control Board.

Due to the presence of shallow groundwater in the study area, it is expected that some excavations will need to be dewatered. As part of the Site Investigation, testing may be required to determine if the groundwater is contaminated to develop contract provisions for its handling and disposal during construction. The groundwater sampling results will need to be compared with the following to determine if its contaminated:

- California Maximum Contaminant Levels (MCLs) or action levels for drinking water.
- San Francisco Bay Water Quality Control Plan water quality objectives (WQOs) for surface water. A comparison of the sampling results to the parameters on tables 3-3, 3-4, 3-5, and 3-6 will be required. San Francisco

Bay Water Quality Control Plan water quality objectives including these tables can be found at: http://www.waterboards.ca.gov/sanfranciscobay/basinplan/web/BP_CH3.html

- Cal/EPA Environmental Screening Levels (ESLs) in tables A, C and F for a Tier 1 Environmental Risk Assessment.

- **Noise Barriers**

A noise technical study has been prepared for the project under the requirements of 23CFR772. No noise barriers are currently located in the area. Traffic noise impacts are predicted to occur at two residences in the area. A noise impact analysis was conducted for the project. Noise levels at all receiver locations are predicted to approach or exceed the Noise Abatement Criteria (NAC). Noise Barrier SB4 would consist of two barriers that would provide shielding for traffic noise from both I-80 and the SR 12E flyover transition ramp. Noise Barrier SB4 (along south side of EB I-80 to EB SR 12E connector) has been evaluated for wall heights in the range of 6 to 16 feet and is predicted to result in at least 5 dB of noise reduction. Noise Barrier SB4 will meet the Caltrans line-of-sight requirement at a barrier height of 12 feet.

A Noise Abatement Decision Report (NADR) was prepared on October 3, 2008 for this project. The NADR noted that the estimated construction costs exceed the reasonable allowance in all cases. Accordingly, the barrier design is not considered to be reasonable from a cost perspective. See table below.

Summary of Reasonableness Allowances and Cost Estimate for the Evaluated Noise Barrier Design SB4

Height (ft)	Receivers Benefited	Existing Noise Level dBA-Leg (h)	Predicted Design Year Noise Level, dBA-Leg (h)	Predicted Design Year Noise Level with Barrier dBA-Leg (h)	Caltrans Reasonableness Allowances ($)	Estimated Construction Cost ($)
10	1	71	73	66	50,000	1,710,000
12	3	71	73	65	150,000	2,072,000
14	3	71	73	64	156,000	2,414,000
16	3	71	73	64	156,000	2,776,000

- **Non Motorized and Pedestrian Features**

The inspection facility and parking areas will be designed to meet ADA accessibility requirements. Disabled spaces will be provided. Walkways will meet accessibility standards.

- **Needed Roadway Rehabilitation and Upgrading**

None within the limits of the inspection facility. Caltrans is proceeding with rehabilitation of the I-80 pavement west of I-680 (PM 8.1/12.9) and east of SR 12 East (PM 15.4/30.6). Construction is expected to be completed in late 2009.

- **Needed Structure Rehabilitation and Upgrading**

There is an existing scour problem at Suisun Creek Bridge. This problem will be addressed when the new bridge at Suisun Creek is constructed as part of the I-80/I-680/SR 12 interchange project.

- **Cost Estimates**

The total cost for the project is estimated to be $99.6 million. Below is a summary of the cost estimate. See Attachment D for the Project Report Cost Estimate. The programmed amount is $ 100.9 million.

SUMMARY OF PROJECT COST ESTIMATE

Total Roadway Items	$	38,100,000
Contingencies (15%)	$	4,700,000
Total Truck Scale Facility	$	20,000,000
Total Structure Items	$	6,600,000
SUBTOTAL CONSTRUCTION COSTS	$	69,400,000
Total Environmental Mitigation	$	1,100,000
TOTAL COST (WITHOUT R/W)	$	70,500,000
TOTAL RIGHT OF WAY ITEMS	$	4,125,000
ESCALATED ALTERNATIVE COST (4.5% ± per year until 2011)	$	77,000,000
Soft Costs (Design, PM, Const Admin, etc) – 25%	$	17,400,000
ESCALATED RIGHT OF WAY COST (3% per year until 2010)	$	4,200,000
Risk Cost	$	1,000,000
ESCALATED TOTAL COST	$	**99,600,000**

The breakdown for the Truck Scale Facility is as follows:

Building - $14.75 million
Utility Services (for the building) - $2.25 million
Facility Operation Components (WIM, static scale, sign bridges, etc.) - $3.0 million

- **Right of Way Data**

See Attachment H for the Right of Way Data Sheet.

- **Effect of Special Funded Proposal on State Highway**

The proposed project is funded from TCIF and RM2 funds. The project will improve the capacity and operating characteristics of I-80.

B. REJECTED ALTERNATIVES

In February 2005, STA, in coordination with Caltrans and the CHP, completed the Cordelia Truck Scales Relocation Study (Solano Transportation Authority 2005). This study identified the need to construct replacement scales and evaluated several alternative locations along the I-80, I-505, SR 12, and SR 113 corridors. The study was conducted as a four-tier technical analysis. Tier 1 initially screened 24 sites for physical size, impact of freeway operations, and environmental fatal flaws. Eleven of the 24 sites were further evaluated in Tier 2, which screened for specific geometric requirements, traffic operations, additional environmental impacts, and right-of-way requirements.

Three options were subjected to a detailed technical analysis. The three potential options analyzed were:

- Option 1: Relocate and expand the scales within the future I-80/I-680/SR 12 Interchange
- Option 2: Build new scales on I-80 between Fairfield and Vacaville and on SR 12 between I-80 and SR 113
- Option 3: Build new scales on I-80 between Vacaville and Dixon, on SR 12 between I-80 and SR 114, and on I-505 between Vacaville and Winters

The detailed technical analysis of these three options considered the following five criteria:

- Capital Cost
- 35-year Operations and Maintenance
- Right-of-Way Requirements
- Environmental Considerations
- Traffic Operations

The analysis was initiated by the release of the Draft Cordelia Truck Scales Relocation Study for public review. As a result of public input, including Caltrans and the CHP Options 2 and 3 were eliminated.

No Build

The No-Build alternative proposed no action. No cost is incurred with this alternative. However, this alternative does not provide a viable solution to the existing congestion caused by the eastbound truck scales and the inability to be able to screen all trucks passing through this corridor. This alternative does not address the safety issues related to the truck weaving problems. This alternative was rejected because it does not address the Need and Purpose of the Project.

6. CONSIDERATIONS REQUIRING DISCUSSION

A. HAZARDOUS WASTE

A draft initial site assessment (GEOCON September 2008) has been performed of the project area. It identified the potential for petroleum hydrocarbons and volatile organic compounds (VOCs) in soil and groundwater, aerially deposited lead and pesticides in soil, and asbestos-containing materials and lead-containing paint at bridge structures and buildings that are proposed to be demolished in the Project Area.

No petroleum hydrocarbon or volatile organic compounds (VOC) were identified. ADL contaminated material is anticipated to be buried underneath the proposed truck scale facility. Truck scale facility buildings have been identified as containing lead-containing paint and asbestos-containing materials. Building demolition procedures will address these materials.

B. VALUE ANALYSIS

The "Cordelia Truck Scales Relocation Study, February 16, 2005" evaluated several alternatives and optimized those using value analysis techniques. Subsequent to that there have been on-going efforts to optimize the scope and phasing of the entire I-80 / I-680 / SR 12 interchange improvements package. This overall effort included a "Value Analysis Study Report, Interstate 80, Interstate 680, State Route 12 Interchange Project" (with I-80 HOV Lane Component) August 2006. Several truck scale alternative concepts were developed, however none were determined to have net positive performance value. The Value Analysis study did prioritize the construction of the new eastbound scales with braided on ramps to eastbound I-80 and SR 12, and considered the scales as a needed first phase of the overall interchange project. No further value analysis study is required.

C. RESOURCE CONSERVATION

The proposed project will minimize the use of energy and nonrenewable resources. Metal beam guard rail will be salvaged. Certain signs may require relocation. No asphalt concrete recycling is anticipated for the project since the majority of the existing pavement will be left in place. Measures to conserve energy and nonrenewable resources during construction will be considered during the design phase of the project. The existing paved areas of the inspection area will be left in place for contingency uses. The materials in the existing buildings will be recycled where practical.

The facility will be designed with the goal of obtaining the U.S. Green Building Council's Leadership in Energy and Environmental Design Silver certification. Consistent with the Governor's Executive Order S-20-04 for Energy Conservation. The building will be designed to use 28% less energy and 30% less water than a typical building the same size as the TIF. The building will incorporate a solar-voltaic system on the roof which is expected to generate over 12% of the

building's energy needs; day-lighting will be used in 75% of the rooms to reduce the amount of electric lighting needed.

D. RIGHT OF WAY

The project would impact primarily agricultural lands and undeveloped lands all within Solano County. The project would require the demolition of two existing residences and five associated buildings (barns, sheds, etc.). One of the two residences, located at 2525 Cordelia Road (associated with an agricultural business owned by the County – "Fairwind Farms") would be displaced to accommodate the new truck scales facility. The other residence, located at 4015 Hale Ranch Road, would be displaced to accommodate the braided on-ramps to I-80 and eastbound SR 12.

Permanent utility easements would be required to relocate existing utility lines.

A Right of Way Data Sheet has been prepared for the build alternative and it is included as Attachment H.

Railroad

There is no railroad involvement on this project.

Utilities

Utilities are shown on Attachment P – Utility Layout.

Solano Irrigation District: The Solano Irrigation District (SID) has several lines in the project vicinity, both parallel to and crossing the freeway. Their locations and status will be confirmed during the PS&E phase. Existing SID facilities include:

- 18" SID line "Young Lateral" (in a 70" RCP casing) transverse crossing of the freeway west of Suisun Creek at "BP1-80" 297+30. There is an angle point in this line under the approach to the proposed Suisun Creek bridge. The casing and pipe will be extended. The Young Lateral crosses under Suisun Creek immediately south of the existing right of way. That siphon will be relocated outside the proposed right of way.
- 18" SID "Valine Lateral" line parallel to the freeway is in the proposed right of way from the above line on the east bank of Suisun Creek to "BP1-80" 319+00. The line crossing Suisun Creek will be removed. The parcel served is a full take for the Truck Scales project.
- 12" SID line (in a 14" steel casing) transverse crossing of the freeway just east of the Raines Drain at "BP1-80" 319+00. The casing and pipe will be extended to be outside of the proposed right of way.

- 12" SID "Chadbourne Lateral 5-2" water line will need to be relocated or shortened to stay clear of the proposed right of way, adjacent to the proposed EB I-80 / SR 12E Connector bridge.
- 12" SID "Chadbourne Lateral 5-2-1" line along the westerly side of Hale Ranch Road is expected to be modified or abandoned as most of the parcel it is serving will be acquired for the project.
- SID's "Chadbourne Lateral 5" where near the intersection of Hale Ranch Road and Busch Drive is expected to be relocated as a consequence of relocating the PG&E towers in that area (see discussion below regarding the PG&E lines).
- SID water is seasonal, gravity fed and is not considered "potable."

City of Fairfield Utilities: The City of Fairfield proposes to construct a 30 inch diameter water line that will cross under the freeway (transverse crossing) just west of the existing exit to eastbound SR 12. The proposed waterline, anticipated to be constructed in 2010, will pass under the proposed I-80/SR 12 connector structure.

PG&E Electric Power Alignments: An existing transverse 12 KV line near Suisun Creek ("BP1-80" 299+00) will be modified, relocating one pole and increasing the span length to span the right of way.

An existing 12KV line parallels the freeway outside of the existing right of way from Suisun Creek (EBT D3" 98+50) through the proposed truck scales ("EBT D3" 113+00) servicing the buildings on the Solano County property. It is anticipated that the line will be re-routed around the proposed off-ramp and the truck scales circulation lot in a new easement.

An existing 115KV line parallels the freeway outside of the existing right of way from adjacent to the existing scales to the proposed scales. It has a tower adjacent to the existing right of way near Suisun Creek ("EBT D3" 97+50), which is also at an angle point in the power line. The proposed right of way will be set between the existing tower and the new bridge abutment walls. This will require adjusting PG&E's 100 foot wide easement to not overlap with State right of way but the tower will remain in its current location. A portion of the proposed truck scales circulation lot is proposed to be built under one span of the power line. This line was included in an Encroachment Policy Variance Request, approved on July 8, 2009.

An existing transverse 12 KV line near Hale Ranch Road ("BP1-80" 351+00) will modified to increase its span increased to clear the proposed EB I-80/SR 12E connector.

Two parallel 115KV lines cross I-80 immediately west of the I-80/SR 12E interchange. There is a pair of existing towers on the south side of I-80 (one on

each line) that will be relocated within their existing tower line easement. These dual lines were included in the approved Encroachment Policy Variance Request.

PG&E Gas: There is an existing transverse 6" gas line across the freeway at "BP1-80" 352+80. It is in a casing that will be extended at the new connector to eastbound SR 12.

Below is a table of identified utilities

Utility Owner	Description	Type	Direction*	Line	From	To	Proposed Action
PG&E	Electrical 12kv	OH	TR	"BP1-80"	299+00		Extend span across freeway to include new ramp
PG&E	Electrical (12kV)	OH	PA	"EBT D3"	98+50	113+00	Conflicts with new ramp and new circulation lot Reroute
PG&E	Electrical (115KV) and Towers	OH	TR	"EBT D3"	95+00	110+00	Angle Point adjacent to proposed Truck Scale off ramp at Suisun Creek. Spans over new truck scale circulation lot.
PG&E	Electrical (115KV) and Towers (2 Pole lines)	OH	Long (55 degree from normal across Fwy)	"BP1-80"	353+00 (Rt)	362+00 (Lt)	Existing towers conflict with new connector at "12E-CON1" 54+00. Conditional approval of the Longitudinal Encroachment was granted on July 8, 2009.
PG&E	Electrical (12 KV)	OH	TR	"BP1-80"	351+00 (Rt)	353+00 (Lt)	Extend span across freeway to include new connector
PG&E	Gas 6" in Casing	UG	TR	"BP1-80"	352+80		Extend casing
Solano Irrigation District	12" Water ("Chadbourne Lateral 5-2")	UG	PA	"EBT D2"	31+00	38+00	Conflicts with new ramp. Line to be relocated
Solano Irrigation District	18" Water in 70" Sleeve ("Young Lateral")	UG	TR	"BP1-80"	297+30		Extend casing, coordinate with approach slabs of proposed Suisun Creek Bridge Relocate branches of the Young Lateral where they conflict with the new facility. Relocate crossing of Suisun Creek outside of ne right of way.
Solano Irrigation District	18" water in proposed right of way for new exit ramp and scales ("Valine Lateral")	UG	PA	"BP1-80"	297+30	319+00	The Valine property is being acquired by the project, including this lateral which will be removed.
Solano Irrigation District	12" Water in 14" Sleeve	UG	TR	"BP1-80"	319+00		Confirm location during PS&E phase.

* abbreviations for direction are as follows: PA – Parallel, TR – Transverse and Long - Longitudinal

The project will require utility relocation and modification. Mapping verification efforts are under way to confirm utility relocations and modifications with the following agencies and utility owners:

- Solano Irrigation District (SID)
- City of Fairfield
- PG&E
- AT&T

Airspace leasing would not be practical in an agricultural area.

Relocation Impact Study Report

A *Community Impact Assessment* report has been prepared for the preferred alternative. This report addresses relocation impacts of the project which are limited to the displacement of the two residences noted above. It has been discussed in more detail in the Final Environmental Document (Attachment E).

All rights and services provided under Public Law 91-646, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, would be strictly adhered to. The rights of non-tenured occupants of displaced properties would be preserved. It is Caltrans policy that persons displaced as a result of Caltrans sponsored transportation programs shall receive fair and humane treatment and shall not suffer unnecessarily as a result of Projects designed for the benefit of the public. No occupants would be required to relocate until comparable replacement housing has been made available to them.

E. ENVIRONMENTAL ISSUES

An EIR/EA has been prepared, and approved on October 16, 2009, in accordance with Caltrans' environmental procedure, as well as state and federal environmental regulations. The attached EIR/EA is the appropriate document for the proposal. Caltrans processed the NEPA component under assignment from FHWA. Caltrans has issued a Notice of Determination under CEQA for the EIR and a Finding of No Significant Impact (FONSI) under NEPA. Those documents are included with the summary of the EIR in Attachment E.

Natural Environmental Study Report

Natural resources were identified through coordination with Caltrans, California Department of Fish and Game (DFG), U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS); a review of existing information; and a variety of field studies conducted by ICF/Jones & Stokes Associates biologists. Natural resources were documented or identified as having the potential to occur within the study area and therefore could be affected by the

proposed project. Natural resources issues include the presence of habitat for valley elderberry longhorn beetle, California Red-Legged Frog (CRLF), migratory birds and raptors, and anadromous fish, and riparian habitat.

STA will obtain and implement the conditions for the following permits and regulations:

- U.S. Army Corps of Engineers Section 404 Nationwide Permit 14 or Individual Permit
- USFWS Consultation under Section 7 of the Federal Endangered Species Act
- San Francisco Bay Regional Water Quality Control Board Non-Point Section 402, National Pollutant Discharge Elimination System permit (General Construction Permit), 401 Water Quality Certification
- San Francisco Bay Area Air Quality Management District Permit for Air Emission Generating Equipment
- Migratory Bird Treaty Act
- NMFS informal consultation under Section 7 of Endangered Species Act
- California Public Utilities Commission – GO-131 filing requirements for high-voltage electrical lines.

As part of the proposed project, Caltrans or its contractor will implement standard avoidance and minimization measures. These measures listed in the report have been determined based on natural resources identified as present or having the potential to occur in the study area, and on the potential impacts that could occur as a result of the proposed project.

Preconstruction surveys for sensitive species (including CRLF, nesting migratory birds and raptors, other birds and bats) would be conducted to reduce potential impacts. In addition, a mitigation measure to compensate for the permanent and temporary loss of riparian vegetation would be implemented.

Compensatory mitigation for direct impacts on Valley Elderberry Longhorn Beetle (VELB) habitat will be accomplished by replanting the affected shrubs to a conservation area in accordance with USFWS approved procedures. Compensation for loss of CRLF upland habitat will be in the form of creation or enhancement of an acceptable amount of riparian habitat at the Solano Community College property. It is anticipated that up to two acres of impacted habitat will be mitigated at 1:1 ratio. The exact acreage requirements and compensation location will be worked out with USFWS during the Section 7 consultation process.

Compensation for the loss of Swainson's hawk foraging habitat will be through buying credits at an approved mitigation bank. It is anticipated that 25 acres of impacted habitat will be mitigated at a 0.75:1 ratio.

The table below provides an itemization of the environmental mitigation

Season Wetlands	$	35,000
Swainson's Hawk	$	125, 000
CRLF and Riparian Forest*	$	900,000
Estimated Mitigation Cost	$	1,060,000

*Includes design, right of way, construction and construction services including monitoring at Solano Community College site.

Cultural Resources

The study area was examined for cultural resources and a series of reports conforming to Caltrans standards were prepared addressing archaeological and architectural resources. The Historic Resources Evaluation Report (HRER) documented that no historic properties are located within the indirect Area of Potential Effect (APE). An Archaeological Survey Report (ASR) recommended that, though no surface indications of archaeological resources were located in the project area, further subsurface investigation (Extended Phase I) was necessary based on the sensitivity of the area as determined by land form and known resources in the vicinity. The Extended Phase I investigation was conducted and no sensitive resources were encountered.

Energy

An Energy technical study of the project area has been performed. It found that the project is unlikely to substantially increase direct consumption of energy and that it is likely to decrease carbon dioxide emissions and lessen impact on global warming. It is expected to increase consumption of indirect energy which will be mitigated by implementing least energy-intensive methods for construction, improved transportation energy efficiency and implementing smart land use and intelligent transportation systems.

Visual Impact Assessment

A *Visual Impact Assessment* report has been prepared to evaluate visual impacts of the project. The process used to identify impacts generally follows the guidelines outlined in the publication "Visual Impact Assessment for Highway Projects," FHWA, March 1981.

Development of proposed truck scales will decrease the visual quality of views from eastbound I-80 from moderately high to moderate. Development of the truck scales adjacent to the highway is consistent in character with the existing highway use and would therefore not decrease the unity of views from the freeway. The truck scales will however, block vivid views of agricultural fields from the highway and decrease the intactness of the agricultural scene. The scales will also create a new source of light and glare. Overall, development of the proposed truck scales would create a moderate adverse visual impact.

The project would also include the demolition of the existing eastbound truck scales. Demolition of the existing scales could create a beneficial visual impact by opening up views of the vegetated hill behind the existing truck scales, thereby increasing the vividness and intactness of views from I-80. However, since the future use of this site has not been determined, the extent of change in visual quality is unknown. For example, should the area to be used for maintenance or storage facilities, these uses would introduce elements that would decrease the vividness and intactness of the landscape. Future uses of this site are likely to have a lower intensity of development than the current truck scales and therefore would result in somewhat of a beneficial impact. Since demolition of the existing scales would be likely to increase visual quality in this area, it would offset some degree of the visual impacts from the new truck scale facility.

All visual mitigation will be designed and implemented with the concurrence of the Caltrans District 4 Landscape Architect. Mitigation measures, to be developed in consultation with Caltrans, will likely include:

- Building materials and form will be selected to blend with local architectural features of the surrounding community.
- Referenced to the agricultural past may be made through the planting and hardscape features surrounding the building.

Hydrology and Floodplain

The 100-year flow in Suisun Creek passes under the I-80 bridge without flooding the highway. However, historically, at several locations within 2 miles upstream of I-80, 100-year flows escaped from the banks of both Suisun Creek and Ledgewood Creek, flowing away from the creek. Some of these flood flows encounter the I-80 embankment at Raines Drain. The capacity of the Raines Drain cross culverts is not sufficient to carry the 100-year flood flows across the highway, causing flood flows to overtop the highway at this location, as defined on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM). Downstream of the highway the concrete lined portion of the Raines Drain has limited capacity, approximately 125 cfs, with the FEMA defined floodplain limits greatly exceeding the limits of the lined channel.

The first flows in Raines Drain and on the Raines Drain floodplain are conveyed in a concrete lined ditch and flow southward under the freeway via four cross culverts. These existing culverts will be extended to match the width of the new freeway improvement. Currently, when the capacity of the existing culverts is exceeded, floodwaters rise on the north side of the freeway and eventually overtop it. The FEMA maps show that the existing 100-year floodplain at Raines Drain overtops I-80. The new truck scales and associated improvements would not impede these flood flows. They would continue to overtop the freeway and flow to the existing floodplain on the south side. The project would not create an adverse effect on the floodplain upstream of I-80.

To the south of the highway, the construction of the facilities associated with the relocated eastbound scales will result in fill placed on the defined floodplain. The FEMA floodplain in this area is defined as sheet flow with less than 1 foot depth. Placement of fill in the area would not impede flood flows, but rather would displace them, causing water to move eastward of the current location farther into an agricultural field. Although the primary area of flooding will shift slightly, the flood flows would not extend outside of the existing 100-year flood plain as defined by FEMA FIRM maps. No ponding would occur and flood water would continue to drain according to the same basic pattern as it does without the project. Flood depths would not increase to a depth of more than the current condition of 1 foot or less. The proposed elevation for the Truck Scales facility and the proposed profile for the EB I-80 on ramp and the EB I-80 to EB SR12 connector have been lowered to reduce both the need for imported embankment as well as to reduce the level of impact to the flooplain.

Placement of the fill would not result in a significant floodplain encroachment as defined under 23 CFR 650. There would be no increase interruption of the operation or use of this transportation facility and no significant adverse impact on the natural and beneficial floodplain values (i.e., the existing agriculture).

Because flood flows would not be impeded north or south of the freeway, and because there would be no significant encroachment on the floodplain, fill in this area would not have an adverse effect on the floodplain.

The Project is located within the limits of an ongoing floodplain study co-sponsored by the STA and the Solano County Water Agency (SCWA). The study involves the development of a 2-dimensional hydrodynamic model of the Suisun Valley. The model will be used to evaluate flooding within the area, the impact on infrastructure and will be used to develop mitigation for floodplain impacts for this project and future projects.

F. AIR QUALITY CONFORMITY

The I-80 Eastbound Cordelia Truck Scales Relocation project was included in the regional emissions analysis conducted by Metropolitan Transportation Commission (MTC) for the conforming *Transportation 2035 Plan for the San Francisco Bay Area* (MTC 2009). The project's design concept and scope have not changed significantly from what was analyzed in the *Transportation 2035 Plan.* This analysis found that the plan and, therefore, the individual projects contained in the plan, are conforming projects, and will have air quality impacts consistent with those identified in the state implementation plans (SIPs) for achieving the National Ambient Air Quality Standards (NAAQS). FHWA determined the RTP to conform to the SIP on March 17, 2005.

The I-80 Eastbound Cordelia Truck Scales Relocation project is also included in the federal *2007 Transportation Improvement Plan.* The project's open to the public year is consistent with (within the same regional emission analysis period as) the construction completion date identified in the federal TIP and/or RTP. The federal TIP gives priority

to eligible Transportation Control Measures (TCMs) identified in the SIP and provides sufficient funds to provide for their implementation. FHWA determined the TIP to conform to the SIP on October 4, 2007.

An Air Quality Technical report has been prepared. It did not identify any impacts other than during construction from construction activities, which are mitigated by standard Caltrans specifications and BAAQMD requirements.

G. TITLE VI CONSIDERATIONS

As the inspection facility is a specialized "off line" facility, there are no applicable provisions related to low mobility and minority groups. The facility will be designed to meet accessibility standards for people with disabilities (e.g. curb ramps and avoidance of any steps, except for access into inspection pits).

7. OTHER CONSIDERATIONS AS APPROPRIATE

- **PUBLIC HEARING PROCESS**

A public hearing was held February 26, 2009 during the public circulation of the draft environmental document at the Solano County Building in Fairfield.

Comments received at the hearing included:

- Biology – Concerned about impacts to Suisun Creek and the endangered threatened federal species of concern in that area.
- Noise/Air Quality – Why was no sound or particulate (air quality) studies done on the north side of I-80 or at my home?
- Noise/Air Quality – You say that it was determined soundwalls would significantly reduce the noise but were not cost effective. Is the property owner going to be compensated? Or are they just going to have to suffer the fact you think it is too expense to protect them?

Local Agencies have stated their positions as follows:

- Solano County: "No comments. Solano County supports the project." (Letter from Paul Wiese, Engineering Manager, Solano County Department of Resource Management).
- City of Fairfield: "The City of Fairfield has no comments and strongly supports the proposed project." (Letter from Sean P. Quinn, City Manager, City of Fairfield).

Written comments were received. Those comments along with the responses are included as part of Attachment E Final Environmental Document.

There were no changes to the Project as a result of the public comments.

- **ROUTE MATTERS**

The new inspection facility replaces an existing facility and is fully consistent with the Route Concept Report for this section of I-80. Current freeway agreement is still valid, and no revision is required.

- **PERMITS**

The following permits are required for this project:

- U.S. Fish and Wildlife Service – consultation under Section 7 of the federal Endangered Species
- San Francisco Bay Regional Water Quality Control Board – Non-point Section 402, National Pollutant Discharge Elimination, 401 Water Quality Certification
- San Francisco Bay Area Quality Management District – Permit for air emission generating equipment
- NOAA Fisheries – informal consultation under Section 7 of Endangered Species Act
- U.S. Army Corps of Engineers Section 404 Nationwide Permit 14 or Individual Permit
- Project may potentially require a section 401 CWA Certification from Regional Water Quality Control Board.
- California Public Utilities Commission – GO-131 filing requirements for high-voltage electrical lines

- **COOPERATIVE AGREEMENTS**

Cooperative agreements between Caltrans and STA have been executed for PA/ED, Design and Right of Way. Copies of the executed Cooperative Agreements for PA/ED and Design and for Right of Way are included in Attachments K and L, respectively.

A Cooperative Agreement will be needed for construction of the inspection facility.

The existing Cooperative Agreements and Memorandums of Understandings between Caltrans and the STA that related to this project include:

Execution Date	Type of Doc	Scope of Agreement
June 13, 2002	Cooperative Agreement 015387	For Study of Improvements to I-80 in Fairfield and parallel facilities. Funding is from the I-80/I-680/SR 12 interchange project (Project 25.3)
April 6, 2009	Cooperative Agreement 04-2235	PA/ED and PS&E responsibilities for the I-80 Eastbound Truck Scales Inspection Facility (TIF) in Cordelia
July 2, 2009	Cooperative Agreement 04-2261	Right of Way responsibilities for the I-80 Eastbound TIF in Cordelia

The funding for the project is from Trade Corridor Improvement Funds (TCIF) and Bridge Toll Funds from MTC. This project is part of the Corridor Improvements near

I-80/I-680 Interchange being sponsored by the STA. The State (Caltrans) will own, operate and maintain the completed work, including funding of those activities.

STA is performing the work with oversight being provided by Caltrans. This relationship is proposed to continue under the Cooperative Agreement for Design. The construction contract will be administered by Caltrans. Specifically the items funded and performed for work on the State Highway System by each agency are as follows:

Item	Solano Transportation Authority (STA)		State (Caltrans)	
	Perform	Fund	Perform	Fund
Environmental Mitigation		X	X	
STA Costs	X	X		
Environmental Documentation	X	X	X	
Design Engineering	X	X		
Project Management	X	X		
Design Oversight (Independent Quality Assurance			X	X
Construction/Construction Management		X	X	X
Maintenance of Completed Project			X	X

The following freeway and maintenance agreements exist within the project limits which are not affected by this project:

- Maintenance agreement between the State and County of Solano dated January 2, 1964 for the Green Valley Road overcrossing, Suisun Valley Road overcrossing and Abernathy Road overcrossing.
- Maintenance agreement between the State and County of Solano dated June 16, 1970 for the Red Top Road undercrossing.
- Maintenance agreement between the State and City of Fairfield dated April 6, 1994 for the Red Top Road overcrossing, Green Valley Road overcrossing, Suisun Valley Road overcrossing and Airbase Parkway overcrossing.
- Freeway agreement between the State and the County of Solano dated October 21, 1958 for the section of State Highway Route 74 from 0.5 miles south of Jameson Creek and Route 7 near Cordelia and Route 7 and between Cordelia Road and 0.3 miles east of Green Valley Creek.
- Freeway agreement between the State and the County of Solano dated July 25, 1966 for the section of Route 80 (Old Route 7) from the Napa-Solano County Line and the junction with Route 12 near Cordelia.
- Freeway agreement between the State and the City of Fairfield dated October 1, 1974 for the section of Route 80 from 0.3 miles east of Green Valley Road to 0.3 miles east of Suisun Valley Road.
- Freeway agreement between the State and the County of Solano data April 3, 1984 for the section of Route 80 from 0.3 miles east of Suisun Valley Road to Chadbourne Road.

- **TRANSPORTATION MANAGEMENT PLAN FOR USE DURING CONSTRUCTION**

A Transportation Management Plan is needed. Various TMP elements such as a Public Information Program, enhanced Freeway Service Patrol, Highway Advisory Radio, portable changeable message signs, and a CHP Construction Zone Enhanced Enforcement Program (COZEEP) may be used to alleviate and minimize delay to the traveling public. A majority of the proposed improvements will be built outside of the I-80 corridor and will not affect maintenance operations of existing facility. Ramp conform improvements will require shoulder closures. Attachment J includes the Request for Transportation Management Plan Data Sheet as well as the Transportation Management Plan Data Sheet.

- **STAGE CONSTRUCTION**

All work for the eastbound truck scales project will be performed behind temporary concrete barrier (k-rail), existing permanent barriers or railings or separated from traffic clear recovery zones. Stage Construction and Traffic Handling plans will be provided in the PS&E phase to show how traffic is to be routed and maintained within the project limits. These plans will indicate the sequence of operation, work to be performed, materials to be used and the traveled way to be used for all movement of traffic during each construction sequence.

Stage construction is expected to be generally as follows:

- Construct new weigh station and inspection site facility, ramp connection from existing facility to new facility (including bridge across Suisun Creek), on ramps from the new facility and the new I-80/SR 12 connector.
- Open new connector to eastbound SR 12, then complete paving of new on ramp to eastbound I-80 from the inspection facility.
- Open new facility, using temporary alignment through existing facility.
- Complete final off ramp configuration and remove existing on ramp from existing truck scales.
- Demolish existing facility above ground improvements.

- **ACCOMMODATION OF OVERSIZE LOADS**

The truck scales facilities will be designed to process extra legal oversize load/vehicle, though not all portions of the facility may be designed to directly accommodate them. Oversized loads will be accommodated during construction.

- **GRAFFITI CONTROL**

Final design of the facility will include selection of materials and finishes that discourage graffiti and expedite its removal when it occurs. Graffiti should not be a major problem due to the fact that the facility is expected to manned 24 hours a day by CHP personnel.

- **RISK MANAGEMENT PLAN**

A Risk Management Plan has been prepared for this project and is included as Attachment I.

Delays in right of way acquisition, delaying the project was identified as a medium probability, medium impact risk. A delay of up to 60 calendar days is possible with a 35% probability of occurring. The identified response strategy is to initiate right of way efforts as soon as the 65% PS&E is submitted.

Specialty items or price escalation increasing costs was identified as a low probability, medium impact risk. A cost impact of up to $1,000,000 total is possible. The identified response strategy is to monitor material prices and update the Engineer's Estimate with the most up to date information available.

- **MATERIALS RECOMMENDATION**

A Life Cycle Cost Analysis (LCCA) was performed in September 2009 for the project. All ramps, including the I-80/SR12 connector and the Truck Scale Facility itself utilize a 40-year design life. An exception to utilize a 20-year design life for the I-80 mainline is not required based on justifcation from the LCCA. The LCCA indicated that Jointed Plane Concrete Pavement (JPCP) be used for the EB I-80 off ramp and the I-80 on ramp and Hot Mix Asphalt (HMA) and Rubberized Hot Mix Asphalt (RHMA) be used for the I-80/SR12 connector, the on ramp onto SR12E and for the I-80 mainline widening. Bill Farmbach, Headquarters, concurred with the findings of the LCCA.

8. PROGRAMMING

A. PROGRAMMING

This project is identified in the following planning documents:

- STA's Cordelia Truck Scales Relocation Study, February 16, 2005
- STA's I-80/I-680/I-780 Major Investment and Corridor Study 2004.

This project is listed in Regional Measure 2 and TCIF Program. The total programmed amount is $100.9 million. The current cost estimate for this project is $99.6 million.

B. SCHEDULE

PA&ED Complete – October 2009
PS&E Complete – June 30, 2010
RTL – March 31, 2011
R/W Certification – March 31, 2011
Award – August 1, 2011
Begin Construction – August 31, 2011

End Construction – December 31, 2013

C. FUNDING

The project is fully funded as follows:

- Transportation Corridor Improvement Funds (TCIF) - $49.8M
- Toll Bridge (AB1171) Funds - $49.8M

Total Funding $99.6 M

9. REVIEWS

Gordon Brown, Design Reviewer for the Division of Design, reviewed and concurred with this project on May 29, 2009. The Program Advisor, Nader Ebrahimi, also reviewed this project and his comments have been incorporated.

An oversight agreement was signed by STA, Caltrans and FHWA on June 30, 2008 for the parent EA (the I-80/I-680/SR 12 Interchange), which included the children projects, one of which is the Truck Scales. Karen Bobo of FHWA also reviewed and concurred with this project on January 8, 2009. This project has also been reviewed by Lanh Pham of FHWA.

Also Constructability branch has reviewed this report and their comments have been addressed.

10. PROJECT PERSONNEL

To facilitate contacts with team members responsible for preparation of the Draft Project Report, names and phone numbers of key staff are identified below.

Caltrans Project Manager	-	Nicolas Endrawos	(510) 286-5123
Caltrans Project Development Team Leader	-	Roni Boukhalil	(510) 286-5694
Caltrans Environmental Unit Supervisor	-	Melanie Brent	(510) 286-5231
Caltrans Right of Way Branch Reviewer	-	Melanie Hunt	(510) 286-5495

In addition to the above-mentioned key staff, the following PDT members were involved with the preparation of this Draft Project Report.

Caltrans

Cameron Oakes	(510) 622-5758
Evelyn Gestuvo	(510) 286-4939
Mike Thomas	(510) 286-4683
Gordon Brown	(510) 622-5932
Joe Peterson	(510) 286-6377
Nader Ebrahimi	(916) 654-6914
Allison Paich	(510) 286-5402

Beth Perrill	(510) 286-5383

FHWA

Jeff Holm	(916) 498-5021
Karen Bobo	(916) 498-5036
Lanh Pham	(916) 498-5046

Solano Transportation Authority

Janet Adams	(707) 424-6010
Dale Dennis	(925) 686-0619

Solano County

Paul Wiese	(707) 421-6072

City of Fairfield

Wayne Lewis	(707) 428-7632

California Highway Patrol

Mike Ferrell	(707) 864-5552

Mark Thomas & Company/Nolte Associates Joint Venture

Mike Lohman	(925) 938-0383
Andrea Glerum	(925) 279-4408

Fehr & Peers

Ellen Poling	(925) 930-7100

Jones & Stokes

Maggie Townsley	(916) 737-3000

CirclePoint

Scott Steinwert	(415) 227-1100

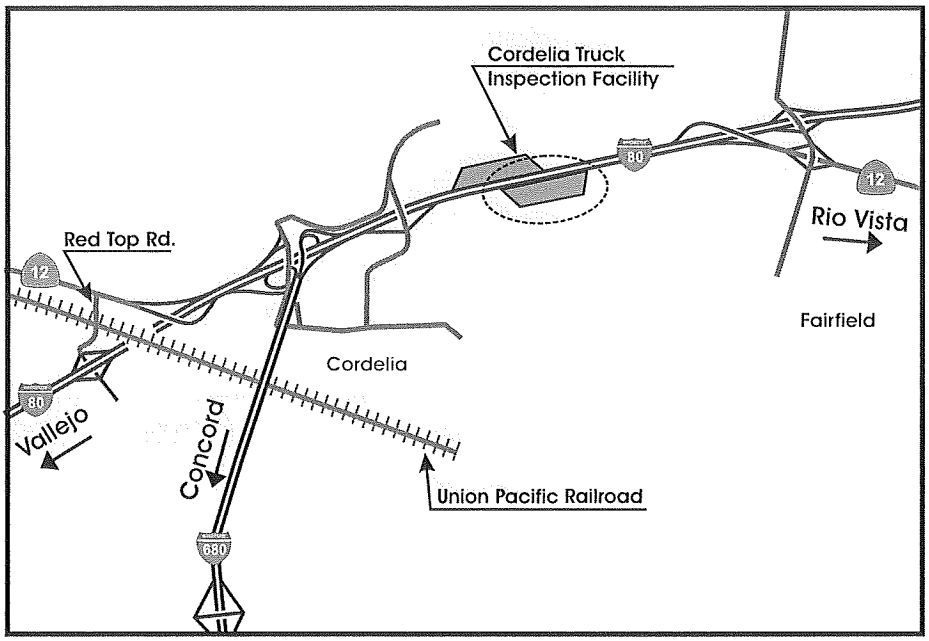
11. LIST OF ATTACHMENTS

A. Project Location Map
B. Project Layouts, Profiles and Bridge Plans
C. Typical Cross Sections
D. Project Report Cost Estimate
E. Final Environmental Document Cover Sheet and Summary
F. Storm Water Data Report Cover Sheet
G. Initial Site Assessment Checklist
H. Right of Way Data Sheet
I. Risk Management Plan
J. Transportation Management Plan (Data Sheet)
K. Cooperative Agreement for PA/ED and Design
L. Cooperative Agreement for Right of Way

M. Pavement Strategy Checklist
N. Oversight Agreement for I-80/I-680/SR 12 Interchange
O. TCIF Application
P. Utility Layout

ATTACHMENT A

Project Location Map



INTERSTATE 80 EASTBOUND TRUCK SCALE RECONSTRUCTION
PROJECT LOCATION MAP

ATTACHMENT B

Project Layouts, Profiles and Bridge Plans

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

CURVE DATA				
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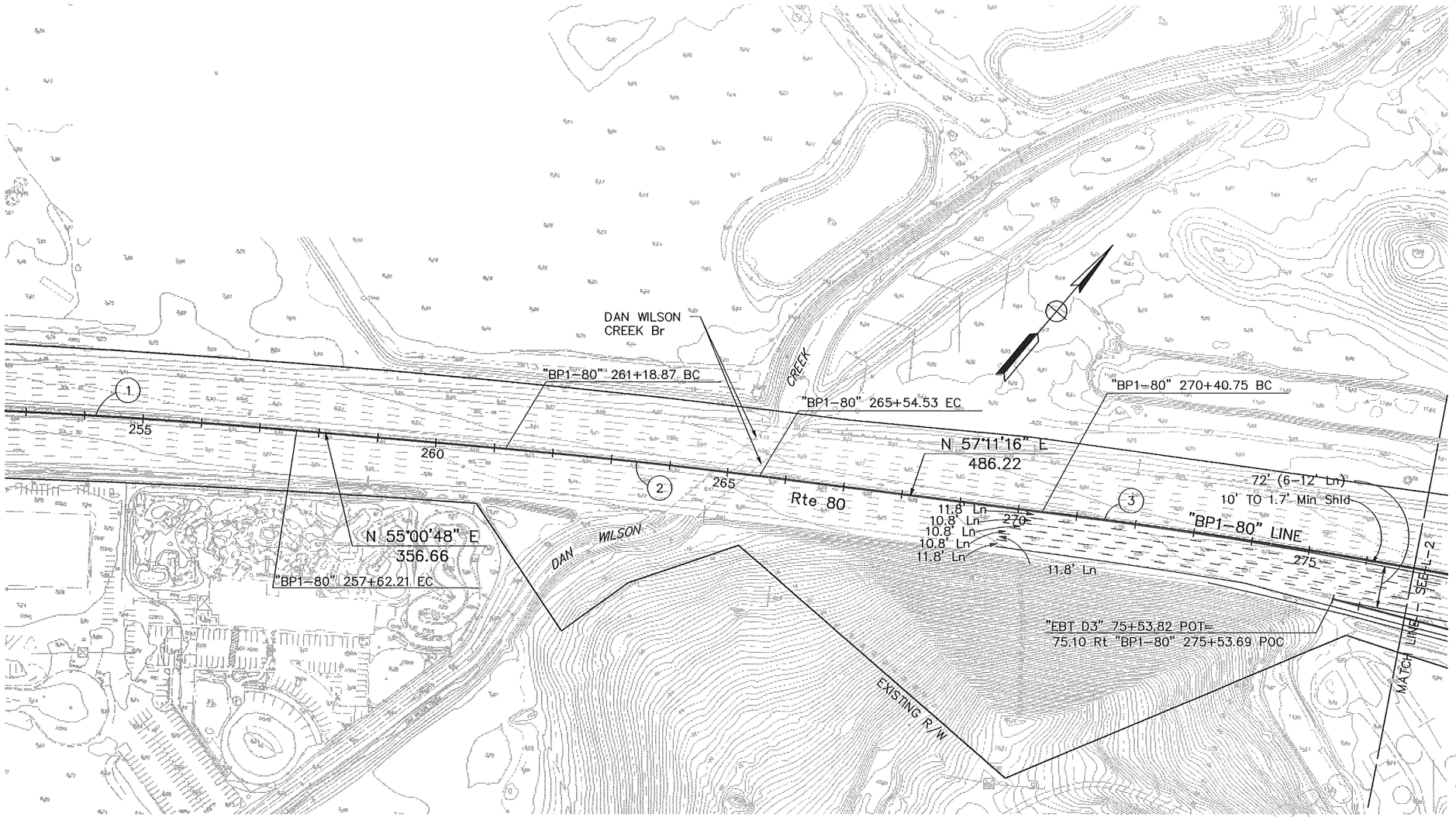

EB 80 TRUCK SCALES
LAYOUT
SCALE 1"=100'

L-1

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

REVISED BY	DATE REVISED

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Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR
RONI BOUKHALIL

PS&E REPORT
04/01/2009

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SUISUN CITY, CA 94585

CURVE DATA				
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CURVE DATA				
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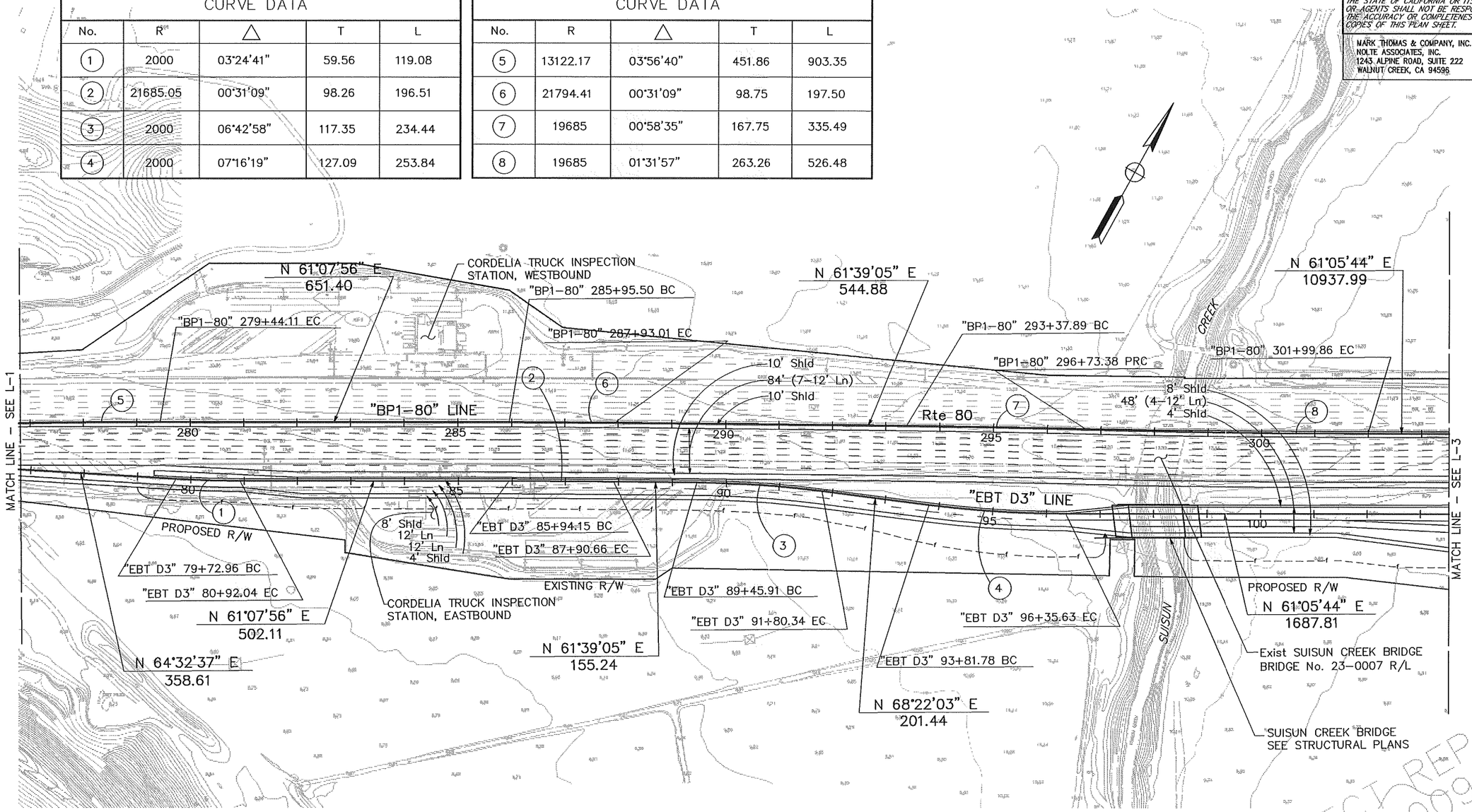

PROJECT REPORT 9/2009

EB 80 TRUCK SCALES
LAYOUT
SCALE 1"=100'

L-2

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

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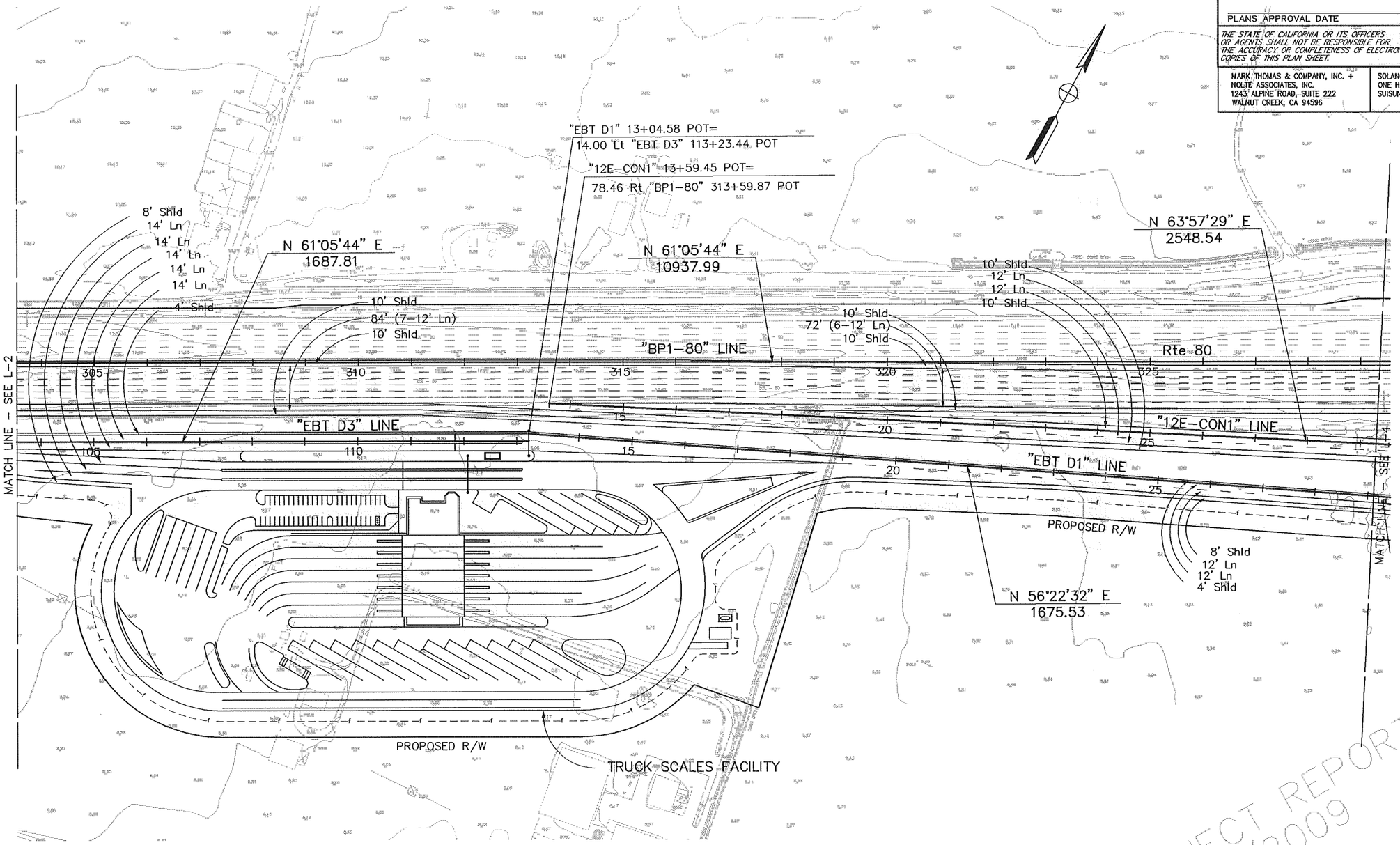

PROJECT REPORT
9/2009

EB 80 TRUCK SCALES
LAYOUT
SCALE 1"=100'

L-3

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CURVE DATA				
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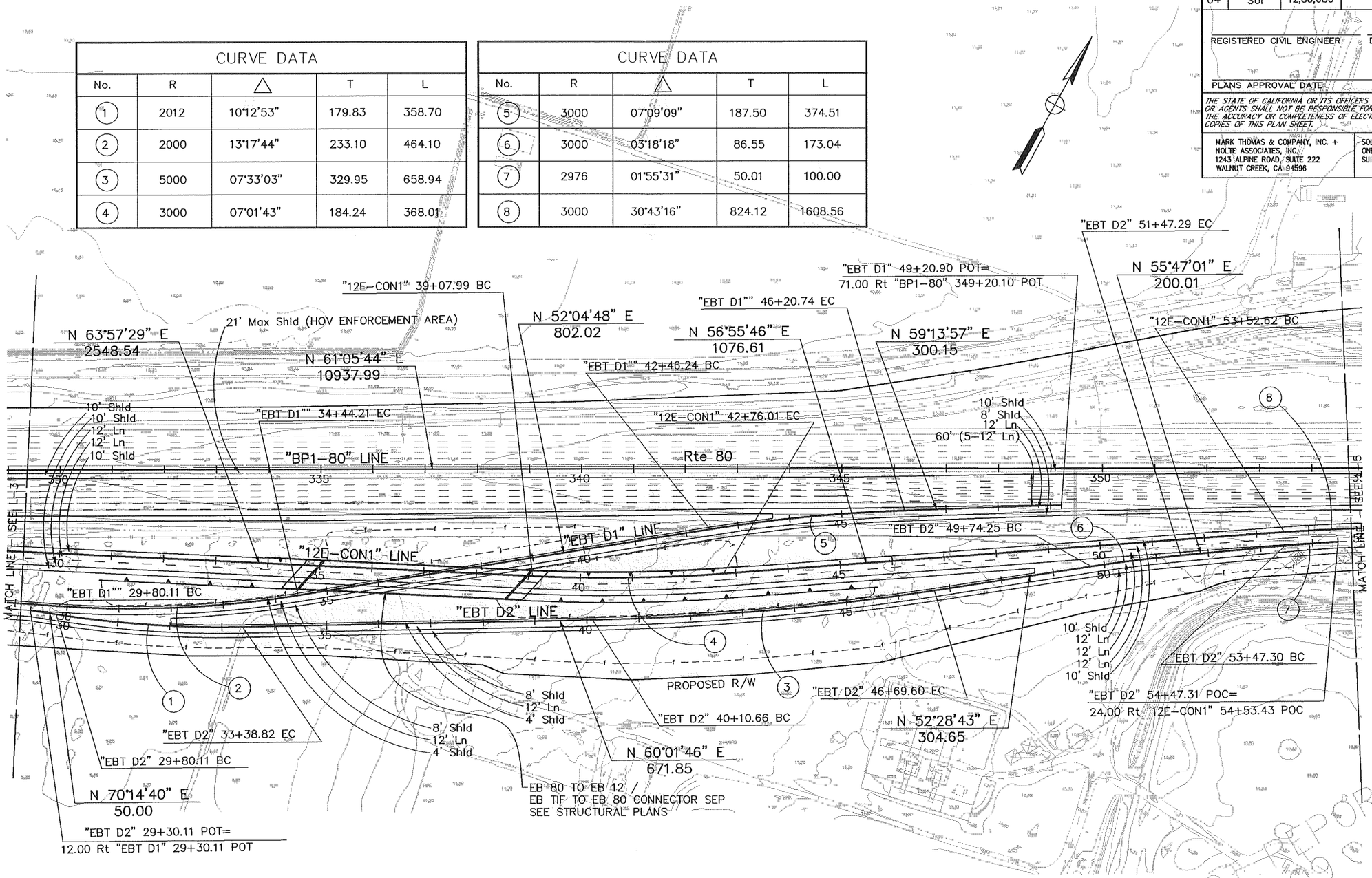

PROJECT REPORT
9/2009 ©

EB 80 TRUCK SCALES
LAYOUT
SCALE 1"=100'

L-4

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER DATE

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SUISUN CITY, CA 94585

CURVE DATA				
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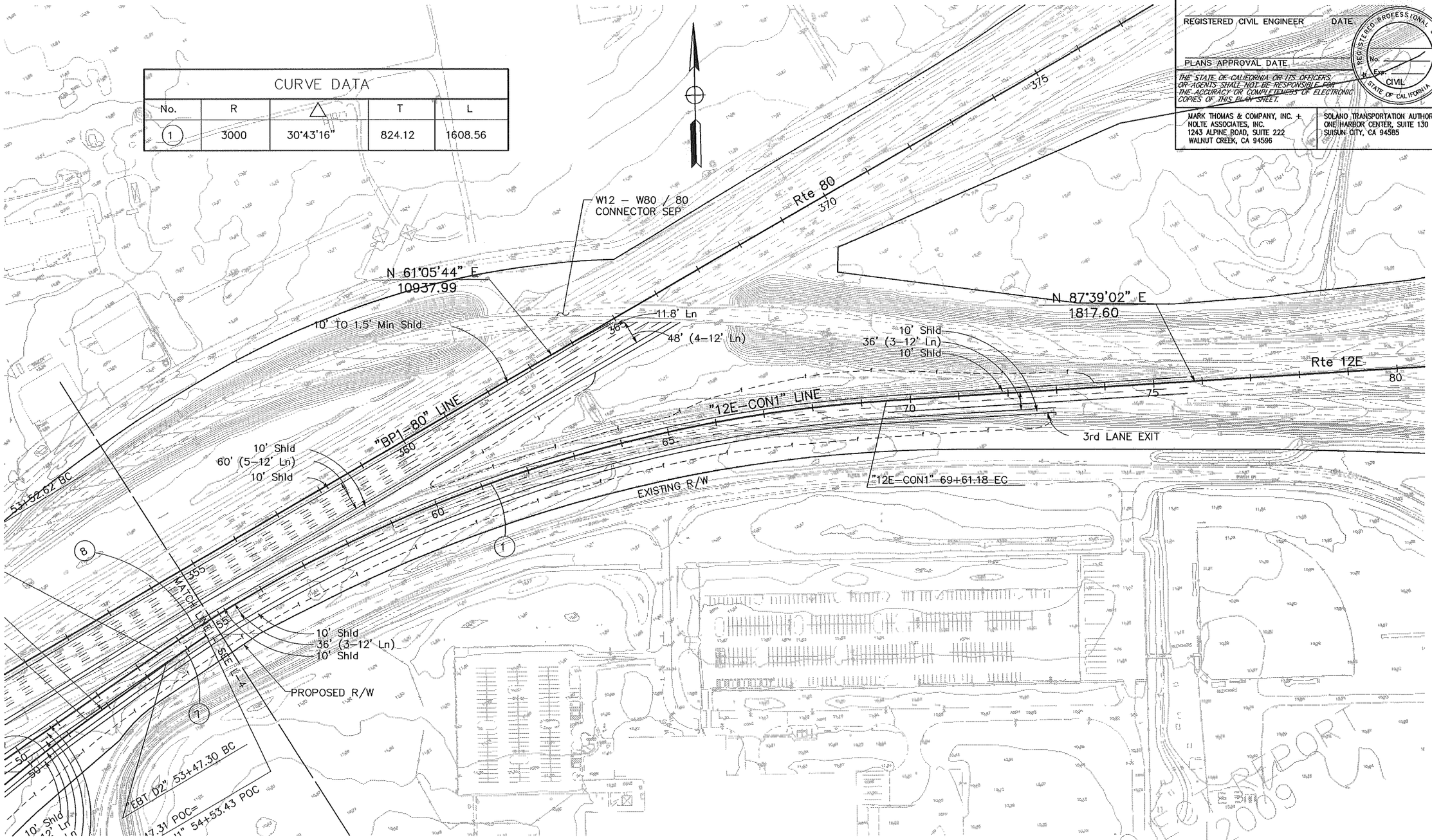
(1)	3000	30°43'16"	824.12	1608.56



PROJECT REPORT 9/2009

EB 80 TRUCK SCALES
LAYOUT
SCALE 1"=100'

L–5

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

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04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER — No. ____ Exp. ____ CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

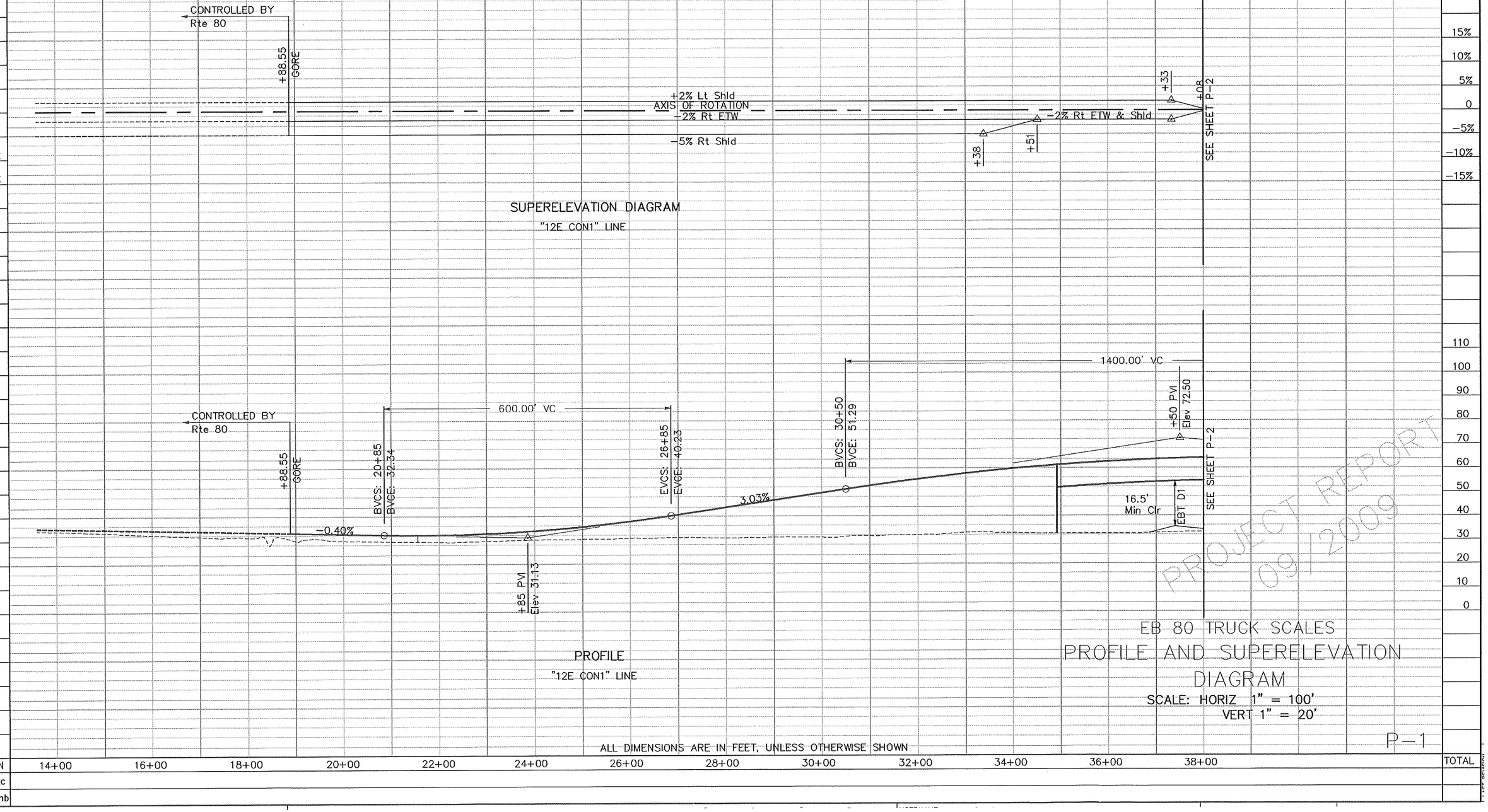
REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR: RONI BOUKHALIL

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

Caltrans



P-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

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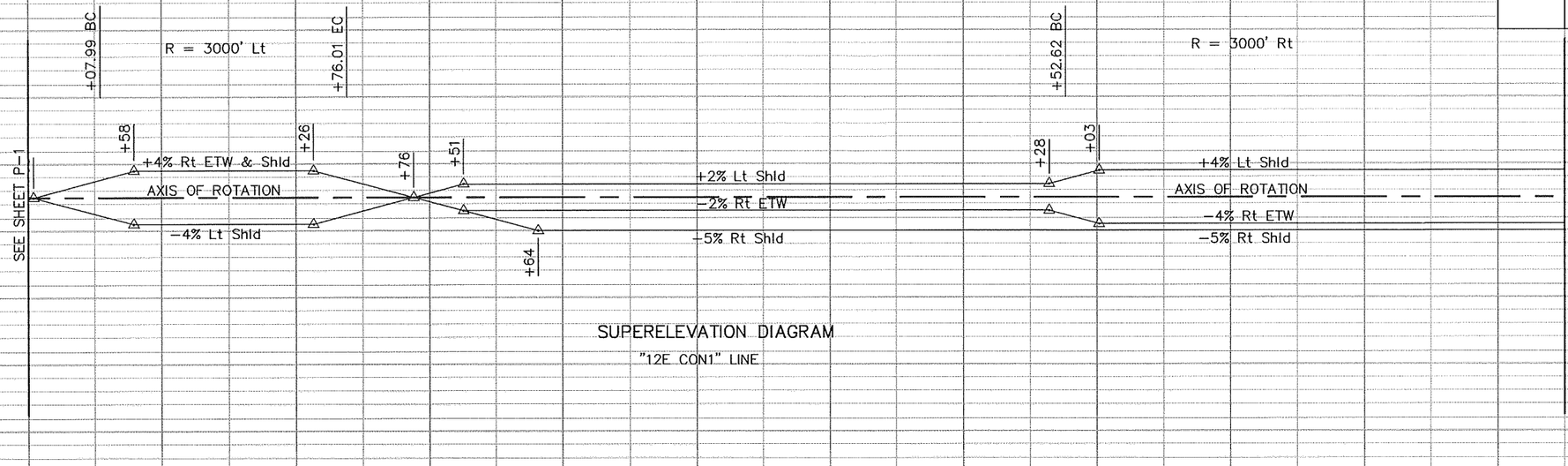
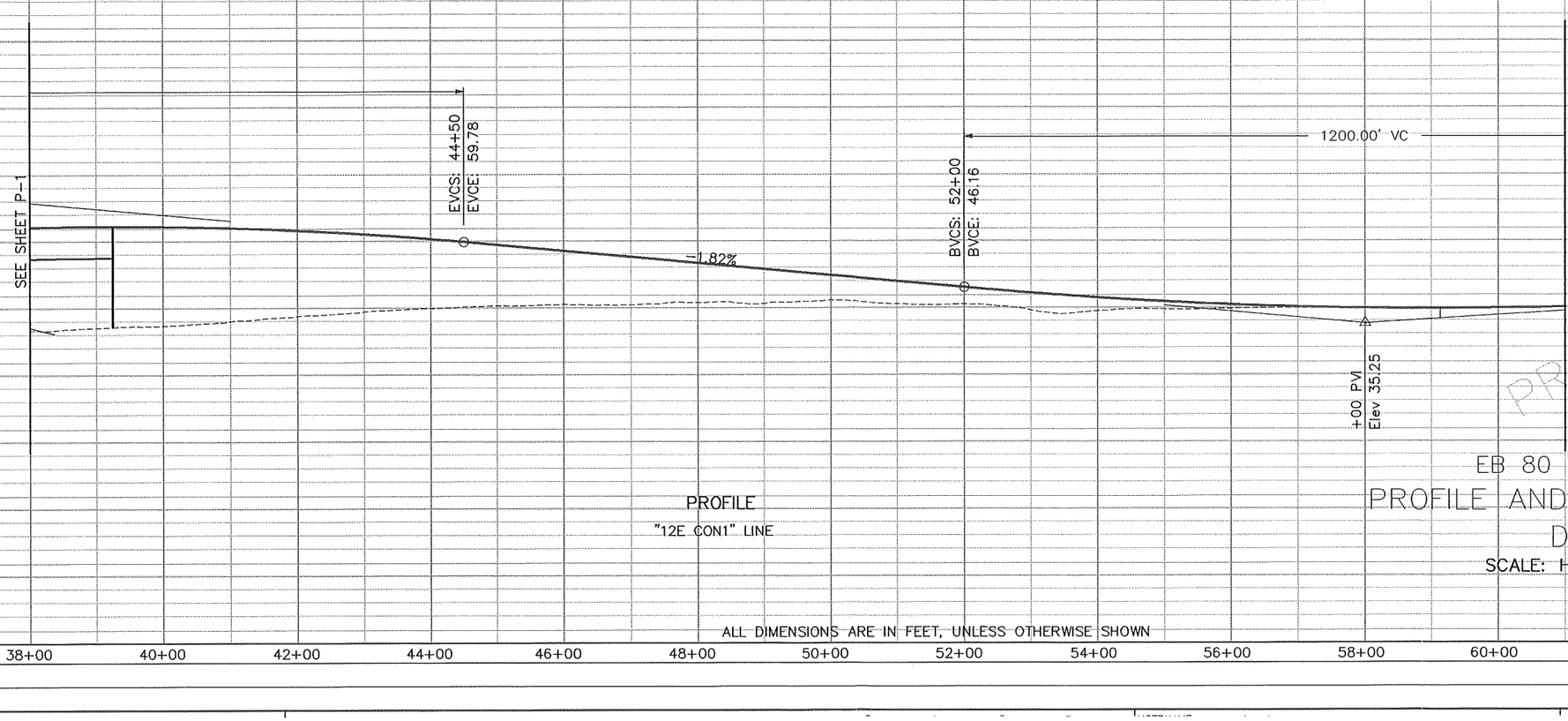


SUPERELEVATION DIAGRAM

"12E CON1" LINE



PROFILE

"12E CON1" LINE

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

STATION	38+00	40+00	42+00	44+00	46+00	48+00	50+00	52+00	54+00	56+00	58+00	60+00	TOTAL
CY Exc													
CY Emb													

PROJECT REPORT
09/2009

EB 80 TRUCK SCALES

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: HORIZ 1" = 100'
VERT 1" = 20'

P-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

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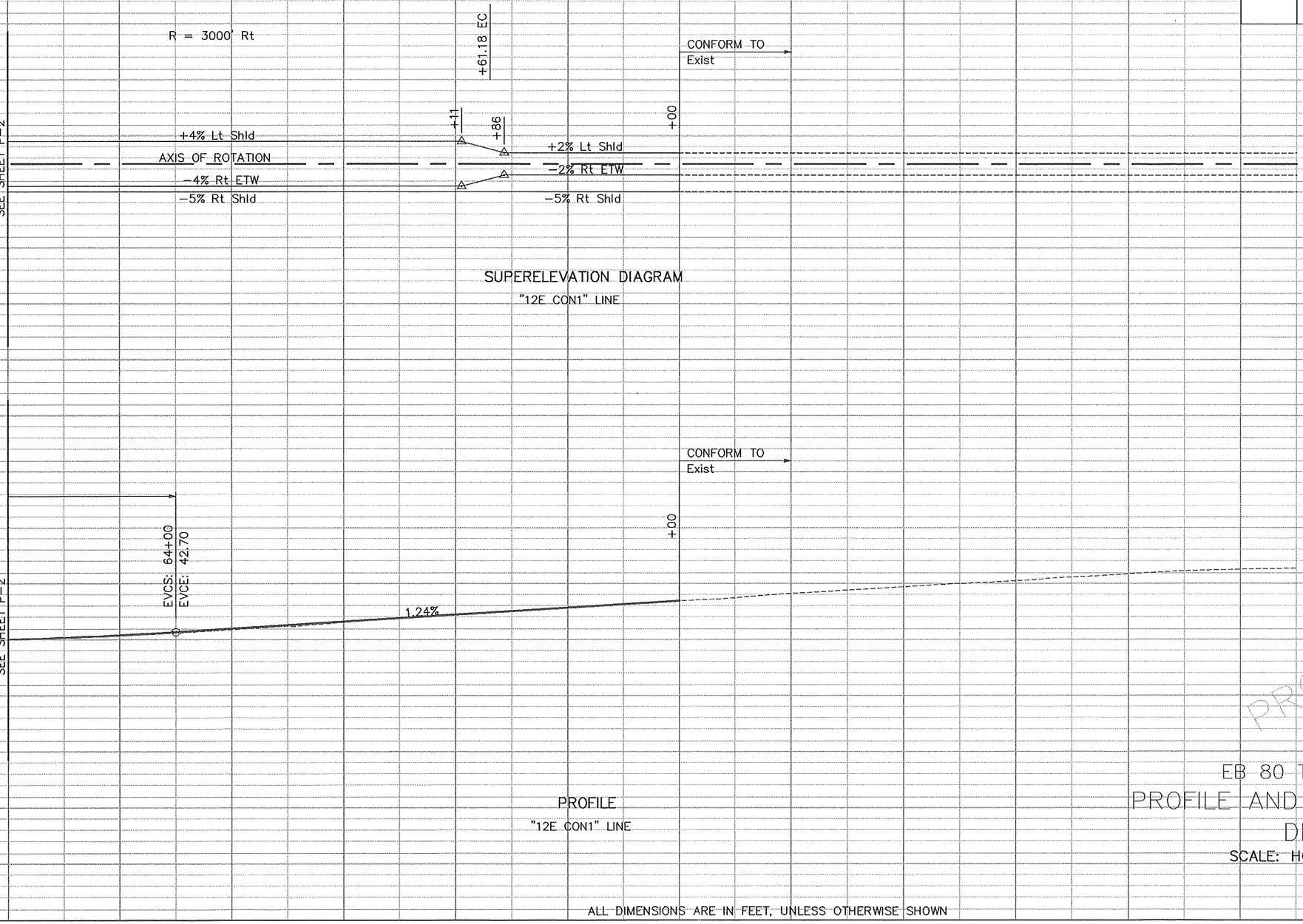

SUPERELEVATION DIAGRAM

"12E CON1" LINE

PROFILE

"12E CON1" LINE

PROJECT REPORT
09/2009

EB 80 TRUCK SCALES

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: HORIZ 1" = 100'
VERT 1" = 20'

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

P–3

STATION	62+00	64+00	66+00	68+00	70+00	72+00	74+00	76+00	78+00	80+00	82+00	84+00	TOTAL
CY Exc													
CY Emb													

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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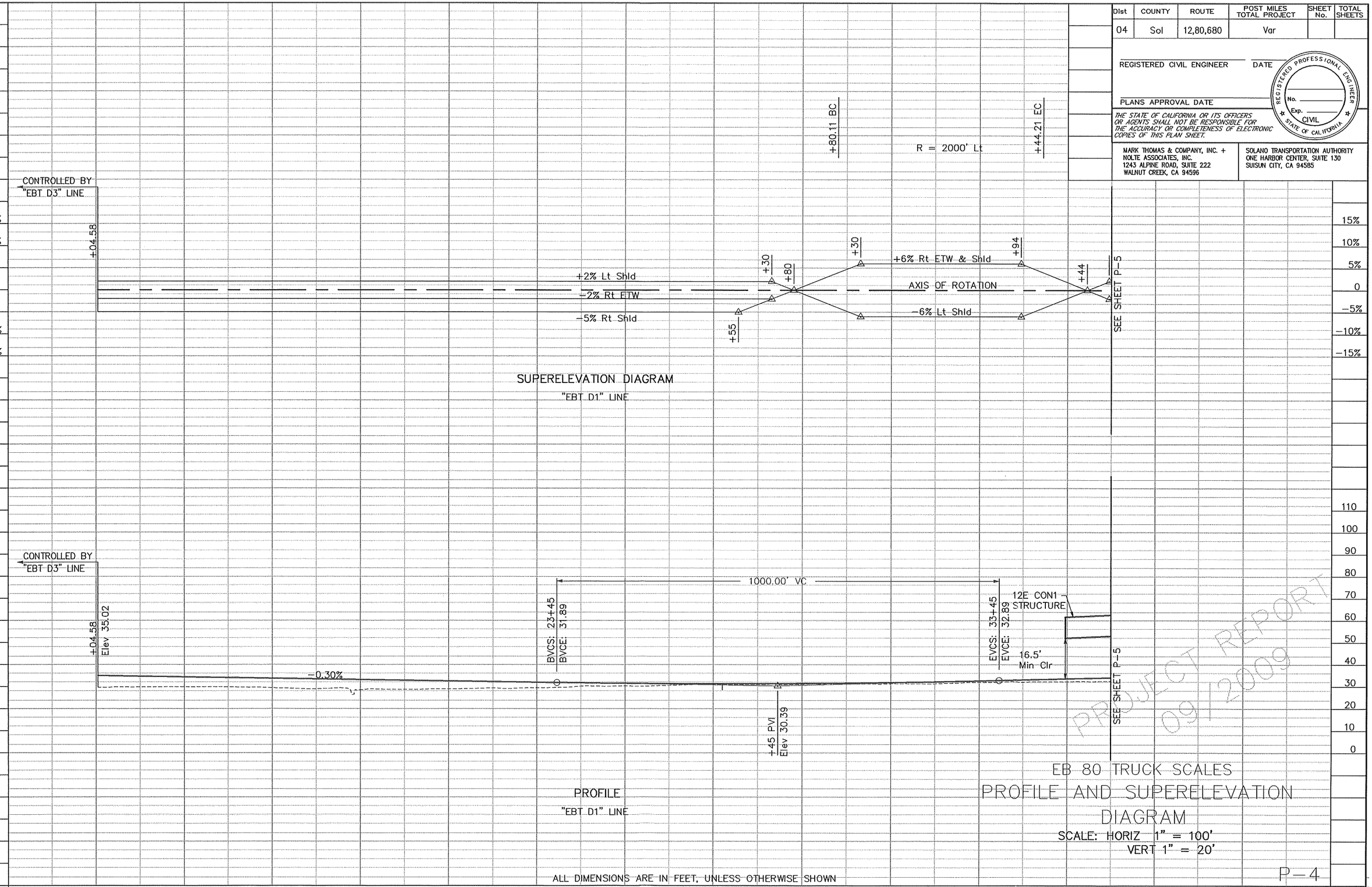

PROJECT REPORT 09/17/2009

EB 80 TRUCK SCALES

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: HORIZ 1" = 100'
VERT 1" = 20'

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

P−4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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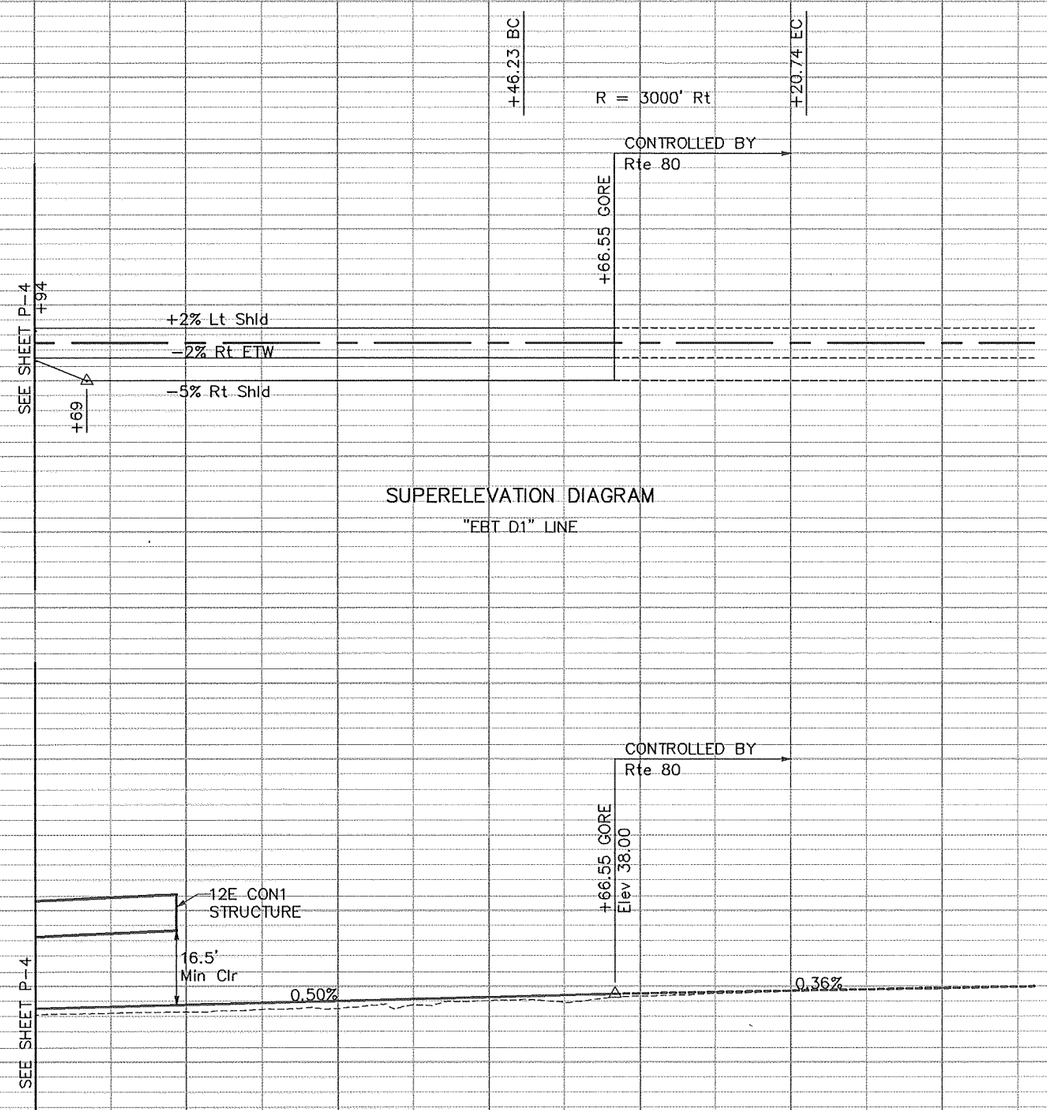

SUPERELEVATION DIAGRAM

"EBT D1" LINE

PROFILE

"EBT D1" LINE

PROJECT REPORT
09/2009

EB 80 TRUCK SCALES

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: HORIZ 1" = 100'
VERT 1" = 20'

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

P-5

STATION	36+00	38+00	40+00	42+00	44+00	46+00	48+00	TOTAL
CY Exc								
CY Emb								

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER _____ DATE _____

PLANS APPROVAL DATE _____

REGISTERED PROFESSIONAL ENGINEER — No. _____ Exp. _____ CIVIL — STATE OF CALIFORNIA

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ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

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CONSULTANT FUNCTIONAL SUPERVISOR: RONI BOUKHALIL

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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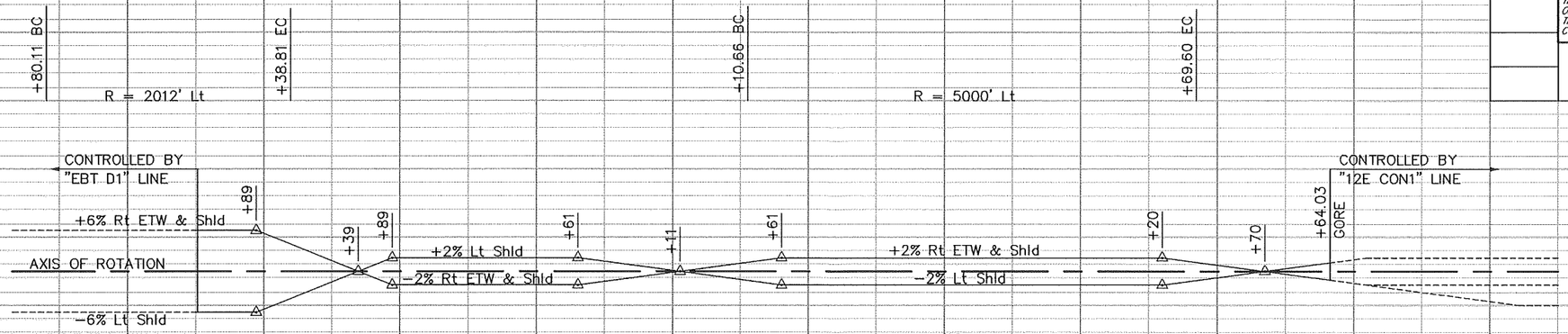
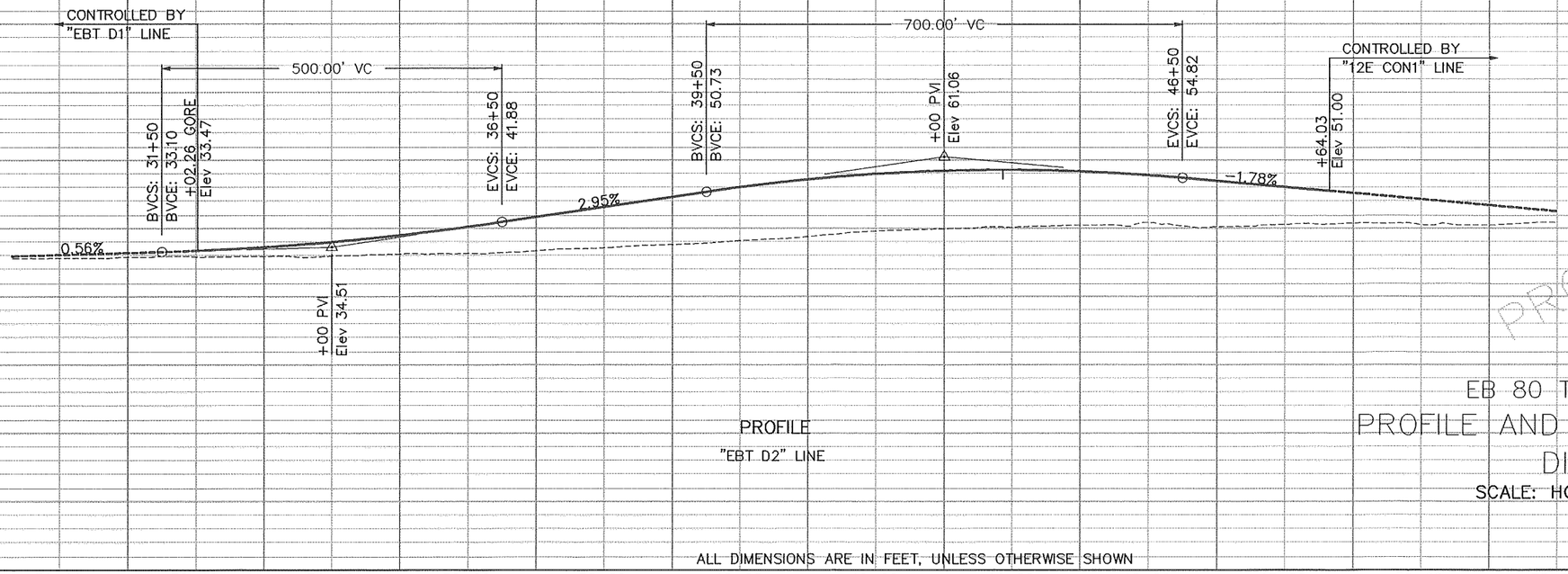


SUPERELEVATION DIAGRAM

"EBT D2" LINE



PROFILE

"EBT D2" LINE

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

STATION	30+00	32+00	34+00	36+00	38+00	40+00	42+00	44+00	46+00	48+00	50+00	52+00	TOTAL
CY Exc													
CY Emb													

PROJECT REPORT 09/2009

EB 80 TRUCK SCALES
PROFILE AND SUPERELEVATION DIAGRAM

SCALE: HORIZ 1" = 100'
VERT 1" = 20'

P–6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER _____ DATE _____

PLANS APPROVAL DATE _____

REGISTERED PROFESSIONAL ENGINEER — No. _____ Exp. _____ CIVIL — STATE OF CALIFORNIA

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SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REVISED BY | DATE REVISED

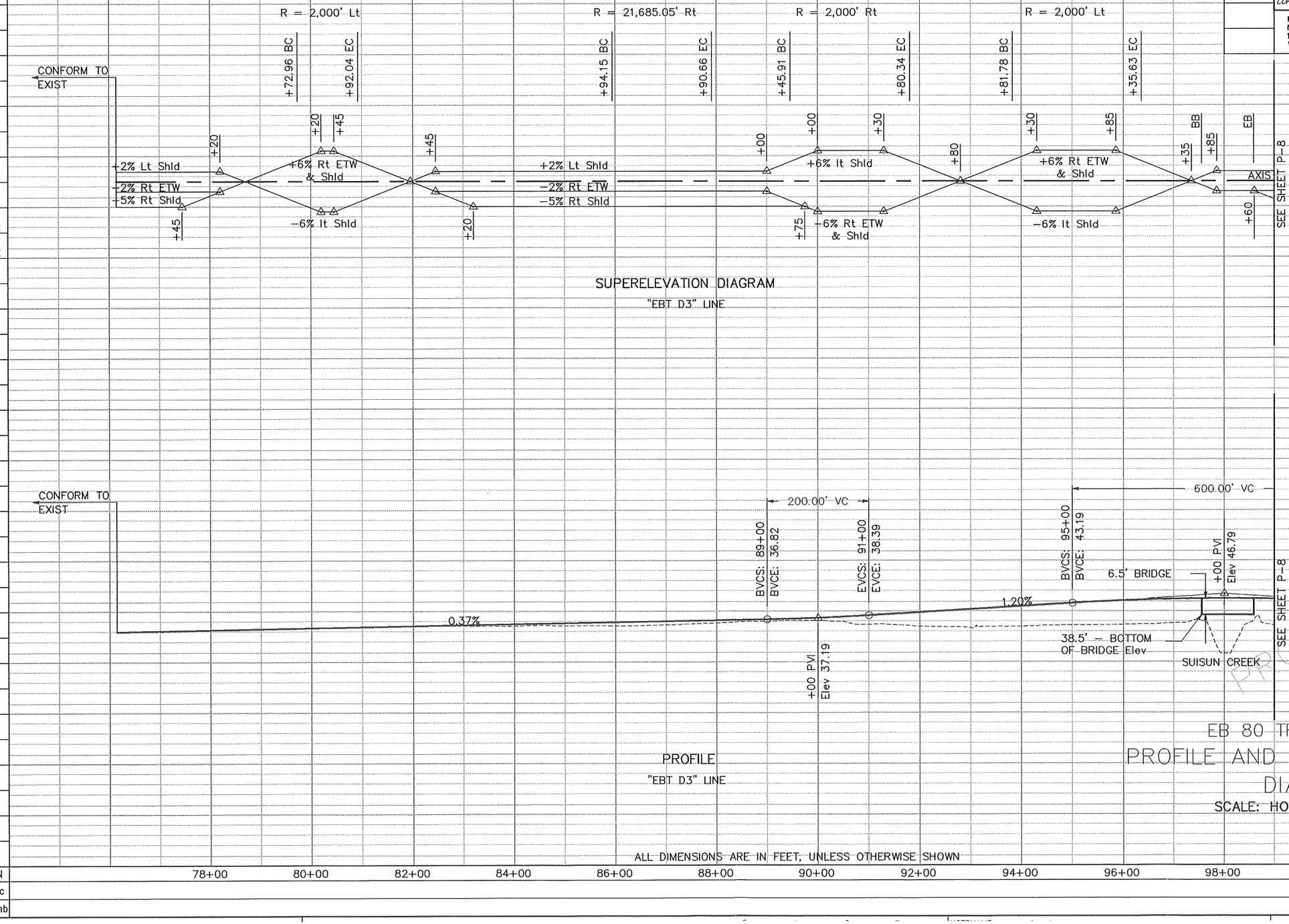
CALCULATED–DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

RONI BOUKHALIL

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

Caltrans



SUPERELEVATION DIAGRAM

"EBT D3" LINE

PROFILE

"EBT D3" LINE

EB 80 TRUCK SCALES

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: HORIZ 1" = 100'
VERT 1" = 20'

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

P–7

STATION	78+00	80+00	82+00	84+00	86+00	88+00	90+00	92+00	94+00	96+00	98+00	TOTAL
CY Exc												
CY Emb												

PROJECT REPORT 09/2009

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REVISED BY | DATE REVISED

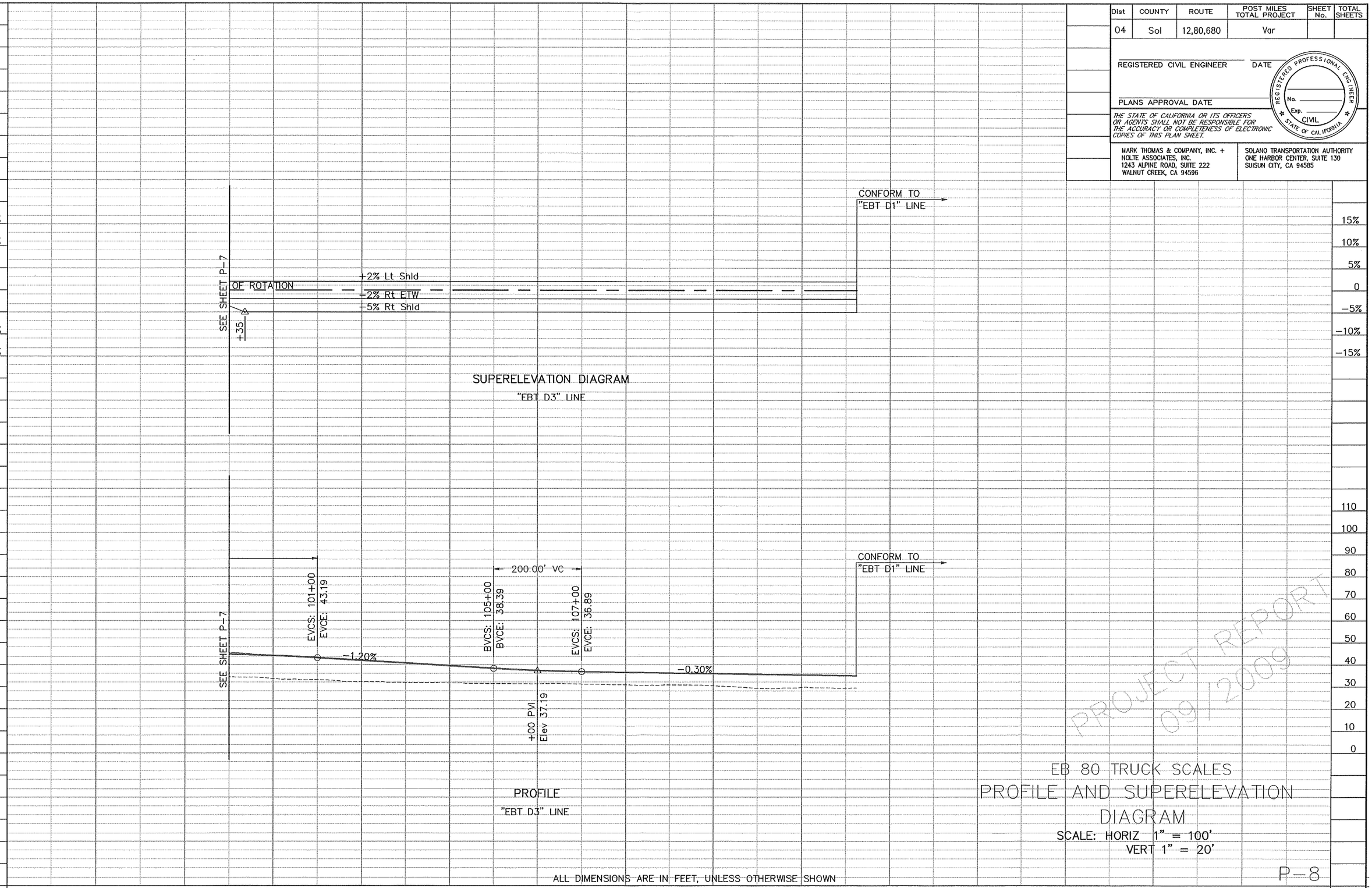
CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

RONI BOUKHALIL

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans



PROJECT REPORT 09/2009

EB 80 TRUCK SCALES

PROFILE AND SUPERELEVATION DIAGRAM

SCALE: HORIZ 1" = 100'
VERT 1" = 20'

P-8

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

STATION		100+00	102+00	104+00	106+00	108+00	110+00	112+00	TOTAL
CY	Exc								
	Emb								

PREPARED FOR THE STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

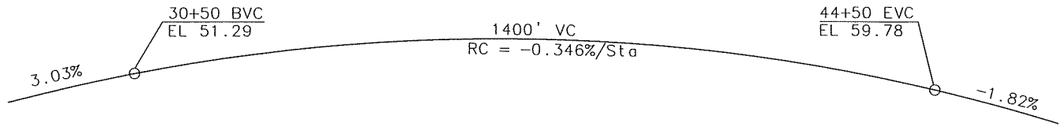
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	12,80,680	Var.		

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

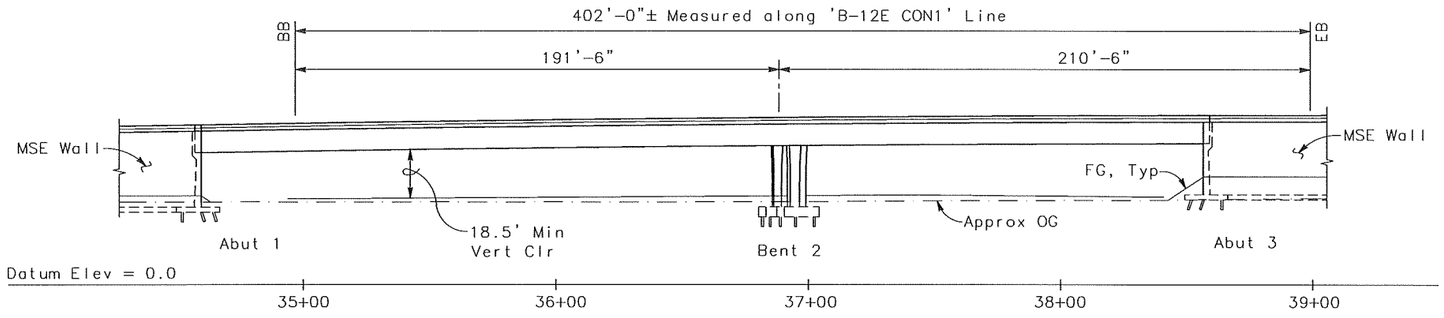
MARK THOMAS & COMPANY, .INC
+ NOLTE ASSOCIATES, INC.
1243 ALPINE ROAD,SUITE 222
WALNUT CREEK, CA 94596

PLANNING ESTIMATE

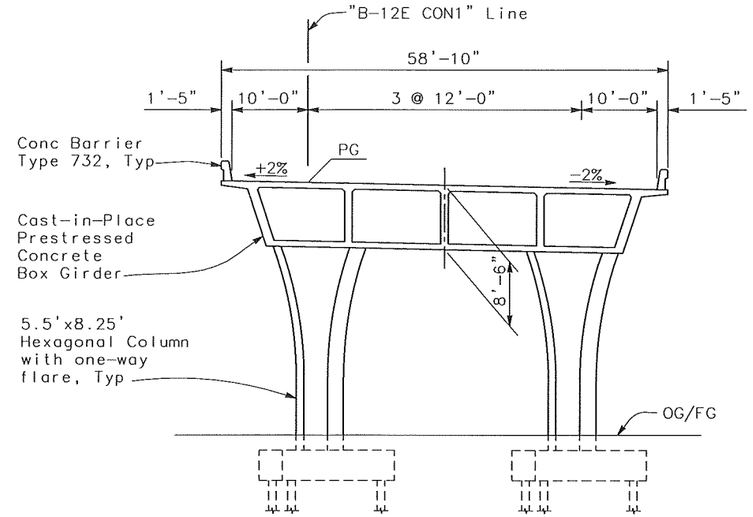
Date of Estimate	10/14/08
Structure Depth	=8.5 FT
Length	=402± FT
Width	=58.83 FT
Area	=23,650 SQ FT
Cost/sq ft including 10% Mobilization & 25% Contingency	$240/SQ FT
Total Cost	=$5,700,000



PROFILE
No Scale



ELEVATION
1"= 30'



TYPICAL SECTION
1"= 10'

PLAN
1"= 30'

LEGEND

(1) Approach Slab Type N(30S)

(2) Retaining Wall, see 'Road Plans'

Indicates Point of Minimum Vertical Clearance

VEHICULAR TRAFFIC

1. ✓ New alignment. No traffic at the site.
2. ___ Traffic will be detoured away from the site.
3. ___ Traffic will be carried on the structure. Stage construction will/will not be required.
4. ___ Traffic will pass under the structure on _____ (Name of St. or Hwy.)
   - A. ___ No falsework allowed over traffic
   - B. ___ Falsework opening(s) required:

	Temporary Vertical Clearance	Width of Traffic Opening
___ Bnd.		
___ Bnd.		
___ Two-way		

   - C. ___ Temporary traffic lane reduction needed for footing excavation.

DESIGNED BY	T. WALKER	DATE	6/3/08
DRAWN BY	T. WALKER	DATE	6/3/08
CHECKED BY	P. CHEN	DATE	6/3/08
APPROVED		DATE	

PO CHEN
PROJECT ENGINEER

GENERAL PLAN
EB 80 TO EB 12 CONNECTOR

BRIDGE NO.	CU
SCALE:	EA 04-0A535

ISSUE ON REQUEST

PREPARED FOR THE STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT
04	Sol	80	

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
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+ NOLTE ASSOCIATES, INC.
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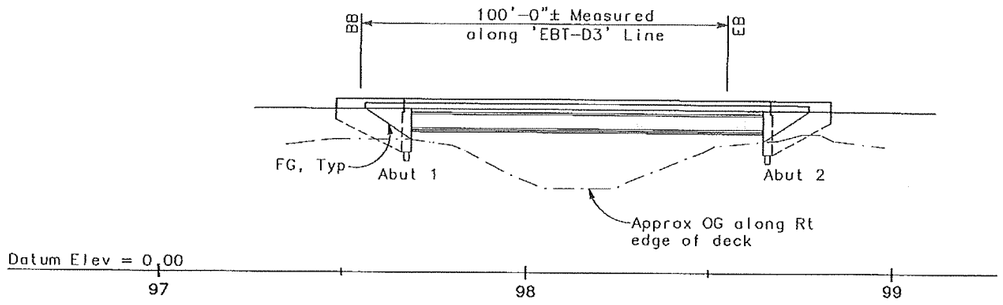
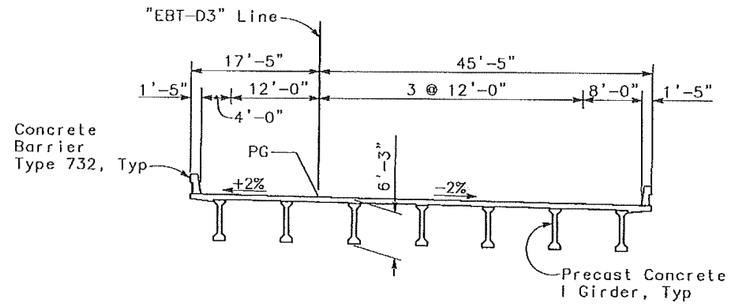
WALNUT CREEK, CA 94596



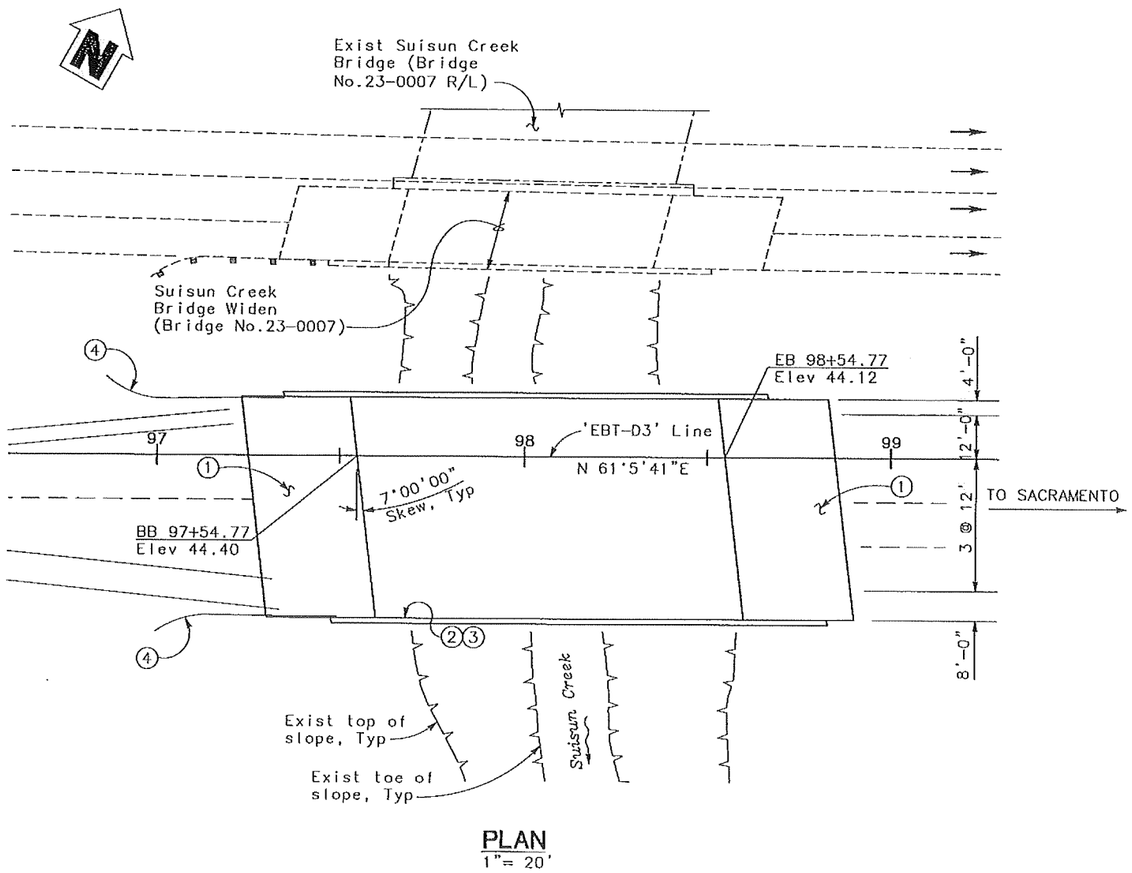
ELEVATION
1"= 20'

LEGEND

(1) Approach Slab Type N(30D)
(2) Paint "Suisun Creek Bridge"
(3) Paint "Br. No. 23-____" and Year completed
(4) Railing. See 'Road Plans'
——— Indicates New Structure
– – – – Indicates Existing Structure



TYPICAL SECTION
1"= 10'



PLAN
1"= 20'

VEHICULAR TRAFFIC

1. ✓ New alignment. No traffic at the site.
2. ___ Traffic will be detoured away from the site.
3. ___ Traffic will be carried on the structure. Stage construction will be required.
4. ___ Traffic will pass under the structure on _____ (Nome of St. or Hwy.)
   A. ___ No falsework allowed over traffic
   B. ___ Falsework opening(s) required:

	Temporary Vertical Clearance	Width of Traffic Opening
___ Bnd.		
___ Bnd.		
___ Two-way		

   C. ___ Temporary traffic lane reduction needed for footing excavation.

PLANNING ESTIMATE

Date of Estimate	6/9/08
Structure Depth	=6.25 FT
Length	=100.0± FT
Width	=62.8± FT
Area	=6,280 SQ FT
Cost/sq ft including 10% Mobilization & 25% Contingency	$215/SQ FT
Total Cost	=$1,350,000

DESIGNED BY	K. WONG	DATE	5/12/08
DRAWN BY	K. WONG	DATE	5/12/08
CHECKED BY	T. WALKER	DATE	5/12/08
APPROVED		DATE	

PO CHEN
PROJECT ENGINEER

SUISUN CREEK BRIDGE
GENERAL PLAN

BRIDGE NO.	CU
SCALE: AS SHOWN	EA 04-0A535

DATE PLOTTED => $DATE
TIME PLOTTED => $TIME
USERNAME => $USER
FILE => $REQUEST

ADVANCE PLANNING STUDY SHEET (METRIC) (REV. 3/1/99)
W:\SOLANO TA 58-01289 EB 80 TRUCK SCALES RELOCATION\APS\02 SUISUN CREEK BRIDGE TRUCK LANES.DAG 10/14/2008 9:47:21 AM

ATTACHMENT C

Typical Cross Sections

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

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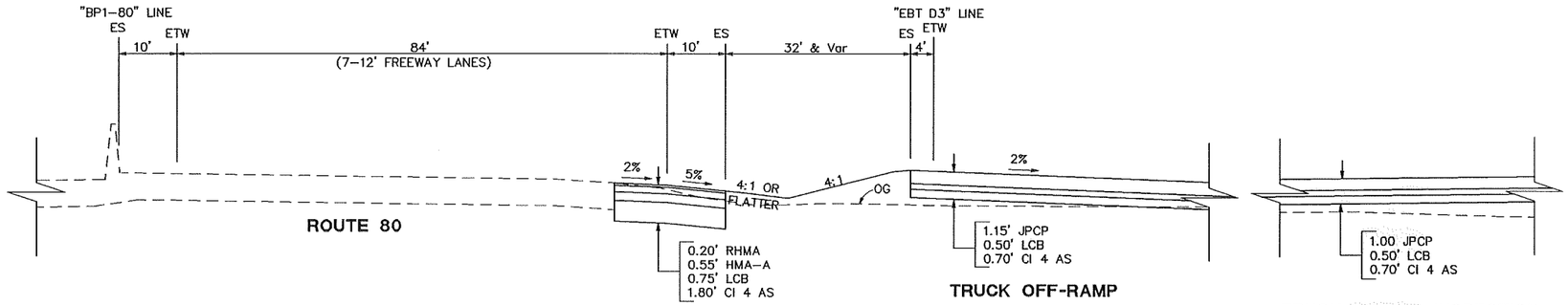
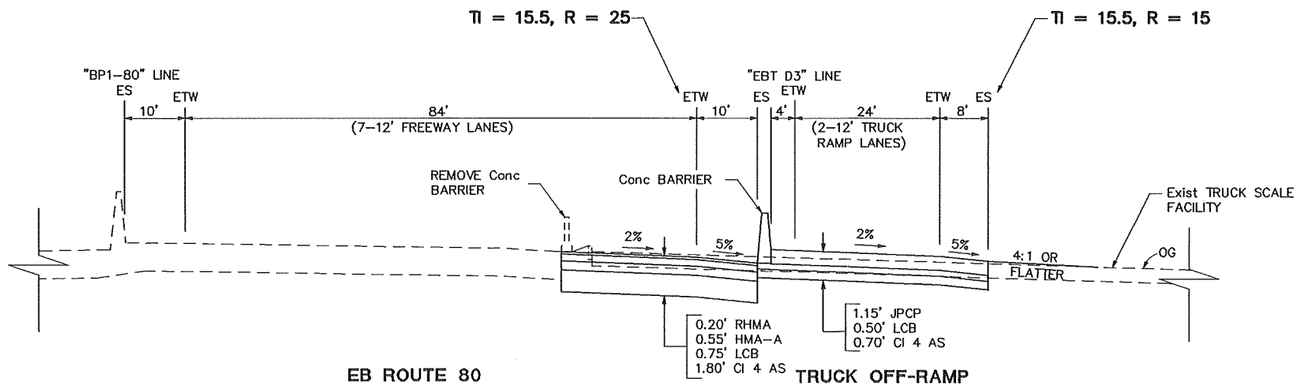


AT PROPOSED TRUCK SCALES
BP1–80 STA 290+00 TO 318+00

TRUCK SCALES INSPECTION
BAYS & OVAL "RACETRACK"
Tl = 12.0, R = 15



AT EXISTING TRUCK SCALES
BP1–80 STA 280+00 TO 290+00

PROJECT REPORT
9/2009

EB 80 TRUCK SCALES
TYPICAL CROSS SECTIONS

NO SCALE

X-1

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

REVISED BY	DATE REVISED

CALCULATED–DESIGNED BY

CHECKED BY

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

RONI BOUKHALIL

LAST REVISION

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

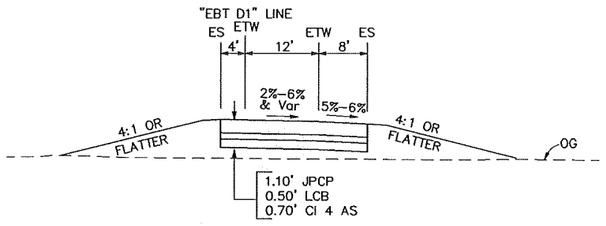
REVISED BY	DATE REVISED

CALCULATED–DESIGNED BY

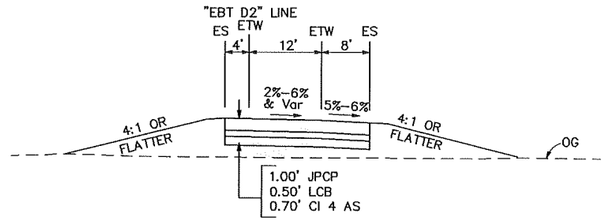
CHECKED BY

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION
CONSULTANT FUNCTIONAL SUPERVISOR
RONI BOUKHALIL

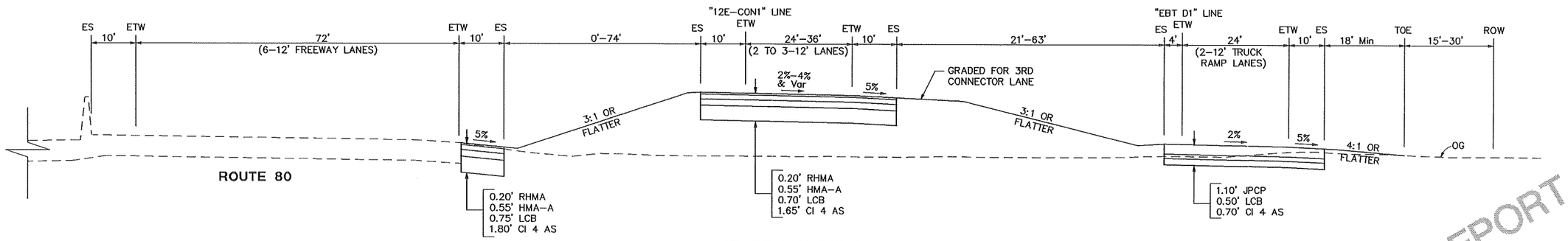
Caltrans



TRUCK ON-RAMP TO ROUTE 80
EBT D1 STA 32+00 TO 45+00
TI = 17.0, R = 25



TRUCK ON-RAMP TO SR 12E
EBT D2 STA 32+00 TO 50+00
TI = 12.5, R = 15



SR 12E CONNECTOR
12E–CON1 STA 18+00 TO 73+00
TI = 13.0, R = 15

TRUCK ON-RAMP
EBT D1 STA 18+00 TO 32+00
TI = 17.0, R = 25

PROJECT REPORT
9/2009

EB 80 TRUCK SCALES
TYPICAL CROSS SECTIONS

NO SCALE

X-2

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

ATTACHMENT D

Project Report Cost Estimate

EB 80 Truck Scales – Preliminary Cost Estimate

District-County-Route 04-SOL-12
PM I-80 14.0 – 15.7
SR12 L1.8 – 2.0
EA 0A5350
Program Code HA11

PROJECT DESCRIPTION:

Limits Along EB Route 80 from Dan Wilson Creek to SR12E/Chadbourne IC. Does not include cost for truck scales equipment (scales, inspection bays, signals, etc.) and facility buildings.

Proposed Improvement (Scope) Remove existing EB truck scales and construct enlarged facility to East of Suisun Creek. Includes widening EB 80 to standard lane/shoulder widths within project limits, EB 80 off-ramp to scales, EB 80 on-ramp from scales, braided EB 80 connector to EB SR 12E with merging truck scales auxiliary lane.

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$ 42,800,000
TOTAL TRUCK SCALE FACILITY	$ 20,000,000
TOTAL STRUCTURE ITEMS	$ 6,600,000
SUBTOTAL CONSTRUCTION COSTS	$ 69,400,000
TOTAL RIGHT OF WAY ITEMS	$ 4,125,000
TOTAL ENVIRONMENTAL MITIGATION	$ 1,100,000
TOTAL COSTS (WITHOUT R/W)	$ 70,500,000
ESCALATED ALTERNATIVE COST (4.5% ± per year until 2011)	$ 77,000,000
SOFT COSTS (Design, PM, Const Admin, etc) – 25%	$ 17,400,000
ESCALATED RIGHT OF WAY COST (3% per year until 2010)	$ 4,200,000
RISK COST	$ 1,000,000
ESCALATED TOTAL COST	$ 99,600,000

Reviewed by District Program Manager _____ (Signature)

Approved by Project Manager _____ (Signature) Date 10-20-09

Phone No. (925) 938-0383

A-D

I. ROADWAY ITEMS

Section 1 Earthwork	Quantity	Unit	Unit Price	Item Cost	Section Cost
Roadway Excavation	37,000	YD3	$ 15	$ 555,000	
Imported Borrow	339,000	YD3	$ 13.00	$ 4,407,000	
Clearing & Grubbing	42	AC	$ 10,000	$ 420,000	
Develop Water Supply	1	LS	$ 80,000	$ 80,000	
			$	$	
			$	$	
				Subtotal Earthwork	$ 5,462,000

Section 2 Pavement Structural Section*					
PCC Pavement	25,800	CY	$ 210	$ 5,418,000	
Rubberized Asphalt (RHMA)	6,200	TON	$ 105	$ 651,000	
Hot Mix Asphalt (HMA-A)	19,100	TON	$ 91	$ 1,738,100	
Lean Concrete Base	23,500	CY	$ 110	$ 2,585,000	
OGFC	1,522	TON	$ 125	$ 190,250	
Aggregate Base	800	CY	$ 45	$ 36,000	
Treated Permeable Base			$	$	
Aggregate Subbase	39,000	CY	$ 20	$ 780,000	
Pavement Reinforcing Fabric			$	$	
Edge Drains	5,000	FT	$ 12	$ 60,000	
			$	$	
			$	$	
			$	$	
				Subtotal Pavement Structural Section	$ 11,458,350

Section 3 Drainage					
Large Drainage Facilities			$	$	
Storm Drains			$	$	
Pumping Plants			$	$	
Project Drainage (X-Drains, overside, etc.)	1	LS	$ 1,692,035	$ 1,692,035	
			$	$	
			$	$	
			$	$	
			$	$	
				Subtotal Drainage	$ 1,692,035

*Reference sketch showing typical pavement structural section elements of the roadway. Include (if available) T.I., R-Value and date when tests were performed.

NOTE: Extra lines are provided for items not listed, use additional lines as appropriate.

Section 4 Specialty Items	Quantity	Unit	Unit Price	Item Cost	Section Cost
Retaining Walls	41,000	SF	$ 60	$ 2,460,000	
Noise Barriers			$	$	
Barriers and Guardrails	2,000	FT	$ 60	$ 120,000	
Equipment/Animal Passes			$	$	
Highway Planting			$	$	
Replacement Planting			$	$	
State (site) Utility Relocation	1	LS	$ 270,000	$ 270,000	
Relocate Private Irrigation Facilities	3,000	FT	$ 100	$ 300,000	
Water Pollution Control	1	LS	$ 540,000	$ 540,000	
Treatment BMPs	1	LS	$ 390,000	$ 390,000	
Erosion Control	1	LS	$ 65,000	$ 65,000	
SWPPP	1	LS	$ 10,000	$ 10,000	
Environmental Mitigation			$	$	
Resident Engineering Office Space			$	$	
Landscaping/Irrigation	19	AC	$ 65,000	$ 1,235,000	
Hazardous Waste Mitigation			$	$	
Aerial Lead	8,000	YD3	$ 80	$ 640,000	
Median Island	18,000	SF	$ 12	$ 216,000	
				Subtotal Specialty Items	$ 6,246,000

Section 5 Traffic Items					
Lighting	50	EA	$ 10,000	$ 500,000	
Traffic Delineation Items			$	$	
Traffic Signals			$	$	
Overhead Sign Structures	2	EA	$ 500,000	$ 1,000,000	
Roadside Signs			$	$	
Traffic Control	1	LS	$ 850,000	$ 850,000	
Traffic Control Systems	1	LS	$ 1,000,000	$ 1,000,000	
Transportation Management Plan			$	$	
Traffic Operations System	1	LS	$ 150,000	$ 150,000	
Permanent Signing	1	LS	$ 300,000	$ 300,000	
Striping	140,000	FT	$ 0.65	$ 91,000	
Remove Yellow Thermoplastic	3,000	FT	$ 3.70	$ 11,100	
				Subtotal Traffic Items	$ 3,902,100

TOTAL SECTIONS 1 thru 5 $ 28,730,485

NOTE: Extra lines are provided for items not listed, use additional lines as appropriate.

Section 6 Minor Items	Item Cost	Section Cost
$ 28,760,485 x (10%) = (Subtotal Sections 1 thru 5)	$ 2,876,049	
TOTAL MINOR ITEMS		$ 2,876,049

Section 7 Roadway Mobilization

$ 31,636,534 x (10%) = $ 3,163,653
(Subtotal Sections 1 thru 6)

TOTAL ROADWAY MOBILIZATION $ 3,163,653

Section 8 Roadway Additions

Supplemental Work

$ 31,636,534 x (10%) = $ 3,163,653
(Subtotal Sections 1 thru 6)

Contingencies

$ 31,636,534 x (15%) = $ 4,745,480
(Subtotal Sections 1 thru 6)

TOTAL ROADWAY ADDITIONS $ 7,909,133

TOTAL ROADWAY ITEMS $ 42,709,320
(Subtotal Sections 1 thru 8)

Estimate Prepared By Karsten Adam (Print Name) Phone# (650) 363-8277 Date 8/31/2009

Estimate Checked By Mike Lohman (Print Name) Phone# (925) 938-0383 Date 8/31/2009

** Use appropriate percentage per Chapter 20.

II. STRUCTURES ITEMS

	Structure (1)	Structure (2)	Structure (3)
Bridge Name	EB 80/12 Conn	Suisun Creek	
Structure Type	CIP Box	PC I Girder	
Width (out to out) - (ft)	58.8	62.8	
Span Lengths - (ft)	191.5, 210.5	100	
Total Area - (sf)	23,560	6,280	
Footing Type (pile/spread)	Pile		
Cost Per sf (incl. 10% mobilization and 20% contingency)	$ 220	$ 215	
Total Cost for Structure	$ 5,183,200	$ 1,350,200	

SUBTOTAL STRUCTURES ITEMS (Sum of Total Cost for Structures) $ 6,533,400

Railroad Related Costs:

	$
	$
	$

SUBTOTAL RAILROAD ITEMS $ 0

TOTAL STRUCTURES ITEMS (Sum of Structures Items plus Railroad Items) $ 6,533,400

COMMENTS:

Estimate Prepared By Karsten Adam (Print Name) Phone# (650) 363-8277 Date 8/31/2009

NOTE: If appropriate, attach additional pages and backup.

III. RIGHT OF WAY ITEMS — ESCALATED VALUE

A. Acquisition, including excess lands, damages to remainder(s) and Goodwill	$ 1,800,000
B. Utility Relocation (State share)	$ 2,225,000
C. Relocation Assistance	$ 50,000
D. Clearance/Demolition	$ 50,000
E. Title and Escrow Fees	$ _____

TOTAL RIGHT OF WAY ITEMS (Escalated Value) $ 4,125,000

Anticipated Date of Right of Way Certification $_____
(Date to which Values are Escalated)

F. Construction Contract Work

Brief Description of Work:

_____

_____

_____

_____

Right of Way Branch Cost Estimate for Work * $_____

* This dollar amount is to be included in the Roadway and/or Structures Items of Work, as appropriate. Do not include in Right of Way Items.

COMMENTS:

Estimate Prepared By Karsten Adam (Print Name) Phone# (650) 363-8277 Date 8/31/2009

NOTE: If appropriate, attach additional pages and backup.

ATTACHMENT E

Final Environmental Document
Cover Sheet and Summary

04-SOL-80-13.8/15.7; 04-SOL-12-L1.8/L2.0
EA 0A5350

I-80 Eastbound Cordelia Truck Scales Relocation Project

Draft Environmental Impact Report/ Environmental Assessment

Solano County, California
Interstate 80, from approximately 0.2 mile east of Suisun Creek to Chadbourne Road on State Route 12
04-SOL-80-13.8/15.7; 04-SOL-12-L1.8/L2.0
EA 0A5350

January 2009

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2) C

State of California
Department of Transportation

1-29-09
Date of Approval

Bijan Sartipi
District Director
California Department of Transportation, District 4

Summary

Overview of Project Area

The Cordelia Truck Scales facility is located within the Interstate 80 (I-80)/Interstate 680 (I-680)/State Route 12 (SR 12) interchange in Solano County, in the vicinity of Fairfield and Suisun City. The project area encompasses the existing facility, the site of the new facility, and all associated on- and off-ramps and utility relocations. The project area extends along I-80 from the Scandia Family Center (at post mile 13.8) east to the SR 12 East (SR 12E) interchange with I-80 and continues east along SR 12E to Chadbourne Road, a distance of 2.1 miles (see Figure 1-1) in Chapter 1.

The land surrounding the project area is relatively flat (the average elevation is approximately 10 feet) and includes two waterways (Suisun and Dan Wilson Creeks). The land uses in the area consist primarily of agricultural and commercial uses.

Related Projects

Several related transportation projects are being planned or recently were completed in the general project area. These projects (and their Caltrans EA project numbers where appropriate) are listed below in the order of anticipated completion.

- **Interstate 80 High-Occupancy Vehicle Lane Project:** Eastbound and westbound high-occupancy vehicle (HOV) lanes will be constructed along an approximately 8.5-mile-long segment of I-80 from the Red Top Road interchange in Solano County to 0.5 mile east of the Air Base Parkway interchange in Fairfield. The project (EA-04-0A5304) will increase the overall carrying capacity of I-80 in the project area and will facilitate the already high demand for ridesharing on I-80. Construction of this project began in June 2008, and completion is anticipated in late 2009.
- **North Connector Project:** The North Connector Project would construct a parallel route to the north of I-80 between Abernathy Road at I-80 on the east to SR 12 at Red Top Road on the west. This project would provide increased east/west capacity and provide an alternative to I-80 for local traffic. Construction of the first phase of the North Connector Project is expected to begin in summer 2009, with completion anticipated in December 2010.
- **Transit Improvements:** To support increased transit ridership and expanded bus routes in the county, the *I-80/I-680/I-780 Transit Corridor Study* identifies numerous potential locations for park-and-ride lots in these major corridors, three of which could be located in the project area: Red Top Road at I-80, a surface lot at Abernathy Road between I-80 and SR 12 or an expanded parking structure at the Fairfield Multimodal Transportation Center, and Gold Hill Road at I-680. These potential lots are expected to be constructed between 2010 and 2015.
- **I-80/I-680/SR 12 Interchange Project:** The I-80/I-680/SR 12 Interchange Project (EA-04-0A5300) would include numerous improvements to the I-80/I-680/SR 12 interchange to address existing and future traffic operations and congestion, including the relocation of the westbound Cordelia Truck Scales. The improvements are intended to add freeway capacity, reduce cut-through traffic on local roads, improve local access to and from the freeway,

accommodate current and future truck volumes, improve safety, and increase the use of HOV lanes and ridesharing. The environmental document for the project is currently underway and is expected to be completed in early 2010.

- **Jameson Canyon (SR 12) Widening from I-80 to SR 29:** This project would provide a continuous 4 lane expressway between I-80 and SR 29. The project currently in the final design phase and construction is planned to begin in 2011, with completion in 2013.

- **I-80 Improvements through Fairfield:** Several projects are programmed between SR 12 East and Air Base Parkway. They include construction of an eastbound auxiliary lane between Abernathy Road and Auto Mall Parkway, removal of existing hook ramps at Auto Mall Parkway, construction of an eastbound auxiliary lane between Beck Avenue and Travis Boulevard, construction of an eastbound auxiliary lane from Travis Boulevard to Air Base Parkway, construction of a westbound auxiliary lane from Waterman Boulevard/Air Base Parkway to Travis Boulevard, and construction of a westbound auxiliary lane from West Texas Street to Abernathy Road. These improvements are in the early planning phases. No construction date has been determined.

Purpose and Need

Purpose

The purpose of the project is to:

- Accommodate anticipated growth in truck traffic in the corridor by 2040.
- Improve the reliability of the truck weight and safety inspection.
- Improve mainline safety by reducing truck/auto weaving and queuing.
- Provide traffic congestion relief along this segment of I-80.

Need

The existing Cordelia Truck Scales are located within the I-80/I-680/SR12 interchange, a point at which two major interstate freeways and one state highway converge. Since the facility was constructed in 1958, the San Francisco Bay Area (Bay Area) and Northern California region have experienced rapid population growth, resulting in substantial increases in truck and regional traffic passing through the interchange area, as well as substantial changes in the land uses immediately surrounding the interchange.

The truck scales substantially contribute to the congestion and safety concerns on I-80 because of the large number of trucks exiting and entering I-80 and the close proximity of the scales to both the Suisun Valley Road and I-680 and SR 12E interchanges. Congestion leads to closure of the truck scales when queuing trucks begin to back up onto the mainline freeway. The project will address these related deficiencies.

- **Inadequate Enforcement:** Currently closures to the truck scales occur approximately 15 times a week, when the queue gets too long and extends into traffic, creating a safety hazard and compromising enforcement of weight and safety requirements.

- **Truck-Related Congestion:** Trucks slowing to enter and accelerating to exit the facilities, as well as those queuing to enter, exacerbate the congestion problem, particularly during peak commute hours.
- **Unreliable Freight Transport:** Travel times for truck trips are unpredictable due to queues and congestion. This unpredictability is further increased by the likelihood of breakdowns resulting from uninspected trucks which have bypassed the scales during periodic closures.
- **Traffic Safety:** High vehicle and truck volumes, short merge and diverge maneuvers, short distances between interchanges, and trucks queuing on the entrance ramp all contribute to safety concerns in the area.

Proposed Project

The proposed Project is to construct a larger, more efficient truck scale facility on eastbound I-80 approximately 2,500 feet to the east of the current facility in a large oval configuration. Associated on- and off-ramps would be constructed, and, upon completion of the project, the existing facility would be demolished.

The new facility would be a Class B Commercial Vehicle Enforcement Facility (CVEF) (with Class B being defined as an independent command facility of the CHP located along a major highway route), which would have the capacity to inspect all eastbound I-80 trucks passing the facility 24 hours per day, seven days a week. The facility would contain up to four sets of scales to accommodate two lines of empty and loaded trucks. The new facility would contain seven inspection bays, parking for semi-truck trailer combinations and automobiles, and a roadway along the outer edge of the oval to allow weighed trucks to be driven around into the inspection bay or to be reweighed. An operations building would be constructed to facilitate the vehicle inspection and weighing process. Utilities would be provided from the west.

The off-ramp to the new truck scale facility would use the existing off-ramp location and geometry, which consists of a single lane exit. The new off-ramp would widen to a two-lane facility through the existing truck scale site and would widen to four lanes immediately west of Suisun Creek. The new off-ramp would cross over Suisun Creek on a new bridge before entering the new truck scale facility. Truck traffic would be sorted along the approach roadway into the appropriate lane by means of weigh-in-motion scales and signal bridges.

Trucks leaving the facility would use a new two-lane eastbound roadway that splits approximately 1,300 feet east of the facility, with one lane merging onto eastbound I-80 and the other lane connecting to the eastbound I-80–to–eastbound SR 12E connector.

The eastbound I-80 connector to eastbound SR 12E would be reconstructed as a two-lane ramp crossing over (braided with) the truck scale on-ramp to eastbound I-80. The connector overpass and associated retaining wall would be constructed to an ultimate three-lane width although the exit from I-80 proposed with this project would consist of a two-lane connection (one dedicated SR 12E lane and a shared through-exit lane). The new dedicated lane on I-80 would begin approximately 2,500 feet west of the exit point to the connector. The two-lane connector would continue east, becoming SR 12E, with the truck scale on-ramp joining as an auxiliary lane that would end at the SR 12E/Chadbourne Road interchange off-ramp.

Once construction of the new truck scales had been completed, and the new facility was operational, the existing facility would be removed.

As part of the proposed project, several utilities would need to be relocated. Relocating the utilities would occur during the construction phase of the proposed project. Impacts associated with high-voltage power line relocations are addressed in this EIR/EA pursuant to California Public Utilities Commission General Order (GO) 131 D filing requirements. The precise field location of high-risk utilities would be identified during final design in accordance with Caltrans procedures.

Other Alternatives Considered

Other alternatives were eliminated as part of the 2005 *Cordelia Truck Scales Relocation Study: Summary Report and Recommendations* (Solano Transportation Authority 2005a). This study determined that the Cordelia location was the preferred location based on enforcement and financial feasibility standards. This document considers only the proposed project and the no-project alternative.

No Project Alternative

Under the no-project alternative, operations of the existing truck scales would continue, and no improvements or expansions of truck scale facilities would be constructed. Congestion would worsen over time as truck and auto traffic increases.

Joint California Environmental Quality Act/National Environmental Policy Act Documentation

The proposed project is a joint project by the California Department of Transportation (the Department) and the Federal Highway Administration (FHWA) and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Caltrans is the lead agency under CEQA. In addition, the FHWA's responsibility for environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S. Code (USC) 327.

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, it is quite often the case that a "lower level" document is prepared for NEPA. One of the most commonly seen joint document types is an environmental impact report/environmental assessment (EIR/EA).

Following the receipt of public comments on the draft EIR/EA and the circulation of the final EIR/EA, Caltrans will be required to take actions regarding the environmental document. Caltrans will determine whether to certify the EIR/EA and issue findings and a statement of overriding considerations under CEQA and to issue a finding of no significant impact (FONSI) or require an environmental impact statement (EIS) under NEPA.

Project Impacts

Table S-1 summarizes project effects and impacts and minimization or mitigation measures that reduce the significance of those impacts, where feasible. Project effects under NEPA are discussed fully in Chapter 2. Chapter 3 addresses impacts under CEQA.

Coordination with Public and Other Agencies

Notice of Preparation and Scoping

A notice of preparation of (NOP) for the proposed project was published on May 16, 2008. It was filed with the State Clearinghouse and sent to the appropriate elected officials, agencies, and interested parties.

A scoping meeting was held on June 5, 2008, from 6:30 to 8:30 p.m. at the Solano County Administration Building, at 675 Texas Street in Fairfield.

A number of means were utilized to inform the public of the scoping process and the public open house scoping meeting. A public notice was distributed to the project mailing list, which included property owners, elected officials, city staff, special interest organizations, and neighborhood groups. The Department mailed a letter to agency representatives and elected officials. Samples of these notification materials are included in Appendix G of this report.

Information pertaining to the scoping process and the public open house scoping meeting also appeared on the Solano Transportation Authority website at http://www.solanolinks.com.

Necessary Permits and Approvals

Table S-2 shows the permits and approvals that would be required.

Table S-2. Permits and Approvals

Agency	Permit, Approval, or Consultation
U.S. Fish and Wildlife Service (USFWS)	Consultation under Section 7 of the federal Endangered Species Act
National Marine Fisheries Service (NMFS)	Consultation under Section 7 of the federal Endangered Species Act
U.S. Army Corps of Engineers	Section 404 nationwide permit for placement of fill
California Department of Fish and Game (DFG)	CEQA trustee agency
San Francisco Bay Regional Water Quality Control Board	Nonpoint Section 402, National Pollutant Discharge Elimination System permit (General Construction Permit), 401 Water Quality Certification
Bay Area Air Quality Management District (BAAQMD)	Permit for air emission generating equipment
California Public Utilities Commission	GO-131 D filing requirements for high-voltage electrical lines

Unresolved Issues

Section 15123(b) of the State CEQA Guidelines requires an EIR to identify areas of controversy known to the lead agency, including issues raised by agencies and the public. During preparation of the environmental document, no known issues of controversy were raised, and no issues remain unresolved.

ATTACHMENT F

Storm Water Data Report Cover Sheet

Dist-County-Route: 04 Sol 80 04 Sol 12

Post Mile Limits:

I-80 14.0-15.7 SR 12 1.8-2.0

Project Type: Truck Scale Relocation

EA: 04-0A535

RU: 264

Program Identification: 367D

Phase: ☐PID ☒PA/ED ☐PS&E

Regional Water Quality Control Board(s): San Francisco Bay Area RWQCB Region #2

Is the project required to consider incorporating Treatment BMPs? ☒Yes ☐No

If yes, can Treatment BMPs be incorporated into the project? ☒Yes ☐No

If No, a Technical Data Report must be submitted to the RWQCB at least 30 days prior to Advertisement. List submittal date: _____

Total Disturbed Soil Area: Approximately 49.4 acres

Estimated Construction Start Date: 10/01/2012 Construction Completion Date: 12/31/2014

Notification of Construction (NOC) Date to be submitted: September 2012

Notification of ADL reuse (if Yes, provide date) ☒Yes Date: January 2012 (est.) ☐No

Separate Dewatering Permit (if Yes, permit number) ☐Yes Permit #: TBD ☐No

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the data upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

John Wm Mountin — October 2008

John Wm Mountin, *Registered Project Engineer* — Date

I have reviewed the storm water quality design issues and find this report to be complete, current, and accurate.

Nicolas Endrawos — 12/17/08

Nicolas Endrawos, *Project Manager* — Date

Robert W. Braga — 1/16/09

Bob Braga, *Designated Maintenance Representative* — Date

David Yam — 1/05/09

David Yam, *Designated Landscape Architect Representative* — Date

Brian J. Rowley — 12/04/08

Brian J. Rowley, *District/Regional SW Coordinator or Designee* — Date

ATTACHMENT G

Initial Site Assessment Checklist

Initial Site Assessment (ISA) Checklist

Project Information

District 4 County SOL Route Eastbound I-80 and SR-12 East Kilometer Post (Post Mile) I-80 PM 14.0 to 15.7; SR-12 PM 1.8 to 2.0 EA: 0A530

Description:
The purpose of the Eastbound I-80 Cordelia Truck Scale Relocation Project is to improve traffic operations and safety, and to provide route continuity in the area of Solano County. The proposed project involves demolition of the existing eastbound I-80 truck inspection facility (TIF) and construction of a new TIF approximately 2,500 feet further east along eastbound I-80. The proposed project also includes reconstruction of the eastbound I-80 connector to SR-12 East. Additionally, full and partial private property takes will be required to accommodate the proposed improvements.

Is the project on the HW Study Minimal-Risk Projects List (HW1)? No

Project Manager Mr. Dale Dennis phone # 925-686-0619

Project Engineer Mr. Mike Lohman phone # 925-938-0383

Project Screening

Attach the project location map to this checklist to show location of all known and/or potential HW sites identified.

1. Project Features: New R/W? Yes Excavation? Yes Railroad Involvement? No

   Structure demolition/modification? Yes Subsurface utility relocation? Yes

2. Project Setting Eastbound I-80 and SR-12 East in a mixed commercial/agricultural/residential area.

   Rural or Urban Mix of Rural and Urban.

   Current land uses Eastbound I-80 and SR-12 East highway corridors (Caltrans ROW), commercial, residential, and agricultural properties (potential full or partial property acquisitions).

   Adjacent land uses North – Caltrans ROW, commercial, residential; agricultural. East – Commercial, residential. West – Commercial, residential, agricultural. South – Agricultural, residential.
   (industrial, light industry, commercial, agricultural, residential, etc.)

3. Check federal, State, and local environmental and health regulatory agency records as necessary, to see if any known hazardous waste site is in or near the project area. If a known site is identified, show its location on the attached map and attach additional sheets, as needed, to provide pertinent information for the proposed project.

4. Conduct Field Inspection. Date 4/16/08 and 5/8/08 Identified localized areas of petroleum impacts to soil and groundwater from prior UST operations at and near the project area.

   STORAGE STRUCTURES / PIPELINES:

   Underground tanks Yes — Surface tanks None
   Sumps Yes (sewage holding tank at TIF) — Ponds None
   Drums Unknown — Basins None
   Transformers None — Landfill None
   Other

Initial Site Assessment (ISA) Checklist

(continued)

CONTAMINATION: (spills, leaks, illegal dumping, etc.)

Surface staining None Oil sheen None

Odors None Vegetation damage None

Other

HAZARDOUS MATERIALS: (asbestos, lead, etc.) Asbestos-containing material and lead-containing paint surveys of structures to be demolished will be provided under separate cover. Includes the TIF, and residential and associated buildings on properties with Solano County APNs 0027-27-2080 and 0027-27-2160.

Buildings Yes Spray-on fireproofing Unknown

Pipe wrap Unknown Friable tile Unknown

Acoustical plaster Unknown Serpentine N/A

Paint Yes Other Possible aerially deposited lead in surface soil near highways, and possible pesticides, herbicides, petroleum hydrocarbons, and metals in soil from historical agricultural land use.

5. Additional record search, as necessary, of subsequent land uses that could have resulted in a hazardous waste site. Use the attached map to show the location of potential hazardous waste sites. See ISA Report.

6. Other comments and/or observations: Abandon the sewage holding/settling tank at the TIF and properly abandon any undocumented underground storage tanks, septic systems, or domestic/agricultural wells if encountered during the project. At proposed road widening locations where groundwater may be encountered during construction, groundwater sampling should be conducted to evaluate groundwater management options.

ISA Determination

Does the project have potential hazardous waste involvement? Yes If there is known or potential hazardous waste involvement, is additional ISA work needed before task orders can be prepared for the Investigation? Yes If "YES," explain; then give an estimate of additional time required:

The ISA identified the potential for ADL, pesticides, herbicides, metals, and petroleum hydrocarbons in soil;and asbestos-containing materials and lead-containing paint at buildings proposed to be demolished in the Project Area. Additionally, groundwater should be sampled in proposed construction areas where groundwater is likely to be encountered. Soil and groundwater investigations to collect samples for lead, pesticides, herbicides, metals, and petroleum hydrocarbons in soil, and metals, petroleum hydrocarbons, and volatile organic compounds in groundwater is recommended (12-16 weeks to complete). The ISA was prepared by Geocon Consultants, Inc., and dated September 2008.

A brief memo should be prepared to transmit the ISA conclusions to the Project Manager and Project Engineer.

ISA Conducted by _____ **Date** 9/24/08

Geocon Consultants, Inc.

ATTACHMENT H

Right of Way Data Sheet

To: District Office Chief
R/W Local Public Agency Services

Date: September 1, 2009
Co. Solano Rte. 04-Sol-80 PM I-80 14.0-15.7 / PM SR12 L1.8 – L2.0

Attention: Beth Perrill, Senior Right of Way Agent
Local Public Agency Services

Expense Authorization: 04264 0A535

Subject: **RIGHT OF WAY DATA SHEET- LOCAL PUBLIC AGENCY SERVICES**

Project Description: I-80 Cordelia Inspection Facility Eastbound

Right of way necessary for the subject project will be the responsibility of the Solano Transportation Authority under executed Cooperative Agreement Number _____.

The information in this data sheet was developed by Associated Right of Way Services, Inc.

I. ***Right of Way Engineering***

Will right of way engineering be required for this project?

- No ___
- Yes X

- Hard copy (base map) X
- Appraisal map X
- Acquisition Documents X
- Property Transfer Documents X
- R/W Record Map X
- Record of Survey X

II. ***Engineering Surveys***

1. Is any surveying or photogrammetric mapping required?

   No _____ Yes X (Complete the following)

2. Datum Requirements

   Yes X Project will adhere to the following criteria.
   - Horizontal - datum policy is NAD 83, CA-HPGN, EPOCH 1991.35.
   - Vertical - datum policy is NAVD 88.
   - Units - English is required.

   No _____ Provide an explanation on additional page.

3. Will land survey monument perpetuation be scoped into the project, if required?

   Yes X

   No _____ Provide explanation on additional page.

A-"H"

III. *Parcel Information (Land and Improvements)*

Are there any property rights required within the proposed project limits?

No ____ Yes X (Complete the following)

	Part Take	Full Take	Estimate $
A. Number of Vacant Land Parcels			$ 0.00
B. Number of Single Family Residential Units	1		$ 449,700.00
C. Number of Multi-Family Residential Units			$ 0.00
D. Number of Commercial/Industrial Parcels			$ 0.00
E. Number of Farm/Agricultural Parcels	4	4	$ 1,150,000.00
F. Permanent and/or Temporary Easements	4		$ 200,000.00
G. Other Parcels (define in "Remarks" section)		3	$ 300.00
Totals	5	7	$ 1,800,000.00

The parcels involved are primarily agricultural in use. One property owned by Solano County includes a single-family residence.

IV. ***Dedications***

Are there any property rights which have been acquired, or anticipate will be acquired, through the "dedication" process for the Project?

No __X__ Yes _____ (Complete the following):

Number of dedicated parcels ___.

Have the dedication parcel(s) been accepted by the municipality involved? N/A .

V. ***Excess Lands / Relinquishments***

Are there Caltrans property rights which may become excess lands or potential relinquishment areas?

No __X__ Yes _____ (Refer to XIII – Remarks section.)

VI. ***Relocation Information***

Are relocation displacements anticipated?

No _____ Yes __X__ (Complete the following)

A. Number of Single Family Residential Units	_____	
Estimated RAP Payments		$ _____
B. Number of Multi-Family Residential Units	_____	
Estimated RAP Payments		$ _____
C. Number of Business/Nonprofit	_____	
Estimated RAP Payments		$ _____
D. Number of Farms	_____	
Estimated RAP Payments		$ _____
E. Other (define in the "Remarks" section)	1	
Estimated RAP Payments		$ 50,000.00
Totals	1	$ 50,000.00

VII. ***Utility Relocation Information***

Anticipate any utility facilities or utility rights of way to be affected?

No ____ Yes __X__ (Complete the following)

Facility	Owner	Estimated Relocation Expense: State Obligation	Local Obligation	Utility Owner Obligation
A. Water (Irrigation)	Solano Irrigation District	$ 0	$500,000	
B. Electrical (OH 12KV or distribution)	PG&E	$ 0	$250,000	
C. Electrical (High Voltage Transmission)	PG&E	$ 0	$800,000	
D. Gas	PG&E	$ 0	$ 40,000	
E. Cable	AT&T	$ 0	$0	$0
F. Telephone	AT&T	$ 0	$0	$0
G. Utility Potholing		$ 0	$ 30,000	$0
Subtotal Relocation Expense			$1,620,000	
Contingency (25%) +/-		$ 0	$ 405,000	$0
Subtotal Relocation Exp			$2,025,000	
Escalation *		$ 0	$ 200,000	$0
Totals		$ 0	$2,225,000	
Number of facilities			6	

* Escalation amount is based on a 3% annual increase over a 3 year period.

Additional information concerning utility involvement on this project? See Attachments.

VIII. ***Rail Information***

Are railroad facilities or railroad rights of way affected?

No __X__ Yes ____ (Complete the following)

Describe railroad facilities or railroad rights of way affected.

Owner's Name	Transverse Crossing	Longitudinal Encroachment
A.		
B.		

Discuss types of agreements and rights required from the railroads. Are grade crossings requiring services contracts, or grade separations requiring construction and maintenance agreements involved?

IX. *Clearance Information*

Are there improvements that require clearance?

No ____ Yes X (Complete the following)

A. Number of Structures to be Demolished 5 $ 50,000.00
Estimated Cost of Demolition

X. *Hazardous Materials/Waste*

Are there any site(s) and/or improvements(s) in the Project Limits that are known to contain *hazardous materials*? None ____ Yes X (Explain in the "Remarks" section)

Asbestos fibers and lead containing paint have been determined to be present in the existing Cordelia Truck Scale Facility buildings.

Are there any site(s) and/or improvement(s) in the Project Limits that are suspected to contain *hazardous waste*? None ____ Yes X (Explain in the "Remarks" section)

It is anticipated that the property to be acquired which had prior agricultural use will test positive for herbicide and pesticides. It is also anticipated that the area adjacent to I-80 may contain elevated levels of aerially deposited lead. Currently a Phase II Site Investigation is underway to confirm the absence or presence of these materials.

XI. *Project Scheduling*

	Proposed lead time	Completion date
R/W Engineering Submittals	6 (months)	November 2009
R/W Appraisals/Acquisition	12 (months)	February 2011
Proposed Environmental Clearance		September 2009
Proposed R/W Certification		March 2011

Note: To avoid R/W schedule compression and insufficient lead time, R/W Engineering submittals/approvals must be completed no later than December 2009.

XII. *Proposed Funding*

	Local++	State++	Federal++	Other
Acquisition	$ 1,800,000*	$	$	$
Utilities	$ 2,225,000	$	$	$
Relocation Assistance Program	$ 50,000	$	$	$
Clearance/Demolition	$ 50,000	$	$	$
R/W Support Cost (Eng., Appraisals, etc.)	$	$	$	$
Easement (Utility and TCE parcels already listed in Acquisition estimate from page 2 of 6)	$ 0	$	$	$

++ Proposed funding for Right of Way as shown is for current value and has not been escalated.
* See comments under Section III – Parcel information.

XIII. *Remarks*

1. VI. (E) – Property is owned by Solano County. There is one residential unit and several barns. Estimated relocation costs included in the event property is occupied.

Project Sponsor Consultant

Prepared by:

Steven L. Castellano, SR/WA
Right of Way Consultant
Associated Right of Way Services, Inc.

9/08/09
Date

Project Sponsor

Reviewed and Approved by:

Janet Adams

Solano Transportation Authority

9/2/09
Date

Caltrans

Reviewed and approved based on information provided to date:

Caltrans District Branch Chief

9/28/09
Date

Local Public Agency Services

Division of Right of Way

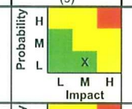
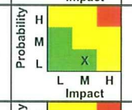
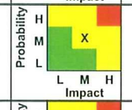
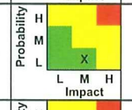
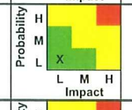
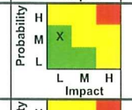
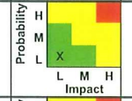
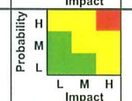
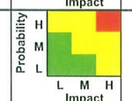
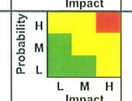
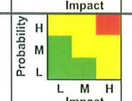
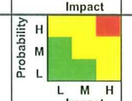
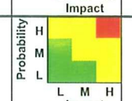
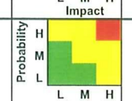
Rev8/98 pgk

A. H.

ATTACHMENT I

Risk Management Plan

RISK MANAGEMENT RESPONSE PLAN

Identification				Qualitative Analysis					Quantitative Analysis			Response Strategy			Monitoring and Control		
Status	ID #	Date Identified	Threat/Opportunity Event	Type	Probability	Impact	Risk Matrix	Priority	Probability (%)	Impact ($ or days)	Effect ($ or days)	Strategy	Response Actions including advantages and disadvantages	Affected WBS Tasks	Responsibility (Task Manager)	Status Interval or Milestone Check	Date, Status and Review Comments
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Active	1	7/23/2008	Too few bidders could drive construction costs up.	Cost	Low	Medium			5%	$5M	$0.25M	Mitigation	An effort will be made to reach out to bidders in advance of the project being Ready to List.	WBS 265 Advertise, Open Bids, Award, and Approve Contract	STA	Fall/Winter '10	
Active	2	7/23/2008	Specialty items or price escalation (e.g. AC) could increase costs.	Cost	Low	Medium			10%	$5M	$0.5M	Acceptance	Material prices will be monitored and the final engineer's estimate will be updated with the most up-to-date information available.	WBS 270 Perform Construction Engineering and General Contract Administration	STA	Winter/Spring '11 (Final BEES)	
Active	3	7/23/2008	Acquisition of Right-of-Way may take longer than expected, delaying the project.	Schedule	Medium	Medium			35%	60 days	21 days	Acceptance	Right of Way acquisition is identified as a critical task on this project. Acquisition will commence as soon as the 65% design is complete.	WBS 265 Advertise, Open Bids, Award, and Approve Contract	CT/STA	Fall/Winter '10	
Active	4	7/23/2008	Utility relocation may take longer than expected and could delay project if not completed prior to other work.	Schedule	Low	Medium			20%	60 days	12 days	Acceptance	The designer is being brought on early in the process and will commence utility coordination immediately.	WBS 270 Perform Construction Engineering and General Contract Administration	STA	Spring '10	
Active	5	7/23/2008	Coordination and approvals between multiple stakeholders, including Caltrans and the California Highway Patrol, may take longer than expected, delaying the project.	Schedule	Low	Low			20%	40 days	8 days	Acceptance	The designer is being brought on early in the process and will begin coordinating between agencies immediately to facilitate approvals.	WBS 260 Prepare Contract Documents	STA	Spring '10	
Active	6	7/23/2008	Getting a signed Biological Opinion from the USFWS could take longer than expected, delaying the project.	Schedule	Medium	Low			40%	30 days	12 days	Acceptance	The STA will coordinate with Caltrans to ensure that the project has a place on the priority list with USFWS.	WBS 265 Advertise, Open Bids, Award, and Approve Contract	STA/CT	Fall '09	
Active	7	8/6/2008	Achieving LEED Silver certification on the building design could increase project costs.	Cost	low	Low			15%	$2M	$0.3M	Acceptance	With the designer being brought on early, every effort will be made to achieve LEED Silver certification within the project budget. However, if anticipated construction costs are significantly higher as a result of LEED certification, an exception to the requirement may be sought.	WBS 265 Advertise, Open Bids, Award, and Approve Contract	STA	Spring '10	
	8																
	9																
	10																
	11																
	12																
	13																
	14																

ATTACHMENT J

Transportation Management Plan
(Data Sheet)

TRANSPORTATION MANAGEMENT PLAN DATA SHEET

Co/Rte/PM 04-SOL-80 KP 14.0-15.7 EA 0A5350 Project Engineer Roni Boukhalil

Project Limit On I-80 from Suisun Valley Road Interchange to the SR12E/Chadbourne Road Interchange

Project Description Reconstruct eastbound I-80 Cordelia Truck Scale Facility

1) Public Information

☐	a. Brochures and Mailers	$
☒	b. Press Release	
☐	c. Paid Advertising	$50,000
☐	d. Public Information Center/Kiosk	$
☐	e. Public Meeting/Speakers Bureau	
☐	f. Telephone Hotline	
☐	g. Internet, E-mail	
☐	h. Notification to impacted groups (i.e. bicycle users, pedestrians with disabilities, others…)	
☒	i. Others _____	$

2) Traveler Information Strategies

☐	a. Changeable Message Signs (Fixed)	$
☒	b. Changeable Message Signs (Portable)	$50,000
☒	c. Ground Mounted Signs	$20,000
☒	d. Highway Advisory Radio	$
☐	e. Caltrans Highway Information Network (CHIN)	
☐	f. Detour maps (i.e. bicycle, vehicle, pedestrian...etc)	
☐	g. Revised Transit Schedules/maps	
☐	h. Bicycle community information	
☐	i. Others	
	_____	$

3) Incident Management

☒	a. Construction Zone Enhanced Enforcement Program (COZEEP)	$150,000
☐	b. Freeway Service Patrol	$
☐	c. Traffic Management Team	
☐	d. Helicopter Surveillance	$
☐	e. Traffic Surveillance Stations (Loop Detector and CCTV)	$
☐	f. Others _____	$

TMP Data Sheet (cont.)

4) Construction Strategies

- [x] a. Lane Closure Chart
- [ ] b. Reversible Lanes
- [ ] c. Total Facility Closure
- [ ] d. Contra Flow
- [ ] e. Truck Traffic Restrictions $30,000
- [ ] f. Reduced Speed Zone $
- [ ] g. Connector and Ramp Closures
- [ ] h. Incentive and Disincentive $
- [ ] i. Moveable Barrier $
- [ ] _____ _____
- [ ] k. Others _____ $

5) Demand Management

- [ ] a. HOV Lanes/Ramps (New or Convert) $
- [ ] b. Park and Ride Lots $
- [ ] c. Rideshare Incentives $
- [ ] d. Variable Work Hours
- [ ] e. Telecommute
- [ ] f. Ramp Metering (Temporary Installation) $
- [ ] g. Ramp Metering (Modify Existing) $
- [ ] h. Others _____ $

6) Alternate Route Strategies

- [ ] a. Add Capacity to Freeway Connector $
- [ ] b. Street Improvement (widening, traffic signal... etc) $
- [ ] c. Traffic Control Officers $
- [ ] d. Parking Restrictions
- [ ] e. Others _____ $

7) Other Strategies

- [ ] a. Application of New Technology $
- [ ] e. Others _____ $

TOTAL ESTIMATED COST OF TMP ELEMENTS = $300,000

PREPARED BY Mike Lohman DATE 10/14/08

Roni Boukhalil DATE 1/8/09

APPROVAL RECOMMENDED BY Oklah Alhayek DATE 1/8/09

ATTACHMENT K

Cooperative Agreement for PA/ED and Design

COOPERATIVE AGREEMENT

This agreement, effective on April 6, 2009, is between the State of California, acting through its Department of Transportation, referred to as CALTRANS, and:

Solano Transportation Authority, a political subdivision of the State of California, referred to as STA.

RECITALS

1. CALTRANS and STA, collectively referred to as PARTNERS, are authorized to enter into a cooperative agreement for improvements within the SHS right of way per Streets and Highways Code sections 114 and/or 130.

2. WORK completed under this agreement contributes toward the relocation of the Eastbound Interstate 80 truck inspection facility, located in Cordelia, referred to as PROJECT.

3. PARTNERS will cooperate to perform PA&ED and PS&E.

4. There are no prior PROJECT-related cooperative agreements.

5. Prior to this agreement, STA developed the Project Initiation Document.

6. The estimated date for COMPLETION OF WORK is December 31, 2015.

7. PARTNERS now define in this agreement the terms and conditions under which they will accomplish WORK.

DEFINITIONS

CALTRANS STANDARDS – CALTRANS policies and procedures, including, but not limited to, the guidance provided in the *Guide to Capital Project Delivery Workplan Standards* (previously known as WBS Guide) available at http://dot.ca.gov.

CEQA – The California Environmental Quality Act (California Public Resources Code, sections 21000 et seq.) that requires State and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those significant impacts, if feasible.

COMPLETION OF WORK – All PARTNERS have met all scope, cost, and schedule commitments included in this agreement and have signed a COOPERATIVE AGREEMENT CLOSURE STATEMENT.

COOPERATIVE AGREEMENT CLOSURE STATEMENT – A document signed by PARTNERS that verifies the completion of all scope, cost, and schedule commitments included in this agreement.

FHWA – Federal Highway Administration.

FHWA STANDARDS – FHWA regulations, policies and procedures, including, but not limited to, the guidance provided at http://www.fhwa.dot.gov/programs.html.

FUNDING PARTNER – A partner who commits a defined dollar amount to WORK.

FUNDING SUMMARY - The table in which PARTNERS designate funding sources, types of funds, and the project components in which the funds are to be spent. Funds listed on the FUNDING SUMMARY are "not-to-exceed" amounts for each FUNDING PARTNER.

HM-1 – Hazardous material (including, but not limited to, hazardous waste) that requires removal and disposal pursuant to federal or state law whether it is disturbed by PROJECT or not.

HM-2 – Hazardous material (including, but not limited to, hazardous waste) that may require removal and disposal pursuant to federal or state law only if disturbed by PROJECT.

HM MANAGEMENT ACTIVITIES – Management activities related to either HM-1 or HM-2 including, without limitation, any necessary manifest requirements and disposal facility designations.

IMPLEMENTING AGENCY – The partner responsible for managing the scope, cost, and schedule of a project component to ensure the completion of that component.

IQA – Independent Quality Assurance – Ensuring that IMPLEMENTING AGENCY'S quality assurance activities result in WORK being developed in accordance with the applicable standards and within an established Quality Management Plan. IQA does not include any work necessary to actually develop or deliver WORK or any validation by verifying or rechecking work performed by another partner.

NEPA – The National Environmental Policy Act of 1969 that establishes a national policy for the environment and a process to disclose the adverse impacts of projects with a federal nexus.

PA&ED (Project Approval and Environmental Document) – The project component that includes the activities required to deliver the project approval and environmental documentation for PROJECT.

PARTNERS – The term that collectively references all of the signatory agencies to this agreement. This term only describes the relationship between these agencies to work together to achieve a mutually beneficial goal. It is not used in the traditional legal sense in which one partner's individual actions legally bind the other partners.

PROJECT MANAGEMENT PLAN – A group of documents used to guide a project's execution and control throughout the project's lifecycle.

PS&E (Plans, Specifications, and Estimates) – The project component that includes the activities required to deliver the plans, specifications, and estimates for PROJECT.

SAFETEA-LU – The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, signed into federal law on August 10, 2005.

SCOPE SUMMARY – The table in which PARTNERS designate their commitment to specific scope activities within each project component as outlined by the *Guide to Capital Project Delivery Workplan Standards* (previously known as WBS Guide) available at http://dot.ca.gov.

SHS – State Highway System.

SPONSOR(S) – The partner that accepts the obligation to secure financial resources to fully fund WORK. This includes any additional funds beyond those committed in this agreement necessary to complete the full scope of WORK defined in this agreement or settle claims.

STATE-FURNISHED MATERIAL – Any materials or equipment supplied by CALTRANS.

WORK – All scope and cost commitments included in this agreement.

RESPONSIBILITIES

8. STA is SPONSOR for 100% of all WORK.

9. STA is the only FUNDING PARTNER for this agreement. STA's funding commitment is defined in the FUNDING SUMMARY.

10. STA is IMPLEMENTING AGENCY for PA&ED and PS&E.

SCOPE

Scope: General

11. All WORK will be performed in accordance with federal and California laws, regulations, and standards.

    All WORK will be performed in accordance with FHWA STANDARDS and CALTRANS STANDARDS.

12. IMPLEMENTING AGENCY for a project component will provide a Quality Management Plan for that component as part of the PROJECT MANAGEMENT PLAN.

13. CALTRANS will provide IQA for the portions of WORK within existing and proposed SHS right of way. CALTRANS retains the right to reject noncompliant WORK, protect public safety, preserve property rights, and ensure that all WORK is in the best interest of the SHS.

14. STA may provide IQA for the portions of WORK outside existing and proposed SHS right of way.

15. PARTNERS may, at their own expense, have a representative observe any scope, cost, or schedule commitments performed by another partner. Observation does not constitute authority over those commitments.

16. Each partner will ensure that all of their personnel participating in WORK are appropriately qualified to perform the tasks assigned to them.

17. PARTNERS will invite each other to participate in the selection and retention of any consultants who participate in WORK.

18. PARTNERS will conform to sections 1720 – 1815 of the California Labor Code and all applicable regulations and coverage determinations issued by the Director of Industrial Relations if PROJECT work is done under contract (not completed by a partner's own employees) and is governed by the Labor Code's definition of a "public work" (section 1720(a)(1)).

    PARTNERS will include wage requirements in all contracts for "public work" and will require their contractors and consultants to include prevailing wage requirements in all agreement-funded subcontracts for "public work".

19. IMPLEMENTING AGENCY for each project component included in this agreement will be available to help resolve WORK-related problems generated by that component for the entire duration of PROJECT.

20. CALTRANS will issue, upon proper application, at no cost, the encroachment permits required for WORK within SHS right of way.

    Contractors and/or agents, and utility owners will not perform WORK without an encroachment permit issued in their name.

21. If unanticipated cultural, archaeological, paleontological, or other protected resources are discovered during WORK, all work in that area will stop until a qualified professional can evaluate the nature and significance of the discovery and a plan is approved for its removal or protection.

22. All administrative draft and administrative final reports, studies, materials, and documentation relied upon, produced, created, or utilized for PROJECT will be held in confidence pursuant to Government Code section 6254.5(e).

    PARTNERS will not distribute, release, or share said documents with anyone other than employees, agents, and consultants who require access to complete WORK without the written consent of the partner authorized to release them, unless required or authorized to do so by law.

23. If any partner receives a public records request, pertaining to WORK under this agreement, that partner will notify PARTNERS within five (5) working days of receipt and make PARTNERS aware of any transferred public documents.

24. If HM-1 or HM-2 is found during WORK, IMPLEMENTING AGENCY for the project component during which it is found will immediately notify PARTNERS.

25. CALTRANS, independent of PROJECT, is responsible for any HM-1 found within existing SHS right of way. CALTRANS will undertake HM-1 MANAGEMENT ACTIVITIES with minimum impact to PROJECT schedule.

26. If HM-1 is found outside existing SHS right of way, responsibility for such HM-1 rests with the owner(s) of the parcel(s) on which the HM-1 is found. STA, in concert with the local agency having land use jurisdiction over the parcel(s), will ensure that HM-1 MANAGEMENT ACTIVITIES are undertaken with minimum impact to PROJECT schedule.

27. If HM-2 is found within PROJECT limits, the public agency responsible for the advertisement, award, and administration (AAA) of the PROJECT construction contract will be responsible for managing HM-2 MANAGEMENT ACTIVITIES.

28. CALTRANS' acquisition or acceptance of title to any property on which any HM-1 or HM-2 is found will proceed in accordance with CALTRANS' policy on such acquisition.

29. PARTNERS will comply with all of the commitments and conditions set forth in the environmental documentation, environmental permits, approvals, and applicable agreements as those commitments and conditions apply to each partner's responsibilities in this agreement.

30. IMPLEMENTING AGENCY for each project component will furnish PARTNERS with written monthly progress reports during the implementation of WORK in that component.

31. Upon COMPLETION OF WORK, ownership and title to all materials and equipment constructed or installed as part of WORK within SHS right of way become the property of CALTRANS.

32. IMPLEMENTING AGENCY for a project component may accept, reject, compromise, settle, or litigate claims of any non-agreement parties hired to do WORK in that component.

33. PARTNERS will confer on any claim that may affect WORK or PARTNERS' liability or responsibility under this agreement in order to retain resolution possibilities for potential future claims. No partner shall prejudice the rights of another partner until after PARTNERS confer on claim.

34. PARTNERS will maintain and make available to each other all WORK-related documents, including financial data, during the term of this agreement and retain those records for four (4) years from the date of termination or COMPLETION OF WORK, or three (3) years from the date of final federal voucher, whichever is later.

35. PARTNERS have the right to audit each other in accordance with generally accepted governmental audit standards.

CALTRANS, the State auditor, FHWA, and STA will have access to all WORK-related records of each partner for audit, examination, excerpt, or transaction.

The examination of any records will take place in the offices and locations where said records are generated and/or stored and will be accomplished during reasonable hours of operation.

The audited partner will review the preliminary audit, findings, and recommendations, and provide written comments within 60 calendar days of receipt.

Any audit dispute not resolved by PARTNERS is subject to dispute resolution. Any costs arising out of the dispute resolution process will be paid within 30 calendar days of the final audit or dispute resolution findings.

36. PARTNERS consent to service of process by mailing copies by registered or certified mail, postage prepaid. Such service becomes effective 30 calendar days after mailing. However, nothing in this agreement affects PARTNERS' rights to serve process in any other matter permitted by law.

37. PARTNERS will not incur costs beyond the funding commitments in this agreement. If IMPLEMENTING AGENCY anticipates that funding for WORK will be insufficient to complete WORK, SPONSOR(S) will seek out additional funds and PARTNERS will amend this agreement.

38. If WORK stops for any reason, IMPLEMENTING AGENCY will place all facilities impacted by WORK in a safe and operable condition acceptable to CALTRANS.

39. If WORK stops for any reason, PARTNERS are still obligated to implement all applicable commitments and conditions included in the PROJECT environmental

documentation, permits, agreements, or approvals that are in effect at the time that WORK stops, as they apply to each partner's responsibilities in this agreement, in order to keep PROJECT in environmental compliance until WORK resumes.

40. As the NEPA lead agency, CALTRANS will coordinate and obtain the following federal resource agency permits, agreements, and/or approvals: U.S. Army Corps of Engineers Permit (404) and U.S. Fish and Wildlife Service approval.

41. CALTRANS will coordinate and obtain the following non-federal resource agency permits, agreements, and/or approvals:, Department of Fish and Game 1600 Agreement(s), Waste Discharge (NPDES) Permit, Regional Water Quality Control Board 401 Permit, and any other non-federal resource agency permits, agreements and/or approval which are required for PROJECT.

42. STA will, prepare any required federal resource agency permits, agreements and/or approvals for PROJECT. STA will submit all said applications to CALTRANS for review, comment and approval. CALTRANS will submit the final applications to the appropriate federal resource agencies.

43. STA will prepare any required non-federal resource agency permits, agreements and/or approvals for PROJECT. CALTRANS will submit the final applications to the appropriate non-federal resource agencies.

44. STA, on behalf of CALTRANS, will implement all federal and non-federal resource agency permits, agreements, and/or approvals for PROJECT.

45. Each partner accepts responsibility to complete the activities that they selected on the SCOPE SUMMARY. Activities marked with "N/A" on the SCOPE SUMMARY are not included in the scope of this agreement.

Scope: Project Approval and Environmental Document (PA&ED)

46. CALTRANS is the CEQA lead agency. CALTRANS will determine the type of environmental documentation required and will cause that documentation to be prepared.

47. All partners involved in the preparation of CEQA environmental documentation will follow the CALTRANS STANDARDS that apply to the CEQA process including, but not limited to, the guidance provided in the Standard Environmental Reference available at www.dot.ca.gov/ser.

48. CALTRANS is the NEPA lead agency for PROJECT. Pursuant to SAFETEA-LU Section 6004 and/or 6005, CALTRANS will assume responsibility for NEPA compliance and will prepare any needed NEPA environmental documentation or will cause that documentation to be prepared.

49. All partners involved in the preparation of NEPA environmental documentation will follow FHWA STANDARDS that apply to the NEPA process including, but not limited to, the guidance provided in the FHWA Environmental Guidebook available at www.fhwa.dot.gov/hep/index.htm.

50. STA will prepare the appropriate environmental documentation to meet CEQA requirements.

51. STA will prepare the appropriate NEPA environmental documentation to meet NEPA requirements.

52. Any partner preparing any portion of the CEQA environmental documentation, including any studies and reports, will submit that portion of the documentation to the CEQA lead agency for review, comment, and approval at appropriate stages of development prior to public availability.

53. Any partner preparing any portion of the NEPA environmental documentation (including, but not limited to, studies, reports, public notices, and public meeting materials, determinations, administrative drafts, and final environmental documents) will submit that portion of the documentation to CALTRANS for CALTRANS' review, comment, and approval prior to public availability.

54. STA will prepare, publicize and circulate all CEQA-related public notices and will submit said notices to the CEQA lead agency for review, comment, and approval prior to publication and circulation.

55. STA will prepare, publicize, and circulate all NEPA-related public notices, except Federal Register notices. STA will submit all notices to CALTRANS for CALTRANS' review, comment, and approval prior to publication and circulation.

    CALTRANS will work with the appropriate federal agency to publish notices in the Federal Register.

56. The CEQA lead agency will attend all CEQA-related public meetings.

57. STA will plan, schedule, prepare materials for, and host all CEQA-related public meetings and will submit all materials to the CEQA lead agency for review, comment, and approval at least 10 working days prior to the public meeting date.

58. The NEPA lead agency will attend all NEPA-related public meetings.

59. STA will plan, schedule, prepare materials for, and host all NEPA-related public meetings. STA will submit all materials to CALTRANS for CALTRANS' review, comment, and approval at least 10 working days prior to the public meeting date.

60. If a partner who is not the CEQA or NEPA lead agency holds a public meeting about PROJECT, that partner must clearly state their role in PROJECT and the identity of the CEQA and NEPA lead agencies on all meeting publications. All meeting publications must also inform the attendees that public comments collected at the meetings are not part of the CEQA or NEPA public review process.

That partner will submit all meeting advertisements, agendas, exhibits, handouts, and materials to the appropriate lead agency for review, comment, and approval at least 10 working days prior to publication or use. If that partner makes any changes to the materials, that partner will allow the appropriate lead agency to review, comment on, and approve those changes three (3) working days prior to the public meeting date.

The CEQA lead agency maintains final editorial control with respect to text or graphics that could lead to public confusion over CEQA-related roles and responsibilities. The NEPA lead agency has final approval authority with respect to text or graphics that could lead to public confusion over NEPA-related roles and responsibilities.

61. The partner preparing the environmental documentation, including the studies and reports, will ensure that qualified personnel remain available to help resolve environmental issues and perform any necessary work to ensure that PROJECT remains in environmental compliance.

Scope: Plans, Specifications, and Estimates (PS&E)

62. STA will ensure that the engineering firm preparing the plans, specifications, and estimates will not be employed by or under contract to the PROJECT construction contractor.

STA will not employ the engineering firm preparing the plans, specifications, and estimates for construction management of PROJECT.

However, STA may retain the engineering firm during CONSTRUCTION to check shop drawings, do soil foundation tests, test construction materials, and perform construction surveys.

63. STA will identify and locate all utility facilities within PROJECT area as part of PS&E responsibilities. All utility facilities not relocated or removed in advance of construction will be identified on the plans, specifications, and estimate for PROJECT.

64. STA will make all necessary arrangements with utility owners for the timely accommodation, protection, relocation, or removal of any existing utility facilities that conflict with construction of PROJECT or that violate CALTRANS' encroachment policy.

65. The responsibility to advertise, open bids, award, and approve the construction contract will be handled outside the commitments of this agreement. However, STA and CALTRANS have agreed that when AAA is necessary, CALTRANS will perform those duties.

66. STA acknowledges that activity 3.260 will be performed by CALTRANS. In order for CALTRANS to perform AAA in the future, the PS&E package must be reviewed and approved by CALTRANS District and HQ Office Engineers prior to advertisement, which includes all the duties listed in the SCOPE SUMMARY under activity 3.260.

67. STA will ensure that the consultant who prepared the PS&E package will remain available to address all comments generated during the performance of activity 3.260.

COST

Cost: General

68. SPONSOR(S) will secure funds for all WORK including any additional funds beyond the FUNDING PARTNERS' existing commitments in this agreement. Any change to the funding commitments outlined in this agreement requires an amendment to this agreement.

69. The cost of any awards, judgments, or settlements generated by WORK is a WORK cost.

70. CALTRANS, independent of PROJECT, will pay all costs for HM MANAGEMENT ACTIVITIES related to HM-1 found within existing SHS right of way.

71. Independent of PROJECT, all costs for HM MANAGEMENT ACTIVITIES related to any HM-1 found outside of existing SHS right of way will be the responsibility of the owner(s) of the parcel(s) where the HM-1 is located.

72. HM MANAGEMENT ACTIVITIES costs related to HM-2 are a PROJECT CONSTRUCTION cost.

73. The cost of coordinating, obtaining, complying with, implementing, and if necessary renewing and amending resource agency permits, agreements, and/or approvals is a WORK cost.

74. The cost to comply with and implement the commitments set forth in the environmental documentation is a WORK cost.

75. The cost to ensure that PROJECT remains in environmental compliance is a WORK cost.

76. The cost of any legal challenges to the CEQA or NEPA environmental process or documentation is a WORK cost.

77. Independent of WORK costs, CALTRANS will fund the cost of its own IQA for WORK done within existing or proposed future SHS right of way.

78. Independent of WORK costs, STA will fund the cost of its own IQA for WORK done outside existing or proposed future SHS right of way.

79. Fines, interest, or penalties levied against any partner will be paid, independent of WORK costs, by the partner whose actions or lack of action caused the levy. That partner will indemnify and defend all other partners.

80. The cost to place PROJECT right of way in a safe and operable condition and meet all environmental commitments is a WORK cost.

81. Because IMPLEMENTING AGENCY is responsible for managing the scope, cost, and schedule of a project component, if there are insufficient funds available in this agreement to place the right of way in a safe and operable condition, the appropriate IMPLEMENTING AGENCY accepts responsibility to fund these activities until such time as PARTNERS amend this agreement.

    That IMPLEMENTING AGENCY may request reimbursement for these costs during the amendment process.

82. If there are insufficient funds in this agreement to implement applicable commitments and conditions included in the PROJECT environmental documentation, permits, agreements, and/or approvals that are in effect at a time that WORK stops, the partner implementing the commitments or conditions accepts responsibility to fund these activities until such time are PARTNERS amend this agreement.

    That partner may request reimbursement for these costs during the amendment process.

83. PARTNERS will pay invoices within 30 calendar days of receipt of invoice.

84. FUNDING PARTNERS accept responsibility to provide the funds identified on the FUNDING SUMMARY.

85. SPONSOR(S) accepts responsibility to ensure full funding for the identified scope of work.

Cost: Project Approval and Environmental Document (PA&ED)

86. The cost to prepare, publicize, and circulate all CEQA and NEPA-related public notices is a WORK cost.

87. The cost to plan, schedule, prepare, materials for, and host all CEQA and NEPA-related public hearings is a WORK cost.

88. The following partners will submit invoices for PA&ED:
    - CALTRANS will invoice STA

89. PARTNERS will exchange funds for actual costs.

    CALTRANS will invoice STA for an initial deposit of $10,000 upon execution of this agreement. This deposit represents two (2) months' estimated support costs.

    Thereafter CALTRANS will submit to STA monthly invoices for estimated monthly costs based on the prior month's actual expenditures. Billings will not exceed $56,000 as shown in the SPENDING SUMMARY.

90. After PARTNERS agree that all Scope activities are complete, CALTRANS will submit a final accounting for all WORK costs. Based on the final accounting, PARTNERS will refund or invoice as necessary in order to satisfy the obligation of this agreement.

SCHEDULE

91. PARTNERS will manage the schedule for WORK through the work plan included in the PROJECT MANAGEMENT PLAN.

GENERAL CONDITIONS

92. This agreement will be understood in accordance with and governed by the Constitution and laws of the State of California. This agreement will be enforceable in the State of California. Any legal action arising from this agreement will be filed and maintained in the Superior Court of the county in which the CALTRANS district office signatory to this agreement resides or in Solano County.

93. All obligations of CALTRANS under the terms of this agreement are subject to the appropriation of resources by the Legislature, the State Budget Act authority, and the allocation of funds by the California Transportation Commission.

94. Any PARTNER who performs IQA does so for its own benefit, further, that PARTNER cannot be assigned liability due to its IQA activities.

95. Neither STA nor any officer or employee thereof is responsible for any injury, damage or liability occurring by reason of anything done or omitted to be done by CALTRANS under or in connection with any work, authority, or jurisdiction conferred upon CALTRANS or arising under this agreement.

It is understood and agreed that CALTRANS will fully defend, indemnify, and save harmless STA and all of its officers and employees from all claims, suits, or actions of every name, kind, and description brought forth under, but not limited to, tortious, contractual, inverse condemnation, or other theories or assertions of liability occurring by reason of anything done or omitted to be done by CALTRANS under this agreement.

96. Neither CALTRANS nor any officer or employee thereof is responsible for any injury, damage, or liability occurring by reason of anything done or omitted to be done by STA under or in connection with any work, authority, or jurisdiction conferred upon STA or arising under this agreement.

It is understood and agreed that STA will fully defend, indemnify, and save harmless CALTRANS and all of its officers and employees from all claims, suits, or actions of every name, kind, and description brought forth under, but not limited to, tortious, contractual, inverse condemnation, or other theories or assertions of liability occurring by reason of anything done or omitted to be done by STA under this agreement.

97. This agreement is not intended to create a third party beneficiary or define duties, obligations, or rights in parties not signatory to this agreement. This agreement is not intended to affect the legal liability of PARTNERS by imposing any standard of care for completing WORK different from the standards imposed by law.

98. PARTNERS will not assign or attempt to assign agreement obligations to parties not signatory to this agreement.

99. Any ambiguity contained in this agreement will not be interpreted against PARTNERS. PARTNERS waive the provisions of California Civil Code section 1654.

100. A waiver of a partner's performance under this agreement will not constitute a continuous waiver of any other provision. An amendment made to any article or section of this agreement does not constitute an amendment to or negate all other articles or sections of this agreement.

101. A delay or omission to exercise a right or power due to a default does not negate the use of that right or power in the future when deemed necessary.

102. If any partner defaults in their agreement obligations, the non-defaulting partner(s) will request in writing that the default be remedied within 30 calendar days. If the defaulting partner fails to do so, the non-defaulting partner(s) may initiate dispute resolution.

103. PARTNERS will first attempt to resolve agreement disputes at the PROJECT team level. If they cannot resolve the dispute themselves, the CALTRANS district director and the executive officer of STA will attempt to negotiate a resolution. If no resolution is reached, PARTNERS' legal counsel will initiate mediation. PARTNERS agree to participate in mediation in good faith and will share equally in its costs.

Neither the dispute nor the mediation process relieves PARTNERS from full and timely performance of WORK in accordance with the terms of this agreement. However, if any partner stops WORK, the other partner(s) may seek equitable relief to ensure that WORK continues.

Except for equitable relief, no partner may file a civil complaint until after mediation, or 45 calendar days after filing the written mediation request, whichever occurs first.

Any civil complaints will be filed in the Superior Court of the county in which the CALTRANS district office signatory to this agreement resides or Solano County. The prevailing partner will be entitled to an award of all costs, fees, and expenses, including reasonable attorney fees as a result of litigating a dispute under this agreement or to enforce the provisions of this article including equitable relief.

104. PARTNERS maintain the ability to pursue alternative or additional dispute remedies if a previously selected remedy does not achieve resolution.

105. If any provisions in this agreement are deemed to be, or are in fact, illegal, inoperative, or unenforceable, those provisions do not render any or all other agreement provisions invalid, inoperative, or unenforceable, and those provisions will be automatically severed from this agreement.

106. This agreement is intended to be PARTNERS' final expression and supersedes all prior oral understanding or writings pertaining to WORK.

107. If during performance of WORK additional activities or environmental documentation is necessary to keep PROJECT in environmental compliance, PARTNERS will amend this agreement to include completion of those additional tasks.

108. PARTNERS will execute a formal written amendment if there are any changes to the commitments made in this agreement.

109. This agreement will terminate upon COMPLETION OF WORK or upon 30 calendar days' written notification to terminate and acceptance between PARTNERS, whichever occurs first.

However, all indemnification, document retention, audit, claims, environmental commitment, legal challenge, and ownership articles will remain in effect until terminated or modified in writing by mutual agreement.

110. The following documents are attached to, and made an express part of this agreement: SCOPE SUMMARY, FUNDING SUMMARY, and SPENDING SUMMARY.

111. Signatories may execute this agreement through individual signature pages provided that each signature is an original. This agreement is not fully executed until all original signatures are attached.

CONTACT INFORMATION

The information provided below indicates the primary contact data for each partner to this agreement. PARTNERS will notify each other in writing of any personnel or location changes. These changes do not require an amendment to this agreement.

The primary agreement contact person for CALTRANS is:
Nicolas Endrawos, Project Manager
111 Grand Avenue
Oakland, California 94612
Office Phone: (510) 286-5123
Mobile Phone: (510) 715-8983
Email: nicolas_endrawos@dot.ca.gov

The primary agreement contact person for STA is:
Janet Adams, Director of Projects
One Harbour Center, Suite 130
Suisun City, California 94585
Office Phone: (707) 424-6075
Email: jadams@sta-snci.com

SIGNATURES

PARTNERS declare that:

1. Each partner is an authorized legal entity under California state law.
2. Each partner has the authority to enter into this agreement.
3. The people signing this agreement have the authority to do so on behalf of their public agencies.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

By: _____
Helena (Lenka) Culik-Caro
Deputy District Director - Design

CERTIFIED AS TO FUNDS:

By: _____
Cynthia Stratton
District Budget Manager

SOLANO TRANSPORTATION
AUTHORITY

By: _____
Daryl Halls
Executive Director

Attest: _____
Johanna Masiclat
Clerk of the Board

APPROVED AS TO FORM AND
PROCEDURE

By: _____
Charles Lamoree
STA Legal Counsel

SCOPE SUMMARY

4	5	6	7	8	Description	CALTRANS	STA	N/A
2					**Project Approval and Environmental Document (PA&ED) - 160, 165, 175, 180, 205**	X	X	
	160				Perform Preliminary Engineering Studies and Draft Project Report	X	X	
		05			Updated Project Information		X	
		10			Engineering Studies		X	
		15			Draft Project Report		X	
		20			Engineering and Land Net Surveys		X	
		30			Environmental Study Request (ESR)		X	
		40			NEPA Delegation	X		
		45			Base Maps and Plan Sheets for Project Report and Environmental Studies		X	
	165				Perform Environmental Studies and Prepare Draft Environmental Document	X	X	
		05			Environmental Scoping of Alternatives Identified for Studies in Project Initiation Document		X	
		10			General Environmental Studies		X	
		15			Biological Studies		X	
			05		Biological Assessment		X	
			10		Wetlands Study		X	
			15		Resource Agency Permit Related Coordination		X	
			20		Natural Environment Study (NES) Report		X	
			99		Other Biological Studies (Biological Opinions)	X		
		20			Cultural Resource Studies		X	
			05		Archaeological Survey		X	
				05	Area of Potential Effects/Study Area Maps		X	
				10	Native American Consultation		X	
				15	Records and Literature Search		X	
				20	Field Survey		X	
				25	Archaeological Survey Report		X	
				99	Other Archaeological Survey Products		X	
			10		Extended Phase I Archaeological Studies		X	
				05	Native American Consultation		X	
				10	Extended Phase I Proposal		X	
				15	Extended Phase I Field Investigation		X	
				20	Extended Phase I Materials Analysis		X	
				25	Extended Phase I Report		X	
				99	Other Phase I Archaeological Study Products		X	

			15		Phase II Archaeological Studies		X	
				05	Native American Consultation		X	
				10	Phase II Proposal		X	
				15	Phase II Field Investigation		X	
				20	Phase II Materials Analysis		X	
				25	Phase II Report		X	
				99	Other Phase II Archaeological Study Products		X	
			20		Historical and Architectural Resource Studies		X	
				05	Preliminary Area of Potential Effects/Study Area Maps for Architecture		X	
				10	Historic Resources Evaluation Report - Archaeology		X	
				15	Historic Resource Evaluation Report - Architecture (HRER)		X	
				20	Bridge Evaluation		X	
				99	Other Historical and Architectural Resource Study Products		X	
			25		Cultural Resource Compliance Consultation Documents		X	
				05	Final Area of Potential Effects/Study Area Maps		X	
				10	PRC 5024.5 Consultation		X	
				15	Historic Property Survey Report/Historic Resources Compliance Report		X	
				20	Finding of Effect		X	
				25	Archaeological Data Recovery Plan/Treatment Plan		X	
				30	Memorandum of Agreement		X	
				99	Other Cultural Resources Compliance Consultation Products		X	
		25			Draft Environmental Document or Categorical Exemption/Exclusion	X	X	
			10		Section 4(F) Evaluation		X	
			20		Environmental Quality Control and Other Reviews	X		
			25		Approval to Circulate Resolution	X		
			30		Environmental Coordination		X	
			99		Other Draft Environmental Document Products		X	
		30			NEPA Delegation	X		
		45			Required Permits During PA&ED Development		X	
		50			Permits During PA&ED Development		X	
	175				Circulate Draft Environmental Document and Select Preferred Project Alternative Identification	X	X	
		05			DED Circulation		X	
		10			Public Hearing		X	
		15			Public Comment Responses and Correspondence		X	
		20			Project Preferred Alternative		X	
		25			NEPA Delegation	X		
	180				Prepare and Approve Project Report and Final Environmental Document	X	X	
		05			Final Project Report	X	X	
		10			Final Environmental Document	X	X	
			05		Approved Final Environmental Document	X		
				25	Statement of Overriding Considerations	X		
				30	CEQA Certification	X		

				40	Section 106 Consultation and MOA	X		
				45	Section 7 Consultation	X		
				50	Final Section 4(F) Statement	X		
				55	Floodplain Only Practicable Alternative Finding	X		
				60	Wetlands Only Practicable Alternative Finding	X		
				65	Section 404 Compliance	X		
				70	Mitigation Measures	X		
			10		Public Distribution of Final Environmental Document and Respond To Comments	X	X	
			15		Final Right of Way Relocation Impact Document	X	X	
			99		Other Final Environmental Document Products	X	X	
		15			Completed Environmental Document	X	X	
			05		Record of Decision (NEPA)	X		
			10		Notice of Determination (CEQA)	X	X	
			20		Environmental Commitments Record	X		
			99		Other Completed Environmental Document Products	X	X	
		20			NEPA Delegation	X		
	205				Obtain Permits, Agreements, and Route Adoptions	X	X	
3					**Plans, Specifications, and Estimates (PS&E) - 185, 230, 235, 240, 250, 255, 260, 265**	X	X	
	185				Prepare Base Maps and Plan Sheets for PS&E Development		X	
	230				Prepare Draft Plans, Specifications, and Estimates		X	
	235				Mitigate Environmental Impacts and Clean Up Hazardous Waste		X	
	240				Draft Structures Plans, Specifications, and Estimates		X	
	250				Final Structures Plans, Specifications, and Estimates Package		X	
	255				Circulate, Review, and Prepare Final District Plans, Specifications, and Estimates Package	X	X	
		05			Circulated and Reviewed Draft District Plans, Specifications, and Estimates Package		X	
		10			Updated Plans, Specifications, and Estimates Package		X	
		15			Environmental Re-Evaluation		X	
		20			Final District Plans, Specifications, and Estimates Package		X	
		25			Geotechnical Information Handout		X	
		30			Materials Information Handout		X	
		35			Construction Staking Package and Control		X	
		40			Resident Engineer's Pending File		X	
		45			NEPA Delegation	X		
		50			Secured Lease for Resident Engineer Office Space or Trailer	X		
	260				Contract Bid Documents Ready to List	X		
	265				Awarded and Approved Construction Contract			X

FUNDING SUMMARY

Funding Source	Funding Partner	Fund Type	PA&ED	PS&E	Subtotal Support	Subtotal Capital	Subtotal Funds Type
LOCAL	STA	Local	$4,500,000	$17,700,000	$22,200,000	$0	$22,200,000
		Subtotals by Component	$4,500,000	$17,700,000	$22,200,000	$0	$22,200,000

SPENDING SUMMARY

PA&ED

Description	Work Partner assigned by Scope Summary	Funding Limit
PROJECT APPROVAL & ENVIRONMENTAL DOCUMENTATION (PA&ED) – 165.15.99 – Biological Opinion	CALTRANS	$56,000

SOLANO TRANSPORTATION AUTHORITY
RESOLUTION No. 2007-10

RESOLUTION OF THE SOLANO TRANSPORTATION AUTHORITY AUTHORIZING THE EXECUTIVE DIRECTOR TO SIGN AGREEMENTS/DOCUMENTS WITH OR FOR THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) AND THE FEDERAL HIGHWAY ADMINISTRATION TO RECEIVE FUNDING AND TO DELIVER TRANSPORTATION PROJECTS

WHEREAS, the Solano Transportation Authority is eligible to receive Federal and/or State funding for certain transportation projects, through the California Department of Transportation (CALTRANS) and the Federal Highway Administration (FHWA); and

WHEREAS, Master Agreements, Program Supplemental Agreements, Fund Exchange Agreements, Fund Transfer Agreements, need to be executed with CALTRANS or FHWA before such funds could be claimed; and

WHEREAS, the Solano Transportation Authority, pursuant to Streets and Highways Code Section 114 is authorized to enter into Cooperative Agreements for implementing the delivery of proposed improvements to State highways within the County of Solano; and

WHEREAS, various Cooperative Agreements need to be executed and Right-of-Way Certifications signed for implementing the delivery of said proposed improvements to State Highways within the County of Solano; and

WHEREAS, the Solano Transportation Authority wishes to delegate authorization to execute these agreements/documents and any amendments thereto to the Executive Director or the Acting Executive Director following Project approval by the STA Board whether through project-specific action of the Board or through approval of the STA Budget which Budget includes projects and their funding.

NOW, THEREFORE BE IT RESOLVED that the Executive Director or Acting Executive Director be authorized to execute all Master Agreements, Program Supplemental Agreements, Fund Exchange Agreements, Fund Transfer Agreements, Cooperative Agreements, Right-of-Way Certifications and any amendments thereto with or for CALTRANS or FHWA following approval by the STA Board through either project-specific action of the Board or approval of the STA Budget which Budget includes or references projects and their funding.

I HEREBY CERTIFY that the foregoing resolution was introduced and passed at a regular meeting of the Board of the Solano Transportation Authority, held on the 10th day October, 2007, by the following vote:

Ayes: 8
No's: 0
Absent: 0
Abstain: 0

Attest by: _____
Johanna Masiclat
Clerk of the Board

_____
Anthony Intintoli, Chair
Solano Transportation Authority

I, Daryl K. Halls, the Solano Transportation Authority Executive Director, do hereby certify that the above and foregoing resolution was introduced, passed, and adopted by said Authority at a regular meeting thereof held this the day of October 10, 2007.

_____
Daryl K. Halls, Executive Director
Solano Transportation Authority

ATTACHMENT L

Cooperative Agreement for Right of Way

04-SOL-80-14.3/14.4
EA: 0A535
District Agreement 04-2261

COOPERATIVE AGREEMENT

This agreement, effective on July 2, 2009, is between the State of California, acting through its Department of Transportation, referred to as CALTRANS, and:

Solano Transportation Authority, a political subdivision of the State of California, referred to as STA.

RECITALS

1. CALTRANS and STA, collectively referred to as PARTNERS, are authorized to enter into a cooperative agreement for improvements within the SHS right of way per Streets and Highways Code sections 114 and/or 130.

2. WORK completed under this agreement contributes toward the relocation of the Eastbound Interstate 80 truck inspection facility, located in Cordelia, referred to as PROJECT.

3. PARTNERS will cooperate to perform R/W.

4. This agreement is separate from and does not modify or supersede prior Cooperative Agreement No. 04-2235.

5. Prior to this agreement, STA developed the Project Report.

6. STA prepared the environmental documentation for PROJECT.

7. The estimated date for COMPLETION OF WORK is December 31, 2015.

8. PARTNERS now define in this agreement the terms and conditions under which they will accomplish WORK.

DEFINITIONS

CALTRANS STANDARDS – CALTRANS policies and procedures, including, but not limited to, the guidance provided in the *Guide to Capital Project Delivery Workplan Standards* (previously known as WBS Guide) available at http://dot.ca.gov.

CEQA – The California Environmental Quality Act (California Public Resources Code, sections 21000 et seq.) that requires State and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those significant impacts, if feasible.

COMPLETION OF WORK – All PARTNERS have met all scope, cost, and schedule commitments included in this agreement and have signed a COOPERATIVE AGREEMENT CLOSURE STATEMENT.

COOPERATIVE AGREEMENT CLOSURE STATEMENT – A document signed by PARTNERS that verifies the completion of all scope, cost, and schedule commitments included in this agreement.

FHWA – Federal Highway Administration.

FHWA STANDARDS – FHWA regulations, policies and procedures, including, but not limited to, the guidance provided at http://www.fhwa.dot.gov/programs.html.

FUNDING PARTNER – A partner who commits a defined dollar amount to WORK.

FUNDING SUMMARY - The table in which PARTNERS designate funding sources, types of funds, and the project components in which the funds are to be spent. Funds listed on the FUNDING SUMMARY are "not-to-exceed" amounts for each FUNDING PARTNER.

HM-1 – Hazardous material (including, but not limited to, hazardous waste) that requires removal and disposal pursuant to federal or state law whether it is disturbed by PROJECT or not.

HM-2 – Hazardous material (including, but not limited to, hazardous waste) that may require removal and disposal pursuant to federal or state law only if disturbed by PROJECT.

HM MANAGEMENT ACTIVITIES – Management activities related to either HM-1 or HM-2 including, without limitation, any necessary manifest requirements and disposal facility designations.

IMPLEMENTING AGENCY – The partner responsible for managing the scope, cost, and schedule of a project component to ensure the completion of that component.

IQA – Independent Quality Assurance – Ensuring that IMPLEMENTING AGENCY'S quality assurance activities result in WORK being developed in accordance with the applicable standards and within an established Quality Management Plan. IQA does not include any work necessary to actually develop or deliver WORK or any validation by verifying or rechecking work performed by another partner.

NEPA – The National Environmental Policy Act of 1969 that establishes a national policy for the environment and a process to disclose the adverse impacts of projects with a federal nexus.

PARTNERS – The term that collectively references all of the signatory agencies to this agreement. This term only describes the relationship between these agencies to work together to achieve a mutually beneficial goal. It is not used in the traditional legal sense in which one partner's individual actions legally bind the other partners.

PROJECT MANAGEMENT PLAN – A group of documents used to guide a project's execution and control throughout the project's lifecycle.

R/W (Right of Way) – The project component that includes the activities required to deliver the right of way for PROJECT.

SAFETEA-LU – The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, signed into federal law on August 10, 2005.

SCOPE SUMMARY – The table in which PARTNERS designate their commitment to specific scope activities within each project component as outlined by the *Guide to Capital Project Delivery Workplan Standards* (previously known as WBS Guide) available at http://dot.ca.gov.

SHS – State Highway System.

SPONSOR(S) – The partner that accepts the obligation to secure financial resources to fully fund WORK. This includes any additional funds beyond those committed in this agreement necessary to complete the full scope of WORK defined in this agreement or settle claims.

WORK – All scope and cost commitments included in this agreement.

RESPONSIBILITIES

9. STA is SPONSOR for all WORK.

10. STA is the only FUNDING PARTNER for this agreement. STA's funding commitment is defined in the FUNDING SUMMARY.

11. CALTRANS is IMPLEMENTING AGENCY for R/W.

SCOPE

Scope: General

12. All WORK will be performed in accordance with Federal and State laws, and regulations.

All WORK will be performed in accordance with CALTRANS STANDARDS and FHWA STANDARDS.

CALTRANS retains the right to reject noncompliant WORK, protect public safety, preserve property rights, and ensure that all WORK is in the best interest of the SHS.

13. IMPLEMENTING AGENCY for a project component will provide a Quality Management Plan for that component as part of the PROJECT MANAGEMENT PLAN.

14. CALTRANS will provide IQA for the portions of WORK within existing and proposed SHS right of way.

15. STA may provide IQA for the portions of WORK outside existing and proposed SHS right of way.

16. PARTNERS may, at their own expense, have a representative observe any scope, cost, or schedule commitments performed by another partner. Observation does not constitute authority over those commitments.

17. Each partner will ensure that all of their personnel participating in WORK are appropriately qualified to perform the tasks assigned to them.

18. PARTNERS will invite each other to participate in the selection and retention of any consultants who participate in WORK.

19. PARTNERS will conform to sections 1720 – 1815 of the California Labor Code and all applicable regulations and coverage determinations issued by the Director of Industrial Relations if PROJECT work is done under contract (not completed by a partner's own employees) and is governed by the Labor Code's definition of a "public work" (section 1720(a)(1)).

PARTNERS will include wage requirements in all contracts for "public work" and will require their contractors and consultants to include prevailing wage requirements in all agreement-funded subcontracts for "public work".

20. IMPLEMENTING AGENCY for each project component included in this agreement will be available to help resolve WORK-related problems generated by that component for the entire duration of PROJECT.

21. CALTRANS will issue, upon proper application, at no cost to STA, the encroachment permits required for WORK within SHS R/W.

Any third party agent (including but not limited to contractors, consultants, and utility owners) must obtain an encroachment permit issued in their name, prior to performing any WORK within the SHS R/W. All third party agents will be assessed an encroachment permit fee.

22. If unanticipated cultural, archaeological, paleontological, or other protected resources are discovered during WORK, all work in that area will stop until a qualified professional can evaluate the nature and significance of the discovery and a plan is approved for its removal or protection.

23. All administrative draft and administrative final reports, studies, materials, and documentation relied upon, produced, created, or utilized for PROJECT will be held in confidence, and where applicable, Government Code section 6254.5(e) shall protect the confidentiality of such documents in the event said documents are shared between the PARTNERS.

    PARTNERS will not distribute, release, or share said documents with anyone other than employees, agents, and consultants who require access to complete WORK without the written consent of the PARTNER authorized to release them, unless required or authorized to do so by law.

24. If any partner receives a public records request, pertaining to WORK under this agreement, that partner will notify PARTNERS within five (5) working days of receipt and make PARTNERS aware of any transferred public documents.

25. If HM-1 or HM-2 is found during WORK, IMPLEMENTING AGENCY for the project component during which it is found will immediately notify PARTNERS.

26. CALTRANS, independent of PROJECT, is responsible for any HM-1 found within existing SHS right of way. CALTRANS will undertake HM-1 MANAGEMENT ACTIVITIES with minimum impact to PROJECT schedule.

27. If HM-1 is found outside existing SHS right of way, responsibility for such HM-1 rests with the owner(s) of the parcel(s) on which the HM-1 is found. STA, in concert with the local agency having land use jurisdiction over the parcel(s), will ensure that HM-1 MANAGEMENT ACTIVITIES are undertaken with minimum impact to PROJECT schedule.

28. If HM-2 is found within PROJECT limits, the public agency responsible for the advertisement, award, and administration (AAA) of the PROJECT construction contract will be responsible for HM-2 MANAGEMENT ACTIVITIES.

29. CALTRANS' acquisition or acceptance of title to any property on which any HM-1 or HM-2 is found will proceed in accordance with CALTRANS' policy on such acquisition.

30. PARTNERS will comply with all of the commitments and conditions set forth in the environmental documentation, environmental permits, approvals, and applicable agreements as those commitments and conditions apply to each partner's responsibilities in this agreement.

31. IMPLEMENTING AGENCY for each project component will furnish PARTNERS with written monthly progress reports during the implementation of WORK in that component.

32. Upon COMPLETION OF WORK, ownership and title to all materials and equipment constructed or installed as part of WORK within SHS right of way become the property of CALTRANS.

33. IMPLEMENTING AGENCY for a project component may accept, reject, compromise, settle, or litigate claims of any non-agreement parties hired to do WORK in that component.

34. PARTNERS will confer on any claim that may affect WORK or PARTNERS' liability or responsibility under this agreement in order to retain resolution possibilities for potential future claims. No partner shall prejudice the rights of another partner until after PARTNERS confer on claim.

35. PARTNERS will maintain and make available to each other all WORK-related documents, including financial data during the term of this agreement (with the exception of source documentation) and retain those records for four (4) years from the date of termination or COMPLETION OF WORK, or three (3) years from the date of final federal voucher, whichever is later. Source documentation, including invoices and time-sheets will be maintained for a period no longer than five (5) years from the date of the original expenditure.

36. PARTNERS have the right to audit each other in accordance with generally accepted governmental audit standards.

    CALTRANS, the State auditor, FHWA, and STA will have access to all WORK-related records of each partner for audit, examination, excerpt, or transaction.

    The examination of any records will take place in the offices and locations where said records are generated and/or stored and will be accomplished during reasonable hours of operation.

    The audited partner will review the preliminary audit, findings, and recommendations, and provide written comments within 60 calendar days of receipt.

Any audit dispute not resolved by PARTNERS is subject to dispute resolution. Any costs arising out of the dispute resolution process will be paid within 30 calendar days of the final audit or dispute resolution findings.

37. PARTNERS consent to service of process as permitted by law.

38. PARTNERS will not incur costs beyond the funding commitments in this agreement. If IMPLEMENTING AGENCY anticipates that funding for WORK will be insufficient to complete WORK, SPONSOR(S) will seek out additional funds and PARTNERS will amend this agreement.

39. If WORK stops for any reason, IMPLEMENTING AGENCY will place all facilities impacted by WORK in a safe and operable condition acceptable to CALTRANS.

40. If WORK stops for any reason, PARTNERS are still obligated to implement all applicable commitments and conditions included in the PROJECT environmental documentation, permits, agreements, or approvals that are in effect at the time that WORK stops, as they apply to each partner's responsibilities in this agreement, in order to keep PROJECT in environmental compliance until WORK resumes.

41. Each partner accepts responsibility to complete the activities that they selected on the SCOPE SUMMARY. Activities marked with "N/A" on the SCOPE SUMMARY are not included in the scope of this agreement.

Scope: Right of Way (R/W)

42. STA will provide a land surveyor licensed in the State of California to be responsible for surveying and right of way engineering. All survey and right of way engineering documents shall bear the professional seal, certificate number, registration classification, expiration date of certificate, and signature of the responsible surveyor.

43. STA will make all necessary arrangements with utility owners for the timely accommodation, protection, relocation, or removal of any existing utility facilities that conflict with construction of PROJECT or that violate CALTRANS' encroachment policy.

44. STA will provide to CALTRANS for review, comment and approval, verification of its arrangements for the protection, relocation, or removal of all conflicting facilities and that such work will be completed prior to construction contract award or as otherwise stated in the PS&E package. This verification must include references to all required SHS encroachment permits.

45. CALTRANS will perform all R/W activities except utility relocation and R/W Engineering.

46. CALTRANS will provide a Right of Way Certification prior to PROJECT advertisement.

47. The California Transportation Commission will hear any Resolutions of Necessity.

COST

Cost: General

48. SPONSOR(S) will secure funds for all WORK including any additional funds beyond the FUNDING PARTNERS' existing commitments in this agreement. Any change to the funding commitments outlined in this agreement requires an amendment to this agreement.

49. The cost of any awards, judgments, or settlements generated by WORK is a WORK cost.

50. CALTRANS, independent of PROJECT, will pay all costs for HM MANAGEMENT ACTIVITIES related to HM-1 found within existing SHS right of way.

51. Independent of PROJECT, all costs for HM MANAGEMENT ACTIVITIES related to any HM-1 found outside of existing SHS right of way will be the responsibility of the owner(s) of the parcel(s) where the HM-1 is located.

52. HM MANAGEMENT ACTIVITIES costs related to HM-2 are a PROJECT CONSTRUCTION cost.

53. Independent of WORK costs, CALTRANS will fund the cost of its own IQA for WORK done within existing or proposed future SHS right of way.

54. Independent of WORK costs, STA will fund the cost of its own IQA for WORK done outside existing or proposed future SHS right of way.

55. Fines, interest, or penalties levied against any partner will be paid, independent of WORK costs, by the partner whose actions or lack of action caused the levy. That partner will indemnify and defend all other partners.

56. The cost to place PROJECT right of way in a safe and operable condition and meet all environmental commitments is a WORK cost.

57. Because IMPLEMENTING AGENCY is responsible for managing the scope, cost, and schedule of a project component, if there are insufficient funds available in this agreement to place the right of way in a safe and operable condition, the appropriate

IMPLEMENTING AGENCY accepts responsibility to fund these activities until such time as PARTNERS amend this agreement

That IMPLEMENTING AGENCY may request reimbursement for these costs during the amendment process.

58. If there are insufficient funds in this agreement to implement applicable commitments and conditions included in the PROJECT environmental documentation, permits, agreements, and/or approvals that are in effect at a time that WORK stops, the partner implementing the commitments or conditions accepts responsibility to fund these activities until such time are PARTNERS amend this agreement

That partner may request reimbursement for these costs during the amendment process.

59. PARTNERS will pay invoices within 45 calendar days of receipt of invoice.

60. FUNDING PARTNERS accept responsibility to provide the funds identified on the FUNDING SUMMARY.

61. SPONSOR(S) accepts responsibility to ensure full funding for the identified scope of work.

62. All funds identified in the FUNDING SUMMARY will be exhausted proportionately for each project component

Cost: Right of Way (R/W) Support

63. The cost to positively identify and locate, protect, relocate, or remove any utility facilities whether inside or outside SHS right of way will be determined in accordance with federal and California laws and regulations, and CALTRANS' policies, procedures, standards, practices, and applicable agreements including, but not limited to, Freeway Master Contracts.

64. The following partners will submit invoices for R/W Support:
    - CALTRANS will invoice STA

65. PARTNERS will exchange funds for actual costs.

CALTRANS will invoice STA for a $50,000 initial deposit upon execution of this agreement. This deposit represents two (2) months' estimated support costs.

Thereafter, CALTRANS will submit to STA monthly invoices for estimated monthly costs based on the prior month's actual expenditures.

After PARTNERS agree that all Scope activities are complete, CALTRANS will submit a final accounting for all WORK costs. Based on the final accounting, PARTNERS will refund or invoice as necessary in order to satisfy the obligation of this agreement.

Cost: Right of Way (R/W) Capital

66. The following partners will submit invoices for R/W Capital:
    - CALTRANS will invoice STA

67. PARTNERS will exchange funds for actual costs.

    CALTRANS will invoice STA for a $2,107,000 initial deposit upon execution of this agreement. This deposit represents the total estimated capital costs.

    After PARTNERS agree that all Scope activities are complete, CALTRANS will submit a final accounting for all WORK costs. Based on the final accounting, PARTNERS will refund or invoice as necessary in order to satisfy the obligation of this agreement.

SCHEDULE

68. PARTNERS will manage the schedule for WORK through the work plan included in the PROJECT MANAGEMENT PLAN.

GENERAL CONDITIONS

69. This agreement will be understood in accordance with and governed by the Constitution and laws of the State of California. This agreement will be enforceable in the State of California. Any legal action arising from this agreement will be filed and maintained in the Superior Court of the county in which the CALTRANS district office signatory to this agreement resides.

70. All obligations of CALTRANS under the terms of this agreement are subject to the appropriation of resources by the Legislature, the State Budget Act authority, and the allocation of funds by the California Transportation Commission.

71. Any PARTNER who performs IQA does so for its own benefit, further, that PARTNER cannot be assigned liability due to its IQA activities.

72. Neither STA nor any officer or employee thereof is responsible for any injury, damage or liability occurring by reason of anything done or omitted to be done by CALTRANS under or in connection with any work, authority, or jurisdiction conferred upon CALTRANS under this agreement.

    It is understood and agreed that CALTRANS will fully defend, indemnify, and save harmless STA and all of its officers and employees from all claims, suits, or actions of

every name, kind, and description brought forth under, but not limited to, tortious, contractual, inverse condemnation, or other theories or assertions of liability occurring by reason of anything done or omitted to be done by CALTRANS under this agreement.

73. Neither CALTRANS nor any officer or employee thereof is responsible for any injury, damage, or liability occurring by reason of anything done or omitted to be done by STA under or in connection with any work, authority, or jurisdiction conferred upon STA under this agreement.

It is understood and agreed that STA will fully defend, indemnify, and save harmless CALTRANS and all of its officers and employees from all claims, suits, or actions of every name, kind, and description brought forth under, but not limited to, tortious, contractual, inverse condemnation, or other theories or assertions of liability occurring by reason of anything done or omitted to be done by STA under this agreement.

74. This agreement is not intended to create a third party beneficiary or define duties, obligations, or rights in parties not signatory to this agreement. This agreement is not intended to affect the legal liability of PARTNERS by imposing any standard of care for completing WORK different from the standards imposed by law.

75. PARTNERS will not assign or attempt to assign agreement obligations to parties not signatory to this agreement.

76. Any ambiguity contained in this agreement will not be interpreted against PARTNERS. PARTNERS waive the provisions of California Civil Code section 1654.

77. A waiver of a partner's performance under this agreement will not constitute a continuous waiver of any other provision. An amendment made to any article or section of this agreement does not constitute an amendment to or negate all other articles or sections of this agreement.

78. A delay or omission to exercise a right or power due to a default does not negate the use of that right or power in the future when deemed necessary.

79. If any partner defaults in their agreement obligations, the non-defaulting partner(s) will request in writing that the default be remedied within 30 calendar days. If the defaulting partner fails to do so, the non-defaulting partner(s) may initiate dispute resolution.

80. PARTNERS will first attempt to resolve agreement disputes at the PROJECT team level. If they cannot resolve the dispute themselves, the CALTRANS district director and the executive officer of STA will attempt to negotiate a resolution. If no resolution is reached, PARTNERS' legal counsel will initiate mediation. PARTNERS agree to participate in mediation in good faith and will share equally in its costs.

Neither the dispute nor the mediation process relieves PARTNERS from full and timely performance of WORK in accordance with the terms of this agreement. However, if any

partner stops WORK, the other partner(s) may seek equitable relief to ensure that WORK continues.

Except for equitable relief, no partner may file a civil complaint until after mediation, or 45 calendar days after filing the written mediation request, whichever occurs first.

Any civil complaints will be filed in the Superior Court of the county in which the CALTRANS district office signatory to this agreement resides. The prevailing partner will be entitled to an award of all costs, fees, and expenses, including reasonable attorney fees as a result of litigating a dispute under this agreement or to enforce the provisions of this article including equitable relief.

81. PARTNERS maintain the ability to pursue alternative or additional dispute remedies if a previously selected remedy does not achieve resolution.

82. If any provisions in this agreement are deemed to be, or are in fact, illegal, inoperative, or unenforceable, those provisions do not render any or all other agreement provisions invalid, inoperative, or unenforceable, and those provisions will be automatically severed from this agreement.

83. This agreement is intended to be PARTNERS' final expression and supersedes all prior oral understanding or writings pertaining to WORK.

84. If during performance of WORK additional activities or environmental documentation is necessary to keep PROJECT in environmental compliance, PARTNERS will amend this agreement to include completion of those additional tasks.

85. PARTNERS will execute a formal written amendment if there are any changes to the commitments made in this agreement.

86. This agreement will terminate upon COMPLETION OF WORK or upon 30 calendar days' written notification to terminate and acceptance between PARTNERS, whichever occurs first.

However, all indemnification, document retention, audit, claims, environmental commitment, legal challenge, and ownership articles will remain in effect until terminated or modified in writing by mutual agreement.

87. The following documents are attached to, and made an express part of this agreement: SCOPE SUMMARY, FUNDING SUMMARY.

88. Signatories may execute this agreement through individual signature pages provided that each signature is an original. This agreement is not fully executed until all original signatures are attached.

CONTACT INFORMATION

The information provided below indicates the primary contact data for each partner to this agreement. PARTNERS will notify each other in writing of any personnel or location changes. These changes do not require an amendment to this agreement.

The primary agreement contact person for CALTRANS is:
Nicolas Endrawos, Project Manager
111 Grand Avenue
Oakland, California 94612
Office Phone: (510) 286-5123
Mobile Phone: (510) 715-8983
Email: nicolas_endrawos@dot.ca.gov

The primary agreement contact person for STA is:
Janet Adams, Director of Projects
One Harbour Center, Suite 130
Suisun City, California 94585
Office Phone: (707) 424-6075
Email: jadams@sta-snci.com

SIGNATURES

PARTNERS declare that:

1. Each partner is an authorized legal entity under California state law.
2. Each partner has the authority to enter into this agreement.
3. The people signing this agreement have the authority to do so on behalf of their public agencies.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

By: _____
Helena (Lenka) Culik-Caro
Deputy District Director - Design

CERTIFIED AS TO FUNDS:

By: _____
Cynthia Stratton
District Budget Manager

SOLANO TRANSPORTATION
AUTHORITY

By: _____
Daryl Halls
Executive Director

Attest: _____
Johanna Masiclat
Clerk of the Board

APPROVED AS TO FORM AND
PROCEDURE

By: _____
Charles Lamoree
STA Legal Counsel

SCOPE SUMMARY

4	5	6	7	8	Description	CALTRANS	STA	N/A
4					**Right of Way (R/W) - 195, 200, 220, 225, 245, 300**	X	X	
	100				Project Management	X		
	195				Right of Way Property Management and Excess Land	X		
	200				Utility Relocation		X	
	220				Right of Way Engineering		X	
	225				Obtain Right of Way Interests for Project Right of Way Certification	X		
	245				Post Right of Way Certification Work	X		
	300				Final Right of Way Engineering		X	

FUNDING SUMMARY

Funding Source	Funding Partner	Fund Type	R/W Capital	R/W Support	Subtotal Support	Subtotal Capital	Subtotal Funds Type
LOCAL	STA	Local (Bridgetoll)	$2,107,000	$400,000	$400,000	$2,107,000	$2,507,000
		Subtotals by Component	$2,107,000	$400,000	$400,000	$2,107,000	$2,507,000

SPENDING SUMMARY

Right of Way Capital

Description	Work Partner assigned by Scope Summary	LOCAL (Bridgetoll)
Right of Way (RW) Capital	CALTRANS	$2,107,000

Right of Way Support

Description	Work Partner assigned by Scope Summary	LOCAL (Bridgetoll) Funding Limit
Right of Way (R/W) – 100, 195, 225, 245	CALTRANS	$400,000

SOLANO TRANSPORTATION AUTHORITY
RESOLUTION No. 2007-10

RESOLUTION OF THE SOLANO TRANSPORTATION AUTHORITY AUTHORIZING THE EXECUTIVE DIRECTOR TO SIGN AGREEMENTS/DOCUMENTS WITH OR FOR THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) AND THE FEDERAL HIGHWAY ADMINISTRATION TO RECEIVE FUNDING AND TO DELIVER TRANSPORTATION PROJECTS

WHEREAS, the Solano Transportation Authority is eligible to receive Federal and/or State funding for certain transportation projects, through the California Department of Transportation (CALTRANS) and the Federal Highway Administration (FHWA); and

WHEREAS, Master Agreements, Program Supplemental Agreements, Fund Exchange Agreements, Fund Transfer Agreements, need to be executed with CALTRANS or FHWA before such funds could be claimed; and

WHEREAS, the Solano Transportation Authority, pursuant to Streets and Highways Code Section 114 is authorized to enter into Cooperative Agreements for implementing the delivery of proposed improvements to State highways within the County of Solano; and

WHEREAS, various Cooperative Agreements need to be executed and Right-of-Way Certifications signed for implementing the delivery of said proposed improvements to State Highways within the County of Solano; and

WHEREAS, the Solano Transportation Authority wishes to delegate authorization to execute these agreements/documents and any amendments thereto to the Executive Director or the Acting Executive Director following Project approval by the STA Board whether through project-specific action of the Board or through approval of the STA Budget which Budget includes projects and their funding.

NOW, THEREFORE BE IT RESOLVED that the Executive Director or Acting Executive Director be authorized to execute all Master Agreements, Program Supplemental Agreements, Fund Exchange Agreements, Fund Transfer Agreements, Cooperative Agreements, Right-of-Way Certifications and any amendments thereto with or for CALTRANS or FHWA following approval by the STA Board through either project-specific action of the Board or approval of the STA Budget which Budget includes or references projects and their funding.

I HEREBY CERTIFY that the foregoing resolution was introduced and passed at a regular meeting of the Board of the Solano Transportation Authority, held on the 10th day October, 2007, by the following vote:

Ayes: 8
No's: 0
Absent: 0
Abstain: 0

Attest by: _____
Johanna Masiclat
Clerk of the Board

_____
Anthony Intintoli, Chair
Solano Transportation Authority

I, Daryl K. Halls, the Solano Transportation Authority Executive Director, do hereby certify that the above and foregoing resolution was introduced, passed, and adopted by said Authority at a regular meeting thereof held this the day of October 10, 2007.

_____
Daryl K. Halls, Executive Director
Solano Transportation Authority

Charlie Knox
Community Development/Public Works Director
City of Benicia
250 East L Street
Benicia, CA 94510-3239

Erin Beavers, Community Development Director
Gene Cortright, Public Works Director
City of Fairfield
1000 Webster Street
Fairfield, CA 94533-4883

Birgetta Corsello
Director of Resource Management
675 Texas Street, Suite 5500
Fairfield, CA 94533-6342

Maureen Carson, Community Development Director
Rod Moresco, Public Works Director
City of Vacaville
650 Merchant Street
Vacaville, CA 95688-6908

Dave Dowswell, Community Development Director
Royce Cunningham, City Engineer
City of Dixon
600 East A Street
Dixon, CA. 95620-3619

Emi Theriaut, Community Development Director
Morrie Barr, Public Works Director
City of Rio Vista
One Main Street
Rio Vista, CA 94571-1842

April Wooden, Community Development Director
Daniel Kasperson, Public Works Director
City of Suisun City
701 Civic Center Boulevard
Suisun City, CA 94585-2717

Gary Leach, Public Works Director
Craig Whittom, Assistant City Manager / Community Development
City of Vallejo
555 Santa Clara Street
Vallejo, CA 94590-5922

ATTACHMENT M

Pavement Strategy Checklist

PAVEMENT STRATEGY CHECKLIST (Rev. 6/25/09)

Date: September 23, 2009

Project description and project elements: Cordelia Eastbound Inspection Facility (Class B). The project will include the following improvements: a single lane exit ramp from I-80 widening (essentially in the existing location) to two lanes and then to four lanes to accommodate truck queuing; a new single-lane on ramp to eastbound I-80 and new single-lane on ramp to eastbound SR12E, and new Eastbound I-80 connector and a Eastbound SR12E crossing over the proposed Truck Scale on ramp to I-80.

EA: 04-264-0A5350 Project Manager: Nicolas Endrawos

Co/Rte: SOL-80 Office:

Project Engineer: Michael Lohman Initial ML Program: HA11

Design Senior: Roni Boukhalil Initial RB PM Limits: I-80 14.0-15.7 SR12 L1.8-L2.0

Materials Engineer: BK Signature Brian Kuehne

Maintenance Engineering: KEITH YONG Signature Keith Yong

This project is at the following phase (please check one):

☐ PID (PSSR, etc.) ☒ PR ☐ PS&E ☐ OTHER

Describe existing structural section (e.g., shoulder, traveled way). Show limits if different sections are within the project:

30 mm OGAC, 225 mm AC (Type A), 255 mm Class A CTB and 255 mm Class 4 AS

What pavement types/structural sections does Materials propose for each segment (shoulders and traveled way)?

A. EB I-80 off ramp to CVEF - structural section JPCP 1.15, LCB 0.50, AS(4) 0.70

B. CVEF to EB I-80 on ramp - structural section JPCP 1.10, LCB 0.50, AS(4) 0.70

C. EB I-80 to SR12E Connector - structural section RHMA 0.20, HMA-A 0.55, LCB 0.70, AS(4) 1.65

D. CVEF to SR12E on ramp - structural section JPCP 1.00, LCB 0.50, AS(4) 0.70

E. EB I-80 Mainline - structural section RHMA 0.20, HMA-A 0.55, LCB 0.75, AS(4) 1.80

F. CVEF Site - structural section: JPCP 1.00, LCB 0.50, AS(4) 0.70

AM (1)

Pavement is involved in:

☐ Entire project OR ☒ Part of the project

Assumptions (Is future widening in Regional Transportation Plan? (Yes) or no?): Please provide information for all of the following items that apply to this project.

	Yes	No	Question
1.	☐	☒	Are you implementing an innovative strategy (e.g., cold foam Hot-Mix Asphalt (HMA)), pre-cast concrete pavement, continuously reinforced pavement, etc)? If so, which are you implementing and why? If not, why not?
2.	☐	☒	Has Rapid Rehab strategy been considered (e.g., weekend closures and lane replacements)? Explain: Project consists of new ramps and Truck Inspection Facility, all off the mainline.
3.	☒	☐	Are you using Rubberized Hot-Mix Asphalt (RHMA) in this project? If not, justify:
4.	☒	☐	Was Life Cycle Analysis performed? Provide Life Cycle Analysis and results.
5.	☐	☒	Does existing pavement have a settlement problem? Explain:
6.	☒	☐	a) Is this project (or part of project) maintaining the grade profile? b) If not, explain how the profile change affects the pavement strategy choice (cut v. fill):
7.	☐	☒	Will there be a new barrier?
8.	☒	☐	Is the proposed structural section on cut or fill or both? Provide limits of both, if applicable. The EB I-80 connector to SR12 and the off ramp (east of the existing scales) and the CVEF are fill. All other ramps are in cut.
9.	☐	☒	Are highly expansive basement soils present?

	Yes	No	Question
10.	☒	☐	Are as-builts (including structural section information regarding edge drains, under drains, lime treatment, permeable blanket, etc.) available?
	☐	☐	If no, did you check map files and online?
			If yes, existing structural section was based on (check one): ☒ as-built ☐ actual boring
11.	☐	☒	Do the project limits have problems with groundwater (e.g., high water table, flow requirements, etc.)? If yes, explain:
12.	☐	☒	Has the availability of pavement materials (i.e., long haul distances from plants) been considered?
			If yes, how does material availability affect pavement type selection?
13.	☐	☒	Will the existing pavement be rehabilitated?
	☐	☐	What are the age and condition of the existing adjacent lanes? Explain: Existing outside lane/shoulder were constructed as a part of the I-80 HOV lane project (EA 04-0A5314) in 2008/9. Pavement rehab of remainder of pavement was performed in 2006.
14.	☐	☐	What is the type of pavement/structural section (corridor pavement type/structural section continuity) on upstream/downstream roadway? Explain if several: 30mm OGAC, 225mm AC (Type A), 255mm Class A CTB and 255 mm Class 4 AS.
15.	☐	☒	Is TMP data (lane closure charts) available and was it considered? This is PA/ED effort. TMP will be prepared during PS&E.
	☐	☒	Will there be nighttime paving? If so, provide lane closure hours: _____.
16.	☐	☒	Was field Maintenance input considered?
17.	☒	☐	Were climate conditions (extreme temperature, rainfall, etc.) considered?
			If so, which ones do you anticipate affecting the pavement job? None
18.			Which stage construction requirements (matching adjacent sections, temporary paving, etc.) were considered? Project is in PA/ED phase so detailed construction staging concept has not been developed. Project is almost exclusively on new alignment, so staging issues should be relatively minor.

	Yes	No	Question
19.	☒	☐	Is this a large-scale project? Explain all quantity take-off: Quantities were calculated based on area.
20.	☒	☐	Is there Open-Graded Hot-Mix Asphalt (OGHMA) on the existing pavement?
21.	☐	☒	Was environmental impact considered? Explain:
22.			What is the proposed pavement design life? 40 year design CVEF on ramp to the EB I-80 on ramp. 20 year design on remainder of improvements.
23.			What is the final lane line configuration? Single lane off ramp widens to four lanes at CVEF; single lane on ramps from CVEF to EB I-80 and EB SR12; and two lane connector from EB I-80 to EB SR12.
24.	☐	☒	Are there vertical clearance issues? If yes, explain:
25.			What is the traffic index? Varies. I-80 truck scales off ramp: 15.5 (20 year), 17.5 (40 year); I-80 truck scales on ramp to I-80: 15.5, 17.0; I-80 truck scales on ramp to SR12: 12.5, 14.5; I-80 to SR12E connector ramp: 13.0, 14.5; I-80 mainline: 15.5, 17.5.
26.	☐	☒	Are there existing retrofit edge drains?
27.	☒	☐	Will shoulders be used as detours?
28.	☐	☒	Is there settlement at bridge approaches?
	☐	☒	Are bridge approach slabs being replaced? Does such replacement include shoulders? Consulted with structures maintenance representative on _____.
29.	☒	☐	Is there a minimum standard (2% or 1.5%) cross-slope? If not standard, provide date of design exception approval: _____
30.			Provide the pavement condition report. N/A (new facility)
31	☐	☒	Other factors? Explain:

ATTACHMENT N

Oversight Agreement for I-80/I-680/SR 12 Interchange

FEDERAL HIGHWAY ADMINISTRATION
Major Project Oversight Agreement for
I-80/I-680/SR-12 Interchange
Fed Project No. / EA: 04-609101
June 30, 2008

On September 4, 2007, a new Federal Highway Administration (FHWA) and California Department of Transportation (Caltrans) Stewardship and Oversight (Stewardship/Oversight) Agreement was signed. Under the new Stewardship/Oversight Agreement, the FHWA and Caltrans will utilize a risk-based approach to project-level management that no longer uses the $1,000,000 threshold on the interstate to determine FHWA stewardship and oversight. This risk-based approach to project oversight will be conducted in two steps: 1) selecting the projects that traditionally pose a risk to the health of the Federal-aid Highway Program (High Profile projects) and 2) within the High Profile projects, further delegating approval authorities in activities that pose a low risk to the individual projects.

A Major Project is defined as having a total project cost of greater than $500 million. Under the Stewardship/Oversight Agreement, all Major Projects are considered "High Profile" Projects. Each "High Profile" project will have an Oversight Agreement which includes a Project Responsibilities List developed to define which approval actions are to be handled by FHWA or Caltrans/Local Agency. The I-80/I-680/SR-12 Interchange project has been determined to be a Major Project with an estimated total project cost of approximately $1.5 Billion (2007$) (NOTE: Costs are currently being updated); therefore, this Oversight Agreement along with a Project Responsibilities List which is attached is being developed. Other areas of Federal involvement and/or approval actions for this project are summarized in this agreement, i.e., attending meetings, design reviews, conducting project inspections, etc. The I-80/I-680/SR-12 Interchange project is in Project Approval/Environmental Document (PA/ED) and will be developed in phases; therefore, this agreement will need to be revisited as each phase is added and moves towards construction.

Furthermore, this agreement covers those projects which may be split under a separate project number but falls in the footprint/purview of the I-80/I-680/SR-12 Interchange project. This includes current and future projects which may evolve from or be separated out of this major project. Currently, there are two such projects: I-80 EB Truck Scales Relocation (EA: 04-0A535) which received Proposition 1B and Bridge Toll funds allowing it to progress faster than the major project, and the I-80 Ramp Metering project (EA: 04-0A532). A separate Financial Plan has been completed and approved by the California Transportation Commission (CTC), Caltrans and STA for these two projects as part of the Proposition 1B Corridor Mobility Improvement Account (CMIA) and the Trade Corridor Improvement Fund (TCIF) programs. The already approved Financial Plans for these two projects will be used as an equivalent Financial Plan that may be required by this agreement and therefore will require a new Financial Plan to be developed.

FHWA Project Personnel and Resources for Oversight:
A FHWA Project Oversight Manager (POM) has been assigned for the oversight of this project. The POM will be responsible for all project actions and approvals, with the guidance of the FHWA Division Office management and the assistance of other FHWA personnel. Division Office specialists will be available to the POM for project reviews and technical assistance in order to provide expeditious reviews and approvals of project actions. Oversight will be conducted through project inspections, review of project data and various other means. The United States Department of Transportation (US DOT) Office of Inspector General may also perform audits of project costs and other financial data as required.

Reporting Requirements:
The FHWA POM will be responsible for providing periodic updates of the costs and schedules of the project to FHWA Headquarters and the US DOT – Office of the Secretary. Briefings will also be provided to assist various agencies with tracking information. The I-80/I-680/SR-12 Interchange Project Management team will provide the POM with quarterly updates at a minimum (using all available information) with respect to project scope, cost, and scheduling to assist with this task. Along with the quarterly updates, the FHWA POM will attend regular meetings to discuss the project's progress including any unforeseen circumstances.

PROJECT DESCRIPTION
This project consists of improvements to freeway-to-freeway connections between I-80 and I-680, I-80 and SR-12 West, and I-80 and SR-12 East in Fairfield, Solano County. The project also includes improvements to several interchanges providing access to local roadways and land use and truck scale facilities along I-80. The total project cost is estimated to be $1.5 Billion (2007$) (NOTE: Costs are currently being updated).

PROJECT-SPECIFIC REQUIREMENTS
Oversight activities specific to this project are detailed in Attachment A. Items not addressed by the Project Responsibilities List that pertain to this project are discussed below.

Since this project has not yet completed PA/ED, the approval actions to be taken by FHWA, as indicated in Attachment A under Right-of-Way and Construction, may be delegated to Caltrans when the project has advanced enough to more accurately determine low-risk activities in later phases. Should a decision be made after NEPA but prior to construction that significantly changes the project's risks, i.e., a change to design-sequencing or design-build, another evaluation of FHWA approvals and involvement may be necessary.

Planning:
FHWA has ensured that a portion of Phase 1 ($491-523M) of the I-80/I-680/SR12 Project is included in a conforming Transportation Improvement Plan. The plan will be adjusted to accommodate the Phase 1 project estimate as more information becomes available. As subsequent project phases come online, the FHWA will ensure that they are included in the Transportation Improvement Plan.

Environment:
Caltrans has assumed responsibility for the NEPA process under Section 6004 and 6005 Memorandum of Understandings. The FHWA will reassume responsibility should any of the applicable agreements be terminated or expire.

Design:
The FHWA will provide a "Determination of Engineering and Operations Acceptability" for this project after reviewing a completed Concept Acceptance Report which provides all necessary documentation for FHWA's decision. For the New/Modified Interstate Access Control Change – Final Approval, Caltrans must provide FHWA with proof of NEPA completion. Other areas of design where FHWA approval actions are needed may be found in Attachment A.

Right of Way:
Since this project has not yet completed the NEPA phase, the approval actions to be taken by FHWA, as indicated in Attachment A under Right-of-Way and Construction, may be delegated to Caltrans when the project has advanced enough to more accurately determine low-risk activities in later phases.

Construction:
Due to the magnitude of the I-80/I-680/SR 12 Interchange project, it will be delivered in phases and each phase will consist of one or more construction packages. Currently, Construction Package 1 of Phase 1 of this project is estimated to begin construction in 2012. The level of construction oversight will vary depending upon the complexity of the construction activities. The FHWA POM is responsible for FHWA construction oversight. This oversight may include routine inspections throughout the life of the project. If FHWA approval for Major Contract change orders is retained, it will be implemented per the Caltrans Construction Manual Procedure 5-308B (1) Federal Highway Administration Involvement Requirements – Major Contract Change Orders. However, since this project has not yet completed the NEPA phase, the approval actions to be taken by FHWA, as indicated in Attachment A under Right-of-Way and Construction, may be delegated to Caltrans when the project has advanced enough to more accurately determine low-risk activities in later phases.

Finance Plan
The initial Finance Plan will cover Phase 1 and will be submitted to FHWA as early as possible but no later than ninety days prior to authorization of funds for construction. Updates to the initial plan will be provided to the FHWA Division Office and the FHWA Major Projects Team by the annual submission date established in the Initial Finance Plan for each subsequent year until all construction is completed.

A Cost Estimate Verification Review will be conducted by a multi-agency, multi-functional team that will consist of FHWA, Caltrans, Solano County Transportation, and consultant personnel. The team will review all aspect of the cost estimate for accuracy and reasonableness and identify major cost items and estimate issues. At a minimum this would include structures, roadway elements, right-or-way, utilities, environmental mitigation, preliminary engineering, construction engineering, contract administration, contingencies, and inflation rates. The initial cost estimate review, along with the initial finance plan, will serve as a baseline in which any future project cost changes will be

measured against. The cost estimate verification review should be conducted prior to completion of the NEPA process and before construction.

Project Management Plan

A draft Project Management Plan (PMP) will be submitted to FHWA prior to finalization of the NEPA decision document. The final PMP will be due 90 days after completion of NEPA. The final PMP will be approved by the FHWA California Division, in concurrence with the FHWA Headquarters Major Projects Team. Updates to the PMP will be completed and submitted if significant changes occur to the project scope, cost, and/or schedule.

Karen A. Bobo
Sr. Transportation Engineer,
Team Leader (North)
FHWA – CA Division

Nicolas Endrawos
Regional Project Manager
Caltrans

Janet Adams
Director of Projects
Solano Transportation Authority

ATTACHMENT A

Overview

The Project Responsibility List identifies the responsible agency for project level actions. It is organized by columns listed as High Profile and Delegated Projects. Within each column, activities are listed and the appropriate Approval Authority (FHWA or Caltrans) is identified. The FHWA will maintain approval authority for activities that cannot be delegated and activities that may pose a risk to individual projects. The activities with highlighted ( ) cells under the High Profile projects column, which show FHWA, may be delegated to Caltrans if the particular activity is of low risk to the project or the FAHP. The activities which have been agreed upon with this version of the agreement are bold.

APPROVAL ACTION	APPROVAL AUTHORITY High Profile Projects
ADMINISTRATION	
Financial Management	
All Vouchers (progress payments and final)	FHWA
Federal-aid Project Agreement and Modification—Preliminary Engineering through Construction [23 CFR 630.110]	FHWA
Funding Eligibility Determinations	**FHWA**
Obligate funds	FHWA
Section 1.9 Waiver [23 CFR Section 1.9]	FHWA
PROJECT DEVELOPMENT	
ROW	
Accept ROW certificate 3 as a condition of PS&E approval [23 CFR 635.309(c)(3)]	FHWA
Accept ROW certificates 1 and 2 as a condition of PS&E approval [23 CFR 635.309(c)(1)&(2)]	FHWA
Air space agreements / Non-highway use and occupancy not on the Interstate [23 CFR 710.405]	FHWA
Air space agreements / Non-highway use and occupancy on the Interstate [23 CFR 710.405]	FHWA
Control of Access [23 CFR 620.203(h)]	FHWA
Functional Replacement [23 CFR 710.509]	FHWA
Junkyard Control [23 CFR 751.25]	FHWA
Outdoor Advertising Sign Removal Projects [23 CFR 750.307]	FHWA
Protective Buying and Hardship Acquisition [23 CFR 710.307, 503]	FHWA
Public Interest Finding (PIF) - Disposal of federally funded ROW [23 CFR 710.403, 409]	FHWA
Railroad Agreement [23 CFR 646.216 (3)(d)]	FHWA
Relinquishment of a Highway Facility for continued highway purposes [23 CFR 620.201, 202, 203]	FHWA
Request for Credits for Early Acquisition of ROW [23 CFR 710.501]	FHWA

APPROVAL ACTION	APPROVAL AUTHORITY High Profile Projects
Request for Direct Federal Acquisition [23 CFR 710.603]	FHWA
Request for Federal Land Transfer [23 CFR 710.601]	FHWA
Request for Waivers [49 CFR 24.204(b)]	FHWA
Utility Agreement [23 CFR 645.113, 119]	Caltrans
Utility Relocation [23 CFR 645 subparts A and B]	FHWA
Withholding of Payments [23 CFR 710.203(c), 23 CFR 1.36]	FHWA
Environment	
Categorical Exclusion (CE) [23 CFR771.117 (c) and (d): SAFETEA-LU 6004; 23 CFR 771.117 all other CEs: SAFETEA-LU 6005]	Caltrans (1)
Certification of Public Hearing [23 CFR 771.111(h)(2)(vi)]	Caltrans
Draft Environmental Impact Statement (DEIS) [23 CFR 771.123; 23 CFR 771.123 (e); SAFETEA-LU 6005]	Caltrans (1)
Environmental Assessment (EA) Availability to the Public [23 CFR 771.1199(c); SAFETEA-LU 6005]	Caltrans (1)
Final Environmental Impact Statement (FEIS) [23 CFR 771.125; 23 CFR 771.125(c); SAFETEA-LU 6005]	Caltrans (1)
FEIS Legal Sufficiency [23 CFR 771.125(b); SAFETEA-LU 6005]	Caltrans (1)
Finding of No Significant Impact [23 CFR 771.121; SAFETEA-LU 6005]	Caltrans (1)
Noise Abatement [23 CFR 772]	Caltrans
Project-Level Transportation Conformity for CE processed under SAFETEA-LU 6004 MOU [40 CFR 93]	Caltrans (1)
Project-Level Transportation Conformity for CE, EA and Environmental Impact Statement (EIS) processed under SAFETEA-LU 6005 MOU [40 CFR 93]	FHWA
Record of Decision [23 CFR 771.127; SAFETEA-LU 6005]	Caltrans (1)
Re-evaluation on Approved Environmental Documents [23 CFR 771.129; SAFETEA-LU 6004 & 6005]	Caltrans (1)
Section 4(f) *De Minimis* Determination [SAFETEA-LU 6004, 6005 & 6009, 49 USC 303]	Caltrans (1)
Section 4(f) Individual [23 CFR 771.135; SAFETEA-LU 6004 & 6005]	Caltrans (1)
Section 4(f) Programmatic [23 CFR 771.135; SAFETEA-LU 6004 & 6005]	Caltrans (1)
Supplemental EIS [23 CFR 771.130; SAFETEA-LU 6005]	Caltrans (1)
Preliminary Design	
Consultant Selection [23CFR 172.5]	FHWA
Financial Plans for projects from $100M to $499M [SAFETEA-LU 1904]	Caltrans
Major ITS Project Development [23 CFR 940.11]	FHWA
Major Projects and TIFIA Loan Projects - Project Management Plan and Financial Plan Approval [SAFETEA-LU 1904]	FHWA
Minor ITS Project Development [23 CFR 940.11]	Caltrans

APPROVAL ACTION	APPROVAL AUTHORITY High Profile Projects
New/Modified Interstate Access Determination of Engineering and Operations Acceptability [Feb 1998 Federal Register, Vol#28 - (minor access changes delegated to Caltrans, see letter dated September 15, 1994]	FHWA (Caltrans)
PIF – Airspace Clearance FAA [CFR 620.104]	FHWA
PIF - Use of Negotiated Consultant Contracts [23 CFR 172.5(3)]	**Caltrans**
Detailed Design	
Approve preliminary plans for major and unusual structures	**FHWA**
Design Exceptions, non-Interstate (all other projects) [23 CFR 625.3]	Caltrans
Design Exceptions on the Interstate (13 controlling Criteria) [23 CFR 625.3]	FHWA
Experimental Features (Pilot and Demo) aka CEWP, design/sequencing	FHWA
New/Modified Interstate Access Control Change - Final Approval [Feb 1998 Federal Register, Vol#28]	FHWA
PIF – Statewide and project specific use of proprietary products and processes [23 CFR 635.411]. If statewide, FHWA approval.	**Caltrans**
PIF and Cost Justification Letter - Statewide and Project Specific - Concur in use of publicly furnished materials and expenses [23 CFR 635.407]. If statewide, FHWA approval.	**Caltrans**
ROW encroachments - Use and occupancy of acquired ROW [23 CFR 710.401, HDM 504.8]	FHWA
Value Engineering [23 CFR 627, SAFETEA-LU 1904]	Caltrans
PS&E and Advertising	
Authorize advertising for bids [23 CFR 635.112]	**FHWA**
Authorize utility or railroad force account work [23 CFR 645.113 & 646.216]	**FHWA**
Bid Analysis (Engineer Estimates)	**FHWA**
Consultant Agreements [23 CFR 172.7 - 172.9]	**Caltrans**
Exempt bridge from Coast Guard permit requirements [23 CFR 650.805]	FHWA
Hiring of consultant to serve in a "management" role [23 CFR 172.9(d)]	**Caltrans**
Noise - Reasonable and Feasible Determination for PS&E approval [23 CFR 772.11(g)]	Caltrans (1)
PIF - Advertising period less than three weeks [23 CFR 635.112]	**Caltrans**
PIF - Use of contracting method other than competitive bidding [23 CFR 635.104 & 204]	**Caltrans**
PIF - Use of Force Account [23 CFR 635.204, 205]	**Caltrans**
PIF - Use of Mandatory Borrow/Disposal Sites [23 CFR 635.407]	**Caltrans**
PIF - Use of Publicly Owned Equipment [23 CFR 635.106]	**Caltrans**
PS&E [23 CFR 630.205, 23 USC 106]	**FHWA**
Supplemental Work Item Justification	FHWA

APPROVAL ACTION	APPROVAL AUTHORITY High Profile Projects
Utility and railroad agreements [23 CFR 645.113 & 646.216]	FHWA
Warranties [23 CFR 635.413]	FHWA
Construction	
Accept Materials Certification [23 CFR 637.207]	FHWA
Addenda during advertising period [23 CFR 635.112(c)]	FHWA
Buy America Waiver [23 CFR 635.410, ISTEA Sec. 1041(a) & 1048(a), 41 CFR 10 (a-d)] Submit to HQ if >$50K.	FHWA
Concur in award of contract [23 CFR 635.114]	FHWA
Concur in rejection of all bids [23 CFR 635.114]	FHWA
Concur in settlement of contract claims [23 CFR 635.124; C&M Manual, Chapter 2]	FHWA
Concur in termination of contracts [23 CFR 635.125]	FHWA
Construction engineering by local agency [23 CFR 635.105]	FHWA
Contract time extensions [23 CFR 635.120 & 121]	FHWA
Final inspection/acceptance of completed work [23 USC 114(a)]	FHWA
Incentive/Disincentive Amount Justification [23 CFR 635.127]	FHWA
Innovative Contracting Requirements [SEP 14 & 15]	FHWA
Liquidated Damages (rates subject to FHWA approval) [23 CFR 635.127]	FHWA
Major changes and extra work [23 CFR 635.120]	FHWA
Minor changes and extra work [23 CFR 635.120]	FHWA
Subcontracting Requirements [23 CFR 635.116(b)]	FHWA
Research	
Experimental Features [FAPG Ch. 6, Sect G 6042.4]	FHWA
Emergency Relief	
ER Damage Assessments and Reports on the SHS [23 CFR 668, 23 USC 120 and 125]	N/A
ER Damage Assessments and Reports off the SHS [23 CFR 668; 23 USC 120 and 125; ER Q&A, Question #5 Revised DAF and #8 Coordination with Other Agencies]	N/A
(1) Caltrans has assumed responsibility for these items under the Section 6004 and 6005 MOUs. The FHWA will reassume responsibility should any of the applicable agreements be terminated or expire. Additionally, the FHWA remains responsible for several projects that have been excluded from the assumption of NEPA responsibilities by Caltrans.	

ATTACHMENT O

TCIF Application

2008 Project Programming Request
(Project Information)

Caltrans

General Instructions

☑ New Project ☐ Amendment (Existing Project)				Date: 01/14/08
Caltrans District	**EA**	**PPNO**	**MPO ID**	**TCRP No.**
04	0A530	367D		

County	Route/Corridor	Project Sponsor/Lead Agency	MPO	Element
SOL	80	STA/Caltrans	MTC	

Project Title

Eastbound Cordelia Truck Scale Relocation Project

PM Bk	PM Ahd	Project Mgr/Contact	Phone	E-mail Address
14.3	14.4	Nic Endrawos/Janet Adams	286-5123/(707)424	las_endrawos@dot.ca.gov/jadams@sta-snci.c

Location, Project Limits, Description, Scope of Work, Legislative Description

The project would rebuild and relocate the Eastbound Truck Scales Facility, build a 4-lane bridge across Suisun Creek, and construct braided ramps from the new truck scales facility to EB I-80 and EB SR 12 ramps. The facility will be designed to handle 2040 truck traffic volumes and will have a useful life of at least 25 years.

Component	Implementing Agency	AB 3090	Letter of No Prejudice
PA&ED	STA	☐	☐
PS&E	STA	☐	☐
Right of Way	Caltrans	☐	☐
Construction	Caltrans	☐	☐

Legislative Districts

Assembly:	8	Senate:	5
Congressional:	10		

Purpose and Need

The Cordelia Truck Scales significantly contribute to the congestion on I-80 due to the large number of trucks exiting and entering I-80 and the close proximity of the scales to both the Suisun Valley Road and I-680 interchanges. In addition, the Cordelia Truck Scales were constructed in 1958 and are seriously undersized and overcapacitated. The purpose of the project is to construct new truck scales with the capacity to accomodate the anticipated 115% growth in truck traffic in the corridor by 2040; to provide traffic congestion relief in this section of I-80 by reducing truck/auto weaving and truck queuing; and improve reliability of the system with improved capacity and up-to-date equipment.

Project Benefits

The Project will increase truck throughput from the current 400 trucks per hour to 1,000 trucks per hour. The Project will increase velocity of freight traffic by processing trucks at the scales more quickly and efficiently; by providing better diverge and merge operations at the scales off/on-ramps, and help relieve congestion in the vicinity of the scales on/off-ramps by providing better spacing. The planned new scales will improve reliability for the Truck Scales by processing trucks with more redundancy and fewer unplanned closures of the facility and improve the reliability of the regional highway corridor by reducing congestion.

Project Milestone			Date
Project Study Report Approved			06/01/02
Begin Environmental (PA&ED) Phase			05/01/03
Circulate Draft Environmental Document	Document Type	EIR/EIS	01/31/09
Draft Project Report			01/31/09
End Environmental Phase (PA&ED Milestone)			12/31/09
Begin Design (PS&E) Phase			01/01/10
End Design Phase (Ready to List for Advertisement Milestone)			05/01/12
Begin Right of Way Phase			01/01/10
End Right of Way Phase (Right of Way Certification Milestone)			05/01/12
Begin Construction Phase (Contract Award Milestone)			10/01/12
End Construction Phase (Construction Contract Acceptance Milestone)			12/31/14
Begin Closeout Phase			01/01/15
End Closeout Phase (Closeout Report)			12/31/15

Form Version Date: 10/1/07

2008 Project Programming Request
(Funding Information)

Caltrans

(dollars in thousands and escalated to the programmed year)

Date: 01/14/08

County	CT District	PPNO	TCRP Project No.	EA
SOL	04	367D	0	0A530

Project Title: Eastbound Cordelia Truck Scale Relocation Project

Existing Total Project Cost									
Component	Prior	08/09	09/10	10/11	11/12	12/13	13/14+	Total	Implementing Agency
E&P (PA&ED)	0	0	0	0	0	0	0	0	
PS&E	0	0	0	0	0	0	0	0	
R/W SUP (CT)	0	0	0	0	0	0	0	0	
CON SUP (CT)	0	0	0	0	0	0	0	0	
R/W	0	0	0	0	0	0	0	0	
CON	0	0	0	0	0	0	0	0	
TOTAL	0	0	0	0	0	0	0	0	
Proposed Total Project Cost									
E&P (PA&ED)	0	0	0	0	0	0	0	0	
PS&E	0	0	22,200	0	0	0	0	22,200	
R/W SUP (CT)	0	0	0	400	0	0	0	400	
CON SUP (CT)	0	0	0	0	9,700	0	0	9,700	
R/W	0	0	0	2,600	0	0	0	2,600	
CON	0	0	0	0	64,700	0	0	64,700	
TOTAL	0	0	22,200	3,000	74,400	0	0	99,600	

Fund No. 1:									Program Code
Existing Funding									
Component	Prior	08/09	09/10	10/11	11/12	12/13	13/14+	Total	Funding Agency
E&P (PA&ED)	0	0	0	0	0	0	0	0	
PS&E	0	0	0	0	0	0	0	0	
R/W SUP (CT)	0	0	0	0	0	0	0	0	
CON SUP (CT)	0	0	0	0	0	0	0	0	
R/W	0	0	0	0	0	0	0	0	
CON	0	0	0	0	0	0	0	0	
TOTAL	0	0	0	0	0	0	0	0	
Proposed Funding									Notes
E&P (PA&ED)								0	Funding Source is
PS&E								0	TCIF/SHOPP
R/W SUP (CT)								0	
CON SUP (CT)								0	
R/W								0	
CON					49,800			49,800	
TOTAL	0	0	0	0	49,800	0	0	49,800	

Fund No. 2:									Program Code
Existing Funding									
Component	Prior	08/09	09/10	10/11	11/12	12/13	13/14+	Total	Funding Agency
E&P (PA&ED)	0	0	0	0	0	0	0	0	
PS&E	0	0	0	0	0	0	0	0	
R/W SUP (CT)	0	0	0	0	0	0	0	0	
CON SUP (CT)	0	0	0	0	0	0	0	0	
R/W	0	0	0	0	0	0	0	0	
CON	0	0	0	0	0	0	0	0	
TOTAL	0	0	0	0	0	0	0	0	
Proposed Funding									Notes
E&P (PA&ED)								0	Funding Source is AB1171 -
PS&E			22,200					22,200	PS&E Budget includes 10%
R/W SUP (CT)				400				400	Project Reserve
CON SUP (CT)					9,700			9,700	
R/W				2,600				2,600	
CON					14,900			14,900	
TOTAL	0	0	22,200	3,000	24,600	0	0	49,800	

ATTACHMENT P

Utility Layout

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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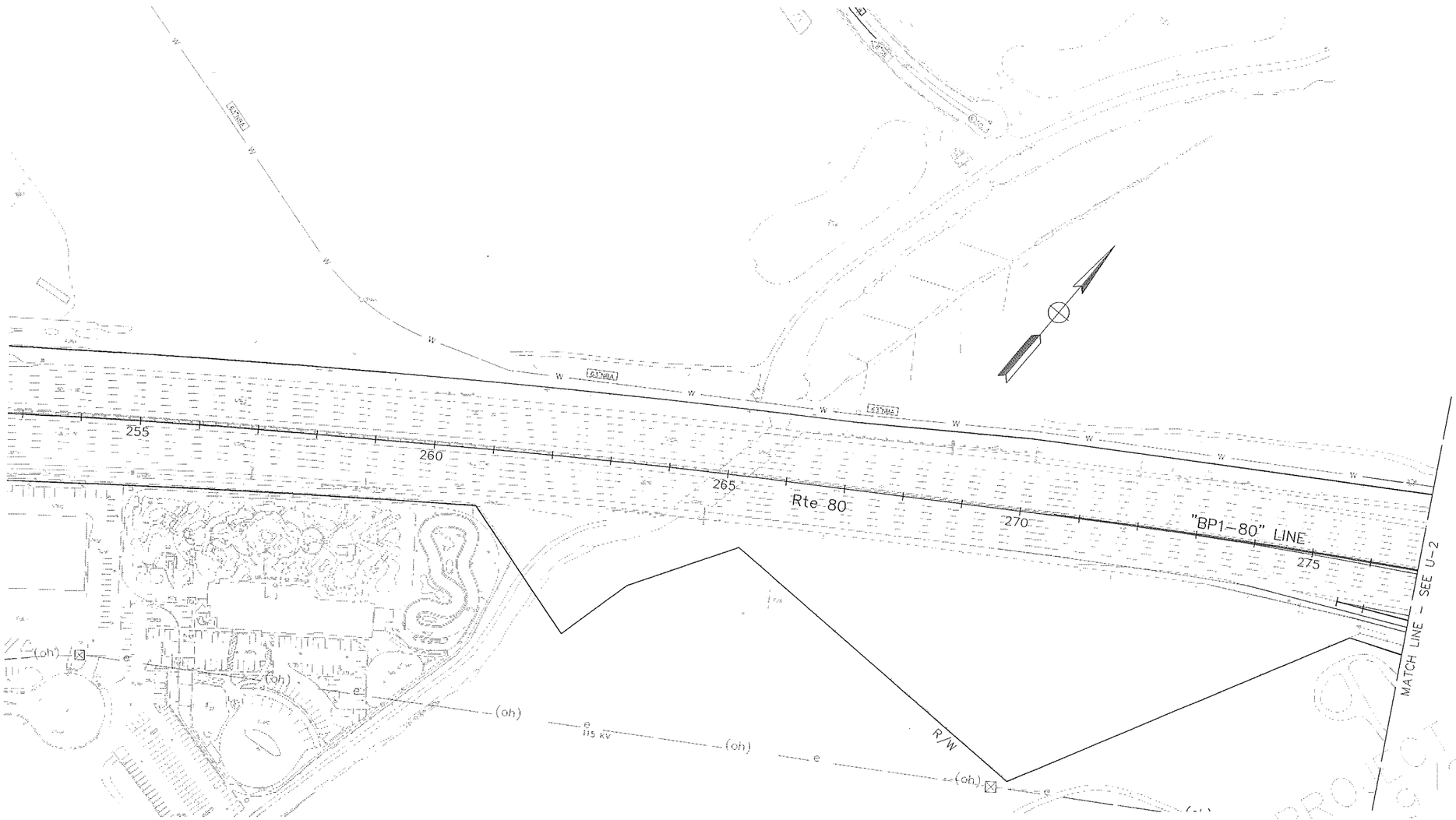
MARK THOMAS & COMPANY, INC. +
NOLTE ASSOCIATES, INC.
1243 ALPINE ROAD, SUITE 222
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

ABBREVIATIONS:

CAL	CALTRANS INTERNAL UTILITY
NBA	NORTH BAY ACQUEDUCT (DEPARTMENT OF WATER RESOURCES)
SID	SOLANO IRRIGATION DISTRICT
SSFM	SANITARY SEWER FORCE MAIN

(SEE STANDARD PLANS FOR OTHER ABBREVIATIONS AND LEGENDS)



EB 80 TRUCK SCALES
UTILITY PLAN
SCALE 1"=100'

U-1

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

PROJECT REPORT 12/2009

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR: RONI BOUKHALIL

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY

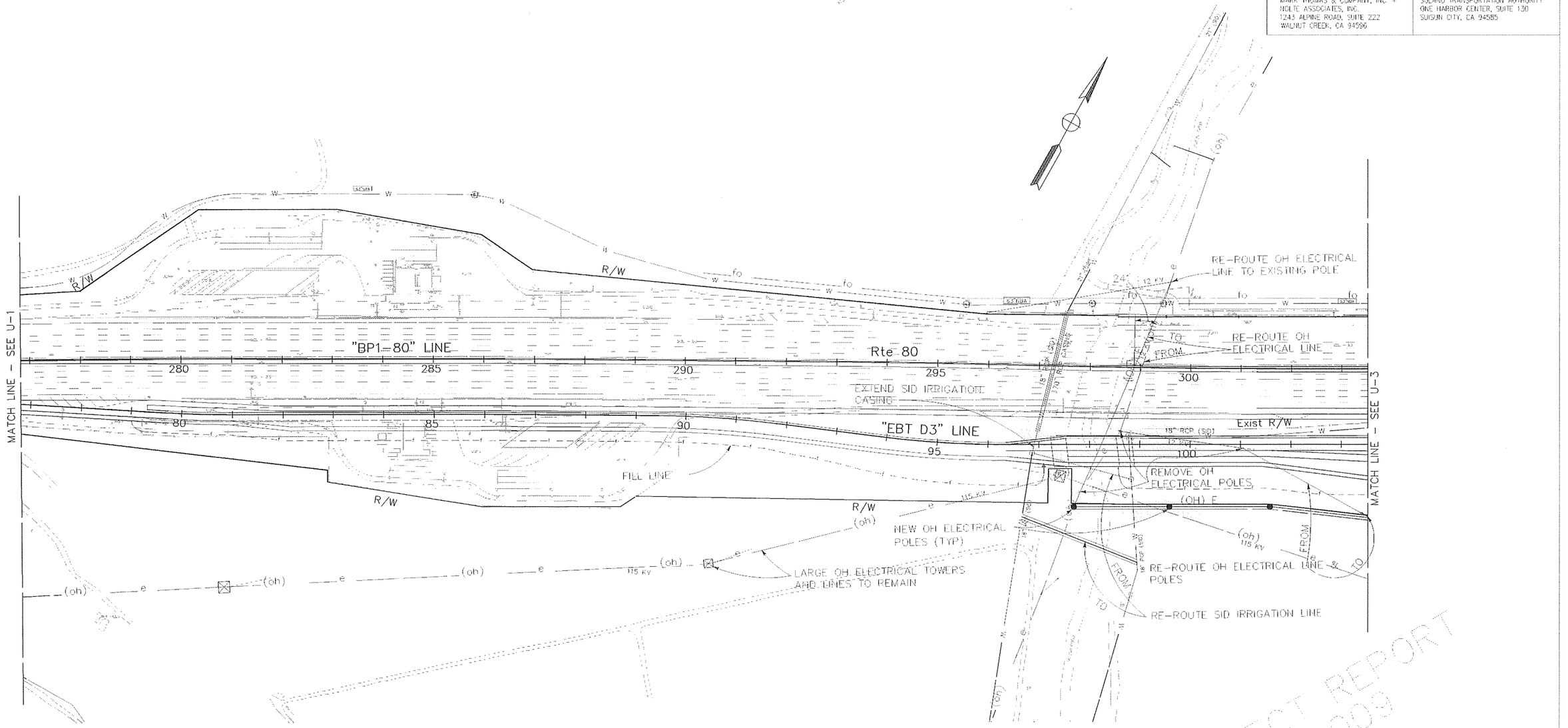
CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

RONI BOUKHALIL

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans



PROJECT REPORT 9/2009

EB 80 TRUCK SCALES
UTILITY PLAN
SCALE 1"=100'

U-2

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

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1243 ALPINE ROAD, SUITE 222
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REVISED BY | DATE REVISED

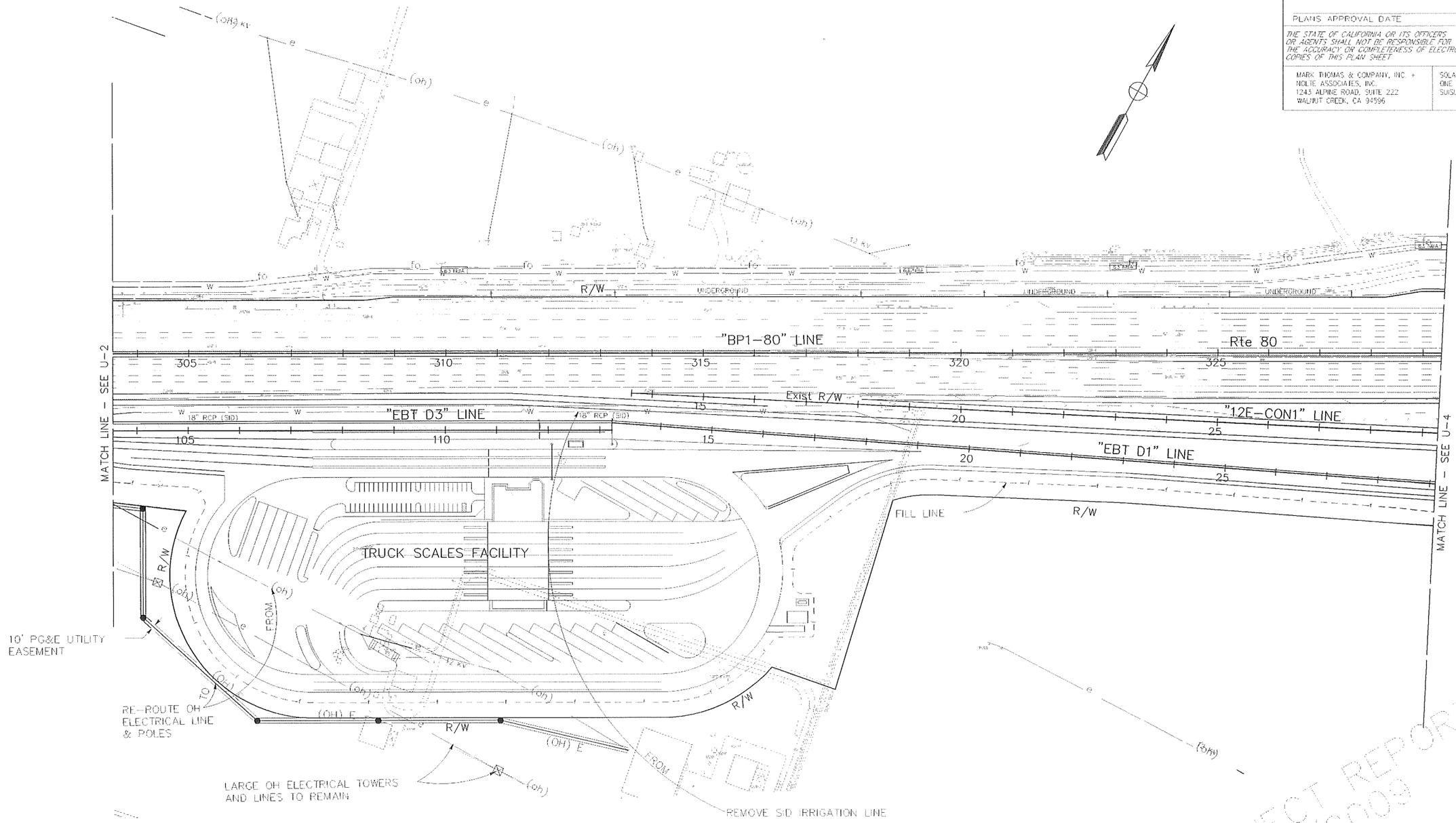
CALCULATED-DESIGNED BY | CHECKED BY

SUPERVISOR | CONSULTANT FUNCTIONAL SUPERVISOR

RONI BOUKHALIL

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans



PROJECT REPORT 9/2009

EB 80 TRUCK SCALES
UTILITY PLAN
SCALE 1"=100'

U-3

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER _____ DATE _____

PLANS APPROVAL DATE _____

REGISTERED PROFESSIONAL ENGINEER
No. _____
Exp. _____
CIVIL
STATE OF CALIFORNIA

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WALNUT CREEK, CA 94596

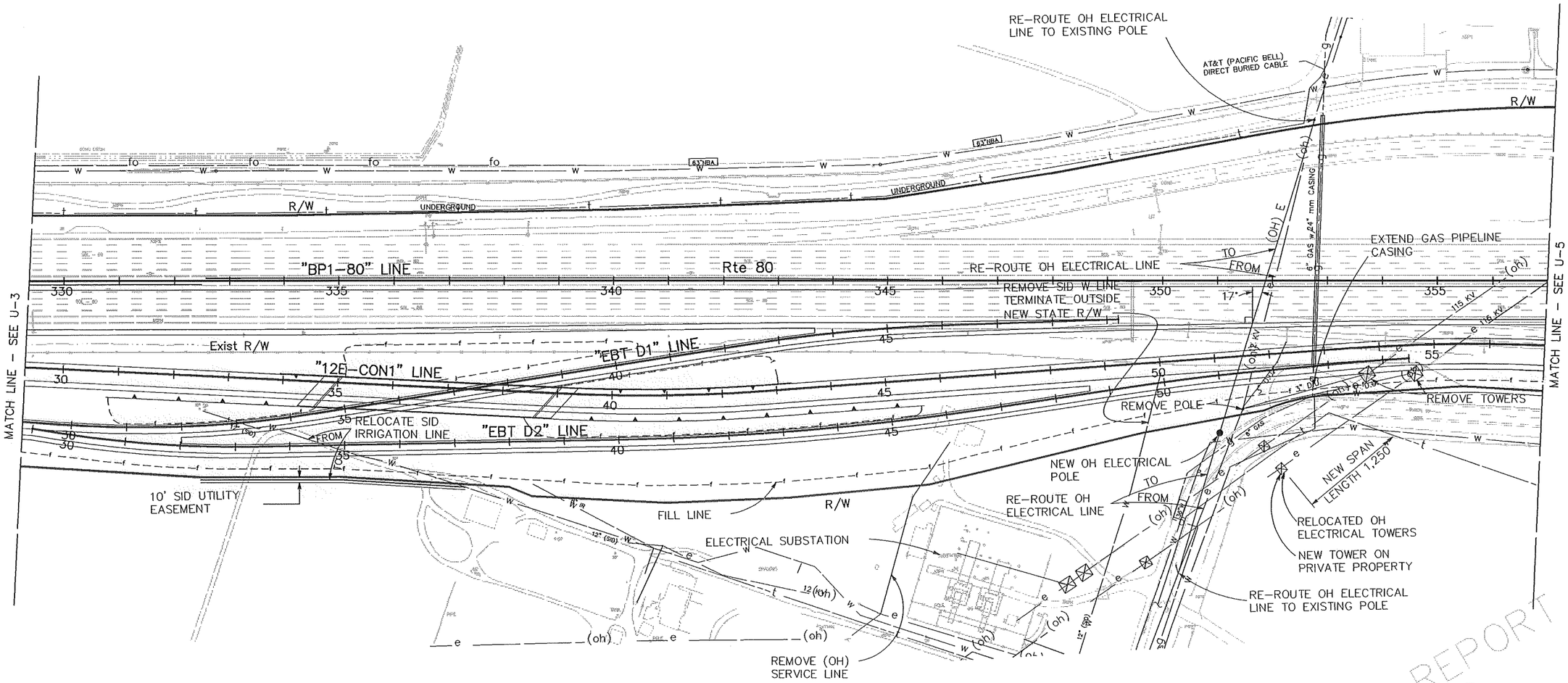
SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR: RONI BOUKHALIL

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans



PROJECT REPORT 9/2009

EB 80 TRUCK SCALES
UTILITY PLAN
SCALE 1"=100'

U-4

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80,680	Var		

REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

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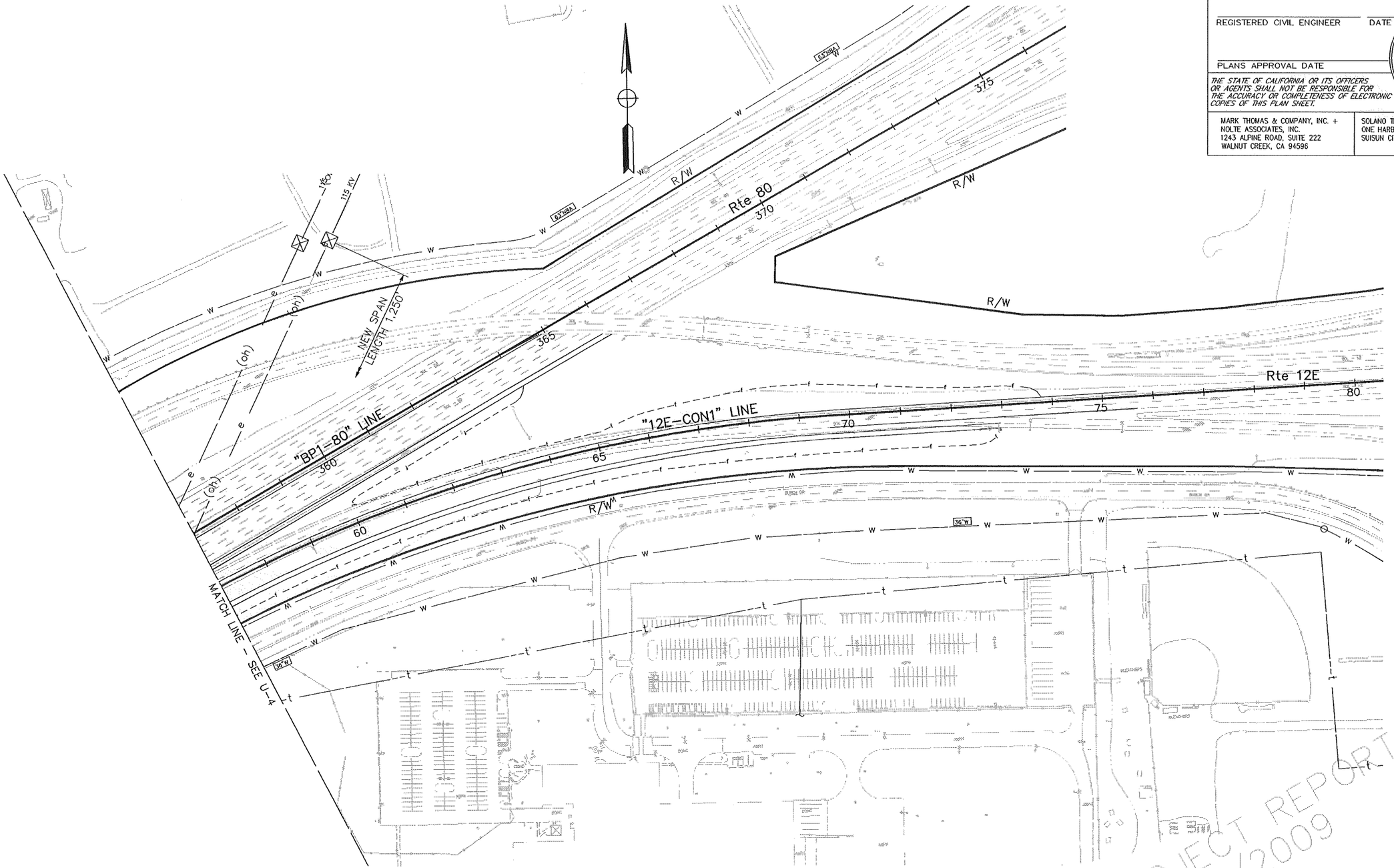
NOLTE ASSOCIATES, INC.
1243 ALPINE ROAD, SUITE 222
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585



PROJECT REPORT 9/2009

EB 80 TRUCK SCALES
UTILITY PLAN
SCALE 1"=100'

U-5

ALL DIMENSIONS ARE IN FEET, UNLESS OTHERWISE SHOWN

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY

CHECKED BY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

RONI BOURKHALIL

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

JUN 9 2010

Regulatory Division

SUBJECT: File Number SPN-2008-00358 S

Mr. Nicolas Endrawos
California Department of Transportation, District 4
P.O. Box 23660
Oakland, California 94623-0660

Dear Mr. Endrawos:

This letter is written in response to your submittal of March 24, 2010, concerning Department of the Army authorization for the Interstate 80 Eastbound Cordelia Truck Scales Relocation Project. The project is located along eastbound Interstate 80 between the town of Cordelia and the City of Fairfield in Solano County, California.

The purpose of the project is to accommodate anticipated growth in the truck traffic in the corridor by 2040, improve the reliability of the truck weight and safety inspection and enforcement system, and improve mainline safety by reducing truck/auto weaving and queuing, and provide some traffic congestion relief along that segment of I-80. The truck scales, now over 50 years old, are undersized and unable to process the existing truck volumes. Consequently, the scales contribute significantly to congestion and safety issues from trucks entering and exiting the roadway. In general, the project will enlarge the truck scale inspection facility, increase off-ramp storage capacity, and improve on-ramps that provide access to eastbound I-80 and eastbound SR-12 in accordance with the enclosed drawings titled "Interstate 80 Eastbound Cordelia Truck Scales Relocation Project Drawings", 1 through 5, dated March 13, 2010. The project will result in the fill of one seasonal wetland and several roadside ditches, and would require a widening of the existing bridge over Suisun Creek. The project, in total would impact 0.12 acres of wetlands and 0.16 acres of other waters of the U.S. The widening of the bridge over crossing of Suisun Creek will be accomplished using a span structure placed above the creek's ordinary high water mark.

Based on a review of the information you submitted and an inspection of the project site conducted by Corps personnel in January 2009, your project qualifies for authorization under Department of the Army Nationwide Permit 39 – Commercial and Institutional Developments (72 Fed. Reg. 11092, March 12, 2007), pursuant to Section 404 of the Clean Water Act (33 U.S.C. Section 1344). See Enclosure 1. The project will impact 307 linear feet of perennial channel (Suisun Creek). All work shall be completed in accordance with the plans and drawings

titled "Interstate 80 Eastbound Cordelia Truck Scales Relocation Project Drawings" 1 through 5, dated March 13, 2010.

The project must be in compliance with the General Conditions cited in Enclosure 2 for this Nationwide Permit authorization to remain valid. Non-compliance with any condition could result in the suspension, modification or revocation of the authorization for your project, thereby requiring you to obtain an Individual Permit from the Corps. This Nationwide Permit authorization does not obviate the need to obtain other State or local approvals required by law.

This verification is valid until the NWP is modified, reissued, or revoked. All of the existing NWPs are scheduled to be modified, reissued, or revoked prior to March 18, 2012. It is incumbent upon you to remain informed of changes to the NWPs. We will issue a public notice when the NWPs are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant nationwide permit is modified or revoked, you will have twelve months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this nationwide permit. Upon completion of the project and all associated mitigation requirements, you shall sign and return the Certification of Compliance, Enclosure 3, verifying that you have complied with the terms and conditions of the permit.

This authorization will not be effective until you have obtained a Section 401 water quality certification from the San Francisco Bay Regional Water Quality Control Board (RWQCB). If the RWQCB fails to act on a valid request for certification within two months after receipt of a complete application, the Corps will presume a waiver of water quality certification has been obtained. You shall submit a copy of the certification to the Corps prior to the commencement of work.

To ensure compliance with this Nationwide Permit authorization, the following special conditions shall be implemented:

1. Corps permit does not authorize you to take an endangered species. In order to legally take a listed species, you must have a separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit or a Biological Opinion (BO) under ESA Section 7 with "incidental take" provisions with which you must comply). The enclosed U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) BOs dated September 19, 2009, and November 12, 2008, respectively contain mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BOs. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take authorized by the attached BOs, whose terms and conditions are

incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BOs, where a take of the listed species occurs, would constitute an unauthorized take and it would also constitute non-compliance with this Corps permit. The FWS and NMFS are the appropriate authorities to determine compliance with the terms and conditions of their BOs and with the ESA.

2. Environmentally sensitive areas shall be clearly delineated on the construction plans and demarcated in the field with high-visibility fencing prior to commencement of construction activities. The fencing shall be properly maintained throughout the duration of the project. The fenced areas shall be off limits to construction activity and personnel at all times.

3. Work within areas subject to the jurisdiction of the Corps shall be conducted between June 15 and October 15 to minimize impacts to aquatic resources. An open channel shall be maintained through the project area to allow fish passage.

4. All project staging and equipment storage areas shall be located away from areas subject to the jurisdiction of the Corps.

5. No debris, oil, petroleum products or other organic material resulting from construction activities shall be allowed to enter or be placed where it may be washed by rainfall or runoff into areas subject to the jurisdiction of the Corps.

6. Following project construction, disturbed areas including access points, staging and equipment storage areas, etc. shall be returned to pre-project conditions. This shall include, but is not necessarily limited to, grading to establish pre-project contours, removal of debris and planting site-specific vegetation.

7. Compensation for unavoidable impacts to 0.28 acres of waters of the U.S., including 0.12 acres of seasonal wetlands and 0.16 acres of roadside ditches, you shall purchase 0.12 acres of seasonal wetland credits from a Corps approved mitigation bank and create approximately 13,000 linear feet of stormwater drainage features on-site.

8. In the event of any unanticipated discoveries of potential cultural/historic resources, you shall immediately halt work in the vicinity of the discovery and contact the appropriate regulatory authorities. You shall complete consultation pursuant to 36 CFR 800 to the satisfaction of the SHPO prior to resuming work.

Should you have any questions regarding this matter, please call Andrea Meier of our Regulatory Division at 415-503-6798 or email her at andrea.j.meier@usace.army.mil. Please address all correspondence to the Regulatory Division and refer to the File Number at the head of this letter. If you would like to provide comments on our permit review process, please complete the Customer Survey Form available online at http://per2.nwp.usace.army.mil/survey.html.

ORIGINAL SIGNED
BY Cameron Johnson
ACTING CHIEF, REG. DIV., SOUTH BR.
FOR

Jane M. Hicks
Chief, Regulatory Division

Enclosures

Copies furnished (w/o enclosures):

US EPA, San Francisco, CA
US FWS, Sacramento, CA
US NMFS, Santa Rosa, CA
CA DFG, Yountville, CA
CA RWQCB, Oakland, CA

CF:

CESPN-R (Rdg File)
CESPN-R (Meier)

MEIER 5/19/10
CESPN-R-S
-6798
05/19/10

JOHNSON
CESPN-R-S 5/19/10

MARTEL
CESPN-R 5/20/10

HICKS
CESPN-R 5/19/10

California Regional Water Quality Control Board
San Francisco Bay Region

Linda S. Adams
Secretary for Environmental Protection

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.waterboards.ca.gov/sanfranciscobay

Arnold Schwarzenegger
Governor

Date: November 1, 2010
Site No. 02-48-C0448
CIWQS Place No.: 719912 (BT)

Sent via electronic mail: No hardcopy to follow

California Department of Transportation
Attn: Mr. Nicolas Endrawos
Nicolas_Endrawos@dot.ca.gov
PO Box 23660
Oakland, CA 94623-0660

Subject: Water Quality Certification for Eastbound Cordelia Truck Scales Relocation Project, City of Fairfield, Solano County

Department EA No.: 04-0A535

Dear Mr. Endrawos:

San Francisco Bay Regional Water Quality Control Board (Water Board) staff have reviewed the application submitted by the California Department of Transportation (the Department) for the Cordelia Truck Scales Relocation Project in the City of Fairfield, Solano County (Project). The Department has applied for a United States Army Corps of Engineers (Corps) Permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344) for the proposed Project. As such, the Department has applied to the Water Board for a Clean Water Act Section 401 water quality certification that the Project will not violate State water quality standards.

Project: The Department proposes to abandon the existing truck scale facility adjacent the eastbound Interstate 80 (I-80) mainline in the City of Fairfield; a new, larger facility is proposed for construction adjacent eastbound I-80, approximately 2,500 feet east of the existing truck scale facility.

Earthwork for the Project will include fill grading for the new on- and off-ramp alignments and the new truck scale site location, as well as excavations for building foundations, retaining walls and bridge foundation footings.

The proposed Project includes the following elements:

Construction of new off-ramp and bridge over Suisun Creek
One off-ramp from eastbound I-80 to the truck scales will be constructed. The new off-ramp will utilize the existing single lane exit and will widen to two lanes through the existing truck scale site and cross over Suisun Creek on a new, two-lane, clear span bridge before entering the new truck scale facility. The new bridge will be pre-cast and lowered into place during construction. The excavation for the bridge abutments will extend approximately eight feet below the existing ground, and the piles supporting the abutments will extend approximately fifty feet below the abutment footing. Construction equipment shall access the Project area from the existing road shoulder on the south side of I-80; no direct effects will occur in Suisun Creek.

Construction of new on-ramps to eastbound I-80 and eastbound SR 12
Trucks exiting the new truck scale facility will use a three-lane on-ramp that will split into eastbound I-80 and eastbound SR 12 directions. The on-ramp to eastbound I-80 will cross under the eastbound I-80 to eastbound SR 12 through a reinforced concrete box structure.

Reconstruction of eastbound I-80 to eastbound SR 12 Connector
The eastbound I-80 to eastbound SR 12 connector will be reconstructed as a two-lane connector crossing over the truck scale on-ramp to eastbound I-80.

Relocation of 18-inch pipeline beneath Suisun Creek
The existing 18-inch Solano Irrigation District water pipeline crossing beneath Suisun Creek will be relocated to accommodate the new eastbound truck scales off-ramp bridge over Suisun Creek. The Department proposes to us horizontal directional drilling to relocate the pipeline approximately 150 feet to the south of its current location. The boring and receiving pits will be located a minimum 135 feet from the top embankments on either side of Suisun Creek.

Jurisdictional Wetlands and Waters Impacts: Project implementation will result in permanent impacts to: approximately 1,681 (0.16 acres) linear feet of two seasonal roadside drainages as a result of construction of the new truck scale facility; 240 linear feet (0.08 acres) of Raines Drain, a cement-lined agricultural drainage channel, as a result of culverting and realignment; and, approximately 0.12 acres of jurisdictional wetlands adjacent the eastbound SR 12 connector will be permanently impacted as a result of construction of the new eastbound SR 12 connector.

Riparian Impacts: Construction of the Project will result in a total permanent and temporary loss of approximately 1.60 acres of riparian woodland along Suisun Creek and adjacent to I-80.

Hydromodification impacts: Added impervious areas may result in alterations to existing hydrologic regimes, resulting in erosion and/or changes of sediment transport in receiving waters (hydromodification). Project implementation would result in approximately 20.8 acres of added impervious area. Because the Project area is not within the Fairfield-Suisun hydromodification control areas, as identified in Attachment D of the Water Board's Municipal Regional Permit (Order No. R2-2009-0074), hydromodification mitigation is not required for this Project.

Jurisdictional Wetlands and Waters Mitigation: Approximately 1,681 linear feet of roadside drainages will be constructed to replace, in-kind, the two roadside drainages that will be filled during construction of the new truck scale facility. The re-built ditches will be built adjacent their former locations. To mitigate for permanent impacts to 0.12 acres of seasonal wetlands and 0.06 acres of Raines Drain, the Department will purchase 0.18 acres of seasonal wetland mitigation credits from the Elsie Gridley Mitigation Bank.

Riparian Mitigation: To compensate for the loss of riparian woodland habitat, the Department shall plant native riparian species and restore 2.82 acres of existing agricultural land on property owned by Solano Community College, approximately 500 feet to the north of I-80 and adjacent the west bank of Suisun Creek. Planting at this location will widen the existing riparian buffer on the west Bank of Suisun Creek and provide riparian habitat connectivity to the one-acre North Connector mitigation site upstream of the mitigation site. An Environmental Restoration Agreement between the Solano Transportation Authority and Solano Community College was executed on June 17, 2009, which includes prohibited uses to protect the mitigation site as well as an agreement declaring restrictive covenants.

Roadway Pollutant Mitigation: As mitigation for increased pollutant loads associated with impervious areas, the Department shall provide treatment of stormwater runoff from approximately 25.1 acres of impervious area using 17 biofiltration strips.

The following biofiltration strips will mitigate water quality impacts resulting from Project implementation:

Strip Location	Location of Treated Impervious Area	From Post Mile	To Post Mile	Treated Impervious Area (ac)
South of I-80 truck scale off-ramp	I-80 mainline and truck scale off-ramp	14.12	14.23	0.87
North of truck scale off-ramp	I-80 mainline	14.24	14.53	3.64
South of truck scale off-ramp	Truck scale off-ramp	14.24	14.54	1.18
North of I-80 truck scale off-ramp	I-80 mainline	14.58	14.86	3.62
South of I-80 truck scale off-ramp	Truck scale off-ramp	14.56	14.64	0.34
South of I-80 truck scale off-ramp	Truck scale off-ramp	14.64	14.70	0.28
Outside perimeter of truck scale facility	Truck scale facility	14.68	14.93	7.87

Strip Location	Location of Treated Impervious Area	From Post Mile	To Post Mile	Treated Impervious Area (ac)
North of SR 12 Connector	I-80 Mainline	14.89	15.17	1.88
South of I-80 on-ramp	Truck Scale I-80 on-ramp	14.96	15.11	0.93
North of SR 12 Connector	I-80 Mainline	15.05	15.14	0.95
South of I-80 on-ramp	Truck Scale I-80 on-ramp	15.12	15.16	0.24
WB	Truck Scale I-80 and SR 12 on-ramp	15.18	15.24	0.36
South of SR 12 on-ramp	Truck Scale SR 12 on-ramp	15.23	15.42	0.55
South of I-80 Mainline	I-80 Mainline	15.25	15.36	1.31
South of I-80 on-ramp	Truck Scale I-80 on-ramp	15.33	15.43	0.58
South of SR 12 on-ramp	SR 12 connector and on-ramp	15.45	15.55	0.56
			Total treated area:	25.1

Wetland Tracker System: It has been determined through regional, State, and national studies that tracking of mitigation/restoration projects must be improved to better assess the performance of these projects, following monitoring periods that last several years. In addition, to effectively carry out the State's No Net Loss Policy for wetlands, the State needs to closely track both wetland losses and mitigation/restoration project success. Therefore, as specified under Condition No. 8 of this certification, we require that the Department to use a standard form to provide Project information related to restoration measures. An electronic copy of the form and instructions can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml. Project information concerning impacts and mitigation/restoration will be made available at the web link: http://www.californiawetlands.net.

CEQA Compliance: The Project was evaluated pursuant to the requirements of the California Environmental Quality Act (CEQA) in an October 2009 Final Environmental Impact Report (SCH No. 2008052067). The Department filed a Notice of Determination for the Project on October 28, 2009.

Certification: I hereby issue an order certifying that any discharge from the referenced project will comply with the applicable provisions of sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act, and with other applicable requirements of State law. This discharge is also regulated under State Water Resources Control Board Order No. 2003 - 0017 – DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received

State Water Quality Certification" which requires compliance with all conditions of this Water Quality Certification. The following conditions are associated with this certification:

1. The Department shall adhere to the conditions of the Individual Permit issued to the Department by the Corps;

2. The Department shall install seventeen biofiltration strips to treat stormwater contaminants from no less than 25.1 acres of impervious area. The strips shall be installed and consistent with the information summarized above in "Roadway Pollutant Mitigation. All biofiltration strips shall be inspected and maintained for their entire design life to retain their full pollutant treatment functionality as designed;"

3. Except as expressly allowed in this Certification, the discharge, or creation of the potential for discharge, to waters of the State of any construction wastes and/or soil materials including cement, fresh concrete, or washings thereof, silts, clay, sand, oil or petroleum products and other organic materials to waters of the State is prohibited;

4. This Certification applies to the Project as proposed in the application materials. Please be advised that failure to implement the Project as proposed is a violation of this water quality certification;

5. The new bridge over Suisun Creek shall be built per the plans included in Attachment A, "Suisun Creek Bridge General Plan." Bridge footings and abutments shall be constructed outside the bed and banks of Suisun Creek. Except for bridge abutment and pile installation, and vegetation trimming and removal, no work shall occur in Suisun Creek. Vegetation trimmed or removed from the banks of Suisun Creek to accommodate the new bridge shall be trimmed by hand and the roots shall be left in place;

6. Certification is conditioned upon submission to the Water Board of a Bill of Sale of 0.20 acres of seasonal freshwater wetland mitigation credits at the Elsie Gridley Mitigation Bank, to be submitted to the Water Board prior to Project construction;

7. The Department shall provide no less than 2.82 acres of riparian habitat creation and restoration on Solano Community College property as described in the "Interstate 80 HOV Lanes/Eastbound Cordelia Truck Scales Relocation Project Mitigation and Monitoring Plan," (Plan) dated March 30, 2009, and revised July 31, 2009. Mitigation implementation, maintenance, and monitoring shall be performed as described in the Plan. The Department shall be subject to, but not limited to, the following mitigation requirements for work described in the Plan:

    a. Mitigation installation shall occur no later than Fall 2010;

b. Installed vegetation shall be monitored for a period of no less than ten years. Final success criteria shall not be considered prior to the end of this ten year period. If final success criteria has not been met at Year 10, monitoring shall continue until the final success criteria has been met;
c. The Department shall submit a Year 0 mitigation report to the Water Board. Following installation of the mitigation, the immediate post-construction condition of the site shall be photo-documented and a report shall be submitted to the Water Board including pre-construction photographs, post-construction photographs, and a map with the locations of the photo-documentation points clearly marked. The Department shall include as-built plans showing all significant deviations from the Plan, such as, changes to the mitigation area configuration and any features added to the site that were not included in the Plan;
d. The Department shall submit Years 1-3, 5, 7, and 10, mitigation monitoring reports to the Water Board. Monitoring reports shall incorporate photo-documentation of the mitigation site using photo-documentation points. Photo-documentation points shall include those locations submitted in the Year 0 report;
e. Performance and final success criteria shall be based on percent native vegetation survival, percent cover of non-native invasive plants, tree canopy cover, and tree height. The following criteria shall apply:
    i. Percent cover criteria shall be 6, 10, 20, and 40 percent at years 3, 5, 7, and 10, respectively, and determined using the line-intercept method;
    ii. The maximum height of all weeds within the three-foot diameter planting basins shall be no greater than six inches at any time and cover of non-native, invasive plants shall be less than five percent;
    iii. All dead plants shall be replaced during the first two years following mitigation installation. During the third year following mitigation installation, replanting shall occur if overall plant survival falls below 80 percent; and,
    iv. Mitigation areas shall not be considered to meet final success criteria where temporary irrigation systems have been deactivated within three years of final success criteria consideration.
f. The planting plan shall create a multi-layered, riparian community through the incorporation of riparian understory shrub plantings and upper- and mid-canopy tree species native to the Suisun Creek watershed. Propagules shall be obtained from the impact site and/or other areas along Suisun Creek. If sufficient numbers of propagules are not available from Suisun Creek, other creeks in Solano County may be used as collection sites, subject to the approval of a qualified restoration ecologist;
g. All temporarily impacted areas shall be revegetated using a native seed mix; and,
h. Large limbs and trunks from native trees removed from the impact site shall be salvaged and scattered within the mitigation site.

8. The Department is required to use the California Wetlands Standard Form to provide Project information and a map of the enhancement and restoration site no later than six weeks from the date of this certification. The completed form shall be submitted electronically to habitatdata@waterboards.ca.gov or shall be submitted as a hard copy to both: 1) The Water Board to the attention of Wetland Tracker; and 2) The San Francisco Estuary Institute, 7770 Pardee Lane, Oakland, CA 94621-1424, to the attention of Mike May;

9. The Department shall replace in-kind the following roadside drainage ditches, adjacent their former locations: OW-57, 1,374 linear feet, located on I-80 at approximate post-mile 14.0; and OW-110, 307 feet, located on SR 12 at approximate post-mile 1.7;

10. All earthwork or foundation activities involving or adjacent to creeks, culverts, and bridges shall occur only between June 15 and October 15;

11. The Department shall maintain a copy of this water quality certification at the Project site so as to be available at all times to site operating personnel. It is the responsibility of the Department to assure that all personnel (employees, contractors, and subcontractors) are adequately informed and trained regarding the conditions of this certification;

12. This certification does not allow for the take, or incidental take, of any special status species. The Department shall use the appropriate protocols, as approved by the California Department of Fish and Game and the U.S. Fish and Wildlife Service, to ensure that Project activities do not impact the Beneficial Use of the Preservation of Rare and Endangered Species;

13. Groundwater or accumulated stormwater removed during dewatering of excavations shall not be discharged directly to waters of the State without meeting the following conditions: any groundwater or accumulated stormwater released to waters of the State shall not exceed 110 percent of the ambient turbidity of the receiving water, if receiving water turbidity is greater than 50 NTU, or 5 NTU above ambient turbidity if the ambient turbidity is less than or equal to 50 NTU; any groundwater discharged to waters of the State shall have a pH in the range of 6.5 to 8.5;

14. No fueling, cleaning, or maintenance of vehicles or equipment shall take place within 300 feet of all drainages and wetlands. Construction materials and heavy equipment must be stored outside waters of the State;

15. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section 13330 of the California Water Code (CWC) and Section 3867 of Title 23 of the California Code of Regulations(23 CCR);

16. This certification action does not apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license, unless the pertinent certification application was filed pursuant to California Code of Regulations (CCR) Title 23, Subsection 3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought; and,

17. Certification is conditioned upon total payment of the full fee required in State regulations (23 CCR Section 3833). Water Board staff received full payment of $11,729.00 on April 21, 2010.

We anticipate your cooperation in implementing these conditions. However, please be advised that any violation of water quality certification conditions is a violation of State law and subject to administrative civil liability pursuant to California Water Code (CWC) section 13350. Failure to respond, inadequate response, late response, or failure to meet any condition of this certification may subject you to civil liability imposed by the Water Board to a maximum of $5,000 per day per violation or $10 for each gallon of waste discharged in violation of this certification.

Condition numbers 6 - 8 are requirements for information or reports. Any requirement for a report made as a condition to this action is a formal requirement pursuant to CWC section 13267, and failure or refusal to provide, or falsification of such required report is subject to civil liability as described in CWC section 13268.

We anticipate no further action on this request. Should new information come to our attention that indicates a water quality problem with this project, the Water Board may issue Waste Discharge Requirements pursuant to 23 CCR Section 3857.

If you have any question, please contact Brendan Thompson of my staff at (510) 622-2506, or via e-mail, to BThompson@waterboards.ca.gov.

Sincerely,

Bruce H. Wolfe
Executive Officer

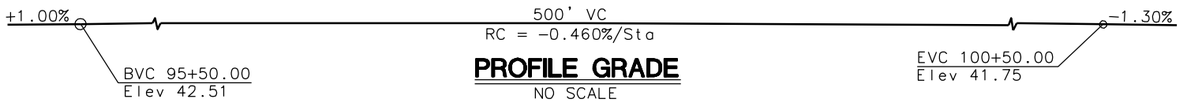
cc (via e-mail): Mr. Bill Orme SWRCB-DWQ
Mr. Hal Durio, Regulatory Branch, USACE
Mr. Dale Bowyer, Water Board
Ms. Melissa Escaron, Fish and Game, Yountville

Ms. Jane Hicks, Regulatory Branch, USACE
Mr. Ramsey Hissen, URS
Ms. Laurie Monarres, USACE
Mr. Cyrus Vafai, Caltrans
Mr. Hardeep Takhar, Caltrans
Mr. Jason Brush, USEPA
Ms. Andrea Meier, USACE
Ms. Jayshree Chauhan, Caltrans

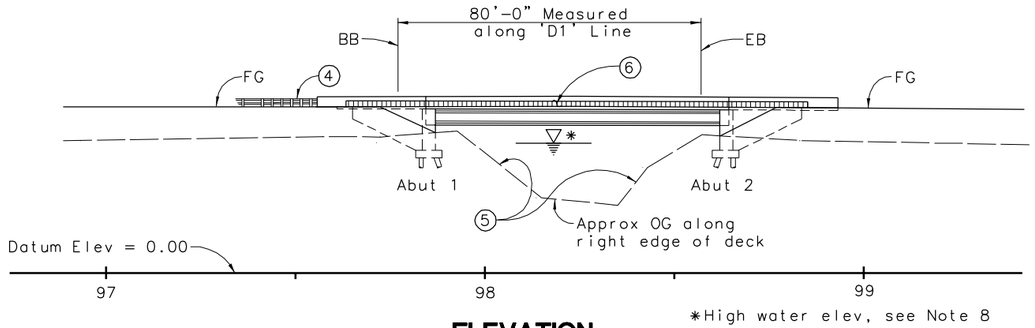
Attachment A

Suisun Creek Bridge General Plan

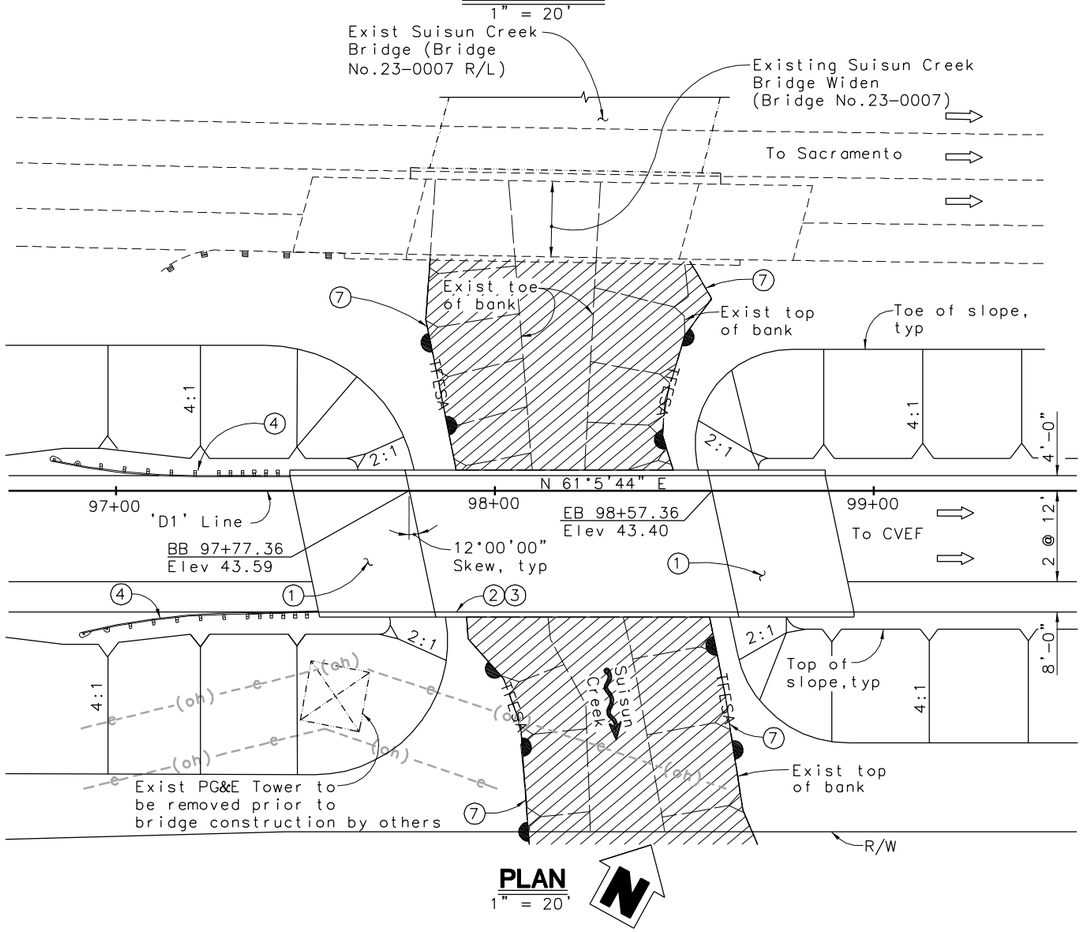
FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE



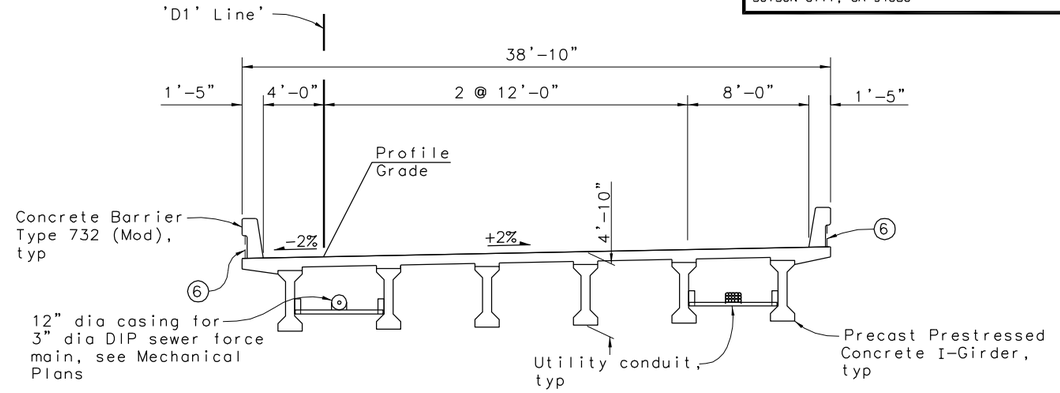
PROFILE GRADE
NO SCALE



ELEVATION
1" = 20'



PLAN
1" = 20'



TYPICAL SECTION
1" = 5'

Notes:

1. Structure Approach Type N(30S)
2. Paint 'Suisun Creek Bridge'
3. Paint Br No. and Year completed
4. MBGR, see Road Plans
5. The existing creek bed & creek banks shall remain undisturbed during abutment excavations & backfill operations & all other bridge construction operations
6. Fractured Rib Textured, see 'TYPICAL SECTION' sheet
7. ESA fencing, see Road Plans
8. For Hydrologic Summary, see 'FOUNDATION PLAN' sheet
9. For Pile Data Table, see 'FOUNDATION PLAN' sheet
10. For General Notes, see 'DECK CONTOURS' sheet
11. For List of Standard Plans, see 'DECK CONTOURS' sheet
12. For Bench Mark and Datum, see 'FOUNDATION PLAN' sheet
13. B6-10 / U12 — Indicates Standard Plan sheet No. / Indicates Detail No.
14. For Temporary Construction Easement, see Road Plans

INDEX TO BRIDGE PLANS

Sheet No.	Title
1	GENERAL PLAN
2	DECK CONTOURS
3	FOUNDATION PLAN
4	ABUTMENT 1 PLAN & ELEVATION
5	ABUTMENT 2 PLAN & ELEVATION
6	ABUTMENT DETAILS No. 1
7	ABUTMENT DETAILS No. 2
8	ABUTMENT DETAILS No. 3
9	TYPICAL SECTION
10	GIRDER LAYOUT
11	GIRDER DETAILS No. 1
12	GIRDER DETAILS No. 2
13	UTILITY SUPPORT DETAILS
14	STRUCTURE APPROACH TYPE N(30S)
15	STRUCTURE APPROACH DRAINAGE DETAILS
16	SOILS LEGEND SHEET 1 OF 2
17	SOILS LEGEND SHEET 2 OF 2
18	LOG OF TEST BORINGS
19	AS-BUILT LOG OF TEST BORINGS 1 OF 3
20	AS-BUILT LOG OF TEST BORINGS 2 OF 3
21	AS-BUILT LOG OF TEST BORINGS 3 OF 3

Legend

⇨ Indicates direction of travel

ESA

PLAN CHECK SET/NOT FOR CONSTRUCTION (4/30/10)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	14.0/15.7		

REGISTERED STRUCTURAL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MAHWASH M. HARMS — No. 2639 — Exp. 12/31/10 — STRUCTURAL — STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

BIGGS CARDOSA ASSOCIATES INC.
865 THE ALAMEDA
SAN JOSE, CALIFORNIA 95126

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

DESIGN OVERSIGHT	DESIGN	BY G. KENNING	CHECKED A. REJAIE	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	M. HARMS PROJECT ENGINEER
SIGN OFF DATE	DETAILS	BY M. LIPA	CHECKED A. NOTARO	LAYOUT BY M. LIPA	CHECKED G. KENNING		
	QUANTITIES	BY J. GERLACH	CHECKED H. BEDAIR	SPECIFICATIONS BY J. VISAYA	PLANS AND SPECS COMPAREDA. NOTARO		

BRIDGE NO. 23-0240S
POST MILES 14.5

SUISUN CREEK BRIDGE
GENERAL PLAN

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 6-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 04-0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY): 8/19/09 11/24/09 5/6/10

SHEET 1 OF 21

FILE => $REQUEST

20080178 (20080178A_S1)
USERNAME => $USER DATE PLOTTED => $DATE TIME PLOTTED => $TIME

State of California – The Natural Resources Agency **ARNOLD SCHWARZENEGGER**, *Governor*
DEPARTMENT OF FISH AND GAME
Bay Delta Region
Post Office Box 47
Yountville, California 94599
(707) 944-5520
www.dfg.ca.gov

September 2, 2010

Nicole Endrawos
California Department of Transportation
111 Grand Avenue
Oakland, CA 94623

Subject: Final Lake or Streambed Alteration Agreement
Notification No. 1600-2010-0120-R3
Interstate 80 Eastbound Cordelia Truck Scales Relocation Project

Dear Ms. Endrawos:

Enclosed is the final Streambed Alteration Agreement ("Agreement") for Interstate 80 Cordelia Truck Scales Project ("Project"). Before the Department may issue an Agreement, it must comply with the California Environmental Quality Act ("CEQA"). In this case, the Department, acting as a responsible agency, filed a notice of determination ("NOD") on September 2, 2010, based on information contained in the Negative Declaration the lead agency prepared for the Project.

Under CEQA, filing a NOD starts a 30-day period within which a party may challenge the filing agency's approval of the project. You may begin your project before the 30-day period expires if you have obtained all necessary local, state, and federal permits or other authorizations. However, if you elect to do so, it will be at your own risk.

If you have any questions regarding this matter, please contact Melissa Escaron, Staff Environmental Scientist at (707) 339-0334 or mescaron@dfg.ca.gov.

Sincerely,

Scott Wilson
Environmental Program Manager
Bay Delta Region

cc: Melissa Escaron
Warden Keiser

This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Game (DFG) and California Department of Transportation (Permittee) as represented by Nicolas Endrawos.

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, Permittee notified DFG on February 16, 2009 that Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC section 1603, DFG has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, Permittee has reviewed the Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, Permittee agrees to complete the project in accordance with the Agreement

PROJECT LOCATION

The Project is located at the Interstate 80 and Route 12 interchange within Suisun Creek in Solano County.

PROJECT DESCRIPTION

The California Department of Transportation (Caltrans), in cooperation with the Solano Transportation Authority propose to move and rebuild the Eastbound Cordelia Truck Scales at a new location approximately 2,500 feet east of its present location on Interstate 80 in Solano County California. The work located within DFG jurisdiction includes the construction of a new clear span bridge over Suisun Creek (entrance to the truck scales) and the relocation of an 18-inch Solano Irrigation District pipe beneath Suisun Creek using horizontal Directional Drilling. The pipe will be relocated 150 feet to the south of its current location. The boring and receiving pits will be located at least 135 feet from the top of Suisun Creek's banks.

To build the new bridge concrete bridge abutments will be located above the ordinary high water mark. The bottom of the bridge girders will be 3 feet above the creek's 100-year storm event level. Excavations for the abutments would extend to eight feet below the original ground. A precast bridge will be positioned using a crane located outside of the banks of the creek.

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include: aquatic habitat including California red-legged (CRLF) frog, Central California Coast steelhead, and Central Valley fall/late fall-run Chinook salmon habitat.

The adverse effects the project could have on the fish or wildlife resources identified above include: Potential for adverse impacts to riparian habitat resulting from removal of riparian vegetation, increased shading from the new bridge, soil disturbance, decreased water quality and direct injury or mortality of sensitive riparian species.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

Permittee (Caltrans and/or its Designee) shall meet each administrative requirement described below.

1.1 Documentation at Project Site. Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to DFG personnel, or personnel from another state, federal, or local agency upon request.

1.2 Providing Agreement to Persons at Project Site. Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of Permittee, including but not limited to Resident Engineers, contractors, subcontractors, inspectors, and monitors.

1.3 Notification of Conflicting Provisions. Permittee shall notify DFG if Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, DFG shall contact Permittee to resolve any conflict.

1.4 Project Site Entry. Permittee agrees that DFG personnel may enter the project site at any time to verify compliance with the Agreement.

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, Permittee (Caltrans and/or its Designee) shall implement each measure listed below.

2.1 Permittee shall conduct all work according to the project description stated above as well as the plans submitted to DFG that are not in conflict with the above stated project description. Permittee shall notify the DFG of any modifications made to the plans submitted to DFG.

2.2 Permittee shall provide a Designated Onsite Biologist, approved by the DFG, to conduct an employee orientation program, presented by the Designated Onsite Biologist, for all persons who will work on-site during construction and landscape establishment activities.

2.3 Permittee shall provide a Designated Onsite Biologist to monitor weather forecasts for rain events in coordination with the Department. The Designated Onsite Biologist and Caltrans Water Quality staff shall work together to ensure protection of aquatic resources before and during rain events. Storm Water Prevention Plan measures shall be monitored for proper installation and maintained to prevent sediment transport into the creek. The Resident Engineer shall make corrections suggested by the Designated Onsite Biologist Water Quality staff to ensure compliance with this Agreement.

2.4 Permittee shall provide a Designated Onsite Biologist to monitor the project site, on a daily basis, for compliance with this Agreement and Biological Opinion #81420-2008-F-1929-3 and any pursuant amendments.

2.5 Permittee shall submit to DFG for approval an offsite riparian mitigation plan to offset riparian impacts resulting from the proposed project. Permittee shall develop this plan in coordination with DFG.

2.6 Permittee shall not work within Suisun Creek between October 15 and June 15.

2.7 Permittee shall not use temporary or permanent erosions control devices containing plastic, including photo- or bio-degradable plastic netting.

2.8 Permittee shall conduct focused surveys for burrowing owls within 15 days prior to the beginning of work within the riparian the Suisun Creek corridor. The project impact areas plus 250 feet shall be surveyed for suitable habitat, burrows, and owls. Surveys shall occur two hours before to 1 hour after sunset or from 1 hour before to 2

hours after sunrise. Occupied burrows within 250 feet of project areas shall not be disturbed during the nesting season, February 1 through August 31. After August 31, if occupied burrows are located within 160 feet of the project impact area, disturbance shall be kept to a minimum.

2.9 Permittee shall be in compliance with Migratory Bird Treaty Act (MBTA) and Fish and Game Code 3503. To avoid potential impacts to nesting birds, Permittee shall remove vegetation or install exclusion measures during the time period of August 15 to February 15. If construction activities that have the potential to violate MBTA and Fish and Game Code 3503 are scheduled during the nesting season, focused surveys for active nests shall be conducted within 72 hours of said construction activities. If active nests are identified, a 50-foot no-work buffer for non-raptors and a 300-foot no-work buffer for raptors shall be established. If active nests are found, Caltrans shall consult with DFG and the United States Fish and Wildlife Service (USFWS) regarding appropriate action to comply with the MBTA of 1918 and the Fish & Game Code of California.

2.10 Permittee shall allow any wildlife encountered during the course of construction to leave the construction area unharmed. This authorization does not allow for the trapping, capture, or relocation of the giant garter snake, or any other state or federally listed species.

2.11 Permittee shall ensure that the Designated Onsite Biologist conducts a pre-construction survey for CRLF and western pond turtles no more than 24 hours prior to the commencement of construction activities, including site preparation and grading. If construction activities stop for a period of two or more weeks, a new CRLF and western pond turtle survey shall be completed no more than 24 hours prior to the re-initiation of these activities.

2.12 Permittee shall submit to the California Natural Diversity Data Base (CNDDB), forms for any state or federal listed species, or state species of special concern, observed during project surveys within five working days of the sightings.

2.13 Permitee shall, in the event of a frac-out, implement the Surface Spill and Hydrofracture Contingency Plan, prepared by Bennett Trenchless Engineers, dated December 9, 2009.

2.14 Permittee shall install, monitor and maintain high-visibility Environmentally Sensitive Area fencing. Permittee shall monitor fencing on a daily basis, to protect sensitive resources.

2.15 Permittee shall have readily available, at all times, plastic sheeting or visqueen and will cover exposed spoil piles and exposed areas to prevent these areas from losing loose soil into the stream. These covering materials shall be applied when it is evident rainy conditions threaten to erode loose soils into the stream.

2.16 Permittee shall not operate equipment or vehicles in water-covered portions of the stream, canals, ditches, or where wetland vegetation, riparian vegetation, or aquatic organisms may be destroyed, except as otherwise provided for in this Agreement and as necessary to complete authorized work.

2.17 Permittee shall locate staging and storage areas for equipment, materials, fuels, lubricants and solvents, outside of irrigation and agricultural ditches and canals. Stationary equipment such as motors, pumps, generators, compressors and welders, located within or adjacent to irrigation or agricultural ditches will be positioned over drip pans. Any equipment or vehicles driven and/or operated within or adjacent to the irrigation or agricultural ditches will be checked and maintained daily, to prevent leaks of materials that if introduced to water could be deleterious to aquatic life. Vehicles will be moved away from the canals and ditches prior to refueling and lubrication.

2.18 Permittee shall prevent raw cement/concrete or washings thereof, asphalt, straw, paint or other coating material, oil or other petroleum products, or any other substances related to project activities which could be hazardous to aquatic life, wildlife, or riparian habitat from contaminating the soil and/or entering the waters of the State. Permittee may be subject to a citation for placing materials where they may enter a irrigation or agricultural ditches.

2.19 Permittee shall not dump any litter or construction debris within the irrigation or agricultural ditches. All such debris and waste shall be picked up daily and properly disposed of at an appropriate site.

2.20 Permittee shall, prior to inundation, remove any materials placed in seasonally dry portions of canals or ditches, that could be washed downstream or could be deleterious to aquatic life, wildlife, or riparian habitat.

3. Compensatory Measures

To compensate for adverse impacts to fish and wildlife resources identified above that cannot be avoided or minimized, Permittee (Caltrans and/or its Designee) shall implement each measure listed below.

.

3.1 Permittee shall design and implement a riparian mitigation plan to be approved by DFG six months prior to the start of construction to compensate for riparian habitat impacts,

3.2 Permittee shall purchase Swainson's hawk credits, at a rate to be approved by DFG and at bank that DFG has approved for sale of Swainson's hawk credits, prior to the start of construction, to compensate for impacts to potential Swainson's Hawk habitat.

CONTACT INFORMATION

Any communication that Permittee or DFG submits to the other shall be in writing and any communication or documentation shall be delivered to the address below by U.S. mail, fax, or email, or to such other address as Permittee or DFG specifies by written notice to the other.

To Permittee:

Nicolas Endrawos
Caltrans, District 4
111 Grand Ave.
Oakland, Ca 94623
Nicolas_endrawos@dot.ca.gov

To DFG:

Department of Fish and Game
Bay Delta Region
7329 Silverado Trail
Attn: Lake and Streambed Alteration Program – Melissa Escaron
Notification #1600-2010-0120-R3
mescaron@dfg.ca.gov

LIABILITY

Permittee shall be solely liable for any violations of the Agreement, whether committed by Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute DFG's endorsement of, or require Permittee to proceed with the project. The decision to proceed with the project is Permittee's alone.

SUSPENSION AND REVOCATION

DFG may suspend or revoke in its entirety the Agreement if it determines that Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before DFG suspends or revokes the Agreement, it shall provide Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide Permittee an opportunity to correct any deficiency before DFG suspends or revokes the Agreement, and include instructions to Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused DFG to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes DFG from pursuing an enforcement action against Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects DFG's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or an activity related to it.

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the FGC including, but not limited to, FGC sections 2050 et seq. (threatened and endangered species), 3503 (bird nests and eggs), 3503.5 (birds of prey), 5650 (water pollution), 5652 (refuse disposal into water), 5901 (fish passage), 5937 (sufficient water for fish), and 5948 (obstruction of stream).

Nothing in the Agreement authorizes Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

DFG may amend the Agreement at any time during its term if DFG determines the amendment is necessary to protect an existing fish or wildlife resource.

Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by DFG and Permittee. To request an amendment, Permittee shall submit to DFG a completed DFG "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in DFG's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective,

unless the transfer or assignment is requested by Permittee in writing, as specified below, and thereafter DFG approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, Permittee shall submit to DFG a completed DFG "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in DFG's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

EXTENSIONS

In accordance with FGC section 1605(b), Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, Permittee shall submit to DFG a completed DFG "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in DFG's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). DFG shall process the extension request in accordance with FGC 1605(b) through (e).

If Permittee fails to submit a request to extend the Agreement prior to its expiration, Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (Fish & G. Code, § 1605, subd. (f)).

EFFECTIVE DATE

The Agreement becomes effective on the date of DFG's signature, which shall be: 1) after Permittee's signature; 2) after DFG complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC section 711.4 filing fee listed at http://www.dfg.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall expire on December 31, 2013, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as FGC section 1605(a)(2) requires.

AUTHORITY

If the person signing the Agreement (signatory) is doing so as a representative of Permittee, the signatory hereby acknowledges that he or she is doing so on Permittee's

behalf and represents and warrants that he or she has the authority to legally bind Permittee to the provisions herein.

AUTHORIZATION

This Agreement authorizes only the project described herein. If Permittee begins or completes a project different from the project the Agreement authorizes, Permittee may be subject to civil or criminal prosecution for failing to notify DFG in accordance with FGC section 1602.

CONCURRENCE

The undersigned accepts and agrees to comply with all provisions contained herein.

FOR NICOLAS ENDRAWOS REPRESENTING CALIFORNIA DEPARTMENT OF TRANSPORTATION

Nicolas Endrawos — 8/24/2010

Nicolas Endrawos
California Department of Transportation
Date

FOR DEPARTMENT OF FISH AND GAME

Scott Wilson — 9/2/10

Scott Wilson
Environmental Program Manager
Date

Prepared by: Melissa Escaron
Staff Environmental Scientist
Prepared June 23, 2010
Revised July 27, 2010

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

November 12, 2008

In response refer to:
2008/07393

James B. Richards
Deputy Director Environmental Planning and Engineering
Office of Natural Sciences and Permits
California Department of Transportation
111 Grand Avenue
Oakland, California 94623-0660

Dear Mr. Richards:

Thank you for your October 9, 2008, letter requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), and the Essential Fish Habitat (EFH) provisions of the Magnuson Stevens Fishery Conservation and Management Act (MSFCMA). The California Department of Transportation's (Caltrans) request for informal consultation was received on October 10, 2008. Additional information was requested for the project by NMFS on October 17, 2008; that information was received from Caltrans on October 21 and November 3, 2008. This response also serves as consultation under the authority of and in accordance with the provisions of the Fish and Wildlife Coordination Act of 1934 (FWCA), as amended. These consultations pertain to Caltrans' proposed Interstate 80 (I-80) Eastbound Cordelia Truck Scales Project (EA 0A5350), located at the I-80/State Route (SR) 12 East interchange over Suisun Creek, in Cordelia, Solano County, California.

Caltrans, in conjunction with the Federal Highway Administration, and the Solano County Transportation Authority (SCTA), proposes to construct a new truck scale facility on I-80 in the eastbound direction at Cordelia, Solano County. The project includes construction of a four-lane, single-span, precast bridge over Suisun Creek. The bridge will be lowered in place onto new abutments. The abutments will be constructed above the ordinary high water mark (OHWM), and supported on 12 piles each (24 piles total). The piles will either be 14" square precast concrete piles, or 24" cast-in-drill-hole (CIDH) piles. Installation of the piles will be done with an impact hammer, and depending on the type of pile used, pile driving will require from 6 (for precast) to 24 (for CIDH) days. Caltrans and the SCTA anticipate construction to begin in June 2012.

Endangered Species Act

Suisun Creek flows perpendicular to I-80. It is a tributary to Suisun Slough, and eventually drains

into the Suisun Bay. Although the creek has been highly disturbed and channelized, it does support a population of Federally-listed threatened Central California Coast (CCC) steelhead *(Oncorhynchus mykiss)*, and provides a migratory corridor for the species. Suisun Creek does not contain designated critical habitat for the species. The creek also supports Central Valley fall/late fall-run Chinook salmon (*O. tshawytscha)*, which is a species of concern and not Federally-listed under the ESA. However, they are managed under the MSFCMA, and will be discussed in the EFH section of this letter.

Caltrans has determined that the proposed action is not likely to adversely affect CCC steelhead or its habitat. During the installation of the bridge, disturbance of the creek bank may increase sedimentation rates and turbidity. However, due to the timing of construction (June 15th – October 15th) and location of the work area, turbidity and sedimentation will be minimal as no work will occur in flowing water and all work will be conducted from the creek bank, above the OHWM. The banks will be revegetated where necessary and stabilized prior to the rainy season.

Pile driving for the bridge abutments may result in temporary elevations of underwater sound, which may affect listed fish through exposure to high underwater sound levels. For this project, Caltrans proposes to use an impact hammer to install the piles. However, all piles will be installed along the dry creek bank, none will be driven in water. Thus, anticipated underwater sound pressure levels during pile driving by this project are not expected to rise to levels which would adversely affect anadromous salmonids.

NMFS considers the possibility of adverse effects to listed steelhead during project implementation to be insignificant because: (1) project activities will occur during low flow conditions between June 15th and October 15th; (2) no work will be conducted within the creek bed or in flowing water; (3) the installation of piles is expected to temporarily produce elevations of underwater sound levels, but not to reach levels that would cause injuries to fish; and (4) additional BMPs will be implemented to minimize disturbances and to preclude potential adverse effects to the aquatic environment and associated salmonid habitat (*e.g.*, installation of erosion control devices).

Based on the best available scientific and commercial information, NMFS concurs with Caltrans' determination that the proposed project is not likely to adversely affect CCC steelhead. This concludes ESA consultation in accordance with 50 CFR 402.13(a) for the proposed Interstate 80 (I-80) Eastbound Cordelia Truck Scales Project (EA 0A5350), located at Suisun Creek, Solano County, California. However, further consultation may be required if: (1) new information becomes available indicating that listed species or habitat may be affected by the project in a manner or to an extent not previously considered; (2) current project plans change in a manner that causes an effect to listed species or critical habitat in a manner not previously considered; or (3) a new species is listed or critical habitat designated that may be affected by the action.

Magnuson-Stevens Fishery Conservation and Management Act

As discussed in the above ESA section, Suisun Creek is designated EFH for Central Valley fall/late fall-run Chinook salmon. Although no in-water construction will take place, there may be increased sedimentation and turbidity resulting from construction on the bank. In addition,

Caltrans may have to remove riparian vegetation for access to the construction area during construction. Caltrans has stated that they will implement BMPs to reduce erosion, and replant any areas where vegetation was removed with native vegetation. While these impacts are considered minor and temporary, NMFS has made the determination that the proposed action would adversely affect EFH for this species. However, the proposed action contains adequate measures to avoid, minimize, mitigate, or otherwise offset any adverse effects to EFH. Therefore, NMFS has no additional EFH Conservation Recommendations to provide.

Fish and Wildlife Coordination Act

The purpose of the FWCA is to ensure that wildlife conservation receives equal consideration, and is coordinated with other aspects of water resources development [16 U.S.C. 661]. The FWCA establishes a consultation requirement for Federal departments and agencies that undertake any action that proposes to modify any stream or other body of water for any purpose, including navigation and drainage [16 U.S.C 662(a)]. Consistent with this consultation requirement, NMFS provides recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources. The FWCA allows the opportunity to offer recommendations for the conservation of species and habitats beyond those currently managed under the ESA.

Pursuant to FWCA, NMFS has no comments to provide.

Please contact Ms. Jacqueline Meyer at (707) 575-6057, or via e-mail at jacqueline.pearson-meyer@noaa.gov should you have any questions concerning this consultation.

Sincerely,

for Rodney R. McInnis
Regional Administrator

cc: Russ Strach, NMFS, Sacramento
Korie Schaeffer, NMFS, Santa Rosa
Jeffrey Jensen, Caltrans District 4 Oakland
Ahmad Hashemi, Caltrans District 4 Oakland
Melissa Escaron, California Department of Fish and Game
Copy to file: ARN: 151422-SWR-2008-SR00418

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
81420-2008-F-1929-3

SEP 18 2009

Mr. James Richards
California Department Transportation
111 Grand Avenue
P.O. Box 23660
Oakland, California 94623-0660

Subject: Biological Opinion for the Proposed Interstate 80 Eastbound Cordelia Truck Scales Relocation Project, Solano County, California (Caltrans EA 0A5350) on the Threatened Valley Elderberry Longhorn Beetle and the Threatened California Red-legged Frog

Dear Mr. Richards:

This is in response to your July 30, 2008, request for formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Interstate 80 Eastbound Cordelia Truck Scales Relocation Project in Solano County, California. Your request was received in our Sacramento field office on July 31, 2008, and included the request for formal consultation on the threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) and the threatened California red-legged frog (*Rana aurora draytonii*). A revised biological assessment for the project was received on October 27, 2008. Formal consultation on the valley elderberry longhorn beetle was removed on May 30, 2009, but reinitiated on July 15, 2009 (as detailed in the *Consultation History* section). This document represents the Service's biological opinion on the effects of the proposed action on these listed species. This document is issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*)(Act).

This biological opinion is based on: (1) the October 2008 Biological Assessment; (2) additional project information provided by ICF Jones & Stokes on March 18, 2009; April 21, 2009, and June 1, 2009; (3) the March 30, 2009, mitigation and monitoring plan for the proposed 3.0-acre compensation site; (4) the July 15, 2009, California Department of Transportation's (Caltrans) response to the July 2, 2009, draft biological opinion and request for reinitiation of formal consultation for the valley elderberry longhorn beetle; (5) additional effects to the valley elderberry longhorn beetle provided by Caltrans on July 16, 2009; (6) miscellaneous correspondence and electronic mail concerning the proposed action between the Service and

TAKE PRIDE IN AMERICA

Caltrans and their consultant between July 2008 and July 2009; and (7) other information available to the Service.

Consultation History

July 31, 2008	The Service received a biological assessment and a letter from Caltrans requesting formal consultation on the valley elderberry longhorn beetle and the California red-legged frog. The Caltrans letter was dated July 30, 2008.
October 27, 2008	The Service received a revised biological assessment from Caltrans' consultant, ICF Jones & Stokes.
December 5, 2008	The Service issued a request for additional information required for the completion of consultation (Service File #: 81420-2008-F-1929-1).
December 12, 2008	The Service visited the proposed project site with Caltrans and ICF Jones & Stokes.
February 9, 2009	The Service received the Draft Environmental Impact Report/Environmental Assessment for the proposed project.
March 18, 2009	The Service received a response to the December 2008 information request from ICF Jones & Stokes via an electronic mail (email) message. The response letter was dated March 18, 2009. The letter included the acceptance of a list of additional conservation measures recommended by the Service in our December 5, 2008, request for additional information.
April 20, 2009	The Service received a copy of the *Interstate 80 HOV Lanes/Eastbound Cordelia Truck Scales Relocation Project Mitigation and Monitoring Plan* attached to an email message from a consultant to the Solano Transportation Authority (STA). The restoration project was intended to offset the project's effects on the California red-legged frog. The plan also includes the planting of 107 elderberry shrubs (*Sambucus* species). The document was prepared by H.T. Harvey & Associates and was dated March 30, 2009.

April 21, 2009 The Service received an electronic mail message from ICF Jones & Stokes which included further clarification of the area of effects to California red-legged frog habitat as shown in the following table.

	Permanent (acres)	To be restored (acres)	**Total (acres)**
Riparian previously covered by Interstate 80 biological opinion.	0.02	0.11	**0.13**
Riparian	0.71	1.00	**1.71**
Ruderal	0.31	1.28	**1.59**
Total	**1.04**	**2.39**	**3.43**

May 26, 2009 The Service was informed via an email message that a jack and bore operation to install a Solano Irrigation District water pipeline under Suisun Creek was being added to the project description.

May 30, 2009 The Service received confirmation from Caltrans' consultant, ICF Jones & Stokes, that the valley elderberry longhorn beetle should be removed from the consultation because the beetles and the associated elderberry shrubs in the action area were covered under incidental take for the overlapping Interstate 80 HOV Lane Project (Service File 1-1-07-F-0146). ICF Jones & Stokes stated that they would pursue an amendment to the Interstate 580 HOV Project with Caltrans and STA. The amendment would incorporate the changes regarding the contingency plans should they be unable to transplant the five elderberry shrubs in the shared action areas.

June 1, 2009 The Service received a project description for the proposed jack and bore activity under Suisun Creek via an email from ICF Jones & Stokes. The message stated that reconnaissance surveys were performed for the additional action area. The closest elderberry shrub was approximately 70 feet away from the entry and exit work areas for the jack and bore and would be avoided by the activity. The entry and exit locations are also located within in an area actively managed for orchard and row crop agriculture and therefore activity in these locations is not likely to adversely affect the California red-legged frog.

June 4, 2009 The Service received an email from ICF Jones & Stokes stating that the entry and exit work area for the jack and bore would add 0.5 acres to the overall action area and the activity would occur between June 1 and October 1 in 2010 or 2011.

July 2, 2009 The Service issued a draft biological opinion (Service File 81420-2008-F-1929-2) for the California red-legged frog.

July 15, 2009 The Service received a letter head response from Caltrans regarding their review of the July 2, 2009, draft biological opinion. The letter included requested edits along with a request to reinitiate formal consultation for the valley elderberry longhorn beetle. The request to add the listed beetle resulted from the realization that a fifth elderberry shrub in the shared action area with the Interstate 80 HOV Lane Project had not been included in the consultation for the neighboring project (unlike the other four elderberry shrubs). This fifth shrub would be pruned or removed as a result of the actions associated with the Interstate 80 Eastbound Cordelia Truck Scales Relocation Project. If the shrub needs to be removed, it will be transplanted to the proposed 3.0-acre Suisun Creek restoration site on the Solano Community College Campus where the effects to the listed beetle have been offset by the proposed planting of 107 elderberry shrubs.

July 16, 2009 The Service received an email from Caltrans stating that they had identified three additional elderberry shrubs that may be indirectly affected by the proposed project. The three shrubs are within 17 to 34 feet of the proposed construction at the top of the bank on the east side of Suisun Creek and south of the truck scales construction area. Biologists were unable to assess the shrubs for valley elderberry beetle exit holes due to heavy poison oak (*Toxicodendron diversilobum*) growth. Caltrans identified dust accumulation, removal of associated woodland species, and root damage as potential indirect effects to the three shrubs and elderberry beetles that may be found on the shrubs. Caltrans proposed construction buffer and dust control measures to minimize the effects to the listed beetle.

BIOLOGICAL OPINION

Description of the Proposed Action

Caltrans proposes to relocate and reconstruct the Cordelia truck scales off of eastbound Interstate 80 in Solano County, California. The new facility would be located south of Interstate 80 between the existing truck scale facility and the Interstate 80/eastbound State Route 12 interchange. The approximately 2 mile long project includes removal of the existing truck scales along with construction of the new facility and the associated on and off ramps. The proposed project is intended to address the need for increased capacity to accommodate anticipated growth in truck traffic in the corridor by 2040, to provide traffic congestion relief along this segment of I-80, improve safety by reducing truck/auto weaving and queuing, and improve the reliability of the system to enforce truck weight and safety requirements. The project is also intended to address overall velocity, throughput, reliability, congestion, and safety in the eastbound Interstate 80 traffic corridor.

Construction Schedule and Funding

Construction is expected to begin May 31, 2011 and be completed by September 30, 2013.

Caltrans expects the construction to be phased generally as follows:

1. Utility relocations.

2. Construct new weigh station and inspection facility, ramp connection from existing facility to new facility (including bridge across Suisun Creek), and on ramps from the new facility to Interstate 80 and the new Interstate 80/eastbound State Route 12 connector. Any work in the Suisun Creek (vegetation cutting) would occur between June 1 and October 15 to avoid periods when Central Valley fall/late fall–run Chinook salmon (*Oncorhynchus tshawytscha*) and central California coast steelhead (*Oncorhynchus mykiss*) may be present.

3. Construct and open a new connector to eastbound State Route 12, then complete paving of a new on-ramp to eastbound Interstate 80 from the inspection facility.

4. Open new facility, using temporary off-ramp east of existing facility.

5. Complete final off-ramp configuration and remove temporary off-ramp east of existing truck scales.

6. Demolish existing facility.

Project Components

1. Truck Scales
   The eastbound Cordelia Truck Scales facility would be reconstructed approximately 2,500 feet east of its present location. The new facility would be a Class B (defined as an independent command facility of the California Highway Patrol located along a major highway route) Commercial Vehicle Enforcement Facility, which would have the capacity to inspect all eastbound Interstate 80 trucks passing the facility 24 hours a day, 7 days a week. The facility would contain up to four sets of scales to accommodate two lines of empty and loaded trucks. The new facility would contain four inspection bays, parking for up to 22 semi-truck trailer combinations, 49 automobile parking spaces, and a roadway along the outer edge of an oval to allow weighed trucks to be driven around into the inspection bay or to be reweighed. A single-story operations building would be constructed to facilitate the vehicle inspection and weighing process.

Construction would consist of grading to a maximum of 4 feet in depth, compacting, paving, and striping. Staging areas would be located within the acquired right-of-way and are included in the described action area.

2. Associated Ramps
Associated ramps would include an off-ramp providing access to the truck scale facility from eastbound Interstate 80 and on-ramps providing access to eastbound Interstate 80 and eastbound State Route 12.

The off-ramp to the new truck scale facility would use the existing off-ramp location and geometry, which consists of a dedicated off-ramp and a shared through-exit lane. The new off-ramp would continue as a two-lane facility through the existing truck scale site and would widen to four lanes immediately west of Suisun Creek. The new off-ramp would cross over Suisun Creek on a new bridge before entering the new truck scale facility. Truck traffic would be sorted along the approach roadway into the appropriate lane by means of weigh-in-motion scales and signal bridges.

Trucks leaving the facility would use a new two-lane eastbound roadway that splits approximately 1,300 feet east of the facility with one lane merging onto eastbound Interstate 80 and the other lane connecting to the eastbound Interstate 80–to–eastbound State Route 12 connector.

Construction would consist of grading to a maximum of 4 feet in depth, compacting, paving, and striping. Staging areas would be located within the acquired right-of-way.

3. Interstate 80/Eastbound State Route 12 Connector
The eastbound Interstate 80 connector to eastbound State Route 12 would be reconstructed as a two-lane ramp crossing over (braided with) the truck scale on-ramp to eastbound Interstate 80. The connector bridge and associated retaining wall would be constructed to an ultimate three-lane width to facilitate future planned improvements, although the exit from Interstate 80 proposed for this project would consist of a two-lane connection (one dedicated eastbound State Route 12 lane and a shared through-exit lane). The new dedicated lane on Interstate 80 would begin approximately 2,500 feet west of the exit point to the connector. The connector would cross Suisun Creek on a bridge that has been widened as part of a previous project (Interstate 80 HOV Lanes [Service File 1-1-07-F-0146]). The two-lane connector would continue east becoming eastbound State Route 12, with the truck scale on-ramp joining as an auxiliary lane that would end at the eastbound State Route 12/Chadbourne Road interchange off-ramp.

4. Bridge over Suisun Creek
A four-lane, precast, single-span bridge would be constructed to carry truck traffic on the off-ramp over Suisun Creek. The bridge would be approximately 100 feet long and 56 feet wide.

Concrete bridge abutments for the new bridge would be located above the ordinary high water mark. Excavations for the abutments would extend approximately 8 feet below the surface. The precast bridge would be positioned using a crane. No construction work would take place within the creek. Construction equipment would access the bridge site from Interstate 80 and would use the highway bridge to cross the creek.

5. Relocation of Utilities

Sewer, communication, and electrical services for the truck scales would be provided by underground utilities. The underground lines would connect to existing utilities to the west (in the vicinity of Scandia) and would follow the road shoulder, remaining entirely with the existing Caltrans right-of-way. It is expected that excavation for these utilities would be approximately 8 feet deep and would parallel existing underground utilities. The utilities would cross both Suisun and Dan Wilson Creeks attached to the Interstate 80 bridges.

Some adjustment to overhead power lines would be necessary. To facilitate the realignment of the overhead power line, it would be necessary to remove some utility poles and towers and relocate them. It is expected that five new utility poles would be located along the south and west sides of the proposed truck scales facility, and that two poles would need to be removed in that area. In the vicinity of the Interstate 80/eastbound State Route 12 interchange, one pole and two towers would be removed and relocated.

Bore-and-jack technology would be used to relocate an 18-inch diameter Solano Irrigation District (SID) pipeline beneath Suisun Creek. The bore and jack would be constructed approximately 50 feet south of the study area. The boring and receiving pits would be set in row crops approximately 30 feet east of riparian woodland on the east side of Suisun Creek and set in an orchard approximately 50 feet west of riparian woodland on the west side of the creek. Construction of the jack and bore would take approximately 4 weeks and would occur between June 1 and October 1 in 2010 or 2011. The micro-tunneling process may use a mixture of bentonite (inert clay) and petroleum as a lubricant for the drilling mechanism.

Drilling near the ground surface or close to the bed of a surface water body introduces the potential for an unplanned "frac-out," in which the pressure of the bentonite or other drilling lubricant generates a surface rupture, causing a release of bentonite to the ground surface or in Suisun Creek. Although bentonite is not toxic, it can smother habitat and increase turbidity and suspended sediments in Suisun Creek.

For bore-and-jack tunneling activities that use drilling lubricants, Caltrans or its contractor will prepare and implement a frac-out contingency plan that is intended to minimize the potential for a frac-out associated with tunneling activities; provide for the timely detection of frac-outs; and ensure an organized, timely, and "minimum-impact"

response in the event of a frac-out and release of drilling lubricant (i.e., bentonite). The contingency plan will require, at a minimum, the following measures.

a. A full-time monitor will attend all drilling to look for observable frac-out conditions or lowered pressure readings on drilling equipment.

b. If a frac-out is identified, all work will stop, including the recycling of drilling lubricant.

c. In the event of a frac-out into water, the pressure of water above the tunnel will keep excess mud from escaping through the fracture. The location and extent of the frac-out will be determined, and the frac-out will be monitored for 4 hours to determine whether the drilling lubricant congeals (bentonite will usually harden, effectively sealing the frac-out location).

d. If the drilling lubricant congeals, no other actions will be taken that would potentially suspend sediments in the water column.

e. Surface releases of bentonite will be allowed to harden and then will be removed.

f. The contingency plan will identify additional measures to be taken to contain or remove the drilling lubricant if it does not congeal.

6. Removal of Existing Truck Scales
Once construction of the new truck scale facility is complete and the new facility is operational, the existing facility would be removed. However, the pavement associated with the existing facility will remain and be retained as a contingency for several possible uses, such as Caltrans maintenance operations or additional inspection holding areas.

Construction Access and Staging

All access to the construction area in the vicinity of Suisun Creek will be from Interstate 80 and within the described action area. Staging areas will be selected prior to construction start-up, located within the identified project footprint and in areas with no sensitive biological resources.

Off-Site Habitat Restoration

Caltrans has proposed restoration of 3.0 acres of Suisun Creek riparian habitat approximately 500 feet upstream of the Interstate 80 crossing of the creek to offset the project's adverse effects on the valley elderberry longhorn beetle and California red-legged frog and to provide replacement plantings for lost riparian vegetation (H.T. Harvey & Assocates 2009). The restoration site is immediately upstream of a proposed 1.0 acre restoration site for compensation associated with STA's proposed North Connector Project (Service File 81420-2009-F-0308). The restoration

would occur in a ruderal, former agricultural field immediately adjacent to the Suisun Creek riparian corridor on Solano Community College property. The proposed restoration site is within the historical flood plain of Suisun Creek and is currently fallow yet routinely disked for fire and weed control.

The proposed restoration plan is a northward expansion of the 1.0-acre restoration plan proposed by STA for their North Connector Project. Caltrans will entrust and fund STA to implement and monitor the 3.0-acre restoration plan in conjunction with and as an extension of STA's efforts on the contiguous 1.0-acre restoration site. STA's consultant, H.T. Harvey & Associates drafted the plans for both sites and is the likely contractor to oversee the restoration and monitoring.

The restoration includes planting 767 trees and shrubs, including coast live oak (*Quercus agrifolia*), valley oak (*Q. lobata*), California buckeye (*Aesculus californica*), California bay (*Umbellularia californica*), blue elderberry (*Sambucus Mexicana*), coyote bush (*Baccharis pilularis*), coffeeberry (*Rhamnus californica*), California rose (*Rosa californica*), and California blackberry (*Rubus ursinus*). The plan includes the planting of 107 elderberries, not including possible transplantation of one shrub within in the action area.

STA has already collected plant material for the 1.0 acre site for its North Connector Project and plans to begin restoration of that area between October 2009 and February 2010. Collection and propagation of plant material for the 3.0-acre site would occur in Fall 2009 and planting would begin in Fall 2010 (which is prior to the scheduled start of the truck scales construction). According to the restoration plan, long-term establishment and reproduction of the planted vegetation would be expected within 10 years of planting and mature growth would be expected after 25 years (H.T. Harvey & Assocates 2009).

The following is a summary of the proposed restoration plan. To prepare the site for planting the soil will be disked and amended if needed. Native vegetation within the adjacent riparian corridor and persisting in the restoration area will be identified for avoidance. Vegetation will be planted to provide a continuous, multi-layered, native riparian woodland community that includes species found in the Suisun Creek riparian corridor. The source material for the plantings will be collected along the Suisun Creek corridor and propagated at an experienced nursery (likely Cornflower Farms in Elk Grove, California). Additional plant material will be collected from other Solano County riparian corridors if needed. Other than the container plantings, areas disturbed during restoration will be hydroseeded with a native seed mix. The plantings will be supported with an irrigation system and mulch, and protected with caging. Woody debris from the truck scales action area will be scattered throughout the restoration area. Fencing and signage will be used to identify and protect the site.

The plan includes a ten-year monitoring plan with a more intense irrigation, management, and monitoring effort for the initial three years following planting. Monitoring during the first three years will include three site visits per month during the growing season (March-October) and one visit a month from November to February. All dead plantings will be replaced during the first

two years and replacement in the third year of monitoring will be based on achieving 80% survival. The monitoring period will be extended if 80% survival is not met by the third year following the initial planting. The success of the restoration site will be reassessed in years five, seven, and ten using the criteria outlined in the March 2009 restoration plan (H.T. Harvey & Assocates 2009). Additional monitoring will occur if the success criteria have not been met after the tenth year. A monitoring report will be submitted by December 31st of each monitoring year.

A conservation easement/deed restriction will be established for the restoration site. Solano Community College will hold the easement/deed restriction and continue the management of the restoration site.

Proposed Avoidance and Minimization Measures

According to the October 2008 Biological Assessment, the March 18, 2009 letter from ICF Jones & Stokes, and the Caltrans' June 16, 2009, email, Caltrans propose to avoid, minimize, and compensate for effects to listed species by implementing the following measures:

Valley Elderberry Longhorn Beetle

1. If feasible, Caltrans will transplant the one directly affected elderberry shrub to the proposed 3.0-acre Suisun Creek riparian corridor restoration site on Solano Community College property according to Service-approved procedures outlined in the *Valley Elderberry Longhorn Beetle Guidelines* (Service 1999) prior to the start of construction. Transplanting will be done during the dormant period for elderberry shrubs (November through the first 2 weeks of February). If Caltrans is unable to remove the shrub due to access and/or bank stability concerns the shrub will be left in place and pruned as needed prior to construction.

2. Caltrans will plant a minimum of 107 elderberry shrubs at the proposed 3.0-acre Suisun Creek restoration site on the Solano Community College Campus to offset the effects to the valley elderberry longhorn beetle due to direct effects associated with transplantation or pruning of an elderberry shrub within the action area and the indirect effects associated with the habitat fragmentation of Suisun Creek.

3. Establish a Buffer Area Around All Elderberry Shrubs. Before any ground-disturbing activity, Caltrans will ensure that a minimum 4-foot-tall temporary, plastic mesh-type construction fence (Tensor Polygrid or equivalent) will be installed 20 feet outside the driplines of elderberry shrubs where feasible. This fencing is intended to prevent encroachment by construction vehicles and personnel, and to prevent inadvertent trimming of elderberry shrubs and associated riparian vegetation. The exact location of the fencing will be determined by a Service-approved biologist, with the goal of protecting habitat for the valley elderberry longhorn beetle.

The fencing will be strung tightly on posts set at a maximum interval of 10 feet. The fencing will be installed in a way that prevents equipment from enlarging the work area beyond the delineated work area. The fencing will be checked and maintained until all construction is completed. This buffer zone will be marked by a sign stating, "This is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." No construction activity, including grading, will be allowed until this condition is satisfied. No grading, clearing, storage of equipment or machinery, or other disturbance or activity may occur until the Service-approved biologist has inspected and approved all temporary construction fencing. The fencing and a note reflecting this condition will be shown on the construction drawings.

4. Dust Control. Caltrans will ensure that dust control measures are implemented for all ground-disturbing activities in the project area. These measures may include application of water to graded and disturbed areas that are unvegetated. To avoid attracting Argentine ants (*Linepithema humile*), at no time will water be sprayed within the driplines of elderberry shrubs.

California Red-Legged Frog

1. Caltrans proposes to offset the loss of approximately 3.43 acres of California red-legged frog habitat with the restoration of 3.0 acres of riparian habitat along the Suisun Creek on Solano Community College property. The proposed habitat restoration site is located approximately 500 feet upstream of the westbound Interstate 80 crossing of Suisun Creek. The proposed 3.0-acre site is currently occupied by a fallow field adjacent to the narrow riparian corridor associated with Suisun Creek. The restoration will be incorporated into another proposed restoration effort of 1.0 acres of riparian habitat for the North Connector Project proposed by STA. The combined restoration will be planned and managed by STA during development of their North Connector Project. The restoration will include a 10-year monitoring plan.

2. A Service-approved biologist(s) will be designated for the activities that will affect California red-legged frog. The qualified biologist(s) will be on-site during specific construction activities that may reasonably result in the take of the California red-legged frog. The qualifications of the biologist(s) will be presented to the Service for review and written approval prior to ground-breaking at the project site. The biologist(s) will coordinate through the Resident Engineer, to stop any work that may result in take of the California red-legged frog. If work is stopped, the biologist(s) will notify the Service by telephone and electronic mail within one (1) working day. The Service contact will be Chris Nagano, Division Chief, Endangered Species Program at the Sacramento Field Office at telephone (916) 414-6600.

3. The Service-approved biologist will monitor all ground-disturbing construction activity near potential California red-legged frog habitat. After ground-disturbing activities are complete, the Service-approved biologist will train an individual to act as the on-site construction monitor. The on-site monitor will have attended the environmental awareness training. Both the Service-approved biologist and construction monitor will have the authority to stop or redirect project activities to ensure protection of resources and compliance with all environmental permits and conditions of the project with communication through the Resident Engineer. If the Service-approved biologist or construction monitor has requested that work stop because of take of any of the listed species, the Service and the California Department of Fish and Game will be notified within one working day via email or telephone. The Service-approved biologist and construction monitor will complete a daily log summarizing activities and environmental compliance.

4. The Resident Engineer will halt work and immediately contact the Service-approved project biologist(s) and the Service in the event that a California red-legged frog gains access to a construction zone. The Resident Engineer will suspend construction activities in the immediate construction zone that could reasonably result in a take of a California red-legged frog until the animal leaves the site voluntarily or is removed by the biologist(s) to a release site using Service-approved handling techniques.

5. Any person capturing or handling a California red-legged frog will be a qualified biologist approved by the Service. Candidates will have completed at least four years of university training in wildlife biology or a related science, or have demonstrated field experience in the identification and life history of the California red-legged frogs. Resumes of all biologists proposed to capture or handle California red-legged frogs will be submitted to the Service for approval no later than 30 days before the start of construction.

6. If necessary, nets or bare hands will be used to capture California red-legged frogs. The Service-approved biologist will not use soaps, oils, creams, lotions, repellents, or solvents of any sort on their hands within two hours before and during periods in which they are capturing and relocating California red-legged frogs. To avoid transferring disease or pathogens between aquatic habitats during the course of surveys or handling of California red-legged frogs, the Service-approved biologist will follow the Declining Amphibian Populations Task Force's Code of Practice. The Service-approved biologist will limit the duration of handling and captivity of California red-legged frog. While in captivity, California red-legged frogs will be kept in a cool, moist, aerated environment, such as a bucket containing a damp sponge. Containers used for holding or transporting adults of this species will not contain any standing water.

7. All construction areas will be flagged, and all activity will be confined to these areas. For seasonal avoidance of the California red-legged frog, construction will not occur in the 3.43 acres of identified habitat in the action area from November 1 through April 30 (California red-legged frog breeding season) to the extent practicable. If any work remains to be completed after November 1, exclusion fencing will be placed in those areas where construction needs to be completed. Exclusionary fencing will consist of taut silt fabric, 24 inches in height, stacked at 10-foot intervals, with the bottom buried 6 inches below grade. Exclusion fencing will be maintained so that it is intact during rain events and 24 hours after any rain event.

8. Because dusk and dawn are often the times when California red-legged frogs are most actively foraging and dispersing, all construction activities will cease 30 minutes before sunset and will not begin before 30 minutes prior to sunrise.

9. A representative will be appointed by Caltrans who will be the contact source for any employee or contractor who might inadvertently kill or injure a California red-legged frog, or who finds a dead, injured, or entrapped individual. The representative will be identified during the employee education program. The representative's name and telephone number will be provided to the Service before the initiation of ground-disturbing activities.

10. Tightly woven fiber netting or similar material will be used for erosion control or other purposes at the project site to ensure that California red-legged frogs are not trapped. This limitation will be communicated to the contractor through use of special provisions included in the bid solicitation package. Coconut coir matting will be considered an acceptable erosion control material. No plastic monofilament matting will be used for erosion control.

11. A litter control program will be instituted at the entire project site. All workers will ensure that food scraps, paper wrappers, food containers, cans, bottles, and other trash from the project area are deposited in covered or closed trash containers. The trash containers will be removed from the project area at the end of each working day.

12. After construction is complete, temporarily disturbed areas within the project area will be restored to pre-project conditions or enhanced to compensate for the removal of riparian vegetation.

13. Caltrans will include special provisions that include the avoidance and minimization efforts described for bid information when applicable.

14. Environmental Awareness Training. Caltrans will retain a Service-approved biologist to develop and conduct environmental awareness training for construction employees on the importance of on-site biological resources, including sensitive natural communities;

native trees to be retained; special-status wildlife habitats, and the valley elderberry longhorn beetle and California red-legged frog. The environmental awareness program will be provided to all construction personnel to brief them on the life history of special-status species in or adjacent to the project area, the need to avoid adverse affects to sensitive biological resources, any terms and conditions required by state and federal agencies, and the penalties for not complying with biological constraints. If new construction personnel are added to the project, the contractor's superintendent will ensure that the personnel receive the mandatory training before starting work. An environmental awareness handout will be provided to each person that describes and illustrates sensitive resources to avoid during project construction and identifies all relevant permit conditions.

15. Project employees will be provided with written guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards.

16. To avoid injury or death of a California red-legged frog, no firearms will be allowed in the action area except for those carried by authorized security personnel, or local, State, or Federal law enforcement officials.

17. To prevent harassment, injury or mortality of a California red-legged frog or destruction of their refuge, project personnel will not be permitted to have dogs or cats in the action area.

18. For work that could reasonably result in a take of a California red-legged frog, a Service-approved biologist(s) will be on-site to monitor the initial ground disturbance activities. The biologist(s) will perform a clearance survey immediately prior to the initial ground disturbance. A Service-approved biologist will carefully search all obvious potential hiding spots for California red-legged frog, such as large downed woody debris, the perimeter of wetland habitats, and the Suisun Creek riparian. The biologist(s) will investigate all potential California red-legged frog cover sites. This includes thorough investigation of mammal burrows. The entrances will be collapsed following investigation. Any California red-legged frog found will be captured and held for the minimum amount of time necessary to release them in suitable habitat outside the study area. Suitable release sites will be identified by a qualified biologist approved by the Service before the start of construction activities. Safety permitting, the Service-approved biologist(s) will investigate areas of disturbed soil for signs of listed species within thirty (30) minutes following the initial disturbance of that given area.

19. When it is necessary to relocate California red-legged frog outside the action area, the listed amphibian will be moved the shortest distance possible by a Service-approved biologist within the Suisun Creek riparian corridor or to a small mammal burrow in adjacent and appropriate habitat.

20. Injured California red-legged frogs will be cared for by a licensed veterinarian or other qualified person such as the on-site biologist; dead individuals must be placed in a sealed plastic bag with the date, time, location of discovery, and the name of the person who found the animal; the carcass should be kept in a freezer; and held in a secure location. The Service and the California Department of Fish and Game will be notified within one (1) working day of the discovery of death or injury to a California red-legged frog that occurs due to project related activities or is observed at the project site. Notification will include the date, time, and location of the incident or of the finding of a dead or injured animal clearly indicated on a USGS 7.5 minute quadrangle and other maps at a finer scale, as requested by the Service, and any other pertinent information. Caltrans has identified the Service contacts as Chris Nagano, Division Chief, Endangered Species Program at the Sacramento Fish and Wildlife Office [(916) 414-6600], and Dan Crum, Resident Agent-in-Charge of the Service's Law Enforcement Division at (916) 414-6660. Caltrans has identified the California Department of Fish and Game contact as Mr. Scott Wilson at telephone (707) 944-5563. Sightings of any listed or sensitive animal species will be reported to the California Natural Diversity Database of the California Department of Fish and Game.

21. Biologists will take precautions to prevent introduction of amphibian diseases to the action area by disinfecting equipment and clothing as directed in the October 2003, California tiger salamander survey protocol titled, *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* and the recommended equipment decontamination procedures within the Service's *California Red-Legged Frog Survey Guidance*. Caltrans is aware that both items are available at the Service's Sacramento office website (http://www.fws.gov/sacramento/es/protocol.htm). Disinfecting equipment and clothing is especially important when biologists are coming to the action area to handle amphibians after working in other aquatic habitats.

22. To minimize temporary disturbances in areas of California red-legged frog habitat, project related vehicle traffic will be restricted to established roads, construction areas, and other designated areas. These areas also should be included in pre-construction surveys and, to the maximum extent practicable, should be established in locations disturbed by previous activities to prevent further adverse effects. Project related vehicles will observe a 20-mile per hour speed limit, except on County roads, and State and Federal highways. Off-road traffic outside of designated action areas for construction phases with potential California red-legged frog habitat will be prohibited.

23. Caltrans describes temporary effects as those activities that are ancillary to permanent construction features and disturb an area for a specific limited period and which can be restored to pre-disturbance-type conditions prior to the beginning of the following year's rainy season (e.g. October 15th). Areas temporarily affected by the project will typically be restored after a single construction season. Where temporary soil disturbance occurs,

Caltrans standard erosion control practices will restore cover prior to winter rains and within a single red-legged frog breeding season.

24. Dust control measures will consist of regular truck watering of constriction access areas and disturbed soil areas with the use of organic soil stabilizers to minimize airborne dust and soil particles generated from graded areas. Regular truck watering will be a requirement of the construction contract. In addition, for disturbed soil areas, an organic tackifier to control dust emissions blowing off of the right-of-way or out of the construction area during construction will be included in the contract special provisions. Watering guildelines for dewatering will be established to avoid any excessive run-off that may flow into contiguous areas. Any material stockpiles will be watered, sprayed with tackifier or covered, to minimize dust production and wind erosion.

25. Use of rodenticides and herbicides in the action area will be used in such a manner to prevent primary or secondary poisoning of a California red-legged frog and the depletion of vegetation on which they depend. All uses of such compounds will observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other appropriate State and Federal regulations, as well as additional project-related restrictions deemed necessary by the Service or the California Department of Fish and Game.

26. Dedicated fueling and refueling practices will be designated as part of the approved Stormwater Pollution Prevention Program (SWPPP). Dedicated fueling areas will be protected from storm water run-on and run-off and will be located at least 50 feet from downslope drainage facilities and water courses. Fueling will be performed on level-grade areas. On site fueling will only be used where it is impractical to send vehicles and equipment off-site for fueling. When fueling must occur on-site, the contractor will designate an area to be used subject to the approval of the Resident Engineer, representing Caltrans. Drip pans or absorbent pads will be used during on-site vehicle and equipment fueling.

27. The potential for adverse effects to water quality will be avoided by implementing temporary and permanent Best Management Practices (BMPs) outlined in section 7-7.01G of the Caltrans' Standard Specifications. Additional water quality protection measures required by other permits such as the California Department of Fish and Game's Lake and Streambed Alteration Agreement and the State Water Resources Control Board's National Pollution Discharge Elimination System Statewide Storm Water Permit will be implemented. Caltrans SWPPP and erosion control BMPs will be used to minimize any wind or water-related erosion. A SWPPP will be developed for the project, as one is required for all projects that have at least 1.0 acre of soil disturbance. The SWPPP complies with the Caltrans Storm Water Management Plan (SWMP). The SWMP includes guidance for Design staff to include provisions in construction contracts

to include measures to protect sensitive areas and to prevent and minimize stormwater and non-stormwater discharges.

The SWPPP is referenced in the Caltrans Construction Site BMPs Manual. This manual is comprehensive and includes many other protective measures and guidance to prevent and minimize pollutant discharges and can be found at the following website location: http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm. Protective measures will be included in the contract, including, at a minimum:

a. No discharge of pollutants from vehicle and equipment cleaning are allowed into the storm drain or water courses.

b. Vehicle and equipment fueling and maintenance operations must be at least 50 feet away from water courses.

c. Concrete wastes are collected in washouts and water from curing operations is collected and disposed of and not allowed into water courses.

d. Dust control will be implemented, including use of water trucks and tackifiers to control dust in excavation and fill areas, rocking temporary access road entrances and exits, and covering temporary stockpiles when weather conditions require.

e. Coir rolls will be installed along or at the base of slopes during construction to capture sediment and temporary organic hydromulching will be applied to all unfinished disturbed and graded areas.

f. Restoration of work areas where temporary disturbance has removed the pre-existing vegetation and re-seeding with a native seed mix.

g. Protection of graded areas from erosion using a combination of silt fences, fiber rolls along toe of slopes or along edges of designated staging areas, and erosion-control netting (such as jute or coir) as appropriate on sloped areas.

h. A Revegetation Plan will be prepared for restoration of temporary work areas. Pavement and base will be removed; topography blended with the surrounding area; and topsoil will be salvaged from the new alignment area to be placed over the restored area, which will then be revegetated with native grassland species.

28. All grindings and asphaltic-concrete waste will be stored within previously disturbed areas absent of habitat and at a minimum of 150 feet from any aquatic habitat, culvert, or drainage feature.

29. Areas outside of the construction zones containing suitable habitat for the California red-legged frog will be delineated with high visibility temporary fencing at least 4 feet in height, flagging, or other barrier to prevent encroachment of construction personnel and equipment onto sensitive areas during construction activities. The fencing will be removed only when all construction equipment is removed from the site. Activities within the action area will be limited to vehicle and equipment operation on existing roads. No project activities will occur outside the delineated project construction area.

30. If requested, before, during, or upon completion of ground breaking and construction activities, Caltrans will allow access by Service personnel to the action area to inspect project effects to California red-legged frogs and their habitat.

31. To prevent inadvertent entrapment of the California red-legged frog during construction, steep-walled holes or trenches more than 2 feet deep will be covered at the close of each working day by plywood or similar materials. Alternatively, an additional 4-foot high vertical barrier, independent of exclusionary fences, may be used to further prevent the inadvertent entrapment of California red-legged frogs. If it is not feasible to cover an excavation or provide an additional 4-foot high vertical barrier, independent of exclusionary fences, one or more escape ramps constructed of earth fill or wooden planks will be installed. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. If at any time a trapped listed animal is discovered, the on-site biologist will immediately place escape ramps or other appropriate structures to allow the animal to escape, or the Service will be contacted by telephone for guidance. The Service will be notified of the incident by telephone and electronic mail within one (1) working day.

32. The following shall be implemented for staging, storage sites, vehicle parking, and access associated with the project:

    a. Caltrans will require as part of the construction contract that all contractors comply with the Act in the performance of the work as described in the project description of this biological opinion and conducted within the action area.

    b. If a staging, storage, access, or vehicle parking area that is in compliance with the Act is not available, the agency with jurisdiction and the contractor would be responsible for compliance with the Act.

Analytical Framework for the Jeopardy Analysis

In accordance with policy and regulation, the jeopardy analysis in this biological opinion relies on four components: (1) the *Status of the Species*, which evaluates the species' range-wide condition, the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition of the species in the action area, the

factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the *Effects of the Action*, which determines the direct and indirect effects of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and (4) *Cumulative Effects*, which evaluates the effects of future, non-Federal Activities in the action area on the species. These four components are presented separately below for the valley elderberry longhorn beetle and California red-legged frog.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the species' current status, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the species in the wild.

Action Area

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." For the proposed action, the action area includes all lands associated with the approximately 56.92 acre project footprint and roads (except for County roads, and State and Federal highways) and other areas accessed by project vehicles.

Status of the Species and Environmental Baseline

Valley Elderberry Longhorn Beetle

The beetle was listed as a threatened species under the Act on August 8, 1980; critical habitat for the species was designated under the same Federal Register notice as the listing (45 FR 52803). The *Valley Elderberry Longhorn Beetle Recovery Plan* was completed on June 28, 1984 (Service 1984). Critical habitat is limited to two areas along the American River in the Sacramento metropolitan area. In addition, an area along Putah Creek, Solano County, and the area west of Nimbus Dam along the American River Parkway, Sacramento County, are considered essential habitat, according to the Valley Elderberry Longhorn Beetle Recovery Plan (Service 1984). These critical habitat and essential habitat areas within the American River parkway and Putah Creek support large numbers of mature elderberry shrubs with extensive evidence of use by the beetle.

The Five Year Status Review for the beetle was completed on September 2006 (Service 2006). The review stated that the number of sightings of the beetle has increased since the listing and that protection of habitat supporting the beetle has substantially reduced the primary threats to the species. On October 2, 2006, the Service announced its recommendation to remove the beetle from the endangered species list (http://www.fws.gov/sacramento/ea/newsroom.htm).

Valley elderberry longhorn beetle is a medium sized (0.8 inch long) beetle that is endemic to the Central Valley of California. The beetle is found only in association with its host plant, elderberry shrubs (*Sambucus* species). Adult beetles are sexually dimorphic with females having a dark metallic green to black elytra with a bright red boarder and males having predominantly red elytra with four dark oblong spots.

The beetle is dependent on its host plant, elderberry, which is a locally common component of the remaining riparian forests and savannah areas and, to a lesser extent, the mixed chaparral-foothill woodlands of the Central Valley.

Each stage of the beetle's life cycle requires a slightly different part of the elderberry plant to fulfill its life history needs. Adults feed on the foliage and perhaps flowers and are present from March through early June. During this period beetles mate and females lay eggs on living elderberry plants (Barr 1991). The first instar larvae bore to the center of elderberry stems where they develop for one to two years while feeding on pith. Prior to forming their pupae, the elderberry wood boring larvae chew through the bark (Halstead and Oldham 1990) and then plug the holes with wood shavings. The larvae crawl back to their pupal chamber which they pack with frass (digested remains) (Barr 1991). In the pupal chamber, the larvae metamorphose into their pupae and then into adults where upon they emerge between mid-March through June (Barr 1991).

Use of the elderberry shrubs by the beetle is rarely apparent. Frequently, the only exterior evidence of the shrub's use by the beetle is an exit hole created by the larva just prior to the pupal stage. Emergence holes are usually observed in living stems more than one inch in diameter and less than nine feet from the ground (Talley and Holyoak 2001). Observations made of elderberry shrubs along the Cosumnes River, in the Folsom Lake area, and near Blue Ravine in Folsom indicate that the beetle may be present in elderberry shrubs with no evidence of exit holes; the larvae either succumb prior to constructing an exit hole or are not far enough along in the developmental process to construct an exit hole. Larvae appear to be distributed in stems which are one inch or greater in diameter at ground level.

Population densities of the beetle are probably naturally low (Service 1984). It has been suggested, based on the spatial distribution of occupied shrubs (Barr 1991), that the beetle is a poor disperser (Collinge et al. 2001). Low density and limited dispersal capability cause the beetle to be vulnerable to the negative effects of the isolation of small subpopulations due to habitat fragmentation.

At the time of its listing in 1980, the beetle was known from less than ten locations on the American River, Putah Creek and the Merced River in the Central Valley of California (Service 1980). The beetle currently inhabits the Central Valley from southern Shasta County south to Fresno County in the San Joaquin Valley (Barr 1991). As of November 2008, there were 196 records of the beetle (largely based on exit holes) in the Central Valley (CNDDB 2008). Although records exist for Kern County (CNDDB 2008), no specimens or observations

of living beetles exist that support the assertion that the species is found there (Talley et al. 2006).

Since the time of listing, the number of sites from which the beetle is known has increased from less than ten to approximately 196 (CNDDB 2008), primarily due to an increased effort to look for the beetle. It should be noted that the number of records does not indicate the number of known populations. In many cases, there are multiple records from within close proximity to one another within the same watershed or river. For example, at least 24 records are known from within two miles of the American River (CNDDB 2008).

There is little information regarding range-wide population trends for the beetle. Collinge et al. (2001) provides the only long-term data set for the species. The Collinge team surveyed for beetles at most of the sites that had previously been surveyed by Barr (1991). Both studies observed evidence of the beetle (i.e., recent exit holes) at approximately 20 percent of the sites examined, and 25 percent of the total number of elderberry groups examined at those sites (more than one elderberry group was examined at some sites). Collinge et al. (2001) found that while the proportions of occupancy were similar, the number of sites examined containing elderberry and the density of elderberry at sites had decreased since Barr's study (1991), resulting in fewer occupied sites and groups.

Environmental Baseline

The distribution and abundance of the beetle within Solano County is believed to have been drastically reduced compared to historic conditions. Most of the Fairfield area was converted to agricultural use by the early 1900's and water courses and their associated riparian corridors were extensively modified and channalized. Since the mid 1900's, the towns of Fairfield and Vacaville have experienced an increase in population that has required conversion of lands from agriculture to urban sprawl. This has increased the pressure for flood control to protect property and infrastructure. As a consequence, the riparian vegetation along many stream courses within the county has been extensively reduced or altered. Alteration and loss of riparian habitat and, consequently, elderberry shrubs is still occurring and is expected to continue in the future. For instance, Solano and Napa Counties are projected to have a 53 percent growth in households by 2030 (Caltrans 2006). Much of this growth will occur in the Cities of Vacaville, Suisun, and Fairfield. To accommodate this growth, Caltrans and STA are planning for a considerable expansion of the road infrastructure within the Suisun Marsh Watershed. Many of these proposed road projects are or will cross streams at locations where the beetle or elderberry shrubs are present.

The California Natural Diversity Data Base (CNDDB) (CNDDB 2008) report from the search of the surrounding U.S. Geological Survey 7.5-minute quadrangles (Cordelia, Denverton, Elmira, Fairfield North, Fairfield South, and Mt. George) contained six records (from 1991 to 2006) for sign of Valley elderberry longhorn beetle. The Service is aware of at least 12 recorded locations of the beetle within Solano County (CNDDB 2008; Service 2005a, b). However, no systematic

distribution surveys or abundance estimates for the beetle or its host plant has been conduced. Seven of those beetle locations are within the Suisun Creek Marsh watershed and one of these is within 680 feet of the action area adjacent to the proposed Solano Community College restoration site (CNDDB 2008; Service 2005a and b; Arnold 2005). The CNDDB (2008) also includes two additional beetle records within the Suisun Marsh Watershed but outside of the Solano County border. Six of the nine records within the Suisun Marsh watershed are located along Suisun Creek.

The Service is aware of nine locations along water courses within the Suisun Marsh Watershed, including the one location approximately 689 feet upstream of the action area, where the remaining riparian vegetation includes elderberry shrubs (exit holes have been found but presence of the beetle not necessarily confirmed) (Bronny 2006). The presence of elderberry within remaining riparian vegetation suggests that elderberry shrubs historically existed along streams where riparian vegetation now has been removed. Thus, even though the historic distribution of elderberry shrub is not known, it is reasonable to assume that it was common along streams within the Suisun Marsh Watershed. Since elderberry is the only host plant used by the listed beetle, it is further reasonable to assume that the beetle's distribution has been reduced concurrently with the reduction in riparian vegetation.

Suisun Creek and its tributaries are the only drainage within the Suisun Marsh Watershed with an extensive riparian corridor that supports elderberry plants. Sign of the beetle have been found in at least six locations along the creek (CNDDB 2008; Service 2005 a and b; Caltrans 2006). The creek's continuous riparian vegetation and multiple elderberry locations have been and continue to be important for the conservation of the beetle in west Solano County and the Suisun Marsh Watershed. However, infrastructure and urbanization resulting in a demand for channel modifications and vegetation removal for flood-control and other projects have also affected the beetle's distribution along Suisun Creek.

Formal consultation and issuance of incidental take for the valley elderberry longhorn beetle for this project is consistent with the Service's biological opinions issued for other recently proposed projects occurring along Suisun Creek including:

1. The 1998 biological opinion for a Morrison Lane bridge replacement on Suisun Creek (Service File 1-1-97-F-0127);

2. The 2005 biological opinions on the replacement of the Cordelia Road Suisun Creek Bridge downstream of the action area (Service File 1-1-05-F-0027) and the Suisun Valley Road Bridge Replacement Project upstream of the action area (Service File 1-1-96-F-0156);

3. The Dan Wilson Creek Bridge and Fairfield Corporate Commons Projects located along the eastern bank of Suisun Creek and just north of Interstate 80 in 2006 (Service File 1-1-06-F-0284); and

4. The Interstate 80 High Occupancy Vehicle Lane Project (Service File 1-1-07-F-0146 and 81420-2009-F-0240-R001-2) in 2007 which overlaps the action area for the Interstate 80 Eastbound Cordelia Truck Scales Relocation Project.

To summarize, the Service believes that the beetle has experienced a long-term decline due to widespread alteration and fragmentation of its riparian habitat, and to a lesser extent, its upland habitat, by human activities. However, new observations show that the beetle has a wider distribution than what was known during the time of the listing. Further, creation and protection of conservation areas since the listing has provided long-term protection of the beetle and reduced the rate of habitat loss. However, within western Solano County, the beetle has not benefited from protection of conservation areas and the beetle continues to be threatened by a high rate of development that has resulted in alteration and fragmentation of riparian habitat. Known locations of the beetle within the Suisun Marsh Watershed is approximately 40 miles southwest from critical habitat and populations along the American River in Sacramento County and about nine miles south of known populations in Dry Creek on the Solano County border with Yolo County. Though the CNDDB does not provide information of absence of listed species, the lack of known connective populations between the Suisun Marsh Watershed observations and other records of this species together with this species limited dispersal ability suggests that the Suisun Marsh Watershed population is isolated from other populations. The likelihood of natural colonization of Suisun Creek if the population was lost would therefore be low.

Because of the presence of host plants along Suisun Creek within the action area, the observations of exit holes in elderberries throughout the riparian corridor immediately north of the action area, and the known distribution, biology, and behavior of the beetle; the Service has determined that the valley elderberry longhorn beetle is reasonably certain to occur within the action area.

California Red-Legged Frog

The California red-legged frog was listed as a threatened species on May 23, 1996 (Service 1996). A recovery plan was published for the California red-legged frog on September 12, 2002 (Service 2002). Critical Habitat was designated for this species on April 13, 2006 (Service 2006) and a proposed revision was published on September 16, 2008 (Service 2008).

The California red-legged frog is the largest native frog in the western United States (Wright and Wright 1949), ranging from 1.5 to 5.1 inches in length (Stebbins 2003). The abdomen and hind legs of adults are largely red, while the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. Dorsal spots usually have light centers (Stebbins 2003), and dorsolateral folds are prominent on the back. Larvae (tadpoles) range from 0.6 to 3.1 inches in length, and the background color of the body is dark brown and yellow with darker spots (Storer 1925).

The historic range of the red-legged frog extended coastally from the vicinity of Elk Creek in Mendocino County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico (Fellers 2005; Jennings and Hayes 1985; Hayes and Krempels 1986). The red-legged frog was historically documented in 46 counties but the taxa now remains in 238 streams or drainages within 23 counties, representing a loss of 70 percent of its former range (Service 2002). Red-legged frogs are still locally abundant within portions of the San Francisco Bay area and the central coast. Within the remaining distribution of the species, only isolated populations have been documented in the Sierra Nevada, northern Coast, and northern Transverse Ranges. The species is believed to be extirpated from the southern Transverse and Peninsular ranges, but is still present in Baja California, Mexico (CDFG 2009).

Because their habitats have been fragmented, many endangered and threatened species, such as the California red-legged frog, exist as metapopulations (Verboom and Apeldom 1990; Verboom et al. 1991). A metapopulation is a collection of spatially discrete subpopulations that are connected by the dispersal movements of the individuals (Levins 1970; Hanski 1991). For metapopulations of listed species, a prerequisite to recovery is determining if unoccupied habitat patches are vacant due to the attributes of the habitat patch (food, cover, and patch area) or due to patch context (distance of the patch to other patches and distance of the patch to other features). Subpopulations on patches with higher quality food and cover are more likely to persist because they can support more individuals. Large populations have less of a chance of extinction due to stochastic events (Gilpin and Soule 1986). Similarly, small patches will support fewer individuals, increasing the rate of extinction. Patches that are near occupied patches are more likely to be recolonized when local extinction occurs and may benefit from emigration of individuals via the "rescue" effect (Hanski 1982; Gotelli 1991; Holt 1993; Fahrig and Merriam 1985). For the metapopulation to persist, the rate of patches being colonized must exceed the rate of patches going extinct (Levins 1970). If some subpopulations go extinct regardless of patch context, recovery actions should be placed on patch attributes. Patches could be managed to increase the availability of food and/or cover. Movements and dispersal corridors likely are critical to California red-legged frog population dynamics, particularly because the animals likely currently persist as metapopulations with disjunct population centers. Movement and dispersal corridors are important for alleviating over-crowding and intraspecific competition, and also they are important for facilitating the recolonization of areas where the animal has been extirpated. Movement between population centers maintains gene flow and reduced genetic isolation.

California red-legged frogs predominately inhabit permanent water sources such as streams, lakes, marshes, natural and manmade ponds, and ephemeral drainages in valley bottoms and foothills up to 4,921 feet in elevation (Jennings and Hayes 1994; Bulger et al. 2003; Stebbins 2003). However, red-legged frogs also have been found in ephemeral creeks and drainages and in ponds that may or may not have riparian vegetation. California red-legged frogs also can be found in disturbed areas such as channelized creeks and drainage ditches in urban and agricultural areas. An adult California red-legged frog recently was observed in a shallow isolated pool on North Slough Creek in the American Canyon area of Napa County (Christine

Gaber/PG&E personal communication with Chris Nagano/Service on October 22, 2008). This frog location was surrounded by vineyard development. Another adult California red-legged frog was observed under debris in an unpaved parking lot in a heavily industrial area of Burlingame (Patrick Kobernus communication with Michelle Havens on October 16, 2008). This Burlingame frog was likely utilizing a nearby drainage ditch. Caltrans also has discovered California red-legged frog adults, tadpoles, and egg masses within a storm drainage system within a major cloverleaf intersection of Millbrae Avenue and State Route 101 in a heavily developed area of San Mateo County (Caltrans 2007). California red-legged frog has the potential to persist in disturbed areas as long as they provide at least one or more of their life history requirements.

California red-legged frogs typically breed between November and April with earlier breeding records occurring in southern localities (Hayes and Jennings 1988, Storer 1925). Breeding often occurs in still or slow-moving water at least 2.5 feet in depth with emergent vegetation, such as cattails (*Typha* spp.), tules (*Scirpus* spp.) or overhanging willows (*Salix* spp.) (Hayes and Jennings 1988). Red-legged frogs have paired vocal sacs and vocalize in air (Hayes and Krempels 1986). Female frogs deposit egg masses on emergent vegetation so that the egg mass floats on or near the surface of the water (Hayes and Miyamoto 1984). Individuals occurring in coastal drainages are active year-round (Jennings et al. 1992), whereas those found in interior sites are normally less active during the cold season.

During other parts of the year, habitat includes nearly any area within 1 to 2 miles of a breeding site that stays moist and cool through the summer (Fellers 2005). According to Fellers (2005), this can include vegetated areas with coyote brush, California blackberry thickets, and root masses associated with willow (*Salix* species) and California bay trees. Sometimes the non-breeding habitat used by red-legged frogs is extremely limited in size. For example, non-breeding red-legged frogs have been found in a 6-foot wide coyote brush thicket growing along a tiny intermittent creek surrounded by heavily grazed grassland (Fellers 2005). Sheltering habitat for red-legged frogs is potentially all aquatic, riparian, and upland areas within the range of the species and includes any landscape features that provide cover, such as existing animal burrows, boulders or rocks, organic debris such as downed trees or logs, and industrial debris. Agricultural features such as drains, watering troughs, spring boxes, abandoned sheds, or hay stacks may also be used. Incised stream channels with portions narrower and depths greater than 18 inches also may provide important summer sheltering habitat. Accessibility to sheltering habitat is essential for the survival of red-legged frogs within a watershed, and can be a factor limiting frog population numbers and survival.

California red-legged frogs do not have a distinct breeding migration (Fellers 2005). Adult frogs are often associated with permanent bodies of water. Some frogs remain at breeding sites all year while others disperse. Dispersal distances are typically less than 0.5 mile, with a few individuals moving up to 1 to 2 miles (Fellers 2005). Movements are typically along riparian corridors, but some individuals, especially on rainy nights, move directly from one site to another through

normally inhospitable habitats, such as heavily grazed pastures or oak-grassland savannas (Fellers 2005).

In a study of California red-legged frog terrestrial activity in a mesic area of the Santa Cruz Mountains, Bulger et al. (2003) categorized terrestrial use as migratory and non-migratory. The latter occurred from one to several days and was associated with precipitation events. Migratory movements were characterized as the movement between aquatic sites and were most often associated with breeding activities. Bulger reported that non-migrating frogs typically stayed within 200 feet of aquatic habitat 90% of the time and were most often associated with dense vegetative cover, i.e. California blackberry, poison oak and coyote brush. Dispersing frogs in northern Santa Cruz County traveled distances from 0.25 miles to more than 2 miles without apparent regard to topography, vegetation type, or riparian corridors (Bulger et al. 2003).

In a study of California red-legged frog terrestrial activity in a xeric environment, Tatarian (2008) noted that a 57% majority of frogs fitted with radio transmitters in the Round Valley study area in eastern Contra Costa County stayed at their breeding pools, whereas 43% moved into adjacent upland habitat or to other aquatic sites. This study reported a peak of seasonal terrestrial movement occurring in the fall months, with movement commencing with the first 0.2 inches of precipitation. Movements away from the source pools tapered off into spring. Upland movement activities ranged from 3 to 233 feet, averaging 80 feet, and were associated with a variety of refugia including grass thatch, crevices, cow hoof prints, ground squirrel burrows at the bases of trees or rocks, logs, and a downed barn door; others were associated with upland sites lacking refugia (Tatarian 2008). The majority of terrestrial movements lasted from 1 to 4 days; however, one adult female was reported to remain in upland habitat for 50 days (Tatarian 2008). Uplands closer to aquatic sites were used more often and frog refugia were more commonly associated with areas exhibiting higher object cover, e.g. woody debris, rocks, and vegetative cover. Subterranean cover was not significantly different between occupied upland habitat and non-occupied upland habitat.

California red-legged frogs are often prolific breeders, laying their eggs during or shortly after large rainfall events in late winter and early spring (Hayes and Miyamoto 1984). Egg masses containing 2,000 to 5,000 eggs are attached to vegetation below the surface and hatch after 6 to 14 days (Storer 1925, Jennings and Hayes 1994). In coastal lagoons, the most significant mortality factor in the pre-hatching stage is water salinity (Jennings et al. 1992). Eggs exposed to salinity levels greater than 4.5 parts per thousand results in 100 percent mortality (Jennings and Hayes 1990). Increased siltation during the breeding season can cause asphyxiation of eggs and small larvae. Larvae undergo metamorphosis 3.5 to 7 months following hatching and reach sexual maturity 2 to 3 years of age (Storer 1925; Wright and Wright 1949; Jennings and Hayes 1985, 1990, 1994). Of the various life stages, larvae probably experience the highest mortality rates, with less than one percent of eggs laid reaching metamorphosis (Jennings et al. 1992). Sexual maturity normally is reached at three to four years of age (Storer 1925; Jennings and Hayes 1985). Red-legged frogs may live eight to 10 years (Jennings et al. 1992). Populations of red-legged frogs fluctuate from year to year. When conditions are favorable red-legged frogs can

experience extremely high rates of reproduction and thus produce large numbers of dispersing young and a concomitant increase in the number of occupied sites. In contrast, red-legged frogs may temporarily disappear from an area when conditions are stressful (e.g., drought).

The diet of red-legged frogs is highly variable. Hayes and Tennant (1985) found invertebrates to be the most common food items. According to their data, vertebrates, such as Pacific tree frogs (*Pseudacris regilla*) and California mice (*Peromyscus californicus*); represent over half the prey mass eaten by larger frogs (Hayes and Tennant 1985). Hayes and Tennant (1985) found juvenile frogs to be active diurnally and nocturnally, whereas adult frogs were largely nocturnal. Feeding activity probably occurs along the shoreline and on the surface of the water (Hayes and Tennant 1985). The diet of red-legged frog tadpoles is not well studied, but their diet probably is similar to other ranid frog tadpoles that feed on algae, diatoms, and detritus by grazing on the surface of rocks and vegetation (Fellers 2005; Kupferberg 1996a, 1996b).

Habitat loss, non-native species introduction, and urban encroachment are the primary factors that have adversely affected the red-legged frog throughout its range. Several researchers in central California have noted the decline and eventual local disappearance of California and northern red-legged frogs in systems supporting bullfrogs (Jennings and Hayes 1990; Twedt 1993), red swamp crayfish (*Procambarus clarkii*), signal crayfish (*Pacifastacus leniusculus*), and several species of warm water fish including sunfish (*Lepomis* spp.), goldfish (*Carassius auratus*), common carp (*Cyprinus carpio*), and mosquitofish (*Gambusia affinis*) (Moyle 1976; S. Barry 1992; L. Hunt 1993; Fisher and Schaffer 1996). This has been attributed to predation, competition, and reproduction interference. Twedt (1993) documented bullfrog predation of juvenile northern red-legged frogs (*Rana aurora aurora*), and suggested that bullfrogs could prey on subadult northern red-legged frogs as well. Bullfrogs may also have a competitive advantage over red-legged frogs. For instance, bullfrogs are larger and possess more generalized food habits (Bury and Whelan 1984). In addition, bullfrogs have an extended breeding season (Storer 1933) during which an individual female can produce as many as 20,000 eggs (Emlen 1977). Further more, bullfrog larvae are unpalatable to predatory fish (Kruse and Francis 1977). Bullfrogs also interfere with red-legged frog reproduction. Both California and northern red-legged frogs have been observed in amplexus (mounted on) with both male and female bullfrogs (Jennings and Hayes 1990; Twedt 1993; M. Jennings 1993). Thus bullfrogs are able to prey upon and out-compete red-legged frogs, especially in sub-optimal habitat.

The urbanization of land within and adjacent to red-legged frog habitat has also adversely affected red-legged frogs. These declines are attributed to channelization of riparian areas, enclosure of the channels by urban development that blocks red-legged frog dispersal, and the introduction of predatory fishes and bullfrogs. This report further identifies the conversion and isolation of perennial pool habitats resulting from urbanization as an ongoing impact to red-legged frogs. Mao et al. (1999 cited in Fellers 2005) reported northern red-legged frogs infected with an iridovirus, which was also presented in sympatric threespine sticklebacks (*Gasterosteus aculeatus*) in northwestern California. Ingles (1932a, 1932b, and 1933 cited in Fellers 2005)

reported four species of trematodes from red-legged frogs, but he later synonymized two of them (found them to be the same as the other two).

Environmental Baseline

The recovery plan for red-legged frogs identifies eight Recovery Units (Service 2002). The establishment of these Recovery Units is based on the Recovery Team's determination that various regional areas of the species' range are essential to its survival and recovery. The status of the red-legged frog will be considered within the smaller scale of Recovery Units as opposed to the overall range. These Recovery Units are delineated by major watershed boundaries as defined by U.S. Geological Survey hydrologic units and the limits of the range of the California red-legged frog. The goal of the draft recovery plan is to protect the long-term viability of all extant populations within each Recovery Unit. Within each Recovery Unit, core areas have been delineated and represent contiguous areas of moderate to high red-legged frog densities that are relatively free of exotic species such as bullfrogs. The goal of designating core areas is to protect metapopulations that, combined with suitable dispersal habitat, will allow for the long term viability within existing populations. This management strategy will allow for the recolonization of habitat within and adjacent to core areas that are naturally subjected to periodic localized extinctions, thus assuring the long-term survival and recovery of red-legged frogs.

The proposed Interstate 80 Eastbound Cordelia Truck Scales Relocation Project is within Recovery Unit 3 (North Coast and North San Francisco Bay) and is approximately 2.0 miles east of the Jameson Canyon-Lower Napa River Core Recovery Area (Service 2002). Most remaining known occurrences in southern Solano County are threatened by proposed developments and the habitat along Suisun Creek has been constricted by adjacent cultivated agriculture to a narrow riparian corridor. The strategy for recovery for the California red-legged frog includes promoting and protecting populations that are geographically distributed and connected in a manner that allows for the continued existence of viable metapopulations. Protection of habitat and especially watershed integrity is an integral component to achieve this. Land protection can be achieved through the purchase of land or conservation easements. The action area is also located approximately 1.9 to 2.8 miles east of the three proposed critical habitat units in Solano County (Service 2008).

A systematic, long-term study of red-legged frog distribution and abundance within the action area has not been conducted. Earlier developments within and upstream of the action area likely have had significant adverse effects on the red-legged frog and its habitat within the Suisun Creek riparian corridor. The high peak flows, channel down cutting which has resulted in concentrated winter flows, and the stream's loss of connection with floodplains have reduced the hydrological diversity in the stream to create available red-legged frog breeding habitat. This is because high water flows during winter through late spring likely wash eggs or larvae in less protected areas downstream. Construction of bridges over the stream together with associated concrete lining of stream banks and channels also adversely affected the habitat for the listed frog in Suisun Creek. Because the creek within the construction area is a channelized with steep

incised banks, there are no side channels or pools that would be protected from high flows and would provide ideal breeding conditions for the red-legged frog. Channalization and clearing of riparian vegetation along Suisun Creek have removed natural geomorphic processes and therefore limited the creation of plunge pools, backwater, and side channels that provide habitat for the red-legged frog. As a result, potential breeding habitat within Suisun Creek is limited to smaller isolated locations within the stream whose potential may be dependent on variable yearly rainfall and hydrological conditions.

Formal consultation and issuance of incidental take for the California red-legged frog for this project is consistent with the Service's biological opinions issued for other recently proposed projects occurring along Suisun Creek including:

1. The Dan Wilson Creek Bridge and Fairfield Corporate Commons Projects located along the eastern bank of Suisun Creek and just north of Interstate 80 in 2006 (Service File 1-1-06-F-0284); and

2. The Interstate 80 HOV Lane Project (Service File 1-1-07-F-0146 and 81420-2009-F-0240-R001-2) in 2007 which overlaps the action area for the Interstate 80 Eastbound Cordelia Truck Scales Relocation Project.

The CNDDB (2008) report from the search of the surrounding U.S. Geological Survey 7.5-minute quadrangles (Cordelia, Denverton, Elmira, Fairfield North, Fairfield South, and Mt. George) contained 15 records (from 1993 to 2007) for sightings of California red-legged frogs. The closest record is approximately 2.3 miles southwest of the action area (Monk 2005). No CNDDB (2008) records are known from the action area; however, the CNDDB is limited to occurrence data from areas that have been previously surveyed and does not represent all occupied habitat. The comprehensive value of the CNDDB is also limited by the degree to which people are willing to report data.

Potential aquatic and upland riparian habitat for the California red-legged frog was identified within the Suisun Creek portion of the action area. Aerial photography and the results of Caltrans' habitat assessment (Caltrans 2008) suggest that potential red-legged frog habitat is found throughout much of the length Suisun Creek, including potential breeding habitat. The riparian corridor for Suisun Creek is constricted by intense agricultural cultivation throughout its length therefore placing high value on what habitat remains. Caltrans identified at least 28 non-native plants species in the action area but reported that their intrusion into the Suisun Creek riparian habitat portion of the action area is limited (Caltrans 2008). Red-legged frogs likely use the project area for forage, refugia, and dispersal. Due of the presence of habitat within the action area, connectivity with a long corridor of habitat, observations of the species in the general area, observations of the species in similar habitat conditions throughout its range, and knowledge of the biology and behavior of the red-legged frog, the Service has determined that it is reasonable to conclude that the red-legged frog could occur within Suisun Creek and riparian habitat in the action area.

Effects of the Proposed Action

Valley Elderberry Longhorn Beetle

Four elderberry shrubs have been identified in the action area. The construction of the Cordelia Truck Scales bridge across Suisun Creek will result in direct effects to one of the shrubs. Caltrans plans to transplant this shrub and avoid the other three; however transplantation may not be an option due to access and bank stability. If so, Caltrans may need to cut the shrub back to accommodate the footprint of the proposed overhead bridge.

Construction of the bridge will permanently remove approximately 56 linear feet of vegetated riparian corridor from opposing stream banks. This will add to the existing loss and fragmentation of the Suisun Creek riparian corridor created by the approximately 236 foot-wide existing Interstate 80 Bridge immediately north of the action area. The new bridge structure will further widen the gap between the existing riparian vegetation and elderberry shrubs up and downstream of the bridges. Fragmentation and isolation of elderberry shrubs could eventually result in local extirpations.

The planting of 107 elderberry shrubs within a 3.0-acre restoration site less than 800 feet upstream of the action area has the potential to enhance the local valley elderberry longhorn beetle habitat and compensate for project's effects to the beetle. This restoration of riparian habitat that had been removed for agriculture may partially offset the local effects of fragmentation by increasing the size of the available habitat and the number of host plants. Exit holes have been observed in the elderberry shrubs in the adjacent existing riparian habitat (CNDDB 2008). If occupied by the valley elderberry longhorn beetle, these existing plants could be a source of recruitment for the Solano Community College restoration area.

Although the conservation measures involve creation or restoration of habitat, it generally takes five or more years for elderberry plants to become large enough to support beetles, and it may take 25 years or longer for riparian habitats to reach their full value. Temporal disturbance of habitat will temporarily reduce the amount of habitat available to beetles and may cause fragmentation of habitat and isolation of subpopulations.

Unsuccessful transplantation could result in the death or stunting of the plant's growth affecting the viability of the shrubs to continue to host or become occupied by the listed beetle. The success criteria and long term monitoring and active management included in the restoration plan are intended to minimize plant loss. The conservation easement/deed restriction placed on the restoration area will also preserve the habitat for the beetle in perpetuity. Establishment of the restoration area is likely to provide a model and an opportunity to continue habitat improvements along Suisun Creek by way of compensation for other projects or conservation-based grants. David Redfield, the Dean of Math and Science at Solano Community College informed the Service that the College has continued interest in restoring additional riparian habitat on Suisun

and Dan Wilson Creek within the campus property (personal communication with D. Redfield on December 17, 2008).

The proposed conservation measures are likely to avoid and minimize the take of valley elderberry longhorn beetles that could result from the potential adverse effects described above. The majority of the proposed action area will be located within open and disked agricultural land which reduces the loss of elderberry and riparian habitat that could have been locally removed. Successful implementation of the proposed dust control and installation of construction buffers will likely avoid direct and indirect adverse effects to the other three elderberry plants in the action area as well as neighboring vegetation thereby safeguarding the integrity and function of the local riparian system for the listed beetle. Post-construction restoration of temporary work areas will likely limit fragmentation of the riparian corridor. Possible transplantation of one elderberry shrub to and the proposed planting of 107 elderberry shrubs within the approximately 3.0-acre riparian restoration site on the Solano Community College property have the potential to enhance the riparian habitat for the listed beetle on Suisun Creek. There is potential for future occupation of the restoration site from a nearby source where valley elderberry longhorn beetle sign has been observed.

California Red-Legged Frog

The proposed project could have adverse effects on the threatened California red-legged frog through mortality, injury, harassment, and harm of individual juveniles and adults. Due to existing development, the effects to California red-legged frog habitat will likely be limited to the activities associated with the construction of the new bridge across Suisun Creek or any utility relocations under Suisun Creek. The new bridge will be a clear span structure that will avoid the need for construction or structures within Suisun Creek. The proposed jack and bore method of installing a water pipeline under Suisun Creek is intended to avoid effects to the creek and riparian corridor but has the potential to affect frogs if drilling muds are inadvertently discharged within frog habitat.

According to an April 21, 2009, email message, the proposed project will adversely affect approximately 3.43 acres of California red-legged frog riparian and upland habitat. This includes 0.13 acres of riparian woodland that was previously accounted for in the Interstate 80 HOV Lanes (Service File 1-1-07-F-0146), 1.71 acres of riparian woodland not previously accounted for, and 1.59 acres of ruderal upland habitat. Given the intensity of the surrounding agricultural and transportation-related development, the localized California red-legged frog habitat for breeding, foraging, dispersal, and refuge is likely limited to Suisun Creek and its constrained riparian corridor. Approximately 2.39 acres of the affected habitat will be subject to restoration within the action area following construction. This includes 0.11 acres of habitat covered under the mentioned Interstate 80 consultation, 1.0 acres of the riparian habitat specific to the truck scales project, and 1.28 acres of the ruderal habitat. Replacement of mature riparian vegetation is likely to take several years but this area has the potential to provide foraging, dispersal, and refuge habitat for the California red-legged frog given successful restoration. Restoration of the

ruderal vegetation area is expected to result in baseline function within one year following construction. The proposed compensation through the restoration of 3.0 acres of riparian habitat approximately 736 feet upstream may offset the effects of new bridge construction by increasing the net California red-legged frog habitat in the general vicinity.

The proposed project likely will result in adverse effects to the feeding, resting, aestivation, movement, and other essential behaviors of the California red-legged frog. It will result in the loss and degradation of habitat. The clear span bridge structure will create shading and interrupt the vegetated riparian corridor but is unlikely to present any significant barriers to movement.

Construction activities associated with the proposed project would remove vegetation and other materials necessary for cover and aestivation, fill or crush burrows or crevices, and potentially reduce the prey base for the California red-legged frog. Because this listed amphibian uses small mammal burrows and soil crevices for shelter, individuals may be crushed, buried, or otherwise injured during construction activities. California red-legged frogs also may be run over by construction equipment or other vehicles accessing the construction areas. Siltation, fill, or spill of petroleum products or other chemicals could cause loss of prey items in or adjacent to the project area. Discharge of drilling muds and the associated cleanup could cause death or injury to individual frogs at the or downstream of the point of discharge. A "frac-out" could also result in the fill or removal of upland refugia. Construction activities are likely to result in the direct disturbance, displacement, injury, and/or morality of California red-legged frogs. Individuals likely are to be killed or injured by construction equipment or other vehicles accessing the construction site. There is a likelihood of direct injury or mortality to the animal from injury or death due to pet cats or dogs owned by construction related personnel, poisoning by pesticides, injury or death due to predators attracted to food or trash at the site, and harassment from night-lighting, noise, and vibration. Implementation of certain types of erosion control materials, such as plastic netting, could result in the entanglement and death of California red-legged frogs within these materials due to exposure or predators (Bartin and Kinkead 2005, Stuart et al. 2001). Disturbance from construction activities may also cause individuals to move into or across areas of unsuitable habitat where they may be prone to higher rates of mortality from vehicles and predation.

Range-wide habitat loss, fragmentation, and degradation from multiple factors are the primary threats to the California red-legged frog (Service 1996, 2004). Loss of natural lands continues to further reduce the habitat available for this listed animal. However, the amount of historical and current habitat loss directly attributable to road loss has not been calculated, but the effect of habitat fragmentation on the California red-legged frog is significant. Fragmentation can reduce access to habitat as well as habitat suitability, increase mortality of animals that are moving between habitat patches due to increased risk of predation, and disrupt movements, dispersal, and gene flow. As barriers to movement for the California red-legged frog, roads, paved areas, and other habitat loss create smaller patches of habitat and increase patch isolation. Smaller populations of animals are at greater risk of extinction by chance from demographic, genetic, and environmental stochastic events (Wilcox and Murphy 1985, Schoener and Spiller 1992). Isolated

populations also have a higher chance of extinction without the demographic and genetic input of immigrants and a lower chance of colonization after extinction (Lande 1988, Sjogren-Gulve 1994).

A short term temporal effect will occur when suitable habitat is lost when riparian and other vegetation is removed for construction of the bridge, and also due to the improved ability of predators to hunt the listed amphibian. Hilty and Merender (2004) found that, in contrast to native species, non-native mammalian predators were more active in narrow and denuded riparian corridors and in large expanses of agricultural land (vineyards) far from core habitat.

The necessity of moving between multiple habitats and breeding ponds means that many amphibian species, such as the California red-legged frog are especially vulnerable to roads and well-used large paved areas in the landscape. Van Gelder (1973) and Cooke (1995) have examined the effect of roads on amphibians and found that because of their activity patterns, population structure, and preferred habitats, aquatic breeding amphibians are more vulnerable to traffic mortality than some other species.

Although traffic will not be at highway speeds, the proposed truck scales will include a large paved area subject to a great deal of large vehicle traffic. According to Caltrans, the existing truck scales had an average daily volume of 11,800 trucks a day (Caltrans 2008). Caltrans expects that volume to increase 70 % by 2025 and 115% by 2040. The new facility is designed to receive up to 1,000 trucks an hour. All of this traffic will be directed to the truck scales via the new bridge over Suisun Creek. The effects associated with the truck scale construction and long-term operations are likely to be similar to those resulting from highway projects. Fahrig et al. (1995) found that high traffic two-lane paved roads had a much larger effect on frog abundance than low traffic two-lane roads. Mortality rates for anurans on high traffic roads are higher than on low traffic roads (Hels and Buchwald 2001). Vos and Chardon (1998) found a significant negative effect of road density on the occupation probability of ponds by the moor frog (*Rana arvalis*) in the Netherlands. In addition, incidences of very large numbers of road-killed frogs are well documented (e.g., Asley and Robinson 1996), and studies have shown strong population level effects of traffic density (Carr and Fahrig 2001) and high traffic roads on these amphibians (Van Gelder 1973; Vos and Chardon 1998). Most studies regularly count road kills from slow moving vehicles (Hansen 1982; Rosen and Lowe 1994; Drews 1995; Mallick et al. 1998) or by foot (Munguira and Thomas 1992). These studies assume that every victim is observed, which may be true for large conspicuous mammals, but is certainly not true for small animals, such as the California red-legged frog. Amphibians appear especially vulnerable to traffic mortality because they readily attempt to cross roads, are slow-moving and small, and thus can not easily be avoided by drivers (Carr and Fahrig 2001).

The direction and type of habitat used by dispersing animals is especially important in fragmented environments (Forys and Humphrey 1996). Models of habitat patch geometry predict that individual animals will exit patches at more "permeable" areas (Buechner 1987; Stamps et al. 1987). A landscape corridor may increase the patch-edge permeability by

extending patch habitat (La Polla and Barrett 1993), and allow individuals to move from one patch to another. The geometric and habitat features that constitute a "corridor" must be determined from the perspective of the animal (Forys and Humphrey 1996). Given the various modifications to Suisun Creek and the associated riparian vegetation from past and proposed projects, including the proposed truck scales project, the local red-legged frog habitat is more confined and "patchy". This limits the dispersal opportunities in the action area as frogs that disperse in directions other than up or down the riparian corridor will be subject to an increased potential for harm as they encounter additional hardscape, human activity, and barriers to movement. A portion of the adjacent habitat once lost to agricultural development likely poses greater risk now that it has been replaced by more urban development.

Additional fragmentation of the Suisun Creek riparian corridor and the surrounding upland habitat could further genetically isolate metapopulations that are at greater risk of deleterious genetic effects such as inbreeding, genetic drift, and founder effects. The survival of wildlife species in fragmented habitats may ultimately depend on their ability to move among patches to access necessary resources, retain genetic diversity, and maintain reproductive capacity within populations (Hilty and Merenlender 2004; Petit et al. 1995; Buza et al. 2000).

Most metapopulation or meta-population-like models of patchy populations do not directly include the effects of dispersal mortality on population dynamics (Hanski 1994; With and Crist 1995; Lindenmayer and Possingham 1996). Based on these models, it has become a widely held notion that more vagile species have a higher tolerance to habitat loss and fragmentation than less vagile species. But models that include dispersal mortality predict exactly the opposite: more vagile species should be more vulnerable to habitat loss and fragmentation because they are more susceptible to dispersal mortality (Fahrig 1998; Casagrandi and Gatto 1999). This prediction is supported by Gibbs (1998), who examined the presence-absence of five amphibian species across a gradient of habitat loss. He found that species with low dispersal rates are better able than more vagile species to persist in landscapes with low habitat cover. Gibbs (1998) postulated that the land between habitats serves as a demographic "drain" for many amphibians. Furthermore, Bonnet et al. (1999) found that snake species that use frequent long-distance movements have higher mortality rates than do sedentary species.

The proposed construction activities could result in the introduction of chemical contaminants to the site. Substances used in road building materials could leach out or wash out of the soil into adjacent habitat. Vehicles may leak hazardous substances such as motor oil and antifreeze. A variety of substances could be introduced during accidental spills of materials. Such spills can result from leaks in vehicles, small containers falling off vehicles, or from accidents resulting in whole loads being spilled. Large spills may be partially or completely remediated by clean-up efforts, depending on the substance. California red-legged frogs using these areas could be exposed to any contaminants that are present at the site. The commercial vehicles visiting the truck scales during operation are more likely to be carrying a large quantity of potential contaminates than the average personal vehicle traveling on Interstate 80. Even small

contaminate spills and leaks from individual vehicles could be cumulatively significant given that the facility is designed to receive as many as 1000 trucks an hour.

Exposure pathways could include inhalation, dermal contact, direct ingestion, or ingestion of contaminated soil or plants. Exposure to contaminants could cause short- or long-term morbidity, possibly resulting in reduced productivity or mortality. Carcinogenic substances could cause genetic damage resulting in sterility, reduced productivity, or reduced fitness among progeny. Little information is available on the effects of contaminants on the California red-legged frog. The effects may be difficult to detect. Morbidity or mortality likely would occur after the animals had left the contaminated site, and more subtle effects such as genetic damage could only be detected through intensive study and monitoring.

Preconstruction surveys and the relocation of individual red-legged frogs may reduce injury or mortality. However, the capturing and handling of red-legged frogs to remove them from a work area may result in the harassment, mortality or injury of individuals. Stress, injury, and mortality may occur as a result of improper handling, containment, and transport of individuals. Death and injury of individual red-legged frogs could occur at the time of relocation or later in time subsequent to their release. Although survivorship for translocated red-legged frogs has not been estimated, survivorship of translocated wildlife, in general, is lower because of intraspecific competition, lack of familiarity with the location of potential breeding, feeding, and sheltering habitats, risk of contracting disease in foreign environment, and increased risk of predation. Improper handling, containment, or transport of individuals would be reduced or prevented by use of a Service-approved biologist, by limiting the duration of handling, limiting the distance of translocation a short distance down Suisun Creek to clear them from the action area, and requiring the proper transport.

Biologists, construction workers, and construction equipment working in different areas and with different species may transmit diseases by introducing contaminated equipment. The chance of a disease being introduced into a new area is greater today than in the past due to the increasing occurrences of disease throughout amphibian populations in California and the United States. It is possible that chytrid fungus may exacerbate the effects of other diseases on amphibians or increase the sensitivity of the amphibian to environmental changes (e.g., water pH) that reduce normal immune response capabilities (Bosch et al. 2001). Implementation of the "Declining Amphibian Populations Task Force Fieldwork Code of Practice" during any aquatic survey activity will likely prevent transfer of diseases through contaminated equipment or clothing.

Soil disturbing activities and vegetation removal can facilitate the invasion and establishment by species not native to the area (Gelbard and Belnap 2003) such as the bullfrog or are native and are better competitors than the California red-legged frog that could feed on or compete with, the listed amphibian or its food sources. Disturbance and alteration of habitat adjacent to roads and newly paved areas may create favorable conditions for non-native plants and animals. These exotic species can spread along roadsides and then into adjacent habitat. Non-native animals may use modified habitats adjacent to roads to disperse into California red-legged frog habitat.

These animals could compete with the listed ranid for resources such as food or cover, or directly injure or kill the amphibians. Non-native plants and animals may reduce habitat quality for the threatened frog, and reduce the productivity or the local carrying capacity for the animals. Introductions of non-native species could cause California red-legged frogs to alter behavioral patterns by avoiding or abandoning areas near roads or pavement. The addition of non-native plants or animals in the action area has the potential to spread throughout the Suisun Creek watershed.

Disturbed areas adjacent to roads and pavement provide favorable habitat conditions for a number of non-native plant species. Some of these taxa are aggressively invasive and they can alter natural communities and potentially affect habitat quality. A problematic species within the range of the California red-legged frog is yellow star thistle (*Centaurea melitensis*). Dense stands of this plant can form along roadsides and then spread into adjacent habitat. This plant displaces native vegetation, competes with native plants for resources, and it may be difficult for the animals to move through due the plant's numerous sharp spines. Other species that may disperse along roads and invade adjacent riparian habitats include mustards (*Brassica* species) and Russian thistle (*Salsola tragus*) (Tellman 1997). Disturbed soils and reduced competition from native plants are some of the conditions that facilitate invasion along roads by non-native plant species. At least 28 non-native plant species were found in the action area, including yellow star thistle and mustard (Caltrans 2008). Given the local seed sources, there is great potential for these species to spread into areas of temporary disturbance, including frog habitat within the Suisun Creek riparian area.

Negative effects to wildlife populations from roads and pavement may extend some distance from the actual road, as the proposed project. The phenomenon can result from any of the effects already described in this biological opinion, such as vehicle-related mortality, habitat degradation, and invasive exotic species. Forman and Deblinger (1998) described the area affected as the "road effect" zone. Along a 4-lane road in Massachusetts, they determined that this zone extend for an average of approximately 980 feet to either side of the road for an average total zone width of approximately 1970 feet. However, in other places they detected an effect > 0.6 mile from the road. Rudolph et al (1999) detected reduced snake abundance up to 2790 feet from roads in Texas. They estimated snake abundance out to 2790 feet, so the effect may have been greater. Extrapolating to a landscape scale, they concluded the effect of roads on snake populations in Texas likely was significant, given that approximately 79% of the land area of the Lone Star State is within 1640 feet of a road. The "road-zone" effects can be subtle. Van der Zandt et al. (1980) reported that lapwings (*Vanellus vanellus*) and black-tailed godwits (*Limosa limosa*) feeding at 1575 feet-6560 feet from roads were disturbed by passing vehicles. The heart rate, metabolic rate and energy expenditure of female bighorn sheep (*Ovis canadensis*) increases near roads (MacArthur et al. 1979). Trombulak and Frossell (2000) described another type of "road-zone' effect. Heavy metal concentrations from vehicle exhaust were greatest within 66 feet of roads, by elevated levels of metals in both soil and plants were detected at 660 feet of roads. The "road-zone" apparently varies with habitat type and traffic volume. Based on responses by birds, Forman (2000) estimated the effect zone along primary roads of 1000 feet in

woodlands, 1197 feet in grasslands, and 2657 feet in natural lands near urban areas. Along secondary roads with lower traffic volumes, the effect zone was 656 feet. As previously stated in this section, the new truck scales facility is designed to receive up to 1,000 trucks an hour. All of this traffic will be directed to the truck scales via the new bridge over Suisun Creek and the truck scales area will be located approximately 600 feet east of the creek. The "road zone" and the California red-legged frog have not been adequately investigated but based on the effects discussed in this section and the anecdotal information regarding the road effects on other species it is reasonable to conclude that the listed frogs inhabiting the Suisun Creek riparian corridor are likely to experience greater risks with the construction and operation of the proposed project.

The proposed conservation measures are likely to avoid and minimize the take of California red-legged frogs that could result from the potential adverse effects described above. The majority of the proposed action area will be located within open and disked agricultural land which reduces the loss of red-legged frog habitat that could have been locally removed. Designing a clear span bridge structure limits the amount of disturbance needed and permanent structures placed within Suisun Creek. Biological monitoring, worker education, and proper limited localized relocation of red-legged frogs in immediate harm should reduce the death and injury to individual frogs. Post-construction restoration of temporary work areas will likely limit the invasion of non-native vegetation and provide some degree of habitat for the listed frog in the future. The approximately 3.0-acre riparian restoration site on Solano Community College property has the potential to enhance the riparian and upland habitat for frogs displaced by the proposed project as well as the local population that is likely strongly confined to the Suisun Creek riparian corridor.

Cumulative Effects within the Action Area

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Numerous non-Federal activities continue to negatively affect the valley elderberry longhorn beetle and the California red-legged frog in Solano County. Their habitat is lost or degraded as a result of road and utility construction and maintenance, commercial and residential development, overgrazing, agricultural expansion, and water irrigation and storage projects that may not be funded, permitted, or constructed by a Federal agency. Other threats include contamination, poisoning, increased predation, and competition from non-native species associated with human development. Small private actions that may adversely affect listed species, such as conversion of land, small mammal population control, mosquito control, and residential development, may occur without consultation with or authorization by the Service or the California Department of Fish and Game pursuant to their respectively Endangered Species Act.

As urban development continues along Suisun Creek, it will likely adversely affect the function of upland areas within the action area that are occupied by elderberry shrubs and serve as

dispersal and aestivation habitat for red-legged frogs. Continued development and maintenance of roadways to serve expanding urban areas may further fragment and isolate populations of beetles and red-legged frogs from other nearby populations. Increased predation associated with domesticated pets or feral animals generally accompanies urban expansion. As urban development encroaches on rural areas, the need increases for mosquito abatement programs that may introduce exotic fish into ponds used for breeding by red-legged frogs, thus negatively affecting the reproductive success of this species.

The cumulative local development will result in temporary and permanent habitat fragmentation. The results of fragmentation are inhibition of genetic exchange between populations and impediments to recolonization of habitats from which populations have been extirpated. Small, isolated populations are substantially more vulnerable to stochastic events (e.g., aberrant weather patterns, fluctuations in availability of food) and may exhibit reduced adaptability to environmental (natural or anthropogenic) changes.

Despite the recent economic decline, there will be a continued demand for new housing and commercial development in Solano County and other road and development projects have been recently completed or are planned along Interstate 80, State Route 12, and State Route 680. These developments and further infill could result in the eventual need for additional flood control measures and vegetation removal along Suisun Creek. This would diminish the habitat connectivity between listed species habitat remaining in the action area vicinity and the local region. Development of adjacent wildlife habitat will continue to result in the loss of not only breeding, resting, and foraging habitat, but the loss of dispersal corridors between breeding populations, thereby further isolating and fragmenting wildlife populations. Additionally, development of small reservoirs or water bodies, such as golf course hazards, and water diversions may occur which may pose further threats such as disruption of dispersal corridors for terrestrial species, and competition or predation from non-native species such as bullfrogs for aquatic species.

Cumulative effects to the valley elderberry longhorn beetle and the California red-legged frog include continuing and future conversion of suitable breeding, foraging, sheltering, and dispersal habitat resulting from urban development. Additional urbanization can result in road widening, an increased need for enhanced transportation services, and increased traffic on roads that bisect habitat, thereby increasing road-kill of frogs while reducing in size and further fragmenting remaining habitats.

Additional urbanization could also lead to increased burrowing rodent control efforts (T. Jones, in litt. 1993; Shaffer et al. 1993). Rodent control in rural areas in Solano County could contribute to the decline of red-legged frogs in the region, as well as other sensitive species that utilize burrows created by burrowing rodents.

California red-legged frogs likely are exposed to a variety of pesticides and other chemicals throughout their ranges. This amphibian species could also die from starvation due to the loss of

their insect and small mammal prey base. Hydrocarbon and other contamination from oil production and road runoff; the application of numerous chemicals for roadside and truck scales maintenance; urban/suburban landscape maintenance; and rodent and vector control programs may all have negative effects on red-legged frog populations. In addition, red-legged frogs may be harmed through increased road kill due to the construction and use of new roads and increased traffic in the overall region and collection by amphibian enthusiast and others.

Further habitat fragmentation; additional non-native species introduction; translocation of infected individuals, and increased access to aquatic habitat could facilitate or increase the spread of amphibian diseases within the range of the California red-legged frog. The global mass extinction of amphibians primarily due to chytrid fungus continues to be of significant concern (Norris 2007; Skerratt et al 2007).

The global average temperature has risen by approximately 0.6 degrees centigrade during the 20th Century (International Panel on Climate Change 2001, 2007, Adger et al 2007). There is an international scientific consensus that most of the warming observed has been caused by human activities (International Panel on Climate Change 2001, 2007; Adger et al. 2007), and that it is "very likely" that it is largely due to increasing concentrations of greenhouse gases (carbon dioxide, methane, nitrous oxide, and others) in the global atmosphere from burning fossil fuels and other human activities (Cayan et al. 2005; EPA Global Warming webpage http://yosemite.epa.gov; Adger et al. 2007). Eleven of the twelve years between 1995 and 2006 rank among the twelve warmest years since global temperatures began in 1850 (Adger et al. 2007). The warming trend over the last fifty years is nearly twice that for the last 100 years (Adger et al. 2007). Looking forward, under a high emissions scenario, the International Panel on Climate Change estimates that global temperatures will rise another four degrees centigrade by the end of this Century; even under a low emissions growth scenario, the International Panel on Climate Change estimates that the global temperature will go up another 1.8 degrees centigrade (International Panel on Climate Change 2001).

The increase in global average temperatures affects certain areas more than others. The western United States, in general, is experiencing more warming than the rest of the Nation, with the 11 western states averaging 1.7 degrees Fahrenheit warmer temperatures than this region's average over the 20th Century (Saunders et al. 2008). California, in particular, will suffer significant consequences as a result of global warming (California Climate Action Team 2006). In California, reduced snowpack will cause more winter flooding and summer drought, as well as higher temperatures in lakes and coastal areas. The incidence of wildfires in the Golden State also will increase and the amount of increase is highly dependent upon the extent of global warming. No less certain than the fact of global warming itself is the fact that global warming, unchecked, will harm biodiversity generally and cause the extinction of large numbers of species. If the global mean temperatures exceed a warming of two to three degrees centigrade above pre-industrial levels, twenty to thirty percent of plant and animal species will face an increasingly high risk of extinction (International Panel on Climate Change 2001, 2007).

The mechanisms by which global warming may push already imperiled species closer or over the edge of extinction are multiple. Global warming increases the frequency of extreme weather events, such as heat waves, droughts, and storms (International Panel on Climate Change 2001, 2007; California Climate Action Team 2006; Lenihan et al. 2003). Extreme events, in turn may cause mass mortality of individuals and significantly contribute to determining which species will remain or occur in natural habitats. As the global climate warms, terrestrial habitats are moving northward and upward, but in the future, range contractions are more likely than simple northward or upslope shifts. Ongoing global climate change (Anonymous 2007; Inkley et al. 2004; Adger et al. 2007; Kanter 2007) likely imperils the valley elderberry longhorn beetle and the California red-legged frog and the resources necessary for their survival. Since climate change threatens to disrupt annual weather patterns, it may result in a loss of their habitats and/or prey, and/or increased numbers of their predators, parasites, and diseases. Where populations are isolated, a changing climate may result in local extinction, with range shifts precluded by lack of habitat.

Conclusion

After reviewing the current status of the species, the environmental baselines for the action area, the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that the proposed project is not likely to jeopardize the continued existence of the valley elderberry longhorn beetle or the California red-legged frog.

INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by Caltrans in order for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this Incidental Take Statement. If Caltrans (1) fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit

or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

The Service anticipates incidental take of the valley elderberry longhorn beetle will be difficult to measure because it is difficult to determine the number of beetle larvae and pupae contained within each elderberry plant. Because it is not known how many larvae or pupae each stem 1.0 inch or greater in diameter at ground level can support, the Service quantifies the amount of incidental take of the valley elderberry longhorn beetle in terms of the number of plants or stems 1.0 inch or greater in diameter at ground level that would be lost. The Service anticipates that all valley elderberry longhorn beetles inhabiting the one elderberry plant that may be subject to transplantation or pruning, will be harmed, harassed, or killed, as a result of the proposed action. Due to the proposed implementation of avoidance measures, incidental take is not being issued for the listed beetles that may inhabit other elderberry plants within or adjacent to the action area.

The Service anticipates that incidental take of the California red-legged frog will be difficult to detect because when California red-legged frogs are not in their breeding ponds, they inhabit the burrows of ground squirrels or other rodents; they may be difficult to locate due to their cryptic appearance and behavior; the juvenile and adult animals may be located a distance from the breeding ponds; the migrations occur on a limited period during rainy nights in the fall, winter, or spring; and the finding of an injured or dead individual is unlikely because of their relatively small body size. Recent project monitoring suggests that California red-legged frogs are difficult to find during preconstruction clearance surveys that include excavation of potential upland frog refugia in close proximity to breeding ponds and other aquatic habitat. Losses of California red-legged frogs may also be difficult to quantify due to seasonal fluctuations in their numbers, random environmental events, changes in water regime at their breeding ponds, or additional environmental disturbances. Due to the difficulty in quantifying the number of California red-legged frogs that will be taken as a result of the proposed action, the Service is quantifying take incidental to the project as all of the California red-legged frogs inhabiting or utilizing the 3.43 acres of habitat identified in the action area. A portion of the frog habitat that will be affected by the proposed Interstate 80 Eastbound Cordelia Truck Scales Relocation Project has already been covered under incidental take issued for the Interstate 80 HOV Lanes Project (Service File 1-1-07-F-0146). Due to overlapping action areas the Interstate 80 project accounted for 0.13 acres of frog habitat that will be affected by the truck scales project. Therefore, the Service is issuing incidental take in this biological opinion for the remaining 3.30 acres of frog habitat in the action area. The incidental take is expected to be in the form of harm, harassment, injury, and mortality to adult California red-legged frogs from habitat loss/degradation, construction-related disturbance, capture and relocation, as well as roadkill and other activities associated with the operation and maintenance of the completed truck scales facility.

Upon implementation of the following reasonable and prudent measures incidental take associated with the proposed action described above for the valley elderberry longhorn beetle and

California red-legged frog will become exempt from the prohibitions described under section 9 of the Act.

Effect of the Take

The Service determined that this level of anticipated take is not likely to result in jeopardy to the valley elderberry longhorn beetle or California red-legged frog.

This biological opinion does not include incidental take for take that may occur to the valley elderberry longhorn beetle or the California red-legged frog due to a "frac-out" or implementation of a "frac-out" contingency plan.

Reasonable and Prudent Measures

The following reasonable and prudent measures are necessary and appropriate to minimize the effects of the proposed action on the valley elderberry longhorn beetle and California red-legged frog. Caltrans will be responsible for compliance with these measures:

1. Caltrans will ensure that all the conservation measures in the project description section of this biological opinion will be implemented.

2. Caltrans will ensure adverse effects to the valley elderberry longhorn beetle and California red-legged frog will be minimized.

3. Caltrans will ensure their compliance with this biological opinion.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, Caltrans shall ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

1. The following Terms and Conditions implement Reasonable and Prudent Measure one (1):

   a. Caltrans shall minimize the potential for harm, harassment, or killing of federally listed wildlife species resulting from project related activities by implementation of the conservation measures as described in the October 2008, Biological Assessment, the March 18, 2009, letter to the Service, and appearing in the *Project Description* of this biological opinion, except as modified by these *Terms and Conditions*.

   b. Caltrans shall include Special Provisions that include the Conservation Measures and the *Terms and Conditions* of this biological opinion in the solicitation for bid

information. In addition, Caltrans shall educate and inform contractors involved in the project as to the requirements of the biological opinion.

c. Caltrans has proposed to provide compensation for the effects to 3.43 acres of California red-legged frog habitat by providing STA with sufficient resource to implement, monitor, and manage a 3.0-acre restoration project on Solano Community College property. Acceptable compensation shall require a Service-approved conservation easement/deed restriction on the 3.0-acre restoration site. Caltrans shall immediately reinitiate consultation with the Service if Solano Community College is unable to secure a conservation easement/deed restriction for the restoration site or if STA is unable to satisfy the success criteria outlined in the March 30, 2009, mitigation and monitoring plan for the restoration site. The conservation easement/deed restriction for the site shall be reviewed and approved by the Service.

   An approved ecologically-based conservation easement/deed restriction shall include restricted public access, a long-term management plan, and an in-perpetuity endowment based on a Service-approved property analysis record (PAR). The Service-approved management plan shall be in perpetuity and shall include, but not be limited to, a description of the site, management needs (e.g. non-native vegetation and animal control, etc), when the management activities will be implemented, how often and to what level monitoring of the site shall occur, and a action/contingency plan to address potential management issues.

d. Caltrans shall prepare a relocation plan for moving California red-legged frogs that will be submitted to the Service for review and approval at least thirty (30) calendar days prior to the date of groundbreaking.

2. The following Terms and Conditions implement Reasonable and Prudent Measure two (2):

   a. The Resident Engineer or their designee shall be responsible for implementing the conservation measures and *Terms and Conditions* of this biological opinion and shall be the point of contact for the project. The Resident Engineer or their designee shall maintain a copy of this biological opinion onsite whenever construction is taking place. Their name and telephone number shall be provided to the Service at least thirty (30) calendar days prior to groundbreaking at the project. At least thirty (30) calendar days prior to ground breaking, the Resident Engineer must submit a letter to the Service verifying that they posses a copy of this biological opinion and have read and understand the Terms and Conditions.

   b. A Service-approved biologist(s) shall be onsite during all activities that may result in the take of the valley elderberry longhorn beetle or California red-legged frog. The qualifications of the biologist(s) must be presented to the Service for review and

written approval at least thirty (30) calendar days prior to ground-breaking at the project site. The Service-approved biologist(s) will keep a copy of this biological opinion in their possession when onsite. The Service-approved biologist(s) shall be given the authority to communicate verbally or by telephone, electronic mail or hardcopy with Caltrans personnel, construction personnel or any other person(s) at the project site or otherwise associated with the project. The Service-approved biologist(s) shall have oversight over implementation of all the *Terms and Conditions* in this biological opinion, and shall have the authority to stop project activities if they determine any of the requirements associated with these *Terms and Conditions* are not being fulfilled. If the Service-approved biologist(s) exercises this authority, the Service shall be notified by telephone and email within 24 hours. The Service contact is Chris Nagano, Division Chief, Endangered Species Program at the Sacramento Fish and Wildlife Office at telephone (916) 414-6600.

c. An outline of the employee environmental awareness program shall be submitted to the Division Chief of the Endangered Species Program at the Sacramento Fish and Wildlife Office within thirty (30) calendar days prior to the start of construction. The program shall focus on the conservation measures that are relevant to employee's personal responsibility. Documentation of the training, including individual signed affidavits, shall be submitted to the Service with the annual compliance report described in the *Reporting Requirements* on page 46 of this biological opinion.

d. Caltrans shall submit a "frac-out" contingency plan for Service review and approval within sixty (60) days prior to the onset of any ground breaking activities associated with the proposed project.

e. Caltrans shall contact the Service within twenty-four (24) hours if access, containment, or clean-up of a "frac-out", or any other activities associated with implementing the "frac-out" contingency plan occurs within California red-legged frog aquatic or upland habitat or has the potential to affect an elderberry shrub. Caltrans shall quantify, report, and reinitiate consultation for the listed beetle and frog if activities occur outside the action area described in this biological opinion.

f. Caltrans shall contact the Service within twenty-four (24) hours if activities associated with implementing the "frac-out" contingency plan or any other project activities occur within 100 feet of an elderberry shrub or habitat for other listed species.

g. The Service will be notified that (1) the construction and revegetation contractors have been advised that all on-site personnel must receive valley elderberry longhorn beetle and California red-legged frog training prior to commencing work on the project and (2) if elderberry shrubs in the construction zone are disturbed, the details surrounding the incident and the corrective measures taken will be reported to the Service within five (5) working days of any such disturbance.

h. An experienced, licensed, revegetation contractor or landscape architect will carry out the elderberry transplanting and planting activities.

i. If the identified elderberry shrub is transplanted, a Service approved biologist will monitor the removal of the elderberry shrubs and subsequent transplanting to the restoration site and will ensure that proper transplanting procedures are used.

j. During transplanting, the biologist will inspect the stems and roots of the transplant to determine presence or absence of valley elderberry longhorn beetle exit holes, which will be recorded. Existing holes on stems will be marked with white paint (exterior, flat, latex) around each hole. Paint should not enter the hole. Marking holes in this manner will allow monitors in subsequent years to distinguish new exit holes from old ones.

k. If the elderberry shrubs cannot be successfully transplanted because it is in a state of decline, in obvious poor health, or for other reasons such that it would not likely survive transplanting, it will be transported to the Solano Community College Suisun Creek restoration site and left to decompose. Elderberry stems and cuttings will also be left in the restoration site. Cuttings will not be chipped or destroyed because they may contain developing larvae and/or pupae that could complete development and successfully emerge from dead wood.

l. During transplanting, Caltrans will ensure that existing elderberry shrubs adjacent to the construction area and the restoration area are not adversely affected.

m. The transplanted elderberry shrub will be tagged and identified as a transplant opposed to the container-grown elderberries that will be planted in the restoration area. The success of the transplanted elderberry shall be reported in the annual restoration site monitoring report. Monitoring and maintenance shall be done according to the Service's September 19, 1996, *Mitigation Guidelines for the Valley Elderberry Longhorn Beetle.*

3. The following Terms and Conditions implement Reasonable and Prudent Measure three (3):

a. If requested, before, during, or upon completion of ground breaking and construction activities, Caltrans shall allow access by Service and California Department of Fish and Game personnel or their designated agent to the project site to inspect project effects to the valley elderberry longhorn beetle and California red-legged frog, and their habitat.

b. Caltrans shall comply with the reporting requirements outlined below.

Reporting Requirements

Proof of environmental training and fulfillment of compensation requirements shall be provided to the Division Chief of the Endangered Species Program, Sacramento Fish and Wildlife Office, 2800 Cottage Way, Room W-2605, Sacramento, California 95825-1846, phone (916) 414-6600.

Observations of valley elderberry longhorn beetles (including exit holes in dead or living stems), California red-legged frogs, or of any listed or sensitive animal species should be reported to the CNDDB within thirty (30) calendar days of the observation.

The Service's Sacramento Field Office is to be notified within three (3) working days of the finding of any dead, sick, or injured valley elderberry longhorn beetles or any harm to beetles or elderberry plants associated with the Interstate 80 Eastbound Cordelia Truck Scales Relocation Project. The Service contact person for this information is the Coast-Bay Branch Chief, Endangered Species Program at (916) 414-6600. Any salvaged valley elderberry longhorn beetle specimens taken shall be properly preserved in accordance with the Natural History Museum of Los Angeles County's policy of accessioning (10% formalin in a quart jar or freezing). Information concerning how the specimen was taken, length of the interval between death and preservation, the environmental conditions, the incidental take permit number (81420-2008-F-1929), and any other relevant information shall be written on 100% rag content paper, with indelible ink, and included in the container with the specimen. Preserved specimens shall be delivered to the Service's Division of Law Enforcement at 2800 Cottage Way, Room W-2928, Sacramento, California 95825 [telephone: (916) 414-6660].

Injured California red-legged frogs shall be cared for by a licensed veterinarian or other qualified person such as the on-site biologist; dead individuals must be placed in a sealed plastic bag with the date, time, location of discovery, and the name of the person who found the animal; the carcass should be kept in a freezer; and held in a secure location. The Service and the California Department of Fish and Game will be notified within one (1) working day of the discovery of death or injury to a California red-legged frog that occurs due to project related activities or is observed at the project site. Notification will include the date, time, and location of the incident or of the finding of a dead or injured animal clearly indicated on a USGS 7.5 minute quadrangle and other maps at a finer scale, as requested by the Service, and any other pertinent information. The Service contacts are Chris Nagano, Division Chief, Endangered Species Program at the Sacramento Fish and Wildlife Office [(916) 414-6600], and Dan Crum, Resident Agent-in-Charge of the Service's Law Enforcement Division at (916) 414-6660. The California Department of Fish and Game contact is Mr. Scott Wilson at telephone (707) 944-5563.

Caltrans shall submit a post-construction compliance report prepared by the on-site biologist to the Sacramento Fish and Wildlife Office within sixty (60) calendar days following each year of construction or within sixty (60) calendar days of any break in construction activity lasting more than sixty (60) calendar days. This report shall detail (i) dates that construction occurred; (ii) pertinent information concerning the success of the project in meeting compensation and other

conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on the valley elderberry longhorn beetle and/or California red-legged frog, if any; (v) occurrences of incidental take of either of these species; (vi) documentation of employee environmental education; and (vii) other pertinent information. The reports shall be addressed to the Coast-Bay Branch Chief, Endangered Species Program, Sacramento Fish and Wildlife Office.

Caltrans shall report to the Service any information about take or suspected take of listed wildlife species not authorized by this biological opinion. Caltrans must notify the Service via electronic mail and telephone within twenty-four (24) hours of receiving such information. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and photographs of the specific animal. The individual animal shall be preserved, as appropriate, and held in a secure location until instructions are received from the Service regarding the disposition of the specimen or the Service takes custody of the specimen. The Service contacts are Chris Nagano, Division Chief, Endangered Species Program, Sacramento Fish and Wildlife Office at Chris_Nagano@fws.gov and (916) 414-6600, and Resident Agent-in-Charge Dan Crum of the Service's Law Enforcement Division at (916) 414-6660.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases.

We propose the following conservation recommendations:

1. Caltrans should assist the Service in implementing recovery actions identified in the *Valley Elderberry Longhorn Beetle Recovery Plan* (Service 1984) and the *Recovery Plan for the California Red-legged Frog* (Service 2002).

2. Caltrans should consider participating in the planning for regional habitat conservation plans for the valley elderberry longhorn beetle and California red-legged frog, other listed species, and sensitive species.

3. Caltrans should consider establishing functioning preservation and creation conservation banking systems to further the conservation of the valley elderberry longhorn beetle, California red-legged frog, and other listed species. Such banking systems also could possibly be utilized for other required mitigation (i.e., seasonal wetlands, riparian habitats, etc.) where appropriate. Efforts should be made to preserve habitat along roadways in association with wildlife crossings.

4. Roadways can constitute a major barrier to critical wildlife movement. Therefore, Caltans should incorporate culverts, tunnels, or bridges on highways and other roadways that allow

safe passage by California red-legged frogs, other listed animals, and wildlife. Photographs, plans, and other information should be included in biological assessments if "wildlife friendly" crossings are incorporated into projects. Efforts should be made to establish upland culverts designed specifically for wildlife movement rather than accommodations for hydrology. Transportation agencies should also acknowledge the value of enhancing human safety by providing safe passage for wildlife in their early project design.

5. Caltrans should continue to pursue multifaceted compensation packages such as the one developed for the proposed U.S. Interstate 580/Isabel Avenue Interchange Construction Project (Service File 1-1-07-F-0280) on future formal consultations with the Service.

6. Caltrans should continue to develop and implement their Early Statewide Biological Mitigation Planning Project that has been developed by the University of California at Davis, Road Ecology Center through Caltrans funding.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed and/or proposed species or their habitats, the Service requests notification of the implementation of these recommendations.

REINITIATION--CLOSING STATEMENT

This concludes formal consultation on the proposed Interstate 80 Eastbound Cordelia Truck Scales Relocation Project in Solano County, California. As provided in 50 CFR §402.16 and in the terms and conditions of this biological opinion, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the final project design exceeds the described action area in the October 2008, Biological Assessment; (2) the amount or extent of incidental take is exceeded; (3) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (4) the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion; or (5) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have questions concerning this opinion on the proposed Interstate 80 Eastbound Cordelia Truck Scales Relocation Project in Solano County, California, please contact John Cleckler (John_Clecker@fws.gov) or Ryan Olah (Ryan_Olah@fws.gov) at the letterhead address or at (916) 414-6600.

Sincerely,

for Susan K. Moore
Field Supervisor

cc:
Ahmad Hashemi, California Department of Transportation, Oakland, California
Scott Wilson, Melissa Escaron, Liam Davis, Marcia Grefsrud, California Department of Fish and Game, Yountville, California
Dale Dennis, Solano Transportation Authority, Suisun City, California
Stephanie Myers, ICF Jones & Stokes, Sacramento, California

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CERTIFICATE OF SUFFICIENCY

HDR | ONE COMPANY *Many Solutions*

9/3/10	04	SOL	80	P.M.	14.0	15.7	OA535

PROJECT DESCRIPTION:
Cordelia CVEF – I-80 EB Truck Scale Relocation Project
APPRAISAL MAP NO.:
Map Sheets 1-13
MAP DATE:
March 15, 2010 (Map Sheets 1 – 8, 13) and August 31, 2010 (Map Sheets 9 – 12)
PARCEL NUMBER(S):
61894, 61895, 61896, 61897, 61898, 61899, 61900, 61901, 61979, 61980 and 62081

I hereby certify the right of way and degree of access control are correctly shown on the above-referenced appraisal map(s) and are sufficient for the construction of this project.

Brian Stewart
Project Engineer, HDR

9/3/2010
Date

Carl Haack
Senior Design Engineer, HDR

9/3/2010
Date

Nicolas Endrawos
Project Manager, Caltrans

9/15/10
Date

[X] Hazardous Materials Disclosure Document – Acquisition Form ENV-0001-A (REV 03/2009) is attached.

Note: Only the minimum required signatures are shown on the exhibit. Additional signatures may be incorporated as appropriate.

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

HAZARDOUS MATERIALS DISCLOSURE DOCUMENT - ACQUISITION

ENV-0001-A (REV.03/2009)

This document provides written disclosure that the referenced property, as shown on the map(s) attached, has been reviewed by the District Hazardous Waste Technical Specialist (located in Environmental or Environmental Engineering) and provides direction regarding property acquisition based upon that review.

09/03/10
DATE

04/SOL/80/14.0-15.7
DIST/CO/RTE/PM (KP)

Map Sheets 1 - 13
APPRAISAL MAP NO.

OA535
EA

03/15/10 (Sheets 1 - 8, 13), 08/31/10 (Sheets 9 - 12)
MAP DATE

Cordelia CVEF - I-80 EB Truck Scale Relocation
PROJECT NAME OR DESCRIPTION

ACTION SUMMARY

These Parcels Can Be Acquired:
RW PARCEL NUMBER(S)
61896, 61898, 61899, 61900, 61901, 61979, 61980, and 62081

These Parcels Can Be Acquired But Property Is Impacted by Contamination:
RW PARCEL NUMBER(S)
61894, 61895, and 61897

These Parcels Can **NOT** Currently be Acquired:
RW PARCEL NUMBER(S)

See subsequent pages for detailed information regarding property condition and status.

Form prepared By: Carlton L. Haack, HDR

Christopher R. Wilson
Approved by District Hazardous Waste Supervisor

September 8, 2010
Date

HAZARDOUS MATERIALS DISCLOSURE DOCUMENT- ACQUISITION DETAIL

Parcel #s

( ) **1.** Based upon an initial Site Assessment, the referenced parcel(s) are considered free of significant hazardous materials for purposes of this project (describe potential sources of minor contamination in the Comments section). Subject parcel(s) can be acquired.

(See Comments) **2.** The referenced parcel(s) do not require cleanup cost estimates, but have been identified as having:

(a) minor soil contamination. A hazardous waste Site Investigation [☒ has / ☐ has not] been performed on the referenced parcel(s) (if not performed explain source of knowledge in the Comments section). Subject parcel(s) can be acquired;

( ) (b) contaminated groundwater under the property. A hazardous waste Site Investigation [☐ has / ☐ has not] been performed on the referenced parcel(s) (if not performed explain the source of knowledge in the Comments section). The source of contamination has been determined not to be attributed to the property (an indemnification letter from the local, state or federal regulatory authority [☐ is / ☐ is not] attached). Subject parcel(s)[☐ can / ☐ can not] be acquired without completing and acquiring approval of a *Request for Acquisition of Contaminated Property* (ENV-002).;

( ) (c) contaminated groundwater under the property. A hazardous waste Site Investigation [☐ has / ☐ has not] been performed on the referenced parcel(s) (if not performed explain the source of knowledge in the Comments section). However, the source of contamination has been removed or remediated to regulatory cleanup levels (attach closure letter). Subject parcel(s) can be acquired.;

( ) (d) lead soil contamination, probably as a result of aerial deposition of vehicular gasoline emissions. A project specific hazardous waste Site Investigation[☐ has / ☐ has not] been performed on the referenced parcel(s) (if not performed explain the source of knowledge in the Comments section). Subject parcel(s) can be acquired.;

( ) (e) hazardous materials previously present on the subject parcel(s) that have been sufficiently remediated so that significant hazardous materials, for the purposes of this project, are no longer present. A hazardous waste Site Investigation [☐ has / ☐ has not] been performed on the subject parcel(s) (if not performed explain the source of knowledge in the Comments section). A regulatory closure letter, if appropriate, is attached. Subject parcel(s) can be acquired.

AZARDOUS SUBSTANCES DISCLOSURE DOCUMENT - ACQUISITION

ENV-0001-A (REV 03/2009)

Parcel #s

3. This document includes as an attachment, a hazardous waste Site Investigation report stating the nature and extent of contamination and cleanup cost estimates for the referenced parcel(s). In addition:

( ) (a) Subject parcel(s) can only be acquired with approval of the Chief Engineer. Property value is impacted by contamination. For acquisition, a completed and approved *Request for Acquisition of Contaminated Property* (ENV-0002) is necessary. Authorization from the Chief Engineer to proceed with acquisition [☐ is / ☐ is not] attached (if authorization is not attached, explain status in the Comments section).;

( ) (b) Subject parcel(s) is impacted by contamination but can be acquired with approval of a District exception to acquire contaminated property.

4. This document includes the hazardous waste Site Investigation work schedule for additional work and/ or cleanup plans, schedule, and current status for the referenced parcel(s), as an attachment. The work will be completed by [☐ Caltrans / ☐ a private owner or responsible party]. In addition:

( ) (a) Subject parcel(s) **can not be acquired** until Site Investigation and/or remediation is complete. The *Hazardous Materials Disclosure Document - Acquisition* will be updated when appropriate. Work is expected to be completed by _____ (date).;

( ) (b) Subject parcel(s) can be acquired with proper approvals. Property is impacted by contamination. For acquisition, a completed and approved *Request for Acquisition of Contaminated Property* (ENV-0002) [☐ is / ☐ is not] necessary. Authorization from the Chief Engineer to proceed with acquisition [☐ is / ☐ is not] attached (if Chief Engineer authorization is required for acquisition but not attached, explain status in the Comments section.)

5. The referenced parcel(s) have been identified as containing or potentially containing, hazardous materials and **can not be acquired.** The *Hazardous Materials Disclosure Document - Acquisition* will be updated when appropriate. In addition:

( ) (a) an appropriate hazardous waste Site Investigation must be performed to determine the nature and extent of contamination, and remedial cost estimates. Site Investigation is anticipated to be completed by _____ (date).

( ) (b) a hazardous waste Site Investigation will be scheduled by the District Hazardous Waste Technical Specialist when a permit to enter is obtained by the District/Region Right of Way Office.The permit request was submitted on _____ (date) and the Site Investigation is anticipated to be completed by _____ (date).;

( ) (c) hazardous waste Site Investigation studies are complete but there are unresolved regulatory issues (e.g.,regulatory case closure is being pursued by the responsible party, site requires cleanup and approach and responsibility has not been resolved, site requires long-term monitoring that would conflict with the project, etc,). Resolution is expected by _____ (date).

( ) 6. Other: Explain in the Comments section below. (NOTE: Acquisition of property without adequate investigation is an unacceptable risk. If adequate investigation has not been completed, use #4(a) or #5 above).

Comments

Please refer to attached list of HMDD Parcel Classifications dated 12-11-09

ADA Notice For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 654-6410 or TDD (916) 654-3880 or write Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814.

CORDELIA CVEF – I-80 EB TRUCK SCALE RELOCATION PROJECT
HMDD Parcel Classifications

CT Parcel Number	Assessors Parcel Number	Proposed Right of Way Acreage	Parcel Classification
61894	0027-260-120	3.83 ac Fee	2 (a)*
61895	0027-272-080	7.71 ac Fee	2 (a)*
61896	0027-272-140	11.46 ac Fee	1
61897	0027-272-180	7.51 ac Fee	2 (a)**
61898	0027-272-160	.65 ac Fee	1
61899	0027-252-080,090,100,110	8.41 ac Fee 4.56 ac Excess	1
61900	N/A	7,105 sf Fee	1
61901	0028-200-560	177 sf Fee	1
61979	0046-310-010	Esmt Only	1
61980	0027-271-030	Esmt Only	1
62081	0027-271-060	Esmt Only	1

* Surface soil near Suisun Creek contains elevated pesticide concentrations due to agricultural activities and the pesticide concentrations significantly decrease with depth. Excavated soil should not be considered a hazardous waste due to the inherent mixing that occurs during footing excavation and deeper CIDH pile cleanout.

** Surface soil contains elevated pesticide concentrations due to agricultural activities. Soil that is graded during construction of the approach embankment will remain in the "area of contamination" from which it is generated and will be incorporated into the embankment.

AERIALLY-DEPOSITED LEAD INVESTIGATION REPORT

I-80 EASTBOUND TRUCK SCALE RELOCATION PROJECT
SOL-80 PM 14.0/15.7, SOL-12 PM L1.8/2.0
FAIRFIELD, CALIFORNIA

PREPARED FOR:
MARK THOMAS & CO. INC.
1243 ALPINE ROAD, SUITE 222
WALNUT CREEK, CALIFORNIA

PREPARED BY:
GEOCON CONSULTANTS, INC.
6671 BRISA STREET
LIVERMORE, CALIFORNIA

GEOCON

GEOCON PROJECT NO. E8128-06-04
CALTRANS EA No. 04-0A535

NOVEMBER 2008

AERIALLY-DEPOSITED LEAD INVESTIGATION REPORT

EASTBOUND INTERSTATE 80
TRUCK SCALE RELOCATION PROJECT
SOL-80 PM 14.0 TO 15.7,
SOL-12 PM L1.8 TO L2.0
FAIRFIELD, SOLANO COUNTY, CALIFORNIA

PREPARED FOR:

Mark Thomas & Company, Inc.
1243 Alpine Road, Suite 222
Walnut Creek, California

PROJECT NO. E8128-06-04
CALTRANS EA No. 04-0A535

NOVEMBER 2008

Project No. E8128-06-04
November 14, 2008

Mr. Mike Lohman
Mark Thomas & Company, Inc.
1243 Alpine Road, Suite 222
Walnut Creek, California 94596

Subject: AERIALLY-DEPOSITED LEAD INVESTIGATION REPORT
EASTBOUND INTERSTATE 80 TRUCK SCALE RELOCATION PROJECT
SOLANO POST MILE 14.0 TO 15.7 and L1.8 TO L2.0
FAIRFIELD, SOLANO COUNTY, CALIFORNIA

Dear Mr. Lohman:

Geocon has performed environmental engineering services at the subject site in general accordance with the scope of work outlined in Geocon Proposal No. LE-08-015. The subject site consists of California Department of Transportation (Caltrans) right-of-way located along the eastbound shoulder of Interstate 80 (Solano Post Mile 14.0 to 15.7), and State Route 12 East (Solano Post Mile L1.8 to L2.0), a distance of 1.9 miles, in Fairfield, Solano County, California.

The accompanying report summarizes the services performed including the advancement of hand-auger boreholes, limited soil sampling, and laboratory testing.

The contents of this report reflect the views of Geocon Consultants, Inc., who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the State of California or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

If there are any questions concerning the contents of this report, or if Geocon may be of further service, please contact the undersigned at your convenience.

Sincerely,

GEOCON CONSULTANTS, INC.

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EXECUTIVE SUMMARY

This *Aerially-Deposited Lead Investigation Report* was prepared for the Interstate 80 (I-80) Eastbound Truck Scale Relocation Project located in Fairfield, Solano County, California. The project area consists of the eastbound shoulder of Interstate 80 (I-80) (Post Mile [PM] 10.0 to 15.7) and State Route 12 (SR-12) East (PM L1.8 to L2.0) in Fairfield, Solano County, California (the Site). The site location is depicted on the Vicinity Map, Figure 1.

This report documents the site investigation for aerially-deposited lead (ADL) in soil along the roadway shoulder within existing Caltrans right-of-way (ROW). The purpose of the proposed scope of services was to evaluate whether soil at the Site has been impacted by lead associated with historical automobile emissions from the use of leaded gasoline. The soil borings advanced during the investigation at the Site are depicted on the Site Plans, Figures 2a and 2b. The information obtained from this investigation will be used by the client to evaluate soil reuse and disposal options, and for health, safety, and waste management purposes.

The field activities consisted of advancing hand-auger soil borings and collecting soil samples at the Site for lead analysis. On June 17 and July 18, 2008, 105 soil samples were collected from 39 hand-auger borings (B1 through B39). Soil borings B1 through B39 were advanced approximately two feet (ft) from the edge of pavement (EOP). The soil borings were advanced to an approximate maximum depth of 2.5 feet; soil samples were collected at general depths intervals of 0.0 ft to 0.5 ft, 1.0 ft to 1.5 ft, and 2.0 to 2.5 ft. On August 13, 2008, 24 soil samples were collected from 20 step-out borings, which were located 10 feet and 15 feet from the initial borings. Soil samples were collected from the step-out borings at selected depths between the surface and 2.5 feet, and were based upon the depth intervals where reported soluble lead concentrations (using the Waste Extraction Test; WET) exceeded the Soluble Threshold Limit Concentration (STLC) of 5.0 milligrams per liter (mg/l) in the corresponding initial samples.

Geocon instructed the analytical laboratories to perform laboratory analyses under standard turn-around-time. Reproductions of the laboratory reports and chain-of-custody documentation are presented as Appendix C. The laboratory analyses performed are summarized below:

- A total of 141 soil samples were analyzed for total lead using EPA Test Method 6010.
- A total of 12 soil samples (randomly selected by the laboratory) were analyzed for pH using EPA Test Method 9045.
- A total of 40 soil samples with total lead concentrations greater than 50 milligrams per kilogram (mg/kg; i.e., greater than 10 times the soluble threshold limit concentration) were further analyzed via the WET method.
- Twelve soil samples with soluble lead concentrations greater than 5.0 mg/l were further analyzed via the deionized-water Waste Extraction Test (WET-DI).
- Eleven soil samples with soluble (WET) lead concentrations greater than 5 mg/l were analyzed for soluble lead using the TCLP.

Soil analytical results indicated the following:

Shoulder Borings

- Total lead concentrations ranged from less than the laboratory reporting limit of 5 mg/kg (<5.0 mg/kg) to 490 mg/kg, with 27 samples exceeding 50 mg/kg.
- Soluble (WET) lead concentrations ranged from <0.25 mg/l to 22 mg/l, with 12 samples exceeding the STLC of 5.0 mg/l.
- Soluble (WET-DI) lead concentrations ranged from <0.25 mg/l to 1.9 mg/l in the 12 soil samples analyzed.
- Soluble (TCLP) lead concentrations ranged from 0.36 mg/l to 1.5 mg/l in the 11 soil samples analyzed.
- Soil pH values ranged from 6.7 to 8.9.

Step-Out Borings

- Total lead concentrations ranged from 6.1 mg/kg to 280 mg/kg, with 13 samples exceeding 50 mg/kg.
- Soluble (WET) lead concentrations ranged from <0.25 mg/l to 0.63 mg/l.

Lead Statistical Evaluation

The results of the lead statistical evaluation based on the data collected at the Site indicated the following:

- Soil excavated from the western portion of the Site (borings B1 through B10, approximately between Stations 264 and 293) and generated for offsite disposal would not be classified as a California hazardous waste since the 90% UCL-predicted soluble (WET) lead concentration is less than the lead STLC of 5.0 mg/l. Consequently, excavated soil may be reused or disposed as non-hazardous based on lead content.
- The top 1.0 foot of soil excavated from the central portion of the Site (borings B11 through B20, approximately between Stations 293 and 326) should be either (1) managed and disposed of as a California hazardous waste or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable. Underlying soil would not be classified as hazardous waste based on lead content. Based on the results of the step-out borings (see Section 6.2), the ADL impacts at hazardous waste levels do not appear to extend further than 12 feet from the EOP. Based on the reported WET-DI results, soil excavated from the surface to a depth of 1.0 ft may be reused onsite in accordance with the DTSC Variance by placing the excavated soil under clean fill or pavement. Based upon the TCLP results, soil excavated from this portion of the Site would not be classified as RCRA hazardous waste.
- Soil excavated from the eastern portion of the Site (borings B21 through B39, approximately between Stations 326 and 385) and generated for offsite disposal would not be classified as a California hazardous waste since the 90% UCL-predicted soluble (WET) lead concentration is less than the lead STLC of 5.0 mg/l. Consequently, excavated soil may be reused or disposed as non-hazardous based on lead content.

Step-Out Borings

Analytical results of the step-out boring soil samples did not report soluble (WET) lead at concentrations above the STLC of 5.0 mg/l. Therefore, soil excavated from areas greater than approximately 12 feet from the EOP (approximately 10 feet from the initial borings) and generated for offsite disposal should not be classified as a California hazardous waste based on lead content.

Worker Protection

Per Caltrans requirements, contractor(s) should prepare a project-specific lead compliance plan to prevent or minimize worker exposure to lead-impacted soil. The plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other appropriate health and safety protocols and procedures for the handling of lead-impacted soil.

1.0 INTRODUCTION

This *Aerially-Deposited Lead Investigation Report* was prepared for the Interstate 80 (I-80) Eastbound Truck Scale Relocation Project located in Fairfield, Solano County, California. The project area consists of the eastbound shoulder of Interstate 80 (I-80) (Post Mile [PM] 10.0 to 15.7) and State Route 12 (SR-12) East (PM L1.8 to L2.0) in Fairfield, Solano County, California (the Site). The site location is depicted on the Vicinity Map, Figure 1.

This report documents the site investigation for aerially-deposited lead (ADL) in soil along the roadway shoulder within existing Caltrans right-of-way (ROW). The soil borings advanced during the investigation at the Site are depicted on the Site Plans, Figures 2a and 2b.

Geocon conducted a separate investigation of adjacent private property parcels proposed for partial acquisition by Caltrans to evaluate whether impacts from chemicals associated with historical agricultural activities and other chemical constituents of concern exist in the surface and near surface soil and groundwater. The private property parcels are proposed for acquisition to accommodate relocation of the eastbound I-80 Truck Inspection Facility (TIF) and associated project roadway construction. The results of the private property investigation are provided under separate cover.

1.1 Purpose

The purpose of the proposed scope of services was to evaluate whether soil at the Site has been impacted by lead associated with historical automobile emissions from the use of leaded gasoline. Soil borings were located at approximate 300-foot intervals along the eastbound I-80 and SR-12 shoulders. Soil samples were collected at three depth intervals from each boring for the purpose of evaluating vertical impacts of potential ADL. In addition, step-out borings were subsequently advanced adjacent to soil boring locations where elevated levels of lead were reported in the laboratory test results to further characterize the lateral and vertical extent of ADL along the roadway shoulder.

The information obtained from this investigation will be used by the client to evaluate soil reuse and disposal options, and for health, safety, and waste management purposes.

1.2 Proposed Improvements

Under the proposed build alternative, the eastbound I-80 TIF would be reconstructed approximately 2,500 feet east of its present location. The exit ramp from eastbound I-80 to the new truck scale facility would utilize the existing eastbound I-80 exit ramp location and geometry, which consists of a dedicated exit ramp and a shared through-exit lane. The new exit ramp would continue as a two lane roadway through the existing TIF, and be widened to four lanes immediately west of Suisun Creek. The new exit ramp would cross over Suisun Creek on a new bridge before entering the new

truck scale facility. A new two lane eastbound roadway would exit from the TIF and split approximately 1,300 feet east with one lane merging onto eastbound I-80 and the second lane connecting to the eastbound I-80 to eastbound SR-12 East connector.

The eastbound I-80 connector to eastbound SR-12 East would be reconstructed as a two lane ramp crossing over ("braided with") the truck scale entrance ramp to eastbound I-80. A new dedicated lane on I-80 would begin approximately 2,500 feet west of the exit point to the connector. The two lane connector would continue east becoming SR-12 East, with the truck scale entrance ramp joining as an auxiliary lane that would end at the SR-12 East/Chadbourne Road interchange exit ramp. Construction work on existing bridge structures is not proposed as part of the eastbound I-80 Cordelia Truck Scales Relocation Project.

2.0 BACKGROUND

2.1 Previous Phase I Initial Site Assessment

We conducted an Initial Site Assessment (ISA) of the project area and presented the results in our report titled, *Eastbound I-80 Cordelia Truck Scale Relocation Project, Fairfield, Solano County, California, Revised Initial Site Assessment*, dated September 26, 2008. The conclusions of our ISA included the following:

- Further evaluation of conditions within the existing ROW and on private properties proposed for full or partial acquisition for the improvement projects is recommended. More specifically, private properties within the project environmental study area (ESA) with known current and/or historical agricultural uses should be evaluated for potential soil impacts from pesticides, herbicides, metals, and petroleum hydrocarbons.

- ADL at levels exceeding hazardous waste criteria have been identified in shallow soil along the unpaved shoulders and median within the existing I-80 ROW in portions of the project ESA. ADL studies should be performed at any areas on the eastbound I-80 not previously investigated and at the SR-12 East corridor to determine lead levels in planned excavation areas and associated soil material management and disposal requirements. This work is recommended to evaluate management and disposal of potentially contaminated soil, and construction worker health and safety requirements.

The ISA also identified the potential for asbestos-containing materials and lead-containing paint (LCP) to be used in structures located within the existing Caltrans ROW and those located on private properties proposed for partial acquisition. The ISA recommended that asbestos and LCP surveys be conducted for these structures prior to demolition. We conducted an asbestos and LCP survey of the eastbound I-80 TIF, and the results are presented under separate cover.

2.2 Aerially Deposited Lead

Ongoing testing by Caltrans throughout the State has indicated that ADL exists along major freeway routes due to emissions from vehicles powered by leaded gasoline. The ADL is generally limited to the upper two feet of soil material within the unpaved shoulder and median areas.

2.3 Hazardous Waste Determination Criteria

Regulatory criteria to classify a waste as California hazardous for handling and disposal purposes are contained in the CCR, Title 22, Division 4.5, Chapter 11, Article 3, §66261.24. Criteria to classify a waste as Resource, Conservation, and Recovery Act (RCRA) hazardous are contained in Chapter 40 of the Code of Federal Regulations (40 CFR), Section 261.

For waste containing metals, the waste is classified as California hazardous when: 1) the total metal content exceeds the respective Total Threshold Limit Concentration (TTLC); or 2) the soluble metal content exceeds the respective Soluble Threshold Limit Concentration (STLC) based on the standard Waste Extraction Test (WET). A waste has the potential of exceeding the STLC when the waste's total metal content is greater than or equal to ten times the respective STLC value since the WET uses a 1:10 dilution ratio. Hence, when a total metal is detected at a concentration greater than or equal to ten times the respective STLC, and assuming that 100 percent of the total metals are soluble, soluble metal analysis is required. A material is classified as RCRA hazardous, or Federal hazardous, when the soluble metal content exceeds the Federal regulatory level based on the Toxicity Characteristic Leaching Procedure (TCLP).

The above regulatory criteria are based on chemical concentrations. Wastes may also be classified as hazardous based on other criteria such as ignitability and corrosivity; however, for the purposes of this investigation, toxicity (i.e., lead concentrations) is the primary factor considered for waste classification since waste generated during the construction activities would not likely warrant testing for ignitability or other criteria. Waste that is classified as either California hazardous or RCRA hazardous requires management as a hazardous waste.

The Department of Toxic Substances Control (DTSC) regulates and interprets hazardous waste laws in California. The DTSC generally considers excavated or transported materials that exhibit "hazardous waste" characteristics to be a "waste" requiring proper management, treatment and disposal. Soil that contains lead above hazardous waste thresholds and is left in-place would not be necessarily classified by DTSC as a "waste." The DTSC has provided site-specific determinations that "movement of wastes within an area of contamination does not constitute "land disposal" and, thus, does not trigger hazardous waste disposal requirements. Therefore, lead-impacted soil that is scarified in-place, moisture-conditioned, and re-compacted during landscaping improvement activities might not be considered a "waste;" DTSC should be consulted to confirm waste classification. It is noted that in addition to DTSC regulations, health and safety requirements and

other local agency requirements may also apply to the handling and disposal of lead-impacted soil. Waste that is classified as either "California hazardous" or "RCRA hazardous," requires management as a hazardous waste and disposal at an appropriately permitted disposal facility.

2.4 DTSC Variance

The DTSC issued a variance on September 22, 2000 for Caltrans District 4 regarding the disposition of ADL-impacted soils within Caltrans projects. Review of the District 4 Variance, as modified by DTSC on September 12, 2003, and June 17, 2008, indicates the following conditions regarding reuse and management of ADL-impacted soil as fill material for construction and maintenance operations in Caltrans right-of-way.

Category 1 (Caltrans Type Y-1):
Soil exhibiting soluble lead concentrations less than or equal to 0.5 milligrams per liter (mg/l) [based on a modified waste extraction test using deionized water as the extractant (WET-DI)] and total lead concentrations of 1,411 mg/kg or less may be used as fill provided that the lead-impacted soil is placed a minimum of 5 feet above the maximum water table elevation and covered with at least 1 foot of clean soil.

Category 2 (Caltrans Type Y-2):
Soil exhibiting soluble lead concentrations greater than 0.5 mg/l and less than 50 mg/l (based on the WET-DI) and total lead concentrations greater than 1,411 mg/kg and less than 3,397 mg/kg may be used as fill provided that the lead-impacted soil is placed a minimum of 5 feet above the maximum water table elevation and protected from infiltration by a pavement structure maintained by Caltrans.

Category 3 (Caltrans Type Y-2):
Lead-impacted soil with a pH less than 5.0 shall only be used as fill material under the paved portion of the roadway.

3.0 SCOPE OF SERVICES

We performed the following scope of services:

3.1 Pre-Field Activities

- Prepared the *Aerially Deposited Lead Investigation Workplan, Eastbound I-80 Truck Scale Relocation Project, Fairfield, California,* dated June 12, 2008.
- Revised a Health and Safety Plan (HSP) for the project that provided guidelines on the use of personal protective equipment and the health and safety procedures to be implemented during the investigation activities.
- Retained the services of Advanced Technology Laboratories (ATL) to perform the chemical analyses of soil and groundwater samples.

3.2 Field Activities

The field activities consisted of advancing hand-auger soil borings and collecting soil samples along the unpaved shoulders of Eastbound I-80 and eastbound SR-12. On June 17 and July 18, 2008, 105 soil samples were collected from 39 hand-auger borings (B1 through B39). Soil borings B1 through B39 were advanced approximately two feet (ft) from the edge of pavement (EOP). The soil borings were advanced to an approximate maximum depth of 2.5 feet; soil samples were collected at general depths intervals of 0.0 ft to 0.5 ft, 1.0 ft to 1.5 ft, and 2.0 to 2.5 ft.

On August 13, 2008, 24 soil samples were collected from 20 step-out borings. Step-out borings identified as "A" were located 10 feet from the initial borings, and "B" borings were located 15 feet from the initial borings. Step-out borings were advanced at locations where soil sample analytical results reported soluble (WET) lead concentrations greater than the STLC of 5.0 mg/l. Soil samples were collected from the step-out borings at selected depths between the surface and 2.5 feet, and were based upon the depth intervals where reported soluble (WET) lead concentrations exceeded the STLC in the corresponding initial samples.

Soil boring coordinates were obtained using global positioning system (GPS) equipment. The GPS coordinates are presented in Table 1. The boring locations are depicted on the Site Plans, Figures 2a and 2b.

4.0 INVESTIGATIVE METHODS

4.1 Sampling Procedures

The soil samples obtained from the hand auger borings advanced at the Site were collected into new resealable polyethylene bags, were labeled, and placed in chilled ice chests for transport to the analytical laboratory. The soil samples were transported to ATL for analysis utilizing standard chain-of-custody documentation. Completed hand auger borings were backfilled to surface grade with soil cuttings.

Sampling equipment was cleansed by washing with a Liquinox solution followed by two successive rinses with distilled water. The decontamination water was returned to the site surface away from storm drains and inlets in a manner not to create runoff.

4.2 Laboratory Analyses

Geocon instructed the analytical laboratories to perform laboratory analyses under standard turn-around-time. Reproductions of the laboratory reports and chain-of-custody documentation are presented as Appendix C. The laboratory analyses performed are summarized below:

- A total of 141 soil samples were analyzed for total lead using EPA Test Method 6010.

- A total of 12 soil samples (randomly selected by the laboratory) were analyzed for pH using EPA Test Method 9045.
- A total of 40 soil samples with total lead concentrations greater than 50 mg/kg (i.e., greater than 10 times the soluble threshold limit concentration) were further analyzed via the WET method.
- Twelve soil samples with soluble lead concentrations greater than 5 milligrams per liter (mg/l) were further analyzed via the deionized-water Waste Extraction Test (WET-DI).
- Eleven soil samples with soluble (WET) lead concentrations greater than 5 mg/l were analyzed for soluble lead using the TCLP.

4.3 Quality Assurance/Quality Control Procedures

Quality assurance/quality control (QA/QC) procedures were performed for each method of analysis with specificity for each analyte listed in the test method's QA/QC. The laboratory QA/QC procedures included the following:

- One method blank for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One sample analyzed in duplicate for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One spiked sample for every ten samples, batch of samples or type of matrix, whichever was more frequent, with spike made at ten times the detection limit or at the analyte level.

Prior to submitting the soil samples to the laboratory, the chain-of-custody documentation was reviewed for accuracy and completeness.

5.0 INVESTIGATIVE RESULTS

5.1 Shoulder Borings

Analytical results for the soil samples are summarized in Table 2.

- Total lead concentrations ranged from less than the laboratory reporting limit of 5 mg/kg (<5.0 mg/kg) to 490 mg/kg, with 27 samples exceeding 50 mg/kg.
- Soluble (WET) lead concentrations ranged from <0.25 mg/l to 22 mg/l, with 12 samples exceeding the STLC of 5.0 mg/l.
- Soluble (WET-DI) lead concentrations ranged from <0.25 mg/l to 1.9 mg/l in the 12 soil samples analyzed.
- Soluble (TCLP) lead concentrations ranged from 0.36 mg/l to 1.5 mg/l in the 11 soil samples analyzed.
- Soil pH values ranged from 6.7 to 8.9.

5.2 Step-Out Borings

Analytical results for the step-out borings are summarized in Table 2.

- Total lead concentrations ranged from 6.1 mg/kg to 280 mg/kg, with 13 samples exceeding 50 mg/kg.
- Soluble (WET) lead concentrations ranged from <0.25 mg/l to 0.63 mg/l.

5.3 Laboratory Quality Assurance/Quality Control

We reviewed the laboratory QA/QC provided with the laboratory report. The data show acceptable surrogate recoveries and non-detect results for the method blanks.

The relative percent differences (RPDs) of several duplicate samples were outside criteria. Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) were outside recovery criteria for several of the analyses. Several samples required dilution due to sample matrix. The Case Narratives in the laboratory reports state that each analytical batch was validated by the Laboratory Control Sample (LCS). The data showed acceptable recoveries and RPDs for the remainder of the duplicates and matrix spikes.

Based on this limited data review, no additional qualifications of the soil data are necessary and the data are of sufficient quality for the purposes of this report.

5.4 Statistical Evaluation for Lead Detected in Soil Samples

Statistical methods were applied to the total lead data to evaluate: 1) the upper confidence limits (UCLs) of the arithmetic means of the total lead concentrations for each sampling depth; and 2) if an acceptable correlation between total and soluble lead concentrations exists that would allow the prediction of soluble lead concentrations based on calculated UCLs. The statistical methods used are discussed in a book entitled *Statistical Methods for Environmental Pollution Monitoring*, by Richard Gilbert; in an EPA *Technology Support Center Issue* document entitled, *The Lognormal Distribution in Environmental Applications*, by Ashok Singh et. al., dated December 1997; and in a book entitled *An Introduction to the Bootstrap,* by Bradley Efron and Robert J. Tibshirani.

The lead data for the Site were treated as three sample populations for statistical evaluation, which consisted of:

- Sample Population A: Soil samples collected within the western portion of the Site, borings B1 through B10;
- Sample Population B: Soil samples collected from the central portion of the Site, borings B11 through B20; and
- Sample Population C: Soil samples collected from the eastern portion of the Site, borings B21 through B39.

5.4.1 Calculating the UCLs for the Arithmetic Mean

The upper one-sided 90% and 95% UCLs of the arithmetic mean are defined as the values that, when calculated repeatedly for randomly drawn subsets of site data, equal or exceed the true mean 90% and 95% of the time, respectively. Statistical confidence limits are the classical tool for addressing uncertainties of a distribution mean. The UCLs of the arithmetic mean concentration are used as the mean concentrations because it is not possible to know the true mean due to the essentially infinite number of soil samples that could be collected from a site. The UCLs therefore account for uncertainties due to limited sampling data. As data become less limited at a site, uncertainties decrease, and the UCLs move closer to the true mean.

Non-parametric bootstrap techniques used to calculate the UCLs are discussed in the previously referenced EPA document and in *An Introduction to the Bootstrap.* For those samples in which total lead was not detected at concentrations exceeding the laboratory MRL, a value equal to one-half of the detection limit was used in the UCL calculation. The bootstrap test results are included in Appendix B, and the following tables present the calculated UCLs and statistics for the data.

Sample Population A (Borings B1 through B10)

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	71.4	75.2	55.6	20	130
1.0 to 1.5	60.5	65.9	42.8	2.5	150
2.0 to 2.5	16.7	17.7	13.1	2.5	31

Sample Population B (Borings B11 through B20)

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	216.5	233.5	151.9	14	490
1.0 to 1.5	116.1	125.3	80.8	2.5	240
2.0 to 2.5	102.5	113.5	62.2	2.5	320

Sample Population C (Borings B21 through B39)

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0 to 0.5	33.7	35.8	27.3	2.5	76
1.0 to 1.5	22.3	23.8	17.2	2.5	78
2.0 to 2.5	43.6	47.5	30.0	2.5	180

5.4.2 Correlation of Total and Soluble Lead

Total and corresponding soluble (WET) lead concentrations are bivariate data with a linear structure. This linear structure should allow for the prediction of soluble lead (WET) concentrations based on the UCLs calculated above in Section 5.4.1.

To estimate the degree of interrelation between total and corresponding soluble (WET) lead values (*x* and *y*, respectively), the *correlation coefficient (r)* is used. The correlation coefficient is a ratio that ranges from +1 to –1. A *correlation coefficient* of +1 indicates a perfect direct relationship between two variables; a *correlation coefficient* of –1 indicates that one variable changes inversely with relation to the other. Between the two extremes is a spectrum of less-than-perfect relationships, including zero, which indicates the lack of any sort of linear relationship at all. The *correlation coefficient* was calculated for the 27 (*x, y*) data points (i.e., soil samples analyzed for both total lead [*x*] and soluble [WET] lead [*y*]). Soil sample results for the step-out borings were not included in the regression analysis. The resulting *coefficient of determination* (r^2) equaled 0.7475, which yields a corresponding *correlation coefficient* (*r*) of 0.865.

For the *correlation coefficient* that indicates a linear relationship between total and soluble (WET) lead concentrations, it is possible to compute the line of dependence or a best-fit line between the two variables. A least squares method was used to find the equation of a best-fit line (regression line) by forcing the y-intercept equal to zero since that is a known point. The equation of the regression line was determined to be $y = 0.0433(x)$, where x represents total lead concentrations and y represents predicted soluble lead (WET) concentrations.

This equation was used to estimate the expected WET soluble lead concentrations for the UCLs calculated in for samples collected from the Site (see Section 5.3.1). Regression analysis results and a scatter plot depicting the (x, y) data points along with the regression line are included in Appendix B. The predicted soluble (WET) lead concentrations for the eastbound I-80 shoulder soil samples are summarized in Tables 3a through 3c.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Waste classifications are evaluated based on the 90% UCL of the lead content for the relevant excavation depths; this has historically been considered sufficient to satisfy a good faith effort by the EPA as discussed in SW-846. Risk assessment characterization is based on the 95% UCL of the lead content in the waste for the relevant depths; this is in accordance with the Risk Assessment Guidance for Superfund (RAGS) Volume 1 Documentation for Exposure Assessment. Per Caltrans, the 90% UCLs are to be used to evaluate onsite reuse and the 95% UCLs are to be used to evaluate offsite disposal.

6.1 Shoulder Borings

6.1.1 Sample Population A - Borings B1 through B10

The following table summarizes the predicted soluble (WET) lead concentrations and the waste classification for excavated soil based on the calculated total lead UCLs and the relationship between total and soluble (WET) lead for data collected in this portion of the Site. The total and soluble (WET) lead calculations are summarized in Table 3a.

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	Waste Classification
0 to 1.0 ft	71	3.1	75	Non-Hazardous
Underlying soil (1.0 to 2.5 ft)	*46*	*2.0*	*50*	*Non-Hazardous*
0 to 2.0 ft	66	2.9	71	Non-Hazardous
Underlying Soil (2.0 to 2.5 ft)	*17*	*0.7*	*18*	*Non-Hazardous*
0 to 2.5 ft	56	2.4	60	Non-Hazardous

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal

Based on the data presented in the above table, soil excavated from the western portion of the Site (approximately between Stations 264 and 293) and generated for offsite disposal would not be classified as a California hazardous waste since the 90% UCL-predicted soluble (WET) lead concentration is less than the lead STLC of 5.0 mg/l. Consequently, excavated soil may be reused or disposed as non-hazardous based on lead content.

6.1.2 Sample Population B - Borings B11 through B20

The following table summarizes the predicted soluble (WET) lead concentrations and the waste classification for excavated soil based on the calculated total lead UCLs and the relationship between total and soluble (WET) lead for data collected in this portion of the Site. The total and soluble (WET) lead calculations are summarized in Table 3b.

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	Waste Classification
0 to 1.0 ft	217	**9.4**	234	**Hazardous**
Underlying soil (1.0 to 2.5 ft)	*112*	*4.8*	*121*	*Non-Hazardous*
0 to 2.0 ft	166	**7.2**	179	**Hazardous**
Underlying Soil (2.0 to 2.5 ft)	*103*	*4.4*	*114*	*Non-Hazardous*
0 to 2.5 ft	154	**6.6**	166	**Hazardous**

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal

Based on the data presented in the above table, the top 1.0 foot of soil from the central portion of the Site (approximately between Stations 293 and 326) should be either (1) managed and disposed of as a California hazardous waste or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable. Underlying soil would not be classified as hazardous waste based on lead content. Based on the results of the step-out borings (see Section 6.2), the ADL impacts at hazardous waste levels do not appear to extend further than 12 feet from the EOP. Based on the reported WET-DI results, soil excavated from the surface to a depth of 1.0 ft may be reused onsite in accordance with the DTSC Variance by placing the excavated soil under clean fill or pavement.

Based upon the TCLP results, soil excavated from this portion of the Site would not be classified as RCRA hazardous waste.

6.1.3 Sample Population C - Borings B21 through B39

The following table summarizes the predicted soluble (WET) lead concentrations and the waste classification for excavated soil based on the calculated total lead UCLs and the relationship between total and soluble (WET) lead for data collected in this portion of the Site. The total and soluble (WET) lead calculations are summarized in Table 3c.

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	Waste Classification
0 to 1.0 ft	34	1.5	36	Non-Hazardous
Underlying soil (1.0 to 2.5 ft)	*29*	*1.3*	*32*	*Non-Hazardous*
0 to 2.0 ft	28	1.2	30	Non-Hazardous
Underlying Soil (2.0 to 2.5 ft)	*44*	*1.9*	*48*	*Non-Hazardous*
0 to 2.5 ft	31	1.3	33	Non-Hazardous

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal

Based on the data presented in the above table, soil excavated from the eastern portion of the Site (approximately between Stations 326 and 385) and generated for offsite disposal would not be classified as a California hazardous waste since the 90% UCL-predicted soluble (WET) lead concentration is less than the lead STLC of 5.0 mg/l. Consequently, excavated soil may be reused or disposed as non-hazardous based on lead content.

6.2 Step-Out Borings

Analytical results of the step-out boring soil samples did not report soluble (WET) lead at concentrations above the STLC of 5.0 mg/l. Therefore, soil excavated from areas greater than approximately 12 feet from the EOP (approximately 10 feet from the initial borings) and generated for offsite disposal should not be classified as a California hazardous waste based on lead content.

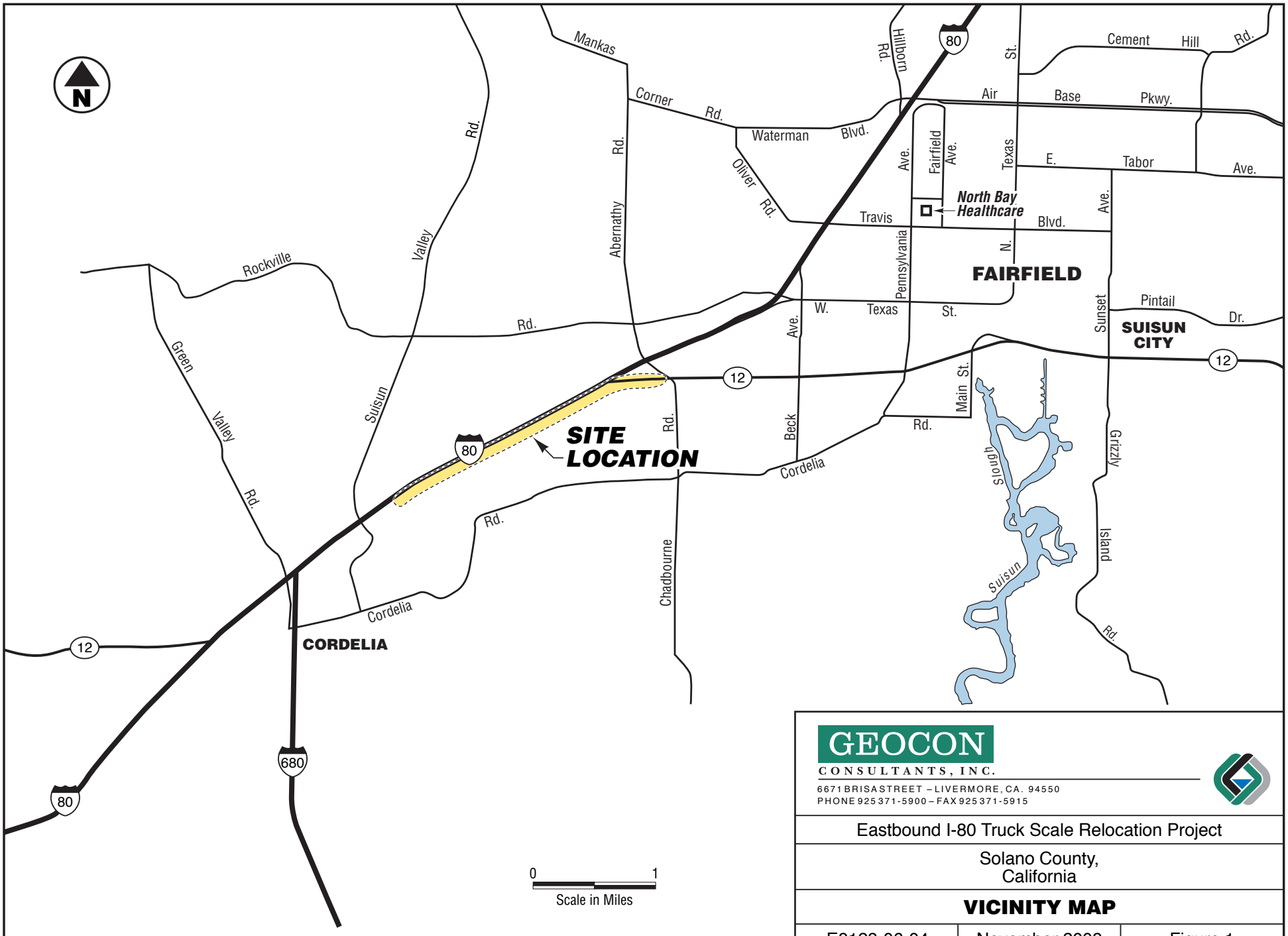
6.3 Worker Protection

Per Caltrans requirements, contractor(s) should prepare a project-specific lead compliance plan to prevent or minimize worker exposure to lead-impacted soil. The plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other appropriate health and safety protocols and procedures for the handling of lead-impacted soil.

7.0 REPORT LIMITATIONS

This report has been prepared exclusively for Mark Thomas and Company, Inc. The information contained herein is only valid as of the date of the field sampling, and will require an update to reflect additional information obtained.

This report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein. Therefore, the report should be deemed conclusive with respect to only the information obtained. We make no warranty, express or implied, with respect to the content of this report or any subsequent reports, correspondence or consultation. Geocon strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.



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Eastbound I-80 Truck Scale Relocation Project

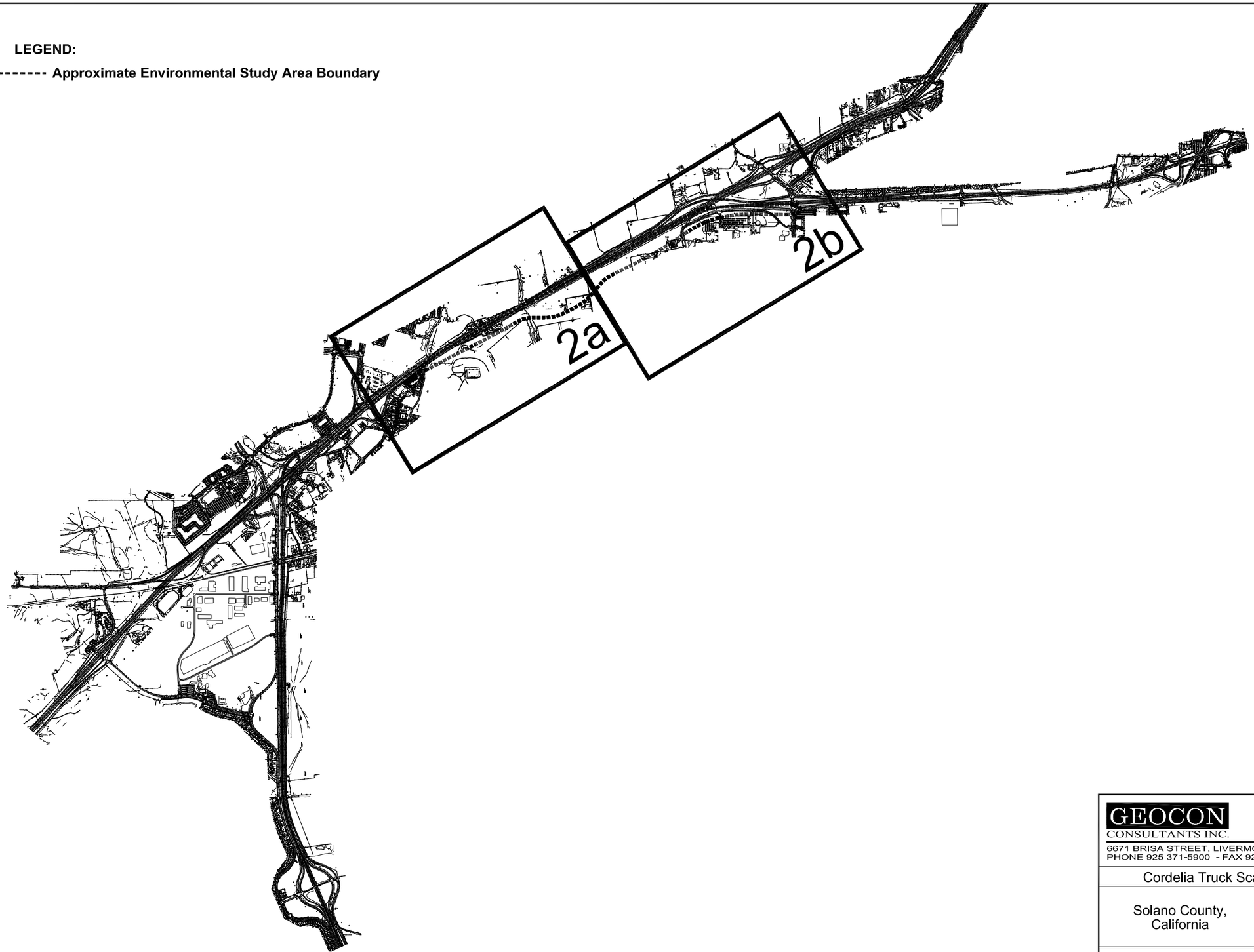
Solano County, California

VICINITY MAP

E8128-06-04	November 2008	Figure 1

LEGEND:

---------- **Approximate Environmental Study Area Boundary**



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Cordelia Truck Scale Relocation Project

Solano County, California

SITE PLAN

GEOCON Proj. No. E8128-06-04	November 2008	Figure 2

PRMAGeocon0608.DWG

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Eastbound I-80 Truck Scale Relocation Project

Solano County, California

SITE PLAN

GEOCON Proj. No. E8128-06-04 | November 2008 | Figure 2a

PRMAGeocon0908-500scale.DWG

B-19
B-19A
B-19B
B-20
B-20A
B-20B
B-21
B-22
B-22A
B-22B
B-23
B-24
B-25
B-26
B-27
B-28
B-29
B-30
B-31
B-32
B-33
B-34
B-35
B-36
B-37
B-38
B-39

Matchline

N

0 500

SCALE: feet

Legend:
Shoulder Boring Location

Typical Step-Out Boring Configuration
B-05
10'
5'
B-05A
B-05B

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Eastbound I-80 Truck Scale Relocation Project

Solano County, California

SITE PLAN

GEOCON Proj. No. E8128-06-04 | November 2008 | Figure 2b

PRMAGeocon0908–500scale.DWG

TABLE 1
BORING COORDINATES
Eastbound I-80 Truck Scale Relocation Project
Shoulder Borings
Fairfield, California

Boring	Northing	Easting
B-01	6,526,509.836	1,844,280.473
B-02	6,526,828.031	1,844,481.997
B-03	6,527,127.617	1,844,680.105
B-03A	6,527,132.365	1,844,671.304
B-03B	6,527,135.145	1,844,667.100
B-04	6,527,385.763	1,844,819.389
B-05	6,527,639.785	1,844,944.119
B-05A	6,527,644.350	1,844,935.222
B-05B	6,527,646.632	1,844,930.773
B-06	6,527,881.335	1,845,068.053
B-07	6,528,102.879	1,845,171.953
B-08	6,528,426.337	1,845,211.120
B-09	6,528,698.362	1,845,478.264
B-10	6,528,908.826	1,845,660.888
B-11	6,529,189.345	1,845,817.114
B-11A	6,529,194.129	1,845,808.333
B-11B	6,529,196.562	1,845,803.964
B-12	6,529,462.840	1,845,966.129
B-12A	6,529,467.624	1,845,957.348
B-12B	6,529,470.036	1,845,952.968
B-13	6,529,768.018	1,846,134.168
B-14	6,530,034.261	1,846,282.989
B-14A	6,530,039.240	1,846,274.317
B-14B	6,530,041.680	1,846,269.951
B-15	6,530,303.784	1,846,437.719
B-16	6,530,587.859	1,846,596.597
B-16A	6,530,592.740	1,846,587.869
B-16B	6,530,595.129	1,846,583.476
B-17	6,530,872.747	1,846,751.472
B-17A	6,530,877.693	1,846,742.781
B-17B	6,530,880.167	1,846,738.436
B-18	6,531,164.354	1,846,917.439
B-19	6,531,457.383	1,847,068.575
B-19A	6,531,461.967	1,847,059.687
B-19B	6,531,464.354	1,847,055.292
B-20	6,531,748.372	1,847,226.613
B-20A	6,531,752.806	1,847,217.650
B-20B	6,531,755.024	1,847,213.168
B-21	6,532,012.688	1,847,357.379
B-21A	6,532,017.829	1,847,348.802
B-21B	6,532,020.399	1,847,344.513
B-22	6,532,270.133	1,847,511.678
B-23	6,532,536.835	1,847,658.493
B-24	6,532,803.939	1,847,812.934
B-25	6,533,076.287	1,847,956.311
B-26	6,533,337.936	1,848,104.720
B-27	6,533,618.911	1,848,246.532
B-28	6,533,875.710	1,848,401.836
B-29	6,534,144.224	1,848,529.610
B-30	6,534,410.924	1,848,664.409
B-31	6,534,689.201	1,848,799.651
B-32	6,534,978.874	1,848,910.636
B-33	6,535,267.955	1,848,978.942
B-34	6,535,599.474	1,849,022.618
B-35	6,535,912.729	1,849,042.334
B-36	6,536,209.634	1,849,021.746
B-37	6,536,521.034	1,849,058.259
B-38	6,536,830.089	1,849,068.359
B-39	6,537,144.577	1,849,075.676

Notes: Northing and Easting shown in feet, NAD 83 (Zone 2)

TABLE 2
Summary of Lead and pH Results - Shoulder Borings
Eastbound I-80 Truck Scale Relocation Project
Shoulder Borings
Fairfield, California

Sample I.D.	Sample Depth (ft)	Total Lead (mg/kg)	WET (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B1-0	0	49	---	---	---	7.2
B1-1	1	49	---	---	---	---
B1-2	2	10	---	---	---	---
B2-0	0	22	---	---	---	---
B2-1	1	11	---	---	---	---
B2-2	2	12	---	---	---	---
B3-0	0	130	5.5	0.34	0.36	---
B3-1	1	<5.0	---	---	---	---
B3-2	2	6.0	---	---	---	---
B-03A-0	0	7.8	---	---	---	---
B-03B-0	0	71	<0.25	---	---	---
B4-0	0	74	2.5	---	---	---
B4-1	1	48	---	---	---	---
B4-2	2	31	---	---	---	7.6
B5-0	0	38	---	---	---	---
B5-1	1	150	5.4	1.4	0.38	---
B5-2	2	10	---	---	---	---
B-05A-1	1	63	<0.25	---	---	---
B-05B-1	1	31	---	---	---	---
B6-0	0	120	4.7	---	---	---
B6-1	1	17	---	---	---	---
B6-2	2	20	---	---	---	---
B7-0	0	20	---	---	---	---
B7-1	1	11	---	---	---	---
B7-2	2	7.2	---	---	---	---
B8-0	0	48	---	---	---	---
B8-1	1	49	---	---	---	8.0
B8-2	2	26	---	---	---	---
B9-0	0	35	---	---	---	---
B9-1	1	88	2.8	---	---	---
B9-2	2	<5.0	---	---	---	---
B10-0	0	20	---	---	---	---
B10-1	1	<5.0	---	---	---	---
B10-2	2	6.0	---	---	---	---
B11-0	0	390	22	0.53	0.71	---
B11-1	1	28	---	---	---	---

TABLE 2
Summary of Lead and pH Results - Shoulder Borings
Eastbound I-80 Truck Scale Relocation Project
Shoulder Borings
Fairfield, California

Sample I.D.	Sample Depth (ft)	Total Lead (mg/kg)	WET (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B11-2	2	15	---	---	---	---
B-11A-0	0	7.5	---	---	---	---
B-11B-0	0	18	---	---	---	---
B12-0	0	220	15	<0.25	0.92	7.7
B12-1	1	<5.0	---	---	---	---
B12-2	2	5.0	---	---	---	---
B-12A-0	0	110	0.47	---	---	---
B-12B-0	0	20	---	---	---	---
B13-0	0	16	---	---	---	---
B13-1	1	<5.0	---	---	---	---
B13-2	2	<5.0	---	---	---	---
B14-0	0	62	4.2	---	---	---
B14-1	1	190	9.8	1.7	0.71	---
B14-2	2	48	---	---	---	---
B-14A-1	1	37	---	---	---	---
B-14B-1	1	130	0.26	---	---	---
B15-0	0	89	4.5	---	---	---
B15-1	1	85	4.0	---	---	---
B15-2	2	<5.0	---	---	---	8.2
B16-0	0	180	11	0.94	0.89	---
B16-1	1	<5.0	---	---	---	---
B16-2	2	10	---	---	---	---
B-16A-0	0	130	0.30	---	---	---
B-16B-0	0	110	0.36	---	---	---
B17-0	0	490	15	0.32	1.5	---
B17-1	1	57	5.5	0.93	---	---
B17-2	2	320	12	2.4	0.87	---
B-17A-0	0	280	0.50	---	---	---
B-17A-1	1	97	0.35	---	---	---
B-17A-2	2	9.2	---	---	---	---

TABLE 2
Summary of Lead and pH Results - Shoulder Borings
Eastbound I-80 Truck Scale Relocation Project
Shoulder Borings
Fairfield, California

Sample I.D.	Sample Depth (ft)	Total Lead (mg/kg)	WET (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B-17B-0	0	200	0.44	---	---	---
B-17B-1	1	70	0.32	---	---	---
B-17B-2	2	8.6	---	---	---	---
B18-0	0	14	---	---	---	---
B18-1	1	11	---	---	---	---
B18-2	2	17	---	---	---	---
B19-0	0	24	---	---	---	---
B19-1	1	190	4.5	---	---	7.8
B19-2	2	180	12	1.5	0.59	---
B-19A-2	2	74	0.37	---	---	---
B-19B-2	2	8.8	---	---	---	---
B20-0	0	34	---	---	---	---
B20-1	1	240	9.6	1.4	0.73	---
B20-2	2	22	---	---	---	---
B-20A-1	1	150	0.45	---	---	---
B-20B-1	1	130	0.63	---	---	---
B21-0	0	23	---	---	---	---
B21-1	1	32	---	---	---	---
B21-2	2	55	1.6	---	---	---
B22-0	0	17	---	---	---	---
B22-1	1	32	---	---	---	---
B22-2	2	180	9.9	1.9	0.54	---
B-22A-2	2	6.9	---	---	---	---
B-22B-2	2	6.1	---	---	---	---
B23-0	0	59	2.3	---	---	7.1
B23-1	1	25	---	---	---	---
B23-2	2	39	---	---	---	---
B24-0	0	40	---	---	---	---
B24-1	1	31	---	---	---	---
B24-2	2	120	3.1	---	---	---
B25-0	0	76	1.7	---	---	---
B25-1	1	78	1.3	---	---	---
B25-2	2	66	4.5	---	---	---

TABLE 2
Summary of Lead and pH Results - Shoulder Borings
Eastbound I-80 Truck Scale Relocation Project
Shoulder Borings
Fairfield, California

Sample I.D.	Sample Depth (ft)	Total Lead (mg/kg)	WET (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B26-0	0	56	1.5	---	---	---
B26-1	1	8.9	---	---	---	---
B26-2	2	9.3	---	---	---	7.7
B27-0	0	18	---	---	---	---
B27-1	1	7.2	---	---	---	---
B27-2	2	6.9	---	---	---	---
B28-0	0	42	---	---	---	---
B28-1	1	17	---	---	---	---
B28-2	2	6.9	---	---	---	---
B29-0	0	41	---	---	---	---
B29-1	1	7.5	---	---	---	---
B29-2	2	6.6	---	---	---	---
B30-0	0	60	0.82	---	---	---
B30-1	1	7.7	---	---	---	7.4
B30-2	2	6.5	---	---	---	---
B31-0	0	18	---	---	---	6.7
B31-1	1	6.5	---	---	---	---
B31-2	2	20	---	---	---	---
B32-0	0	13	---	---	---	---
B32-1	1	<5.0	---	---	---	---
B32-2	2	<5.0	---	---	---	---
B33-0	0	6.4	---	---	---	---
B33-1	1	6.5	---	---	---	---
B33-2	2	5.6	---	---	---	---
B34-0	0	9.9	---	---	---	---
B34-1	1	5.6	---	---	---	---
B34-2	2	<5.0	---	---	---	8.0
B35-0	0	6.8	---	---	---	---
B35-1	1	6.6	---	---	---	---
B35-2	2	6.9	---	---	---	---
B36-0	0	7.8	---	---	---	---
B36-1	1	5.3	---	---	---	---
B36-2	2	5.8	---	---	---	---

TABLE 2
Summary of Lead and pH Results - Shoulder Borings
Eastbound I-80 Truck Scale Relocation Project
Shoulder Borings
Fairfield, California

Sample I.D.	Sample Depth (ft)	Total Lead (mg/kg)	WET (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B37-0	0	11	---	---	---	---
B37-1	1	10	---	---	---	---
B37-2	2	12	---	---	---	---
B38-0	0	12	---	---	---	---
B38-1	1	11	---	---	---	8.9
B38-2	2	9.1	---	---	---	---
B39-0	0	<5.0	---	---	---	---
B39-1	1	27	---	---	---	---
B39-2	2	9.2	---	---	---	---

Notes:

WET = Waste Extraction Test using citric acid as the extraction fluid
WET DI = Waste Extraction Test using deionized water as the extraction fluid
TCLP = Toxicity Characteristic Leaching Procedure
mg/kg = milligrams per kilogram
mg/l = milligrams per Liter
< = Analyte was not detected above the stated laboratory reporting limit
--- = Not Analyzed

TABLE 3c
Summary of Statistical Analysis
Eastbound I-80 Truck Scale Relocation Project
Shoulder Borings
Fairfield, California

Borings B21 through B39

TOTAL LEAD UCLs

	Total Lead (mg/kg)	
	90% UCL	**95% UCL**
0 to 0.5 ft.	33.7	35.8
1.0 to 1.5 ft.	22.3	23.8
2.0 to 2.5 ft.	43.6	47.5

EXCAVATION SCENARIOS

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Soluble (WET) Lead* (mg/l)	95% UCL Total Lead (mg/kg)
0 to 1.0 ft	34	1.5	36
Underlying Soil (1.0 to 2.5 ft.)	*29*	*1.3*	*32*
0 to 2.0 ft	28	1.2	30
Underlying Soil (2.0 to 2.5 ft.)	*44*	*1.9*	*48*
0 to 2.5 ft.	31	1.3	33

Notes:

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)
mg/kg = milligrams per kilogram
mg/l = milligrams per liter
* = Soluble (WET) lead concentrations are predicted using slope of regression line, where y = predicted soluble (WET) lead and x = total lead.

Regression Line Slope: $y =$ 0.0433 x

TABLE 3b
Summary of Statistical Analysis
Eastbound I-80 Truck Scale Relocation Project
Shoulder Borings
Fairfield, California

Borings B11 through B20

TOTAL LEAD UCLs

	Total Lead (mg/kg)	
	90% UCL	**95% UCL**
0 to 0.5 ft.	216.5	233.5
1.0 to 1.5 ft.	116.1	125.3
2.0 to 2.5 ft.	102.5	113.5

EXCAVATION SCENARIOS

	90% UCL		95% UCL
Excavation Depth	**Total Lead (mg/kg)**	**Soluble (WET) Lead* (mg/l)**	**Total Lead (mg/kg)**
0 to 1.0 ft	217	9.4	234
Underlying Soil (1.0 to 2.5 ft.)	*112*	*4.8*	*121*
0 to 2.0 ft	166	7.2	179
Underlying Soil (2.0 to 2.5 ft.)	*103*	*4.4*	*114*
0 to 2.5 ft.	154	6.6	166

Notes:
UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)
mg/kg = milligrams per kilogram
mg/l = milligrams per liter
* = Soluble (WET) lead concentrations are predicted using slope of regression line, where y = predicted soluble (WET) lead and x = total lead.

Regression Line Slope: $y =$ 0.0433 x

TABLE 3a
Summary of Statistical Analysis
Eastbound I-80 Truck Scale Relocation Project
Shoulder Borings
Fairfield, California

Borings B1 through B10

TOTAL LEAD UCLs

	Total Lead (mg/kg)	
	90% UCL	**95% UCL**
0 to 0.5 ft.	71.4	75.2
1.0 to 1.5 ft.	60.5	65.9
2.0 to 2.5 ft.	16.7	17.7

EXCAVATION SCENARIOS

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Soluble (WET) Lead* (mg/l)	95% UCL Total Lead (mg/kg)
0 to 1.0 ft	71	3.1	75
Underlying Soil (1.0 to 2.5 ft.)	*46*	*2.0*	*50*
0 to 2.0 ft	66	2.9	71
Underlying Soil (2.0 to 2.5 ft.)	*17*	*0.7*	*18*
0 to 2.5 ft.	56	2.4	60

Notes:

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)
mg/kg = milligrams per kilogram
mg/l = milligrams per liter
* = Soluble (WET) lead concentrations are predicted using slope of regression line, where y = predicted soluble (WET) lead and x = total lead.

Regression Line Slope: $y =$ 0.0433 x

APPENDIX A

August 22, 2008

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 100438

RE: I-80 EB TIF, E8128-06-04

Attention: Chris Giuntoli

Enclosed are the results for sample(s) received on August 15, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

CLIENT: Geocon Consultants, Inc.
Project: I-80 EB TIF, E8128-06-04
Lab Order: 100438

CASE NARRATIVE

Samples for Herbicides (8151) were subcontracted to Sierra Analytical Laboratories, Inc. with ELAP Cert.#2320.

Analytical Comments for Mehod 6010

RPD for Duplicate (DUP) and/or Matrix Spike (MS) / Matrix Spike Duplicate (MSD) is outside criteria for samples 100438-014ADUP, 100438-041EDUP, 100438-045AMSD and 100507-005ADUP, ; however, the Laboratory Control Sample (LCS) validated the analytical batch.

Analytical Comments for Mehod 7470

RPD for Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria for sample 100462-003AMSD; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Analytical Comments for Mehod 8081

Dilution was necessary for sample 100438-042A, due to sample matrix.

Surrogate recovery was diluted out for sample 100438-042A.

Advanced Technology Laboratories

Date: 8/22/2008

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	100438
Project:	I-80 EB TIF, E8128-06-04	**Date Received**	8/15/2008 10:05:00 AM
Project No:	E8128-06-04	**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	LKN

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
100438-001A	B-03A-0	7.8	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-002A	B-03B-0	71	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-004A	B-05A-1	63	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-006A	B-05B-1	31	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-007A	B-11A-0	7.5	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-008A	B-11B-0	18	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-009A	B-12A-0	110	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-010A	B-12B-0	20	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-012A	B-14A-1	37	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-014A	B-14B-1	130	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-015A	B-16A-0	130	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-016A	B-16B-0	110	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-017A	B-17A-0	280	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-018A	B-17A-1	97	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-019A	B-17A-2	9.2	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-022A	B-19A-2	74	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-023A	B-17B-0	200	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-024A	B-17B-1	70	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

Date: 8/22/2008

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	100438
Project:	I-80 EB TIF, E8128-06-04	**Date Received**	8/15/2008 10:05:00 AM
Project No:	E8128-06-04	**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	LKN

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
100438-025A	B-17B-2	8.6	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-028A	B-19B-2	8.8	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-030A	B-20A-1	150	mg/Kg	48154	5.0	1	8/13/2008	8/21/2008
100438-033A	B22A-2	6.9	mg/Kg	48154	5.0	1	8/13/2008	8/21/2008
100438-036A	B22B-2	6.1	mg/Kg	48154	5.0	1	8/13/2008	8/21/2008
100438-045A	B-20B-1	130	mg/Kg	48154	5.0	1	8/13/2008	8/21/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B32-GW
Lab Order:	100438	**Collection Date:**	8/13/2008 2:40:00 PM
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100438-041A		

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_080818A QC Batch: A08VW195 PrepDate: Analyst: **TT**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,1,1-Trichloroethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,1,2-Trichloroethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,1-Dichloroethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,1-Dichloroethene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,1-Dichloropropene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2,3-Trichlorobenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2,3-Trichloropropane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2,4-Trichlorobenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2,4-Trimethylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2-Dibromo-3-chloropropane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2-Dibromoethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2-Dichlorobenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2-Dichloroethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2-Dichloropropane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,3,5-Trimethylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,3-Dichlorobenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,3-Dichloropropane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,4-Dichlorobenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
2,2-Dichloropropane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
2-Chlorotoluene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
4-Chlorotoluene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
4-Isopropyltoluene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Benzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Bromobenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Bromodichloromethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Bromoform	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Bromomethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Carbon tetrachloride	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Chlorobenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Chloroethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Chloroform	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Chloromethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
cis-1,2-Dichloroethene	ND	0.50		µg/L	1	8/18/2008 11:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B32-GW
Lab Order:	100438	**Collection Date:**	8/13/2008 2:40:00 PM
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100438-041A		

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_080818A QC Batch: A08VW195 PrepDate: Analyst: **TT**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Dibromochloromethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Dibromomethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Dichlorodifluoromethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Ethylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Hexachlorobutadiene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Isopropylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
m,p-Xylene	ND	1.0		µg/L	1	8/18/2008 11:19 AM
Methylene chloride	ND	1.0		µg/L	1	8/18/2008 11:19 AM
n-Butylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
n-Propylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Naphthalene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
o-Xylene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
sec-Butylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Styrene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
tert-Butylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Tetrachloroethene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Toluene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
trans-1,2-Dichloroethene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Trichloroethene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Trichlorofluoromethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Vinyl chloride	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Surr: 1,2-Dichloroethane-d4	79.3	70-130		%REC	1	8/18/2008 11:19 AM
Surr: 4-Bromofluorobenzene	87.8	70-130		%REC	1	8/18/2008 11:19 AM
Surr: Dibromofluoromethane	93.3	70-130		%REC	1	8/18/2008 11:19 AM
Surr: Toluene-d8	97.7	70-130		%REC	1	8/18/2008 11:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B32-GW
Lab Order:	100438	**Collection Date:**	8/13/2008 2:40:00 PM
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100438-041B		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
		EPA 8015B(M)				
RunID: GC6_080820A	QC Batch: I08VW136			PrepDate:		Analyst: **TT**
GRO	ND	0.050		mg/L	1	8/20/2008 02:04 PM
Surr: Bromofluorobenzene (FID)	99.1	76-127		%REC	1	8/20/2008 02:04 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B32-GW
Lab Order:	100438	**Collection Date:**	8/13/2008 2:40:00 PM
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100438-041C		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3510C				**EPA 8015B(M)**		
RunID: GC7_BACK_080819B	QC Batch: 48183			PrepDate:	8/19/2008	Analyst: **SMH**
DRO	ND	0.050		mg/L	1	8/20/2008 03:42 AM
ORO	ND	0.050		mg/L	1	8/20/2008 03:42 AM
Surr: p-Terphenyl	71.5	37-134		%REC	1	8/20/2008 03:42 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B32-GW
Lab Order:	100438	**Collection Date:**	8/13/2008 2:40:00 PM
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100438-041D		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3010A			**EPA 6010B**		
RunID: ICP8_080821A	QC Batch: 48213			PrepDate:	8/20/2008	Analyst: **LKN**
Antimony	ND	0.025		mg/L	1	8/21/2008 09:45 AM
Arsenic	ND	0.050		mg/L	1	8/21/2008 09:45 AM
Barium	7.0	0.015		mg/L	1	8/21/2008 09:45 AM
Beryllium	ND	0.015		mg/L	1	8/21/2008 09:45 AM
Cadmium	ND	0.015		mg/L	1	8/21/2008 09:45 AM
Chromium	0.63	0.015		mg/L	1	8/21/2008 09:45 AM
Cobalt	0.34	0.015		mg/L	1	8/21/2008 09:45 AM
Copper	0.92	0.025		mg/L	1	8/21/2008 09:45 AM
Lead	0.13	0.025		mg/L	1	8/21/2008 09:45 AM
Molybdenum	ND	0.025		mg/L	1	8/21/2008 09:45 AM
Nickel	0.83	0.025		mg/L	1	8/21/2008 09:45 AM
Selenium	ND	0.050		mg/L	1	8/21/2008 09:45 AM
Silver	ND	0.015		mg/L	1	8/21/2008 09:45 AM
Thallium	ND	0.075		mg/L	1	8/21/2008 09:45 AM
Vanadium	1.2	0.015		mg/L	1	8/21/2008 09:45 AM
Zinc	1.5	0.050		mg/L	1	8/21/2008 09:45 AM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7470A		
RunID: AA5_080819F	QC Batch: 48123			PrepDate:	8/18/2008	Analyst: **AMT**
Mercury	1.6	1.0		µg/L	1	8/19/2008 04:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B32-GW
Lab Order:	100438	**Collection Date:**	8/13/2008 2:40:00 PM
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100438-041E		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP						
	EPA 3010A			**EPA 6010B**		
RunID: ICP8_080822F	QC Batch: 48225			PrepDate:	8/20/2008	Analyst: **LKN**
Antimony	ND	0.0050		mg/L	1	8/22/2008 01:12 PM
Arsenic	ND	0.010		mg/L	1	8/22/2008 01:12 PM
Barium	0.15	0.0030		mg/L	1	8/22/2008 01:12 PM
Beryllium	ND	0.0030		mg/L	1	8/22/2008 01:12 PM
Cadmium	ND	0.0030		mg/L	1	8/22/2008 01:12 PM
Chromium	ND	0.0030		mg/L	1	8/22/2008 01:12 PM
Cobalt	ND	0.0030		mg/L	1	8/22/2008 01:12 PM
Copper	ND	0.0050		mg/L	1	8/22/2008 01:12 PM
Lead	ND	0.0050		mg/L	1	8/22/2008 01:12 PM
Molybdenum	ND	0.0050		mg/L	1	8/22/2008 01:12 PM
Nickel	ND	0.0050		mg/L	1	8/22/2008 01:12 PM
Selenium	ND	0.010		mg/L	1	8/22/2008 01:12 PM
Silver	ND	0.0030		mg/L	1	8/22/2008 01:12 PM
Thallium	ND	0.015		mg/L	1	8/22/2008 01:12 PM
Vanadium	ND	0.0030		mg/L	1	8/22/2008 01:12 PM
Zinc	0.016	0.010		mg/L	1	8/22/2008 01:12 PM
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7470A		
RunID: AA5_080819J	QC Batch: 48156			PrepDate:	8/19/2008	Analyst: **AMT**
Mercury	ND	0.20		µg/L	1	8/19/2008 05:11 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B32-GW-1, B1-GW-1
Lab Order:	100438	**Collection Date:**	8/13/2008
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100438-042A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080820C	QC Batch: 48195			PrepDate:	8/20/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/20/2008 02:45 PM
Arsenic	13	1.0		mg/Kg	1	8/20/2008 02:45 PM
Barium	210	1.0		mg/Kg	1	8/20/2008 02:45 PM
Beryllium	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Cadmium	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Chromium	29	1.0		mg/Kg	1	8/20/2008 02:45 PM
Cobalt	13	1.0		mg/Kg	1	8/20/2008 02:45 PM
Copper	61	2.0		mg/Kg	1	8/20/2008 02:45 PM
Lead	27	1.0		mg/Kg	1	8/20/2008 02:45 PM
Molybdenum	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Nickel	40	1.0		mg/Kg	1	8/20/2008 02:45 PM
Selenium	2.2	1.0		mg/Kg	1	8/20/2008 02:45 PM
Silver	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Thallium	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Vanadium	52	1.0		mg/Kg	1	8/20/2008 02:45 PM
Zinc	78	1.0		mg/Kg	1	8/20/2008 02:45 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080818A	QC Batch: 48129			PrepDate:	8/18/2008	Analyst: **VLT**
4,4´-DDD	32	2.0		µg/Kg	1	8/18/2008 10:17 PM
4,4´-DDE	2400	100		µg/Kg	50	8/20/2008 07:23 PM
4,4´-DDT	680	40		µg/Kg	20	8/20/2008 07:47 PM
Aldrin	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
beta-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Chlordane	ND	8.5		µg/Kg	1	8/18/2008 10:17 PM
delta-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Dieldrin	10	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endrin	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B32-GW-1, B1-GW-1
Lab Order:	100438	**Collection Date:**	8/13/2008
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100438-042A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080818A	QC Batch: 48129			PrepDate:	8/18/2008	Analyst: **VLT**
gamma-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Heptachlor	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/18/2008 10:17 PM
Toxaphene	ND	50		µg/Kg	1	8/18/2008 10:17 PM
Surr: Decachlorobiphenyl	94.6	31-132		%REC	1	8/18/2008 10:17 PM
Surr: Decachlorobiphenyl	0	31-132	SDO	%REC	50	8/20/2008 07:23 PM
Surr: Decachlorobiphenyl	0	31-132	SDO	%REC	20	8/20/2008 07:47 PM
Surr: Tetrachloro-m-xylene	0	34-106	SDO	%REC	20	8/20/2008 07:47 PM
Surr: Tetrachloro-m-xylene	80.6	34-106		%REC	1	8/18/2008 10:17 PM
Surr: Tetrachloro-m-xylene	0	34-106	SDO	%REC	50	8/20/2008 07:23 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080821C	QC Batch: 48210			PrepDate:	8/20/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/21/2008 09:49 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B32-GW-4, B1-GW-4
Lab Order:	100438	**Collection Date:**	8/13/2008
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100438-043A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080820C	QC Batch: 48195			PrepDate:	8/20/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/20/2008 02:51 PM
Arsenic	7.7	1.0		mg/Kg	1	8/20/2008 02:51 PM
Barium	220	1.0		mg/Kg	1	8/20/2008 02:51 PM
Beryllium	ND	1.0		mg/Kg	1	8/20/2008 02:51 PM
Cadmium	ND	1.0		mg/Kg	1	8/20/2008 02:51 PM
Chromium	29	1.0		mg/Kg	1	8/20/2008 02:51 PM
Cobalt	13	1.0		mg/Kg	1	8/20/2008 02:51 PM
Copper	43	2.0		mg/Kg	1	8/20/2008 02:51 PM
Lead	6.2	1.0		mg/Kg	1	8/20/2008 02:51 PM
Molybdenum	ND	1.0		mg/Kg	1	8/20/2008 02:51 PM
Nickel	38	1.0		mg/Kg	1	8/20/2008 02:51 PM
Selenium	2.2	1.0		mg/Kg	1	8/20/2008 02:51 PM
Silver	ND	1.0		mg/Kg	1	8/20/2008 02:51 PM
Thallium	ND	1.0		mg/Kg	1	8/20/2008 02:51 PM
Vanadium	55	1.0		mg/Kg	1	8/20/2008 02:51 PM
Zinc	71	1.0		mg/Kg	1	8/20/2008 02:51 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080818A	QC Batch: 48129			PrepDate:	8/18/2008	Analyst: **VLT**
4,4´-DDD	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM
4,4´-DDE	5.8	2.0		µg/Kg	1	8/18/2008 10:39 PM
4,4´-DDT	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM
Aldrin	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
beta-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
Chlordane	ND	8.5		µg/Kg	1	8/18/2008 10:39 PM
delta-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
Dieldrin	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM
Endrin	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B32-GW-4, B1-GW-4
Lab Order:	100438	**Collection Date:**	8/13/2008
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100438-043A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080818A	QC Batch: 48129			PrepDate:	8/18/2008	Analyst: **VLT**
gamma-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
Heptachlor	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/18/2008 10:39 PM
Toxaphene	ND	50		µg/Kg	1	8/18/2008 10:39 PM
Surr: Decachlorobiphenyl	83.9	31-132		%REC	1	8/18/2008 10:39 PM
Surr: Tetrachloro-m-xylene	66.4	34-106		%REC	1	8/18/2008 10:39 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080821C	QC Batch: 48210			PrepDate:	8/20/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/21/2008 09:51 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-48195** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/20/2008** RunNo: **98573**
Client ID: **PBS** Batch ID: **48195** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/20/2008** SeqNo: **1525561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									
Molybdenum	ND	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	ND	1.0									

Sample ID: **LCS-48195** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/20/2008** RunNo: **98573**
Client ID: **LCSS** Batch ID: **48195** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/20/2008** SeqNo: **1525562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	47.944	2.0	50.00	0	95.9	80	120				
Arsenic	47.089	1.0	50.00	0	94.2	80	120				
Barium	50.632	1.0	50.00	0	101	80	120				
Beryllium	48.828	1.0	50.00	0	97.7	80	120				
Cadmium	47.929	1.0	50.00	0	95.9	80	120				
Chromium	47.465	1.0	50.00	0	94.9	80	120				
Cobalt	50.372	1.0	50.00	0	101	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **LCS-48195** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/20/2008** RunNo: **98573**
Client ID: **LCSS** Batch ID: **48195** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/20/2008** SeqNo: **1525562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	51.775	2.0	50.00	0	104	80	120				
Lead	49.814	1.0	50.00	0	99.6	80	120				
Molybdenum	49.420	1.0	50.00	0	98.8	80	120				
Nickel	48.588	1.0	50.00	0	97.2	80	120				
Selenium	44.769	1.0	50.00	0	89.5	80	120				
Silver	45.717	1.0	50.00	0	91.4	80	120				
Thallium	42.880	1.0	50.00	0	85.8	80	120				
Vanadium	50.647	1.0	50.00	0	101	80	120				
Zinc	47.542	1.0	50.00	0	95.1	80	120				

Sample ID: **100507-005A-DUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/20/2008** RunNo: **98573**
Client ID: **ZZZZZZ** Batch ID: **48195** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/20/2008** SeqNo: **1525642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	1.019	1.0						1.030	1.01	20	
Barium	122.973	1.0						120.1	2.37	20	
Beryllium	ND	1.0						0	0	20	
Cadmium	0.386	1.0						0.3632	0	20	
Chromium	14.338	1.0						13.86	3.39	20	
Cobalt	6.590	1.0						6.363	3.50	20	
Copper	20.379	2.0						19.33	5.29	20	
Lead	3.208	1.0						2.807	13.3	20	
Molybdenum	ND	1.0						0	0	20	
Nickel	11.777	1.0						11.29	4.19	20	
Selenium	1.476	1.0						1.081	30.9	20	R
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	35.182	1.0						34.54	1.84	20	
Zinc	66.444	1.0						63.39	4.70	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **100507-005A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/20/2008** RunNo: **98573**
Client ID: **ZZZZZZ** Batch ID: **48195** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/20/2008** SeqNo: **1525643**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	68.298	2.0	125.0	0	54.6	24	109				
Arsenic	89.823	1.0	125.0	1.030	71.0	52	106				
Barium	213.902	1.0	125.0	120.1	75.1	31	129				
Beryllium	91.371	1.0	125.0	0	73.1	55	110				
Cadmium	87.905	1.0	125.0	0.3632	70.0	51	110				
Chromium	102.233	1.0	125.0	13.86	70.7	50	114				
Cobalt	97.973	1.0	125.0	6.363	73.3	51	109				
Copper	124.182	2.0	125.0	19.33	83.9	55	122				
Lead	91.234	1.0	125.0	2.807	70.7	45	110				
Molybdenum	90.009	1.0	125.0	0	72.0	52	109				
Nickel	103.038	1.0	125.0	11.29	73.4	47	111				
Selenium	87.061	1.0	125.0	1.081	68.8	48	108				
Silver	93.887	1.0	125.0	0	75.1	55	110				
Thallium	81.419	1.0	125.0	0	65.1	43	105				
Vanadium	130.589	1.0	125.0	34.54	76.8	54	115				
Zinc	156.968	1.0	125.0	63.39	74.9	39	120				

Sample ID: **100507-005A-MSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/20/2008** RunNo: **98573**
Client ID: **ZZZZZZ** Batch ID: **48195** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/20/2008** SeqNo: **1525644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	74.477	2.0	125.0	0	59.6	24	109	68.30	8.66	20	
Arsenic	96.788	1.0	125.0	1.030	76.6	52	106	89.82	7.46	20	
Barium	222.664	1.0	125.0	120.1	82.1	31	129	213.9	4.01	20	
Beryllium	98.319	1.0	125.0	0	78.7	55	110	91.37	7.33	20	
Cadmium	94.108	1.0	125.0	0.3632	75.0	51	110	87.90	6.82	20	
Chromium	108.444	1.0	125.0	13.86	75.7	50	114	102.2	5.90	20	
Cobalt	105.257	1.0	125.0	6.363	79.1	51	109	97.97	7.17	20	
Copper	131.833	2.0	125.0	19.33	90.0	55	122	124.2	5.98	20	
Lead	97.937	1.0	125.0	2.807	76.1	45	110	91.23	7.09	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **100507-005A-MSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/20/2008** RunNo: **98573**
Client ID: **ZZZZZZ** Batch ID: **48195** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/20/2008** SeqNo: **1525644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	97.380	1.0	125.0	0	77.9	52	109	90.01	7.87	20	
Nickel	109.884	1.0	125.0	11.29	78.9	47	111	103.0	6.43	20	
Selenium	93.941	1.0	125.0	1.081	74.3	48	108	87.06	7.60	20	
Silver	100.414	1.0	125.0	0	80.3	55	110	93.89	6.72	20	
Thallium	87.801	1.0	125.0	0	70.2	43	105	81.42	7.54	20	
Vanadium	138.396	1.0	125.0	34.54	83.1	54	115	130.6	5.80	20	
Zinc	163.715	1.0	125.0	63.39	80.3	39	120	157.0	4.21	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-48153A**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/19/2008**	RunNo: **98606**
Client ID: **PBS**	Batch ID: **48153**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **8/21/2008**	SeqNo: **1526110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-48153**	SampType: **LCS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/19/2008**	RunNo: **98606**
Client ID: **LCSS**	Batch ID: **48153**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **8/21/2008**	SeqNo: **1526111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	269.877	5.0	250.0	0	108	80	120				

Sample ID: **100438-014A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/19/2008**	RunNo: **98606**
Client ID: **B-14B-1**	Batch ID: **48153**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **8/21/2008**	SeqNo: **1526122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	100.928	5.0						127.2	23.0	20	R

Sample ID: **100438-014A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/19/2008**	RunNo: **98606**
Client ID: **B-14B-1**	Batch ID: **48153**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **8/21/2008**	SeqNo: **1526123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	303.293	5.0	250.0	127.2	70.5	45	110				

Sample ID: **MB-48153B**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/19/2008**	RunNo: **98606**
Client ID: **PBS**	Batch ID: **48153**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **8/21/2008**	SeqNo: **1526124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **100438-028A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/19/2008**	RunNo: **98606**
Client ID: **B-19B-2**	Batch ID: **48153**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **8/21/2008**	SeqNo: **1526135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	8.052	5.0						8.850	9.44	20	

Sample ID: **100438-028A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/19/2008**	RunNo: **98606**
Client ID: **B-19B-2**	Batch ID: **48153**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **8/21/2008**	SeqNo: **1526136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	183.632	5.0	250.0	8.850	69.9	45	110				

Sample ID: **100438-028A-MSD**	SampType: **MSD**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/19/2008**	RunNo: **98606**
Client ID: **B-19B-2**	Batch ID: **48153**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **8/21/2008**	SeqNo: **1526137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	169.866	5.0	250.0	8.850	64.4	45	110	183.6	7.79	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-48154**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/19/2008**	RunNo: **98515**
Client ID: **PBS**	Batch ID: **48154**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **8/21/2008**	SeqNo: **1526172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-48154**	SampType: **LCS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/19/2008**	RunNo: **98515**
Client ID: **LCSS**	Batch ID: **48154**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **8/21/2008**	SeqNo: **1526173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	267.995	5.0	250.0	0	107	80	120				

Sample ID: **100438-045A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/19/2008**	RunNo: **98515**
Client ID: **B-20B-1**	Batch ID: **48154**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **8/21/2008**	SeqNo: **1526178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	119.809	5.0						129.4	7.66	20	

Sample ID: **100438-045A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/19/2008**	RunNo: **98515**
Client ID: **B-20B-1**	Batch ID: **48154**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **8/21/2008**	SeqNo: **1526179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	327.300	5.0	250.0	129.4	79.2	45	110				

Sample ID: **100438-045A-MSD**	SampType: **MSD**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **8/19/2008**	RunNo: **98515**
Client ID: **B-20B-1**	Batch ID: **48154**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **8/21/2008**	SeqNo: **1526180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	263.610	5.0	250.0	129.4	53.7	45	110	327.3	21.6	20	R

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID: **MB-48213** SampType: **MBLK** TestCode: **6010_W** Units: **mg/L** Prep Date: **8/20/2008** RunNo: **98610**
Client ID: **PBW** Batch ID: **48213** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **8/21/2008** SeqNo: **1526215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.0050									
Arsenic	ND	0.010									
Barium	0.002	0.0030									
Beryllium	ND	0.0030									
Cadmium	ND	0.0030									
Chromium	0.002	0.0030									
Cobalt	ND	0.0030									
Copper	ND	0.0050									
Lead	ND	0.0050									
Molybdenum	ND	0.0050									
Nickel	0.000959	0.0050									
Selenium	ND	0.010									
Silver	ND	0.0030									
Thallium	ND	0.015									
Vanadium	ND	0.0030									
Zinc	ND	0.010									

Sample ID: **LCS-48213** SampType: **LCS** TestCode: **6010_W** Units: **mg/L** Prep Date: **8/20/2008** RunNo: **98610**
Client ID: **LCSW** Batch ID: **48213** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **8/21/2008** SeqNo: **1526216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.972	0.0050	1.000	0	97.2	85	115				
Arsenic	0.964	0.010	1.000	0	96.4	85	115				
Barium	0.993	0.0030	1.000	0.001541	99.2	85	115				
Beryllium	0.973	0.0030	1.000	0	97.3	85	115				
Cadmium	0.960	0.0030	1.000	0	96.0	85	115				
Chromium	0.922	0.0030	1.000	0.001713	92.0	85	115				
Cobalt	0.988	0.0030	1.000	0	98.8	85	115				
Copper	0.967	0.0050	1.000	0	96.7	85	115				
Lead	1.013	0.0050	1.000	0	101	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID: **LCS-48213**	SampType: **LCS**	TestCode: **6010_W**	Units: **mg/L**	Prep Date: **8/20/2008**	RunNo: **98610**
Client ID: **LCSW**	Batch ID: **48213**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **8/21/2008**	SeqNo: **1526216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.966	0.0050	1.000	0	96.6	85	115				
Nickel	0.959	0.0050	1.000	0.0009591	95.8	85	115				
Selenium	0.950	0.010	1.000	0	95.0	85	115				
Silver	0.926	0.0030	1.000	0	92.6	85	115				
Thallium	0.866	0.015	1.000	0	86.6	85	115				
Vanadium	0.986	0.0030	1.000	0	98.6	85	115				
Zinc	0.953	0.010	1.000	0	95.3	85	115				

Sample ID: **100504-007B-DUP**	SampType: **DUP**	TestCode: **6010_W**	Units: **mg/L**	Prep Date: **8/20/2008**	RunNo: **98610**
Client ID: **ZZZZZZ**	Batch ID: **48213**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **8/21/2008**	SeqNo: **1526218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.010						0	0	20	
Lead	ND	0.0050						0	0	20	

Sample ID: **100504-007B-MS**	SampType: **MS**	TestCode: **6010_W**	Units: **mg/L**	Prep Date: **8/20/2008**	RunNo: **98610**
Client ID: **ZZZZZZ**	Batch ID: **48213**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **8/21/2008**	SeqNo: **1526219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.361	0.010	2.500	0	94.4	76	120				
Lead	2.442	0.0050	2.500	0	97.7	71	118				

Sample ID: **100504-007B-MSD**	SampType: **MSD**	TestCode: **6010_W**	Units: **mg/L**	Prep Date: **8/20/2008**	RunNo: **98610**
Client ID: **ZZZZZZ**	Batch ID: **48213**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **8/21/2008**	SeqNo: **1526220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.387	0.010	2.500	0	95.5	76	120	2.361	1.10	20	
Lead	2.470	0.0050	2.500	0	98.8	71	118	2.442	1.18	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WD

Sample ID: **MB-48225**	SampType: **MBLK**	TestCode: **6010_WD**	Units: **mg/L**	Prep Date: **8/20/2008**	RunNo: **98676**
Client ID: **PBW**	Batch ID: **48225**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **8/22/2008**	SeqNo: **1527363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.0050									
Arsenic	ND	0.010									
Barium	ND	0.0030									
Beryllium	ND	0.0030									
Cadmium	ND	0.0030									
Chromium	0.000975	0.0030									
Cobalt	ND	0.0030									
Copper	ND	0.0050									
Lead	0.002	0.0050									
Molybdenum	ND	0.0050									
Nickel	ND	0.0050									
Selenium	ND	0.010									
Silver	ND	0.0030									
Thallium	ND	0.015									
Vanadium	ND	0.0030									
Zinc	ND	0.010									

Sample ID: **LCS-48225**	SampType: **LCS**	TestCode: **6010_WD**	Units: **mg/L**	Prep Date: **8/20/2008**	RunNo: **98676**
Client ID: **LCSW**	Batch ID: **48225**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **8/22/2008**	SeqNo: **1527364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.933	0.0050	1.000	0	93.3	85	115				
Arsenic	0.969	0.010	1.000	0	96.9	85	115				
Barium	0.966	0.0030	1.000	0	96.6	85	115				
Beryllium	0.944	0.0030	1.000	0	94.4	85	115				
Cadmium	0.952	0.0030	1.000	0	95.2	85	115				
Chromium	0.954	0.0030	1.000	0.0009752	95.3	85	115				
Cobalt	0.968	0.0030	1.000	0	96.8	85	115				
Copper	0.935	0.0050	1.000	0	93.5	85	115				
Lead	0.989	0.0050	1.000	0.002199	98.7	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WD

Sample ID: **LCS-48225**	SampType: **LCS**	TestCode: **6010_WD**	Units: **mg/L**	Prep Date: **8/20/2008**	RunNo: **98676**
Client ID: **LCSW**	Batch ID: **48225**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **8/22/2008**	SeqNo: **1527364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.955	0.0050	1.000	0	95.5	85	115				
Nickel	0.943	0.0050	1.000	0	94.3	85	115				
Selenium	0.967	0.010	1.000	0	96.7	85	115				
Silver	0.927	0.0030	1.000	0	92.7	85	115				
Thallium	0.872	0.015	1.000	0	87.2	85	115				
Vanadium	0.956	0.0030	1.000	0	95.6	85	115				
Zinc	0.957	0.010	1.000	0	95.7	85	115				

Sample ID: **100438-041E-DUP**	SampType: **DUP**	TestCode: **6010_WD**	Units: **mg/L**	Prep Date: **8/20/2008**	RunNo: **98676**
Client ID: **B32-GW**	Batch ID: **48225**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **8/22/2008**	SeqNo: **1527366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.0050						0	0	20	
Arsenic	ND	0.010						0	0	20	
Barium	0.151	0.0030						0.1500	0.651	20	
Beryllium	ND	0.0030						0	0	20	
Cadmium	ND	0.0030						0	0	20	
Chromium	0.001	0.0030						0.001312	0	20	
Cobalt	ND	0.0030						0	0	20	
Copper	0.002	0.0050						0.001708	0	20	
Lead	ND	0.0050						0	0	20	
Molybdenum	ND	0.0050						0	0	20	
Nickel	0.001	0.0050						0.001085	0	20	
Selenium	ND	0.010						0.008383	0	20	
Silver	ND	0.0030						0	0	20	
Thallium	ND	0.015						0	0	20	
Vanadium	0.002	0.0030						0.001557	0	20	
Zinc	0.012	0.010						0.01566	24.0	20	R

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WD

Sample ID: **100438-041E-MS** SampType: **MS** TestCode: **6010_WD** Units: **mg/L** Prep Date: **8/20/2008** RunNo: **98676**
Client ID: **B32-GW** Batch ID: **48225** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **8/22/2008** SeqNo: **1527367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	2.451	0.0050	2.500	0	98.1	77	122				
Arsenic	2.443	0.010	2.500	0	97.7	76	120				
Barium	2.520	0.0030	2.500	0.1500	94.8	70	119				
Beryllium	2.466	0.0030	2.500	0	98.7	77	121				
Cadmium	2.329	0.0030	2.500	0	93.1	76	120				
Chromium	2.279	0.0030	2.500	0.001312	91.1	75	120				
Cobalt	2.299	0.0030	2.500	0	92.0	75	118				
Copper	2.448	0.0050	2.500	0.001708	97.8	77	126				
Lead	2.439	0.0050	2.500	0	97.5	71	118				
Molybdenum	2.389	0.0050	2.500	0	95.6	76	121				
Nickel	2.319	0.0050	2.500	0.001085	92.7	73	120				
Selenium	2.382	0.010	2.500	0.008383	94.9	73	127				
Silver	2.415	0.0030	2.500	0	96.6	64	130				
Thallium	2.260	0.015	2.500	0	90.4	67	119				
Vanadium	2.460	0.0030	2.500	0.001557	98.3	79	119				
Zinc	2.303	0.010	2.500	0.01566	91.5	67	122				

Sample ID: **100438-041E-MSD** SampType: **MSD** TestCode: **6010_WD** Units: **mg/L** Prep Date: **8/20/2008** RunNo: **98676**
Client ID: **B32-GW** Batch ID: **48225** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **8/22/2008** SeqNo: **1527368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	2.498	0.0050	2.500	0	99.9	77	122	2.451	1.87	20	
Arsenic	2.490	0.010	2.500	0	99.6	76	120	2.443	1.91	20	
Barium	2.584	0.0030	2.500	0.1500	97.4	70	119	2.520	2.52	20	
Beryllium	2.547	0.0030	2.500	0	102	77	121	2.466	3.23	20	
Cadmium	2.386	0.0030	2.500	0	95.4	76	120	2.329	2.43	20	
Chromium	2.341	0.0030	2.500	0.001312	93.6	75	120	2.279	2.66	20	
Cobalt	2.357	0.0030	2.500	0	94.3	75	118	2.299	2.46	20	
Copper	2.516	0.0050	2.500	0.001708	101	77	126	2.448	2.73	20	
Lead	2.459	0.0050	2.500	0	98.4	71	118	2.439	0.841	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WD

Sample ID: **100438-041E-MSD** SampType: **MSD** TestCode: **6010_WD** Units: **mg/L** Prep Date: **8/20/2008** RunNo: **98676**
Client ID: **B32-GW** Batch ID: **48225** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **8/22/2008** SeqNo: **1527368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	2.453	0.0050	2.500	0	98.1	76	121	2.389	2.61	20	
Nickel	2.379	0.0050	2.500	0.001085	95.1	73	120	2.319	2.58	20	
Selenium	2.427	0.010	2.500	0.008383	96.8	73	127	2.382	1.89	20	
Silver	2.477	0.0030	2.500	0	99.1	64	130	2.415	2.54	20	
Thallium	2.302	0.015	2.500	0	92.1	67	119	2.260	1.84	20	
Vanadium	2.528	0.0030	2.500	0.001557	101	79	119	2.460	2.72	20	
Zinc	2.364	0.010	2.500	0.01566	94.0	67	122	2.303	2.63	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W

Sample ID: **MB-48123**	SampType: **MBLK**	TestCode: **7470_W**	Units: **µg/L**	Prep Date: **8/18/2008**	RunNo: **98539**
Client ID: **PBW**	Batch ID: **48123**	TestNo: **EPA 7470A**		Analysis Date: **8/19/2008**	SeqNo: **1525061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **LCS-48123**	SampType: **LCS**	TestCode: **7470_W**	Units: **µg/L**	Prep Date: **8/18/2008**	RunNo: **98539**
Client ID: **LCSW**	Batch ID: **48123**	TestNo: **EPA 7470A**		Analysis Date: **8/19/2008**	SeqNo: **1525062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.171	0.20	10.00	0	91.7	85	115				

Sample ID: **100412-001C-MS**	SampType: **MS**	TestCode: **7470_W**	Units: **µg/L**	Prep Date: **8/18/2008**	RunNo: **98539**
Client ID: **ZZZZZZ**	Batch ID: **48123**	TestNo: **EPA 7470A**		Analysis Date: **8/19/2008**	SeqNo: **1525063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.588	0.20	10.00	0	95.9	70	130				

Sample ID: **100412-001C-MSD**	SampType: **MSD**	TestCode: **7470_W**	Units: **µg/L**	Prep Date: **8/18/2008**	RunNo: **98539**
Client ID: **ZZZZZZ**	Batch ID: **48123**	TestNo: **EPA 7470A**		Analysis Date: **8/19/2008**	SeqNo: **1525064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.892	0.20	10.00	0	98.9	70	130	9.588	3.12	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID: **MB-48156**	SampType: **MBLK**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **8/19/2008**	RunNo: **98555**
Client ID: **PBW**	Batch ID: **48156**	TestNo: **EPA 7470A**		Analysis Date: **8/19/2008**	SeqNo: **1525279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: **LCS-48156**	SampType: **LCS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **8/19/2008**	RunNo: **98555**
Client ID: **LCSW**	Batch ID: **48156**	TestNo: **EPA 7470A**		Analysis Date: **8/19/2008**	SeqNo: **1525280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.827	0.20	10.00	0	108	85	115				

Sample ID: **100462-003A-MS**	SampType: **MS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **8/19/2008**	RunNo: **98555**
Client ID: **ZZZZZZ**	Batch ID: **48156**	TestNo: **EPA 7470A**		Analysis Date: **8/19/2008**	SeqNo: **1525281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	8.058	0.20	10.00	0	80.6	70	130				

Sample ID: **100462-003A-MSD**	SampType: **MSD**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **8/19/2008**	RunNo: **98555**
Client ID: **ZZZZZZ**	Batch ID: **48156**	TestNo: **EPA 7470A**		Analysis Date: **8/19/2008**	SeqNo: **1525282**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.348	0.20	5.000	0	87.0	70	130	8.058	59.8	20	R

Sample ID: **100462-003A-DUP**	SampType: **DUP**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **8/19/2008**	RunNo: **98555**
Client ID: **ZZZZZZ**	Batch ID: **48156**	TestNo: **EPA 7470A**		Analysis Date: **8/19/2008**	SeqNo: **1525284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: **MB-48210**	SampType: **MBLK**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/20/2008**	RunNo: **98653**
Client ID: **PBS**	Batch ID: **48210**	TestNo: **EPA 7471A**		Analysis Date: **8/21/2008**	SeqNo: **1527022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID: **LCS-48210**	SampType: **LCS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/20/2008**	RunNo: **98653**
Client ID: **LCSS**	Batch ID: **48210**	TestNo: **EPA 7471A**		Analysis Date: **8/21/2008**	SeqNo: **1527023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.848	0.10	0.8300	0	102	80	120				

Sample ID: **100486-001A-MS**	SampType: **MS**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/20/2008**	RunNo: **98653**
Client ID: **ZZZZZZ**	Batch ID: **48210**	TestNo: **EPA 7471A**		Analysis Date: **8/21/2008**	SeqNo: **1527024**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.987	0.10	0.8300	0.1371	102	70	130				

Sample ID: **100486-001A-MSD**	SampType: **MSD**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/20/2008**	RunNo: **98653**
Client ID: **ZZZZZZ**	Batch ID: **48210**	TestNo: **EPA 7471A**		Analysis Date: **8/21/2008**	SeqNo: **1527025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.012	0.10	0.8300	0.1371	105	70	130	0.9866	2.52	20	

Sample ID: **100486-001A-DUP**	SampType: **DUP**	TestCode: **7471_S**	Units: **mg/Kg**	Prep Date: **8/20/2008**	RunNo: **98653**
Client ID: **ZZZZZZ**	Batch ID: **48210**	TestNo: **EPA 7471A**		Analysis Date: **8/21/2008**	SeqNo: **1527027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.131	0.10						0.1371	4.74	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_DM_LL

Sample ID: **LCS-48183**	SampType: **LCS**	TestCode: **8015_W_DM_**	Units: **mg/L**	Prep Date: **8/19/2008**	RunNo: **98580**
Client ID: **LCSW**	Batch ID: **48183**	TestNo: **EPA 8015B(M**	**EPA 3510C**	Analysis Date: **8/20/2008**	SeqNo: **1525725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	0.654	0.050	1.000	0	65.4	43	105				
Surr: p-Terphenyl	0.050		0.08000		62.6	37	134				

Sample ID: **MB-48183MS**	SampType: **MS**	TestCode: **8015_W_DM_**	Units: **mg/L**	Prep Date: **8/19/2008**	RunNo: **98580**
Client ID: **ZZZZZZ**	Batch ID: **48183**	TestNo: **EPA 8015B(M**	**EPA 3510C**	Analysis Date: **8/20/2008**	SeqNo: **1525726**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	0.626	0.050	1.000	0	62.6	43	105				
Surr: p-Terphenyl	0.050		0.08000		63.1	37	134				

Sample ID: **MB-48183MSD**	SampType: **MSD**	TestCode: **8015_W_DM_**	Units: **mg/L**	Prep Date: **8/19/2008**	RunNo: **98580**
Client ID: **ZZZZZZ**	Batch ID: **48183**	TestNo: **EPA 8015B(M**	**EPA 3510C**	Analysis Date: **8/20/2008**	SeqNo: **1525727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	0.681	0.050	1.000	0	68.1	43	105	0.6260	8.35	20	
Surr: p-Terphenyl	0.049		0.08000		61.1	37	134		0	0	

Sample ID: **MB-48183**	SampType: **MBLK**	TestCode: **8015_W_DM_**	Units: **mg/L**	Prep Date: **8/19/2008**	RunNo: **98580**
Client ID: **PBW**	Batch ID: **48183**	TestNo: **EPA 8015B(M**	**EPA 3510C**	Analysis Date: **8/20/2008**	SeqNo: **1525728**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	0.050									
ORO	ND	0.050									
Surr: p-Terphenyl	0.058		0.08000		73.0	37	134				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_GP LL

Sample ID: **I080820LCS2**	SampType: **LCS**	TestCode: **8015_W_GP**	Units: **mg/L**	Prep Date:	RunNo: **98608**
Client ID: **LCSW**	Batch ID: **I08VW136**	TestNo: **EPA 8015B(M**		Analysis Date: **8/20/2008**	SeqNo: **1526181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	1.025	0.050	1.000	0	103	77	122				
Surr: Bromofluorobenzene (FID)	102.060		100.0		102	76	127				

Sample ID: **I080820MB1MS**	SampType: **MS**	TestCode: **8015_W_GP**	Units: **mg/L**	Prep Date:	RunNo: **98608**
Client ID: **ZZZZZZ**	Batch ID: **I08VW136**	TestNo: **EPA 8015B(M**		Analysis Date: **8/20/2008**	SeqNo: **1526182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	1.045	0.050	1.000	0	104	77	122				
Surr: Bromofluorobenzene (FID)	104.898		100.0		105	76	127				

Sample ID: **I080820MB1MSD**	SampType: **MSD**	TestCode: **8015_W_GP**	Units: **mg/L**	Prep Date:	RunNo: **98608**
Client ID: **ZZZZZZ**	Batch ID: **I08VW136**	TestNo: **EPA 8015B(M**		Analysis Date: **8/20/2008**	SeqNo: **1526183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.993	0.050	1.000	0	99.3	77	122	1.045	5.10	20	
Surr: Bromofluorobenzene (FID)	102.154		100.0		102	76	127		0	0	

Sample ID: **I080820MB1**	SampType: **MBLK**	TestCode: **8015_W_GP**	Units: **mg/L**	Prep Date:	RunNo: **98608**
Client ID: **PBW**	Batch ID: **I08VW136**	TestNo: **EPA 8015B(M**		Analysis Date: **8/20/2008**	SeqNo: **1526184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	0.050									
Surr: Bromofluorobenzene (FID)	98.996		100.0		99.0	76	127				

Sample ID: **100437-006ADUP**	SampType: **DUP**	TestCode: **8015_W_GP**	Units: **mg/L**	Prep Date:	RunNo: **98608**
Client ID: **ZZZZZZ**	Batch ID: **I08VW136**	TestNo: **EPA 8015B(M**		Analysis Date: **8/20/2008**	SeqNo: **1526186**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	0.050						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_GP LL

Sample ID: **100437-006ADUP** SampType: **DUP** TestCode: **8015_W_GP** Units: **mg/L** Prep Date: RunNo: **98608**
Client ID: **ZZZZZZ** Batch ID: **I08VW136** TestNo: **EPA 8015B(M** Analysis Date: **8/20/2008** SeqNo: **1526186**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (FID)	96.018		100.0		96.0	76	127		0	0	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: **MB-48129**	SampType: **MBLK**	TestCode: **8081_S**	Units: **µg/Kg**	Prep Date: **8/18/2008**	RunNo: **98484**
Client ID: **PBS**	Batch ID: **48129**	TestNo: **EPA 8081A**	**EPA 3550B**	Analysis Date: **8/18/2008**	SeqNo: **1524319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	2.0									
4,4´-DDE	ND	2.0									
4,4´-DDT	ND	2.0									
Aldrin	ND	1.0									
alpha-BHC	ND	1.0									
alpha-Chlordane	ND	1.0									
beta-BHC	ND	1.0									
Chlordane	ND	8.5									
delta-BHC	ND	1.0									
Dieldrin	ND	2.0									
Endosulfan I	ND	1.0									
Endosulfan II	ND	2.0									
Endosulfan sulfate	ND	2.0									
Endrin	ND	2.0									
Endrin aldehyde	ND	2.0									
Endrin ketone	ND	2.0									
gamma-BHC	ND	1.0									
gamma-Chlordane	ND	1.0									
Heptachlor	ND	1.0									
Heptachlor epoxide	ND	1.0									
Methoxychlor	ND	5.0									
Toxaphene	ND	50									
Surr: Tetrachloro-m-xylene	9.198		16.67		55.2	34	106				
Surr: Decachlorobiphenyl	9.793		16.67		58.7	31	132				

Sample ID: **LCS-48129**	SampType: **LCS**	TestCode: **8081_S**	Units: **µg/Kg**	Prep Date: **8/18/2008**	RunNo: **98484**
Client ID: **LCSS**	Batch ID: **48129**	TestNo: **EPA 8081A**	**EPA 3550B**	Analysis Date: **8/18/2008**	SeqNo: **1524320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aldrin	14.361	1.0	16.67	0	86.2	59	111				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: **LCS-48129** SampType: **LCS** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **8/18/2008** RunNo: **98484**
Client ID: **LCSS** Batch ID: **48129** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **8/18/2008** SeqNo: **1524320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	13.787	2.0	16.67	0	82.7	57	105				
Endrin	12.772	2.0	16.67	0	76.6	52	139				
gamma-BHC	13.775	1.0	16.67	0	82.6	58	111				
Heptachlor	14.215	1.0	16.67	0	85.3	59	114				
Surr: Tetrachloro-m-xylene	12.351		16.67		74.1	34	106				
Surr: Decachlorobiphenyl	13.298		16.67		79.8	31	132				

Sample ID: **100463-001AMS** SampType: **MS** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **8/18/2008** RunNo: **98484**
Client ID: **ZZZZZZ** Batch ID: **48129** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **8/18/2008** SeqNo: **1524321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	14.821	2.0	16.67	0	88.9	33	122				
Aldrin	15.461	1.0	16.67	0	92.7	36	118				
Dieldrin	15.195	2.0	16.67	0	91.2	35	116				
Endrin	14.819	2.0	16.67	0	88.9	39	140				
gamma-BHC	14.897	1.0	16.67	0	89.4	34	117				
Heptachlor	15.295	1.0	16.67	0	91.8	37	121				
Surr: Tetrachloro-m-xylene	13.445		16.67		80.7	34	106				
Surr: Decachlorobiphenyl	15.278		16.67		91.7	31	132				

Sample ID: **100463-001AMSD** SampType: **MSD** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **8/18/2008** RunNo: **98484**
Client ID: **ZZZZZZ** Batch ID: **48129** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **8/18/2008** SeqNo: **1524322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	15.078	2.0	16.67	0	90.5	33	122	14.82	1.72	20	
Aldrin	15.696	1.0	16.67	0	94.2	36	118	15.46	1.51	20	
Dieldrin	15.431	2.0	16.67	0	92.6	35	116	15.20	1.54	20	
Endrin	15.134	2.0	16.67	0	90.8	39	140	14.82	2.11	20	
gamma-BHC	15.102	1.0	16.67	0	90.6	34	117	14.90	1.37	20	
Heptachlor	15.558	1.0	16.67	0	93.3	37	121	15.30	1.70	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: **100463-001AMSD**	SampType: **MSD**	TestCode: **8081_S**	Units: **µg/Kg**	Prep Date: **8/18/2008**	RunNo: **98484**
Client ID: **ZZZZZZ**	Batch ID: **48129**	TestNo: **EPA 8081A**	**EPA 3550B**	Analysis Date: **8/18/2008**	SeqNo: **1524322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Tetrachloro-m-xylene	13.557		16.67		81.3	34	106		0	20	
Surr: Decachlorobiphenyl	15.515		16.67		93.1	31	132		0	20	

Sample ID: **100438-043ADUP**	SampType: **DUP**	TestCode: **8081_S**	Units: **µg/Kg**	Prep Date: **8/18/2008**	RunNo: **98484**
Client ID: **Composite B32-GW-**	Batch ID: **48129**	TestNo: **EPA 8081A**	**EPA 3550B**	Analysis Date: **8/18/2008**	SeqNo: **1526802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	2.0						0	0	20	
4,4´-DDE	5.813	2.0						5.779	0.572	20	
4,4´-DDT	1.344	2.0						1.404	0	20	
Aldrin	ND	1.0						0	0	20	
alpha-BHC	ND	1.0						0	0	20	
alpha-Chlordane	ND	1.0						0	0	20	
Chlordane	ND	8.5						0	0	20	
Chlorothalonil	ND	2.0						0	0	20	
delta-BHC	ND	1.0						0	0	20	
Dieldrin	ND	2.0						0	0	20	
Endosulfan I	ND	1.0						0	0	20	
Endosulfan II	ND	2.0						0	0	20	
Endosulfan sulfate	ND	2.0						0	0	20	
Endrin	ND	2.0						0	0	20	
Endrin aldehyde	ND	2.0						0	0	20	
Endrin ketone	ND	2.0						0	0	20	
gamma-BHC	ND	1.0						0	0	20	
gamma-Chlordane	ND	1.0						0	0	20	
Heptachlor	ND	1.0						0	0	20	
Heptachlor epoxide	ND	1.0						0	0	20	
Methoxychlor	ND	5.0						0	0	20	
Toxaphene	ND	50						0	0	20	
Surr: Tetrachloro-m-xylene	11.463		16.67		68.8	34	106		0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: **100438-043ADUP** SampType: **DUP** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **8/18/2008** RunNo: **98484**
Client ID: **Composite B32-GW-** Batch ID: **48129** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **8/18/2008** SeqNo: **1526802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	13.283		16.67		79.7	31	132		0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **A080818LCS1** SampType: **LCS** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **LCSW** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	18.370	0.50	20.00	0	91.9	70	130				
Benzene	38.590	0.50	40.00	0	96.5	70	130				
Chlorobenzene	19.820	0.50	20.00	0	99.1	70	130				
MTBE	17.560	0.50	20.00	0	87.8	70	130				
Toluene	39.290	0.50	40.00	0	98.2	70	130				
Trichloroethene	19.680	0.50	20.00	0	98.4	70	130				
Surr: 1,2-Dichloroethane-d4	20.920		25.00		83.7	70	130				
Surr: 4-Bromofluorobenzene	22.640		25.00		90.6	70	130				
Surr: Dibromofluoromethane	23.690		25.00		94.8	70	130				
Surr: Toluene-d8	24.650		25.00		98.6	70	130				

Sample ID: **A080818MB2MS** SampType: **MS** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **ZZZZZZ** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	17.160	0.50	20.00	0	85.8	70	130				
Benzene	37.460	0.50	40.00	0	93.6	70	130				
Chlorobenzene	19.070	0.50	20.00	0	95.4	70	130				
Toluene	37.950	0.50	40.00	0	94.9	70	130				
Trichloroethene	19.170	0.50	20.00	0	95.9	70	130				
Surr: 1,2-Dichloroethane-d4	20.730		25.00		82.9	70	130				
Surr: 4-Bromofluorobenzene	22.490		25.00		90.0	70	130				
Surr: Dibromofluoromethane	23.520		25.00		94.1	70	130				
Surr: Toluene-d8	24.580		25.00		98.3	70	130				

Sample ID: **A080818MB2MSD** SampType: **MSD** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **ZZZZZZ** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	16.400	0.50	20.00	0	82.0	70	130	17.16	4.53	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **A080818MB2MSD** SampType: **MSD** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **ZZZZZZ** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.850	0.50	40.00	0	94.6	70	130	37.46	1.04	20	
Chlorobenzene	19.340	0.50	20.00	0	96.7	70	130	19.07	1.41	20	
Toluene	38.310	0.50	40.00	0	95.8	70	130	37.95	0.944	20	
Trichloroethene	19.290	0.50	20.00	0	96.5	70	130	19.17	0.624	20	
Surr: 1,2-Dichloroethane-d4	20.750		25.00		83.0	70	130		0	20	
Surr: 4-Bromofluorobenzene	22.580		25.00		90.3	70	130		0	20	
Surr: Dibromofluoromethane	23.350		25.00		93.4	70	130		0	20	
Surr: Toluene-d8	24.740		25.00		99.0	70	130		0	20	

Sample ID: **A080818MB2** SampType: **MBLK** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **PBW** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	0.50									
1,1,1-Trichloroethane	ND	0.50									
1,1,2,2-Tetrachloroethane	ND	0.50									
1,1,2-Trichloroethane	ND	0.50									
1,1-Dichloroethane	ND	0.50									
1,1-Dichloroethene	ND	0.50									
1,1-Dichloropropene	ND	0.50									
1,2,3-Trichlorobenzene	ND	0.50									
1,2,3-Trichloropropane	ND	0.50									
1,2,4-Trichlorobenzene	ND	0.50									
1,2,4-Trimethylbenzene	ND	0.50									
1,2-Dibromo-3-chloropropane	ND	0.50									
1,2-Dibromoethane	ND	0.50									
1,2-Dichlorobenzene	ND	0.50									
1,2-Dichloroethane	ND	0.50									
1,2-Dichloropropane	ND	0.50									
1,3,5-Trimethylbenzene	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **A080818MB2** SampType: **MBLK** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **PBW** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dichlorobenzene	ND	0.50									
1,3-Dichloropropane	ND	0.50									
1,4-Dichlorobenzene	ND	0.50									
2,2-Dichloropropane	ND	0.50									
2-Chlorotoluene	ND	0.50									
4-Chlorotoluene	ND	0.50									
4-Isopropyltoluene	ND	0.50									
Benzene	ND	0.50									
Bromobenzene	ND	0.50									
Bromodichloromethane	ND	0.50									
Bromoform	ND	0.50									
Bromomethane	ND	0.50									
Carbon tetrachloride	ND	0.50									
Chlorobenzene	ND	0.50									
Chloroethane	ND	0.50									
Chloroform	ND	0.50									
Chloromethane	ND	0.50									
cis-1,2-Dichloroethene	ND	0.50									
cis-1,3-Dichloropropene	ND	0.50									
Dibromochloromethane	ND	0.50									
Dibromomethane	ND	0.50									
Dichlorodifluoromethane	ND	0.50									
Ethylbenzene	ND	0.50									
Hexachlorobutadiene	ND	0.50									
Isopropylbenzene	ND	0.50									
m,p-Xylene	ND	1.0									
Methylene chloride	ND	1.0									
n-Butylbenzene	ND	0.50									
n-Propylbenzene	ND	0.50									
Naphthalene	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **A080818MB2** SampType: **MBLK** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **PBW** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	ND	0.50									
sec-Butylbenzene	ND	0.50									
Styrene	ND	0.50									
tert-Butylbenzene	ND	0.50									
Tetrachloroethene	ND	0.50									
Toluene	ND	0.50									
trans-1,2-Dichloroethene	ND	0.50									
Trichloroethene	ND	0.50									
Trichlorofluoromethane	ND	0.50									
Vinyl chloride	ND	0.50									
Surr: 1,2-Dichloroethane-d4	19.370		25.00		77.5	70	130				
Surr: 4-Bromofluorobenzene	21.840		25.00		87.4	70	130				
Surr: Dibromofluoromethane	22.210		25.00		88.8	70	130				
Surr: Toluene-d8	24.270		25.00		97.1	70	130				

Sample ID: **100438-041A** SampType: **DUP** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **B32-GW** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	0.50						0	0	20	
1,1,1-Trichloroethane	ND	0.50						0	0	20	
1,1,2,2-Tetrachloroethane	ND	0.50						0	0	20	
1,1,2-Trichloroethane	ND	0.50						0	0	20	
1,1-Dichloroethane	ND	0.50						0	0	20	
1,1-Dichloroethene	ND	0.50						0	0	20	
1,1-Dichloropropene	ND	0.50						0	0	20	
1,2,3-Trichlorobenzene	ND	0.50						0	0	20	
1,2,3-Trichloropropane	ND	0.50						0	0	20	
1,2,4-Trichlorobenzene	ND	0.50						0	0	20	
1,2,4-Trimethylbenzene	ND	0.50						0	0	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **100438-041A** SampType: **DUP** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **B32-GW** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.50						0	0	20	
1,2-Dibromoethane	ND	0.50						0	0	20	
1,2-Dichlorobenzene	ND	0.50						0	0	20	
1,2-Dichloroethane	ND	0.50						0	0	20	
1,2-Dichloropropane	ND	0.50						0	0	20	
1,3,5-Trimethylbenzene	ND	0.50						0	0	20	
1,3-Dichlorobenzene	ND	0.50						0	0	20	
1,3-Dichloropropane	ND	0.50						0	0	20	
1,4-Dichlorobenzene	ND	0.50						0	0	20	
2,2-Dichloropropane	ND	0.50						0	0	20	
2-Butanone	ND	10						0	0	20	
2-Chloroethyl vinyl ether	ND	0.50						0	0	20	
2-Chlorotoluene	ND	0.50						0	0	20	
2-Hexanone	ND	10						0	0	20	
4-Chlorotoluene	ND	0.50						0	0	20	
4-Isopropyltoluene	ND	0.50						0	0	20	
4-Methyl-2-pentanone	ND	10						0	0	20	
Acetone	ND	10						0	0	20	
Acrolein	ND	10						0	0	20	
Acrylonitrile	ND	10						0	0	20	
Benzene	ND	0.50						0	0	20	
Bromobenzene	ND	0.50						0	0	20	
Bromochloromethane	ND	0.50						0	0	20	
Bromodichloromethane	ND	0.50						0	0	20	
Bromoform	ND	0.50						0	0	20	
Bromomethane	ND	0.50						0	0	20	
Carbon disulfide	ND	0.50						0	0	20	
Carbon tetrachloride	ND	0.50						0	0	20	
Chlorobenzene	ND	0.50						0	0	20	
Chloroethane	ND	0.50						0	0	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **100438-041A** SampType: **DUP** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **B32-GW** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloroform	ND	0.50						0	0	20	
Chloromethane	ND	0.50						0	0	20	
cis-1,2-Dichloroethene	ND	0.50						0	0	20	
cis-1,3-Dichloropropene	ND	0.50						0	0	20	
Cyclohexanone	ND	50						0	0	20	
Di-isopropyl ether	ND	0.50						0	0	0	
Dibromochloromethane	ND	0.50						0	0	20	
Dibromomethane	ND	0.50						0	0	20	
Dichlorodifluoromethane	ND	0.50						0	0	20	
Ethyl Acetate	ND	10						0	0	20	
Ethyl Ether	ND	10						0	0	20	
Ethyl tert-butyl ether	ND	0.50						0	0	0	
Ethylbenzene	ND	0.50						0	0	20	
Freon-113	ND	0.50						0	0	20	
Hexachlorobutadiene	ND	0.50						0	0	20	
Iodomethane	ND	0.50						0	0	20	
Isopropylbenzene	ND	0.50						0	0	20	
m,p-Xylene	ND	1.0						0	0	20	
Methylene chloride	ND	1.0						0	0	20	
MTBE	ND	0.50						0	0	20	
n-Butylbenzene	ND	0.50						0	0	20	
n-Propylbenzene	ND	0.50						0	0	20	
Naphthalene	ND	0.50						0	0	20	
o-Xylene	ND	0.50						0	0	20	
sec-Butylbenzene	ND	0.50						0	0	20	
Styrene	ND	0.50						0	0	20	
Tert-amyl methyl ether	ND	0.50						0	0	0	
Tert-Butanol	ND	10						0	0	0	
tert-Butylbenzene	ND	0.50						0	0	20	
Tetrachloroethene	ND	0.50						0	0	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **100438-041A** SampType: **DUP** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **B32-GW** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	ND	0.50						0	0	20	
trans-1,2-Dichloroethene	ND	0.50						0	0	20	
trans-1,3-Dichloropropene	ND	0.50						0	0	20	
Trichloroethene	ND	0.50						0	0	20	
Trichlorofluoromethane	ND	0.50						0	0	20	
Vinyl acetate	ND	10						0	0	20	
Vinyl chloride	ND	0.50						0	0	20	
Xylenes, Total	ND	1.5						0	0	0	
Surr: 1,2-Dichloroethane-d4	20.450		25.00		81.8	70	130		0	0	
Surr: 4-Bromofluorobenzene	22.000		25.00		88.0	70	130		0	0	
Surr: Dibromofluoromethane	23.490		25.00		94.0	70	130		0	0	
Surr: Toluene-d8	24.640		25.00		98.6	70	130		0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SIERRA
ANALYTICAL

19 August 2008

Diane Galvan
Advanced Technology Labs
3275 Walnut Avenue
Signal Hill, CA 90755

RE:NA

Work Order No.: 0808289

Attached are the results of the analyses for samples received by the laboratory on 08/18/08 07:50.

The samples were received by Sierra Analytical Labs, Inc. with a chain of custody record attached or completed at the submittal of the samples.

The analyses were performed according to the prescribed method as outlined by EPA, Standard Methods, and A.S.T.M.

The remaining portions of the samples will be disposed of within 30 days from the date of this report.
If you require any additional retaining time, please advise us.

Sincerely,

Richard K. Forsyth

Laboratory Director

Sierra Analytical Labs, Inc. is certified by the California Department of Health Services (DOHS), Environmental Laboratory Accredidation Program (ELAP) No. 2320.

26052 Merit Circle Suite 105, Laguna Hills, California 92653
Telephone: (949) 348-9389 Fax: (949) 348-9115
E-Mail: sierralabs@earthlink.net

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO # SC03845	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/19/08 16:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
100438-042B	0808289-01	Soil	08/13/08 00:00	08/18/08 07:50
100438-043B	0808289-02	Soil	08/13/08 00:00	08/18/08 07:50

CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 5 °C, and accompanied by chain of custody documentation.
PRESERVATION:	Samples requiring preservation were verified prior to sample preparation and analysis.
HOLDING TIMES:	All holding times were met, unless otherwise noted in the report with data qualifiers.
QA/QC CRITERIA:	All quality objective criteria were met, except as noted in the report with data qualifiers.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

26052 Merit Circle Suite 105, Laguna Hills, California 92653
Telephone: (949) 348-9389 Fax: (949) 348-9115
E-Mail: sierralabs @ sierralabs.net

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO # SC03845	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/19/08 16:24

Chlorinated Herbicides by EPA Method 8151A

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
100438-042B (0808289-01) Soil Sampled: 08/13/08 00:00 Received: 08/18/08 07:50									
2,4,5-T	ND	1.6	µg/kg	1	B8H1829	08/18/08	08/19/08 08:31	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*83.9 %*	*35-150*		"	"	"	"	
100438-043B (0808289-02) Soil Sampled: 08/13/08 00:00 Received: 08/18/08 07:50									
2,4,5-T	ND	1.6	µg/kg	1	B8H1829	08/18/08	08/19/08 08:31	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*66.0 %*	*35-150*		"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO # SC03845	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/19/08 16:24

Chlorinated Herbicides by EPA Method 8151A - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8H1829 - EPA 8151A Herbicides										
Blank (B8H1829-BLK1)				Prepared: 08/18/08 Analyzed: 08/19/08						
2,4,5-T	ND	1.6	µg/kg							
2,4,5-TP (Silvex)	ND	1.6	"							
2,4-D	ND	1.6	"							
2,4-DB	ND	4.0	"							
3,5-Dichlorobenzoic acid	ND	2.0	"							
4-Nitrophenol	ND	2.0	"							
Acifluorfen	ND	1.6	"							
Bentazon	ND	1.6	"							
Chloramben	ND	1.6	"							
Dalapon	ND	20	"							
DCPA diacid	ND	1.6	"							
Dicamba	ND	1.6	"							
Dichlorprop	ND	1.6	"							
Dinoseb	ND	1.6	"							
Pentachlorophenol	ND	1.6	"							
Picloram	ND	1.6	"							
Surrogate: 2,4-Dichlorophenylacetic Acid	*47.8*		"	*100*		*47.8*	*35-150*			
LCS (B8H1829-BS1)				Prepared: 08/18/08 Analyzed: 08/19/08						
2,4,5-T	8.15	1.6	µg/kg	10.0		81.5	20-150			
2,4,5-TP (Silvex)	10.8	1.6	"	10.0		108	20-150			
Dichlorprop	4.44	1.6	"	10.0		44.4	20-150			
Dinoseb	9.07	1.6	"	10.0		90.7	20-150			
Duplicate (B8H1829-DUP1)	**Source: 0808289-01**			Prepared: 08/18/08 Analyzed: 08/19/08						
2,4,5-T	ND	1.6	µg/kg		ND				30	
2,4,5-TP (Silvex)	ND	1.6	"		ND				30	
Dichlorprop	ND	1.6	"		ND				30	
Dinoseb	ND	1.6	"		ND				30	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

26052 Merit Circle Suite 105, Laguna Hills, California 92653
Telephone: (949) 348-9389 Fax: (949) 348-9115
E-Mail: sierralabs @ sierralabs.net

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO # SC03845	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/19/08 16:24

Chlorinated Herbicides by EPA Method 8151A - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8H1829 - EPA 8151A Herbicides										
Matrix Spike (B8H1829-MS1)	**Source: 0808288-01**			Prepared: 08/18/08 Analyzed: 08/19/08						
2,4,5-T	8.33	1.6	µg/kg	10.0	ND	83.3	20-150			
2,4,5-TP (Silvex)	11.7	1.6	"	10.0	ND	117	20-150			
Dichlorprop	5.62	1.6	"	10.0	ND	56.2	20-150			
Dinoseb	10.7	1.6	"	10.0	ND	107	20-150			
Matrix Spike Dup (B8H1829-MSD1)	**Source: 0808288-01**			Prepared: 08/18/08 Analyzed: 08/19/08						
2,4,5-T	7.77	1.6	µg/kg	10.0	ND	77.7	20-150	6.96	30	
2,4,5-TP (Silvex)	11.3	1.6	"	10.0	ND	113	20-150	3.48	30	
Dichlorprop	5.43	1.6	"	10.0	ND	54.3	20-150	3.44	30	
Dinoseb	9.69	1.6	"	10.0	ND	96.9	20-150	9.91	30	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

26052 MERIT CIRCLE SUITE 105, LAGUNA HILLS, CALIFORNIA 92653
TELEPHONE: (949) 348-9389 FAX: (949) 348-9115
E-MAIL: SIERRALABS @ SIERRALABS.NET

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO # SC03845	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/19/08 16:24

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

26052 Merit Circle Suite 105, Laguna Hills, California 92653
Telephone: (949) 348-9389 Fax: (949) 348-9115
E-Mail: sierralabs @ sierralabs.net

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755-5225
www.atlglobal.com
TEL: (562) 989-4045 *FAX: (562) 989-4040*

CHAIN-OF-CUSTODY RECORD

0808289

QC Level: CT

Subcontractor:

Sierra Laboratories
26052 Merit Circle Suite 105
Laguna Hills, CA 92653

TEL: (949) 348-9389
FAX: (949) 348-9115
Acct #:

15-Aug-08

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 8151		
01	100438-042B / Composite B32-GW-1, B1-GW	Soil	8/13/2008	4OZG	1		
02	100438-043B / Composite B32-GW-4, B1-GW	Soil	8/13/2008	4OZG	1		

General Comments: Please email sample receipt acknowledgement to the PM.
Please use PO#: SC03845 Please fax results by:Normal TAT
Please send report to Diane Galvan

B35

		Date/Time			Date/Time
Relinquished by:		8/15/08	Received by:		8/15/08 7:00
Relinquished by:		8/18/08 750	Received by:		8/18/08 750

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: 8/15/08

Method of Transport: Client ☐ ATL ☐ CA OverN ☑ FEDEX ☐ Other: usO

Sample Condition Upon Receipt
1. CHILLED 10-4°C 5.0 Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☑ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☑ N☐ 6. PRESERVED Y☑ N☐

Client: GEOCON CONSULTANTS, INC.	Address: 6671 Brisa Street		TEL: (925) 371-5900
Attn: Lauren Wincze	City Livemore	State CA Zip Code 94550	FAX: (925) 371-5915

Project Name: I-80 EB TIF Project #: E8128-06-04 Sampler: (Printed Name) Lauren Wincze / Chris Merritt (Signature) Kal

Relinquished by: (Signature and Printed Name) Lauren Wincze	Date: 8/14/08	Time: 1630	Received by: (Signature and Printed Name)		Date: 8/15/08	Time: 10:05
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)		Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)		Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Lauren Wincze 8/13/08
Print Name Date
Lauren Wincze
Signature

Send Report To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State ____ Zip ____

Bill To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State ____ Zip ____

Special Instructions/Comments:
See pg. 4 & 5

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested

SPECIFY APPROPRIATE MATRIX

PRESERVATION

Q A / Q C
RTNE ☐
CT ☑
SWRCB ☐
Logcode ____
OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal) LEAD	8015B (GRO) / BTEX	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000) HOLD	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	REMARKS
	1004138-001	B-03A-0	8/13/08	0725				X						X				E	1	P	
	2	B-03B-0		0730				X													
	3	B-05A-0		0735									X								
	4	B-05A-1		0738				X													
	5	B-05B-0		0740									X								
	6	B-05B-1		0745				X													
	7	B-11A-0		0750				X													
	8	B-11B-0		0755				X													
	9	B-12A-0		0800				X													
	10	B-12B-0		0805				X													

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☑ FEDEX ☐ Other: _____

Sample Condition Upon Receipt
1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC. Address: 6671 Brisa Street TEL: (925) 371-5900
Attn: Lauren Wincze City Livemore State CA Zip Code 94550 FAX: (925) 371-5915

Project Name: I-80 EB TIF Project #: E8128-06-04 Sampler: (Printed Name) Lauren Wincze / Chris Merritt (Signature)

Relinquished by: (Signature and Printed Name) Lauren Wincze Date: 8/14/08 Time: 1630 Received by: (Signature and Printed Name) Kal Date: 8/15/08 Time: 10:05
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: Lauren Wincze 8/13/08 (Print Name / Date)
Lauren Wincze (Signature)

Send Report To: Attn: _____ Co: SAME AS ABOVE Address _____ City _____ State _____ Zip _____

Bill To: Attn: _____ Co: SAME AS ABOVE Address _____ City _____ State _____ Zip _____

Special Instructions/Comments: See pg. 4 #5

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides); 8082 (PCB); 8260B (Volatiles); 8270C (BNA); 6010B (Total Metal) LEAD; 8015B (GRO) / BTEX; 8015B (DRO); 8021 (BTEX); TITLE 22 / CAM 17 (6010 / 7000) HOLD

SPECIFY APPROPRIATE MATRIX: SOIL; WATER; GROUND WATER; WASTEWATER

PRESERVATION

Q A / Q C: RTNE ☐ CT ☑ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s): #	Type	REMARKS
	100438 - 11	B-14A-0	8/13/08	0830	E	1	P	
	12	B-14A-1		0835				
	13	B-14B-0		0840				
	14	B-14B-1		0845				
	15	B-16A-0		0905				
	16	B-16B-0		0910				
	17	B-17A-0		0910				
	18	B-17A-1		0915				
	19	B-17A-2		0920				
	20	B-19A-0		0845				

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr; B= Emergency Next workday; C= Critical 2 Workdays; D= Urgent 3 Workdays; E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☑ FEDEX ☐ Other: _____

Sample Condition Upon Receipt: 1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐ 2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐ 3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC. Address: 6671 Brisa Street TEL: (925) 371-5900
Attn: Lauren Wincze City Livermore State CA Zip Code 94550 FAX: (925) 371-5915

Project Name: I-80 EB TIF Project #: 8128-06-04 Sampler: (Printed Name) Lauren Wincze / Chris Merritt (Signature)

Relinquished by: (Signature and Printed Name) [signature] Date: 8/14/08 Time: 1630 Received by: (Signature and Printed Name) [signature] Date: 8/15/08 Time: 1005

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: Lauren Wincze 8/13/08 (Print Name / Date)
[signature] (Signature)

Send Report To: Attn: _____ Co: SAME AS ABOVE Address _____ City _____ State _____ Zip _____

Bill To: Attn: _____ Co: SAME AS ABOVE Address _____ City _____ State _____ Zip _____

Special Instructions/Comments: See pg. 4 #5

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides) | 8082 (PCB) | 8260B (Volatiles) | 8270C (BNA) | 6010B (Total Metal) LEAD | 8015B (GRO) / BTEX | 8015B (DRO) | 8021 (BTEX) | TITLE 22 / CAM 17 (6010 / 7000) HOLD

SPECIFY APPROPRIATE MATRIX: SOIL | WATER | GROUND WATER | WASTEWATER

PRESERVATION

Q A / Q C: RTNE ☐ CT ☑ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s): #	Type	REMARKS
	100438-21	B-19A-1	8/13/08	0850	E	1	P	
	22	B-19A-2		0855				
	23	B-17B-0		0925				
	24	B-17B-1		0927				
	25	B-17B-2		0930				
	26	B-19B-0		0858				
	27	B-19B-1		0901				
	28	B-19B-2		0905				
	29	B-20A-0		0950				
	30	B-20A-1		0955				

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☑ FEDEX ☐ Other: _____

Sample Condition Upon Receipt: 1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐ 2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐ 3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC. Address: 6671 Brisa Street TEL: (925) 371-5900
Attn: Lauren Wincze City Livemore State CA Zip Code 94550 FAX: (925) 371-5915

Project Name: I-80 EB TIF Project #: E8128-0604 Sampler: (Printed Name) Lauren Wincze / Chris Merritt (Signature)

Relinquished by: (Signature and Printed Name) Lauren Wincze Date: 8/14/08 Time: 1630 Received by: (Signature and Printed Name) Date: 8/15/08 Time: 1005
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: Lauren Wincze 8/13/08 (Print Name / Date)
Signature

Send Report To: Attn: _____ Co: SAME AS ABOVE Address _____ City _____ State _____ Zip _____

Bill To: Attn: _____ Co: SAME AS ABOVE Address _____ City _____ State _____ Zip _____

Special Instructions/Comments: pesticides, herbicides, metals samples - composite → 2 - 2-point composites:
① B1-GW-1 AND B32-GW-1;
② B1-GW-4 AND B32-GW-4

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides) | 8082 (PCB) | 8260B (Volatiles) | 8270C (BNA) | 6010B (Total Metal) LEAD | 8015B (GRO) / BTEX | 8015B (DRO) | 8021 (BTEX) | TITLE 22 / CAM 17 (6010 / 7000) HOLD Herbicides - 8151A

SPECIFY APPROPRIATE MATRIX: SOIL | WATER | GROUND WATER | WASTEWATER

PRESERVATION | Q A / Q C: RTNE ☐ CT ☑ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch # / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s): #	Type	REMARKS
	100438 - 31	B22A-0	8/13/08	0945	E		P	
	32	B22A-1		0950				
	33	B22A-2		0955				
	34	B22B-0		0957				
	35	B22B-1		1000				
	36	B22B-2		1005				
	37	B32-GW-1		1105	E	1	T	composite w/ B1-GW-1
	38	B32-GW-4		1110				comp. with B1-GW-4
	39	B1-GW-1		1214				composite w/ B32-GW-1
	40	B1-GW-4	↓	1235	↓	↓	↓	composite w/ B32-GW-4

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: _____

Sample Condition Upon Receipt: 1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐ 2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐ 3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC. Address: 6671 Brisa Street TEL: (925) 371-5900
Attn: Lauren Wincze City Livemore State CA Zip Code 94550 FAX: (925) 371-5915

Project Name: I-80 EB TIF Project #: E8128-06-04 Sampler: (Printed Name) Lauren Wincze/Chris Merritt (Signature)

Relinquished by: (Signature and Printed Name) Lauren Dyl Date: 8/14/08 Time: 1630 Received by: (Signature and Printed Name) Kol Date: 8/15/08 Time: 10:05

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: Lauren Wincze 8/14/08
Print Name Date
Lauren Dyl
Signature

Send Report To: Attn: _____ Co: SAME AS ABOVE Address _____ City _____ State____ Zip____

Bill To: Attn: _____ Co: SAME AS ABOVE Address _____ City _____ State____ Zip____

Special Instructions/Comments: metals-total and dissolved-lab to filter.

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / BTEX	8015B (DRO) + Motor oil + gasoline	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000) - total & dissolved	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	100438 - 41	B32-GW	8/13/08	1440			X			X		X				X			E	10	V,L,P	H,N,C

QA/QC: RTNE ☐ CT ☐ SWRCB ☐ Logcode ____ OTHER ____

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

Carmen Aguila

From: Lauren Wincze [wincze@geoconinc.com]
Sent: Friday, August 15, 2008 11:45 AM
To: Carmen Aguila
Subject: I-80 EB TIF project

Hi Carmen:
Per my phone conversation with Margo earlier, please note that sample B22A-0, listed at the top of page 4 of the COC, is to be placed on HOLD, and should NOT be analyzed for total lead at this time. Thanks and have a good weekend!
-Lauren

****

Lauren Wincze
Senior Staff Geologist
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
925.371.5900-p
925.371.5915-f

August 29, 2008

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 100438

RE: I-80 EB TIF, E8128-06-04

Attention: Chris Giuntoli

Enclosed are the results for sample(s) received on August 15, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Project: I-80 EB TIF, E8128-06-04
Lab Order: 100438

CASE NARRATIVE

Analytical Comments for Method 7420

Matrix Spike (MS) and /or Matrix Spike Duplicate (MSD) are/is outside recovery criteria for samples 100438-045AMS and 100438-045AMSD; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Advanced Technology Laboratories

Date: 8/29/2008

ANALYTICAL RESULTS

LEAD BY ATOMIC ABSORPTION (STLC)
WET/ EPA 7420

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	100438
Project:	I-80 EB TIF, E8128-06-04	**Date Received**	8/15/2008 10:05:00 AM
Project No:	E8128-06-04	**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	AMT

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
100438-002A	B-03B-0	ND	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-004A	B-05A-1	ND	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-009A	B-12A-0	0.47	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-014A	B-14B-1	0.26	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-015A	B-16A-0	0.30	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-016A	B-16B-0	0.36	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-017A	B-17A-0	0.50	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-018A	B-17A-1	0.35	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-022A	B-19A-2	0.37	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-023A	B-17B-0	0.44	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-024A	B-17B-1	0.32	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-030A	B-20A-1	0.45	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-045A	B-20B-1	0.63	mg/L	R98908	0.25	1	8/13/2008	8/28/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_ST

Sample ID: **MB-48360A** SampType: **MBLK** TestCode: **7420_ST** Units: **mg/L** Prep Date: RunNo: **98908**
Client ID: **PBS** Batch ID: **R98908** TestNo: **WET/ EPA 74** Analysis Date: **8/28/2008** SeqNo: **1531033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **LCS-48360** SampType: **LCS** TestCode: **7420_ST** Units: **mg/L** Prep Date: RunNo: **98908**
Client ID: **LCSS** Batch ID: **R98908** TestNo: **WET/ EPA 74** Analysis Date: **8/28/2008** SeqNo: **1531034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.012	0.25	5.000	0	100	80	120				

Sample ID: **100438-023A-DUP** SampType: **DUP** TestCode: **7420_ST** Units: **mg/L** Prep Date: RunNo: **98908**
Client ID: **B-17B-0** Batch ID: **R98908** TestNo: **WET/ EPA 74** Analysis Date: **8/28/2008** SeqNo: **1531045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.406	0.25						0.4404	8.04	20	

Sample ID: **100438-023A-MS** SampType: **MS** TestCode: **7420_ST** Units: **mg/L** Prep Date: RunNo: **98908**
Client ID: **B-17B-0** Batch ID: **R98908** TestNo: **WET/ EPA 74** Analysis Date: **8/28/2008** SeqNo: **1531046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.558	0.25	5.000	0.4404	82.4	80	120				

Sample ID: **100438-045A-DUP** SampType: **DUP** TestCode: **7420_ST** Units: **mg/L** Prep Date: RunNo: **98908**
Client ID: **B-20B-1** Batch ID: **R98908** TestNo: **WET/ EPA 74** Analysis Date: **8/28/2008** SeqNo: **1531052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.528	0.25						0.6346	18.3	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_ST

Sample ID: **100438-045A-MS**	SampType: **MS**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date:	RunNo: **98908**
Client ID: **B-20B-1**	Batch ID: **R98908**	TestNo: **WET/ EPA 74**		Analysis Date: **8/28/2008**	SeqNo: **1531053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	3.353	0.25	5.000	0.6346	54.4	80	120				S

Sample ID: **100438-045A-MSD**	SampType: **MSD**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date:	RunNo: **98908**
Client ID: **B-20B-1**	Batch ID: **R98908**	TestNo: **WET/ EPA 74**		Analysis Date: **8/28/2008**	SeqNo: **1531054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	3.534	0.25	5.000	0.6346	58.0	80	120	3.353	5.26	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Diane Galvan

From: Lauren Wincze [wincze@geoconinc.com]
Sent: Tuesday, August 26, 2008 12:15 PM
To: Diane Galvan
Cc: 'Chris Giuntoli'
Subject: WO#100438

Hi Diane:
Please run the following samples for soluble WET lead, under an urgent, 3-day TAT. Thanks so much.

B-03B-0, B-05A-1, B-12A-0, B-14B-1, B-16A-0, B-16B-0, B-17A-0, B-17A-1, B-19A-2, B-17B-0, B-17B-1, B-20A-1, AND B-20B-1.

****

Lauren Wincze
Senior Staff Geologist
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925.371.5900-p
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July 09, 2008

Chris Giuntoli
Geocon Consultants, Inc.
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TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 099405

RE: EB I-80 Truck Scales, E8128-06-04

Attention: Chris Giuntoli

Enclosed are the results for sample(s) received on June 19, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

CLIENT: Geocon Consultants, Inc.
Project: EB I-80 Truck Scales, E8128-06-04
Lab Order: 099405

CASE NARRATIVE

Analytical Comments for Method 6010

Matrix Spike (MS) and /or Matrix Spike Duplicate (MSD) are/is outside recovery criteria for sample 099405-050AMS; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

RPD for Duplicate (DUP) is outside criteria for samples 099405-050ADUP, 099405-060ADUP and 099405-070ADUP; however, the Laboratory Control Sample (LCS) validated the analytical batch.

Analytical Comments for Method 7420

Dilution was necessary for samples 099405-031A, 099405-034A, 099405-046A, 099405-049A, 099405-051A and 099405-057A, due to sample matrix.

Matrix Spike (MS) and /or Matrix Spike Duplicate (MSD) are/is outside recovery criteria for samples 099405-005AMS and 099405-043AMS; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

RPD for Duplicate (DUP) is outside criteria for sample 099405-059ADUP; however, the Laboratory Control Sample (LCS) validated the analytical batch.

Advanced Technology Laboratories

Date: 7/9/2008

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	099405
Project:	EB I-80 Truck Scales, E8128-06-04	**Date Received**	6/19/2008 11:10:09 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	CL

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
099405-001A	B1-0	49	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-002A	B1-1	49	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-003A	B1-2	10	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-004A	B2-0	22	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-005A	B2-1	11	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-006A	B2-2	12	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-007A	B3-0	130	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-008A	B3-1	ND	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-009A	B3-2	6.0	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-010A	B4-0	74	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-011A	B4-1	48	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-012A	B4-2	31	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-013A	B5-0	38	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-014A	B5-1	150	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-015A	B5-2	10	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-016A	B6-0	120	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-017A	B6-1	17	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-018A	B6-2	20	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

Date: 7/9/2008

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	099405
Project:	EB I-80 Truck Scales, E8128-06-04	**Date Received**	6/19/2008 11:10:09 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	CL

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
099405-019A	B7-0	20	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-020A	B7-1	11	mg/Kg	46652	5.0	1	6/17/2008	6/24/2008
099405-021A	B7-2	7.2	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-022A	B8-0	48	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-023A	B8-1	49	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-024A	B8-2	26	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-025A	B9-0	35	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-026A	B9-1	88	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-027A	B9-2	ND	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-028A	B10-0	20	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-029A	B10-1	ND	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-030A	B10-2	6.0	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-031A	B11-0	390	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-032A	B11-1	28	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-033A	B11-2	15	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-034A	B12-0	220	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-035A	B12-1	ND	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-036A	B12-2	5.0	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

Date: 7/9/2008

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	099405
Project:	EB I-80 Truck Scales, E8128-06-04	**Date Received**	6/19/2008 11:10:09 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	CL

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
099405-037A	B13-0	16	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-038A	B13-1	ND	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-039A	B13-2	ND	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-040A	B14-0	62	mg/Kg	46653	5.0	1	6/17/2008	6/24/2008
099405-041A	B14-1	190	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-042A	B14-2	48	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-043A	B15-0	89	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-044A	B15-1	85	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-045A	B15-2	ND	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-046A	B16-0	180	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-047A	B16-1	ND	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-048A	B16-2	10	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-049A	B17-0	490	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-050A	B17-1	57	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-051A	B17-2	320	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-052A	B18-0	14	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-053A	B18-1	11	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-054A	B18-2	17	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

Date: 7/9/2008

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	099405
Project:	EB I-80 Truck Scales, E8128-06-04	**Date Received**	6/19/2008 11:10:09 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	CL

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
099405-055A	B19-0	24	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-056A	B19-1	190	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-057A	B19-2	180	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-058A	B20-0	34	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-059A	B20-1	240	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-060A	B20-2	22	mg/Kg	46654	5.0	1	6/17/2008	6/24/2008
099405-061A	B21-0	23	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-062A	B21-1	32	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-063A	B21-2	55	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-064A	B22-0	17	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-065A	B22-1	32	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-066A	B22-2	180	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-067A	B23-0	59	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-068A	B23-1	25	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-069A	B23-2	39	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-070A	B24-0	40	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-071A	B24-1	31	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-072A	B24-2	120	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

Date: 7/9/2008

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	099405
Project:	EB I-80 Truck Scales, E8128-06-04	**Date Received**	6/19/2008 11:10:09 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	CL

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
099405-073A	B25-0	76	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-074A	B25-1	78	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-075A	B25-2	66	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-076A	B26-0	56	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-077A	B26-1	8.9	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-078A	B26-2	9.3	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-079A	B27-0	18	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-080A	B27-1	7.2	mg/Kg	46655	5.0	1	6/18/2008	6/24/2008
099405-081A	B27-2	6.9	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-082A	B28-0	42	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-083A	B28-1	17	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-084A	B28-2	6.9	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-085A	B29-0	41	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-086A	B29-1	7.5	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-087A	B29-2	6.6	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-088A	B30-0	60	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-089A	B30-1	7.7	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-090A	B30-2	6.5	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

Date: 7/9/2008

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	099405
Project:	EB I-80 Truck Scales, E8128-06-04	**Date Received**	6/19/2008 11:10:09 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	CL

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
099405-091A	B31-0	18	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-092A	B31-1	6.5	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-093A	B31-2	20	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-094A	B32-0	13	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-095A	B32-1	ND	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-096A	B32-2	ND	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-097A	B33-0	6.4	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-098A	B33-1	6.5	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-099A	B33-2	5.6	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-100A	B34-0	9.9	mg/Kg	46657	5.0	1	6/18/2008	6/24/2008
099405-101A	B34-1	5.6	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-102A	B34-2	ND	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-103A	B35-0	6.8	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-104A	B35-1	6.6	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-105A	B35-2	6.9	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-106A	B36-0	7.8	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-107A	B36-1	5.3	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-108A	B36-2	5.8	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

Date: 7/9/2008

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	099405
Project:	EB I-80 Truck Scales, E8128-06-04	**Date Received**	6/19/2008 11:10:09 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	CL

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
099405-109A	B37-0	11	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-110A	B37-1	10	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-111A	B37-2	12	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-112A	B38-0	12	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-113A	B38-1	11	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-114A	B38-2	9.1	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-115A	B39-0	ND	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-116A	B39-1	27	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008
099405-117A	B39-2	9.2	mg/Kg	46658	5.0	1	6/18/2008	6/24/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

Date: 7/9/2008

ANALYTICAL RESULTS

pH
EPA 9045C

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	099405
Project:	EB I-80 Truck Scales, E8128-06-04	**Date Received**	6/19/2008 11:10:09 AM
Project No:		**Matrix:**	Soil
Analyte:	pH	**Analyst:**	MFP

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
099405-001A	B1-0	7.2	pH Units	R96118	0.10	1	6/17/2008	6/20/2008
099405-012A	B4-2	7.6	pH Units	R96118	0.10	1	6/17/2008	6/20/2008
099405-023A	B8-1	8.0	pH Units	R96118	0.10	1	6/17/2008	6/20/2008
099405-034A	B12-0	7.7	pH Units	R96118	0.10	1	6/17/2008	6/20/2008
099405-045A	B15-2	8.2	pH Units	R96118	0.10	1	6/17/2008	6/20/2008
099405-056A	B19-1	7.8	pH Units	R96118	0.10	1	6/17/2008	6/20/2008
099405-067A	B23-0	7.1	pH Units	R96118	0.10	1	6/18/2008	6/20/2008
099405-078A	B26-2	7.7	pH Units	R96118	0.10	1	6/18/2008	6/20/2008
099405-089A	B30-1	7.4	pH Units	R96118	0.10	1	6/18/2008	6/20/2008
099405-091A	B31-0	6.7	pH Units	R96118	0.10	1	6/18/2008	6/20/2008
099405-102A	B34-2	8.0	pH Units	R96120	0.10	1	6/18/2008	6/20/2008
099405-113A	B38-1	8.9	pH Units	R96120	0.10	1	6/18/2008	6/20/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

Date: 7/9/2008

ANALYTICAL RESULTS

LEAD BY ATOMIC ABSORPTION (STLC)
WET/ EPA 7420

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	099405
Project:	EB I-80 Truck Scales, E8128-06-04	**Date Received**	6/19/2008 11:10:09 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	AMT

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
099405-007A	B3-0	5.5	mg/L	46756	0.25	1	6/17/2008	6/30/2008
099405-010A	B4-0	2.5	mg/L	46756	0.25	1	6/17/2008	6/30/2008
099405-014A	B5-1	5.4	mg/L	46756	0.25	1	6/17/2008	6/30/2008
099405-016A	B6-0	4.7	mg/L	46756	0.25	1	6/17/2008	6/30/2008
099405-026A	B9-1	2.8	mg/L	46756	0.25	1	6/17/2008	6/30/2008
099405-031A	B11-0	22	mg/L	46756	1.0	4	6/17/2008	6/30/2008
099405-034A	B12-0	15	mg/L	46756	0.50	2	6/17/2008	6/30/2008
099405-040A	B14-0	4.2	mg/L	46756	0.25	1	6/17/2008	7/2/2008
099405-041A	B14-1	9.8	mg/L	46756	0.25	1	6/17/2008	6/30/2008
099405-043A	B15-0	4.5	mg/L	46756	0.25	1	6/17/2008	6/30/2008
099405-044A	B15-1	4.0	mg/L	46756	0.25	1	6/17/2008	6/30/2008
099405-046A	B16-0	11	mg/L	46756	0.50	2	6/17/2008	6/30/2008
099405-049A	B17-0	15	mg/L	46756	0.50	2	6/17/2008	6/30/2008
099405-050A	B17-1	5.5	mg/L	46756	0.25	1	6/17/2008	6/30/2008
099405-051A	B17-2	12	mg/L	46756	0.50	2	6/17/2008	6/30/2008
099405-056A	B19-1	4.5	mg/L	46756	0.25	1	6/17/2008	6/30/2008
099405-057A	B19-2	12	mg/L	46756	0.50	2	6/17/2008	6/30/2008
099405-059A	B20-1	9.6	mg/L	46756	0.25	1	6/17/2008	6/30/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

Date: 7/9/2008

ANALYTICAL RESULTS

LEAD BY ATOMIC ABSORPTION (STLC)
WET/ EPA 7420

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	099405
Project:	EB I-80 Truck Scales, E8128-06-04	**Date Received**	6/19/2008 11:10:09 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	AMT

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
099405-063A	B21-2	1.6	mg/L	46756	0.25	1	6/18/2008	6/30/2008
099405-066A	B22-2	9.9	mg/L	46756	0.25	1	6/18/2008	6/30/2008
099405-067A	B23-0	2.3	mg/L	46757	0.25	1	6/18/2008	6/30/2008
099405-072A	B24-2	3.1	mg/L	46757	0.25	1	6/18/2008	6/30/2008
099405-073A	B25-0	1.7	mg/L	46757	0.25	1	6/18/2008	6/30/2008
099405-074A	B25-1	1.3	mg/L	46757	0.25	1	6/18/2008	6/30/2008
099405-075A	B25-2	4.5	mg/L	46757	0.25	1	6/18/2008	6/30/2008
099405-076A	B26-0	1.5	mg/L	46757	0.25	1	6/18/2008	6/30/2008
099405-088A	B30-0	0.82	mg/L	46757	0.25	1	6/18/2008	6/30/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

Date: 7/9/2008

ANALYTICAL RESULTS

LEAD BY ATOMIC ABSORPTION (TCLP)
EPA 1311/ 7420

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	099405
Project:	EB I-80 Truck Scales, E8128-06-04	**Date Received**	6/19/2008 11:10:09 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	RQ

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
099405-007A	B3-0	0.36	mg/L	47053	0.25	1	6/17/2008	7/9/2008
099405-014A	B5-1	0.38	mg/L	47053	0.25	1	6/17/2008	7/9/2008
099405-031A	B11-0	0.71	mg/L	47053	0.25	1	6/17/2008	7/9/2008
099405-034A	B12-0	0.92	mg/L	47053	0.25	1	6/17/2008	7/9/2008
099405-041A	B14-1	0.71	mg/L	47053	0.25	1	6/17/2008	7/9/2008
099405-046A	B16-0	0.89	mg/L	47053	0.25	1	6/17/2008	7/9/2008
099405-049A	B17-0	1.5	mg/L	47053	0.25	1	6/17/2008	7/9/2008
099405-051A	B17-2	0.87	mg/L	47053	0.25	1	6/17/2008	7/9/2008
099405-057A	B19-2	0.59	mg/L	47053	0.25	1	6/17/2008	7/9/2008
099405-059A	B20-1	0.73	mg/L	47053	0.25	1	6/17/2008	7/9/2008
099405-066A	B22-2	0.54	mg/L	47054	0.25	1	6/18/2008	7/9/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

Date: 7/9/2008

ANALYTICAL RESULTS

LEAD BY ATOMIC ABSORPTION
WET DI/ EPA 7420

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	099405
Project:	EB I-80 Truck Scales, E8128-06-04	**Date Received**	6/19/2008 11:10:09 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	RQ

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
099405-007A	B3-0	0.34	mg/L	46996	0.25	1	6/17/2008	7/9/2008
099405-014A	B5-1	1.4	mg/L	46996	0.25	1	6/17/2008	7/9/2008
099405-031A	B11-0	0.53	mg/L	46996	0.25	1	6/17/2008	7/9/2008
099405-034A	B12-0	ND	mg/L	46996	0.25	1	6/17/2008	7/9/2008
099405-041A	B14-1	1.7	mg/L	46996	0.25	1	6/17/2008	7/9/2008
099405-046A	B16-0	0.94	mg/L	46996	0.25	1	6/17/2008	7/9/2008
099405-049A	B17-0	0.32	mg/L	46996	0.25	1	6/17/2008	7/9/2008
099405-050A	B17-1	0.93	mg/L	46996	0.25	1	6/17/2008	7/9/2008
099405-051A	B17-2	2.4	mg/L	46996	0.25	1	6/17/2008	7/9/2008
099405-057A	B19-2	1.5	mg/L	46996	0.25	1	6/17/2008	7/9/2008
099405-059A	B20-1	1.4	mg/L	46996	0.25	1	6/17/2008	7/9/2008
099405-066A	B22-2	1.9	mg/L	46996	0.25	1	6/18/2008	7/9/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-46652A**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96238**
Client ID: **PBS**	Batch ID: **46652**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-46652**	SampType: **LCS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96238**
Client ID: **LCSS**	Batch ID: **46652**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486557**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	280.656	5.0	250.0	0	112	80	120				

Sample ID: **099405-010A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96238**
Client ID: **B4-0**	Batch ID: **46652**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	87.395	5.0						74.07	16.5	20	

Sample ID: **099405-010A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96238**
Client ID: **B4-0**	Batch ID: **46652**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	335.468	5.0	250.0	74.07	105	45	110				

Sample ID: **MB-46652B**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96238**
Client ID: **PBS**	Batch ID: **46652**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **099405-020A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96238**
Client ID: **B7-1**	Batch ID: **46652**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.461	5.0						10.55	0.801	20	

Sample ID: **099405-020A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96238**
Client ID: **B7-1**	Batch ID: **46652**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486582**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	231.077	5.0	250.0	10.55	88.2	45	110				

Sample ID: **099405-020A-MSD**	SampType: **MSD**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96238**
Client ID: **B7-1**	Batch ID: **46652**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	235.307	5.0	250.0	10.55	89.9	45	110	231.1	1.81	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-46653A**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96239**
Client ID: **PBS**	Batch ID: **46653**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-46653**	SampType: **LCS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96239**
Client ID: **LCSS**	Batch ID: **46653**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	284.827	5.0	250.0	0	114	80	120				

Sample ID: **099405-030A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96239**
Client ID: **B10-2**	Batch ID: **46653**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.167	5.0						5.972	14.4	20	

Sample ID: **099405-030A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96239**
Client ID: **B10-2**	Batch ID: **46653**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	226.988	5.0	250.0	5.972	88.4	45	110				

Sample ID: **MB-46653B**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96239**
Client ID: **PBS**	Batch ID: **46653**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **099405-040A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96239**
Client ID: **B14-0**	Batch ID: **46653**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486609**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	64.739	5.0						61.65	4.90	20	

Sample ID: **099405-040A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96239**
Client ID: **B14-0**	Batch ID: **46653**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	280.726	5.0	250.0	61.65	87.6	45	110				

Sample ID: **099405-040A-MSD**	SampType: **MSD**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96239**
Client ID: **B14-0**	Batch ID: **46653**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	296.025	5.0	250.0	61.65	93.8	45	110	280.7	5.31	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-46654A**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96240**
Client ID: **PBS**	Batch ID: **46654**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-46654**	SampType: **LCS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96240**
Client ID: **LCSS**	Batch ID: **46654**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	296.860	5.0	250.0	0	119	80	120				

Sample ID: **099405-050A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96240**
Client ID: **B17-1**	Batch ID: **46654**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	86.420	5.0						57.08	40.9	20	R

Sample ID: **099405-050A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96240**
Client ID: **B17-1**	Batch ID: **46654**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	359.920	5.0	250.0	57.08	121	45	110				S

Sample ID: **MB-46654B**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96240**
Client ID: **PBS**	Batch ID: **46654**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **099405-060A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96240**
Client ID: **B20-2**	Batch ID: **46654**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486637**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	16.390	5.0						22.21	30.1	20	R

Sample ID: **099405-060A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96240**
Client ID: **B20-2**	Batch ID: **46654**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	222.864	5.0	250.0	22.21	80.3	45	110				

Sample ID: **099405-060A-MSD**	SampType: **MSD**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96240**
Client ID: **B20-2**	Batch ID: **46654**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	221.907	5.0	250.0	22.21	79.9	45	110	222.9	0.430	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-46655A**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96241**
Client ID: **PBS**	Batch ID: **46655**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-46655**	SampType: **LCS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96241**
Client ID: **LCSS**	Batch ID: **46655**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	287.407	5.0	250.0	0	115	80	120				

Sample ID: **099405-070A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96241**
Client ID: **B24-0**	Batch ID: **46655**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	28.608	5.0						39.65	32.3	20	R

Sample ID: **099405-070A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96241**
Client ID: **B24-0**	Batch ID: **46655**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	260.154	5.0	250.0	39.65	88.2	45	110				

Sample ID: **MB-46655B**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96241**
Client ID: **PBS**	Batch ID: **46655**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486654**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **099405-080A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96241**
Client ID: **B27-1**	Batch ID: **46655**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	6.610	5.0						7.242	9.13	20	

Sample ID: **099405-080A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96241**
Client ID: **B27-1**	Batch ID: **46655**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	222.471	5.0	250.0	7.242	86.1	45	110				

Sample ID: **099405-080A-MSD**	SampType: **MSD**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96241**
Client ID: **B27-1**	Batch ID: **46655**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	204.029	5.0	250.0	7.242	78.7	45	110	222.5	8.65	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-46657A**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96242**
Client ID: **PBS**	Batch ID: **46657**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-46657**	SampType: **LCS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96242**
Client ID: **LCSS**	Batch ID: **46657**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	229.161	5.0	250.0	0	91.7	80	120				

Sample ID: **099405-090A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96242**
Client ID: **B30-2**	Batch ID: **46657**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	6.626	5.0						6.543	1.26	20	

Sample ID: **099405-090A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96242**
Client ID: **B30-2**	Batch ID: **46657**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	202.743	5.0	250.0	6.543	78.5	45	110				

Sample ID: **MB-46657B**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96242**
Client ID: **PBS**	Batch ID: **46657**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **099405-100A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **6/24/2008** RunNo: **96242**
Client ID: **B34-0** Batch ID: **46657** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **6/24/2008** SeqNo: **1486693**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	11.529	5.0						9.915	15.1	20	

Sample ID: **099405-100A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **6/24/2008** RunNo: **96242**
Client ID: **B34-0** Batch ID: **46657** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **6/24/2008** SeqNo: **1486694**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	229.313	5.0	250.0	9.915	87.8	45	110				

Sample ID: **099405-100A-MSD** SampType: **MSD** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **6/24/2008** RunNo: **96242**
Client ID: **B34-0** Batch ID: **46657** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **6/24/2008** SeqNo: **1486695**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	214.492	5.0	250.0	9.915	81.8	45	110	229.3	6.68	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-46658A**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96243**
Client ID: **PBS**	Batch ID: **46658**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-46658**	SampType: **LCS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96243**
Client ID: **LCSS**	Batch ID: **46658**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	263.841	5.0	250.0	0	106	80	120				

Sample ID: **099405-110A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96243**
Client ID: **B37-1**	Batch ID: **46658**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	11.100	5.0						10.35	6.98	20	

Sample ID: **099405-110A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96243**
Client ID: **B37-1**	Batch ID: **46658**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	213.531	5.0	250.0	10.35	81.3	45	110				

Sample ID: **MB-46658B**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **6/24/2008**	RunNo: **96243**
Client ID: **PBS**	Batch ID: **46658**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **6/24/2008**	SeqNo: **1486710**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **099405-117A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **6/24/2008** RunNo: **96243**
Client ID: **B39-2** Batch ID: **46658** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **6/24/2008** SeqNo: **1486718**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	7.848	5.0						9.215	16.0	20	

Sample ID: **099405-117A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **6/24/2008** RunNo: **96243**
Client ID: **B39-2** Batch ID: **46658** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **6/24/2008** SeqNo: **1486719**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	207.393	5.0	250.0	9.215	79.3	45	110				

Sample ID: **099405-117A-MSD** SampType: **MSD** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **6/24/2008** RunNo: **96243**
Client ID: **B39-2** Batch ID: **46658** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **6/24/2008** SeqNo: **1486720**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	209.679	5.0	250.0	9.215	80.2	45	110	207.4	1.10	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_DI_GEOCON

Sample ID: **MB-46996A**	SampType: **MBLK**	TestCode: **7420_DI_GE**	Units: **mg/L**	Prep Date: **7/7/2008**	RunNo: **96875**
Client ID: **PBS**	Batch ID: **46996**	TestNo: **WET DI/ EPA WET**		Analysis Date: **7/9/2008**	SeqNo: **1497744**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **LCS-46996**	SampType: **LCS**	TestCode: **7420_DI_GE**	Units: **mg/L**	Prep Date: **7/7/2008**	RunNo: **96875**
Client ID: **LCSS**	Batch ID: **46996**	TestNo: **WET DI/ EPA WET**		Analysis Date: **7/9/2008**	SeqNo: **1497745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.930	0.25	5.000	0	98.6	80	120				

Sample ID: **099405-057A-DUP**	SampType: **DUP**	TestCode: **7420_DI_GE**	Units: **mg/L**	Prep Date: **7/7/2008**	RunNo: **96875**
Client ID: **B19-2**	Batch ID: **46996**	TestNo: **WET DI/ EPA WET**		Analysis Date: **7/9/2008**	SeqNo: **1497756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.482	0.25						1.456	1.82	20	

Sample ID: **099405-057A-MS**	SampType: **MS**	TestCode: **7420_DI_GE**	Units: **mg/L**	Prep Date: **7/7/2008**	RunNo: **96875**
Client ID: **B19-2**	Batch ID: **46996**	TestNo: **WET DI/ EPA WET**		Analysis Date: **7/9/2008**	SeqNo: **1497757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.405	0.25	5.000	1.456	79.0	70	130				

Sample ID: **MB-46996B**	SampType: **MBLK**	TestCode: **7420_DI_GE**	Units: **mg/L**	Prep Date: **7/7/2008**	RunNo: **96875**
Client ID: **PBS**	Batch ID: **46996**	TestNo: **WET DI/ EPA WET**		Analysis Date: **7/9/2008**	SeqNo: **1497758**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_DI_GEOCON

Sample ID: **099405-066A-DUP**	SampType: **DUP**	TestCode: **7420_DI_GE**	Units: **mg/L**	Prep Date: **7/7/2008**	RunNo: **96875**
Client ID: **B22-2**	Batch ID: **46996**	TestNo: **WET DI/ EPA WET**		Analysis Date: **7/9/2008**	SeqNo: **1497761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.014	0.25						1.938	3.80	20	

Sample ID: **099405-066A-MS**	SampType: **MS**	TestCode: **7420_DI_GE**	Units: **mg/L**	Prep Date: **7/7/2008**	RunNo: **96875**
Client ID: **B22-2**	Batch ID: **46996**	TestNo: **WET DI/ EPA WET**		Analysis Date: **7/9/2008**	SeqNo: **1497762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.991	0.25	5.000	1.938	81.1	70	130				

Sample ID: **099405-066A-MSD**	SampType: **MSD**	TestCode: **7420_DI_GE**	Units: **mg/L**	Prep Date: **7/7/2008**	RunNo: **96875**
Client ID: **B22-2**	Batch ID: **46996**	TestNo: **WET DI/ EPA WET**		Analysis Date: **7/9/2008**	SeqNo: **1497763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.995	0.25	5.000	1.938	81.1	70	130	5.991	0.0578	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_ST

Sample ID: **099405-066A-DUP**	SampType: **DUP**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96467**
Client ID: **B22-2**	Batch ID: **46756**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **6/30/2008**	SeqNo: **1490596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.020	0.50						9.862	1.59	20	

Sample ID: **099405-066A-MS**	SampType: **MS**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96467**
Client ID: **B22-2**	Batch ID: **46756**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **6/30/2008**	SeqNo: **1490597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	15.322	0.50	5.000	9.862	109	80	120				

Sample ID: **099405-066A-MSD**	SampType: **MSD**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96467**
Client ID: **B22-2**	Batch ID: **46756**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **6/30/2008**	SeqNo: **1490598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	15.261	0.50	5.000	9.862	108	80	120	15.32	0.402	20	

Sample ID: **MB-46756A**	SampType: **MBLK**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96467**
Client ID: **PBS**	Batch ID: **46756**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **6/30/2008**	SeqNo: **1490599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **LCS-46756**	SampType: **LCS**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96467**
Client ID: **LCSS**	Batch ID: **46756**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **6/30/2008**	SeqNo: **1490600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.075	0.25	5.000	0	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_ST

Sample ID: **099405-043A-DUP**	SampType: **DUP**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96467**
Client ID: **B15-0**	Batch ID: **46756**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **6/30/2008**	SeqNo: **1490611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	3.769	0.25						4.535	18.4	20	

Sample ID: **099405-043A-MS**	SampType: **MS**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96467**
Client ID: **B15-0**	Batch ID: **46756**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **6/30/2008**	SeqNo: **1490612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	7.650	0.25	5.000	4.535	62.3	80	120				S

Sample ID: **MB-46756B**	SampType: **MBLK**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96467**
Client ID: **PBS**	Batch ID: **46756**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **6/30/2008**	SeqNo: **1490613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **MB-46756**	SampType: **MBLK**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96543**
Client ID: **PBS**	Batch ID: **46756**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **7/2/2008**	SeqNo: **1492597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **LCS-46756**	SampType: **LCS**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96543**
Client ID: **LCSS**	Batch ID: **46756**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **7/2/2008**	SeqNo: **1492598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.031	0.25	5.000	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_ST

Sample ID: **MB-46757A**	SampType: **MBLK**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96451**
Client ID: **PBS**	Batch ID: **46757**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **6/30/2008**	SeqNo: **1490648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **LCS-46757**	SampType: **LCS**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96451**
Client ID: **LCSS**	Batch ID: **46757**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **6/30/2008**	SeqNo: **1490649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.100	0.25	5.000	0	102	80	120				

Sample ID: **099550-005A-DUP**	SampType: **DUP**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96451**
Client ID: **ZZZZZZ**	Batch ID: **46757**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **6/30/2008**	SeqNo: **1490658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.699	0.25						6.573	14.2	20	

Sample ID: **099550-005A-MS**	SampType: **MS**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96451**
Client ID: **ZZZZZZ**	Batch ID: **46757**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **6/30/2008**	SeqNo: **1490659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.321	0.50	5.000	6.573	75.0	80	120				S

Sample ID: **099550-005A-MSD**	SampType: **MSD**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date: **6/27/2008**	RunNo: **96451**
Client ID: **ZZZZZZ**	Batch ID: **46757**	TestNo: **WET/ EPA 74 WET**		Analysis Date: **6/30/2008**	SeqNo: **1490660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.737	0.50	5.000	6.573	83.3	80	120	10.32	3.95	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_TC

Sample ID: **MB-47053**	SampType: **MBLK**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date: **7/9/2008**	RunNo: **96862**
Client ID: **PBS**	Batch ID: **47053**	TestNo: **EPA 1311/ 74**	**EPA3010A**	Analysis Date: **7/9/2008**	SeqNo: **1497355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **MB-47013 TCLP**	SampType: **MBLK**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date: **7/9/2008**	RunNo: **96862**
Client ID: **PBS**	Batch ID: **47053**	TestNo: **EPA 1311/ 74**	**EPA3010A**	Analysis Date: **7/9/2008**	SeqNo: **1497356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **LCS-47053**	SampType: **LCS**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date: **7/9/2008**	RunNo: **96862**
Client ID: **LCSS**	Batch ID: **47053**	TestNo: **EPA 1311/ 74**	**EPA3010A**	Analysis Date: **7/9/2008**	SeqNo: **1497357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.055	0.25	1.000	0	106	80	120				

Sample ID: **099405-059A-DUP**	SampType: **DUP**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date: **7/9/2008**	RunNo: **96862**
Client ID: **B20-1**	Batch ID: **47053**	TestNo: **EPA 1311/ 74**	**EPA3010A**	Analysis Date: **7/9/2008**	SeqNo: **1497368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.980	0.25						0.7264	29.7	20	R

Sample ID: **099405-059A-MS**	SampType: **MS**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date: **7/9/2008**	RunNo: **96862**
Client ID: **B20-1**	Batch ID: **47053**	TestNo: **EPA 1311/ 74**	**EPA3010A**	Analysis Date: **7/9/2008**	SeqNo: **1497369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	3.053	0.25	2.500	0.7264	93.1	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_TC

Sample ID: **099405-059A-MSD** SampType: **MSD** TestCode: **7420_TC** Units: **mg/L** Prep Date: **7/9/2008** RunNo: **96862**
Client ID: **B20-1** Batch ID: **47053** TestNo: **EPA 1311/ 74 EPA3010A** Analysis Date: **7/9/2008** SeqNo: **1497370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	3.139	0.25	2.500	0.7264	96.5	70	130	3.053	2.76	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_TC

Sample ID: **MB-47054**	SampType: **MBLK**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date: **7/9/2008**	RunNo: **96861**
Client ID: **PBS**	Batch ID: **47054**	TestNo: **EPA 1311/ 74**	**EPA3010A**	Analysis Date: **7/9/2008**	SeqNo: **1497345**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **MB-47013 TCLP**	SampType: **MBLK**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date: **7/9/2008**	RunNo: **96861**
Client ID: **PBS**	Batch ID: **47054**	TestNo: **EPA 1311/ 74**	**EPA3010A**	Analysis Date: **7/9/2008**	SeqNo: **1497346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **LCS-47054**	SampType: **LCS**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date: **7/9/2008**	RunNo: **96861**
Client ID: **LCSS**	Batch ID: **47054**	TestNo: **EPA 1311/ 74**	**EPA3010A**	Analysis Date: **7/9/2008**	SeqNo: **1497347**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.090	0.25	1.000	0	109	80	120				

Sample ID: **099729-001A-DUP**	SampType: **DUP**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date: **7/9/2008**	RunNo: **96861**
Client ID: **ZZZZZZ**	Batch ID: **47054**	TestNo: **EPA 1311/ 74**	**EPA3010A**	Analysis Date: **7/9/2008**	SeqNo: **1497352**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.415	0.25						0.3782	9.36	20	

Sample ID: **099729-001A-MS**	SampType: **MS**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date: **7/9/2008**	RunNo: **96861**
Client ID: **ZZZZZZ**	Batch ID: **47054**	TestNo: **EPA 1311/ 74**	**EPA3010A**	Analysis Date: **7/9/2008**	SeqNo: **1497353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.886	0.25	2.500	0.3782	100	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_TC

Sample ID: **099729-001A-MSD** SampType: **MSD** TestCode: **7420_TC** Units: **mg/L** Prep Date: **7/9/2008** RunNo: **96861**
Client ID: **ZZZZZZ** Batch ID: **47054** TestNo: **EPA 1311/ 74 EPA3010A** Analysis Date: **7/9/2008** SeqNo: **1497354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.872	0.25	2.500	0.3782	99.8	70	130	2.886	0.498	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 9045_S

Sample ID: **099405-091ADUP** SampType: **DUP** TestCode: **9045_S** Units: **pH Units** Prep Date: RunNo: **96118**
Client ID: **B31-0** Batch ID: **R96118** TestNo: **EPA 9045C** Analysis Date: **6/20/2008** SeqNo: **1484126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.730	0.10						6.740	0.148	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 099405
Project: EB I-80 Truck Scales, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 9045_S

Sample ID: **099405-113ADUP** SampType: **DUP** TestCode: **9045_S** Units: **pH Units** Prep Date: RunNo: **96120**
Client ID: **B38-1** Batch ID: **R96120** TestNo: **EPA 9045C** Analysis Date: **6/20/2008** SeqNo: **1484137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.860	0.10						8.880	0.225	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CHAIN OF CUSTODY RECORD

Pg 1 of 4

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____
Logged By: _____ Date: 6/19/08

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: UPS

Sample Condition Upon Receipt
1. CHILLED 18.4° Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON
Attn: C. GIUNTOLI
Address: 6671 BRISA ST.
City: LIVERMORE State: CA Zip Code: 94550
TEL: (925) 371-5900
FAX: (") " 5915

Project Name: EB I-80 TRUCK SCALE Project #: E8128-06-04 Sampler: (Printed Name) D. WATTS (Signature) D. WATTS

Relinquished by: (Signature and Printed Name) D. WATTS	Date: 6/18/08	Time: 1200	Received by: (Signature and Printed Name) [illegible]	Date: 6/18/08	Time: 1600
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name) [illegible]	Date: 6/19/08	Time: 9:40
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: D. WATTS 6/18/08 (Print Name / Date)
Signature: D. WATTS

Send Report To:
Attn: _____
Co: SEE "CLIENT"
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: _____
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:
HOMOGENIZE SAMPLES.
DO NOT COMPOSITE SAMPLE SETS.
SEE ATTACHED INSTRUCTIONS.

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides); 8082 (PCB); 8260B (Volatiles); 8270C (BNA); 6010B (Total Metal); 8015B (GRO) / 8020 (BTEX); 8015B (DRO); 8021 (BTEX); TITLE 22 / CAM 17 (6010 / 7000)

SPECIFY APPROPRIATE MATRIX: SOIL; WATER; GROUND WATER; WASTEWATER

PRESERVATION

Q A / Q C: RTNE ☐ CT ☒ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s): #	Container(s): Type	REMARKS
	0994/05-01/03	B1 - 0, 1, 2'	6/17/08	0831	E	3	Bg; P	
	-4/6	B2 -		0851				
	7/9	B3 -		0914				
	10/12	B4 -		0941				
	13/15	B5 -		0953				
	16/18	B6 -		1007				
	19/21	B7 -		1024				
	22/24	B8 -		1059				
	25/27	B9 -		1114				
	28/30	B10 -		1134				

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr; B= Emergency Next workday; C= Critical 2 Workdays; D= Urgent 3 Workdays; E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____
Logged By: _____ Date: 6/19/08

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: _____

Sample Condition Upon Receipt
1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: Attn: SEE Pg 1 | Address: City State Zip Code | TEL: ( ) FAX: ( )

Project Name: SEE Pg 1 Project #: Sampler: (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name) Witt	Date: 6/18/08	Time: 1200	Received by: (Signature and Printed Name) UPS	Date: 6/18/08	Time: 1200
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name) Kal	Date: 6-19-08	Time: 940
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: SEE Pg 1
Print Name Date
Signature

Send Report To: Attn: Co: Address City State Zip

Bill To: Attn: Co: Address City State Zip

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	099405 - 31/33	B11 - 0, 1, 2	6/17/08	1145										X				E	3	Bg P		
	- 34/36	B12 -		1159																		
	- 37/39	B13 -		1246																		
	- 40/42	B14 -		1250																		
	- 43/45	B15 -		1259																		
	- 46/48	B16 -		1303																		
	- 49/51	B17 -		1313																		
	- 52/54	B18 -		1318																		
	- 55/57	B19 -		1327																		
	- 58/60	B20 -	↓	1335										↓				↓	↓	↓		

QA/QC: RTNE ☐ CT ☒ SWRCB ☐ Logcode ____ OTHER ____

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____
Logged By: _____ Date: 6/19/08

Method of Transport
Client ☐
ATL ☐
CA OverN ☐
FEDEX ☐
Other: _____

Sample Condition Upon Receipt
1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client:
Attn: SEE Pg 1
Address:
City State Zip Code
TEL: ( )
FAX: ( )
Project Name: SEE Pg 1 Project #:
Sampler: (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name)		Date: 6/18/08	Time: 1200	Received by: (Signature and Printed Name) UPS		Date: 6/18/08	Time: 1200
Relinquished by: (Signature and Printed Name)		Date:	Time:	Received by: (Signature and Printed Name)		Date: 6-19-08	Time: 940
Relinquished by: (Signature and Printed Name)		Date:	Time:	Received by: (Signature and Printed Name)		Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
SEE Pg 1
Print Name Date
Signature

Send Report To:
Attn: _____
Co: _____
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: _____
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested

SPECIFY APPROPRIATE MATRIX

PRESERVATION

Q A / Q C
RTNE ☐
CT ☒
SWRCB ☐
Logcode ____
OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	099405-61/63	B21 - 0, 1, 2	6/18/08	0746										X				E	3	Pg 1 of 4		
	-64/65	B22 -		0755																		
	-67/69	B23 -		0801																		
	-70/72	B24 -		0822																		
	-73/75	B25 -		0814																		
	-76/78	B26 -		0833																		
	-79/81	B27 -		0827																		
	-82/84	B28 -		0842																		
	-85/87	B29 -		0834																		
	-88/90	B30 -		0905																		

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

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DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____
Logged By: _____ Date: 6/19/08

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: _____

Sample Condition Upon Receipt
1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client:
Attn: SEE Pg 1
Address:
City State Zip Code
TEL: ( )
FAX: ( )
Project Name: Project #: Sampler: (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name)	Date: 6/18/08	Time: 1200	Received by: (Signature and Printed Name)		Date: 6/18/08	Time: 1200
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Kal	Date: 6-19-08	Time: 0940
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)		Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: SEE Pg 1
Print Name Date
Signature

Send Report To:
Attn: _____
Co: _____
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: _____
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

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Circle or Add Analysis(es) Requested: 8081A (Pesticides); 8082 (PCBs); 8260B (Volatiles); 8270C (BNA); 6010B (Total Metals); 8015B (GRO) / 8020 (BTEX); 8015B (DRO); 8021 (BTEX); TITLE 22 / CAM 17 (6010 / 7000)

SPECIFY APPROPRIATE MATRIX: SOIL; WATER; GROUND WATER; WASTEWATER

PRESERVATION

Q A / Q C: RTNE ☐ CT ☒ SWRCB ☐ Logcode _____ OTHER _____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s) #	Container(s) Type	REMARKS
	094405 - 91/93	B31 - D, I, 2	6/18/08	0849	E	3	Bj, P	
	- 94/96	B32 - " "	"	0917				
	- 97/99	B33 -		0901				
	- 100/102	B34 -		0935				
	- 103/105	B35 -		0908				
	- 106/108	B36 -		0945				
	- 109/111	B37 -		0917				
	- 112/114	B38 -		0951				
	- 115/117	B39 -		0931				

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr; B= Emergency Next workday; C= Critical 2 Workdays; D= Urgent 3 Workdays; E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

Samples will be analyzed as follows:

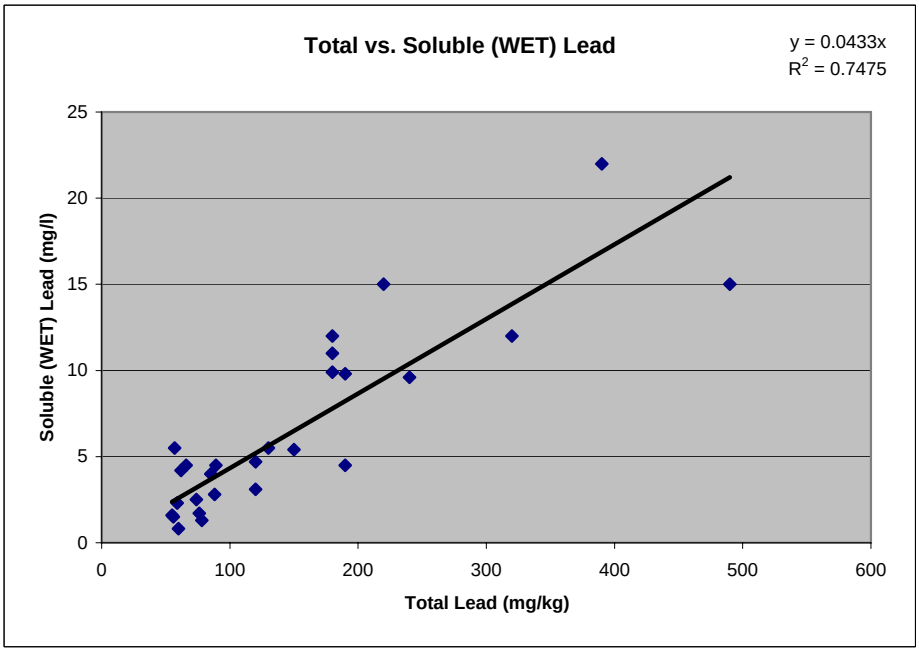
- All soil samples will be analyzed for total lead using EPA Test Method 6010.
- Ten-percent of all samples (randomly selected by the laboratory) will be analyzed for pH using EPA Test Method 9045.
- Those soil samples that exhibit a total lead concentration $\geq$ 50 mg/kg and < 1,000 mg/kg will be analyzed via the Waste Extraction Test (WET).
- Those soil samples that exhibit a total lead concentration $\geq$ 1,000 mg/kg will be analyzed via the Toxicity Characteristic Leaching Procedure (TCLP) test.
- Those soil samples that exhibit a WET soluble lead concentration $\geq$ 5 mg/l will be analyzed via the deionized-water Waste Extraction Test (WET-DI).
- Those soil samples that exhibit a total lead concentration $\geq$ 100 mg/kg *and* a WET soluble lead concentration $\geq$ 5 mg/l will be analyzed for soluble lead by the TCLP test.

All samples will be analyzed under a standard turn-around-time following sample submittal to the laboratory.

APPENDIX B

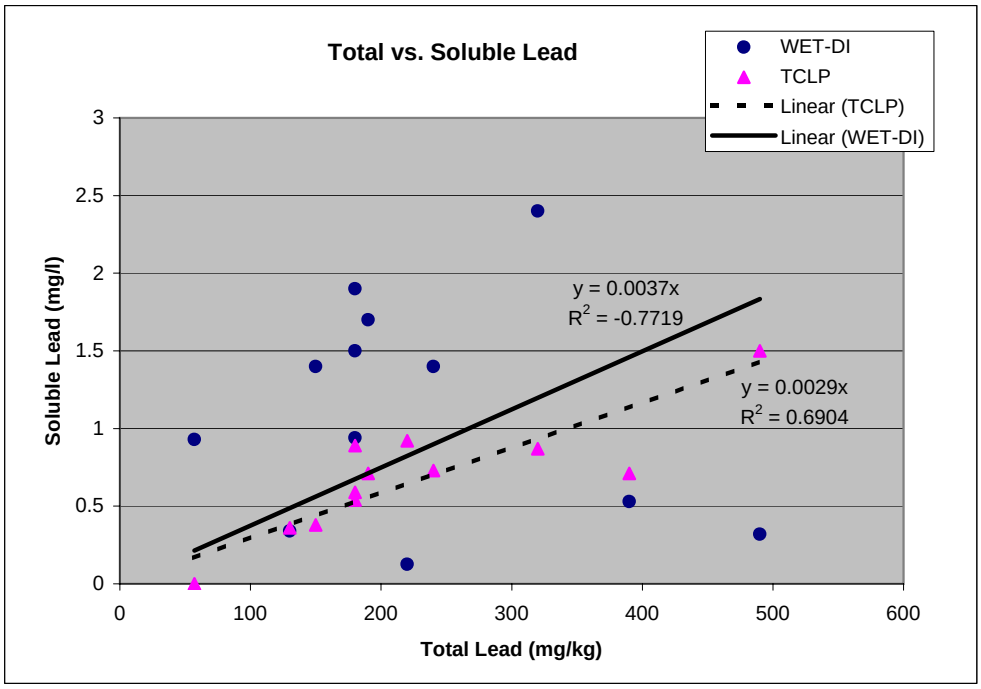
APPENDIX B - Lead Regression

Sample I.D.	Sample Depth (ft)	Total Lead (mg/kg)	WET (mg/l)
B30-0	0	60	0.82
B25-1	1	78	1.3
B26-0	0	56	1.5
B21-2	2	55	1.6
B25-0	0	76	1.7
B23-0	0	59	2.3
B4-0	0	74	2.5
B9-1	1	88	2.8
B24-2	2	120	3.1
B15-1	1	85	4.0
B14-0	0	62	4.2
B15-0	0	89	4.5
B19-1	1	190	4.5
B25-2	2	66	4.5
B6-0	0	120	4.7
B5-1	1	150	5.4
B3-0	0	130	5.5
B17-1	1	57	5.5
B20-1	1	240	9.6
B14-1	1	190	9.8
B22-2	2	180	9.9
B16-0	0	180	11
B17-2	2	320	12
B19-2	2	180	12
B12-0	0	220	15
B17-0	0	490	15
B11-0	0	390	22



APPENDIX B - Lead Regression

Sample I.D.	Sample Depth (ft)	Total Lead (mg/kg)	WET-DI (mg/l)	TCLP (mg/l)
B5-1	1	150	1.4	0.38
B3-0	0	130	0.34	0.36
B17-1	1	57	0.93	---
B20-1	1	240	1.4	0.73
B14-1	1	190	1.7	0.71
B22-2	2	180	1.9	0.54
B16-0	0	180	0.94	0.89
B17-2	2	320	2.4	0.87
B19-2	2	180	1.5	0.59
B12-0	0	220	0.125	0.92
B17-0	0	490	0.32	1.5
B11-0	0	390	0.53	0.71



Nonparametric UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

A-0

Number of Valid Observations	10
Number of Distinct Observations	9
Minimum	20
Maximum	130
Mean	55.6
Median	43
SD	40.17
Variance	1613
Coefficient of Variation	0.722
Skewness	1.162
Mean of log data	3.8
SD of log data	0.688
90% Standard Bootstrap UCL	71.35
95% Standard Bootstrap UCL	75.19

A-1

Number of Valid Observations	10
Number of Distinct Observations	7
Minimum	2.5
Maximum	150
Mean	42.8
Median	32.5
SD	46.64
Variance	2175
Coefficient of Variation	1.09
Skewness	1.523
Mean of log data	3.06
SD of log data	1.413
90% Standard Bootstrap UCL	60.46
95% Standard Bootstrap UCL	65.91

A-2

Number of Valid Observations	10
Number of Distinct Observations	8
Minimum	2.5
Maximum	31
Mean	13.07
Median	10
SD	9.445
Variance	89.2
Coefficient of Variation	0.723
Skewness	1.007
Mean of log data	2.325
SD of log data	0.764
90% Standard Bootstrap UCL	16.72
95% Standard Bootstrap UCL	17.69

B-0

Number of Valid Observations	10
Number of Distinct Observations	10
Minimum	14
Maximum	490
Mean	151.9
Median	75.5
SD	168.7
Variance	28468
Coefficient of Variation	1.111
Skewness	1.233
Mean of log data	4.348
SD of log data	1.306
90% Standard Bootstrap UCL	216.5
95% Standard Bootstrap UCL	233.5

B-1

Number of Valid Observations	10
Number of Distinct Observations	7
Minimum	2.5
Maximum	240
Mean	80.85
Median	42.5
SD	91.79
Variance	8426
Coefficient of Variation	1.135
Skewness	0.842
Mean of log data	3.294
SD of log data	1.887
90% Standard Bootstrap UCL	116.1
95% Standard Bootstrap UCL	125.3

B-2

Number of Valid Observations	10
Number of Distinct Observations	9
Minimum	2.5
Maximum	320
Mean	62.2
Median	16
SD	105.2
Variance	11061
Coefficient of Variation	1.691
Skewness	2.119
Mean of log data	2.921
SD of log data	1.646
90% Standard Bootstrap UCL	102.5
95% Standard Bootstrap UCL	113.5

C-0

Number of Valid Observations	19
Number of Distinct Observations	18
Minimum	2.5
Maximum	76
Mean	27.34
Median	18
SD	22.35
Variance	499.5
Coefficient of Variation	0.818
Skewness	0.853
Mean of log data	2.942
SD of log data	0.935
90% Standard Bootstrap UCL	33.72
95% Standard Bootstrap UCL	35.76

C-1

Number of Valid Observations	19
Number of Distinct Observations	17
Minimum	2.5
Maximum	78
Mean	17.23
Median	8.9
SD	17.89
Variance	320
Coefficient of Variation	1.038
Skewness	2.396
Mean of log data	2.47
SD of log data	0.859
90% Standard Bootstrap UCL	22.34
95% Standard Bootstrap UCL	23.8

C-2

Number of Valid Observations	19
Number of Distinct Observations	16
Minimum	2.5
Maximum	180
Mean	29.99
Median	9.1
SD	46.97
Variance	2207
Coefficient of Variation	1.566
Skewness	2.397
Mean of log data	2.571
SD of log data	1.231
90% Standard Bootstrap UCL	43.57
95% Standard Bootstrap UCL	47.52

PRIVATE PROPERTY INVESTIGATION REPORT

I-80 EASTBOUND CORDELIA TRUCK SCALE RELOCATION PROJECT FAIRFIELD, CALIFORNIA

U.S. Department of Transportation
Federal Highway Administration

Caltrans

PREPARED BY:
GEOCON CONSULTANTS, INC.
6671 BRISA STREET
LIVERMORE, CALIFORNIA

GEOCON

GEOCON PROJECT NO. E8128-06-04
CALTRANS EA No. 04-0A535

JUNE 2009

GEOCON
CONSULTANTS, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. E8128-06-04
June 25, 2009

Mr. Mike Lohman
Mark Thomas & Company, Inc.
1243 Alpine Road, Suite 222
Walnut Creek, California 94596

Subject: PRIVATE PROPERTY INVESTIGATION REPORT
I-80 EASTBOUND CORDELIA TRUCK SCALE RELOCATION PROJECT
SOLANO POST MILE 14.0 TO 15.7 and L1.8 TO L2.0
FAIRFIELD, SOLANO COUNTY, CALIFORNIA

Dear Mr. Lohman:

Geocon has performed environmental engineering services at the subject site in general accordance with the scope of work outlined in Geocon Proposal No. LE-08-015. The subject site is adjacent to California Department of Transportation (Caltrans) right-of-way located along the eastbound shoulder of Interstate 80 (Solano Post Mile 14.0 to 15.7), and State Route 12 East (Solano Post Mile L1.8 to L2.0), a distance of 1.9 miles, in Fairfield, Solano County, California.

The accompanying report summarizes the services performed including the advancement of hand-auger boreholes, limited soil and groundwater sampling, and laboratory testing.

The contents of this report reflect the views of Geocon Consultants, Inc., who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the State of California or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

If there are any questions concerning the contents of this report, or if Geocon may be of further service, please contact the undersigned at your convenience.

Sincerely,

GEOCON CONSULTANTS, INC.

Lauren Vigliotti
Senior Staff Geologist

Richard Day, CEG, CHG
Regional Manager

PROFESSIONAL GEOLOGIST
RICHARD W. DAY
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LJV:RWD

(5) Addressee

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EXECUTIVE SUMMARY

This *Private Property Investigation Report* was prepared for the Interstate 80 (I-80) Eastbound Cordelia Truck Scale Relocation Project located in Fairfield, Solano County, California. The project area consists of portions of private property parcels (proposed for State of California Department of Transportation [Caltrans] acquisition) located adjacent to and south of the eastbound shoulder of I-80 (Solano [SOL] Post Mile [PM] 14.0 to 15.7) and State Route 12 (SR-12) East (SOL PM L1.8 to L2.0) in Fairfield, Solano County, California (the Site). The site location is depicted on the Vicinity Map, Figure 1.

This report documents the site investigation for metals, pesticides, herbicides, petroleum hydrocarbons and volatile organic compounds (VOCs) in soil and groundwater on portions of private property parcels proposed for Caltrans partial acquisition. The purposes of the proposed scope of services were to evaluate whether impacts from chemicals associated with historical agricultural activities and other chemical constituents of concern exist in the surface and near surface soil, and groundwater on the private property parcels proposed for partial acquisition by Caltrans. The information obtained from this investigation will be used by the client to evaluate soil reuse and soil/groundwater disposal options, and for health, safety, and waste management purposes.

The field activities consisted of collecting soil samples on unpaved portions of private property parcels adjacent to and south of the I-80 Eastbound Caltrans right-of-way (ROW). On July 25 and August 11, 2008, 68 soil samples were collected from 34 hand-auger borings (B1, B1-GW, B2 through B32, and B32-GW). Soil samples were collected at general depths of 0 to 0.5 foot and 2.0 to 2.5 feet. Borings located adjacent to the Suisun Creek Bridge (B1-GW and B32-GW), were advanced to an approximate depth of 4.5 feet and soil samples were collected at general depths of 1.0 to 1.5 feet and 4.0 to 4.5 feet bgs. Boring B1-GW was further advanced to a depth of approximately 11.0 feet to attempt to collect a groundwater sample; however groundwater was not encountered. Borings B18 and B32-GW were further advanced to maximum depths of 10.5 feet and 13.5 feet, respectively, and grab-groundwater samples were collected. Soil boring coordinates were obtained using global positioning system (GPS) equipment. The GPS coordinates are presented in Table 1. The boring locations are depicted on the Site Plan, Figures 2a and 2b.

Geocon instructed the analytical laboratories to perform laboratory analyses under standard turn-around-time. A summary of the laboratory analyses performed are summarized below:

Composite Soil Samples

- A total of 16 composite soil samples were analyzed for California Assessment Manual (CAM) 17 metals following Environmental Protection Agency (EPA) Test Method 6010B, mercury by EPA Method 7471A, Total petroleum hydrocarbons (TPH) as gasoline (TPHg), TPH as diesel (TPHd), and TPH as motor oil (TPHmo) using EPA Test Method 8015, Fuel Oxygenate Compounds (FOCs) using EPA Method 8260B, which included: benzene, toluene,

ethylbenzene, and xylenes (BTEX), methyl tert-butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), and tert-butanol, chlorinated pesticides by EPA Test Method 8080, and chlorinated herbicides by EPA Test Method 8151.

- Four composite soil samples that exhibited total lead concentrations equal to or greater than 50 milligrams per kilogram (mg/kg; i.e., ten times the respective Soluble Threshold Limit Concentrations [STLCs]) were further analyzed for soluble lead (using the Waste Extraction Test [WET]).
- Soil sample "Composite B13-0, B14-0, B15-0, B16-0", which exhibited a soluble WET lead concentration greater than the STLC of 5.0 milligrams per liter (mg/l), was further analyzed for soluble lead (using the Toxicity Characteristic Leaching Procedure [TCLP]).
- Soil sample "Composite B29-0, B30-0, B31-0, B32-0", which exhibited pesticides concentrations greater than ten times the respective STLC values, was further analyzed for soluble WET pesticides.

Discrete Soil Samples

- A total of 16 discrete soil samples that were grouped as composites from borings B1 through B32, which exhibited total lead concentrations equal to or greater than 50 mg/kg (i.e., ten times the respective STLC values), were individually analyzed for total lead.
- Ten discrete soil samples that exhibited total lead concentrations equal to or greater than 50 mg/kg were further analyzed for soluble WET lead.
- Two discrete soil samples that exhibited soluble WET lead concentrations equal to or greater than the STLC of 5.0 mg/l were further analyzed for soluble TCLP lead.

Suisun Creek Bridge and Proposed I-80 Eastbound to State Route 12 East Connector

- Two composite soil samples were analyzed for CAM 17 metals following EPA Test Method 6010B, mercury by EPA Method 7471A, chlorinated pesticides by EPA Test Method 8080, and chlorinated herbicides by EPA Test Method 8151.
- One soil sample (Composite B17, B18, B19, B20) was analyzed for CAM 17 metals following EPA Test Method 6010B, mercury by EPA Method 7471A, TPHg, TPHd, and TPHmo using EPA Test Method 8015, chlorinated pesticides by EPA Test Method 8080, and chlorinated herbicides by EPA Test Method 8151.
- Discrete soil sample B18-0, which exhibited a total lead concentration of 100 mg/kg, exceeding ten times the STLC value of 5.0 mg/l, was further analyzed for soluble WET lead.
- Soil sample "Composite B32-GW-1, B1-GW-1", which exhibited pesticides concentrations greater than ten times the respective STLC values, was further analyzed for soluble WET pesticides.
- Grab-groundwater samples collected from borings B18 and B32-GW, located adjacent to existing and proposed bridges, were analyzed for CAM 17 metals following EPA Test Method 6010B, mercury by EPA Method 7471A, TPHg, TPHd, and TPHmo using EPA Test Method 8015, BTEX, MTBE, and VOCs by EPA Test Method 8260B.

The investigative results indicated the following:

Composite and Discrete Soil Samples

Four of the composite soil samples collected from the 0 to 0.5 foot depth interval had reported total lead concentrations greater than 50 mg/kg and were further analyzed for soluble WET lead. One of

the composite soil samples (Composite B13-0, B14-0, B15-0, B16-0) had a reported soluble WET lead concentration (6.9 milligram per liter [mg/l]) that exceeded the STLC of 5.0 mg/l.

Ten of the discrete soil samples from the four composites had reported total lead concentrations that exceeded 50 mg/kg. Three of these discrete samples (B13-0, B14-0, and B15-0) collected near the I-80 Eastbound mainline had reported soluble WET lead concentrations that exceeded the STLC of 5.0 mg/l. These soil samples are located on the parcel identified as Solano County Assessor Parcel Number (APN) 0027-272-180.

Based on the total and soluble lead results, soil between the surface and a depth of at least approximately 0.5 foot on parcel APN 0027-272-180 appears to be impacted with lead. Accordingly, soil excavated from this parcel to a depth of at least 0.5 foot may be considered California hazardous waste based on lead content. However, the reported soluble TCLP results indicate that excavated soil would not be considered RCRA hazardous waste based on lead content.

The individual CAM17 metals concentrations in soil were compared to Environmental Screening Levels (ESLs; San Francisco Regional Water Quality Control Board [SFRWQCB], November 2007, Revised May 2008). Reported arsenic concentrations in site soil were between <1.0 mg/kg and 40 mg/kg, exceeding the residential land use ESL of 0.39 mg/kg and the commercial/industrial land use ESL of 1.6 mg/kg for shallow soil (≤3 meters; SFRWQCB, Table A). Vanadium was detected in the soil samples at concentrations between 26 and 65 mg/kg, with some individual samples exceeding the residential land use ESL of 16 mg/kg for shallow soil. Lead was detected in one soil sample (B14-0) at a concentration equal to the residential land use ESL of 200 mg/kg for shallow soil. Vanadium was not detected at concentrations greater than the commercial/industrial land use ESL of 200 mg/kg.

TPHg was not detected above the laboratory reporting limit in the samples. TPHd and TPHmo were not reported in the soil samples at concentrations above their respective residential and commercial/industrial land use ESLs (SFRWQCB, Table A).

The pesticide compound 4,4'-DDE was reported in soil sample "Composite B29-0, B30-0, B31-0, B32-0" at a concentration equal to the TTLC of 1,000 µg/kg and was further analyzed via the WET. The reported soluble WET concentration of 4,4'-DDE was 0.00038 mg/l, below the STLC of 0.1 mg/l.

Dieldrin was reported in the composite soil samples collected at the Site at concentrations exceeding the residential and commercial/industrial land use ESLs of 2.3 µg/kg.

Soil

Based on the reported total and soluble WET lead concentrations of 100 mg/kg and 2.6 mg/l, respectively, for discrete soil sample B18-0, soil excavated from this area would not be considered California hazardous waste based on lead content.

The composite soil samples collected from the 1.0 to 1.5 ft and 4.0 to 4.5 ft depth intervals did not contain concentrations of CAM17 metals above their respective STLC values.

Reported arsenic concentrations in the soil samples collected from the 1.0 to 1.5 ft and 4.0 to 4.5 ft depth intervals were 13 mg/kg and 7.7 mg/kg, respectively, exceeding the residential and commercial/industrial land use ESLs for shallow soil (0.39 mg/kg and 1.6 mg/kg; SFRWQCB, Table A). Vanadium was detected in the soil samples collected from the 1.0 to 1.5 ft and 4.0 to 4.5 ft depth intervals at concentrations of 52 mg/kg and 55 mg/kg, respectively, exceeding the residential land use ESL of 16 mg/kg for shallow soil. Vanadium was not detected at concentrations greater than the commercial/industrial land use ESL of 200 mg/kg.

The pesticide compound 4,4'-DDE was reported in the soil sample "Composite B32-GW-1, B1-GW-1" at a concentration of 2,400 µg/kg, exceeding the TTLC of 1,000 µg/kg, and was further analyzed via the WET method. The reported soluble WET concentration of 4,4'-DDE was 0.0028 mg/l, below the STLC of 0.1 mg/l.

Dieldrin was reported in the soil sample collected from the 1.0 to 1.5 foot depth interval at a concentration exceeding the residential and commercial/industrial land use ESLs of 2.3 µg/kg. Additionally, the soil sample from the 1.0 to 1.5 foot depth interval had a reported 4,4'-DDE concentration of 2,400 µg/kg, exceeding the residential land use ESL of 1,700 µg/kg.

Groundwater

Reported concentrations of the following total metals in the groundwater samples exceeded their respective ESLs for *Groundwater that IS a Current or Potential Source of Drinking Water* (SFRWQCB, Table A): barium, chromium, cobalt, lead, nickel, and vanadium. Detected concentrations of total and dissolved metals were below their respective ESLs for *Groundwater that is NOT a Current or Potential Source of Drinking Water* (SFRWQCB, Table C).

Based on the analytical results of the grab-groundwater samples collected at the Site, groundwater extracted during construction may require treatment to reduce sediment load and metals content prior to discharge to surface water bodies or publicly owned treatment works (POTW).

Grab-groundwater samples collected at the Site did not contain concentrations of TPHd, TPHmo, TPHg, BTEX, MTBE, or VOCs above their respective laboratory reporting limits.

Recommendations

The analytical results for metals indicate that surface soil at the Site appears to be impacted with arsenic and lead due to agricultural use to a depth of approximately 2.5 feet with reported concentrations exceeding their respective ESLs. Surface soil at the Site also appears to be impacted with pesticides, with the exception soil borings B21 through B24 (western portion of the Site). Soil at depths greater than 2.5 ft generally contains lower levels of pesticides. In addition, soil at depths greater than 2.5 ft in the vicinity of the proposed TIF (borings B1 through B8) does not contain concentrations of pesticides above their respective ESLs. Accordingly, offsite reuse or disposal of soil excavated from the surface to a depth of 2.5 ft may be restricted based on metals and pesticides content.

As discussed previously in Section 6.1, soil excavated from parcel APN 0027-272-180 from the surface to a depth of at least approximately 0.5 ft may be considered California hazardous waste based on lead content. Geocon recommends that soil excavated from this portion of the Site be either (1) managed and disposed of as a California hazardous waste or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable.

Worker Protection

The contractor(s) should prepare a project-specific health and safety plan to prevent or minimize worker exposure to metals and pesticides impacted soil. The plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other appropriate health and safety protocols and procedures for the handling of impacted soil.

PRIVATE PROPERTY INVESTIGATION REPORT

1.0 INTRODUCTION

This *Private Property Investigation Report* was prepared for the I-80 Eastbound Cordelia Truck Scale Relocation Project located in Fairfield, Solano County, California. The project area consists of portions of private property parcels (proposed for State of California Department of Transportation [Caltrans] acquisition) located adjacent to and south of the eastbound Caltrans right-of-way (ROW) of Interstate 80 (I-80) (Solano [SOL] Post Mile [PM] 14.0 to 15.7) and State Route 12 (SR-12) East (SOL PM L1.8 to L2.0) in Fairfield, Solano County, California (the Site). The site location is depicted on the Vicinity Map, Figure 1.

This report documents the site investigation for metals, pesticides, herbicides, and petroleum hydrocarbons in soil, and metals, petroleum hydrocarbons, and volatile organic compounds (VOCs) in groundwater on portions of private property parcels proposed for Caltrans partial acquisition. Private property parcels are located adjacent to and south of the eastbound I-80 Caltrans right-of-way (ROW) at the Site. The soil borings advanced during the limited site investigation within the project area are depicted in the Site Plan, Figures 2a and 2b.

1.1 Purpose

The purposes of the proposed scope of services were to evaluate whether impacts from chemicals associated with historical agricultural activities and other chemical constituents of concern exist in the surface and near surface soil, and groundwater on the private property parcels proposed for partial acquisition by Caltrans. The private property parcels are proposed for acquisition to accommodate relocation of the I-80 Eastbound Cordelia Truck Inspection Facility (TIF) and associated project roadway construction. Soil samples were collected at two depths from each boring for the purpose of evaluating vertical impacts of potential chemicals associated with historical agricultural land use constituents of concern in soil.

The soil samples collected from each depth interval at the Site were combined into four-point composites for analysis. The rationale for analyzing composite soil samples was to obtain representative data regarding soil conditions at parcels proposed for partial ROW acquisition due to historical land uses. The private property investigation does not include existing Caltrans ROW and was not conducted to evaluate ADL; therefore, we modified our sampling methodology accordingly. Our Aerially Deposited Lead (ADL) Investigation Report (November 2008) completed for the project area presents statistical analysis of lead data from discrete samples collected along the existing ROW.

Additional soil borings were advanced adjacent to one existing bridge structure (Suisun Creek Bridge) and at one proposed bridge structure (elevated connector from I-80 Eastbound to

SR-12 East). Soil samples from two depth intervals and a grab-groundwater sample were collected from each boring to evaluate levels of metals, petroleum hydrocarbons, and VOCs at these locations.

Soil samples were not collected from four small parcels proposed for acquisition located east of Hale Ranch Road. Although soil samples were not collected from these small parcels, soil sample results collected from borings on private properties located west of Hale Ranch Road were generally consistent across the parcels, and land in the vicinity of the private properties has a similar history of agricultural use. Based on the adjacent locations of the sliver parcels to areas sampled during our investigation, we assert that soil on the sliver parcels may be treated in a similar manner to soil on private properties where samples were collected. Furthermore, these four parcels comprise less than one percent of the total square footage of land proposed for ROW acquisition. Therefore, the analytical results for soil samples collected at the other portions of the project are considered representative of the overall site conditions.

The information obtained from this investigation will be used by the client to evaluate soil reuse and soil/groundwater disposal options, and for health, safety, and waste management purposes.

1.2 Proposed Improvements

Under the proposed build alternative, the I-80 Eastbound Cordelia TIF would be reconstructed approximately 2,500 feet east of its present location. The exit ramp from I-80 Eastbound to the new truck scale facility would utilize the existing I-80 Eastbound exit ramp location and geometry, which consists of a dedicated exit ramp and a shared through-exit lane. The new exit ramp would continue as a two-lane roadway through the existing Cordelia TIF, and be widened to four lanes immediately west of Suisun Creek. The new exit ramp would cross over Suisun Creek on a new bridge before entering the new truck scale facility. A new two lane eastbound roadway would exit from the TIF and split approximately 1,300 feet east with one lane merging onto I-80 Eastbound and the second lane connecting to the I-80 Eastbound to SR-12 East connector.

The I-80 Eastbound connector to SR-12 East would be reconstructed as a two-lane ramp crossing over ("braided with") the truck scale entrance ramp to I-800 Eastbound. A new dedicated lane on I-80 would begin approximately 2,500 feet west of the exit point to the connector. The two lane connector would continue east becoming SR-12 East, with the truck scale entrance ramp joining as an auxiliary lane that would end at the SR-12 East/Chadbourne Road interchange exit ramp. Construction work on existing bridge structures is not proposed as part of the I-80 Eastbound Cordelia Truck Scales Relocation Project.

Partial private property acquisitions on land adjoining existing Caltrans right-of-way (ROW) will be required to accommodate the proposed project improvements. A figure depicting the I-80

Eastbound Cordelia Truck Scale Relocation Project Vicinity is presented in Appendix A. Figures indicating private property parcels proposed for land acquisition are presented in Appendix B.

2.0 BACKGROUND

We conducted an Initial Site Assessment (ISA) of the project area and presented the results in our report titled, *Eastbound I-80 Cordelia Truck Scale Relocation Project, Fairfield, Solano County, California, Revised Initial Site Assessment*, dated September 26, 2008, and approved by Caltrans on October 15, 2008. The conclusions of our ISA included the following:

- Further evaluation of conditions within the existing ROW and on private properties proposed for full or partial acquisition for the improvement projects is recommended. More specifically, private properties within the project environmental study area (ESA) with known current and/or historical agricultural uses should be evaluated for potential soil impacts from pesticides, herbicides, metals, and petroleum hydrocarbons.

- Aerially deposited lead (ADL) at levels exceeding hazardous waste criteria have been identified in shallow soil along the unpaved shoulders and median within the existing I-80 ROW in portions of the project ESA. ADL studies should be performed at any areas on the eastbound I-80 not previously investigated and at the SR-12 East corridor to determine lead levels in planned excavation areas and associated soil material management and disposal requirements. This work is recommended to evaluate management and disposal of potentially contaminated soil, and construction worker health and safety requirements.

The ISA also identified the potential for asbestos-containing materials and lead-containing paint (LCP) to be used in structures located within the existing Caltrans ROW and those located on private properties proposed for partial acquisition. The ISA recommended that asbestos and LCP surveys be conducted for these structures prior to demolition. We conducted an ADL investigation within the existing Caltrans ROW, and also an asbestos and LCP survey of the eastbound I-80 TIF. The results of these investigations are presented under separate cover.

2.1 Hazardous Waste Determination Criteria

Regulatory criteria to classify a waste as California hazardous for handling and disposal purposes are contained in the CCR, Title 22, Division 4.5, Chapter 11, Article 3, §66261.24. Criteria to classify a waste as Resource, Conservation, and Recovery Act (RCRA) hazardous are contained in Chapter 40 of the Code of Federal Regulations (40 CFR), Section 261.

For waste containing metals, the waste is classified as California hazardous when: 1) the total metal content exceeds the respective Total Threshold Limit Concentration (TTLC); or 2) the soluble metal content exceeds the respective Soluble Threshold Limit Concentration (STLC) based on the standard Waste Extraction Test (WET). A waste may have the potential of exceeding the STLC when the waste's total metal content is greater than or equal to ten times the respective STLC value, since the WET uses a 1:10 dilution ratio. Hence, when a total metal is detected at a

concentration greater than or equal to ten times the respective STLC, and assuming that 100 percent of the total metals are soluble, soluble metal analysis is required. A material is classified as RCRA hazardous, or Federal hazardous, when the soluble metal content exceeds the Federal regulatory level based on the Toxicity Characteristic Leaching Procedure (TCLP). The TTLC value for lead is 1,000 mg/kg. The STLC and TCLP values for lead are both 5.0 milligrams per liter (mg/l).

The above regulatory criteria are based on chemical concentrations. Wastes may also be classified as hazardous based on other criteria such as ignitability and corrosivity; however, for the purposes of this investigation, toxicity (i.e., lead concentrations) is the primary factor considered for waste classification since waste generated during the construction activities would not likely warrant testing for ignitability or other criteria.

2.2 Environmental Screening Levels

The San Francisco Bay Regional Water Quality Control Board (SFRWQCB) has prepared a technical report entitled *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater, Interim Final* (November 2007, Revised May 2008), which presents Environmental Screening Levels (ESLs) for soil, groundwater, soil gas, and surface water, to assist in evaluating sites impacted by releases of hazardous chemicals The ESLs are conservative values for more than 100 commonly detected contaminants, which may be used to compare with environmental data collected at a site. ESLs are strictly risk assessment tools and "not regulatory clean up standards." The presence of a chemical at concentrations in excess of an ESL does not necessarily indicate that adverse impacts to human health or the environment are occurring; this simply indicates that a potential for adverse risk may exist and that additional evaluation is or may be warranted (SFRWQCB, 2008).

The most restrictive ESL table was used for this characterization: Table A – Shallow Soil (less than or equal to [≤3] meters below ground surface [bgs]) – Groundwater is a Current or Potential Source of Drinking Water. The respective ESLs are listed at the end of Tables 2 through 6. The respective TTLC and STLC values are also listed on the tables for comparative purposes.

3.0 SCOPE OF SERVICES

We performed the following scope of services:

3.1 Pre-Field Activities

- Prepared the *Draft Limited Site Investigation Workplan, Private Parcels Adjacent to the Eastbound I-80 Truck Scale Relocation Project, Fairfield, California,* dated July 24, 2008.

- Revised a Health and Safety Plan (HSP) for the project that provided guidelines on the use of personal protective equipment and the health and safety procedures to be implemented during the investigation activities.
- Retained the services of Advanced Technology Laboratories (ATL) to perform the chemical analyses of soil and groundwater samples.

3.2 Field Activities

The field activities consisted of collecting soil samples on unpaved portions of private property parcels adjacent to and south of the I-80 Eastbound Caltrans ROW. On July 25 and August 11, 2008, 68 soil samples were collected from 34 hand-auger borings (B1, B1-GW, B2 through B32, and B32-GW). With the exception of borings advanced adjacent to the Suisun Creek Bridge location, the soil borings were excavated to an approximate maximum depth of 2.5 feet (ft). Soil samples were collected at general depths of 0 to 0.5 ft and 2.0 to 2.5 ft bgs.

Borings located adjacent to the Suisun Creek Bridge (B1-GW and B32-GW), the soil borings were advanced to an approximate depth of 4.5 ft and soil samples were collected at general depths of 1.0 to 1.5 ft and 4.0 to 4.5 ft bgs. Boring B1-GW was further advanced to a depth of approximately 11.0 ft to attempt to collect a groundwater sample; however groundwater was not encountered. At the boring advanced adjacent to the proposed elevated connector from I-80 Eastbound to SR-12 East (B18) the soil boring was excavated to an approximate depth of 2.5 ft and soil samples were collected at general depths of 0 to 0.5 ft and 2.0 to 2.5 ft bgs. Borings B18 and B32-GW were further advanced to maximum depths of 10.5 ft and 13.5 ft, respectively, and grab-groundwater samples were collected.

Soil boring coordinates were obtained using global positioning system (GPS) equipment. The GPS coordinates are presented in Table 1. The boring locations are depicted on the Site Plan, Figures 2a and 2b.

4.0 INVESTIGATIVE METHODS

4.1 Sampling Procedures

The soil samples obtained from hand auger borings were collected into stainless steel sample tubes, capped with Teflon tape and plastic end caps. Grab-groundwater samples were collected in laboratory-supplied glass and plastic containers. The sample containers were labeled and placed in chilled ice chests for transport to the analytical laboratory. The soil and grab-groundwater samples were transported to ATL for analysis utilizing standard chain-of-custody documentation. Completed hand auger borings were backfilled to surface grade with soil cuttings.

Sampling equipment was cleansed by washing the equipment with a Liquinox solution followed by two successive rinses with distilled water. The decontamination water was returned to the site

surface away from storm drains and inlets in a manner not to create runoff.

4.2 Laboratory Analyses

Geocon instructed the analytical laboratories to perform laboratory analyses under standard turn-around-time. Reproductions of the laboratory reports and chain-of-custody documentation are presented as Appendix C. The laboratory analyses performed are summarized below:

4.2.1 Composite Soil Samples

- At borings B1 through B32, 16 composite soil samples collected from the same depth intervals were analyzed for the following:
  - California Assessment Manual 17 (CAM17) metals following Environmental Protection Agency (EPA) Test Method 6010B, mercury by EPA Method 7471A,
  - Total petroleum hydrocarbons (TPH) as gasoline (TPHg), TPH as diesel (TPHd), and TPH as motor oil (TPHmo) using EPA Test Method 8015
  - Fuel Oxygenate Compounds (FOC) using EPA Method 8260B, which included: benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tert-butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), and tert-butanol
  - Chlorinated pesticides by EPA Test Method 8080
  - Chlorinated herbicides by EPA Test Method 8151.
- The four composite soil samples that exhibited total lead concentrations equal to or greater than 50 mg/kg (i.e., ten times the respective STLC values) were further analyzed for soluble WET lead.
- Soil sample "Composite B13-0, B14-0, B15-0, B16-0" exhibited a soluble WET lead concentration greater than the STLC of 5.0 mg/l and was further analyzed for soluble TCLP lead.
- Soil sample "Composite B29-0, B30-0, B31-0, B32-0" exhibited pesticides concentrations greater than ten times the respective STLC values and was further analyzed for soluble WET pesticides.

4.2.2 Discrete Soil Samples

- A total of 16 discrete soil samples that were grouped as composites from borings B1 through B32, which exhibited total lead concentrations equal to or greater than 50 mg/kg (i.e., ten times the respective STLC values), were individually analyzed for total lead.
- Ten discrete soil samples that exhibited total lead concentrations equal to or greater than 50 mg/kg were further analyzed for soluble WET lead.
- Two discrete soil samples that exhibited soluble WET lead concentrations equal to or greater than the STLC of 5.0 mg/l were further analyzed for soluble TCLP lead.

4.2.3 Suisun Creek Bridge and Proposed I-80 Eastbound to SR12 East Connector

Soil Samples

- At soil borings advanced adjacent to Suisun Creek Bridge (B1-GW and B32-GW), soil samples collected from the same depth intervals (1.0 to 1.5 ft and 4.0 to 4.5 ft) were grouped into 2-part composites (two total) and analyzed for CAM17 metals following EPA Test Method 6010B, mercury by EPA Method 7471A, chlorinated pesticides by EPA Test Method 8080, and chlorinated herbicides by EPA Test Method 8151.
- At the soil boring advanced at the proposed flyover bridge location (B18), soil samples were grouped into one 4-part composite with samples from the same depth intervals collected from nearby borings (Composite B17, B18, B19, B20) and analyzed for CAM 17 metals following EPA Test Method 6010B, mercury by EPA Method 7471A, TPHg, TPHd, and TPHmo using EPA Test Method 8015, chlorinated pesticides by EPA Test Method 8080, and chlorinated herbicides by EPA Test Method 8151.
- Discrete soil sample B18-0, which exhibited a total lead concentration of 100 mg/kg, exceeding ten times the STLC value of 5.0 mg/l, was further analyzed for soluble WET lead.
- Soil sample "Composite B32-GW-1, B1-GW-1", which exhibited pesticides concentrations greater than ten times the respective STLC values, was further analyzed for soluble WET pesticides.

Grab-Groundwater Samples

Grab-groundwater samples collected from borings B18 and B32-GW, located adjacent to existing and proposed bridges, were analyzed for CAM17 metals following EPA Test Method 6010B, mercury by EPA Method 7471A, TPHg, TPHd, and TPHmo using EPA Test Method 8015, benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tert-butyl ether (MTBE), and VOCs by EPA Test Method 8260B.

4.2.4 Quality Assurance/Quality Control Procedures

Quality assurance/quality control (QA/QC) procedures were performed for each method of analysis with specificity for each analyte listed in the test method's QA/QC. The laboratory QA/QC procedures included the following:

- One method blank for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One sample analyzed in duplicate for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One spiked sample for every ten samples, batch of samples or type of matrix, whichever was more frequent, with spike made at ten times the detection limit or at the analyte level.

Prior to submitting the soil samples to the laboratory, the chain-of-custody documentation was reviewed for accuracy and completeness.

5.0 INVESTIGATIVE RESULTS

Analytical results for the soil samples are summarized in Tables 2 through 4.

5.1 Composite Soil Samples

- Total metals were detected in the composite soil samples at concentrations below ten times their respective STLC values, with the exception of lead, which was detected in four of the composite soil samples at concentrations above 50 mg/kg (i.e. ten times the STLC of 5 mg/l); total lead was reported in these four of the composite samples at concentrations between 61 and 130 mg/kg.
- Soluble WET lead was reported in four composite soil samples at concentrations ranging from 0.77 to 6.9 mg/l.
- Soluble TCLP lead was not detected above the laboratory reporting limit of 0.25 mg/l in soil sample "Composite B13-0, B14-0, B15-0, B16-0."
- TPHd was reported in the composite soil samples at concentrations ranging from <1.0 to 46 mg/kg.
- TPHmo was reported in the composite soil samples at concentrations ranging from <1.0 to 120 mg/kg.
- TPHg was not detected in the composite soil samples above the laboratory reporting limit of 1.0 mg/kg.
- Chlorinated pesticides were detected in the composite soil samples as follows: 4,4'-DDE was reported at concentrations between <2.0 and 1,000 micrograms per kilogram (µg/kg), 4,4'-DDT was reported at concentrations between <2.0 and 410 µg/kg, 4,4'-DDD was reported at concentrations between <2.0 and 36 µg/kg, and dieldrin was reported at concentrations between <2.0 and 43 µg/kg.
- Soluble WET pesticides were reported in soil sample "Composite B29-0, B30-0, B31-0, B32-0"as follows: 4,4'-DDE and 4,4'-DDT at concentrations of 0.00038 µg/l and 0.00014 µg/l, respectively; 4,4'-DDD was not detected above the laboratory reporting limit of 0.000056 µg/l in the sample.
- Chlorinated herbicides and VOCs were not reported in the composite soil samples above their respective laboratory reporting limits.

5.2 Discrete Soil Samples

- Total lead was reported in the discrete soil samples at concentrations ranging from 29 to 200 mg/kg, with ten samples exceeding 50 mg/kg (i.e. ten times the STLC of 5.0 mg/kg).
- Soluble WET lead was reported in the ten discrete soil samples at concentrations ranging from 1.1 to 9.0 mg/l.
- Soluble TCLP lead was reported in two discrete soil samples at concentrations of 0.34 mg/l and 0.38 mg/l.

5.3 Suisun Creek and Proposed I-80 Eastbound to SR12 East Connector

Analytical results for soil and groundwater samples collected from the Suisun Creek Bridge and proposed elevated connector from I-80 Eastbound to SR-12 East locations are summarized in Tables 2 through 6.

5.3.1 Soil Samples

- Total metals were detected in the composite soil samples at concentrations below ten times their respective STLC values, with the exception of lead, which was detected in the two composite soil samples above 50 mg/kg (i.e. ten times the STLC of 5 mg/l).
- Discrete soil sample B18-0 was analyzed for total lead, with a reported concentration of 100 mg/kg, because the corresponding composite sample had a reported lead concentration above 50 mg/kg (i.e., ten times the STLC of 5 mg/l).
- Soluble WET lead was reported in discrete soil sample B18-0 at a concentration of 2.6 mg/l, below the STLC of 5.0 mg/l.
- Chlorinated pesticides were detected in the composite soil samples as follows: 4,4'-DDE was reported in the samples collected from the 1-foot and 4-foot depth intervals at concentrations of 2,400 µg/kg and 5.8 µg/kg, respectively; 4,4'-DDT, 4,4'-DDD, and dieldrin were reported in the sample collected from the 1-foot depth interval at concentrations of 680 µg/kg, 32 µg/kg, and 10 µg/kg, respectively.
- Soil sample "Composite B32-GW-1, B1-GW-1" had reported soluble WET concentrations of 4,4'-DDE, and 4,4'-DDT of 0.0028 µg/l and 0.00097 µg/l, respectively; 4,4'-DDD was not detected above the laboratory reporting limit of 0.000056 µg/l in the sample.

5.3.2 Groundwater Samples

- The following total metals were detected above their respective laboratory reporting limits in the grab-groundwater samples: barium, chromium, cobalt, copper, lead, mercury, nickel, vanadium, and zinc. Total concentrations of antimony, arsenic, beryllium, cadmium, molybdenum, selenium, silver, and thallium were not detected above their respective laboratory reporting limits in the grab-groundwater samples.
- Grab-groundwater sample B32-GW was also analyzed for dissolved CAM 17 metals, which were not detected above their respective laboratory reporting limits, with the exception of barium and zinc.
- TPHd, TPHmo, TPHg, BTEX, and VOCs were not detected in the grab-groundwater samples above their respective laboratory reporting limits.

5.4 Laboratory Quality Assurance/Quality Control

We reviewed the laboratory QA/QC provided with the laboratory report. The data show acceptable surrogate recoveries and non-detect results for the method blanks.

The relative percent differences (RPDs) of several duplicate samples were outside criteria. Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) were outside recovery criteria for several of the analyses. The Case Narratives in the laboratory reports state that each analytical batch was

validated by the Laboratory Control Sample (LCS). The data showed acceptable recoveries and RPDs for the remainder of the duplicates and matrix spikes. Several of the soil samples required dilution for metals and pesticides analysis, due to matrix effects. The surrogate recovery values were biased high in a number of the samples analyzed for VOCs via Method 8260B, possibly due to sample matrix.

Additionally, soil sample "Composite B32-GW-1, B1-GW-1" was analyzed for soluble WET pesticides outside of the holding time of 14 days. However, the other QA/QC results were all within allowable limits and the holding time exceedence is not likely to affect the usability of the sample results for the purposes of this report.

Based on this limited data review, no additional qualifications of the soil data are necessary and the data are of sufficient quality for the purposes of this report.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Composite and Discrete Soil Samples

Metals

Four of the composite soil samples collected from the 0 to 0.5 ft depth interval had reported total lead concentrations greater than 50 mg/kg (i.e. ten times the STLC of 5.0 mg/l), and were further analyzed for soluble WET lead. One of the composite soil samples (Composite B13-0, B14-0, B15-0, B16-0) had a reported soluble WET lead concentration (6.9 mg/l) that exceeded the STLC of 5.0 mg/l.

Ten of the discrete soil samples from the four composites had reported total lead concentrations that exceeded 50 mg/kg. Three of these discrete samples (B13-0, B14-0, and B15-0) collected near the I-80 Eastbound mainline had reported soluble WET lead concentrations that exceeded the STLC of 5.0 mg/l. These soil samples are located on the parcel identified as Solano County Assessor Parcel Number (APN) 0027-272-180.

Based on the total and soluble lead results, soil between the surface and a depth of at least approximately 0.5 ft on parcel APN 0027-272-180 appears to be impacted with lead. Accordingly, soil excavated from this parcel to a depth of at least 0.5 ft may be considered California hazardous waste based on lead content. However, based on the reported soluble TCLP results, excavated soil would not be considered RCRA hazardous waste based on lead content.

The individual CAM17 metals concentrations in soil were compared to ESLs (SFRWQCB, November 2007, Revised May 2008). Reported arsenic concentrations in site soil were between <1.0 mg/kg and 40 mg/kg, exceeding the residential land use ESL of 0.39 mg/kg and the commercial/industrial land use ESL of 1.6 mg/kg for shallow soil (≤3 meters; SFRWQCB, Table A). Vanadium was detected in the soil samples at concentrations between 26 and 65 mg/kg, with some individual samples exceeding the residential land use ESL of 16 mg/kg for shallow soil. Lead was detected in one soil sample (B14-0) at a concentration equal to the residential land use ESL of 200 mg/kg for shallow soil. Vanadium was not detected at concentrations greater than the commercial/industrial land use ESL of 200 mg/kg.

Total Petroleum Hydrocarbons

TPHg was not detected above the laboratory reporting limit in the samples. TPHd and TPHmo were not reported in the soil samples at concentrations above their respective residential and commercial/industrial land use ESLs (SFRWQCB, Table A).

Pesticides

The pesticide compound 4,4'-DDE was reported in soil sample "Composite B29-0, B30-0, B31-0, B32-0" at a concentration equal to the TTLC of 1,000 µg/kg and was further analyzed via the WET. The reported soluble WET concentration of 4,4'-DDE was 0.00038 mg/l, below the STLC of 0.1 mg/l.

Dieldrin was reported in the composite soil samples collected at the Site at concentrations exceeding the residential and commercial/industrial land use ESLs of 2.3 µg/kg.

6.2 Suisun Creek Bridge and Proposed I-80 Eastbound to SR12 East Connector

6.2.1 Soil

Metals

Based on the reported total and soluble WET lead concentrations of 100 mg/kg and 2.6 mg/l, respectively, for discrete soil sample B18-0, soil excavated from this area would not be considered California hazardous waste based on lead content.

The composite soil samples collected from the 1.0 to 1.5 ft and 4.0 to 4.5 ft depth intervals did not contain concentrations of CAM17 metals above their respective STLC values.

Reported arsenic concentrations in the soil samples collected from the 1.0 to 1.5 ft and 4.0 to 4.5 ft depth intervals were 13 mg/kg and 7.7 mg/kg, respectively, exceeding the residential and commercial/industrial land use ESLs for shallow soil (0.38 mg/kg and 1.5 mg/kg; SFRWQCB, Table A). Vanadium was detected in the soil samples collected from the 1.0 to 1.5 ft and 4.0 to 4.5 ft depth intervals at concentrations of 52 mg/kg and 55 mg/kg, respectively, exceeding the residential land use ESL of 16 mg/kg for shallow soil. Vanadium was not detected at concentrations greater than the commercial/industrial land use ESL of 200 mg/kg.

Pesticides

The pesticide compound 4,4'-DDE was reported in the soil sample "Composite B32-GW-1, B1-GW-1" at a concentration of 2,400 µg/kg, exceeding the TTLC of 1,000 µg/kg, and was further analyzed via the WET. The reported soluble WET concentration of 4,4'-DDE was 0.0028 mg/l, below the STLC of 0.1 mg/l.

Dieldrin was reported in the soil sample collected from the 1.0 to 1.5 foot depth interval at a concentration exceeding the residential and commercial/industrial land use ESLs of 2.3 µg/kg. Additionally, the 1.0 to 1.5 foot depth soil sample had a reported 4,4'-DDE concentration of 2,400 µg/kg, exceeding the residential land use ESL of 1,700 µg/kg.

6.2.2 Groundwater

Metals

Reported concentrations of the following total metals in the groundwater samples exceeded their respective ESLs for *Groundwater that IS a Current or Potential Source of Drinking Water* (SFRWQCB, Table A): barium, chromium, cobalt, lead, nickel, and vanadium. Detected concentrations of total and dissolved metals were below their respective ESLs for *Groundwater that is NOT a Current or Potential Source of Drinking Water* (SFRWQCB, Table C).

Based on the analytical results of the grab-groundwater samples collected at the Site, groundwater extracted during construction may require treatment to reduce sediment load and metals content prior to discharge to surface water bodies or publicly owned treatment works (POTW).

Organics

Grab groundwater samples collected at the Site did not contain concentrations of TPHd, TPHmo, TPHg, BTEX, MTBE, or VOCs above their respective laboratory reporting limits.

6.3 Recommendations

The analytical results for metals indicate that surface soil at the Site appears to be impacted with arsenic and lead due to agricultural use to a depth of approximately 2.5 feet with reported concentrations exceeding their respective ESLs. Surface soil at the Site also appears to be impacted with pesticides, with the exception soil borings B21 through B24 (western portion of the Site). Soil at depths greater than 2.5 ft generally contains lower levels of pesticides. In addition, soil at depths greater than 2.5 ft in the vicinity of the proposed TIF (borings B1 through B8) does not contain concentrations of pesticides above their respective ESLs. Accordingly, offsite reuse or disposal of soil excavated from the surface to a depth of 2.5 ft may be restricted based on metals and pesticides content.

As discussed previously in Section 6.1, soil excavated from parcel APN 0027-272-180 from the surface to a depth of at least approximately 0.5 ft may be considered California hazardous waste based on lead content. Geocon recommends that soil excavated from this portion of the Site be either (1) managed and disposed of as a California hazardous waste or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable.

6.4 Worker Protection

The contractor(s) should prepare a project-specific health and safety plan to prevent or minimize worker exposure to metals and pesticides impacted soil. The plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other appropriate health and safety protocols and procedures for the handling of impacted soil.

7.0 REPORT LIMITATIONS

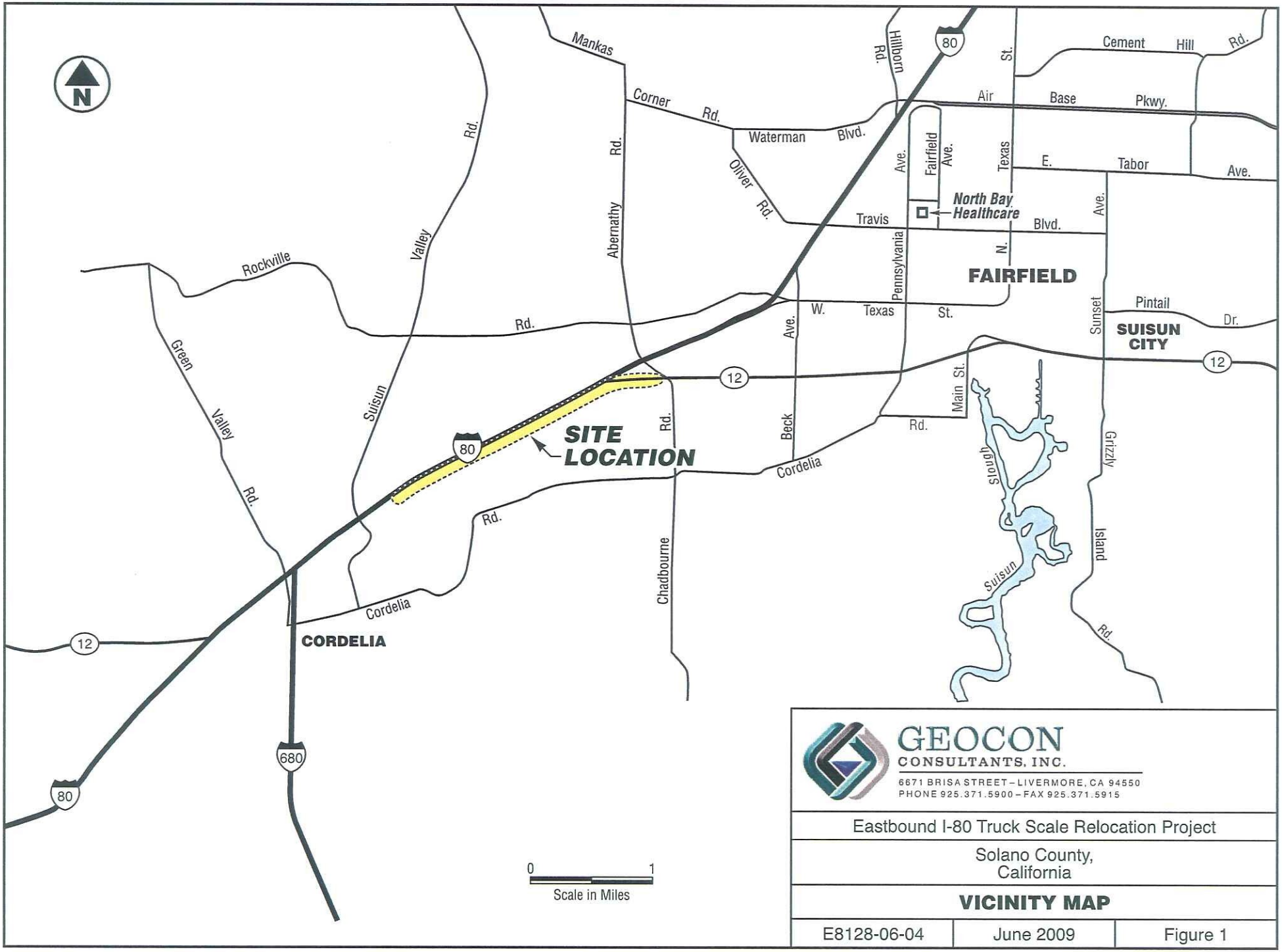
This report has been prepared exclusively for Mark Thomas and Company, Inc. The information contained herein is only valid as of the date of the field sampling, and will require an update to reflect additional information obtained.

This report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein. Therefore, the report should be deemed conclusive with respect to only the information obtained. We make no warranty, express or implied, with respect to the content of this report or any subsequent reports, correspondence or consultation. Geocon strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

TABLE 1
Boring Coordinates
I-80 Eastbound Cordelia Truck Scale Relocation Project
Private Property Parcels
Fairfield, California

Boring	Northing	Easting
B1	6,529,595.075	1,845,960.756
B1-GW	6,529,501.210	1,845,922.090
B2	6,530,367.343	1,846,424.822
B3	6,530,854.608	1,846,696.005
B4	6,531,248.243	1,846,865.044
B5	6,530,244.636	1,846,089.402
B6	6,530,518.801	1,846,249.733
B7	6,530,845.789	1,846,392.197
B8	6,531,220.001	1,846,562.302
B9	6,530,325.522	1,845,823.568
B10	6,530,735.685	1,845,946.767
B11	6,531,009.845	1,846,126.329
B12	6,531,291.735	1,846,322.943
B13	6,531,316.011	1,846,954.129
B14	6,531,703.084	1,847,165.069
B15	6,531,986.090	1,847,291.068
B16	6,532,552.199	1,847,491.969
B17	6,532,621.210	1,847,474.428
B18	6,532,963.214	1,847,834.805
B19	6,533,300.082	1,847,945.129
B20	6,534,046.746	1,848,398.495
B21	6,526,568.780	1,844,258.020
B22	6,526,912.950	1,844,483.640
B23	6,527,173.420	1,844,658.420
B24	6,527,346.970	1,844,742.380
B25	6,527,573.840	1,844,861.300
B26	6,527,879.890	1,844,987.540
B27	6,528,096.970	1,845,090.040
B28	6,528,343.030	1,845,137.520
B29	6,528,705.360	1,845,340.660
B30	6,528,893.530	1,845,570.320
B31	6,529,132.130	1,845,723.950
B32	6,529,380.550	1,845,801.030
B32-GW	6,529,321.410	1,845,840.040

Northing and Easting shown in feet, NAD 83 (Zone 2)



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Eastbound I-80 Truck Scale Relocation Project

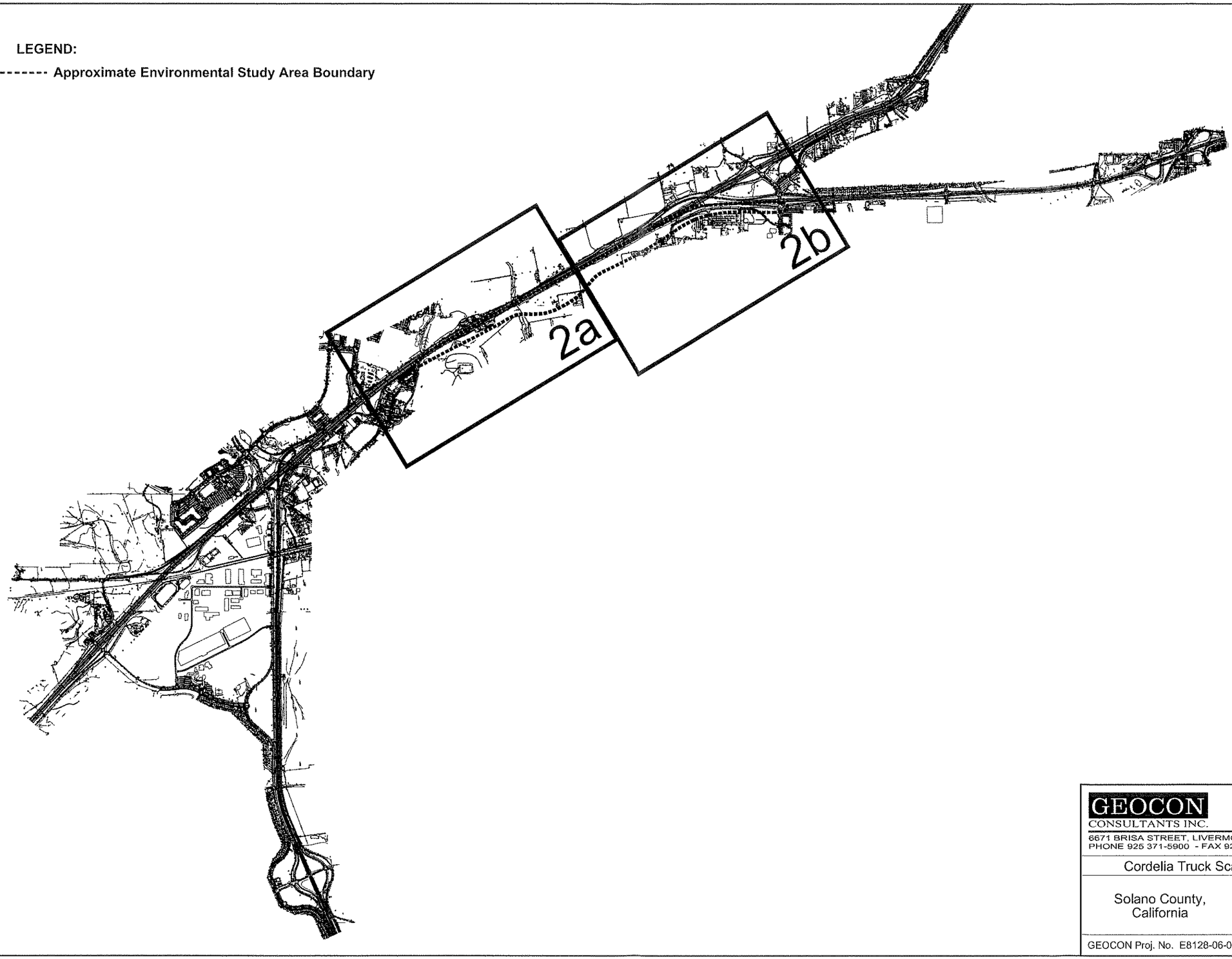
Solano County,
California

VICINITY MAP

E8128-06-04	June 2009	Figure 1

LEGEND:

---------- Approximate Environmental Study Area Boundary



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Cordelia Truck Scale Relocation Project

Solano County, California

SITE PLAN

GEOCON Proj. No. E8128-06-03 | June 2008 | Figure 2

PRMAGeocon0608.DWG

B21 B22 B23 B24 B25 B26 B27 B28 B29 B30 B31 B32-GW B32 B1-GW B1 B2 B3 B4 B13 B5 B6 B7 B8 B9 B10 B11 B12

Matchline

0 500
SCALE: feet

Legend:
Soil Boring Location

PRMAGeocon0908.DWG

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Eastbound I-80 Truck Scale Relocation Project

Solano County, California

SITE PLAN

GEOCON Proj. No. E8128-06-04 | June 2009 | Figure 2a

B14
B15
B16
B17
B18
B19
B20

Matchline

N

0 500
SCALE: feet

Legend:
Soil Boring Location

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Eastbound I-80 Truck Scale Relocation Project

Solano County, California

SITE PLAN

GEOCON Proj. No. E8128-06-04 | June 2009 | Figure 2b

PRMAGeocon0908.DWG

TABLE 2
Summary of CAM 17 Metals Results - Soil
I-80 Eastbound Cordelia Truck Scale Relocation Project
Fairfield, California

Sample I.D.	Sample Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
Composite B1-0, B2-0, B3-0, B4-0	0	<2.0	**10**	220	<1.0	<1.0	32	14	84	31	<1.0	41	2.0	<1.0	<1.0	**58**	93	<0.10
Composite B1-2.5, B2-2.5, B3 2.5,B4-2.5	2.5	<2.0	**7.1**	190	<1.0	<1.0	29	12	40	5.9	<1.0	36	1.3	<1.0	<1.0	**51**	71	<0.10
Composite B5-0, B6-0, B7-0, B8-0	0	<2.0	**9.7**	290	<1.0	<1.0	32	17	80	17	<1.0	44	1.8	<1.0	<1.0	**57**	87	<0.10
Composite B5-2.5, B6-2.5, B7-2.5, B8-2.5	2.5	<2.0	**6.8**	180	<1.0	<1.0	30	12	40	6.0	<1.0	36	1.3	<1.0	<1.0	**54**	72	<0.10
Composite B9-0, B10-0, B11-0, B12-0	0	<2.0	**12**	200	<1.0	<1.0	31	16	60	24	<1.0	41	1.6	<1.0	<1.0	**65**	82	0.26
Composite B9-2.5, B10-2.5, B11-2.5, B12-2.5	2.5	<2.0	**6.9**	220	<1.0	<1.0	31	12	42	6.6	<1.0	38	1.2	<1.0	<1.0	**54**	76	<0.10
Composite B13-0, B14-0, B15-0, B16-0	0	<2.0	**40**	170	<1.0	<1.0	25	11	48	130	<1.0	33	1.1	<1.0	<1.0	**45**	86	<0.10
Composite B13-2.5, B14-2.5, B15-2.5, B16-2.5	2.5	<2.0	**6.0**	160	<1.0	<1.0	25	10	33	5.9	<1.0	32	<1.0	<1.0	<1.0	**44**	63	<0.10
Composite B17-0, B18-0, B19-0, B20-0	0	<2.0	**25**	190	<1.0	<1.0	27	12	83	91	<1.0	33	<1.0	<1.0	<1.0	**49**	96	<0.10
Composite B17-2.5, B18-2.5, B19-2.5, B20-2.5	2.5	<2.0	**6.3**	170	<1.0	<1.0	25	10	34	6.0	<1.0	32	<1.0	<1.0	<1.0	**46**	64	<0.10
Composite B21-0, B22-0, B23-0, B24-0	0	<2.0	**1.4**	95	<1.0	<1.0	35	10	18	37	<1.0	34	1.3	<1.0	<1.0	**27**	47	<0.10
Composite B21-2.5, B22-2.5, B23-2.5, B24-2.5	2.5	<2.0	**<1.0**	89	<1.0	<1.0	32	9.7	12	7.8	<1.0	31	<1.0	<1.0	<1.0	**26**	25	<0.10

TABLE 2
Summary of CAM 17 Metals Results - Soil
I-80 Eastbound Cordelia Truck Scale Relocation Project
Fairfield, California

Sample I.D.	Sample Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
Composite B25-0, B26-0, B27-0, B28-0	0	<2.0	**19**	200	<1.0	<1.0	32	14	65	61	<1.0	38	2.1	<1.0	<1.0	**56**	84	<0.10
Composite B25-2.5, B26-2.5, B27-2.5, B28-2.5	2.5	<2.0	**7.6**	180	<1.0	<1.0	27	13	35	6.9	<1.0	32	1.9	<1.0	<1.0	**55**	60	<0.10
Composite B29-0, B30-0, B31-0, B32-0	0	<2.0	**21**	220	<1.0	<1.0	48	15	72	63	<1.0	89	2.0	<1.0	<1.0	**58**	93	<0.10
Composite B29-2.5, B30-2.5, B31-2.5, B32-2.5	2.5	<2.0	**7.9**	190	<1.0	<1.0	27	12	38	8.9	<1.0	32	1.8	<1.0	<1.0	**52**	61	<0.10
Composite B32-GW-1, B1-GW-1	1	<2.0	**13**	210	<1.0	<1.0	29	13	61	27	<1.0	40	2.2	<1.0	<1.0	**52**	78	<0.10
Composite B32-GW-4, B1-GW-4	4	<2.0	**7.7**	220	<1.0	<1.0	29	13	43	6.2	<1.0	38	2.2	<1.0	<1.0	**55**	71	<0.10
TTLC		500	500	10,000	75	100	2,500	8,000	2,500	1,000	3,500	2,000	100	500	700	2,400	5,000	20
STLC (mg/l)		15	5.0	100	0.75	1.0	5.0	80	25	5.0	350	20	1.0	5.0	7.0	24	250	0.20
ESLs																		
Shallow Soils (≤3 m bgs)																		
Residential Land Use		6.3	0.39	750	4.0	1.7	750*	40	230	200	40	150	10	20	1.3	16	600	1.3
Comm/Ind Land Use		40	1.6	1,500	8.0	7.4	750*	80	230	750	40	150	10	40	16	200	600	10

Notes:

Results are presented in units of milligrams per kilogram (mg/kg)

< = Analyte was not detected above the stated laboratory reporting limit

TTLC = Total Threshold Limit Concentration

STLC = Soluble Threshold Limit Concentration, shown in units of milligrams per liter (mg/l).

ESLs = Environmental Screening Levels, SFRWQCB, May 2008, Tables A and C.

m = meters

bgs = below ground surface

* = Value for Chromium III, no standard for total chromium

BOLD = Value exceeds one or more applicable standards

TABLE 3
Summary of Lead Results - Soil
I-80 Eastbound Cordelia Truck Scale Relocation Project
Private Property Parcels
Fairfield, California

Sample I.D.	Sample Depth (ft)	Total Lead (mg/kg)	WET (mg/l)	TCLP (mg/l)
Composite B13-0, B14-0, B15-0, B16-0	0	130	6.9	<0.25
Composite B17-0, B18-0, B19-0, B20-0	0	91	2.2	---
Composite B25-0, B26-0, B27-0, B28-0	0	61	0.77	---
Composite B29-0, B30-0, B31-0, B32-0	0	63	1.4	---
B13-0	0	140	6.4	
B14-0	0	200	8.7	0.34
B15-0	0	150	9.0	0.38
B16-0	0	77	3.6	---
B17-0	0	45	1.1	---
B18-0	0	100	2.6	---
B19-0	0	37	---	---
B20-0	0	37	---	---
B25-0	0	140	4.8	---
B26-0	0	33	---	---
B27-0	0	32	---	---
B28-0	0	29	---	---
B29-0	0	92	3.1	---
B30-0	0	93	3.2	---
B31-0	0	58	1.7	---
B32-0	0	29	---	---

Notes:

WET = Waste Extraction Test using citric acid as the extraction fluid
WET DI = Waste Extraction Test using deionized water as the extraction fluid
TCLP = Toxicity Characteristic Leaching Procedure
mg/kg = milligrams per kilogram
mg/l = milligrams per Liter
< = Analyte was not detected above the stated laboratory reporting limit
--- = Not Analyzed

TABLE 4
Summary of Organics Results - Soil
I-80 Eastbound Cordelia Truck Scale Relocation Project
Fairfield, California

Sample I.D.	TPHd (mg/kg)	TPHmo (mg/kg)	TPHg (mg/kg)	Chlorinated Pesticides (ug/kg)	Chlorinated Herbicides (mg/kg)	FOCs, BTEX, MTBE (mg/kg)
Composite B1-0,B2-0,B3-0,B4-0	11	32	<1.0	4,4'-DDE = 160 4,4'-DDT = 36 **Dieldrin = 23**	ND	ND
Composite B1-2.5,B2-2.5,B3-2.5,B4-2.5	<1.0	<1.0	<1.0	ND	ND	ND
Composite B5-0,B6-0,B7-0,B8-0	8	19	<1.0	4,4'-DDE = 79 4,4'-DDT = 10 **Dieldrin = 4.9**	ND	ND
Composite B5-2.5,B6-2.5,B7-2.5,B8-2.5	1.1	1.8	<1.0	ND	ND	ND
Composite B9-0,B10-0,B11-0,B12-0	6.2	20	<1.0	4,4'-DDE = 370 4,4'-DDT = 37 **Dieldrin = 11**	ND	ND
Composite B9-2.5,B10-2.5,B11-2.5,B12-2.5	1.5	3.6	<1.0	4,4'-DDE = 8.7	ND	ND
Composite B13-0,B14-0,B15-0,B16-0	46	120	<1.0	4,4'-DDD = 5.3 4,4'-DDE = 560 4,4'-DDT = 130 **Dieldrin = 43**	ND	ND
Composite B13-2.5,B14-2.5,B15-2.5,B16-2.5	<1.0	1.8	<1.0	4,4'-DDE = 12 4,4'-DDT = 2.7	ND	ND
Composite B17-0,B18-0,B19-0,B20-0	12	39	<1.0	4,4'-DDD = 4.0 4,4'-DDE = 270 4,4'-DDT = 64 **Dieldrin = 20**	ND	ND
Composite B17-2.5,B18-2.5,B19-2.5,B20-2.5	<1.0	1.7	<1.0	4,4'-DDE = 2.0	ND	ND
Composite B21-0, B22-0, B23-0, B24-0	<1.0	<1.0	<1.0	ND	ND	ND

TABLE 4
Summary of Organics Results - Soil
I-80 Eastbound Cordelia Truck Scale Relocation Project
Fairfield, California

Sample I.D.	TPHd (mg/kg)	TPHmo (mg/kg)	TPHg (mg/kg)	Chlorinated Pesticides (ug/kg)	Chlorinated Herbicides (mg/kg)	FOCs, BTEX, MTBE (mg/kg)
Composite B21-2.5, B22-2.5, B23-2.5, B24-2.5	<1.0	<1.0	<1.0	ND	ND	ND
Composite B25-0, B26-0, B27-0, B28-0	<1.0	<1.0	<1.0	4,4'-DDD = 13 4,4'-DDE = 290 4,4'-DDT = 140 **Dieldrin = 29**	ND	ND
Composite B25-2.5, B26-2.5, B27-2.5, B28-2.5	<1.0	<1.0	<1.0	ND	ND	ND
Composite B29-0, B30-0, B31-0, B32-0	<1.0	1.4	<1.0	4,4'-DDD = 36 (*<0.000056)* 4,4'-DDE = 1,000 (*0.00038)* 4,4'-DDT = 410 (*0.00014)* **Dieldrin = 33**	ND	ND
Composite B29-2.5, B30-2.5, B31-2.5, B32-2.5	<1.0	<1.0	<1.0	4,4'-DDE = 27 4,4'-DDT = 5.5	ND	ND
Composite B32-GW-1, B1-GW-1	---	---	---	4,4'-DDD = 32 (*<0.000056)* **4,4'-DDE = 2,400** (*0.0028)* 4,4'-DDT = 680 (*0.00097)* **Dieldrin = 10**	ND	---
Composite B32-GW-4, B1-GW-4	---	---	---	4,4'-DDE = 5.8	ND	---
				DDD, DDE, DDT = 1,000	---	---
Total Threshold Limit Concentration (TTLC) **Soluble Threshold Limit Concentration (STLC, mg/l)**				DDD, DDE, DDT = 0.1	---	---

TABLE 4
Summary of Organics Results - Soil
I-80 Eastbound Cordelia Truck Scale Relocation Project
Fairfield, California

Sample I.D.	TPHd (mg/kg)	TPHmo (mg/kg)	TPHg (mg/kg)	Chlorinated Pesticides (ug/kg)	Chlorinated Herbicides (mg/kg)	FOCs, BTEX, MTBE (mg/kg)
ESLs						
Shallow Soils (≤3 m bgs)						
Residential Land Use	83	410	83	4,4'-DDD=2,400 4,4'-DDE=1,700 4,4'-DDT=1,700 Dieldrin=2.3	---	---
Commercial/Industrial Land Use	83	2,500	83	4,4'-DDD=10,000 4,4'-DDE=4,000 4,4'-DDT =4,000 Dieldrin=2.3	---	---

Notes:

TPHd = Total Petroleum Hydrocarbons as diesel
TPHmo = Total Petroleum Hydrocarbons as motor oil
TPHg = Total Petroleum Hydrocarbons as gasoline
FOCs = Fuel Oxygenate Compounds
MTBE = Methyl tert-butyl ether
BTEX = Benzene, toluene, ethylbenzene, and xylenes
< = Not detected above the stated laboratory reporting limit
Results in italics are soluble concentrations in milligrams per liter (mg/l) analyzed using the Waste Extraction Test (WET)
ESLs = Environmental Screening Levels, SFRWQCB, May 2008, Tables A and C.
BOLD = Value exceeds one or more applicable standards

ND = Not detected
--- = Not Analyzed/Not Applicable
m = meters
ug/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
bgs = below ground surface

TABLE 5
Summary of CAM 17 Metals Results - Groundwater
I-80 Eastbound Cordelia Truck Scale Relocation Project
Fairfield, California

Sample I.D.		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury (ug/l)
B18	Total	<0.0050	<0.010	0.67	<0.0030	<0.0030	**0.091**	0.040	0.19	0.012	<0.0050	**0.13**	<0.010	<0.0030	<0.015	**0.20**	0.23	<0.20
B32	Total	<0.025	<0.050	**7.0**	<0.015	<0.015	**0.63**	**0.34**	0.92	**0.13**	<0.025	**0.83**	<0.050	<0.015	<0.075	**1.2**	1.5	1.6
	Dissolved	<0.0050	<0.010	0.15	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0030	<0.015	<0.0030	0.016	<0.20
WQOs																		
Municipal Supply		0.006	0.05	1.0	0.004	0.005	0.05	---	1.0	0.05	---	0.1	0.05	0.1	0.002	---	5.0	2.0
Agricultural Supply		---	2.0	---	0.5	0.5	1.0	5.0	5.0	10.0	0.05	2.0	0.02	---	---	1.0	10.0	---
California MCLs																		
Primary		0.006	0.05	1.0	0.004	0.005	0.05	---	---	---	---	0.1	0.05	---	0.002	---	---	2.0
Secondary		---	---	---	---	---	---	---	1.0	---	---	---	---	0.1	---	---	5.0	---
ESLs																		
GW Current/Potential Source of Drinking Water		0.006	0.036	1.0	0.00053	0.00025	0.05	0.003	0.0031	0.0025	0.035	0.0082	0.005	0.00019	0.002	0.015	0.081	0.025
GW NOT Current/Potential Source of Drinking Water		0.03	0.036	1.0	0.00053	0.00025	0.18	0.003	0.0031	0.0025	0.24	0.0082	0.005	0.00019	0.004	0.019	0.081	0.025
Surface Water Bodies																		
Freshwater		0.006	0.00014	1.0	0.0027	0.00025	0.05	0.003	0.009	0.0025	0.035	0.052	0.005	0.00034	0.002	0.015	0.12	0.0025
Marine		0.5	0.00014	1.0	0.00053	0.0093	0.18	0.003	0.0031	0.0056	0.24	0.0082	0.071	0.00019	0.004	0.019	0.081	0.0025
Estuarine		0.0	0.00014	1.0	0.00053	0.00025	0.18	0.003	0.0031	0.0025	0.24	0.0082	0.005	0.00019	0.004	0.019	0.081	0.0025

Notes:

Data are shown in units of milligrams per liter (mg/l), with the exception of mercury, which is presented in micrograms per liter (ug/l).
< = Not detected above the stated laboratory reporting limit
WQOs = Water Quality Objectives, SFRWQCB Basin Plan, Table 3-5 - WQO for Municipal Supply, January 2007
MCLs = Maximum Contaminant Levels, Title 22, CCR, Division 4, Chapter 15, Article 4, September 12, 2003
ESLs = Environmental Screening Levels, SFRWQCB, May 2008, Tables A, C and F.
GW = Groundwater
--- = Not Analyzed or No Standard
BOLD = Value exceeds one or more applicable standards

TABLE 6
Summary of Organics Results - Groundwater
I-80 Eastbound Cordelia Truck Scale Relocation Project
Fairfield, California

Sample I.D.	TPHg (mg/l)	TPHd (mg/l)	TPHmo (mg/l)	BTEX (ug/l)	VOCs (ug/l)
B18	<0.05	<0.05	<0.05	ND	ND
B32	<0.05	<0.05	<0.05	ND	ND
WQOs					
Municipal Supply	---	---	---	---	---
California MCLs					
Primary Standards	---	---	---	---	---
ESLs					
GW IS Current/Potential Source of Drinking Water	0.1	0.1	0.1	1.0	---
Surface Water Bodies				---	---
Freshwater	0.1	0.1	0.1	---	---
Marine/Estuarine	0.21	0.21	0.21	---	---

Notes:

mg/l = milligrams per liter
ug/l = micrograms per liter
--- = No Standard
ND = No analytes detected above the method detection limit
< = Analyte was not detected above the laboratory reporting limit
TPHmo = Total Petroleum Hydrocarbons as motor oil
TPHd = Total Petroleum Hydrocarbons as diesel
TPHg = Total Petroleum Hydrocarbons as gasoline
BTEX benzene, toluene, ethylbenzene, and xylenes
MTBE = Methyl-tertiary-butyl ether
VOCs = Volatile Organic Compounds
WQOs = Water Quality Objective, SFRWQCB Basin Plan, Table 3-5 - WQO for Municipal Supply, January 2007
MCLs = Maximum Contaminant Levels, Title 22, CCR, Division 4, Chapter 15, Article 4, September 12, 2003
ESLs = Environmental Screening Levels, SFRWQCB, May 2008, Tables A and F. ESL, MCL, and WQO values for xylenes are for individual or sum of all isomers.
BOLD = Value exceeds one or more applicable standards

APPENDIX A

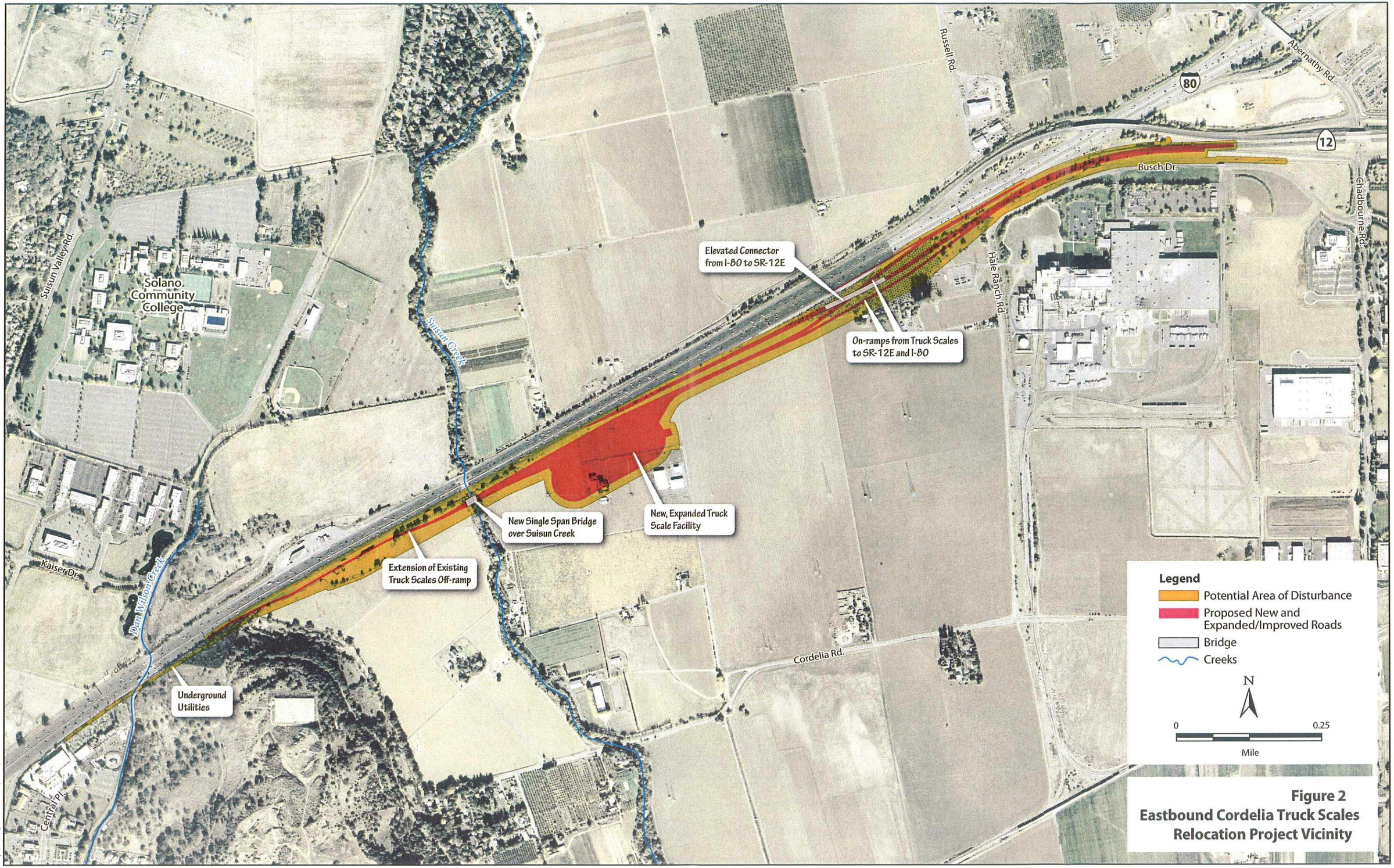
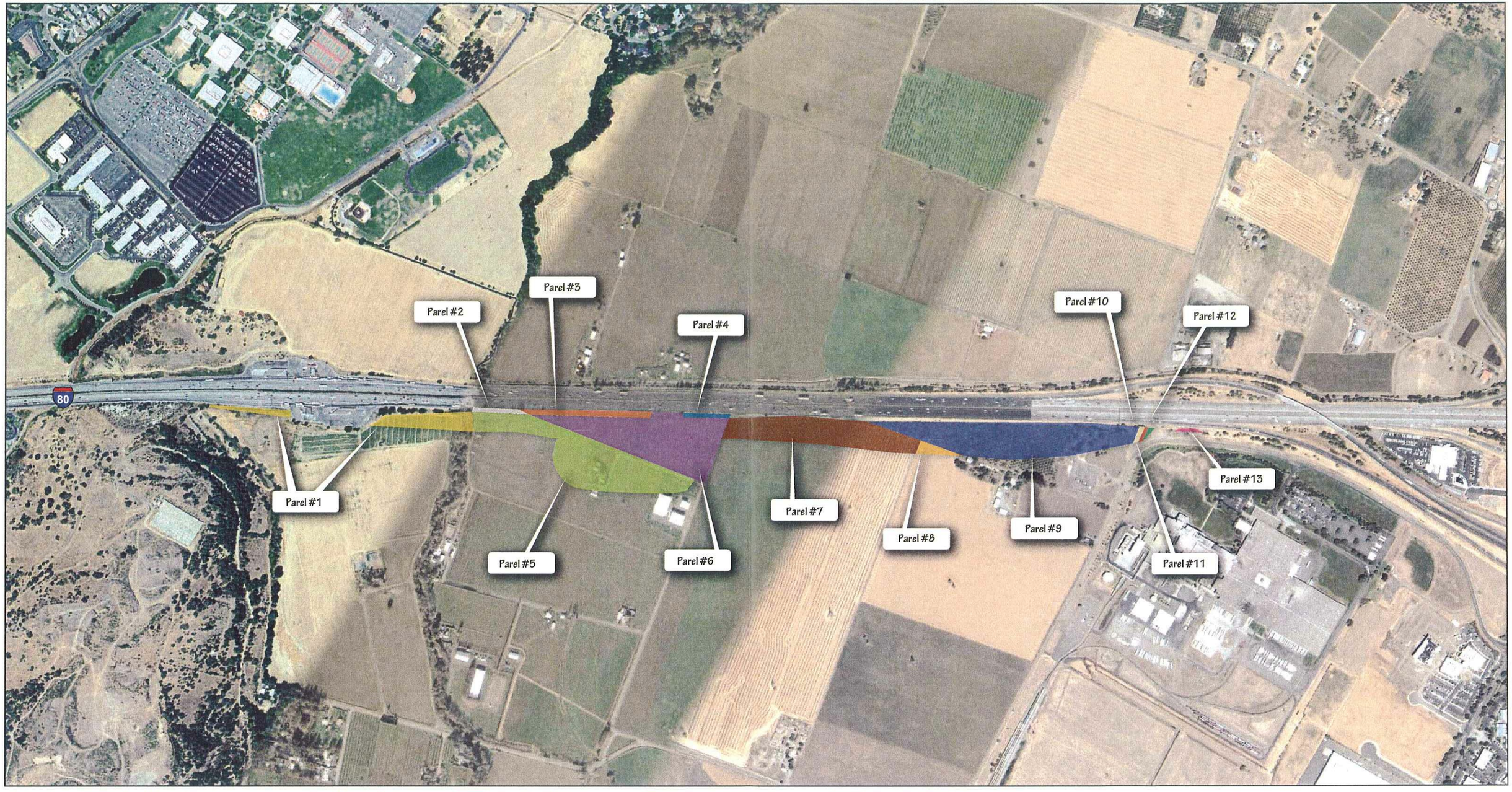


Figure 2
Eastbound Cordelia Truck Scales Relocation Project Vicinity

Graphics\Projects\00342.08 (7-9-08)

APPENDIX B



Legend

- Parcel 1: 142,035 sf
- Parcel 2: 10,584 sf
- Parcel 3: 48,381 sf
- Parcel 4: 16,749 sf
- Parcel 5: 417,002 sf
- Parcel 6: 439,492 sf
- Parcel 7: 272,045 sf
- Parcel 8: 22,619 sf
- Parcel 9: 446,374 sf
- Parcel 10: 4,849 sf
- Parcel 11: 3,454 sf
- Parcel 12: 3,316 sf
- Parcel 13: 5,398 sf

NOT TO SCALE

CirclePoint®
The *whole* view.

Figure 4-1
Property to Be Aquired for the Project

Source: Google Earth, 2008; CirclePoint, 2008

population of the community.

- The low-income or minority population is more than 10 percentage points higher than the City or County average.

The demographic make up of the Project area does not meet either of these criteria. As a result environmental justice consideration are not discussed further in this report.

4.0 IMPACTS AND MITIGATION

4.1 LAND USE IMPACTS

4.1.1 Existing Development

The project would impact primarily agricultural lands and undeveloped lands all located within Solano County. The following table lists the parcels that would be impacted by the project. The parcels are listed in order from west to east and correspond to Figure 4-1.

Table 4-1: Property Acquisition and Displacements for the Project

Parcel Number[7]	APN[8]	Existing Use	Partial or Full Acquisition	Displacement	Area to be acquired for the Project (square feet)
1	0027-26-0120	Agricultural	Partial	No	142,305 (3.3 acres)
2	0027-27-2070	Undeveloped land	Full	No	10,584 (0.2 acres)
3	0027-27-2130	Undeveloped land	Full	No	48,381 (1.1 acres)
4	0027-27-2120	Undeveloped land	Full	No	16,749 (0.4 acres)
5	0027-27-2080	Agricultural/Fairwind Farms	Partial	Yes. One residence and associated buildings.	417,002 (9.6 acres)
6	0027-27-2140	Agricultural[9]	Full	No	439,492 (10.1 acres)
7	0027-27-2180	Agricultural	Partial	No	272,045 (6.2 acres)

[7] Corresponds to Figure 4-1

[8] APN = Assessor Parcel Number

[9] An agricultural conservation easement held by the Solano Land Trust

8	0027-27-2160	Agricultural	Partial	No	22,619 (0.5 acres)
9	0027-25-2080	Agricultural/residence/ substation	Partial	Yes. One residence and associated buildings	446,374 (10.2 acres)
10	0027-25-2090	Undeveloped land	Full	No	4,849 (0.1 acres)
11	0027-25-2100	Undeveloped land	Full	No	3,454 (0.1 acres)
12	0027-25-2110	Undeveloped land	Full	No	3,316 (0.1 acres)
13	0028-20-0560	Undeveloped land	Full	No	5,396 (0.1 acres)

Several small parcels of undeveloped land would be acquired and used for the project as well as portions of several larger agricultural parcels. The project would require the demolition of two existing residences and several associated buildings (barns, sheds, etc.). On residence located on parcel number 5 (APN 0027-27-2080) would be displaced to accommodate the new truck scales facility. The other residence located on parcel number 9 (APN 0027-25-2080) would be displaced to accommodate the braided on-ramps to I-80 and eastbound State Route 12.

It does not appear that access to any parcels in the project area would be severed by the project. All parcels for which only a portion of the parcel would be impacted by the project (listed as Partial acquisitions in Table 4-1) are currently in agricultural use and would appear to be able to remain in agricultural production with the exception of parcel number 9 (APN 0027-25-2080). The majority of this parcel that is currently in agricultural production would be impacted by the project for the braided on-ramps to I-80 and eastbound State Route 12. The remaining portion of this parcel contains an electrical substation which would not be impacted by the project.

APPENDIX C

August 05, 2008

Rick Day
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

RECEIV
AUG 1 8 ...
By

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 100141

RE: I 80 E. TRUCK SCALE, E8128-06-04

Attention: Rick Day

Enclosed are the results for sample(s) received on July 29, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

CLIENT: Geocon Consultants, Inc.
Project: I 80 E. TRUCK SCALE, E8128-06-04
Lab Order: 100141

CASE NARRATIVE

Samples for Herbicides (8151) were subcontracted to Sierra Analytical Laboratories, Inc. with ELAP Cert.# 2320.

Analytical Comments for Method 6010

Matrix Spike (MS) and /or Matrix Spike Duplicate (MSD) are/is outside recovery criteria for samples 100141-051AMS and 100141-051AMSD; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

RPD for Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria for sample 100141-051AMSD; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Analytical Comments for Method 8015 (DRO/ORO)

Dilution was necessary for sample 100141-048A, due to sample matrix.

Surrogate recovery was diluted out for sample 100141-048A.

Analytical Comments for Method 8081

Dilution was necessary for samples 100141-042A, 100141-044A, 100141-046A, 100141-048A and 100141-050A, due to sample matrix.

Analytical Comments for Method 8260

Surrogate recovery biased high for samples 100141-042A, 100141-043A, 100141-044A, 100141-045A, 100141-046A, 100141-047A, 100141-048A, 100141-049A, 100141-050A and 100141-051A, possibly due to matrix interferences.

Matrix Spike (MS) and /or Matrix Spike Duplicate (MSD) are/is outside recovery criteria for sample 100141-042ADUP; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B18-GW
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100141-041A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS2_080801A	QC Batch: Q08VW177			PrepDate:		Analyst: **TT**
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,1,1-Trichloroethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,1,2-Trichloroethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,1-Dichloroethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,1-Dichloroethene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,1-Dichloropropene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,2,3-Trichlorobenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,2,3-Trichloropropane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,2,4-Trichlorobenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,2,4-Trimethylbenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,2-Dibromo-3-chloropropane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,2-Dibromoethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,2-Dichlorobenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,2-Dichloroethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,2-Dichloropropane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,3,5-Trimethylbenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,3-Dichlorobenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,3-Dichloropropane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
1,4-Dichlorobenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
2,2-Dichloropropane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
2-Chlorotoluene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
4-Chlorotoluene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
4-Isopropyltoluene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Benzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Bromobenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Bromodichloromethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Bromoform	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Bromomethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Carbon tetrachloride	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Chlorobenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Chloroethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Chloroform	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Chloromethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
cis-1,2-Dichloroethene	ND	0.50		µg/L	1	8/1/2008 05:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562-989-4045 Fax: 562-989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B18-GW
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100141-041A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS2_080801A	QC Batch: Q08VW177			PrepDate:		Analyst: **TT**
cis-1,3-Dichloropropene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Di-isopropyl ether	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Dibromochloromethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Dibromomethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Dichlorodifluoromethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Ethyl tert-butyl ether	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Ethylbenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Hexachlorobutadiene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Isopropylbenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
m,p-Xylene	ND	1.0		µg/L	1	8/1/2008 05:36 PM
Methylene chloride	ND	1.0		µg/L	1	8/1/2008 05:36 PM
MTBE	ND	0.50		µg/L	1	8/1/2008 05:36 PM
n-Butylbenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
n-Propylbenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Naphthalene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
o-Xylene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
sec-Butylbenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Styrene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Tert-amyl methyl ether	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Tert-Butanol	ND	10		µg/L	1	8/1/2008 05:36 PM
tert-Butylbenzene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Tetrachloroethene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Toluene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
trans-1,2-Dichloroethene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Trichloroethene	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Trichlorofluoromethane	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Vinyl chloride	ND	0.50		µg/L	1	8/1/2008 05:36 PM
Surr: 1,2-Dichloroethane-d4	151	70-130	S	%REC	1	8/1/2008 05:36 PM
Surr: 4-Bromofluorobenzene	86.6	70-130		%REC	1	8/1/2008 05:36 PM
Surr: Dibromofluoromethane	158	70-130	S	%REC	1	8/1/2008 05:36 PM
Surr: Toluene-d8	75.2	70-130		%REC	1	8/1/2008 05:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 [illegible]

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B18-GW
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100141-041B		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
		EPA 8015B(M)				
RunID: GC6_080731B	QC Batch: I08VW115			PrepDate:		Analyst: **TT**
GRO	ND	0.050		mg/L	1	7/31/2008 02:51 PM
Surr: Bromofluorobenzene (FID)	91.7	76-127		%REC	1	7/31/2008 02:51 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B18-GW
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100141-041C		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3510C			**EPA 8015B(M)**		
RunID: GC7_080730B	QC Batch: 47616			PrepDate:	7/29/2008	Analyst: **CBR**
DRO	ND	0.050		mg/L	1	7/30/2008 09:24 PM
ORO	ND	0.050		mg/L	1	7/30/2008 09:24 PM
Surr: p-Terphenyl	74.7	37-134		%REC	1	7/30/2008 09:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories
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Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Aug-08*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B18-GW
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100141-041D		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3010A			**EPA 6010B**		
RunID: ICP8_080801B	QC Batch: 47684			PrepDate:	7/31/2008	Analyst: **LKN**
Antimony	ND	0.0050		mg/L	1	8/1/2008 12:14 PM
Arsenic	ND	0.010		mg/L	1	8/1/2008 12:14 PM
Barium	0.67	0.0030		mg/L	1	8/1/2008 12:14 PM
Beryllium	ND	0.0030		mg/L	1	8/1/2008 12:14 PM
Cadmium	ND	0.0030		mg/L	1	8/1/2008 12:14 PM
Chromium	0.091	0.0030		mg/L	1	8/1/2008 12:14 PM
Cobalt	0.040	0.0030		mg/L	1	8/1/2008 12:14 PM
Copper	0.19	0.0050		mg/L	1	8/1/2008 12:14 PM
Lead	0.012	0.0050		mg/L	1	8/1/2008 12:14 PM
Molybdenum	ND	0.0050		mg/L	1	8/1/2008 12:14 PM
Nickel	0.13	0.0050		mg/L	1	8/1/2008 12:14 PM
Selenium	ND	0.010		mg/L	1	8/1/2008 12:14 PM
Silver	ND	0.0030		mg/L	1	8/1/2008 12:14 PM
Thallium	ND	0.015		mg/L	1	8/1/2008 12:14 PM
Vanadium	0.20	0.0030		mg/L	1	8/1/2008 12:14 PM
Zinc	0.23	0.010		mg/L	1	8/1/2008 12:14 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7470A		
RunID: AA5_080731F	QC Batch: 47672			PrepDate:	7/31/2008	Analyst: **AMT**
Mercury	ND	0.20		µg/L	1	7/31/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B1-0,B2-0,B3-0,B4-0
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-042A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080804D	QC Batch: 47686			PrepDate:	8/1/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/4/2008 03:51 PM
Arsenic	10	1.0		mg/Kg	1	8/4/2008 03:51 PM
Barium	220	1.0		mg/Kg	1	8/4/2008 03:51 PM
Beryllium	ND	1.0		mg/Kg	1	8/4/2008 03:51 PM
Cadmium	ND	1.0		mg/Kg	1	8/4/2008 03:51 PM
Chromium	32	1.0		mg/Kg	1	8/4/2008 03:51 PM
Cobalt	14	1.0		mg/Kg	1	8/4/2008 03:51 PM
Copper	84	2.0		mg/Kg	1	8/4/2008 03:51 PM
Lead	31	1.0		mg/Kg	1	8/4/2008 03:51 PM
Molybdenum	ND	1.0		mg/Kg	1	8/4/2008 03:51 PM
Nickel	41	1.0		mg/Kg	1	8/4/2008 03:51 PM
Selenium	2.0	1.0		mg/Kg	1	8/4/2008 03:51 PM
Silver	ND	1.0		mg/Kg	1	8/4/2008 03:51 PM
Thallium	ND	1.0		mg/Kg	1	8/4/2008 03:51 PM
Vanadium	58	1.0		mg/Kg	1	8/4/2008 03:51 PM
Zinc	93	1.0		mg/Kg	1	8/4/2008 03:51 PM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_BACK_080803C	QC Batch: 47738			PrepDate:	8/1/2008	Analyst: **SMH**
DRO	11	1.0		mg/Kg	1	8/3/2008 03:26 PM
ORO	32	1.0		mg/Kg	1	8/3/2008 03:26 PM
Surr: p-Terphenyl	73.9	26-127		%REC	1	8/3/2008 03:26 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC1_080729B	QC Batch: D08VS106			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	7/30/2008 07:11 PM
Surr: Bromofluorobenzene (FID)	94.0	42-142		%REC	1	7/30/2008 07:11 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
4,4'-DDD	ND	2.0		µg/Kg	1	8/1/2008 03:52 PM
4,4'-DDE	160	20		µg/Kg	10	8/1/2008 07:28 PM
4,4'-DDT	36	2.0		µg/Kg	1	8/1/2008 03:52 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B1-0,B2-0,B3-0,B4-0
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-042A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
Aldrin	ND	1.0		µg/Kg	1	8/1/2008 03:52 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/1/2008 03:52 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 03:52 PM
beta-BHC	ND	1.0		µg/Kg	1	8/1/2008 03:52 PM
Chlordane	ND	8.5		µg/Kg	1	8/1/2008 03:52 PM
delta-BHC	ND	1.0		µg/Kg	1	8/1/2008 03:52 PM
Dieldrin	23	2.0		µg/Kg	1	8/1/2008 03:52 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/1/2008 03:52 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/1/2008 03:52 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/1/2008 03:52 PM
Endrin	ND	2.0		µg/Kg	1	8/1/2008 03:52 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/1/2008 03:52 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/1/2008 03:52 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/1/2008 03:52 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 03:52 PM
Heptachlor	ND	1.0		µg/Kg	1	8/1/2008 03:52 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/1/2008 03:52 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/1/2008 03:52 PM
Toxaphene	ND	50		µg/Kg	1	8/1/2008 03:52 PM
Surr: Decachlorobiphenyl	82.1	31-132		%REC	10	8/1/2008 07:28 PM
Surr: Decachlorobiphenyl	75.3	31-132		%REC	1	8/1/2008 03:52 PM
Surr: Tetrachloro-m-xylene	64.1	34-106		%REC	1	8/1/2008 03:52 PM
Surr: Tetrachloro-m-xylene	66.4	34-106		%REC	10	8/1/2008 07:28 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080804E	QC Batch: 47713			PrepDate:	8/1/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/4/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/2/2008 01:38 AM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/2/2008 01:38 AM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/2/2008 01:38 AM
Ethylbenzene	ND	5.0		µg/Kg	1	8/2/2008 01:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B1-0,B2-0,B3-0,B4-0
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-042A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
m,p-Xylene	ND	10		µg/Kg	1	8/2/2008 01:38 AM
MTBE	ND	5.0		µg/Kg	1	8/2/2008 01:38 AM
o-Xylene	ND	5.0		µg/Kg	1	8/2/2008 01:38 AM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/2/2008 01:38 AM
Tert-Butanol	ND	100		µg/Kg	1	8/2/2008 01:38 AM
Toluene	ND	5.0		µg/Kg	1	8/2/2008 01:38 AM
Surr: 1,2-Dichloroethane-d4	140	70-130	S	%REC	1	8/2/2008 01:38 AM
Surr: 4-Bromofluorobenzene	94.1	70-130		%REC	1	8/2/2008 01:38 AM
Surr: Dibromofluoromethane	113	70-130		%REC	1	8/2/2008 01:38 AM
Surr: Toluene-d8	93.5	70-130		%REC	1	8/2/2008 01:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B1-2.5,B2-2.5,B3-2.5,B4-2
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-043A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080804D	QC Batch: 47686			PrepDate:	8/1/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/4/2008 03:57 PM
Arsenic	7.1	1.0		mg/Kg	1	8/4/2008 03:57 PM
Barium	190	1.0		mg/Kg	1	8/4/2008 03:57 PM
Beryllium	ND	1.0		mg/Kg	1	8/4/2008 03:57 PM
Cadmium	ND	1.0		mg/Kg	1	8/4/2008 03:57 PM
Chromium	29	1.0		mg/Kg	1	8/4/2008 03:57 PM
Cobalt	12	1.0		mg/Kg	1	8/4/2008 03:57 PM
Copper	40	2.0		mg/Kg	1	8/4/2008 03:57 PM
Lead	5.9	1.0		mg/Kg	1	8/4/2008 03:57 PM
Molybdenum	ND	1.0		mg/Kg	1	8/4/2008 03:57 PM
Nickel	36	1.0		mg/Kg	1	8/4/2008 03:57 PM
Selenium	1.3	1.0		mg/Kg	1	8/4/2008 03:57 PM
Silver	ND	1.0		mg/Kg	1	8/4/2008 03:57 PM
Thallium	ND	1.0		mg/Kg	1	8/4/2008 03:57 PM
Vanadium	51	1.0		mg/Kg	1	8/4/2008 03:57 PM
Zinc	71	1.0		mg/Kg	1	8/4/2008 03:57 PM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_BACK_080803C	QC Batch: 47738			PrepDate:	8/1/2008	Analyst: **SMH**
DRO	ND	1.0		mg/Kg	1	8/3/2008 12:01 PM
ORO	ND	1.0		mg/Kg	1	8/3/2008 12:01 PM
Surr: p-Terphenyl	82.4	26-127		%REC	1	8/3/2008 12:01 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC1_080729B	QC Batch: D08VS106			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	7/30/2008 08:10 PM
Surr: Bromofluorobenzene (FID)	101	42-142		%REC	1	7/30/2008 08:10 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
4,4'-DDD	ND	2.0		µg/Kg	1	8/1/2008 04:12 PM
4,4'-DDE	ND	2.0		µg/Kg	1	8/1/2008 04:12 PM
4,4'-DDT	ND	2.0		µg/Kg	1	8/1/2008 04:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B1-2.5,B2-2.5,B3-2.5,B4-2
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-043A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
Aldrin	ND	1.0		µg/Kg	1	8/1/2008 04:12 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/1/2008 04:12 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 04:12 PM
beta-BHC	ND	1.0		µg/Kg	1	8/1/2008 04:12 PM
Chlordane	ND	8.5		µg/Kg	1	8/1/2008 04:12 PM
delta-BHC	ND	1.0		µg/Kg	1	8/1/2008 04:12 PM
Dieldrin	ND	2.0		µg/Kg	1	8/1/2008 04:12 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/1/2008 04:12 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/1/2008 04:12 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/1/2008 04:12 PM
Endrin	ND	2.0		µg/Kg	1	8/1/2008 04:12 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/1/2008 04:12 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/1/2008 04:12 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/1/2008 04:12 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 04:12 PM
Heptachlor	ND	1.0		µg/Kg	1	8/1/2008 04:12 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/1/2008 04:12 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/1/2008 04:12 PM
Toxaphene	ND	50		µg/Kg	1	8/1/2008 04:12 PM
Surr: Decachlorobiphenyl	65.7	31-132		%REC	1	8/1/2008 04:12 PM
Surr: Tetrachloro-m-xylene	58.8	34-106		%REC	1	8/1/2008 04:12 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080804E	QC Batch: 47713			PrepDate:	8/1/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/4/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/2/2008 02:11 AM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/2/2008 02:11 AM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/2/2008 02:11 AM
Ethylbenzene	ND	5.0		µg/Kg	1	8/2/2008 02:11 AM
m,p-Xylene	ND	10		µg/Kg	1	8/2/2008 02:11 AM
MTBE	ND	5.0		µg/Kg	1	8/2/2008 02:11 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B1-2.5,B2-2.5,B3-2.5,B4-2
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-043A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
o-Xylene	ND	5.0		µg/Kg	1	8/2/2008 02:11 AM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/2/2008 02:11 AM
Tert-Butanol	ND	100		µg/Kg	1	8/2/2008 02:11 AM
Toluene	ND	5.0		µg/Kg	1	8/2/2008 02:11 AM
Surr: 1,2-Dichloroethane-d4	151	70-130	S	%REC	1	8/2/2008 02:11 AM
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	8/2/2008 02:11 AM
Surr: Dibromofluoromethane	122	70-130		%REC	1	8/2/2008 02:11 AM
Surr: Toluene-d8	102	70-130		%REC	1	8/2/2008 02:11 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc. **Client Sample ID:** Composite B5-0,B6-0,B7-0,B8-0
Lab Order: 100141 **Collection Date:** 7/25/2008
Project: I 80 E. TRUCK SCALE, E8128-06-04 **Matrix:** SOIL
Lab ID: 100141-044A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080804D	QC Batch: 47686			PrepDate:	8/1/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/4/2008 04:03 PM
Arsenic	9.7	1.0		mg/Kg	1	8/4/2008 04:03 PM
Barium	290	1.0		mg/Kg	1	8/4/2008 04:03 PM
Beryllium	ND	1.0		mg/Kg	1	8/4/2008 04:03 PM
Cadmium	ND	1.0		mg/Kg	1	8/4/2008 04:03 PM
Chromium	32	1.0		mg/Kg	1	8/4/2008 04:03 PM
Cobalt	17	1.0		mg/Kg	1	8/4/2008 04:03 PM
Copper	80	2.0		mg/Kg	1	8/4/2008 04:03 PM
Lead	17	1.0		mg/Kg	1	8/4/2008 04:03 PM
Molybdenum	ND	1.0		mg/Kg	1	8/4/2008 04:03 PM
Nickel	44	1.0		mg/Kg	1	8/4/2008 04:03 PM
Selenium	1.8	1.0		mg/Kg	1	8/4/2008 04:03 PM
Silver	ND	1.0		mg/Kg	1	8/4/2008 04:03 PM
Thallium	ND	1.0		mg/Kg	1	8/4/2008 04:03 PM
Vanadium	57	1.0		mg/Kg	1	8/4/2008 04:03 PM
Zinc	87	1.0		mg/Kg	1	8/4/2008 04:03 PM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_BACK_080803C	QC Batch: 47738			PrepDate:	8/1/2008	Analyst: **SMH**
DRO	7.5	1.0		mg/Kg	1	8/3/2008 02:08 PM
ORO	19	1.0		mg/Kg	1	8/3/2008 02:08 PM
Surr: p-Terphenyl	56.1	26-127		%REC	1	8/3/2008 02:08 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC1_080729B	QC Batch: D08VS106			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	7/30/2008 08:40 PM
Surr: Bromofluorobenzene (FID)	92.5	42-142		%REC	1	7/30/2008 08:40 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
4,4'-DDD	ND	2.0		µg/Kg	1	8/1/2008 04:31 PM
4,4'-DDE	79	20		µg/Kg	10	8/1/2008 07:47 PM
4,4'-DDT	10	2.0		µg/Kg	1	8/1/2008 04:31 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B5-0,B6-0,B7-0,B8-0
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-044A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
Aldrin	ND	1.0		µg/Kg	1	8/1/2008 04:31 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/1/2008 04:31 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 04:31 PM
beta-BHC	ND	1.0		µg/Kg	1	8/1/2008 04:31 PM
Chlordane	ND	8.5		µg/Kg	1	8/1/2008 04:31 PM
delta-BHC	ND	1.0		µg/Kg	1	8/1/2008 04:31 PM
Dieldrin	4.9	2.0		µg/Kg	1	8/1/2008 04:31 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/1/2008 04:31 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/1/2008 04:31 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/1/2008 04:31 PM
Endrin	ND	2.0		µg/Kg	1	8/1/2008 04:31 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/1/2008 04:31 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/1/2008 04:31 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/1/2008 04:31 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 04:31 PM
Heptachlor	ND	1.0		µg/Kg	1	8/1/2008 04:31 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/1/2008 04:31 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/1/2008 04:31 PM
Toxaphene	ND	50		µg/Kg	1	8/1/2008 04:31 PM
Surr: Decachlorobiphenyl	61.5	31-132		%REC	10	8/1/2008 07:47 PM
Surr: Decachlorobiphenyl	58.7	31-132		%REC	1	8/1/2008 04:31 PM
Surr: Tetrachloro-m-xylene	47.0	34-106		%REC	10	8/1/2008 07:47 PM
Surr: Tetrachloro-m-xylene	45.5	34-106		%REC	1	8/1/2008 04:31 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080804E	QC Batch: 47713			PrepDate:	8/1/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/4/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/2/2008 02:27 AM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/2/2008 02:27 AM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/2/2008 02:27 AM
Ethylbenzene	ND	5.0		µg/Kg	1	8/2/2008 02:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc. **Client Sample ID:** Composite B5-0,B6-0,B7-0,B8-0
Lab Order: 100141 **Collection Date:** 7/25/2008
Project: I 80 E. TRUCK SCALE, E8128-06-04 **Matrix:** SOIL
Lab ID: 100141-044A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS				**EPA 8260B**		
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
m,p-Xylene	ND	10		µg/Kg	1	8/2/2008 02:27 AM
MTBE	ND	5.0		µg/Kg	1	8/2/2008 02:27 AM
o-Xylene	ND	5.0		µg/Kg	1	8/2/2008 02:27 AM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/2/2008 02:27 AM
Tert-Butanol	ND	100		µg/Kg	1	8/2/2008 02:27 AM
Toluene	ND	5.0		µg/Kg	1	8/2/2008 02:27 AM
Surr: 1,2-Dichloroethane-d4	143	70-130	S	%REC	1	8/2/2008 02:27 AM
Surr: 4-Bromofluorobenzene	90.3	70-130		%REC	1	8/2/2008 02:27 AM
Surr: Dibromofluoromethane	117	70-130		%REC	1	8/2/2008 02:27 AM
Surr: Toluene-d8	95.9	70-130		%REC	1	8/2/2008 02:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: Geocon Consultants, Inc. **Client Sample ID:** Composite B5-2.5,B6-2.5,B7-2.5,B8-2
Lab Order: 100141 **Collection Date:** 7/25/2008
Project: I 80 E. TRUCK SCALE, E8128-06-04 **Matrix:** SOIL
Lab ID: 100141-045A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080804D	QC Batch: 47686			PrepDate:	8/1/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/4/2008 04:17 PM
Arsenic	6.8	1.0		mg/Kg	1	8/4/2008 04:17 PM
Barium	180	1.0		mg/Kg	1	8/4/2008 04:17 PM
Beryllium	ND	1.0		mg/Kg	1	8/4/2008 04:17 PM
Cadmium	ND	1.0		mg/Kg	1	8/4/2008 04:17 PM
Chromium	30	1.0		mg/Kg	1	8/4/2008 04:17 PM
Cobalt	12	1.0		mg/Kg	1	8/4/2008 04:17 PM
Copper	40	2.0		mg/Kg	1	8/4/2008 04:17 PM
Lead	6.0	1.0		mg/Kg	1	8/4/2008 04:17 PM
Molybdenum	ND	1.0		mg/Kg	1	8/4/2008 04:17 PM
Nickel	36	1.0		mg/Kg	1	8/4/2008 04:17 PM
Selenium	1.3	1.0		mg/Kg	1	8/4/2008 04:17 PM
Silver	ND	1.0		mg/Kg	1	8/4/2008 04:17 PM
Thallium	ND	1.0		mg/Kg	1	8/4/2008 04:17 PM
Vanadium	54	1.0		mg/Kg	1	8/4/2008 04:17 PM
Zinc	72	1.0		mg/Kg	1	8/4/2008 04:17 PM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_BACK_080803C	QC Batch: 47738			PrepDate:	8/1/2008	Analyst: **SMH**
DRO	1.1	1.0		mg/Kg	1	8/3/2008 12:26 PM
ORO	1.8	1.0		mg/Kg	1	8/3/2008 12:26 PM
Surr: p-Terphenyl	73.7	26-127		%REC	1	8/3/2008 12:26 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC1_080729B	QC Batch: D08VS106			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	7/30/2008 09:09 PM
Surr: Bromofluorobenzene (FID)	95.2	42-142		%REC	1	7/30/2008 09:09 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
4,4'-DDD	ND	2.0		µg/Kg	1	8/1/2008 04:51 PM
4,4'-DDE	ND	2.0		µg/Kg	1	8/1/2008 04:51 PM
4,4'-DDT	ND	2.0		µg/Kg	1	8/1/2008 04:51 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc. **Client Sample ID:** Composite B5-2.5,B6-2.5,B7-2.5,B8-2
Lab Order: 100141 **Collection Date:** 7/25/2008
Project: I 80 E. TRUCK SCALE, E8128-06-04 **Matrix:** SOIL
Lab ID: 100141-045A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
Aldrin	ND	1.0		µg/Kg	1	8/1/2008 04:51 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/1/2008 04:51 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 04:51 PM
beta-BHC	ND	1.0		µg/Kg	1	8/1/2008 04:51 PM
Chlordane	ND	8.5		µg/Kg	1	8/1/2008 04:51 PM
delta-BHC	ND	1.0		µg/Kg	1	8/1/2008 04:51 PM
Dieldrin	ND	2.0		µg/Kg	1	8/1/2008 04:51 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/1/2008 04:51 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/1/2008 04:51 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/1/2008 04:51 PM
Endrin	ND	2.0		µg/Kg	1	8/1/2008 04:51 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/1/2008 04:51 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/1/2008 04:51 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/1/2008 04:51 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 04:51 PM
Heptachlor	ND	1.0		µg/Kg	1	8/1/2008 04:51 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/1/2008 04:51 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/1/2008 04:51 PM
Toxaphene	ND	50		µg/Kg	1	8/1/2008 04:51 PM
Surr: Decachlorobiphenyl	83.5	31-132		%REC	1	8/1/2008 04:51 PM
Surr: Tetrachloro-m-xylene	80.0	34-106		%REC	1	8/1/2008 04:51 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080804E	QC Batch: 47713			PrepDate:	8/1/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/4/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/2/2008 02:44 AM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/2/2008 02:44 AM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/2/2008 02:44 AM
Ethylbenzene	ND	5.0		µg/Kg	1	8/2/2008 02:44 AM
m,p-Xylene	ND	10		µg/Kg	1	8/2/2008 02:44 AM
MTBE	ND	5.0		µg/Kg	1	8/2/2008 02:44 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B5-2.5,B6-2.5,B7-2.5,B8-2
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-045A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
o-Xylene	ND	5.0		µg/Kg	1	8/2/2008 02:44 AM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/2/2008 02:44 AM
Tert-Butanol	ND	100		µg/Kg	1	8/2/2008 02:44 AM
Toluene	ND	5.0		µg/Kg	1	8/2/2008 02:44 AM
Surr: 1,2-Dichloroethane-d4	134	70-130	S	%REC	1	8/2/2008 02:44 AM
Surr: 4-Bromofluorobenzene	88.7	70-130		%REC	1	8/2/2008 02:44 AM
Surr: Dibromofluoromethane	110	70-130		%REC	1	8/2/2008 02:44 AM
Surr: Toluene-d8	93.9	70-130		%REC	1	8/2/2008 02:44 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B9-0,B10-0,B11-0,B12-0
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-046A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080804D	QC Batch: 47686			PrepDate:	8/1/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/4/2008 04:23 PM
Arsenic	12	1.0		mg/Kg	1	8/4/2008 04:23 PM
Barium	200	1.0		mg/Kg	1	8/4/2008 04:23 PM
Beryllium	ND	1.0		mg/Kg	1	8/4/2008 04:23 PM
Cadmium	ND	1.0		mg/Kg	1	8/4/2008 04:23 PM
Chromium	31	1.0		mg/Kg	1	8/4/2008 04:23 PM
Cobalt	16	1.0		mg/Kg	1	8/4/2008 04:23 PM
Copper	60	2.0		mg/Kg	1	8/4/2008 04:23 PM
Lead	24	1.0		mg/Kg	1	8/4/2008 04:23 PM
Molybdenum	ND	1.0		mg/Kg	1	8/4/2008 04:23 PM
Nickel	41	1.0		mg/Kg	1	8/4/2008 04:23 PM
Selenium	1.6	1.0		mg/Kg	1	8/4/2008 04:23 PM
Silver	ND	1.0		mg/Kg	1	8/4/2008 04:23 PM
Thallium	ND	1.0		mg/Kg	1	8/4/2008 04:23 PM
Vanadium	65	1.0		mg/Kg	1	8/4/2008 04:23 PM
Zinc	82	1.0		mg/Kg	1	8/4/2008 04:23 PM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_BACK_080803C	QC Batch: 47738			PrepDate:	8/1/2008	Analyst: **SMH**
DRO	6.2	1.0		mg/Kg	1	8/3/2008 02:34 PM
ORO	20	1.0		mg/Kg	1	8/3/2008 02:34 PM
Surr: p-Terphenyl	81.1	26-127		%REC	1	8/3/2008 02:34 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC1_080729B	QC Batch: D08VS106			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	7/30/2008 09:39 PM
Surr: Bromofluorobenzene (FID)	93.6	42-142		%REC	1	7/30/2008 09:39 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
4,4'-DDD	ND	2.0		µg/Kg	1	8/1/2008 05:10 PM
4,4'-DDE	370	20		µg/Kg	10	8/1/2008 08:07 PM
4,4'-DDT	37	2.0		µg/Kg	1	8/1/2008 05:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc. **Client Sample ID:** Composite B9-0,B10-0,B11-0,B12-0
Lab Order: 100141 **Collection Date:** 7/25/2008
Project: I 80 E. TRUCK SCALE, E8128-06-04 **Matrix:** SOIL
Lab ID: 100141-046A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
Aldrin	ND	1.0		µg/Kg	1	8/1/2008 05:10 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/1/2008 05:10 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 05:10 PM
beta-BHC	ND	1.0		µg/Kg	1	8/1/2008 05:10 PM
Chlordane	ND	8.5		µg/Kg	1	8/1/2008 05:10 PM
delta-BHC	ND	1.0		µg/Kg	1	8/1/2008 05:10 PM
Dieldrin	11	2.0		µg/Kg	1	8/1/2008 05:10 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/1/2008 05:10 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/1/2008 05:10 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/1/2008 05:10 PM
Endrin	ND	2.0		µg/Kg	1	8/1/2008 05:10 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/1/2008 05:10 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/1/2008 05:10 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/1/2008 05:10 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 05:10 PM
Heptachlor	ND	1.0		µg/Kg	1	8/1/2008 05:10 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/1/2008 05:10 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/1/2008 05:10 PM
Toxaphene	ND	50		µg/Kg	1	8/1/2008 05:10 PM
Surr: Decachlorobiphenyl	69.0	31-132		%REC	10	8/1/2008 08:07 PM
Surr: Decachlorobiphenyl	61.8	31-132		%REC	1	8/1/2008 05:10 PM
Surr: Tetrachloro-m-xylene	58.9	34-106		%REC	10	8/1/2008 08:07 PM
Surr: Tetrachloro-m-xylene	56.2	34-106		%REC	1	8/1/2008 05:10 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080804E	QC Batch: 47713			PrepDate:	8/1/2008	Analyst: **AMT**
Mercury	0.26	0.10		mg/Kg	1	8/4/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/2/2008 03:00 AM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/2/2008 03:00 AM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/2/2008 03:00 AM
Ethylbenzene	ND	5.0		µg/Kg	1	8/2/2008 03:00 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B9-0,B10-0,B11-0,B12-0
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-046A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
m,p-Xylene	ND	10		µg/Kg	1	8/2/2008 03:00 AM
MTBE	ND	5.0		µg/Kg	1	8/2/2008 03:00 AM
o-Xylene	ND	5.0		µg/Kg	1	8/2/2008 03:00 AM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/2/2008 03:00 AM
Tert-Butanol	ND	100		µg/Kg	1	8/2/2008 03:00 AM
Toluene	ND	5.0		µg/Kg	1	8/2/2008 03:00 AM
Surr: 1,2-Dichloroethane-d4	148	70-130	S	%REC	1	8/2/2008 03:00 AM
Surr: 4-Bromofluorobenzene	97.8	70-130		%REC	1	8/2/2008 03:00 AM
Surr: Dibromofluoromethane	120	70-130		%REC	1	8/2/2008 03:00 AM
Surr: Toluene-d8	98.2	70-130		%REC	1	8/2/2008 03:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4080

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B9-2.5,B10-2.5,B11-2.5,B
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-047A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080804D	QC Batch: 47686			PrepDate:	8/1/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/4/2008 04:28 PM
Arsenic	6.9	1.0		mg/Kg	1	8/4/2008 04:28 PM
Barium	220	1.0		mg/Kg	1	8/4/2008 04:28 PM
Beryllium	ND	1.0		mg/Kg	1	8/4/2008 04:28 PM
Cadmium	ND	1.0		mg/Kg	1	8/4/2008 04:28 PM
Chromium	31	1.0		mg/Kg	1	8/4/2008 04:28 PM
Cobalt	12	1.0		mg/Kg	1	8/4/2008 04:28 PM
Copper	42	2.0		mg/Kg	1	8/4/2008 04:28 PM
Lead	6.6	1.0		mg/Kg	1	8/4/2008 04:28 PM
Molybdenum	ND	1.0		mg/Kg	1	8/4/2008 04:28 PM
Nickel	38	1.0		mg/Kg	1	8/4/2008 04:28 PM
Selenium	1.2	1.0		mg/Kg	1	8/4/2008 04:28 PM
Silver	ND	1.0		mg/Kg	1	8/4/2008 04:28 PM
Thallium	ND	1.0		mg/Kg	1	8/4/2008 04:28 PM
Vanadium	54	1.0		mg/Kg	1	8/4/2008 04:28 PM
Zinc	76	1.0		mg/Kg	1	8/4/2008 04:28 PM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_BACK_080803C	QC Batch: 47738			PrepDate:	8/1/2008	Analyst: **SMH**
DRO	1.5	1.0		mg/Kg	1	8/3/2008 12:52 PM
ORO	3.6	1.0		mg/Kg	1	8/3/2008 12:52 PM
Surr: p-Terphenyl	71.9	26-127		%REC	1	8/3/2008 12:52 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC2_080731A	QC Batch: E08VS230			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	7/31/2008 03:44 PM
Surr: Bromofluorobenzene (FID)	107	42-142		%REC	1	7/31/2008 03:44 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
4,4'-DDD	ND	2.0		µg/Kg	1	8/1/2008 05:30 PM
4,4'-DDE	8.7	2.0		µg/Kg	1	8/1/2008 05:30 PM
4,4'-DDT	ND	2.0		µg/Kg	1	8/1/2008 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562-989-4045 Fax: 562-989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B9-2.5,B10-2.5,B11-2.5,B
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-047A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
Aldrin	ND	1.0		µg/Kg	1	8/1/2008 05:30 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/1/2008 05:30 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 05:30 PM
beta-BHC	ND	1.0		µg/Kg	1	8/1/2008 05:30 PM
Chlordane	ND	8.5		µg/Kg	1	8/1/2008 05:30 PM
delta-BHC	ND	1.0		µg/Kg	1	8/1/2008 05:30 PM
Dieldrin	ND	2.0		µg/Kg	1	8/1/2008 05:30 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/1/2008 05:30 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/1/2008 05:30 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/1/2008 05:30 PM
Endrin	ND	2.0		µg/Kg	1	8/1/2008 05:30 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/1/2008 05:30 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/1/2008 05:30 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/1/2008 05:30 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 05:30 PM
Heptachlor	ND	1.0		µg/Kg	1	8/1/2008 05:30 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/1/2008 05:30 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/1/2008 05:30 PM
Toxaphene	ND	50		µg/Kg	1	8/1/2008 05:30 PM
Surr: Decachlorobiphenyl	81.3	31-132		%REC	1	8/1/2008 05:30 PM
Surr: Tetrachloro-m-xylene	80.3	34-106		%REC	1	8/1/2008 05:30 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080804E	QC Batch: 47713			PrepDate:	8/1/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/4/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/2/2008 03:17 AM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/2/2008 03:17 AM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/2/2008 03:17 AM
Ethylbenzene	ND	5.0		µg/Kg	1	8/2/2008 03:17 AM
m,p-Xylene	ND	10		µg/Kg	1	8/2/2008 03:17 AM
MTBE	ND	5.0		µg/Kg	1	8/2/2008 03:17 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B9-2.5,B10-2.5,B11-2.5,B
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-047A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
o-Xylene	ND	5.0		µg/Kg	1	8/2/2008 03:17 AM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/2/2008 03:17 AM
Tert-Butanol	ND	100		µg/Kg	1	8/2/2008 03:17 AM
Toluene	ND	5.0		µg/Kg	1	8/2/2008 03:17 AM
Surr: 1,2-Dichloroethane-d4	137	70-130	S	%REC	1	8/2/2008 03:17 AM
Surr: 4-Bromofluorobenzene	92.4	70-130		%REC	1	8/2/2008 03:17 AM
Surr: Dibromofluoromethane	113	70-130		%REC	1	8/2/2008 03:17 AM
Surr: Toluene-d8	94.1	70-130		%REC	1	8/2/2008 03:17 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: Geocon Consultants, Inc. **Client Sample ID:** Composite B13-0,B14-0,B15-0,B16-0
Lab Order: 100141 **Collection Date:** 7/25/2008
Project: I 80 E. TRUCK SCALE, E8128-06-04 **Matrix:** SOIL
Lab ID: 100141-048A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080804D	QC Batch: 47686			PrepDate:	8/1/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/4/2008 04:34 PM
Arsenic	40	1.0		mg/Kg	1	8/4/2008 04:34 PM
Barium	170	1.0		mg/Kg	1	8/4/2008 04:34 PM
Beryllium	ND	1.0		mg/Kg	1	8/4/2008 04:34 PM
Cadmium	ND	1.0		mg/Kg	1	8/4/2008 04:34 PM
Chromium	25	1.0		mg/Kg	1	8/4/2008 04:34 PM
Cobalt	11	1.0		mg/Kg	1	8/4/2008 04:34 PM
Copper	48	2.0		mg/Kg	1	8/4/2008 04:34 PM
Lead	130	1.0		mg/Kg	1	8/4/2008 04:34 PM
Molybdenum	ND	1.0		mg/Kg	1	8/4/2008 04:34 PM
Nickel	33	1.0		mg/Kg	1	8/4/2008 04:34 PM
Selenium	1.1	1.0		mg/Kg	1	8/4/2008 04:34 PM
Silver	ND	1.0		mg/Kg	1	8/4/2008 04:34 PM
Thallium	ND	1.0		mg/Kg	1	8/4/2008 04:34 PM
Vanadium	45	1.0		mg/Kg	1	8/4/2008 04:34 PM
Zinc	86	1.0		mg/Kg	1	8/4/2008 04:34 PM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_BACK_080803C	QC Batch: 47738			PrepDate:	8/1/2008	Analyst: **SMH**
DRO	46	10		mg/Kg	10	8/3/2008 04:18 PM
ORO	120	10		mg/Kg	10	8/3/2008 04:18 PM
Surr: p-Terphenyl	0	26-127	SDO	%REC	10	8/3/2008 04:18 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC2_080731A	QC Batch: E08VS230			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	7/31/2008 04:12 PM
Surr: Bromofluorobenzene (FID)	97.2	42-142		%REC	1	7/31/2008 04:12 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
4,4'-DDD	5.3	2.0		µg/Kg	1	8/1/2008 05:50 PM
4,4'-DDE	560	40		µg/Kg	20	8/1/2008 08:26 PM
4,4'-DDT	130	40		µg/Kg	20	8/1/2008 08:26 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT: Geocon Consultants, Inc. **Client Sample ID:** Composite B13-0,B14-0,B15-0,B16-0
Lab Order: 100141 **Collection Date:** 7/25/2008
Project: I 80 E. TRUCK SCALE, E8128-06-04 **Matrix:** SOIL
Lab ID: 100141-048A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
Aldrin	ND	1.0		µg/Kg	1	8/1/2008 05:50 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/1/2008 05:50 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 05:50 PM
beta-BHC	ND	1.0		µg/Kg	1	8/1/2008 05:50 PM
Chlordane	ND	8.5		µg/Kg	1	8/1/2008 05:50 PM
delta-BHC	ND	1.0		µg/Kg	1	8/1/2008 05:50 PM
Dieldrin	43	2.0		µg/Kg	1	8/1/2008 05:50 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/1/2008 05:50 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/1/2008 05:50 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/1/2008 05:50 PM
Endrin	ND	2.0		µg/Kg	1	8/1/2008 05:50 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/1/2008 05:50 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/1/2008 05:50 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/1/2008 05:50 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 05:50 PM
Heptachlor	ND	1.0		µg/Kg	1	8/1/2008 05:50 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/1/2008 05:50 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/1/2008 05:50 PM
Toxaphene	ND	50		µg/Kg	1	8/1/2008 05:50 PM
Surr: Decachlorobiphenyl	54.1	31-132		%REC	20	8/1/2008 08:26 PM
Surr: Decachlorobiphenyl	52.3	31-132		%REC	1	8/1/2008 05:50 PM
Surr: Tetrachloro-m-xylene	49.7	34-106		%REC	20	8/1/2008 08:26 PM
Surr: Tetrachloro-m-xylene	46.6	34-106		%REC	1	8/1/2008 05:50 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080804E	QC Batch: 47713			PrepDate:	8/1/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/4/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/2/2008 03:33 AM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/2/2008 03:33 AM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/2/2008 03:33 AM
Ethylbenzene	ND	5.0		µg/Kg	1	8/2/2008 03:33 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B13-0,B14-0,B15-0,B16-0
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-048A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
m,p-Xylene	ND	10		µg/Kg	1	8/2/2008 03:33 AM
MTBE	ND	5.0		µg/Kg	1	8/2/2008 03:33 AM
o-Xylene	ND	5.0		µg/Kg	1	8/2/2008 03:33 AM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/2/2008 03:33 AM
Tert-Butanol	ND	100		µg/Kg	1	8/2/2008 03:33 AM
Toluene	ND	5.0		µg/Kg	1	8/2/2008 03:33 AM
Surr: 1,2-Dichloroethane-d4	140	70-130	S	%REC	1	8/2/2008 03:33 AM
Surr: 4-Bromofluorobenzene	88.3	70-130		%REC	1	8/2/2008 03:33 AM
Surr: Dibromofluoromethane	112	70-130		%REC	1	8/2/2008 03:33 AM
Surr: Toluene-d8	94.0	70-130		%REC	1	8/2/2008 03:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: Geocon Consultants, Inc.
Client Sample ID: Composite B13-2.5,B14-2.5,B15-2.5,
Lab Order: 100141
Collection Date: 7/25/2008
Project: I 80 E. TRUCK SCALE, E8128-06-04
Matrix: SOIL
Lab ID: 100141-049A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080804D	QC Batch: 47686			PrepDate:	8/1/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/4/2008 04:39 PM
Arsenic	6.0	1.0		mg/Kg	1	8/4/2008 04:39 PM
Barium	160	1.0		mg/Kg	1	8/4/2008 04:39 PM
Beryllium	ND	1.0		mg/Kg	1	8/4/2008 04:39 PM
Cadmium	ND	1.0		mg/Kg	1	8/4/2008 04:39 PM
Chromium	25	1.0		mg/Kg	1	8/4/2008 04:39 PM
Cobalt	10	1.0		mg/Kg	1	8/4/2008 04:39 PM
Copper	33	2.0		mg/Kg	1	8/4/2008 04:39 PM
Lead	5.9	1.0		mg/Kg	1	8/4/2008 04:39 PM
Molybdenum	ND	1.0		mg/Kg	1	8/4/2008 04:39 PM
Nickel	32	1.0		mg/Kg	1	8/4/2008 04:39 PM
Selenium	ND	1.0		mg/Kg	1	8/4/2008 04:39 PM
Silver	ND	1.0		mg/Kg	1	8/4/2008 04:39 PM
Thallium	ND	1.0		mg/Kg	1	8/4/2008 04:39 PM
Vanadium	44	1.0		mg/Kg	1	8/4/2008 04:39 PM
Zinc	63	1.0		mg/Kg	1	8/4/2008 04:39 PM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_BACK_080803C	QC Batch: 47738			PrepDate:	8/1/2008	Analyst: **SMH**
DRO	ND	1.0		mg/Kg	1	8/3/2008 01:17 PM
ORO	1.8	1.0		mg/Kg	1	8/3/2008 01:17 PM
Surr: p-Terphenyl	78.6	26-127		%REC	1	8/3/2008 01:17 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC2_080731A	QC Batch: E08VS230			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	7/31/2008 04:27 PM
Surr: Bromofluorobenzene (FID)	86.7	42-142		%REC	1	7/31/2008 04:27 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
4,4'-DDD	ND	2.0		µg/Kg	1	8/1/2008 06:09 PM
4,4'-DDE	12	2.0		µg/Kg	1	8/1/2008 06:09 PM
4,4'-DDT	2.7	2.0		µg/Kg	1	8/1/2008 06:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B13-2.5,B14-2.5,B15-2.5,
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-049A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
Aldrin	ND	1.0		µg/Kg	1	8/1/2008 06:09 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/1/2008 06:09 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 06:09 PM
beta-BHC	ND	1.0		µg/Kg	1	8/1/2008 06:09 PM
Chlordane	ND	8.5		µg/Kg	1	8/1/2008 06:09 PM
delta-BHC	ND	1.0		µg/Kg	1	8/1/2008 06:09 PM
Dieldrin	ND	2.0		µg/Kg	1	8/1/2008 06:09 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/1/2008 06:09 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/1/2008 06:09 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/1/2008 06:09 PM
Endrin	ND	2.0		µg/Kg	1	8/1/2008 06:09 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/1/2008 06:09 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/1/2008 06:09 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/1/2008 06:09 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 06:09 PM
Heptachlor	ND	1.0		µg/Kg	1	8/1/2008 06:09 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/1/2008 06:09 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/1/2008 06:09 PM
Toxaphene	ND	50		µg/Kg	1	8/1/2008 06:09 PM
Surr: Decachlorobiphenyl	83.5	31-132		%REC	1	8/1/2008 06:09 PM
Surr: Tetrachloro-m-xylene	80.1	34-106		%REC	1	8/1/2008 06:09 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080804E	QC Batch: 47713			PrepDate:	8/1/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/4/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/2/2008 03:49 AM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/2/2008 03:49 AM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/2/2008 03:49 AM
Ethylbenzene	ND	5.0		µg/Kg	1	8/2/2008 03:49 AM
m,p-Xylene	ND	10		µg/Kg	1	8/2/2008 03:49 AM
MTBE	ND	5.0		µg/Kg	1	8/2/2008 03:49 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B13-2.5,B14-2.5,B15-2.5,
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-049A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
o-Xylene	ND	5.0		µg/Kg	1	8/2/2008 03:49 AM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/2/2008 03:49 AM
Tert-Butanol	ND	100		µg/Kg	1	8/2/2008 03:49 AM
Toluene	ND	5.0		µg/Kg	1	8/2/2008 03:49 AM
Surr: 1,2-Dichloroethane-d4	141	70-130	S	%REC	1	8/2/2008 03:49 AM
Surr: 4-Bromofluorobenzene	92.2	70-130		%REC	1	8/2/2008 03:49 AM
Surr: Dibromofluoromethane	112	70-130		%REC	1	8/2/2008 03:49 AM
Surr: Toluene-d8	92.7	70-130		%REC	1	8/2/2008 03:49 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc. **Client Sample ID:** Composite B17-0,B18-0,B19-0,B20-0
Lab Order: 100141 **Collection Date:** 7/25/2008
Project: I 80 E. TRUCK SCALE, E8128-06-04 **Matrix:** SOIL
Lab ID: 100141-050A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080804D	QC Batch: 47686			PrepDate:	8/1/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/4/2008 04:43 PM
Arsenic	25	1.0		mg/Kg	1	8/4/2008 04:43 PM
Barium	190	1.0		mg/Kg	1	8/4/2008 04:43 PM
Beryllium	ND	1.0		mg/Kg	1	8/4/2008 04:43 PM
Cadmium	ND	1.0		mg/Kg	1	8/4/2008 04:43 PM
Chromium	27	1.0		mg/Kg	1	8/4/2008 04:43 PM
Cobalt	12	1.0		mg/Kg	1	8/4/2008 04:43 PM
Copper	83	2.0		mg/Kg	1	8/4/2008 04:43 PM
Lead	91	1.0		mg/Kg	1	8/4/2008 04:43 PM
Molybdenum	ND	1.0		mg/Kg	1	8/4/2008 04:43 PM
Nickel	33	1.0		mg/Kg	1	8/4/2008 04:43 PM
Selenium	ND	1.0		mg/Kg	1	8/4/2008 04:43 PM
Silver	ND	1.0		mg/Kg	1	8/4/2008 04:43 PM
Thallium	ND	1.0		mg/Kg	1	8/4/2008 04:43 PM
Vanadium	49	1.0		mg/Kg	1	8/4/2008 04:43 PM
Zinc	96	1.0		mg/Kg	1	8/4/2008 04:43 PM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_BACK_080803C	QC Batch: 47738			PrepDate:	8/1/2008	Analyst: **SMH**
DRO	12	1.0		mg/Kg	1	8/3/2008 03:00 PM
ORO	39	1.0		mg/Kg	1	8/3/2008 03:00 PM
Surr: p-Terphenyl	55.4	26-127		%REC	1	8/3/2008 03:00 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC2_080731A	QC Batch: E08VS230			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	7/31/2008 04:41 PM
Surr: Bromofluorobenzene (FID)	98.4	42-142		%REC	1	7/31/2008 04:41 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
4,4'-DDD	4.0	2.0		µg/Kg	1	8/1/2008 06:29 PM
4,4'-DDE	270	20		µg/Kg	10	8/1/2008 08:46 PM
4,4'-DDT	64	2.0		µg/Kg	1	8/1/2008 06:29 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories
3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc.
Client Sample ID: Composite B17-0,B18-0,B19-0,B20-0
Lab Order: 100141
Collection Date: 7/25/2008
Project: I 80 E. TRUCK SCALE, E8128-06-04
Matrix: SOIL
Lab ID: 100141-050A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
Aldrin	ND	1.0		µg/Kg	1	8/1/2008 06:29 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/1/2008 06:29 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 06:29 PM
beta-BHC	ND	1.0		µg/Kg	1	8/1/2008 06:29 PM
Chlordane	ND	8.5		µg/Kg	1	8/1/2008 06:29 PM
delta-BHC	ND	1.0		µg/Kg	1	8/1/2008 06:29 PM
Dieldrin	20	2.0		µg/Kg	1	8/1/2008 06:29 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/1/2008 06:29 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/1/2008 06:29 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/1/2008 06:29 PM
Endrin	ND	2.0		µg/Kg	1	8/1/2008 06:29 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/1/2008 06:29 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/1/2008 06:29 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/1/2008 06:29 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 06:29 PM
Heptachlor	ND	1.0		µg/Kg	1	8/1/2008 06:29 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/1/2008 06:29 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/1/2008 06:29 PM
Toxaphene	ND	50		µg/Kg	1	8/1/2008 06:29 PM
Surr: Decachlorobiphenyl	53.3	31-132		%REC	10	8/1/2008 08:46 PM
Surr: Decachlorobiphenyl	50.0	31-132		%REC	1	8/1/2008 06:29 PM
Surr: Tetrachloro-m-xylene	43.4	34-106		%REC	10	8/1/2008 08:46 PM
Surr: Tetrachloro-m-xylene	42.7	34-106		%REC	1	8/1/2008 06:29 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080804E	QC Batch: 47713			PrepDate:	8/1/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/4/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/2/2008 04:06 AM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/2/2008 04:06 AM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/2/2008 04:06 AM
Ethylbenzene	ND	5.0		µg/Kg	1	8/2/2008 04:06 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B17-0,B18-0,B19-0,B20-0
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-050A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
m,p-Xylene	ND	10		µg/Kg	1	8/2/2008 04:06 AM
MTBE	ND	5.0		µg/Kg	1	8/2/2008 04:06 AM
o-Xylene	ND	5.0		µg/Kg	1	8/2/2008 04:06 AM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/2/2008 04:06 AM
Tert-Butanol	ND	100		µg/Kg	1	8/2/2008 04:06 AM
Toluene	ND	5.0		µg/Kg	1	8/2/2008 04:06 AM
Surr: 1,2-Dichloroethane-d4	135	70-130	S	%REC	1	8/2/2008 04:06 AM
Surr: 4-Bromofluorobenzene	86.8	70-130		%REC	1	8/2/2008 04:06 AM
Surr: Dibromofluoromethane	110	70-130		%REC	1	8/2/2008 04:06 AM
Surr: Toluene-d8	92.6	70-130		%REC	1	8/2/2008 04:06 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal [illegible]

CLIENT: Geocon Consultants, Inc. **Client Sample ID:** Composite B17-2.5,B18-2.5,B19-2.5,
Lab Order: 100141 **Collection Date:** 7/25/2008
Project: I 80 E. TRUCK SCALE, E8128-06-04 **Matrix:** SOIL
Lab ID: 100141-051A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080804D	QC Batch: 47686			PrepDate:	8/1/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/4/2008 04:48 PM
Arsenic	6.3	1.0		mg/Kg	1	8/4/2008 04:48 PM
Barium	170	1.0		mg/Kg	1	8/4/2008 04:48 PM
Beryllium	ND	1.0		mg/Kg	1	8/4/2008 04:48 PM
Cadmium	ND	1.0		mg/Kg	1	8/4/2008 04:48 PM
Chromium	25	1.0		mg/Kg	1	8/4/2008 04:48 PM
Cobalt	10	1.0		mg/Kg	1	8/4/2008 04:48 PM
Copper	34	2.0		mg/Kg	1	8/4/2008 04:48 PM
Lead	6.0	1.0		mg/Kg	1	8/4/2008 04:48 PM
Molybdenum	ND	1.0		mg/Kg	1	8/4/2008 04:48 PM
Nickel	32	1.0		mg/Kg	1	8/4/2008 04:48 PM
Selenium	ND	1.0		mg/Kg	1	8/4/2008 04:48 PM
Silver	ND	1.0		mg/Kg	1	8/4/2008 04:48 PM
Thallium	ND	1.0		mg/Kg	1	8/4/2008 04:48 PM
Vanadium	46	1.0		mg/Kg	1	8/4/2008 04:48 PM
Zinc	64	1.0		mg/Kg	1	8/4/2008 04:48 PM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_BACK_080803C	QC Batch: 47738			PrepDate:	8/1/2008	Analyst: **SMH**
DRO	ND	1.0		mg/Kg	1	8/3/2008 01:43 PM
ORO	1.7	1.0		mg/Kg	1	8/3/2008 01:43 PM
Surr: p-Terphenyl	59.5	26-127		%REC	1	8/3/2008 01:43 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC2_080731A	QC Batch: E08VS230			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	7/31/2008 04:56 PM
Surr: Bromofluorobenzene (FID)	97.1	42-142		%REC	1	7/31/2008 04:56 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
4,4'-DDD	ND	2.0		µg/Kg	1	8/1/2008 06:48 PM
4,4'-DDE	2.9	2.0		µg/Kg	1	8/1/2008 06:48 PM
4,4'-DDT	ND	2.0		µg/Kg	1	8/1/2008 06:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: Geocon Consultants, Inc.
Client Sample ID: Composite B17-2.5,B18-2.5,B19-2.5,
Lab Order: 100141
Collection Date: 7/25/2008
Project: I 80 E. TRUCK SCALE, E8128-06-04
Matrix: SOIL
Lab ID: 100141-051A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_080801A	QC Batch: 47691			PrepDate:	7/31/2008	Analyst: **HL**
Aldrin	ND	1.0		µg/Kg	1	8/1/2008 06:48 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/1/2008 06:48 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 06:48 PM
beta-BHC	ND	1.0		µg/Kg	1	8/1/2008 06:48 PM
Chlordane	ND	8.5		µg/Kg	1	8/1/2008 06:48 PM
delta-BHC	ND	1.0		µg/Kg	1	8/1/2008 06:48 PM
Dieldrin	ND	2.0		µg/Kg	1	8/1/2008 06:48 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/1/2008 06:48 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/1/2008 06:48 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/1/2008 06:48 PM
Endrin	ND	2.0		µg/Kg	1	8/1/2008 06:48 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/1/2008 06:48 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/1/2008 06:48 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/1/2008 06:48 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/1/2008 06:48 PM
Heptachlor	ND	1.0		µg/Kg	1	8/1/2008 06:48 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/1/2008 06:48 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/1/2008 06:48 PM
Toxaphene	ND	50		µg/Kg	1	8/1/2008 06:48 PM
Surr: Decachlorobiphenyl	84.0	31-132		%REC	1	8/1/2008 06:48 PM
Surr: Tetrachloro-m-xylene	80.5	34-106		%REC	1	8/1/2008 06:48 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080804E	QC Batch: 47713			PrepDate:	8/1/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/4/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/2/2008 04:22 AM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/2/2008 04:22 AM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/2/2008 04:22 AM
Ethylbenzene	ND	5.0		µg/Kg	1	8/2/2008 04:22 AM
m,p-Xylene	ND	10		µg/Kg	1	8/2/2008 04:22 AM
MTBE	ND	5.0		µg/Kg	1	8/2/2008 04:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue [illegible] CA 90755 Tel: 562 [illegible] Fax: [illegible]

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B17-2.5,B18-2.5,B19-2.5,
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-051A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_080801C	QC Batch: K08VS362			PrepDate:		Analyst: **CBB**
o-Xylene	ND	5.0		µg/Kg	1	8/2/2008 04:22 AM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/2/2008 04:22 AM
Tert-Butanol	ND	100		µg/Kg	1	8/2/2008 04:22 AM
Toluene	ND	5.0		µg/Kg	1	8/2/2008 04:22 AM
Surr: 1,2-Dichloroethane-d4	143	70-130	S	%REC	1	8/2/2008 04:22 AM
Surr: 4-Bromofluorobenzene	96.4	70-130		%REC	1	8/2/2008 04:22 AM
Surr: Dibromofluoromethane	119	70-130		%REC	1	8/2/2008 04:22 AM
Surr: Toluene-d8	99.2	70-130		%REC	1	8/2/2008 04:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: 180 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **LCS-47686**	SampType: **LCS**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/1/2008**	RunNo: **97917**
Client ID: **LCSS**	Batch ID: **47686**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/4/2008**	SeqNo: **1515000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	47.517	2.0	50.00	0	95.0	80	120				
Arsenic	47.965	1.0	50.00	0	95.9	80	120				
Barium	49.013	1.0	50.00	0	98.0	80	120				
Beryllium	46.473	1.0	50.00	0	92.9	80	120				
Cadmium	48.644	1.0	50.00	0	97.3	80	120				
Chromium	44.664	1.0	50.00	0	89.3	80	120				
Cobalt	48.790	1.0	50.00	0	97.6	80	120				
Copper	46.149	2.0	50.00	0	92.3	80	120				
Lead	48.311	1.0	50.00	0	96.6	80	120				
Molybdenum	49.017	1.0	50.00	0	98.0	80	120				
Nickel	47.126	1.0	50.00	0	94.3	80	120				
Selenium	46.101	1.0	50.00	0	92.2	80	120				
Silver	47.008	1.0	50.00	0	94.0	80	120				
Thallium	42.113	1.0	50.00	0	84.2	80	120				
Vanadium	47.551	1.0	50.00	0	95.1	80	120				
Zinc	48.823	1.0	50.00	0	97.6	80	120				

Sample ID: **100141-051A-DUP**	SampType: **DUP**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/1/2008**	RunNo: **97917**
Client ID: **Composite B17-2.5,**	Batch ID: **47686**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/4/2008**	SeqNo: **1515011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.379	2.0						0.3938	0	20	
Arsenic	6.181	1.0						6.345	2.63	20	
Barium	168.826	1.0						173.0	2.44	20	
Beryllium	0.237	1.0						0.2245	0	20	
Cadmium	0.476	1.0						0.4868	0	20	
Chromium	24.452	1.0						25.31	3.46	20	
Cobalt	10.281	1.0						10.40	1.12	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
2275 Westwood Avenue

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **100141-051A-DUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/1/2008** RunNo: **97917**
Client ID: **Composite B17-2.5,** Batch ID: **47686** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/4/2008** SeqNo: **1515011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	33.747	2.0						34.20	1.34	20	
Lead	5.847	1.0						6.049	3.39	20	
Molybdenum	ND	1.0						0	0	20	
Nickel	30.565	1.0						31.52	3.07	20	
Selenium	0.755	1.0						0.7514	0	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	43.416	1.0						46.17	6.15	20	
Zinc	62.639	1.0						63.90	1.99	20	

Sample ID: **100141-051A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/1/2008** RunNo: **97917**
Client ID: **Composite B17-2.5,** Batch ID: **47686** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/4/2008** SeqNo: **1515012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	39.459	2.0	125.0	0.3938	31.3	24	109				
Arsenic	72.296	1.0	125.0	6.345	52.8	52	106				
Barium	203.438	1.0	125.0	173.0	24.4	31	129				S
Beryllium	62.926	1.0	125.0	0.2245	50.2	55	110				S
Cadmium	74.510	1.0	125.0	0.4868	59.2	51	110				
Chromium	79.785	1.0	125.0	25.31	43.6	50	114				S
Cobalt	71.727	1.0	125.0	10.40	49.1	51	109				S
Copper	93.879	2.0	125.0	34.20	47.7	55	122				S
Lead	76.210	1.0	125.0	6.049	56.1	45	110				
Molybdenum	64.468	1.0	125.0	0	51.6	52	109				S
Nickel	88.525	1.0	125.0	31.52	45.6	47	111				S
Selenium	67.550	1.0	125.0	0.7514	53.4	48	108				
Silver	74.649	1.0	125.0	0	59.7	55	110				
Thallium	67.029	1.0	125.0	0	53.6	43	105				
Vanadium	101.041	1.0	125.0	46.17	43.9	54	115				S
Zinc	128.825	1.0	125.0	63.90	51.9	39	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **100141-051A-MSD**	SampType: **MSD**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/1/2008**	RunNo: **97917**
Client ID: **Composite B17-2.5,**	Batch ID: **47686**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/4/2008**	SeqNo: **1515013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	45.746	2.0	125.0	0.3938	36.3	24	109	39.46	14.8	20	
Arsenic	90.180	1.0	125.0	6.345	67.1	52	106	72.30	22.0	20	R
Barium	271.573	1.0	125.0	173.0	78.9	31	129	203.4	28.7	20	R
Beryllium	80.755	1.0	125.0	0.2245	64.4	55	110	62.93	24.8	20	R
Cadmium	85.973	1.0	125.0	0.4868	68.4	51	110	74.51	14.3	20	
Chromium	104.509	1.0	125.0	25.31	63.4	50	114	79.79	26.8	20	R
Cobalt	92.040	1.0	125.0	10.40	65.3	51	109	71.73	24.8	20	R
Copper	125.592	2.0	125.0	34.20	73.1	55	122	93.88	28.9	20	R
Lead	91.094	1.0	125.0	6.049	68.0	45	110	76.21	17.8	20	
Molybdenum	77.686	1.0	125.0	0	62.1	52	109	64.47	18.6	20	
Nickel	116.100	1.0	125.0	31.52	67.7	47	111	88.53	27.0	20	R
Selenium	83.072	1.0	125.0	0.7514	65.9	48	108	67.55	20.6	20	R
Silver	86.097	1.0	125.0	0	68.9	55	110	74.65	14.2	20	
Thallium	75.933	1.0	125.0	0	60.7	43	105	67.03	12.5	20	
Vanadium	133.780	1.0	125.0	46.17	70.1	54	115	101.0	27.9	20	R
Zinc	2039.473	1.0	125.0	63.90	1580	39	120	128.8	176	20	SR

Sample ID: **MB-47686**	SampType: **MBLK**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/1/2008**	RunNo: **97917**
Client ID: **PBS**	Batch ID: **47686**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/4/2008**	SeqNo: **1515038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-47686**	SampType: **MBLK**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/1/2008**	RunNo: **97917**
Client ID: **PBS**	Batch ID: **47686**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/4/2008**	SeqNo: **1515038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	ND	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID: MB-47684	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 7/31/2008	RunNo: 97833
Client ID: PBW	Batch ID: 47684	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/1/2008	SeqNo: 1513406

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.0050									
Arsenic	ND	0.010									
Barium	ND	0.0030									
Beryllium	ND	0.0030									
Cadmium	ND	0.0030									
Chromium	ND	0.0030									
Cobalt	ND	0.0030									
Copper	ND	0.0050									
Lead	ND	0.0050									
Molybdenum	ND	0.0050									
Nickel	ND	0.0050									
Selenium	ND	0.010									
Silver	ND	0.0030									
Thallium	ND	0.015									
Vanadium	ND	0.0030									
Zinc	ND	0.010									

Sample ID: LCS-47684	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 7/31/2008	RunNo: 97833
Client ID: LCSW	Batch ID: 47684	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/1/2008	SeqNo: 1513407

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.979	0.0050	1.000	0	97.9	85	115				
Arsenic	0.967	0.010	1.000	0	96.7	85	115				
Barium	0.996	0.0030	1.000	0	99.6	85	115				
Beryllium	0.974	0.0030	1.000	0	97.4	85	115				
Cadmium	0.970	0.0030	1.000	0	97.0	85	115				
Chromium	0.908	0.0030	1.000	0	90.8	85	115				
Cobalt	0.982	0.0030	1.000	0	98.2	85	115				
Copper	0.973	0.0050	1.000	0	97.3	85	115				
Lead	0.955	0.0050	1.000	0	95.5	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID: LCS-47684	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 7/31/2008	RunNo: 97833
Client ID: LCSW	Batch ID: 47684	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/1/2008	SeqNo: 1513407

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.993	0.0050	1.000	0	99.3	85	115				
Nickel	0.947	0.0050	1.000	0	94.7	85	115				
Selenium	0.948	0.010	1.000	0	94.8	85	115				
Silver	0.974	0.0030	1.000	0	97.4	85	115				
Thallium	0.861	0.015	1.000	0	86.1	85	115				
Vanadium	0.978	0.0030	1.000	0	97.8	85	115				
Zinc	0.968	0.010	1.000	0	96.8	85	115				

Sample ID: 100140-010B-DUP	SampType: DUP	TestCode: 6010_W	Units: mg/L	Prep Date: 7/31/2008	RunNo: 97833
Client ID: ZZZZZZ	Batch ID: 47684	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/1/2008	SeqNo: 1513410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.0050						0	0	20	
Arsenic	ND	0.010						0	0	20	
Barium	ND	0.0030						0	0	20	
Beryllium	ND	0.0030						0	0	20	
Cadmium	ND	0.0030						0	0	20	
Chromium	ND	0.0030						0	0	20	
Cobalt	ND	0.0030						0	0	20	
Copper	ND	0.0050						0	0	20	
Lead	ND	0.0050						0	0	20	
Molybdenum	ND	0.0050						0	0	20	
Nickel	ND	0.0050						0	0	20	
Selenium	ND	0.010						0	0	20	
Silver	ND	0.0030						0	0	20	
Thallium	ND	0.015						0	0	20	
Vanadium	ND	0.0030						0	0	20	
Zinc	ND	0.010						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID: 100140-010B-MS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 7/31/2008	RunNo: 97833
Client ID: ZZZZZZ	Batch ID: 47684	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/1/2008	SeqNo: 1513411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	2.470	0.0050	2.500	0	98.8	77	122				
Arsenic	2.455	0.010	2.500	0	98.2	76	120				
Barium	2.496	0.0030	2.500	0	99.8	70	119				
Beryllium	2.505	0.0030	2.500	0	100	77	121				
Cadmium	2.460	0.0030	2.500	0	98.4	76	120				
Chromium	2.344	0.0030	2.500	0	93.7	75	120				
Cobalt	2.465	0.0030	2.500	0	98.6	75	118				
Copper	2.544	0.0050	2.500	0	102	77	126				
Lead	2.424	0.0050	2.500	0	97.0	71	118				
Molybdenum	2.479	0.0050	2.500	0	99.1	76	121				
Nickel	2.470	0.0050	2.500	0	98.8	73	120				
Selenium	2.405	0.010	2.500	0	96.2	73	127				
Silver	2.541	0.0030	2.500	0	102	64	130				
Thallium	2.359	0.015	2.500	0	94.4	67	119				
Vanadium	2.511	0.0030	2.500	0	100	79	119				
Zinc	2.452	0.010	2.500	0	98.1	67	122				

Sample ID: 100140-010B-MSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 7/31/2008	RunNo: 97833
Client ID: ZZZZZZ	Batch ID: 47684	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/1/2008	SeqNo: 1513412

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	2.603	0.0050	2.500	0	104	77	122	2.470	5.21	20	
Arsenic	2.585	0.010	2.500	0	103	76	120	2.455	5.19	20	
Barium	2.641	0.0030	2.500	0	106	70	119	2.496	5.64	20	
Beryllium	2.643	0.0030	2.500	0	106	77	121	2.505	5.35	20	
Cadmium	2.598	0.0030	2.500	0	104	76	120	2.460	5.47	20	
Chromium	2.481	0.0030	2.500	0	99.2	75	120	2.344	5.70	20	
Cobalt	2.607	0.0030	2.500	0	104	75	118	2.465	5.61	20	
Copper	2.701	0.0050	2.500	0	108	77	126	2.544	6.02	20	
Lead	2.557	0.0050	2.500	0	102	71	118	2.424	5.31	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID: **100140-010B-MSD** SampType: **MSD** TestCode: **6010_W** Units: **mg/L** Prep Date: **7/31/2008** RunNo: **97833**
Client ID: **ZZZZZZ** Batch ID: **47684** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **8/1/2008** SeqNo: **1513412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	2.625	0.0050	2.500	0	105	76	121	2.479	5.73	20	
Nickel	2.611	0.0050	2.500	0	104	73	120	2.470	5.55	20	
Selenium	2.528	0.010	2.500	0	101	73	127	2.405	4.96	20	
Silver	2.690	0.0030	2.500	0	108	64	130	2.541	5.70	20	
Thallium	2.479	0.015	2.500	0	99.2	67	119	2.359	4.98	20	
Vanadium	2.660	0.0030	2.500	0	106	79	119	2.511	5.76	20	
Zinc	2.594	0.010	2.500	0	104	67	122	2.452	5.60	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W

Sample ID: 100184-001B-DUP	SampType: DUP	TestCode: 7470_W	Units: µg/L	Prep Date: 7/31/2008	RunNo: 97805
Client ID: ZZZZZZ	Batch ID: 47672	TestNo: EPA 7470A		Analysis Date: 7/31/2008	SeqNo: 1513048

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20						0	0	20	

Sample ID: 100184-001B-MS	SampType: MS	TestCode: 7470_W	Units: µg/L	Prep Date: 7/31/2008	RunNo: 97805
Client ID: ZZZZZZ	Batch ID: 47672	TestNo: EPA 7470A		Analysis Date: 7/31/2008	SeqNo: 1513049

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.734	0.20	10.00	0	97.3	70	130				

Sample ID: 100184-001B-MSD	SampType: MSD	TestCode: 7470_W	Units: µg/L	Prep Date: 7/31/2008	RunNo: 97805
Client ID: ZZZZZZ	Batch ID: 47672	TestNo: EPA 7470A		Analysis Date: 7/31/2008	SeqNo: 1513050

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.650	0.20	10.00	0	96.5	70	130	9.734	0.871	20	

Sample ID: LCS-47672	SampType: LCS	TestCode: 7470_W	Units: µg/L	Prep Date: 7/31/2008	RunNo: 97805
Client ID: LCSW	Batch ID: 47672	TestNo: EPA 7470A		Analysis Date: 7/31/2008	SeqNo: 1513051

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.182	0.20	10.00	0	102	85	115				

Sample ID: MB-47672	SampType: MBLK	TestCode: 7470_W	Units: µg/L	Prep Date: 7/31/2008	RunNo: 97805
Client ID: PBW	Batch ID: 47672	TestNo: EPA 7470A		Analysis Date: 7/31/2008	SeqNo: 1513052

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Qualifiers:

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- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: (562) 989-4045 Fax: (562) 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: 100141-051A-DUP	SampType: DUP	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/1/2008	RunNo: 97924
Client ID: Composite B17-2.5,	Batch ID: 47713	TestNo: EPA 7471A		Analysis Date: 8/4/2008	SeqNo: 1515120

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.045	0.10						0.04311	0	20	

Sample ID: 100141-051A-MS	SampType: MS	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/1/2008	RunNo: 97924
Client ID: Composite B17-2.5,	Batch ID: 47713	TestNo: EPA 7471A		Analysis Date: 8/4/2008	SeqNo: 1515122

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.029	0.10	0.8300	0.04311	119	70	130				

Sample ID: 100141-051A-MSD	SampType: MSD	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/1/2008	RunNo: 97924
Client ID: Composite B17-2.5,	Batch ID: 47713	TestNo: EPA 7471A		Analysis Date: 8/4/2008	SeqNo: 1515123

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.037	0.10	0.8300	0.04311	120	70	130	1.029	0.775	20	

Sample ID: LCS-47713	SampType: LCS	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/1/2008	RunNo: 97924
Client ID: LCSS	Batch ID: 47713	TestNo: EPA 7471A		Analysis Date: 8/4/2008	SeqNo: 1515124

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.978	0.10	0.8300	0	118	80	120				

Sample ID: MB-47713	SampType: MBLK	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/1/2008	RunNo: 97924
Client ID: PBS	Batch ID: 47713	TestNo: EPA 7471A		Analysis Date: 8/4/2008	SeqNo: 1515125

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Qualifiers:

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  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM LL

Sample ID: MB-47738	SampType: MBLK	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/1/2008	RunNo: 97899
Client ID: PBS	Batch ID: 47738	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/3/2008	SeqNo: 1514747

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0									
ORO	ND	1.0									
Surr: p-Terphenyl	2.395		2.670		89.7	26	127				

Sample ID: LCS-47738	SampType: LCS	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/1/2008	RunNo: 97899
Client ID: LCSS	Batch ID: 47738	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/3/2008	SeqNo: 1514748

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	26.094	1.0	33.00	0	79.1	27	105				
Surr: p-Terphenyl	2.120		2.670		79.4	26	127				

Sample ID: 100141-043AMS	SampType: MS	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/1/2008	RunNo: 97899
Client ID: Composite B1-2.5,B	Batch ID: 47738	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/3/2008	SeqNo: 1514749

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	26.557	1.0	33.00	0	80.5	14	102				
Surr: p-Terphenyl	1.974		2.670		73.9	26	127				

Sample ID: 100141-043AMSD	SampType: MSD	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/1/2008	RunNo: 97899
Client ID: Composite B1-2.5,B	Batch ID: 47738	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/3/2008	SeqNo: 1514750

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	26.085	1.0	33.00	0	79.0	14	102	26.56	1.79	20	
Surr: p-Terphenyl	1.979		2.670		74.1	26	127		0	0	

Sample ID: 100141-043ADUP	SampType: DUP	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/1/2008	RunNo: 97899
Client ID: Composite B1-2.5,B	Batch ID: 47738	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/3/2008	SeqNo: 1514751

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

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CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM LL

Sample ID: **100141-043ADUP** SampType: **DUP** TestCode: **8015_S_DM L** Units: **mg/Kg** Prep Date: **8/1/2008** RunNo: **97899**
Client ID: **Composite B1-2.5,B** Batch ID: **47738** TestNo: **EPA 8015B(M EPA 3550B** Analysis Date: **8/3/2008** SeqNo: **1514751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0						0	0	20	
ORO	ND	1.0						0	0	20	
Surr: p-Terphenyl	2.114		2.670		79.2	26	127		0	0	

Qualifiers:

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3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_GAS

Sample ID: D080729MB2	SampType: MBLK	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 97723
Client ID: PBS	Batch ID: D08VS106	TestNo: EPA 8015B(M		Analysis Date: 7/30/2008	SeqNo: 1513720

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	1.0									
Surr: Bromofluorobenzene (FID)	88.047		100.0		88.0	42	142				

Sample ID: 100125-023AMS	SampType: MS	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 97723
Client ID: ZZZZZZ	Batch ID: D08VS106	TestNo: EPA 8015B(M		Analysis Date: 7/30/2008	SeqNo: 1513722

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.168	1.0	5.000	0	83.4	33	120				
Surr: Bromofluorobenzene (FID)	97.487		100.0		97.5	42	142				

Sample ID: 100125-023AMSD	SampType: MSD	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 97723
Client ID: ZZZZZZ	Batch ID: D08VS106	TestNo: EPA 8015B(M		Analysis Date: 7/30/2008	SeqNo: 1513723

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.307	1.0	5.000	0	86.1	33	120	4.168	3.28	20	
Surr: Bromofluorobenzene (FID)	99.887		100.0		99.9	42	142		0	20	

Sample ID: E080729LCS2	SampType: LCS	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 97723
Client ID: LCSS	Batch ID: D08VS106	TestNo: EPA 8015B(M		Analysis Date: 7/30/2008	SeqNo: 1513731

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.805	1.0	5.000	0	96.1	74	108				
Surr: Bromofluorobenzene (FID)	97.026		100.0		97.0	42	142				

Sample ID: 100141-042ADUP	SampType: DUP	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 97723
Client ID: Composite B1-0,B2-	Batch ID: D08VS106	TestNo: EPA 8015B(M		Analysis Date: 7/30/2008	SeqNo: 1513739

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	1.0						0	0	20	

Qualifiers:

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Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_GAS

Sample ID: **100141-042ADUP**	SampType: **DUP**	TestCode: **8015_S_GAS**	Units: **mg/Kg**		Prep Date:				RunNo: **97723**		
Client ID: **Composite B1-0,B2-**	Batch ID: **D08VS106**	TestNo: **EPA 8015B(M**			Analysis Date: **7/30/2008**				SeqNo: **1513739**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (FID)	91.257		100.0		91.3	42	142		0	0	

Qualifiers:

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- R RPD outside accepted recovery limits
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CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_GAS

Sample ID: E080731MB1	SampType: MBLK	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 97824
Client ID: PBS	Batch ID: E08VS230	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1513316

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	1.0									
Surr: Bromofluorobenzene (FID)	95.382		100.0		95.4	42	142				

Sample ID: E080731MB1MS	SampType: MS	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 97824
Client ID: ZZZZZZ	Batch ID: E08VS230	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1513317

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.126	1.0	5.000	0	103	33	120				
Surr: Bromofluorobenzene (FID)	100.223		100.0		100	42	142				

Sample ID: E080731MB1MSD	SampType: MSD	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 97824
Client ID: ZZZZZZ	Batch ID: E08VS230	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1513318

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.069	1.0	5.000	0	101	33	120	5.126	1.12	20	
Surr: Bromofluorobenzene (FID)	102.105		100.0		102	42	142		0	20	

Sample ID: E080731LCS1	SampType: LCS	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 97824
Client ID: LCSS	Batch ID: E08VS230	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1513331

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.747	1.0	5.000	0	94.9	74	108				
Surr: Bromofluorobenzene (FID)	95.235		100.0		95.2	42	142				

Sample ID: 100141-047ADUP	SampType: DUP	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 97824
Client ID: Composite B9-2.5,B	Batch ID: E08VS230	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1513333

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	1.0						0	0	20	

Qualifiers:

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CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_GAS

Sample ID: **100141-047ADUP** SampType: **DUP** TestCode: **8015_S_GAS** Units: **mg/Kg** Prep Date: RunNo: **97824**
Client ID: **Composite B9-2.5,B** Batch ID: **E08VS230** TestNo: **EPA 8015B(M** Analysis Date: **7/31/2008** SeqNo: **1513333**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (FID)	105.683		100.0		106	42	142		0	0	

Qualifiers:

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- DO Surrogate Diluted Out
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- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_DM_LL

Sample ID: LCS-47616	SampType: LCS	TestCode: 8015_W_DM_	Units: mg/L	Prep Date: 7/29/2008	RunNo: 97741
Client ID: LCSW	Batch ID: 47616	TestNo: EPA 8015B(M	EPA 3510C	Analysis Date: 7/30/2008	SeqNo: 1512236

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	0.727	0.050	1.000	0	72.7	43	105				
Surr: p-Terphenyl	0.048		0.08000		60.1	37	134				

Sample ID: MB-47616	SampType: MBLK	TestCode: 8015_W_DM_	Units: mg/L	Prep Date: 7/29/2008	RunNo: 97741
Client ID: PBW	Batch ID: 47616	TestNo: EPA 8015B(M	EPA 3510C	Analysis Date: 7/30/2008	SeqNo: 1512237

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	0.050									
ORO	ND	0.050									
Surr: p-Terphenyl	0.052		0.08000		64.4	37	134				

Sample ID: 100105-003DMS	SampType: MS	TestCode: 8015_W_DM_	Units: mg/L	Prep Date: 7/29/2008	RunNo: 97741
Client ID: ZZZZZZ	Batch ID: 47616	TestNo: EPA 8015B(M	EPA 3510C	Analysis Date: 7/30/2008	SeqNo: 1512238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	0.842	0.050	1.000	0	84.2	43	105				
Surr: p-Terphenyl	0.055		0.08000		68.2	37	134				

Sample ID: 100105-004DMSD	SampType: MSD	TestCode: 8015_W_DM_	Units: mg/L	Prep Date: 7/29/2008	RunNo: 97741
Client ID: ZZZZZZ	Batch ID: 47616	TestNo: EPA 8015B(M	EPA 3510C	Analysis Date: 7/30/2008	SeqNo: 1512239

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	0.872	0.050	1.000	0	87.2	43	105	0.8419	3.48	20	
Surr: p-Terphenyl	0.056		0.08000		69.7	37	134		0	0	

Sample ID: 100141-041CDUP	SampType: DUP	TestCode: 8015_W_DM_	Units: mg/L	Prep Date: 7/29/2008	RunNo: 97741
Client ID: B18-GW	Batch ID: 47616	TestNo: EPA 8015B(M	EPA 3510C	Analysis Date: 7/30/2008	SeqNo: 1512242

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
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  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_DM_LL

Sample ID: **100141-041CDUP**	SampType: **DUP**	TestCode: **8015_W_DM_**	Units: **mg/L**		Prep Date: **7/29/2008**			RunNo: **97741**			
Client ID: **B18-GW**	Batch ID: **47616**	TestNo: **EPA 8015B(M**	**EPA 3510C**		Analysis Date: **7/30/2008**			SeqNo: **1512242**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	0.050						0	0	20	
ORO	ND	0.050						0	0	20	
Surr: p-Terphenyl	0.058		0.08000		72.7	37	134		0	0	

Qualifiers:

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- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_GP LL

Sample ID: I080731MB1MS	SampType: MS	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 97774
Client ID: ZZZZZZ	Batch ID: I08VW115	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1512642

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.982	0.050	1.000	0	98.2	77	122				
Surr: Bromofluorobenzene (FID)	92.822		100.0		92.8	76	127				

Sample ID: I080731MB1MSD	SampType: MSD	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 97774
Client ID: ZZZZZZ	Batch ID: I08VW115	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1512643

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.984	0.050	1.000	0	98.4	77	122	0.9820	0.203	20	
Surr: Bromofluorobenzene (FID)	110.873		100.0		111	76	127		0	0	

Sample ID: I080731MB1	SampType: MBLK	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 97774
Client ID: PBW	Batch ID: I08VW115	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1512664

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	0.050									
Surr: Bromofluorobenzene (FID)	92.336		100.0		92.3	76	127				

Sample ID: I080730LCS2	SampType: LCS	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 97774
Client ID: LCSW	Batch ID: I08VW115	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1512666

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	1.005	0.050	1.000	0	101	77	122				
Surr: Bromofluorobenzene (FID)	101.703		100.0		102	76	127				

Sample ID: I080731MB1MS	SampType: MS	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 97820
Client ID: ZZZZZZ	Batch ID: I08VW115	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1513233

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.982	0.050	1.000	0	98.2	77	122				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_GP LL

Sample ID: I080731MB1MS	SampType: MS	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 97820
Client ID: ZZZZZZ	Batch ID: I08VW115	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1513233

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (FID)	92.822		100.0		92.8	76	127				

Sample ID: I080731MB1MSD	SampType: MSD	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 97820
Client ID: ZZZZZZ	Batch ID: I08VW115	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1513234

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.984	0.050	1.000	0	98.4	77	122	0.9820	0.203	20	
Surr: Bromofluorobenzene (FID)	110.873		100.0		111	76	127		0	0	

Sample ID: I080731MB1	SampType: MBLK	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 97820
Client ID: PBW	Batch ID: I08VW115	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1513235

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	0.050									
Surr: Bromofluorobenzene (FID)	92.336		100.0		92.3	76	127				

Sample ID: I080731LCS2	SampType: LCS	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 97820
Client ID: LCSW	Batch ID: I08VW115	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1513236

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	1.005	0.050	1.000	0	101	77	122				
Surr: Bromofluorobenzene (FID)	101.703		100.0		102	76	127				

Sample ID: 100141-041B	SampType: DUP	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 97820
Client ID: B18-GW	Batch ID: I08VW115	TestNo: EPA 8015B(M		Analysis Date: 7/31/2008	SeqNo: 1513238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	0.050						0	0	20	
Surr: Bromofluorobenzene (FID)	87.693		100.0		87.7	76	127		0	0	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: MB-47691	SampType: MBLK	TestCode: 8081_S	Units: µg/Kg	Prep Date: 7/31/2008	RunNo: 97874
Client ID: PBS	Batch ID: 47691	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/1/2008	SeqNo: 1514247

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	2.0									
4,4'-DDE	ND	2.0									
4,4'-DDT	ND	2.0									
Aldrin	ND	1.0									
alpha-BHC	ND	1.0									
alpha-Chlordane	ND	1.0									
beta-BHC	ND	1.0									
Chlordane	ND	8.5									
delta-BHC	ND	1.0									
Dieldrin	ND	2.0									
Endosulfan I	ND	1.0									
Endosulfan II	ND	2.0									
Endosulfan sulfate	ND	2.0									
Endrin	ND	2.0									
Endrin aldehyde	ND	2.0									
Endrin ketone	ND	2.0									
gamma-BHC	ND	1.0									
gamma-Chlordane	ND	1.0									
Heptachlor	ND	1.0									
Heptachlor epoxide	ND	1.0									
Methoxychlor	ND	5.0									
Toxaphene	ND	50									
Surr: Tetrachloro-m-xylene	11.587		16.67		69.5	34	106				
Surr: Decachlorobiphenyl	12.878		16.67		77.3	31	132				

Sample ID: LCS-47691	SampType: LCS	TestCode: 8081_S	Units: µg/Kg	Prep Date: 7/31/2008	RunNo: 97874
Client ID: LCSS	Batch ID: 47691	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/1/2008	SeqNo: 1514248

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aldrin	13.224	1.0	16.67	0	79.3	59	111				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: LCS-47691	SampType: LCS	TestCode: 8081_S	Units: µg/Kg	Prep Date: 7/31/2008	RunNo: 97874
Client ID: LCSS	Batch ID: 47691	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/1/2008	SeqNo: 1514248

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	13.042	2.0	16.67	0	78.2	57	105				
Endrin	13.149	2.0	16.67	0	78.9	52	139				
gamma-BHC	12.668	1.0	16.67	0	76.0	58	111				
Heptachlor	12.930	1.0	16.67	0	77.6	59	114				
Surr: Tetrachloro-m-xylene	11.860		16.67		71.1	34	106				
Surr: Decachlorobiphenyl	13.026		16.67		78.1	31	132				

Sample ID: MB-47691MS	SampType: MS	TestCode: 8081_S	Units: µg/Kg	Prep Date: 7/31/2008	RunNo: 97874
Client ID: ZZZZZZ	Batch ID: 47691	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/1/2008	SeqNo: 1514249

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	12.233	2.0	16.67	0	73.4	33	122				
Aldrin	13.149	1.0	16.67	0	78.9	36	118				
Dieldrin	12.948	2.0	16.67	0	77.7	35	116				
Endrin	13.095	2.0	16.67	0	78.6	39	140				
gamma-BHC	12.618	1.0	16.67	0	75.7	34	117				
Heptachlor	12.836	1.0	16.67	0	77.0	37	121				
Surr: Tetrachloro-m-xylene	11.572		16.67		69.4	34	106				
Surr: Decachlorobiphenyl	12.692		16.67		76.1	31	132				

Sample ID: MB-47691MSD	SampType: MSD	TestCode: 8081_S	Units: µg/Kg	Prep Date: 7/31/2008	RunNo: 97874
Client ID: ZZZZZZ	Batch ID: 47691	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/1/2008	SeqNo: 1514250

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	12.405	2.0	16.67	0	74.4	33	122	12.23	1.40	20	
Aldrin	13.332	1.0	16.67	0	80.0	36	118	13.15	1.38	20	
Dieldrin	13.114	2.0	16.67	0	78.7	35	116	12.95	1.27	20	
Endrin	13.413	2.0	16.67	0	80.5	39	140	13.10	2.40	20	
gamma-BHC	12.824	1.0	16.67	0	76.9	34	117	12.62	1.62	20	
Heptachlor	13.044	1.0	16.67	0	78.2	37	121	12.84	1.61	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: MB-47691MSD	SampType: MSD	TestCode: 8081_S	Units: µg/Kg	Prep Date: 7/31/2008	RunNo: 97874
Client ID: ZZZZZZ	Batch ID: 47691	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/1/2008	SeqNo: 1514250

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Tetrachloro-m-xylene	11.785		16.67		70.7	34	106		0	20	
Surr: Decachlorobiphenyl	12.871		16.67		77.2	31	132		0	20	

Sample ID: 100141-051ADUP	SampType: DUP	TestCode: 8081_S	Units: µg/Kg	Prep Date: 7/31/2008	RunNo: 97874
Client ID: Composite B17-2.5,	Batch ID: 47691	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/1/2008	SeqNo: 1514261

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4'-DDD	ND	4.0						0	0	20	
2,4'-DDE	ND	4.0						0	0	20	
2,4'-DDT	ND	4.0						0	0	20	
4,4'-DDD	ND	2.0						0	0	20	
4,4'-DDE	2.755	2.0						2.887	4.70	20	
4,4'-DDT	0.677	2.0						0.6813	0	20	
Aldrin	ND	1.0						0	0	20	
alpha-BHC	ND	1.0						0	0	20	
alpha-Chlordane	ND	1.0						0	0	20	
beta-BHC	ND	1.0						0	0	20	
Chlordane	ND	8.5						0	0	20	
Chlorothalonil	ND	2.0						0	0	20	
delta-BHC	ND	1.0						0	0	20	
Dieldrin	ND	2.0						0	0	20	
Endosulfan I	ND	1.0						0	0	20	
Endosulfan II	ND	2.0						0	0	20	
Endosulfan sulfate	ND	2.0						0	0	20	
Endrin	ND	2.0						0	0	20	
Endrin aldehyde	ND	2.0						0	0	20	
Endrin ketone	ND	2.0						0	0	20	
gamma-BHC	ND	1.0						0	0	20	
gamma-Chlordane	ND	1.0						0	0	20	
Heptachlor	ND	1.0						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: **100141-051ADUP** SampType: **DUP** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **7/31/2008** RunNo: **97874**
Client ID: **Composite B17-2.5,** Batch ID: **47691** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **8/1/2008** SeqNo: **1514261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Heptachlor epoxide	ND	1.0						0	0	20	
Methoxychlor	ND	5.0						0	0	20	
Toxaphene	ND	50						0	0	20	
Surr: Tetrachloro-m-xylene	13.401		16.67		80.4	34	106		0	20	
Surr: Decachlorobiphenyl	14.159		16.67		84.9	31	132		0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
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CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **KS080801MB6MS** SampType: **LCS** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **97941**
Client ID: **LCSS** Batch ID: **K08VS362** TestNo: **EPA 8260B** Analysis Date: **8/2/2008** SeqNo: **1515373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	50.950	5.0	50.00	0	102	70	130				
Benzene	99.580	5.0	100.0	0	99.6	70	130				
Chlorobenzene	49.590	5.0	50.00	0	99.2	70	130				
MTBE	52.940	5.0	50.00	0	106	70	130				
Toluene	102.540	5.0	100.0	0	103	70	130				
Trichloroethene	46.760	5.0	50.00	0	93.5	70	130				
Surr: 1,2-Dichloroethane-d4	62.030		50.00		124	70	130				
Surr: 4-Bromofluorobenzene	51.130		50.00		102	70	130				
Surr: Dibromofluoromethane	53.790		50.00		108	70	130				
Surr: Toluene-d8	48.520		50.00		97.0	70	130				

Sample ID: **KS080801MB6** SampType: **MBLK** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **97941**
Client ID: **PBS** Batch ID: **K08VS362** TestNo: **EPA 8260B** Analysis Date: **8/2/2008** SeqNo: **1515375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	5.0									
1,1,1-Trichloroethane	ND	5.0									
1,1,2,2-Tetrachloroethane	ND	5.0									
1,1,2-Trichloroethane	ND	5.0									
1,1-Dichloroethane	ND	5.0									
1,1-Dichloroethene	ND	5.0									
1,1-Dichloropropene	ND	5.0									
1,2,3-Trichlorobenzene	ND	5.0									
1,2,3-Trichloropropane	ND	5.0									
1,2,4-Trichlorobenzene	ND	5.0									
1,2,4-Trimethylbenzene	ND	5.0									
1,2-Dibromo-3-chloropropane	ND	10									
1,2-Dibromoethane	ND	5.0									
1,2-Dichlorobenzene	ND	5.0									
1,2-Dichloroethane	ND	5.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **KS080801MB6**	SampType: **MBLK**	TestCode: **8260_S**	Units: **µg/Kg**		Prep Date:					RunNo: **97941**	
Client ID: **PBS**	Batch ID: **K08VS362**	TestNo: **EPA 8260B**			Analysis Date: **8/2/2008**					SeqNo: **1515375**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloropropane	ND	5.0									
1,3,5-Trimethylbenzene	ND	5.0									
1,3-Dichlorobenzene	ND	5.0									
1,3-Dichloropropane	ND	5.0									
1,4-Dichlorobenzene	ND	5.0									
2,2-Dichloropropane	ND	5.0									
2-Chlorotoluene	ND	5.0									
4-Chlorotoluene	ND	5.0									
4-Isopropyltoluene	ND	5.0									
Benzene	ND	5.0									
Bromobenzene	ND	5.0									
Bromodichloromethane	ND	5.0									
Bromoform	ND	5.0									
Bromomethane	ND	5.0									
Carbon tetrachloride	ND	5.0									
Chlorobenzene	ND	5.0									
Chloroethane	ND	5.0									
Chloroform	ND	5.0									
Chloromethane	ND	5.0									
cis-1,2-Dichloroethene	ND	5.0									
cis-1,3-Dichloropropene	ND	5.0									
Di-isopropyl ether	ND	5.0									
Dibromochloromethane	ND	5.0									
Dibromomethane	ND	5.0									
Dichlorodifluoromethane	ND	5.0									
Ethyl Tert-butyl ether	ND	5.0									
Ethylbenzene	ND	5.0									
Hexachlorobutadiene	ND	5.0									
Isopropylbenzene	ND	5.0									
m,p-Xylene	ND	10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **KS080801MB6** SampType: **MBLK** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **97941**
Client ID: **PBS** Batch ID: **K08VS362** TestNo: **EPA 8260B** Analysis Date: **8/2/2008** SeqNo: **1515375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methylene chloride	ND	5.0									
MTBE	ND	5.0									
n-Butylbenzene	ND	5.0									
n-Propylbenzene	ND	5.0									
Naphthalene	ND	5.0									
o-Xylene	ND	5.0									
sec-Butylbenzene	ND	5.0									
Styrene	ND	5.0									
Tert-amyl methyl ether	ND	5.0									
Tert-Butanol	ND	100									
tert-Butylbenzene	ND	5.0									
Tetrachloroethene	ND	5.0									
Toluene	ND	5.0									
trans-1,2-Dichloroethene	ND	5.0									
Trichloroethene	ND	5.0									
Trichlorofluoromethane	ND	5.0									
Vinyl chloride	ND	5.0									
Surr: 1,2-Dichloroethane-d4	64.060		50.00		128	70	130				
Surr: 4-Bromofluorobenzene	46.990		50.00		94.0	70	130				
Surr: Dibromofluoromethane	53.670		50.00		107	70	130				
Surr: Toluene-d8	47.590		50.00		95.2	70	130				

Sample ID: **100141-042A-DUP** SampType: **DUP** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **97941**
Client ID: **Composite B1-0,B2-** Batch ID: **K08VS362** TestNo: **EPA 8260B** Analysis Date: **8/2/2008** SeqNo: **1515377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	5.0						0	0	20	
1,1,1-Trichloroethane	ND	5.0						0	0	20	
1,1,2,2-Tetrachloroethane	ND	5.0						0	0	20	
1,1,2-Trichloroethane	ND	5.0						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **100141-042A-DUP** SampType: **DUP** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **97941**
Client ID: **Composite B1-0,B2-** Batch ID: **K08VS362** TestNo: **EPA 8260B** Analysis Date: **8/2/2008** SeqNo: **1515377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	ND	5.0						0	0	20	
1,1-Dichloroethene	ND	5.0						0	0	20	
1,1-Dichloropropene	ND	5.0						0	0	20	
1,2,3-Trichlorobenzene	ND	5.0						0	0	20	
1,2,3-Trichloropropane	ND	5.0						0	0	20	
1,2,4-Trichlorobenzene	ND	5.0						0	0	20	
1,2,4-Trimethylbenzene	ND	5.0						0	0	20	
1,2-Dibromo-3-chloropropane	ND	10						0	0	20	
1,2-Dibromoethane	ND	5.0						0	0	20	
1,2-Dichlorobenzene	ND	5.0						0	0	20	
1,2-Dichloroethane	ND	5.0						0	0	20	
1,2-Dichloropropane	ND	5.0						0	0	20	
1,3,5-Trimethylbenzene	ND	5.0						0	0	20	
1,3-Dichlorobenzene	ND	5.0						0	0	20	
1,3-Dichloropropane	ND	5.0						0	0	20	
1,4-Dichlorobenzene	ND	5.0						0	0	20	
2,2-Dichloropropane	ND	5.0						0	0	20	
2-Butanone	ND	50						0	0	20	
2-Chloroethyl vinyl ether	ND	5.0						0	0	20	
2-Chlorotoluene	ND	5.0						0	0	20	
2-Hexanone	ND	50						0	0	20	
4-Chlorotoluene	ND	5.0						0	0	20	
4-Isopropyltoluene	ND	5.0						0	0	20	
4-Methyl-2-pentanone	ND	50						0	0	20	
Acetone	ND	50						0	0	20	
Acrolein	ND	50						0	0	20	
Acrylonitrile	ND	50						0	0	20	
Benzene	ND	5.0						0	0	20	
Bromobenzene	ND	5.0						0	0	20	
Bromochloromethane	ND	5.0						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **100141-042A-DUP** SampType: **DUP** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **97941**
Client ID: **Composite B1-0,B2-** Batch ID: **K08VS362** TestNo: **EPA 8260B** Analysis Date: **8/2/2008** SeqNo: **1515377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromodichloromethane	ND	5.0						0	0	20	
Bromoform	ND	5.0						0	0	20	
Bromomethane	ND	5.0						0	0	20	
Carbon disulfide	ND	5.0						0	0	20	
Carbon tetrachloride	ND	5.0						0	0	20	
Chlorobenzene	ND	5.0						0	0	20	
Chloroethane	ND	5.0						0	0	20	
Chloroform	ND	5.0						0	0	20	
Chloromethane	ND	5.0						0	0	20	
cis-1,2-Dichloroethene	ND	5.0						0	0	20	
cis-1,3-Dichloropropene	ND	5.0						0	0	20	
Cyclohexanone	ND	50						0	0	20	
Di-isopropyl ether	ND	5.0						0	0	20	
Dibromochloromethane	ND	5.0						0	0	20	
Dibromomethane	ND	5.0						0	0	20	
Dichlorodifluoromethane	ND	5.0						0	0	20	
Ethyl Acetate	ND	50						0	0	20	
Ethyl Ether	ND	50						0	0	20	
Ethyl Tert-butyl ether	ND	5.0						0	0	20	
Ethylbenzene	ND	5.0						0	0	20	
Freon-113	ND	5.0						0	0	20	
Hexachlorobutadiene	ND	5.0						0	0	20	
Iodomethane	ND	5.0						0	0	20	
Isopropylbenzene	ND	5.0						0	0	20	
m,p-Xylene	ND	10						0	0	20	
Methylene chloride	ND	5.0						0	0	20	
MTBE	ND	5.0						0	0	20	
n-Butylbenzene	ND	5.0						0	0	20	
n-Propylbenzene	ND	5.0						0	0	20	
Naphthalene	ND	5.0						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **100141-042A-DUP** SampType: **DUP** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **97941**
Client ID: **Composite B1-0,B2-** Batch ID: **K08VS362** TestNo: **EPA 8260B** Analysis Date: **8/2/2008** SeqNo: **1515377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	ND	5.0						0	0	20	
sec-Butylbenzene	ND	5.0						0	0	20	
Styrene	ND	5.0						0	0	20	
Tert-amyl methyl ether	ND	5.0						0	0	20	
Tert-Butanol	ND	100						0	0	20	
tert-Butylbenzene	ND	5.0						0	0	20	
Tetrachloroethene	ND	5.0						0	0	20	
Toluene	ND	5.0						0	0	20	
trans-1,2-Dichloroethene	ND	5.0						0	0	20	
trans-1,3-Dichloropropene	ND	5.0						0	0	20	
Trichloroethene	ND	5.0						0	0	20	
Trichlorofluoromethane	ND	5.0						0	0	20	
Vinyl acetate	ND	50						0	0	20	
Vinyl chloride	ND	5.0						0	0	20	
Xylenes, Total	ND	15						0	0	20	
Surr: 1,2-Dichloroethane-d4	68.840		50.00		138	70	130		0	20	S
Surr: 4-Bromofluorobenzene	46.070		50.00		92.1	70	130		0	20	
Surr: Dibromofluoromethane	56.400		50.00		113	70	130		0	20	
Surr: Toluene-d8	47.680		50.00		95.4	70	130		0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
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- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **Q080801LCS1** SampType: **LCS** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **97836**
Client ID: **LCSW** Batch ID: **Q08VW177** TestNo: **EPA 8260B** Analysis Date: **8/1/2008** SeqNo: **1513451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	19.570	0.50	20.00	0	97.9	70	130				
Benzene	40.030	0.50	40.00	0	100	70	130				
Chlorobenzene	20.760	0.50	20.00	0	104	70	130				
MTBE	21.210	0.50	20.00	0	106	70	130				
Toluene	39.820	0.50	40.00	0	99.6	70	130				
Trichloroethene	19.340	0.50	20.00	0	96.7	70	130				
Surr: 1,2-Dichloroethane-d4	24.400		25.00		97.6	70	130				
Surr: 4-Bromofluorobenzene	25.310		25.00		101	70	130				
Surr: Dibromofluoromethane	25.700		25.00		103	70	130				
Surr: Toluene-d8	26.330		25.00		105	70	130				

Sample ID: **Q080801MB2MS** SampType: **MS** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **97836**
Client ID: **ZZZZZZ** Batch ID: **Q08VW177** TestNo: **EPA 8260B** Analysis Date: **8/1/2008** SeqNo: **1513452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	18.780	0.50	20.00	0	93.9	70	130				
Benzene	39.850	0.50	40.00	0	99.6	70	130				
Chlorobenzene	21.050	0.50	20.00	0	105	70	130				
MTBE	19.460	0.50	20.00	0	97.3	70	130				
Toluene	39.550	0.50	40.00	0	98.9	70	130				
Trichloroethene	18.920	0.50	20.00	0	94.6	70	130				
Surr: 1,2-Dichloroethane-d4	23.010		25.00		92.0	70	130				
Surr: 4-Bromofluorobenzene	24.890		25.00		99.6	70	130				
Surr: Dibromofluoromethane	24.630		25.00		98.5	70	130				
Surr: Toluene-d8	25.810		25.00		103	70	130				

Sample ID: **Q080801MB2MSD** SampType: **MSD** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **97836**
Client ID: **ZZZZZZ** Batch ID: **Q08VW177** TestNo: **EPA 8260B** Analysis Date: **8/1/2008** SeqNo: **1513453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **Q080801MB2MSD** SampType: **MSD** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **97836**
Client ID: **ZZZZZZ** Batch ID: **Q08VW177** TestNo: **EPA 8260B** Analysis Date: **8/1/2008** SeqNo: **1513453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	18.320	0.50	20.00	0	91.6	70	130	18.78	2.48	20	
Benzene	38.740	0.50	40.00	0	96.9	70	130	39.85	2.82	20	
Chlorobenzene	20.900	0.50	20.00	0	104	70	130	21.05	0.715	20	
MTBE	19.900	0.50	20.00	0	99.5	70	130	19.46	2.24	20	
Toluene	38.580	0.50	40.00	0	96.5	70	130	39.55	2.48	20	
Trichloroethene	18.330	0.50	20.00	0	91.7	70	130	18.92	3.17	20	
Surr: 1,2-Dichloroethane-d4	23.040		25.00		92.2	70	130		0	20	
Surr: 4-Bromofluorobenzene	24.400		25.00		97.6	70	130		0	20	
Surr: Dibromofluoromethane	25.200		25.00		101	70	130		0	20	
Surr: Toluene-d8	26.480		25.00		106	70	130		0	20	

Sample ID: **Q080801MB2** SampType: **MBLK** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **97836**
Client ID: **PBW** Batch ID: **Q08VW177** TestNo: **EPA 8260B** Analysis Date: **8/1/2008** SeqNo: **1513454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	0.50									
1,1,1-Trichloroethane	ND	0.50									
1,1,2,2-Tetrachloroethane	ND	0.50									
1,1,2-Trichloroethane	ND	0.50									
1,1-Dichloroethane	ND	0.50									
1,1-Dichloroethene	ND	0.50									
1,1-Dichloropropene	ND	0.50									
1,2,3-Trichlorobenzene	ND	0.50									
1,2,3-Trichloropropane	ND	0.50									
1,2,4-Trichlorobenzene	ND	0.50									
1,2,4-Trimethylbenzene	ND	0.50									
1,2-Dibromo-3-chloropropane	ND	0.50									
1,2-Dibromoethane	ND	0.50									
1,2-Dichlorobenzene	ND	0.50									
1,2-Dichloroethane	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **Q080801MB2** SampType: **MBLK** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **97836**
Client ID: **PBW** Batch ID: **Q08VW177** TestNo: **EPA 8260B** Analysis Date: **8/1/2008** SeqNo: **1513454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloropropane	ND	0.50									
1,3,5-Trimethylbenzene	ND	0.50									
1,3-Dichlorobenzene	ND	0.50									
1,3-Dichloropropane	ND	0.50									
1,4-Dichlorobenzene	ND	0.50									
2,2-Dichloropropane	ND	0.50									
2-Chlorotoluene	ND	0.50									
4-Chlorotoluene	ND	0.50									
4-Isopropyltoluene	ND	0.50									
Benzene	ND	0.50									
Bromobenzene	ND	0.50									
Bromodichloromethane	ND	0.50									
Bromoform	ND	0.50									
Bromomethane	ND	0.50									
Carbon tetrachloride	ND	0.50									
Chlorobenzene	ND	0.50									
Chloroethane	ND	0.50									
Chloroform	ND	0.50									
Chloromethane	ND	0.50									
cis-1,2-Dichloroethene	ND	0.50									
cis-1,3-Dichloropropene	ND	0.50									
Di-isopropyl ether	ND	0.50									
Dibromochloromethane	ND	0.50									
Dibromomethane	ND	0.50									
Dichlorodifluoromethane	ND	0.50									
Ethyl tert-butyl ether	ND	0.50									
Ethylbenzene	ND	0.50									
Hexachlorobutadiene	ND	0.50									
Isopropylbenzene	ND	0.50									
m,p-Xylene	ND	1.0									

Qualifiers:

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- E Value above quantitation range
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- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **Q080801MB2** SampType: **MBLK** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **97836**
Client ID: **PBW** Batch ID: **Q08VW177** TestNo: **EPA 8260B** Analysis Date: **8/1/2008** SeqNo: **1513454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methylene chloride	ND	1.0									
MTBE	ND	0.50									
n-Butylbenzene	ND	0.50									
n-Propylbenzene	ND	0.50									
Naphthalene	ND	0.50									
o-Xylene	ND	0.50									
sec-Butylbenzene	ND	0.50									
Styrene	ND	0.50									
Tert-amyl methyl ether	ND	0.50									
Tert-Butanol	ND	10									
tert-Butylbenzene	ND	0.50									
Tetrachloroethene	ND	0.50									
Toluene	ND	0.50									
trans-1,2-Dichloroethene	ND	0.50									
Trichloroethene	ND	0.50									
Trichlorofluoromethane	ND	0.50									
Vinyl chloride	ND	0.50									
Surr: 1,2-Dichloroethane-d4	23.880		25.00		95.5	70	130				
Surr: 4-Bromofluorobenzene	23.370		25.00		93.5	70	130				
Surr: Dibromofluoromethane	25.730		25.00		103	70	130				
Surr: Toluene-d8	25.720		25.00		103	70	130				

Sample ID: **100141-041A** SampType: **DUP** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **97836**
Client ID: **B18-GW** Batch ID: **Q08VW177** TestNo: **EPA 8260B** Analysis Date: **8/1/2008** SeqNo: **1514156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	0.50						0	0	20	
1,1,1-Trichloroethane	ND	0.50						0	0	20	
1,1,2,2-Tetrachloroethane	ND	0.50						0	0	20	
1,1,2-Trichloroethane	ND	0.50						0	0	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **100141-041A** SampType: **DUP** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **97836**
Client ID: **B18-GW** Batch ID: **Q08VW177** TestNo: **EPA 8260B** Analysis Date: **8/1/2008** SeqNo: **1514156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	ND	0.50						0	0	20	
1,1-Dichloroethene	ND	0.50						0	0	20	
1,1-Dichloropropene	ND	0.50						0	0	20	
1,2,3-Trichlorobenzene	ND	0.50						0	0	20	
1,2,3-Trichloropropane	ND	0.50						0	0	20	
1,2,4-Trichlorobenzene	ND	0.50						0	0	20	
1,2,4-Trimethylbenzene	ND	0.50						0	0	20	
1,2-Dibromo-3-chloropropane	ND	0.50						0	0	20	
1,2-Dibromoethane	ND	0.50						0	0	20	
1,2-Dichlorobenzene	ND	0.50						0	0	20	
1,2-Dichloroethane	ND	0.50						0	0	20	
1,2-Dichloropropane	ND	0.50						0	0	20	
1,3,5-Trimethylbenzene	ND	0.50						0	0	20	
1,3-Dichlorobenzene	ND	0.50						0	0	20	
1,3-Dichloropropane	ND	0.50						0	0	20	
1,4-Dichlorobenzene	ND	0.50						0	0	20	
2,2-Dichloropropane	ND	0.50						0	0	20	
2-Butanone	ND	10						0	0	20	
2-Chloroethyl vinyl ether	ND	0.50						0	0	20	
2-Chlorotoluene	ND	0.50						0	0	20	
2-Hexanone	ND	10						0	0	20	
4-Chlorotoluene	ND	0.50						0	0	20	
4-Isopropyltoluene	ND	0.50						0	0	20	
4-Methyl-2-pentanone	ND	10						0	0	20	
Acetone	ND	10						0	0	20	
Acrolein	ND	10						0	0	20	
Acrylonitrile	ND	10						0	0	20	
Benzene	ND	0.50						0	0	20	
Bromobenzene	ND	0.50						0	0	20	
Bromochloromethane	ND	0.50						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **100141-041A**	SampType: **DUP**	TestCode: **8260_WP_LL**	Units: **µg/L**	Prep Date:		RunNo: **97836**			
Client ID: **B18-GW**	Batch ID: **Q08VW177**	TestNo: **EPA 8260B**		Analysis Date: **8/1/2008**		SeqNo: **1514156**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromodichloromethane	ND	0.50						0	0	20	
Bromoform	ND	0.50						0	0	20	
Bromomethane	ND	0.50						0	0	20	
Carbon disulfide	ND	0.50						0	0	20	
Carbon tetrachloride	ND	0.50						0	0	20	
Chlorobenzene	ND	0.50						0	0	20	
Chloroethane	ND	0.50						0	0	20	
Chloroform	ND	0.50						0	0	20	
Chloromethane	ND	0.50						0	0	20	
cis-1,2-Dichloroethene	ND	0.50						0	0	20	
cis-1,3-Dichloropropene	ND	0.50						0	0	20	
Cyclohexanone	ND	50						0	0	20	
Di-isopropyl ether	ND	0.50						0	0	0	
Dibromochloromethane	ND	0.50						0	0	20	
Dibromomethane	ND	0.50						0	0	20	
Dichlorodifluoromethane	ND	0.50						0	0	20	
Ethyl Acetate	ND	10						0	0	20	
Ethyl Ether	ND	10						0	0	20	
Ethyl tert-butyl ether	ND	0.50						0	0	0	
Ethylbenzene	ND	0.50						0	0	20	
Freon-113	ND	0.50						0	0	20	
Hexachlorobutadiene	ND	0.50						0	0	20	
Iodomethane	ND	0.50						0	0	20	
Isopropylbenzene	ND	0.50						0	0	20	
m,p-Xylene	ND	1.0						0	0	20	
Methylene chloride	ND	1.0						0	0	20	
MTBE	ND	0.50						0	0	20	
n-Butylbenzene	ND	0.50						0	0	20	
n-Propylbenzene	ND	0.50						0	0	20	
Naphthalene	ND	0.50						8.000	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: 100141-041A	SampType: DUP	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 97836
Client ID: B18-GW	Batch ID: Q08VW177	TestNo: EPA 8260B		Analysis Date: 8/1/2008	SeqNo: 1514156

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	ND	0.50						0	0	20	
sec-Butylbenzene	ND	0.50						0	0	20	
Styrene	ND	0.50						0	0	20	
Tert-amyl methyl ether	ND	0.50						0	0	0	
Tert-Butanol	ND	10						0	0	0	
tert-Butylbenzene	ND	0.50						0	0	20	
Tetrachloroethene	ND	0.50						0	0	20	
Toluene	ND	0.50						0	0	20	
trans-1,2-Dichloroethene	ND	0.50						0	0	20	
trans-1,3-Dichloropropene	ND	0.50						0	0	20	
Trichloroethene	ND	0.50						0	0	20	
Trichlorofluoromethane	ND	0.50						0	0	20	
Vinyl acetate	ND	10						0	0	20	
Vinyl chloride	ND	0.50						0	0	20	
Xylenes, Total	ND	1.5						0	0	0	
Surr: 1,2-Dichloroethane-d4	24.280		25.00		97.1	70	130		0	0	
Surr: 4-Bromofluorobenzene	18.980		25.00		75.9	70	130		0	0	
Surr: Dibromofluoromethane	27.400		25.00		110	70	130		0	0	
Surr: Toluene-d8	22.220		25.00		88.9	70	130		0	0	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SIERRA
ANALYTICAL

06 August 2008

Diane Galvan
Advanced Technology Labs
3275 Walnut Avenue
Signal Hill, CA 90755

RE:NA

Work Order No.: 0807604

Attached are the results of the analyses for samples received by the laboratory on 07/30/08 10:00.

The samples were received by Sierra Analytical Labs, Inc. with a chain of custody record attached or completed at the submittal of the samples.

The analyses were performed according to the prescribed method as outlined by EPA, Standard Methods, and A.S.T.M.

The remaining portions of the samples will be disposed of within 30 days from the date of this report.
If you require any additional retaining time, please advise us.

Sincerely,

Richard K. Forsyth

Laboratory Director

Sierra Analytical Labs, Inc. is certified by the California Department of Health Services (DOHS), Environmental Laboratory Accredidation Program (ELAP) No. 2320.

26052 Merit Circle Suite 105, Laguna Hills, California 92653
Telephone: (949) 348-9389 Fax: (949) 348-9115
E-Mail: sierralabs@earthlink.net

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03785	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/06/08 10:12

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
100141-042B	0807604-01	Soil	07/25/08 00:00	07/30/08 10:00
100141-043B	0807604-02	Soil	07/25/08 00:00	07/30/08 10:00
100141-044B	0807604-03	Soil	07/25/08 00:00	07/30/08 10:00
100141-045B	0807604-04	Soil	07/25/08 00:00	07/30/08 10:00
100141-046B	0807604-05	Soil	07/25/08 00:00	07/30/08 10:00
100141-047B	0807604-06	Soil	07/25/08 00:00	07/30/08 10:00
100141-048B	0807604-07	Soil	07/25/08 00:00	07/30/08 10:00
100141-049B	0807604-08	Soil	07/25/08 00:00	07/30/08 10:00
100141-050B	0807604-09	Soil	07/25/08 00:00	07/30/08 10:00
100141-051B	0807604-10	Soil	07/25/08 00:00	07/30/08 10:00

CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 4 °C, and accompanied by chain of custody documentation.
PRESERVATION:	Samples requiring preservation were verified prior to sample preparation and analysis.
HOLDING TIMES:	All holding times were met, unless otherwise noted in the report with data qualifiers.
QA/QC CRITERIA:	All quality objective criteria were met, except as noted in the report with data qualifiers.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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E-Mail: sierralabs @ sierralabs.net

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03785	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/06/08 10:12

Chlorinated Herbicides by EPA Method 8151A

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
100141-042B (0807604-01) Soil Sampled: 07/25/08 00:00 Received: 07/30/08 10:00									
2,4,5-T	ND	1.6	µg/kg	1	B8H0509	08/05/08	08/06/08 08:37	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*72.2 %*		*35-150*	"	"	"	"	
100141-043B (0807604-02) Soil Sampled: 07/25/08 00:00 Received: 07/30/08 10:00									
2,4,5-T	ND	1.6	µg/kg	1	B8H0509	08/05/08	08/06/08 08:37	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*54.9 %*		*35-150*	"	"	"	"	

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SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03785	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/06/08 10:12

Chlorinated Herbicides by EPA Method 8151A

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
100141-044B (0807604-03) Soil Sampled: 07/25/08 00:00 Received: 07/30/08 10:00									
2,4,5-T	ND	1.6	µg/kg	1	B8H0509	08/05/08	08/06/08 08:37	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*51.5 %*		*35-150*		"	"	"	
100141-045B (0807604-04) Soil Sampled: 07/25/08 00:00 Received: 07/30/08 10:00									
2,4,5-T	ND	1.6	µg/kg	1	B8H0509	08/05/08	08/06/08 08:37	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*57.2 %*		*35-150*		"	"	"	

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SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03785	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/06/08 10:12

Chlorinated Herbicides by EPA Method 8151A

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
100141-046B (0807604-05) Soil Sampled: 07/25/08 00:00 Received: 07/30/08 10:00									
2,4,5-T	ND	1.6	µg/kg	1	B8H0509	08/05/08	08/06/08 08:37	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*76.8 %*		*35-150*	"	"	"	"	
100141-047B (0807604-06) Soil Sampled: 07/25/08 00:00 Received: 07/30/08 10:00									
2,4,5-T	ND	1.6	µg/kg	1	B8H0509	08/05/08	08/06/08 08:37	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*36.5 %*		*35-150*	"	"	"	"	

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SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03785	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/06/08 10:12

Chlorinated Herbicides by EPA Method 8151A

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
100141-048B (0807604-07) Soil Sampled: 07/25/08 00:00 Received: 07/30/08 10:00									
2,4,5-T	ND	1.6	µg/kg	1	B8H0509	08/05/08	08/06/08 08:37	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*46.1 %*		*35-150*	"	"	"	"	
100141-049B (0807604-08) Soil Sampled: 07/25/08 00:00 Received: 07/30/08 10:00									
2,4,5-T	ND	1.6	µg/kg	1	B8H0509	08/05/08	08/06/08 08:37	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*42.3 %*		*35-150*	"	"	"	"	

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TELEPHONE: (949) 348-9389 FAX: (949) 348-9115
E-MAIL: SIERRALABS @ SIERRALABS.NET

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03785	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/06/08 10:12

Chlorinated Herbicides by EPA Method 8151A

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
100141-050B (0807604-09) Soil Sampled: 07/25/08 00:00 Received: 07/30/08 10:00									
2,4,5-T	ND	1.6	µg/kg	1	B8H0509	08/05/08	08/06/08 08:37	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*43.8 %*		*35-150*	"	"	"	"	
100141-051B (0807604-10) Soil Sampled: 07/25/08 00:00 Received: 07/30/08 10:00									
2,4,5-T	ND	1.6	µg/kg	1	B8H0509	08/05/08	08/06/08 08:37	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*53.8 %*		*35-150*	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03785	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/06/08 10:12

Chlorinated Herbicides by EPA Method 8151A - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8H0509 - EPA 8151A Herbicides										
Blank (B8H0509-BLK1)				Prepared: 08/05/08 Analyzed: 08/06/08						
2,4,5-T	ND	1.6	µg/kg							
2,4,5-TP (Silvex)	ND	1.6	"							
2,4-D	ND	1.6	"							
2,4-DB	ND	4.0	"							
3,5-Dichlorobenzoic acid	ND	2.0	"							
4-Nitrophenol	ND	2.0	"							
Acifluorfen	ND	1.6	"							
Bentazon	ND	1.6	"							
Chloramben	ND	1.6	"							
Dalapon	ND	20	"							
DCPA diacid	ND	1.6	"							
Dicamba	ND	1.6	"							
Dichlorprop	ND	1.6	"							
Dinoseb	ND	1.6	"							
Pentachlorophenol	ND	1.6	"							
Picloram	ND	1.6	"							
Surrogate: 2,4-Dichlorophenylacetic Acid	*94.7*		*"*	*100*		*94.7*	*35-150*			
LCS (B8H0509-BS1)				Prepared: 08/05/08 Analyzed: 08/06/08						
2,4,5-T	5.15	1.6	µg/kg	10.0		51.5	20-150			
2,4,5-TP (Silvex)	7.69	1.6	"	10.0		76.9	20-150			
Dichlorprop	4.33	1.6	"	10.0		43.3	20-150			
Dinoseb	6.51	1.6	"	10.0		65.1	20-150			
Matrix Spike (B8H0509-MS1)	**Source: 0807604-01**			Prepared: 08/05/08 Analyzed: 08/06/08						
2,4,5-T	7.41	1.6	µg/kg	10.0	ND	74.1	20-150			
2,4,5-TP (Silvex)	10.1	1.6	"	10.0	ND	101	20-150			
Dichlorprop	6.10	1.6	"	10.0	ND	61.0	20-150			
Dinoseb	8.44	1.6	"	10.0	ND	84.4	20-150			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03785	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/06/08 10:12

Chlorinated Herbicides by EPA Method 8151A - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8H0509 - EPA 8151A Herbicides										
Matrix Spike Dup (B8H0509-MSD1)	**Source: 0807604-01**			Prepared: 08/05/08 Analyzed: 08/06/08						
2,4,5-T	7.01	1.6	µg/kg	10.0	ND	70.1	20-150	5.55	30	
2,4,5-TP (Silvex)	9.52	1.6	"	10.0	ND	95.2	20-150	5.91	30	
Dichlorprop	5.41	1.6	"	10.0	ND	54.1	20-150	12.0	30	
Dinoseb	8.73	1.6	"	10.0	ND	87.3	20-150	3.38	30	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03785	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/06/08 10:12

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755-5225
www.atlglobal.com
TEL: (562) 989-4045 FAX: (562) 989-4040

CHAIN-OF-CUSTODY RECORD

0807604

QC Level: CT

Subcontractor:

Sierra Laboratories
26052 Merit Circle Suite 105
Laguna Hills, CA 92653

TEL: (949) 348-9389
FAX: (949) 348-9115
Acct #:

29-Jul-08

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 8151		
01	100141-042B / Composite B1-0,B2-0,B3-0,B4-	Soil	7/25/2008	4OZG	1		
02	100141-043B / Composite B1-2.5,B2-2.5,B3-2.	Soil	7/25/2008	4OZG	1		
03	100141-044B / Composite B5-0,B6-0,B7-0,B8-	Soil	7/25/2008	4OZG	1		
04	100141-045B / Composite B5-2.5,B6-2.5,B7-2.	Soil	7/25/2008	4OZG	1		
05	100141-046B / Composite B9-0,B10-0,B11-0,	Soil	7/25/2008	4OZG	1		
06	100141-047B / Composite B9-2.5,B10-2.5,B11	Soil	7/25/2008	4OZG	1		
07	100141-048B / Composite B13-0,B14-0,B15-0,	Soil	7/25/2008	4OZG	1		
08	100141-049B / Composite B13-2.5,B14-2.5,B1	Soil	7/25/2008	4OZG	1		
09	100141-050B / Composite B17-0,B18-0,B19-0,	Soil	7/25/2008	4OZG	1		
10	100141-051B / Composite B17-2.5,B18-2.5,B1	Soil	7/25/2008	4OZG	1		

B46 soil

General Comments: Please email sample receipt acknowledgement to the PM.
Please use PO#: SC03785 Please fax results by: NORMAL TAT
PLEASE SEND REPORT TO DIANE GALVAN

		Date/Time			Date/Time
Relinquished by:	Kalsang	7/29/08	**Received by:**	OnTrac # D10010180259818	7/29/08
Relinquished by:			**Received by:**	TZ Fgh	7.30.08/10:00

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: 7/29/08

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: GSS

Sample Condition Upon Receipt (Y 8)
1. CHILLED Y☑ N☐ 4. SEALED Y☐ N☑
2. HEADSPACE (VOA) Y☐ N☑ 5. # OF SPLS MATCH COC Y☑ N☐
3. CONTAINER INTACT Y☑ N☐ 6. PRESERVED Y☑ N☐

Client: GEOCON CONSULTANTS, INC.
Attn:
Address: 6671 Brisa Street
City Livermore State CA Zip Code 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

Project Name: I 80 E. TRUCK SCALE Project #: ES128-06-04 Sampler: (Printed Name) CM/DW (Signature) C. MERRITT

Relinquished by: (Signature and Printed Name) CHRIS MERRITT Date: 7-28-08 Time: 1645 Received by: (Signature and Printed Name) [signature] Date: 7/29/08 Time: 8:00
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
CM (Print Name) 7.25-08 (Date)
CM (Signature)

Send Report To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides); 8082 (PCB); 8260B (Volatiles); 8270C (BNA); 6010B (Total Metal); 8015B (GRO) / BTEX; 8015B (DRO) + MD; 8021 (BTEX); TITLE 22 / CAM 17 (6010 / 7000); HEXAVALENT CHROMIUM: 7199

SPECIFY APPROPRIATE MATRIX: SOIL; WATER; GROUND WATER; WASTEWATER

PRESERVATION

Q A / Q C: RTNE ☐ CT ☑ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s) #	Container(s) Type	REMARKS
	100141-1	B1-0	7-25-08		E	1	TM	
	2	B2-0				1		
	3	B3-0 (COMPOSITE 4-1)				1		
	4	B4-0				1		
	5	B1-2.5				1		
	6	B2-2.5 (COMPOSITE 4-1)				1		
	7	B3-2.5				1		
	8	B4-2.5				1		
	9	B5-0 (COMPOSITE				1		
	10	B6-0 4-1 SEE P2)				1		

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: White (with report) Yellow (folder) Pink (client)

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: GSD

Sample Condition Upon Receipt
1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC.
Attn:
Address: 6671 Brisa Street
City Livermore State CA Zip Code 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

Project Name: I-580 E TRUCK SCALE Project #: E8128-06-04 Sampler: (Printed Name) CM / DW (Signature) C. MERRITT

Relinquished by: (Signature and Printed Name) CHRIS MERRITT Date: 7-28-08 Time: 1645 Received by: (Signature and Printed Name) Date: Time:

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
CM (Print Name) 7-28-08 (Date)
CM (Signature)

Send Report To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides), 8082 (PCB), 8260B (Volatiles), 8270C (BNA), 6010B (Total Metal), 8015B (GRO) / BTEX EPA 8021B + MO, 8015B (DRO) + MO, 8021 (BTEX), TITLE 22 / CAM 17 (6010 / 7000), HERBICIDES 8151A

SPECIFY APPROPRIATE MATRIX: SOIL, WATER, GROUND WATER, WASTEWATER

PRESERVATION

Q A / Q C: RTNE ☐ CT ☐ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s) #	Container(s) Type	REMARKS
	108141-11	B7-0 (COMPOSITE 4-1 BSTF P1)	7-25-08		E	1	T	C
	12	B8-0						
	13	B5-2.5						
	14	B6-2.5						
	15	B7-2.5						
	16	B8-2.5						
	17	B9-0						
	18	B10-0						
	19	B11-0						
	20	B12-0						

COMPOSITE 4-1 (B7-0 through B8-2.5)
COMPOSITE 4-1 (B9-0 through B12-0)

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
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Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: GSO

Sample Condition Upon Receipt
1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC.
Attn:
Address: 6671 Brisa Street
City Livermore State CA Zip Code 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

Project Name: I-80 E. TRUCKSCALES Project #: E6128-06-04 Sampler: (Printed Name) CM/DW (Signature) C. MERRITT

Relinquished by: (Signature and Printed Name) CHRIS MERRITT Date: 7-28-08 Time: 1645 Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
CM (Print Name) 7-28-08 (Date)
CM (Signature)

Send Report To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides), 8082 (PCB), 8260B (Volatiles), 8270C (BNA), 6010B (Total Metal), 8015B (GRO) / BTEX, 8015B (DRO), 8021 (BTEX), TITLE 22 / CAM 17 (6010 / 7000), HEXAVALENT CHROME, TPH MO, HYDROCARBONS - 8151A

SPECIFY APPROPRIATE MATRIX: SOIL, WATER, GROUND WATER, WASTEWATER

PRESERVATION

Q A / Q C: RTNE ☐ CT ☐ SWRCB ☐ Logcode _____ OTHER _____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	100141-21	B9-2.5	7-28-08		E	1	T	C	
	22	B10-2.5							
	23	B11-2.5							
	24	B12-2.5							
	25	B13-0							
	26	B14-0							
	27	B15-0							
	28	B16-0							
	29	B 13-2.5							
	30	B 14-2.5							

COMPOSITE 4-1 (B9-2.5 / B10-2.5 / B11-2.5 / B12-2.5)
COMPOSITE 4-1 (B13-0 / B14-0 / B15-0 / B16-0)
COMPOSITE 4-1 SEE PG 4 (B13-2.5 / B14-2.5)

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: White with report - Yellow to folder - Pink to submitter

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: GSO

Sample Condition Upon Receipt
1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC.
Attn:
Address: 6671 Brisa Street
City Livermore State CA Zip Code 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

Project Name: I-580 E. TRUCK SCALE Project #: E8128-06-04 Sampler: (Printed Name) CM / DW (Signature) C. MERRITT

Relinquished by: (Signature and Printed Name) CHRIS MERRITT Date: 7-28-08 Time: 1645 Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: CM 7-28-08 (Print Name / Date)
CM (Signature)

Send Report To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Bill To:
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Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides); 8082 (PCB); 8260B (Volatiles); 8270C (BNA); 6010B (Total Metal); 8015B (GRO) / BTEX; 8015B (DRO); 8021 (BTEX); TITLE 22 / CAM 17 (6010 / 7000); HEXAVALENT CHROMIUM; STLC

SPECIFY APPROPRIATE MATRIX: SOIL; WATER; GROUND WATER; WASTEWATER

Container(s): TAT; # ; Type

PRESERVATION

Q A / Q C: RTNE ☐ CT ☒ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	REMARKS
	100141-31	B15-2.5 (COMPOSITE 4-1 (SEE P2))	7-28-08		
	32	B16-2.5			
	33	B17-0			
	34	B18-0 (COMPOSITE 4-1)			
	35	B19-0			
	36	B20-0			
	37	B17-2.5			
	38	B18-2.5 (COMPOSITE 4-1)			
	39	B19-2.5			
	40	B20-2.5			

	TAT	#	Type	PRESERVATION	REMARKS
	E	1	TM	C	

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr; B= Emergency Next workday; C= Critical 2 Workdays; D= Urgent 3 Workdays; E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

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DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: GSS

Sample Condition Upon Receipt: 1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐ 2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐ 3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC.
Attn:
Address: 6671 Brisa Street
City Livermore State CA Zip Code 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

Project Name: I-80 E. TRUCK SCALES Project #: E8128-06-04 Sampler: (Printed Name) CM/DW (Signature) C. MERRITT

Relinquished by: (Signature and Printed Name) CHRIS MERRITT Date: 7-28-08 Time: 1645 Received by: (Signature and Printed Name) Date: Time:

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
CM 7-28-08
Print Name Date
CM
Signature

Send Report To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides); 8082 (PCB); 8260B (Volatiles); 8270C (BNA); 8010B (Total Metal); 8015B (GRO) / BTEX GAS ONLY; 8015B (DRO) +MO; 8021 (BTEX); TITLE 22 / CAM 17 (6010 / 7000)

SPECIFY APPROPRIATE MATRIX: SOIL; WATER; GROUND WATER; WASTEWATER

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A	8082	8260B	8270C	8010B	8015B (GRO)	8015B (DRO)	8021	TITLE 22	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	100141-41	~~GTL~~ B18-GW	7-25-08			X			X	X		X				X		E	11	T/P/AG	C/HN	

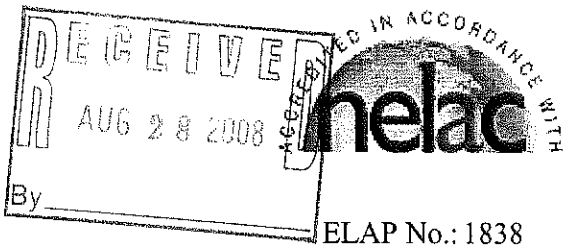
• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

QA/QC: RTNE ☐ CT ☑ SWRCB ☐ Logcode ____ OTHER ____



August 19, 2008

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 100363

RE: EB I-80, E8128-06-04

Attention: Chris Giuntoli

Enclosed are the results for sample(s) received on August 12, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

CLIENT: Geocon Consultants, Inc.
Project: EB I-80, E8128-06-04
Lab Order: 100363

CASE NARRATIVE

Samples for Herbicides (8151) were subcontracted to Sierra Analytical Laboratories, Inc. with ELAP Cert.#2320.

Analytical Comments for Method 7471

Matrix Spike (MS) and /or Matrix Spike Duplicate (MSD) are/is outside recovery criteria for sample 100371-001AMS; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Analytical Comments for Method 8015 (DRO/ORO)

RPD for Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria for sample 100365-011AMSD; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Analytical Comments for Method 8081

Dilution was necessary for samples 100363-027A and 100363-029A, due to sample matrix.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Lab Order: 100363
Project: EB I-80, E8128-06-04
Lab ID: 100363-025A

Client Sample ID: Composite B21-0, 22-0, 23-0, 24-0
Collection Date: 8/11/2008
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080814E	QC Batch: 48035			PrepDate:	8/13/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/14/2008 03:52 PM
Arsenic	1.4	1.0		mg/Kg	1	8/14/2008 03:52 PM
Barium	95	1.0		mg/Kg	1	8/14/2008 03:52 PM
Beryllium	ND	1.0		mg/Kg	1	8/14/2008 03:52 PM
Cadmium	ND	1.0		mg/Kg	1	8/14/2008 03:52 PM
Chromium	35	1.0		mg/Kg	1	8/14/2008 03:52 PM
Cobalt	10	1.0		mg/Kg	1	8/14/2008 03:52 PM
Copper	18	2.0		mg/Kg	1	8/14/2008 03:52 PM
Lead	37	1.0		mg/Kg	1	8/14/2008 03:52 PM
Molybdenum	ND	1.0		mg/Kg	1	8/14/2008 03:52 PM
Nickel	34	1.0		mg/Kg	1	8/14/2008 03:52 PM
Selenium	1.3	1.0		mg/Kg	1	8/14/2008 03:52 PM
Silver	ND	1.0		mg/Kg	1	8/14/2008 03:52 PM
Thallium	ND	1.0		mg/Kg	1	8/14/2008 03:52 PM
Vanadium	27	1.0		mg/Kg	1	8/14/2008 03:52 PM
Zinc	47	1.0		mg/Kg	1	8/14/2008 03:52 PM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_080813A	QC Batch: 48016			PrepDate:	8/13/2008	Analyst: **SMH**
DRO	ND	1.0		mg/Kg	1	8/14/2008 07:42 AM
ORO	ND	1.0		mg/Kg	1	8/14/2008 07:42 AM
Surr: p-Terphenyl	97.0	26-127		%REC	1	8/14/2008 07:42 AM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC1_080814A	QC Batch: D08VS124			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	8/14/2008 11:18 PM
Surr: Bromofluorobenzene (FID)	93.7	42-142		%REC	1	8/14/2008 11:18 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080814A	QC Batch: 48073			PrepDate:	8/14/2008	Analyst: **VLT**
4,4'-DDD	ND	2.0		µg/Kg	1	8/14/2008 08:04 PM
4,4'-DDE	ND	2.0		µg/Kg	1	8/14/2008 08:04 PM
4,4'-DDT	ND	2.0		µg/Kg	1	8/14/2008 08:04 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Lab Order: 100363
Project: EB I-80, E8128-06-04
Lab ID: 100363-025A

Client Sample ID: Composite B21-0, 22-0, 23-0, 24-0
Collection Date: 8/11/2008
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080814A	QC Batch: 48073			PrepDate:	8/14/2008	Analyst: **VLT**
Aldrin	ND	1.0		µg/Kg	1	8/14/2008 08:04 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/14/2008 08:04 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/14/2008 08:04 PM
beta-BHC	ND	1.0		µg/Kg	1	8/14/2008 08:04 PM
Chlordane	ND	8.5		µg/Kg	1	8/14/2008 08:04 PM
delta-BHC	ND	1.0		µg/Kg	1	8/14/2008 08:04 PM
Dieldrin	ND	2.0		µg/Kg	1	8/14/2008 08:04 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/14/2008 08:04 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/14/2008 08:04 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/14/2008 08:04 PM
Endrin	ND	2.0		µg/Kg	1	8/14/2008 08:04 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/14/2008 08:04 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/14/2008 08:04 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/14/2008 08:04 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/14/2008 08:04 PM
Heptachlor	ND	1.0		µg/Kg	1	8/14/2008 08:04 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/14/2008 08:04 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/14/2008 08:04 PM
Toxaphene	ND	50		µg/Kg	1	8/14/2008 08:04 PM
Surr: Decachlorobiphenyl	71.3	31-132		%REC	1	8/14/2008 08:04 PM
Surr: Tetrachloro-m-xylene	59.9	34-106		%REC	1	8/14/2008 08:04 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080815C	QC Batch: 48040			PrepDate:	8/13/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/15/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080813A	QC Batch: K08VS377			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/13/2008 01:45 PM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/13/2008 01:45 PM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/13/2008 01:45 PM
Ethylbenzene	ND	5.0		µg/Kg	1	8/13/2008 01:45 PM
m,p-Xylene	ND	10		µg/Kg	1	8/13/2008 01:45 PM
MTBE	ND	5.0		µg/Kg	1	8/13/2008 01:45 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B21-0, 22-0, 23-0, 24-0
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-025A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_080813A	QC Batch: K08VS377			PrepDate:		Analyst: **CBB**
o-Xylene	ND	5.0		µg/Kg	1	8/13/2008 01:45 PM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/13/2008 01:45 PM
Tert-Butanol	ND	100		µg/Kg	1	8/13/2008 01:45 PM
Toluene	ND	5.0		µg/Kg	1	8/13/2008 01:45 PM
Surr: 1,2-Dichloroethane-d4	112	70-130		%REC	1	8/13/2008 01:45 PM
Surr: 4-Bromofluorobenzene	93.1	70-130		%REC	1	8/13/2008 01:45 PM
Surr: Dibromofluoromethane	99.6	70-130		%REC	1	8/13/2008 01:45 PM
Surr: Toluene-d8	95.2	70-130		%REC	1	8/13/2008 01:45 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4080

CLIENT: Geocon Consultants, Inc.
Lab Order: 100363
Project: EB I-80, E8128-06-04
Lab ID: 100363-026A

Client Sample ID: Composite B21-2.5, 22-2.5, 23-2.5, 24
Collection Date: 8/11/2008
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080814E	QC Batch: 48035			PrepDate:	8/13/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/15/2008 11:46 AM
Arsenic	ND	1.0		mg/Kg	1	8/15/2008 11:46 AM
Barium	89	1.0		mg/Kg	1	8/15/2008 11:46 AM
Beryllium	ND	1.0		mg/Kg	1	8/15/2008 11:46 AM
Cadmium	ND	1.0		mg/Kg	1	8/15/2008 11:46 AM
Chromium	32	1.0		mg/Kg	1	8/15/2008 11:46 AM
Cobalt	9.7	1.0		mg/Kg	1	8/15/2008 11:46 AM
Copper	12	2.0		mg/Kg	1	8/15/2008 11:46 AM
Lead	7.8	1.0		mg/Kg	1	8/15/2008 11:46 AM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2008 11:46 AM
Nickel	31	1.0		mg/Kg	1	8/15/2008 11:46 AM
Selenium	ND	1.0		mg/Kg	1	8/15/2008 11:46 AM
Silver	ND	1.0		mg/Kg	1	8/15/2008 11:46 AM
Thallium	ND	1.0		mg/Kg	1	8/15/2008 11:46 AM
Vanadium	26	1.0		mg/Kg	1	8/15/2008 11:46 AM
Zinc	25	1.0		mg/Kg	1	8/15/2008 11:46 AM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_080813A	QC Batch: 48016			PrepDate:	8/13/2008	Analyst: **SMH**
DRO	ND	1.0		mg/Kg	1	8/14/2008 08:07 AM
ORO	ND	1.0		mg/Kg	1	8/14/2008 08:07 AM
Surr: p-Terphenyl	87.7	26-127		%REC	1	8/14/2008 08:07 AM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC1_080814A	QC Batch: D08VS124			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	8/15/2008 12:17 AM
Surr: Bromofluorobenzene (FID)	94.8	42-142		%REC	1	8/15/2008 12:17 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080814A	QC Batch: 48073			PrepDate:	8/14/2008	Analyst: **VLT**
4,4'-DDD	ND	2.0		µg/Kg	1	8/14/2008 08:24 PM
4,4'-DDE	ND	2.0		µg/Kg	1	8/14/2008 08:24 PM
4,4'-DDT	ND	2.0		µg/Kg	1	8/14/2008 08:24 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B21-2.5, 22-2.5, 23-2.5, 24
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-026A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080814A	QC Batch: 48073			PrepDate:	8/14/2008	Analyst: **VLT**
Aldrin	ND	1.0		µg/Kg	1	8/14/2008 08:24 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/14/2008 08:24 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/14/2008 08:24 PM
beta-BHC	ND	1.0		µg/Kg	1	8/14/2008 08:24 PM
Chlordane	ND	8.5		µg/Kg	1	8/14/2008 08:24 PM
delta-BHC	ND	1.0		µg/Kg	1	8/14/2008 08:24 PM
Dieldrin	ND	2.0		µg/Kg	1	8/14/2008 08:24 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/14/2008 08:24 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/14/2008 08:24 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/14/2008 08:24 PM
Endrin	ND	2.0		µg/Kg	1	8/14/2008 08:24 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/14/2008 08:24 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/14/2008 08:24 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/14/2008 08:24 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/14/2008 08:24 PM
Heptachlor	ND	1.0		µg/Kg	1	8/14/2008 08:24 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/14/2008 08:24 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/14/2008 08:24 PM
Toxaphene	ND	50		µg/Kg	1	8/14/2008 08:24 PM
Surr: Decachlorobiphenyl	81.6	31-132		%REC	1	8/14/2008 08:24 PM
Surr: Tetrachloro-m-xylene	78.8	34-106		%REC	1	8/14/2008 08:24 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080815C	QC Batch: 48040			PrepDate:	8/13/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/15/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080813A	QC Batch: K08VS377			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/13/2008 02:18 PM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/13/2008 02:18 PM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/13/2008 02:18 PM
Ethylbenzene	ND	5.0		µg/Kg	1	8/13/2008 02:18 PM
m,p-Xylene	ND	10		µg/Kg	1	8/13/2008 02:18 PM
MTBE	ND	5.0		µg/Kg	1	8/13/2008 02:18 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B21-2.5, 22-2.5, 23-2.5, 24
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-026A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS				**EPA 8260B**		
RunID: MS4_080813A	QC Batch: K08VS377			PrepDate:		Analyst: **CBB**
o-Xylene	ND	5.0		µg/Kg	1	8/13/2008 02:18 PM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/13/2008 02:18 PM
Tert-Butanol	ND	100		µg/Kg	1	8/13/2008 02:18 PM
Toluene	ND	5.0		µg/Kg	1	8/13/2008 02:18 PM
Surr: 1,2-Dichloroethane-d4	109	70-130		%REC	1	8/13/2008 02:18 PM
Surr: 4-Bromofluorobenzene	91.0	70-130		%REC	1	8/13/2008 02:18 PM
Surr: Dibromofluoromethane	105	70-130		%REC	1	8/13/2008 02:18 PM
Surr: Toluene-d8	97.0	70-130		%REC	1	8/13/2008 02:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B25-0, 26-0, 27-0, 28-0
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-027A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080814E	QC Batch: 48035			PrepDate:	8/13/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/15/2008 11:51 AM
Arsenic	19	1.0		mg/Kg	1	8/15/2008 11:51 AM
Barium	200	1.0		mg/Kg	1	8/15/2008 11:51 AM
Beryllium	ND	1.0		mg/Kg	1	8/15/2008 11:51 AM
Cadmium	ND	1.0		mg/Kg	1	8/15/2008 11:51 AM
Chromium	32	1.0		mg/Kg	1	8/15/2008 11:51 AM
Cobalt	14	1.0		mg/Kg	1	8/15/2008 11:51 AM
Copper	65	2.0		mg/Kg	1	8/15/2008 11:51 AM
Lead	61	1.0		mg/Kg	1	8/15/2008 11:51 AM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2008 11:51 AM
Nickel	38	1.0		mg/Kg	1	8/15/2008 11:51 AM
Selenium	2.1	1.0		mg/Kg	1	8/15/2008 11:51 AM
Silver	ND	1.0		mg/Kg	1	8/15/2008 11:51 AM
Thallium	ND	1.0		mg/Kg	1	8/15/2008 11:51 AM
Vanadium	56	1.0		mg/Kg	1	8/15/2008 11:51 AM
Zinc	84	1.0		mg/Kg	1	8/15/2008 11:51 AM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_080813A	QC Batch: 48016			PrepDate:	8/13/2008	Analyst: **SMH**
DRO	ND	1.0		mg/Kg	1	8/14/2008 08:32 AM
ORO	ND	1.0		mg/Kg	1	8/14/2008 08:32 AM
Surr: p-Terphenyl	91.7	26-127		%REC	1	8/14/2008 08:32 AM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC1_080814A	QC Batch: D08VS124			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	8/15/2008 12:46 AM
Surr: Bromofluorobenzene (FID)	93.2	42-142		%REC	1	8/15/2008 12:46 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080814A	QC Batch: 48073			PrepDate:	8/14/2008	Analyst: **VLT**
4,4'-DDD	13	2.0		µg/Kg	1	8/14/2008 08:43 PM
4,4'-DDE	290	20		µg/Kg	10	8/15/2008 03:18 PM
4,4'-DDT	140	20		µg/Kg	10	8/15/2008 03:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

9275 W.Linn Avenue

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B25-0, 26-0, 27-0, 28-0
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-027A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080814A	QC Batch: 48073			PrepDate:	8/14/2008	Analyst: **VLT**
Aldrin	ND	1.0		µg/Kg	1	8/14/2008 08:43 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/14/2008 08:43 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/14/2008 08:43 PM
beta-BHC	ND	1.0		µg/Kg	1	8/14/2008 08:43 PM
Chlordane	ND	8.5		µg/Kg	1	8/14/2008 08:43 PM
delta-BHC	ND	1.0		µg/Kg	1	8/14/2008 08:43 PM
Dieldrin	29	2.0		µg/Kg	1	8/14/2008 08:43 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/14/2008 08:43 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/14/2008 08:43 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/14/2008 08:43 PM
Endrin	ND	2.0		µg/Kg	1	8/14/2008 08:43 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/14/2008 08:43 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/14/2008 08:43 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/14/2008 08:43 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/14/2008 08:43 PM
Heptachlor	ND	1.0		µg/Kg	1	8/14/2008 08:43 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/14/2008 08:43 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/14/2008 08:43 PM
Toxaphene	ND	50		µg/Kg	1	8/14/2008 08:43 PM
Surr: Decachlorobiphenyl	106	31-132		%REC	10	8/15/2008 03:18 PM
Surr: Decachlorobiphenyl	68.5	31-132		%REC	1	8/14/2008 08:43 PM
Surr: Tetrachloro-m-xylene	85.5	34-106		%REC	10	8/15/2008 03:18 PM
Surr: Tetrachloro-m-xylene	58.7	34-106		%REC	1	8/14/2008 08:43 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080815C	QC Batch: 48040			PrepDate:	8/13/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/15/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080813A	QC Batch: K08VS377			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/13/2008 02:35 PM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/13/2008 02:35 PM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/13/2008 02:35 PM
Ethylbenzene	ND	5.0		µg/Kg	1	8/13/2008 02:35 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B25-0, 26-0, 27-0, 28-0
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-027A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
			EPA 8260B			
RunID: MS4_080813A	QC Batch: K08VS377			PrepDate:		Analyst: **CBB**
m,p-Xylene	ND	10		µg/Kg	1	8/13/2008 02:35 PM
MTBE	ND	5.0		µg/Kg	1	8/13/2008 02:35 PM
o-Xylene	ND	5.0		µg/Kg	1	8/13/2008 02:35 PM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/13/2008 02:35 PM
Tert-Butanol	ND	100		µg/Kg	1	8/13/2008 02:35 PM
Toluene	ND	5.0		µg/Kg	1	8/13/2008 02:35 PM
Surr: 1,2-Dichloroethane-d4	114	70-130		%REC	1	8/13/2008 02:35 PM
Surr: 4-Bromofluorobenzene	88.1	70-130		%REC	1	8/13/2008 02:35 PM
Surr: Dibromofluoromethane	107	70-130		%REC	1	8/13/2008 02:35 PM
Surr: Toluene-d8	96.8	70-130		%REC	1	8/13/2008 02:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill CA 90755 Tel: 562.989.4045 Fax: 562.989.4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B25-2.5, 26-2.5, 27-2.5, 28
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB 1-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-028A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080814E	QC Batch: 48035			PrepDate:	8/13/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/15/2008 11:57 AM
Arsenic	7.6	1.0		mg/Kg	1	8/15/2008 11:57 AM
Barium	180	1.0		mg/Kg	1	8/15/2008 11:57 AM
Beryllium	ND	1.0		mg/Kg	1	8/15/2008 11:57 AM
Cadmium	ND	1.0		mg/Kg	1	8/15/2008 11:57 AM
Chromium	27	1.0		mg/Kg	1	8/15/2008 11:57 AM
Cobalt	13	1.0		mg/Kg	1	8/15/2008 11:57 AM
Copper	35	2.0		mg/Kg	1	8/15/2008 11:57 AM
Lead	6.9	1.0		mg/Kg	1	8/15/2008 11:57 AM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2008 11:57 AM
Nickel	32	1.0		mg/Kg	1	8/15/2008 11:57 AM
Selenium	1.9	1.0		mg/Kg	1	8/15/2008 11:57 AM
Silver	ND	1.0		mg/Kg	1	8/15/2008 11:57 AM
Thallium	ND	1.0		mg/Kg	1	8/15/2008 11:57 AM
Vanadium	55	1.0		mg/Kg	1	8/15/2008 11:57 AM
Zinc	60	1.0		mg/Kg	1	8/15/2008 11:57 AM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_080813A	QC Batch: 48016			PrepDate:	8/13/2008	Analyst: **SMH**
DRO	ND	1.0		mg/Kg	1	8/14/2008 08:58 AM
ORO	ND	1.0		mg/Kg	1	8/14/2008 08:58 AM
Surr: p-Terphenyl	94.7	26-127		%REC	1	8/14/2008 08:58 AM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC1_080814A	QC Batch: D08VS124			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	8/15/2008 01:15 AM
Surr: Bromofluorobenzene (FID)	95.3	42-142		%REC	1	8/15/2008 01:15 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080814A	QC Batch: 48073			PrepDate:	8/14/2008	Analyst: **VLT**
4,4'-DDD	ND	2.0		µg/Kg	1	8/14/2008 09:03 PM
4,4'-DDE	ND	2.0		µg/Kg	1	8/14/2008 09:03 PM
4,4'-DDT	ND	2.0		µg/Kg	1	8/14/2008 09:03 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B25-2.5, 26-2.5, 27-2.5, 28
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-028A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080814A	QC Batch: 48073			PrepDate:	8/14/2008	Analyst: **VLT**
Aldrin	ND	1.0		µg/Kg	1	8/14/2008 09:03 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/14/2008 09:03 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/14/2008 09:03 PM
beta-BHC	ND	1.0		µg/Kg	1	8/14/2008 09:03 PM
Chlordane	ND	8.5		µg/Kg	1	8/14/2008 09:03 PM
delta-BHC	ND	1.0		µg/Kg	1	8/14/2008 09:03 PM
Dieldrin	ND	2.0		µg/Kg	1	8/14/2008 09:03 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/14/2008 09:03 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/14/2008 09:03 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/14/2008 09:03 PM
Endrin	ND	2.0		µg/Kg	1	8/14/2008 09:03 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/14/2008 09:03 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/14/2008 09:03 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/14/2008 09:03 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/14/2008 09:03 PM
Heptachlor	ND	1.0		µg/Kg	1	8/14/2008 09:03 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/14/2008 09:03 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/14/2008 09:03 PM
Toxaphene	ND	50		µg/Kg	1	8/14/2008 09:03 PM
Surr: Decachlorobiphenyl	91.5	31-132		%REC	1	8/14/2008 09:03 PM
Surr: Tetrachloro-m-xylene	86.6	34-106		%REC	1	8/14/2008 09:03 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080815C	QC Batch: 48040			PrepDate:	8/13/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/15/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080813A	QC Batch: K08VS377			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/13/2008 02:52 PM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/13/2008 02:52 PM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/13/2008 02:52 PM
Ethylbenzene	ND	5.0		µg/Kg	1	8/13/2008 02:52 PM
m,p-Xylene	ND	10		µg/Kg	1	8/13/2008 02:52 PM
MTBE	ND	5.0		µg/Kg	1	8/13/2008 02:52 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B25-2.5, 26-2.5, 27-2.5, 28
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-028A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_080813A	QC Batch: K08VS377			PrepDate:		Analyst: **CBB**
o-Xylene	ND	5.0		µg/Kg	1	8/13/2008 02:52 PM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/13/2008 02:52 PM
Tert-Butanol	ND	100		µg/Kg	1	8/13/2008 02:52 PM
Toluene	ND	5.0		µg/Kg	1	8/13/2008 02:52 PM
Surr: 1,2-Dichloroethane-d4	113	70-130		%REC	1	8/13/2008 02:52 PM
Surr: 4-Bromofluorobenzene	90.7	70-130		%REC	1	8/13/2008 02:52 PM
Surr: Dibromofluoromethane	106	70-130		%REC	1	8/13/2008 02:52 PM
Surr: Toluene-d8	98.0	70-130		%REC	1	8/13/2008 02:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B29-0, 30-0, 31-0, 32-0
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-029A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080814E	QC Batch: 48035			PrepDate:	8/13/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/15/2008 12:02 PM
Arsenic	21	1.0		mg/Kg	1	8/15/2008 12:02 PM
Barium	220	1.0		mg/Kg	1	8/15/2008 12:02 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2008 12:02 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2008 12:02 PM
Chromium	48	1.0		mg/Kg	1	8/15/2008 12:02 PM
Cobalt	15	1.0		mg/Kg	1	8/15/2008 12:02 PM
Copper	72	2.0		mg/Kg	1	8/15/2008 12:02 PM
Lead	63	1.0		mg/Kg	1	8/15/2008 12:02 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2008 12:02 PM
Nickel	89	1.0		mg/Kg	1	8/15/2008 12:02 PM
Selenium	2.0	1.0		mg/Kg	1	8/15/2008 12:02 PM
Silver	ND	1.0		mg/Kg	1	8/15/2008 12:02 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2008 12:02 PM
Vanadium	58	1.0		mg/Kg	1	8/15/2008 12:02 PM
Zinc	93	1.0		mg/Kg	1	8/15/2008 12:02 PM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_080813A	QC Batch: 48016			PrepDate:	8/13/2008	Analyst: **SMH**
DRO	ND	1.0		mg/Kg	1	8/14/2008 09:23 AM
ORO	1.4	1.0		mg/Kg	1	8/14/2008 09:23 AM
Surr: p-Terphenyl	102	26-127		%REC	1	8/14/2008 09:23 AM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC1_080814A	QC Batch: D08VS124			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	8/15/2008 01:45 AM
Surr: Bromofluorobenzene (FID)	89.4	42-142		%REC	1	8/15/2008 01:45 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080814A	QC Batch: 48073			PrepDate:	8/14/2008	Analyst: **VLT**
4,4'-DDD	36	2.0		µg/Kg	1	8/14/2008 09:43 PM
4,4'-DDE	1000	50		µg/Kg	25	8/15/2008 03:58 PM
4,4'-DDT	410	50		µg/Kg	25	8/15/2008 03:58 PM

Qualifiers:

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- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Lab Order: 100363
Project: EB I-80, E8128-06-04
Lab ID: 100363-029A

Client Sample ID: Composite B29-0, 30-0, 31-0, 32-0
Collection Date: 8/11/2008
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080814A	QC Batch: 48073			PrepDate:	8/14/2008	Analyst: **VLT**
Aldrin	ND	1.0		µg/Kg	1	8/14/2008 09:43 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/14/2008 09:43 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/14/2008 09:43 PM
beta-BHC	ND	1.0		µg/Kg	1	8/14/2008 09:43 PM
Chlordane	ND	8.5		µg/Kg	1	8/14/2008 09:43 PM
delta-BHC	ND	1.0		µg/Kg	1	8/14/2008 09:43 PM
Dieldrin	33	2.0		µg/Kg	1	8/14/2008 09:43 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/14/2008 09:43 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/14/2008 09:43 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/14/2008 09:43 PM
Endrin	ND	2.0		µg/Kg	1	8/14/2008 09:43 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/14/2008 09:43 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/14/2008 09:43 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/14/2008 09:43 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/14/2008 09:43 PM
Heptachlor	ND	1.0		µg/Kg	1	8/14/2008 09:43 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/14/2008 09:43 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/14/2008 09:43 PM
Toxaphene	ND	50		µg/Kg	1	8/14/2008 09:43 PM
Surr: Decachlorobiphenyl	101	31-132		%REC	25	8/15/2008 03:58 PM
Surr: Decachlorobiphenyl	74.8	31-132		%REC	1	8/14/2008 09:43 PM
Surr: Tetrachloro-m-xylene	74.2	34-106		%REC	25	8/15/2008 03:58 PM
Surr: Tetrachloro-m-xylene	60.2	34-106		%REC	1	8/14/2008 09:43 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080815C	QC Batch: 48040			PrepDate:	8/13/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/15/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080813A	QC Batch: K08VS377			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/13/2008 03:08 PM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/13/2008 03:08 PM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/13/2008 03:08 PM
Ethylbenzene	ND	5.0		µg/Kg	1	8/13/2008 03:08 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, Ca 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B29-0, 30-0, 31-0, 32-0
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-029A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_080813A	QC Batch: K08VS377			PrepDate:		Analyst: **CBB**
m,p-Xylene	ND	10		µg/Kg	1	8/13/2008 03:08 PM
MTBE	ND	5.0		µg/Kg	1	8/13/2008 03:08 PM
o-Xylene	ND	5.0		µg/Kg	1	8/13/2008 03:08 PM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/13/2008 03:08 PM
Tert-Butanol	ND	100		µg/Kg	1	8/13/2008 03:08 PM
Toluene	ND	5.0		µg/Kg	1	8/13/2008 03:08 PM
Surr: 1,2-Dichloroethane-d4	112	70-130		%REC	1	8/13/2008 03:08 PM
Surr: 4-Bromofluorobenzene	85.8	70-130		%REC	1	8/13/2008 03:08 PM
Surr: Dibromofluoromethane	105	70-130		%REC	1	8/13/2008 03:08 PM
Surr: Toluene-d8	98.2	70-130		%REC	1	8/13/2008 03:08 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B29-2.5, 30-2.5, 31-2.5, 32
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-030A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080814E	QC Batch: 48035			PrepDate:	8/13/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/15/2008 12:08 PM
Arsenic	7.9	1.0		mg/Kg	1	8/15/2008 12:08 PM
Barium	190	1.0		mg/Kg	1	8/15/2008 12:08 PM
Beryllium	ND	1.0		mg/Kg	1	8/15/2008 12:08 PM
Cadmium	ND	1.0		mg/Kg	1	8/15/2008 12:08 PM
Chromium	27	1.0		mg/Kg	1	8/15/2008 12:08 PM
Cobalt	12	1.0		mg/Kg	1	8/15/2008 12:08 PM
Copper	38	2.0		mg/Kg	1	8/15/2008 12:08 PM
Lead	8.9	1.0		mg/Kg	1	8/15/2008 12:08 PM
Molybdenum	ND	1.0		mg/Kg	1	8/15/2008 12:08 PM
Nickel	32	1.0		mg/Kg	1	8/15/2008 12:08 PM
Selenium	1.8	1.0		mg/Kg	1	8/15/2008 12:08 PM
Silver	ND	1.0		mg/Kg	1	8/15/2008 12:08 PM
Thallium	ND	1.0		mg/Kg	1	8/15/2008 12:08 PM
Vanadium	52	1.0		mg/Kg	1	8/15/2008 12:08 PM
Zinc	61	1.0		mg/Kg	1	8/15/2008 12:08 PM
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
	EPA 3550B			**EPA 8015B(M)**		
RunID: GC7_080814A	QC Batch: 48017			PrepDate:	8/13/2008	Analyst: **SMH**
DRO	ND	1.0		mg/Kg	1	8/14/2008 11:15 PM
ORO	ND	1.0		mg/Kg	1	8/14/2008 11:15 PM
Surr: p-Terphenyl	83.9	26-127		%REC	1	8/14/2008 11:15 PM
GASOLINE RANGE ORGANICS BY GC/FID						
				EPA 8015B(M)		
RunID: GC1_080814A	QC Batch: D08VS124			PrepDate:		Analyst: **KHN**
GRO	ND	1.0		mg/Kg	1	8/15/2008 02:14 AM
Surr: Bromofluorobenzene (FID)	96.5	42-142		%REC	1	8/15/2008 02:14 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080814A	QC Batch: 48073			PrepDate:	8/14/2008	Analyst: **VLT**
4,4'-DDD	ND	2.0		µg/Kg	1	8/14/2008 10:03 PM
4,4'-DDE	27	2.0		µg/Kg	1	8/14/2008 10:03 PM
4,4'-DDT	5.5	2.0		µg/Kg	1	8/14/2008 10:03 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories
3275 Walnut Avenue [illegible]

CLIENT: Geocon Consultants, Inc.
Lab Order: 100363
Project: EB I-80, E8128-06-04
Lab ID: 100363-030A

Client Sample ID: Composite B29-2.5, 30-2.5, 31-2.5, 32
Collection Date: 8/11/2008
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080814A	QC Batch: 48073			PrepDate:	8/14/2008	Analyst: **VLT**
Aldrin	ND	1.0		µg/Kg	1	8/14/2008 10:03 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/14/2008 10:03 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/14/2008 10:03 PM
beta-BHC	ND	1.0		µg/Kg	1	8/14/2008 10:03 PM
Chlordane	ND	8.5		µg/Kg	1	8/14/2008 10:03 PM
delta-BHC	ND	1.0		µg/Kg	1	8/14/2008 10:03 PM
Dieldrin	ND	2.0		µg/Kg	1	8/14/2008 10:03 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/14/2008 10:03 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/14/2008 10:03 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/14/2008 10:03 PM
Endrin	ND	2.0		µg/Kg	1	8/14/2008 10:03 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/14/2008 10:03 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/14/2008 10:03 PM
gamma-BHC	ND	1.0		µg/Kg	1	8/14/2008 10:03 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/14/2008 10:03 PM
Heptachlor	ND	1.0		µg/Kg	1	8/14/2008 10:03 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/14/2008 10:03 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/14/2008 10:03 PM
Toxaphene	ND	50		µg/Kg	1	8/14/2008 10:03 PM
Surr: Decachlorobiphenyl	90.4	31-132		%REC	1	8/14/2008 10:03 PM
Surr: Tetrachloro-m-xylene	77.8	34-106		%REC	1	8/14/2008 10:03 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080815C	QC Batch: 48040			PrepDate:	8/13/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/15/2008
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS4_080813A	QC Batch: K08VS377			PrepDate:		Analyst: **CBB**
Benzene	ND	5.0		µg/Kg	1	8/13/2008 03:24 PM
Di-isopropyl ether	ND	5.0		µg/Kg	1	8/13/2008 03:24 PM
Ethyl Tert-butyl ether	ND	5.0		µg/Kg	1	8/13/2008 03:24 PM
Ethylbenzene	ND	5.0		µg/Kg	1	8/13/2008 03:24 PM
m,p-Xylene	ND	10		µg/Kg	1	8/13/2008 03:24 PM
MTBE	ND	5.0		µg/Kg	1	8/13/2008 03:24 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill CA 90755 Tel 562 989-4045

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B29-2.5, 30-2.5, 31-2.5, 32
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-030A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
		EPA 8260B				
RunID: MS4_080813A	QC Batch: K08VS377			PrepDate:		Analyst: **CBB**
o-Xylene	ND	5.0		µg/Kg	1	8/13/2008 03:24 PM
Tert-amyl methyl ether	ND	5.0		µg/Kg	1	8/13/2008 03:24 PM
Tert-Butanol	ND	100		µg/Kg	1	8/13/2008 03:24 PM
Toluene	ND	5.0		µg/Kg	1	8/13/2008 03:24 PM
Surr: 1,2-Dichloroethane-d4	115	70-130		%REC	1	8/13/2008 03:24 PM
Surr: 4-Bromofluorobenzene	93.4	70-130		%REC	1	8/13/2008 03:24 PM
Surr: Dibromofluoromethane	106	70-130		%REC	1	8/13/2008 03:24 PM
Surr: Toluene-d8	97.4	70-130		%REC	1	8/13/2008 03:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-48035**	SampType: **MBLK**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/13/2008**	RunNo: **98380**
Client ID: **PBS**	Batch ID: **48035**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/14/2008**	SeqNo: **1522640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0									
Arsenic	ND	1.0									
Barium	0.194	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	0.286	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	0.395	1.0									
Molybdenum	ND	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	0.127	1.0									
Zinc	0.731	1.0									

Sample ID: **LCS-48035**	SampType: **LCS**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/13/2008**	RunNo: **98380**
Client ID: **LCSS**	Batch ID: **48035**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/14/2008**	SeqNo: **1522641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	48.807	2.0	50.00	0	97.6	80	120				
Arsenic	49.301	1.0	50.00	0	98.6	80	120				
Barium	50.772	1.0	50.00	0.1940	101	80	120				
Beryllium	48.563	1.0	50.00	0	97.1	80	120				
Cadmium	48.594	1.0	50.00	0	97.2	80	120				
Chromium	47.672	1.0	50.00	0.2855	94.8	80	120				
Cobalt	50.459	1.0	50.00	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: LCS-48035	SampType: LCS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98380
Client ID: LCSS	Batch ID: 48035	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 8/14/2008	SeqNo: 1522641

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	48.351	2.0	50.00	0	96.7	80	120				
Lead	49.658	1.0	50.00	0.3955	98.5	80	120				
Molybdenum	49.728	1.0	50.00	0	99.5	80	120				
Nickel	48.466	1.0	50.00	0	96.9	80	120				
Selenium	47.340	1.0	50.00	0	94.7	80	120				
Silver	44.661	1.0	50.00	0	89.3	80	120				
Thallium	43.122	1.0	50.00	0	86.2	80	120				
Vanadium	49.924	1.0	50.00	0.1275	99.6	80	120				
Zinc	50.887	1.0	50.00	0.7311	100	80	120				

Sample ID: 100363-025A-MSD	SampType: MSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98380
Client ID: Composite B21-0, 2	Batch ID: 48035	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 8/14/2008	SeqNo: 1522644

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	67.142	2.0	125.0	0.3349	53.4	24	109	68.86	2.53	20	
Arsenic	92.758	1.0	125.0	1.375	73.1	52	106	94.88	2.26	20	
Barium	186.498	1.0	125.0	95.14	73.1	31	129	190.6	2.16	20	
Beryllium	92.532	1.0	125.0	0	74.0	55	110	94.70	2.32	20	
Cadmium	89.247	1.0	125.0	0.4131	71.1	51	110	91.22	2.19	20	
Chromium	129.406	1.0	125.0	35.04	75.5	50	114	132.2	2.16	20	
Cobalt	103.176	1.0	125.0	10.14	74.4	51	109	105.7	2.42	20	
Copper	115.526	2.0	125.0	17.71	78.3	55	122	117.6	1.79	20	
Lead	126.542	1.0	125.0	37.26	71.4	45	110	131.4	3.78	20	
Molybdenum	89.104	1.0	125.0	0	71.3	52	109	91.16	2.28	20	
Nickel	130.011	1.0	125.0	33.74	77.0	47	111	133.5	2.68	20	
Selenium	90.037	1.0	125.0	1.289	71.0	48	108	92.72	2.94	20	
Silver	91.455	1.0	125.0	0	73.2	55	110	92.80	1.46	20	
Thallium	81.139	1.0	125.0	0	64.9	43	105	83.18	2.48	20	
Vanadium	124.558	1.0	125.0	27.35	77.8	54	115	127.2	2.11	20	
Zinc	138.763	1.0	125.0	46.55	73.8	39	120	142.5	2.63	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **100363-025A-DUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/13/2008** RunNo: **98380**
Client ID: **Composite B21-0, 2** Batch ID: **48035** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/14/2008** SeqNo: **1522645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.378	2.0						0.3349	0	20	
Arsenic	1.502	1.0						1.375	8.79	20	
Barium	100.673	1.0						95.14	5.65	20	
Beryllium	ND	1.0						0	0	20	
Cadmium	0.454	1.0						0.4131	0	20	
Chromium	36.991	1.0						35.04	5.43	20	
Cobalt	10.820	1.0						10.14	6.46	20	
Copper	18.730	2.0						17.71	5.60	20	
Lead	40.706	1.0						37.26	8.83	20	
Molybdenum	ND	1.0						0	0	20	
Nickel	35.733	1.0						33.74	5.73	20	
Selenium	1.190	1.0						1.289	7.98	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	28.939	1.0						27.35	5.63	20	
Zinc	49.226	1.0						46.55	5.59	20	

Sample ID: **100363-025A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/13/2008** RunNo: **98380**
Client ID: **Composite B21-0, 2** Batch ID: **48035** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/14/2008** SeqNo: **1522646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	68.861	2.0	125.0	0.3349	54.8	24	109				
Arsenic	94.877	1.0	125.0	1.375	74.8	52	106				
Barium	190.574	1.0	125.0	95.14	76.3	31	129				
Beryllium	94.703	1.0	125.0	0	75.8	55	110				
Cadmium	91.221	1.0	125.0	0.4131	72.6	51	110				
Chromium	132.225	1.0	125.0	35.04	77.8	50	114				
Cobalt	105.701	1.0	125.0	10.14	76.4	51	109				
Copper	117.614	2.0	125.0	17.71	79.9	55	122				
Lead	131.422	1.0	125.0	37.26	75.3	45	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **100363-025A-MS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **8/13/2008** RunNo: **98380**
Client ID: **Composite B21-0, 2** Batch ID: **48035** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **8/14/2008** SeqNo: **1522646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	91.160	1.0	125.0	0	72.9	52	109				
Nickel	133.542	1.0	125.0	33.74	79.8	47	111				
Selenium	92.724	1.0	125.0	1.289	73.1	48	108				
Silver	92.802	1.0	125.0	0	74.2	55	110				
Thallium	83.178	1.0	125.0	0	66.5	43	105				
Vanadium	127.212	1.0	125.0	27.35	79.9	54	115				
Zinc	142.463	1.0	125.0	46.55	76.7	39	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: 100371-001A-DUP	SampType: DUP	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98439
Client ID: ZZZZZZ	Batch ID: 48040	TestNo: EPA 7471A		Analysis Date: 8/15/2008	SeqNo: 1523627

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.012	0.10						0.009661	0	20	

Sample ID: 100371-001A-MS	SampType: MS	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98439
Client ID: ZZZZZZ	Batch ID: 48040	TestNo: EPA 7471A		Analysis Date: 8/15/2008	SeqNo: 1523628

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.099	0.10	0.8300	0.009661	131	70	130				S

Sample ID: 100371-001A-MSD	SampType: MSD	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98439
Client ID: ZZZZZZ	Batch ID: 48040	TestNo: EPA 7471A		Analysis Date: 8/15/2008	SeqNo: 1523629

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.067	0.10	0.8300	0.009661	127	70	130	1.099	2.96	20	

Sample ID: LCS-48040	SampType: LCS	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98439
Client ID: LCSS	Batch ID: 48040	TestNo: EPA 7471A		Analysis Date: 8/15/2008	SeqNo: 1523630

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.855	0.10	0.8300	0	103	80	120				

Sample ID: MB-48040	SampType: MBLK	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98439
Client ID: PBS	Batch ID: 48040	TestNo: EPA 7471A		Analysis Date: 8/15/2008	SeqNo: 1523631

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM LL

Sample ID: LCS-48016	SampType: LCS	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98339
Client ID: LCSS	Batch ID: 48016	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1521947

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	29.862	1.0	33.00	0	90.5	27	105				
Surr: p-Terphenyl	2.450		2.670		91.8	26	127				

Sample ID: MB-48016	SampType: MBLK	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98339
Client ID: PBS	Batch ID: 48016	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1521948

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0									
ORO	ND	1.0									
Surr: p-Terphenyl	2.745		2.670		103	26	127				

Sample ID: 100365-011AMS	SampType: MS	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98339
Client ID: ZZZZZZ	Batch ID: 48016	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1521949

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	16.284	1.0	33.00	0	49.3	14	102				
Surr: p-Terphenyl	2.116		2.670		79.2	26	127				

Sample ID: 100365-011AMSD	SampType: MSD	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98339
Client ID: ZZZZZZ	Batch ID: 48016	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1521950

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	26.858	1.0	33.00	0	81.4	14	102	16.28	49.0	20	R
Surr: p-Terphenyl	2.521		2.670		94.4	26	127		0	0	

Sample ID: 100365-011ADUP	SampType: DUP	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98339
Client ID: ZZZZZZ	Batch ID: 48016	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1521952

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM LL

Sample ID: **100365-011ADUP**	SampType: **DUP**	TestCode: **8015_S_DM L**	Units: **mg/Kg**	Prep Date: **8/13/2008**				RunNo: **98339**		
Client ID: **ZZZZZZ**	Batch ID: **48016**	TestNo: **EPA 8015B(M**	**EPA 3550B**	Analysis Date: **8/14/2008**				SeqNo: **1521952**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0						0	0	20	
ORO	ND	1.0						0	0	20	
Surr: p-Terphenyl	2.284		2.670		85.6	26	127		0	0	

Qualifiers:

- B Analyte detected in the associated Method Blank
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- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM LL

Sample ID: LCS-48017	SampType: LCS	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98391
Client ID: LCSS	Batch ID: 48017	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1522791

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	27.431	1.0	33.00	0	83.1	27	105				
Surr: p-Terphenyl	2.069		2.670		77.5	26	127				

Sample ID: MB-48017	SampType: MBLK	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98391
Client ID: PBS	Batch ID: 48017	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1522792

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0									
ORO	ND	1.0									
Surr: p-Terphenyl	2.372		2.670		88.8	26	127				

Sample ID: 100351-061AMS	SampType: MS	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98391
Client ID: ZZZZZZ	Batch ID: 48017	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1522793

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	27.080	1.0	33.00	0	82.1	14	102				
Surr: p-Terphenyl	2.118		2.670		79.3	26	127				

Sample ID: 100351-061AMSD	SampType: MSD	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98391
Client ID: ZZZZZZ	Batch ID: 48017	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1522794

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	26.557	1.0	33.00	0	80.5	14	102	27.08	1.95	20	
Surr: p-Terphenyl	2.051		2.670		76.8	26	127		0	0	

Sample ID: 100351-061ADUP	SampType: DUP	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98391
Client ID: ZZZZZZ	Batch ID: 48017	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1522795

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM LL

Sample ID: 100351-061ADUP	SampType: DUP	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 8/13/2008	RunNo: 98391
Client ID: ZZZZZZ	Batch ID: 48017	TestNo: EPA 8015B(M	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1522795

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0						0	0	20	
ORO	ND	1.0						0	0	20	
Surr: p-Terphenyl	1.997		2.670		74.8	26	127		0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Advanced Technology Laboratories

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_GAS

Sample ID: D080814MB1	SampType: MBLK	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 98393
Client ID: PBS	Batch ID: D08VS124	TestNo: EPA 8015B(M		Analysis Date: 8/14/2008	SeqNo: 1522851

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	1.0									
Surr: Bromofluorobenzene (FID)	93.110		100.0		93.1	42	142				

Sample ID: 100415-001AMS	SampType: MS	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 98393
Client ID: ZZZZZZ	Batch ID: D08VS124	TestNo: EPA 8015B(M		Analysis Date: 8/14/2008	SeqNo: 1522853

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.211	1.0	5.000	0	84.2	33	120				
Surr: Bromofluorobenzene (FID)	100.137		100.0		100	42	142				

Sample ID: 100415-001AMSD	SampType: MSD	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 98393
Client ID: ZZZZZZ	Batch ID: D08VS124	TestNo: EPA 8015B(M		Analysis Date: 8/14/2008	SeqNo: 1522854

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.360	1.0	5.000	0	87.2	33	120	4.211	3.48	20	
Surr: Bromofluorobenzene (FID)	96.406		100.0		96.4	42	142		0	20	

Sample ID: D080814LCS2	SampType: LCS	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 98393
Client ID: LCSS	Batch ID: D08VS124	TestNo: EPA 8015B(M		Analysis Date: 8/14/2008	SeqNo: 1522859

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.744	1.0	5.000	0	94.9	74	108				
Surr: Bromofluorobenzene (FID)	99.578		100.0		99.6	42	142				

Sample ID: D080814MB2	SampType: MBLK	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 98393
Client ID: PBS	Batch ID: D08VS124	TestNo: EPA 8015B(M		Analysis Date: 8/14/2008	SeqNo: 1522860

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.220	1.0									

Qualifiers:

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- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_GAS

Sample ID: D080814MB2	SampType: MBLK	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 98393
Client ID: PBS	Batch ID: D08VS124	TestNo: EPA 8015B(M		Analysis Date: 8/14/2008	SeqNo: 1522860

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (FID)	99.040		100.0		99.0	42	142				

Sample ID: 100363-025ADUP	SampType: DUP	TestCode: 8015_S_GAS	Units: mg/Kg	Prep Date:	RunNo: 98393
Client ID: Composite B21-0, 2	Batch ID: D08VS124	TestNo: EPA 8015B(M		Analysis Date: 8/14/2008	SeqNo: 1522866

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	1.0						0	0	20	
Surr: Bromofluorobenzene (FID)	92.279		100.0		92.3	42	142		0	0	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: LCS-48073	SampType: LCS	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/14/2008	RunNo: 98410
Client ID: LCSS	Batch ID: 48073	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1523145

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aldrin	13.149	1.0	16.67	0	78.9	59	111				
Dieldrin	12.808	2.0	16.67	0	76.8	57	105				
Endrin	11.396	2.0	16.67	0	68.4	52	139				
gamma-BHC	12.605	1.0	16.67	0	75.6	58	111				
Heptachlor	13.037	1.0	16.67	0	78.2	59	114				
Surr: Tetrachloro-m-xylene	11.738		16.67		70.4	34	106				
Surr: Decachlorobiphenyl	12.323		16.67		73.9	31	132				

Sample ID: MB-48073	SampType: MBLK	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/14/2008	RunNo: 98410
Client ID: PBS	Batch ID: 48073	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1523146

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	2.0									
4,4'-DDE	ND	2.0									
4,4'-DDT	ND	2.0									
Aldrin	ND	1.0									
alpha-BHC	ND	1.0									
alpha-Chlordane	ND	1.0									
beta-BHC	ND	1.0									
Chlordane	ND	8.5									
delta-BHC	ND	1.0									
Dieldrin	ND	2.0									
Endosulfan I	ND	1.0									
Endosulfan II	ND	2.0									
Endosulfan sulfate	ND	2.0									
Endrin	ND	2.0									
Endrin aldehyde	ND	2.0									
Endrin ketone	ND	2.0									
gamma-BHC	ND	1.0									
gamma-Chlordane	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: MB-48073	SampType: MBLK	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/14/2008	RunNo: 98410
Client ID: PBS	Batch ID: 48073	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1523146

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Heptachlor	ND	1.0									
Heptachlor epoxide	ND	1.0									
Methoxychlor	ND	5.0									
Toxaphene	ND	50									
Surr: Tetrachloro-m-xylene	9.933		16.67		59.6	34	106				
Surr: Decachlorobiphenyl	10.571		16.67		63.4	31	132				

Sample ID: MB-48073MS	SampType: MS	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/14/2008	RunNo: 98410
Client ID: ZZZZZZ	Batch ID: 48073	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1523147

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	12.133	2.0	16.67	0	72.8	33	122				
Aldrin	13.191	1.0	16.67	0	79.1	36	118				
Dieldrin	12.833	2.0	16.67	0	77.0	35	116				
Endrin	11.250	2.0	16.67	0	67.5	39	140				
gamma-BHC	12.670	1.0	16.67	0	76.0	34	117				
Heptachlor	13.026	1.0	16.67	0	78.1	37	121				
Surr: Tetrachloro-m-xylene	11.774		16.67		70.6	34	106				
Surr: Decachlorobiphenyl	12.197		16.67		73.2	31	132				

Sample ID: MB-48073MSD	SampType: MSD	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/14/2008	RunNo: 98410
Client ID: ZZZZZZ	Batch ID: 48073	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1523148

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	12.124	2.0	16.67	0	72.7	33	122	12.13	0.0728	20	
Aldrin	13.109	1.0	16.67	0	78.6	36	118	13.19	0.629	20	
Dieldrin	12.755	2.0	16.67	0	76.5	35	116	12.83	0.610	20	
Endrin	11.307	2.0	16.67	0	67.8	39	140	11.25	0.502	20	
gamma-BHC	12.591	1.0	16.67	0	75.5	34	117	12.67	0.631	20	
Heptachlor	12.949	1.0	16.67	0	77.7	37	121	13.03	0.594	20	

Qualifiers:

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- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

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- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: MB-48073MSD	SampType: MSD	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/14/2008	RunNo: 98410
Client ID: ZZZZZZ	Batch ID: 48073	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1523148

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Tetrachloro-m-xylene	11.701		16.67		70.2	34	106		0	20	
Surr: Decachlorobiphenyl	12.295		16.67		73.8	31	132		0	20	

Sample ID: 100363-028ADUP	SampType: DUP	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/14/2008	RunNo: 98410
Client ID: Composite B25-2.5,	Batch ID: 48073	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/14/2008	SeqNo: 1523154

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4'-DDD	ND	4.0						0	0	20	
2,4'-DDE	ND	4.0						0	0	20	
2,4'-DDT	ND	4.0						0	0	20	
4,4'-DDD	ND	2.0						0	0	20	
4,4'-DDE	1.886	2.0						1.893	0	20	
4,4'-DDT	0.593	2.0						0.5535	0	20	
Aldrin	ND	1.0						0	0	20	
alpha-BHC	ND	1.0						0	0	20	
alpha-Chlordane	ND	1.0						0	0	20	
beta-BHC	ND	1.0						0	0	20	
Chlordane	ND	8.5						0	0	20	
Chlorothalonil	ND	2.0						0	0	20	
delta-BHC	ND	1.0						0	0	20	
Dieldrin	ND	2.0						0	0	20	
Endosulfan I	ND	1.0						0	0	20	
Endosulfan II	ND	2.0						0	0	20	
Endosulfan sulfate	ND	2.0						0	0	20	
Endrin	ND	2.0						0	0	20	
Endrin aldehyde	ND	2.0						0	0	20	
Endrin ketone	ND	2.0						0	0	20	
gamma-BHC	ND	1.0						0	0	20	
gamma-Chlordane	ND	1.0						0	0	20	
Heptachlor	ND	1.0						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: **100363-028ADUP**	SampType: **DUP**	TestCode: **8081_S**	Units: **µg/Kg**	Prep Date: **8/14/2008**	RunNo: **98410**
Client ID: **Composite B25-2.5,**	Batch ID: **48073**	TestNo: **EPA 8081A**	**EPA 3550B**	Analysis Date: **8/14/2008**	SeqNo: **1523154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Heptachlor epoxide	ND	1.0						0	0	20	
Methoxychlor	ND	5.0						0	0	20	
Toxaphene	ND	50						0	0	20	
Surr: Tetrachloro-m-xylene	14.668		16.67		88.0	34	106		0	20	
Surr: Decachlorobiphenyl	15.106		16.67		90.6	31	132		0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **K080813LCS1** SampType: **LCS** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **98349**
Client ID: **LCSS** Batch ID: **K08VS377** TestNo: **EPA 8260B** Analysis Date: **8/13/2008** SeqNo: **1522175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	45.350	5.0	50.00	0	90.7	70	130				
Benzene	88.290	5.0	100.0	0	88.3	70	130				
Chlorobenzene	47.590	5.0	50.00	0	95.2	70	130				
MTBE	43.890	5.0	50.00	0	87.8	70	130				
Toluene	94.700	5.0	100.0	0	94.7	70	130				
Trichloroethene	45.250	5.0	50.00	0	90.5	70	130				
Surr: 1,2-Dichloroethane-d4	50.630		50.00		101	70	130				
Surr: 4-Bromofluorobenzene	48.780		50.00		97.6	70	130				
Surr: Dibromofluoromethane	50.460		50.00		101	70	130				
Surr: Toluene-d8	48.980		50.00		98.0	70	130				

Sample ID: **K080813MB2MS** SampType: **MS** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **98349**
Client ID: **ZZZZZZ** Batch ID: **K08VS377** TestNo: **EPA 8260B** Analysis Date: **8/13/2008** SeqNo: **1522176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	88.400	5.0	100.0	0	88.4	70	130				
MTBE	44.530	5.0	50.00	0	89.1	70	130				
Toluene	94.530	5.0	100.0	0	94.5	70	130				
Surr: 1,2-Dichloroethane-d4	50.310		50.00		101	70	130				
Surr: 4-Bromofluorobenzene	48.840		50.00		97.7	70	130				
Surr: Dibromofluoromethane	47.950		50.00		95.9	70	130				
Surr: Toluene-d8	49.970		50.00		99.9	70	130				

Sample ID: **K080813MB2MSD** SampType: **MSD** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **98349**
Client ID: **ZZZZZZ** Batch ID: **K08VS377** TestNo: **EPA 8260B** Analysis Date: **8/13/2008** SeqNo: **1522177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	88.970	5.0	100.0	0	89.0	70	130	88.40	0.643	20	
MTBE	42.930	5.0	50.00	0	85.9	70	130	44.53	3.66	20	
Toluene	93.650	5.0	100.0	0	93.6	70	130	94.53	0.935	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: K080813MB2MSD	SampType: MSD	TestCode: 8260_S	Units: µg/Kg	Prep Date:	RunNo: 98349
Client ID: ZZZZZZ	Batch ID: K08VS377	TestNo: EPA 8260B		Analysis Date: 8/13/2008	SeqNo: 1522177

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	49.350		50.00		98.7	70	130		0	20	
Surr: 4-Bromofluorobenzene	49.150		50.00		98.3	70	130		0	20	
Surr: Dibromofluoromethane	50.410		50.00		101	70	130		0	20	
Surr: Toluene-d8	48.860		50.00		97.7	70	130		0	20	

Sample ID: K080813MB2	SampType: MBLK	TestCode: 8260_S	Units: µg/Kg	Prep Date:	RunNo: 98349
Client ID: PBS	Batch ID: K08VS377	TestNo: EPA 8260B		Analysis Date: 8/13/2008	SeqNo: 1522178

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	5.0									
Di-isopropyl ether	ND	5.0									
Ethyl Tert-butyl ether	ND	5.0									
Ethylbenzene	ND	5.0									
m,p-Xylene	ND	10									
MTBE	ND	5.0									
o-Xylene	ND	5.0									
Tert-amyl methyl ether	ND	5.0									
Tert-Butanol	ND	100									
Toluene	ND	5.0									
Surr: 1,2-Dichloroethane-d4	51.400		50.00		103	70	130				
Surr: 4-Bromofluorobenzene	47.200		50.00		94.4	70	130				
Surr: Dibromofluoromethane	50.670		50.00		101	70	130				
Surr: Toluene-d8	49.830		50.00		99.7	70	130				

Sample ID: 100351-076ADUP	SampType: DUP	TestCode: 8260_S	Units: µg/Kg	Prep Date:	RunNo: 98349
Client ID: ZZZZZZ	Batch ID: K08VS377	TestNo: EPA 8260B		Analysis Date: 8/13/2008	SeqNo: 1522358

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	5.0						0	0	20	
Di-isopropyl ether	ND	5.0						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **100351-076ADUP** SampType: **DUP** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **98349**
Client ID: **ZZZZZZ** Batch ID: **K08VS377** TestNo: **EPA 8260B** Analysis Date: **8/13/2008** SeqNo: **1522358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethyl Tert-butyl ether	ND	5.0						0	0	20	
Ethylbenzene	ND	5.0						0	0	20	
m,p-Xylene	ND	10						0	0	20	
MTBE	ND	5.0						0	0	20	
o-Xylene	ND	5.0						0	0	20	
Tert-amyl methyl ether	ND	5.0						0	0	20	
Tert-Butanol	ND	100						0	0	20	
Toluene	ND	5.0						0	0	20	
Surr: 1,2-Dichloroethane-d4	52.490		50.00		105	70	130		0	20	
Surr: 4-Bromofluorobenzene	46.400		50.00		92.8	70	130		0	20	
Surr: Dibromofluoromethane	52.190		50.00		104	70	130		0	20	
Surr: Toluene-d8	48.930		50.00		97.9	70	130		0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SIERRA
ANALYTICAL

18 August 2008

Diane Galvan
Advanced Technology Labs
3275 Walnut Avenue
Signal Hill, CA 90755

RE:NA

Work Order No.: 0808199

Attached are the results of the analyses for samples received by the laboratory on 08/12/08 11:53.

The samples were received by Sierra Analytical Labs, Inc. with a chain of custody record attached or completed at the submittal of the samples.

The analyses were performed according to the prescribed method as outlined by EPA, Standard Methods, and A.S.T.M.

The remaining portions of the samples will be disposed of within 30 days from the date of this report.
If you require any additional retaining time, please advise us.

Sincerely,

Richard K. Forsyth

Laboratory Director

Sierra Analytical Labs, Inc. is certified by the California Department of Health Services (DOHS), Environmental Laboratory Accredidation Program (ELAP) No. 2320.

26052 Merit Circle Suite 105, Laguna Hills, California 92653
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E-Mail: sierralabs@earthlink.net

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03829	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/18/08 10:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
100363-025B	0808199-01	Soil	08/11/08 00:00	08/12/08 11:53
100363-026B	0808199-02	Soil	08/11/08 00:00	08/12/08 11:53
100363-027B	0808199-03	Soil	08/11/08 00:00	08/12/08 11:53
100363-028B	0808199-04	Soil	08/11/08 00:00	08/12/08 11:53
100363-029B	0808199-05	Soil	08/11/08 00:00	08/12/08 11:53
100363-030B	0808199-06	Soil	08/11/08 00:00	08/12/08 11:53

CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 4 °C, and accompanied by chain of custody documentation.
PRESERVATION:	Samples requiring preservation were verified prior to sample preparation and analysis.
HOLDING TIMES:	All holding times were met, unless otherwise noted in the report with data qualifiers.
QA/QC CRITERIA:	All quality objective criteria were met, except as noted in the report with data qualifiers.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

26052 MERIT CIRCLE SUITE 105, LAGUNA HILLS, CALIFORNIA 92653
TELEPHONE: (949) 348-9389 FAX: (949) 348-9115
E-MAIL: SIERRALABS @ SIERRALABS.NET

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03829	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/18/08 10:23

Chlorinated Herbicides by EPA Method 8151A

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
100363-025B (0808199-01) Soil Sampled: 08/11/08 00:00 Received: 08/12/08 11:53									
2,4,5-T	ND	1.6	µg/kg	1	B8H1518	08/15/08	08/17/08 13:51	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*58.9 %*		*35-150*	"	"	"	"	
100363-026B (0808199-02) Soil Sampled: 08/11/08 00:00 Received: 08/12/08 11:53									
2,4,5-T	ND	1.6	µg/kg	1	B8H1518	08/15/08	08/17/08 13:51	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*69.8 %*		*35-150*	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03829	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/18/08 10:23

Chlorinated Herbicides by EPA Method 8151A

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
100363-027B (0808199-03) Soil Sampled: 08/11/08 00:00 Received: 08/12/08 11:53									
2,4,5-T	ND	1.6	µg/kg	1	B8H1518	08/15/08	08/17/08 13:51	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*106 %*	*35-150*		"	"	"	"	
100363-028B (0808199-04) Soil Sampled: 08/11/08 00:00 Received: 08/12/08 11:53									
2,4,5-T	ND	1.6	µg/kg	1	B8H1518	08/15/08	08/17/08 13:51	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*126 %*	*35-150*		"	"	"	"	

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SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03829	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/18/08 10:23

Chlorinated Herbicides by EPA Method 8151A

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
100363-029B (0808199-05) Soil Sampled: 08/11/08 00:00 Received: 08/12/08 11:53									
2,4,5-T	ND	1.6	µg/kg	1	B8H1518	08/15/08	08/17/08 13:51	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*108 %*		*35-150*	"	"	"	"	
100363-030B (0808199-06) Soil Sampled: 08/11/08 00:00 Received: 08/12/08 11:53									
2,4,5-T	ND	1.6	µg/kg	1	B8H1518	08/15/08	08/17/08 13:51	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*84.6 %*		*35-150*	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03829	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/18/08 10:23

Chlorinated Herbicides by EPA Method 8151A - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8H1518 - EPA 8151A Herbicides										
Blank (B8H1518-BLK1)				Prepared: 08/15/08 Analyzed: 08/17/08						
2,4,5-T	ND	1.6	µg/kg							
2,4,5-TP (Silvex)	ND	1.6	"							
2,4-D	ND	1.6	"							
2,4-DB	ND	4.0	"							
3,5-Dichlorobenzoic acid	ND	2.0	"							
4-Nitrophenol	ND	2.0	"							
Acifluorfen	ND	1.6	"							
Bentazon	ND	1.6	"							
Chloramben	ND	1.6	"							
Dalapon	ND	20	"							
DCPA diacid	ND	1.6	"							
Dicamba	ND	1.6	"							
Dichlorprop	ND	1.6	"							
Dinoseb	ND	1.6	"							
Pentachlorophenol	ND	1.6	"							
Picloram	ND	1.6	"							
Surrogate: 2,4-Dichlorophenylacetic Acid	*77.5*		"	*100*		*77.5*	*35-150*			
LCS (B8H1518-BS1)				Prepared: 08/15/08 Analyzed: 08/17/08						
2,4,5-T	6.13	1.6	µg/kg	10.0		61.3	20-150			
2,4,5-TP (Silvex)	8.14	1.6	"	10.0		81.4	20-150			
Dichlorprop	5.31	1.6	"	10.0		53.1	20-150			
Dinoseb	7.25	1.6	"	10.0		72.5	20-150			
Duplicate (B8H1518-DUP1)	**Source: 0808199-04**			Prepared: 08/15/08 Analyzed: 08/17/08						
2,4,5-T	ND	1.6	µg/kg		ND				30	
2,4,5-TP (Silvex)	ND	1.6	"		ND				30	
Dichlorprop	ND	1.6	"		ND				30	
Dinoseb	ND	1.6	"		ND				30	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03829	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/18/08 10:23

Chlorinated Herbicides by EPA Method 8151A - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8H1518 - EPA 8151A Herbicides										
Matrix Spike (B8H1518-MS1)	**Source: 0808199-04**			Prepared: 08/15/08 Analyzed: 08/17/08						
2,4,5-T	6.56	1.6	µg/kg	10.0	ND	65.6	20-150			
2,4,5-TP (Silvex)	9.41	1.6	"	10.0	ND	94.1	20-150			
Dichlorprop	5.30	1.6	"	10.0	ND	53.0	20-150			
Dinoseb	8.52	1.6	"	10.0	ND	85.2	20-150			
Matrix Spike Dup (B8H1518-MSD1)	**Source: 0808199-04**			Prepared: 08/15/08 Analyzed: 08/17/08						
2,4,5-T	6.24	1.6	µg/kg	10.0	ND	62.4	20-150	5.00	30	
2,4,5-TP (Silvex)	8.99	1.6	"	10.0	ND	89.9	20-150	4.57	30	
Dichlorprop	5.45	1.6	"	10.0	ND	54.5	20-150	2.79	30	
Dinoseb	7.95	1.6	"	10.0	ND	79.5	20-150	6.92	30	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

26052 MERIT CIRCLE SUITE 105, LAGUNA HILLS, CALIFORNIA 92653
TELEPHONE: (949) 348-9389 FAX: (949) 348-9115
E-MAIL: SIERRALABS @ SIERRALABS.NET

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO# SC03829	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/18/08 10:23

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

26052 Merit Circle Suite 105, Laguna Hills, California 92653
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Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755-5225
www.atlglobal.com
TEL: (562) 989-4045 FAX: (562) 989-4040

CHAIN-OF-CUSTODY RECORD

0808199

QC Level: CT

Subcontractor:

Sierra Laboratories
26052 Merit Circle Suite 105
Laguna Hills, CA 92653

TEL: (949) 348-9389
FAX: (949) 348-9115
Acct #:

12-Aug-08

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 8151		
01	100363-025B / Composite B21,22,23,24-0	Soil	8/11/2008	4OZG	1		
02	100363-026B / Composite B21,22,23,24-2.5	Soil	8/11/2008	4OZG	1		
03	100363-027B / Composite 25,26,27,28-0	Soil	8/11/2008	4OZG	1		
04	100363-028B / Composite 25,26,27,28-2.5	Soil	8/11/2008	4OZG	1		
05	100363-029B / Composite 29,30,31,32-0	Soil	8/11/2008	4OZG	1		
06	100363-030B / Composite B29,30,31,32-2.5	Soil	8/11/2008	4OZG	1		

General Comments: Please email sample receipt acknowledgement to the PM.
Please use PO#: SC03829 Please fax results by: NORMAL TAT
PLEASE SEND REPORT TO DIANE GALVAN

B36 SOIL

		Date/Time			Date/Time
Relinquished by:		8/12/08	**Received by:**		8-12-08/10:30 AM
Relinquished by:		8-12-08/11:53AM	**Received by:**	Caridad Brady	8/14/08 1153am

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: 8/12/08

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: GEO

Sample Condition Upon Receipt:
1. CHILLED 8.4°C Y☐ N☐ 4. SEALED Y☐ N☑
2. HEADSPACE (VOA) Y☐ N☑ 5. # OF SPLS MATCH COC Y☑ N☐
3. CONTAINER INTACT Y☑ N☐ 6. PRESERVED Y☐ N☑

Client: GEOCON CONSULTANTS, INC.
Attn: C. GIUNTOLI
Address: 6671 Brisa Street
City Livermore State CA Zip Code 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

Project Name: EB I-80 Project #: EB128-06-04 Sampler: (Printed Name) CM/DW (Signature) CHRIS MERRITT

Relinquished by: (Signature and Printed Name) CHRIS MERRITT	Date 11AUG2008	Time: 1800	Received by: (Signature and Printed Name) GSO	Date: 11/AUG/2008	Time: 1800
Relinquished by: (Signature and Printed Name)	Date :	Time:	Received by: (Signature and Printed Name)	Date: 8/12/08	Time: 8:15
Relinquished by: (Signature and Printed Name)	Date :	Time:	Received by: (Signature and Printed Name)	Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
C. MERRITT 11AUG08
Print Name Date
CM
Signature

Send Report To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:
LAB COMPOSITES (4-PART)

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time
	100363-1	B21-0 } 4 TO 1 COMPOSITE	8/4/08	
	2	B22-0		
	3	B23-0		
	4	B24-0		
	5	B21-2.5 } 4 TO 1 COMPOSITE		
	6	B22-		
	7	B23-		
	8	B24-		
	9	B25-0 } SEE Pg 2		
	10	B26-0 } 4 to 1		

Circle or Add Analysis(es) Requested: 8081A (Pesticides); 8082 (PCB); 8260B (Volatiles); 8270C (BNA); 6010B (Total Metal); 8015B (GRO) / BTEX; 8015B (DRO); 8021 (BTEX); TITLE 22 / CAM 17 (6010 / 7000); METALS ONLY

SPECIFY APPROPRIATE MATRIX: SOIL; WATER; GROUND WATER; WASTEWATER

TAT	Container(s) #	Container(s) Type	PRESERVATION
E	1	TM	C

QA/QC: RTNE ☐ CT ☒ SWRCB ☐ Logcode ____ OTHER ____

REMARKS

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: _____

Sample Condition Upon Receipt
1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC.
Attn: C. Giuntoli
Address: 6671 Brisa Street
City Livermore State CA Zip Code 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

Project Name: See Pg 1 Project #: Sampler: (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name) Chris Meadows Date: 11/4/2008 Time: 1800 Received by: (Signature and Printed Name) GSO Date: 11/4/2008 Time: 1800
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: 11/12/08 Time: 615
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: See Pg 1
Print Name Date
Signature

Send Report To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:
See Pg 1

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested

SPECIFY APPROPRIATE MATRIX

PRESERVATION

QA/QC
RTNE ☐
CT ☒
SWRCB ☐ Logcode ____
OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / BTEX	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	100363-11	B27-0	11/4/08		X				X	X		X	X	X				E	1	T	m	C	
	12	B28-0																				
	13	B25-2.5																				
	14	B26-																				
	15	B27-																				
	16	B28-																				
	17	B29-0																				
	18	B30-																				
	19	B31-																				
	20	B32-																				

(B25-26) 4 to 1 $78
4 to 1
4 to 1 $39

* TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives:
H=HCl N=HNO_3 S=H_2SO_4 C=4°C
Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: White with report, Yellow to folder, Pink to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: _____

Sample Condition Upon Receipt
1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client:
Attn: See Pg 1
Address:
City State Zip Code
TEL: ( )
FAX: ( )
Project Name: See Pg 1 Project #: Sampler: (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name) Chris Merritt	Date: 11/14/2008	Time: 1800	Received by: (Signature and Printed Name)	Date: 11/14/2008	Time: 1800
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name) Kal	Date: 8/18/08	Time: 6:15
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: See Pg 1
Print Name Date
Signature

Send Report To:
Attn: _____
Co: _____
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: _____
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments: See Pg 1

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested

SPECIFY APPROPRIATE MATRIX

PRESERVATION

Q A / Q C
RTNE ☐
CT ☒
SWRCB ☐
Logcode ____
OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8015B (DRO) / 3510	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	HEROLD 0.3 SIEVE	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	108363-21	B29-2.5	8/14/08		X				X	X	X	X	X	X	X					E	1	T	d	
	22	B30-																					
	23	B31-																					
	24	B32-																					

4 to 1 #20

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

August 22, 2008

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 100438

RE: I-80 EB TIF, E8128-06-04

Attention: Chris Giuntoli

* copy- original is in MAIN ADL DRAFT REPORT 10/1/08

Enclosed are the results for sample(s) received on August 15, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

CLIENT: Geocon Consultants, Inc.
Project: I-80 EB TIF, E8128-06-04
Lab Order: 100438

CASE NARRATIVE

Samples for Herbicides (8151) were subcontracted to Sierra Analytical Laboratories, Inc. with ELAP Cert.#2320.

Analytical Comments for Mehod 6010

RPD for Duplicate (DUP) and/or Matrix Spike (MS) / Matrix Spike Duplicate (MSD) is outside criteria for samples 100438-014ADUP, 100438-041EDUP, 100438-045AMSD and 100507-005ADUP, ; however, the Laboratory Control Sample (LCS) validated the analytical batch.

Analytical Comments for Mehod 7470

RPD for Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria for sample 100462-003AMSD; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Analytical Comments for Mehod 8081

Dilution was necessary for sample 100438-042A, due to sample matrix.

Surrogate recovery was diluted out for sample 100438-042A.

Advanced Technology Laboratories

Date: 8/22/2008

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	100438
Project:	I-80 EB TIF, E8128-06-04	**Date Received**	8/15/2008 10:05:00 AM
Project No:	E8128-06-04	**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	LKN

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
100438-001A	B-03A-0	7.8	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-002A	B-03B-0	71	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-004A	B-05A-1	63	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-006A	B-05B-1	31	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-007A	B-11A-0	7.5	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-008A	B-11B-0	18	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-009A	B-12A-0	110	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-010A	B-12B-0	20	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-012A	B-14A-1	37	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-014A	B-14B-1	130	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-015A	B-16A-0	130	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-016A	B-16B-0	110	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-017A	B-17A-0	280	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-018A	B-17A-1	97	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-019A	B-17A-2	9.2	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-022A	B-19A-2	74	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-023A	B-17B-0	200	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-024A	B-17B-1	70	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

Date: 8/22/2008

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	100438
Project:	I-80 EB TIF, E8128-06-04	**Date Received**	8/15/2008 10:05:00 AM
Project No:	E8128-06-04	**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	LKN

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
100438-025A	B-17B-2	8.6	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-028A	B-19B-2	8.8	mg/Kg	48153	5.0	1	8/13/2008	8/21/2008
100438-030A	B-20A-1	150	mg/Kg	48154	5.0	1	8/13/2008	8/21/2008
100438-033A	B22A-2	6.9	mg/Kg	48154	5.0	1	8/13/2008	8/21/2008
100438-036A	B22B-2	6.1	mg/Kg	48154	5.0	1	8/13/2008	8/21/2008
100438-045A	B-20B-1	130	mg/Kg	48154	5.0	1	8/13/2008	8/21/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *22-Aug-08*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B32-GW
Lab Order:	100438	**Collection Date:**	8/13/2008 2:40:00 PM
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100438-041A		

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_080818A QC Batch: A08VW195 PrepDate: Analyst: TT

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,1,1-Trichloroethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,1,2-Trichloroethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,1-Dichloroethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,1-Dichloroethene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,1-Dichloropropene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2,3-Trichlorobenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2,3-Trichloropropane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2,4-Trichlorobenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2,4-Trimethylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2-Dibromo-3-chloropropane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2-Dibromoethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2-Dichlorobenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2-Dichloroethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,2-Dichloropropane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,3,5-Trimethylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,3-Dichlorobenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,3-Dichloropropane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
1,4-Dichlorobenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
2,2-Dichloropropane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
2-Chlorotoluene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
4-Chlorotoluene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
4-Isopropyltoluene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Benzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Bromobenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Bromodichloromethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Bromoform	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Bromomethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Carbon tetrachloride	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Chlorobenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Chloroethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Chloroform	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Chloromethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
cis-1,2-Dichloroethene	ND	0.50		µg/L	1	8/18/2008 11:19 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B32-GW
Lab Order:	100438	**Collection Date:**	8/13/2008 2:40:00 PM
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100438-041A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
			EPA 8260B			
RunID: MS11_080818A	QC Batch: A08VW195			PrepDate:		Analyst: **TT**
cis-1,3-Dichloropropene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Dibromochloromethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Dibromomethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Dichlorodifluoromethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Ethylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Hexachlorobutadiene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Isopropylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
m,p-Xylene	ND	1.0		µg/L	1	8/18/2008 11:19 AM
Methylene chloride	ND	1.0		µg/L	1	8/18/2008 11:19 AM
n-Butylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
n-Propylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Naphthalene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
o-Xylene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
sec-Butylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Styrene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
tert-Butylbenzene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Tetrachloroethene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Toluene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
trans-1,2-Dichloroethene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Trichloroethene	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Trichlorofluoromethane	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Vinyl chloride	ND	0.50		µg/L	1	8/18/2008 11:19 AM
Surr: 1,2-Dichloroethane-d4	79.3	70-130		%REC	1	8/18/2008 11:19 AM
Surr: 4-Bromofluorobenzene	87.8	70-130		%REC	1	8/18/2008 11:19 AM
Surr: Dibromofluoromethane	93.3	70-130		%REC	1	8/18/2008 11:19 AM
Surr: Toluene-d8	97.7	70-130		%REC	1	8/18/2008 11:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *22-Aug-08*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B32-GW
Lab Order:	100438	**Collection Date:**	8/13/2008 2:40:00 PM
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100438-041B		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID						
		EPA 8015B(M)				
RunID: GC6_080820A	QC Batch: I08VW136			PrepDate:		Analyst: TT
GRO	ND	0.050		mg/L	1	8/20/2008 02:04 PM
Surr: Bromofluorobenzene (FID)	99.1	76-127		%REC	1	8/20/2008 02:04 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B32-GW
Lab Order:	100438	**Collection Date:**	8/13/2008 2:40:00 PM
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100438-041C		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3510C				**EPA 8015B(M)**		
RunID: GC7_BACK_080819B	QC Batch: 48183			PrepDate:	8/19/2008	Analyst: **SMH**
DRO	ND	0.050		mg/L	1	8/20/2008 03:42 AM
ORO	ND	0.050		mg/L	1	8/20/2008 03:42 AM
Surr: p-Terphenyl	71.5	37-134		%REC	1	8/20/2008 03:42 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B32-GW
Lab Order:	100438	**Collection Date:**	8/13/2008 2:40:00 PM
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100438-041D		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3010A			**EPA 6010B**		
RunID: ICP8_080821A	QC Batch: 48213			PrepDate:	8/20/2008	Analyst: **LKN**
Antimony	ND	0.025		mg/L	1	8/21/2008 09:45 AM
Arsenic	ND	0.050		mg/L	1	8/21/2008 09:45 AM
Barium	7.0	0.015		mg/L	1	8/21/2008 09:45 AM
Beryllium	ND	0.015		mg/L	1	8/21/2008 09:45 AM
Cadmium	ND	0.015		mg/L	1	8/21/2008 09:45 AM
Chromium	0.63	0.015		mg/L	1	8/21/2008 09:45 AM
Cobalt	0.34	0.015		mg/L	1	8/21/2008 09:45 AM
Copper	0.92	0.025		mg/L	1	8/21/2008 09:45 AM
Lead	0.13	0.025		mg/L	1	8/21/2008 09:45 AM
Molybdenum	ND	0.025		mg/L	1	8/21/2008 09:45 AM
Nickel	0.83	0.025		mg/L	1	8/21/2008 09:45 AM
Selenium	ND	0.050		mg/L	1	8/21/2008 09:45 AM
Silver	ND	0.015		mg/L	1	8/21/2008 09:45 AM
Thallium	ND	0.075		mg/L	1	8/21/2008 09:45 AM
Vanadium	1.2	0.015		mg/L	1	8/21/2008 09:45 AM
Zinc	1.5	0.050		mg/L	1	8/21/2008 09:45 AM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7470A		
RunID: AA5_080819F	QC Batch: 48123			PrepDate:	8/18/2008	Analyst: **AMT**
Mercury	1.6	1.0		µg/L	1	8/19/2008 04:04 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *22-Aug-08*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B32-GW
Lab Order:	100438	**Collection Date:**	8/13/2008 2:40:00 PM
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	GROUNDWATER
Lab ID:	100438-041E		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP						
	EPA 3010A			**EPA 6010B**		
RunID: ICP8_080822F	QC Batch: 48225			PrepDate:	8/20/2008	Analyst: **LKN**
Antimony	ND	0.0050		mg/L	1	8/22/2008 01:12 PM
Arsenic	ND	0.010		mg/L	1	8/22/2008 01:12 PM
Barium	0.15	0.0030		mg/L	1	8/22/2008 01:12 PM
Beryllium	ND	0.0030		mg/L	1	8/22/2008 01:12 PM
Cadmium	ND	0.0030		mg/L	1	8/22/2008 01:12 PM
Chromium	ND	0.0030		mg/L	1	8/22/2008 01:12 PM
Cobalt	ND	0.0030		mg/L	1	8/22/2008 01:12 PM
Copper	ND	0.0050		mg/L	1	8/22/2008 01:12 PM
Lead	ND	0.0050		mg/L	1	8/22/2008 01:12 PM
Molybdenum	ND	0.0050		mg/L	1	8/22/2008 01:12 PM
Nickel	ND	0.0050		mg/L	1	8/22/2008 01:12 PM
Selenium	ND	0.010		mg/L	1	8/22/2008 01:12 PM
Silver	ND	0.0030		mg/L	1	8/22/2008 01:12 PM
Thallium	ND	0.015		mg/L	1	8/22/2008 01:12 PM
Vanadium	ND	0.0030		mg/L	1	8/22/2008 01:12 PM
Zinc	0.016	0.010		mg/L	1	8/22/2008 01:12 PM
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7470A		
RunID: AA5_080819J	QC Batch: 48156			PrepDate:	8/19/2008	Analyst: **AMT**
Mercury	ND	0.20		µg/L	1	8/19/2008 05:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *22-Aug-08*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B32-GW-1, B1-GW-1
Lab Order:	100438	**Collection Date:**	8/13/2008
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100438-042A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080820C	QC Batch: 48195			PrepDate:	8/20/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/20/2008 02:45 PM
Arsenic	13	1.0		mg/Kg	1	8/20/2008 02:45 PM
Barium	210	1.0		mg/Kg	1	8/20/2008 02:45 PM
Beryllium	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Cadmium	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Chromium	29	1.0		mg/Kg	1	8/20/2008 02:45 PM
Cobalt	13	1.0		mg/Kg	1	8/20/2008 02:45 PM
Copper	61	2.0		mg/Kg	1	8/20/2008 02:45 PM
Lead	27	1.0		mg/Kg	1	8/20/2008 02:45 PM
Molybdenum	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Nickel	40	1.0		mg/Kg	1	8/20/2008 02:45 PM
Selenium	2.2	1.0		mg/Kg	1	8/20/2008 02:45 PM
Silver	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Thallium	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Vanadium	52	1.0		mg/Kg	1	8/20/2008 02:45 PM
Zinc	78	1.0		mg/Kg	1	8/20/2008 02:45 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080818A	QC Batch: 48129			PrepDate:	8/18/2008	Analyst: **VLT**
4,4'-DDD	32	2.0		µg/Kg	1	8/18/2008 10:17 PM
4,4'-DDE	2400	100		µg/Kg	50	8/20/2008 07:23 PM
4,4'-DDT	680	40		µg/Kg	20	8/20/2008 07:47 PM
Aldrin	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
beta-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Chlordane	ND	8.5		µg/Kg	1	8/18/2008 10:17 PM
delta-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Dieldrin	10	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endrin	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B32-GW-1, B1-GW-1
Lab Order:	100438	**Collection Date:**	8/13/2008
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100438-042A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080818A	QC Batch: 48129			PrepDate:	8/18/2008	Analyst: **VLT**
gamma-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Heptachlor	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/18/2008 10:17 PM
Toxaphene	ND	50		µg/Kg	1	8/18/2008 10:17 PM
Surr: Decachlorobiphenyl	94.6	31-132		%REC	1	8/18/2008 10:17 PM
Surr: Decachlorobiphenyl	0	31-132	SDO	%REC	50	8/20/2008 07:23 PM
Surr: Decachlorobiphenyl	0	31-132	SDO	%REC	20	8/20/2008 07:47 PM
Surr: Tetrachloro-m-xylene	0	34-106	SDO	%REC	20	8/20/2008 07:47 PM
Surr: Tetrachloro-m-xylene	80.6	34-106		%REC	1	8/18/2008 10:17 PM
Surr: Tetrachloro-m-xylene	0	34-106	SDO	%REC	50	8/20/2008 07:23 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080821C	QC Batch: 48210			PrepDate:	8/20/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/21/2008 09:49 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B32-GW-1, B1-GW-1
Lab Order:	100438	**Collection Date:**	8/13/2008
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100438-042A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080820C	QC Batch: 48195			PrepDate:	8/20/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/20/2008 02:45 PM
Arsenic	13	1.0		mg/Kg	1	8/20/2008 02:45 PM
Barium	210	1.0		mg/Kg	1	8/20/2008 02:45 PM
Beryllium	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Cadmium	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Chromium	29	1.0		mg/Kg	1	8/20/2008 02:45 PM
Cobalt	13	1.0		mg/Kg	1	8/20/2008 02:45 PM
Copper	61	2.0		mg/Kg	1	8/20/2008 02:45 PM
Lead	27	1.0		mg/Kg	1	8/20/2008 02:45 PM
Molybdenum	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Nickel	40	1.0		mg/Kg	1	8/20/2008 02:45 PM
Selenium	2.2	1.0		mg/Kg	1	8/20/2008 02:45 PM
Silver	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Thallium	ND	1.0		mg/Kg	1	8/20/2008 02:45 PM
Vanadium	52	1.0		mg/Kg	1	8/20/2008 02:45 PM
Zinc	78	1.0		mg/Kg	1	8/20/2008 02:45 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080818A	QC Batch: 48129			PrepDate:	8/18/2008	Analyst: **VLT**
4,4'-DDD	32	2.0		µg/Kg	1	8/18/2008 10:17 PM
4,4'-DDE	2400	100		µg/Kg	50	8/20/2008 07:23 PM
4,4'-DDT	680	40		µg/Kg	20	8/20/2008 07:47 PM
Aldrin	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
beta-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Chlordane	ND	8.5		µg/Kg	1	8/18/2008 10:17 PM
delta-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Dieldrin	10	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endrin	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/18/2008 10:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B32-GW-1, B1-GW-1
Lab Order:	100438	**Collection Date:**	8/13/2008
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100438-042A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080818A	QC Batch: 48129			PrepDate:	8/18/2008	Analyst: **VLT**
gamma-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Heptachlor	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/18/2008 10:17 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/18/2008 10:17 PM
Toxaphene	ND	50		µg/Kg	1	8/18/2008 10:17 PM
Surr: Decachlorobiphenyl	94.6	31-132		%REC	1	8/18/2008 10:17 PM
Surr: Decachlorobiphenyl	0	31-132	SDO	%REC	50	8/20/2008 07:23 PM
Surr: Decachlorobiphenyl	0	31-132	SDO	%REC	20	8/20/2008 07:47 PM
Surr: Tetrachloro-m-xylene	0	34-106	SDO	%REC	20	8/20/2008 07:47 PM
Surr: Tetrachloro-m-xylene	80.6	34-106		%REC	1	8/18/2008 10:17 PM
Surr: Tetrachloro-m-xylene	0	34-106	SDO	%REC	50	8/20/2008 07:23 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080821C	QC Batch: 48210			PrepDate:	8/20/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/21/2008 09:49 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B32-GW-4, B1-GW-4
Lab Order:	100438	**Collection Date:**	8/13/2008
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100438-043A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080820C	QC Batch: 48195			PrepDate:	8/20/2008	Analyst: **LKN**
Antimony	ND	2.0		mg/Kg	1	8/20/2008 02:51 PM
Arsenic	7.7	1.0		mg/Kg	1	8/20/2008 02:51 PM
Barium	220	1.0		mg/Kg	1	8/20/2008 02:51 PM
Beryllium	ND	1.0		mg/Kg	1	8/20/2008 02:51 PM
Cadmium	ND	1.0		mg/Kg	1	8/20/2008 02:51 PM
Chromium	29	1.0		mg/Kg	1	8/20/2008 02:51 PM
Cobalt	13	1.0		mg/Kg	1	8/20/2008 02:51 PM
Copper	43	2.0		mg/Kg	1	8/20/2008 02:51 PM
Lead	6.2	1.0		mg/Kg	1	8/20/2008 02:51 PM
Molybdenum	ND	1.0		mg/Kg	1	8/20/2008 02:51 PM
Nickel	38	1.0		mg/Kg	1	8/20/2008 02:51 PM
Selenium	2.2	1.0		mg/Kg	1	8/20/2008 02:51 PM
Silver	ND	1.0		mg/Kg	1	8/20/2008 02:51 PM
Thallium	ND	1.0		mg/Kg	1	8/20/2008 02:51 PM
Vanadium	55	1.0		mg/Kg	1	8/20/2008 02:51 PM
Zinc	71	1.0		mg/Kg	1	8/20/2008 02:51 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC10_080818A	QC Batch: 48129			PrepDate:	8/18/2008	Analyst: **VLT**
4,4'-DDD	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM
4,4'-DDE	5.8	2.0		µg/Kg	1	8/18/2008 10:39 PM
4,4'-DDT	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM
Aldrin	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
alpha-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
beta-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
Chlordane	ND	8.5		µg/Kg	1	8/18/2008 10:39 PM
delta-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
Dieldrin	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM
Endosulfan I	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
Endosulfan II	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM
Endrin	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM
Endrin ketone	ND	2.0		µg/Kg	1	8/18/2008 10:39 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Results are wet unless otherwise specified
- DO Surrogate Diluted Out

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B32-GW-4, B1-GW-4
Lab Order:	100438	**Collection Date:**	8/13/2008
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100438-043A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
EPA 3550B				**EPA 8081A**		
RunID: GC10_080818A	QC Batch: 48129			PrepDate:	8/18/2008	Analyst: **VLT**
gamma-BHC	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
Heptachlor	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	8/18/2008 10:39 PM
Methoxychlor	ND	5.0		µg/Kg	1	8/18/2008 10:39 PM
Toxaphene	ND	50		µg/Kg	1	8/18/2008 10:39 PM
Surr: Decachlorobiphenyl	83.9	31-132		%REC	1	8/18/2008 10:39 PM
Surr: Tetrachloro-m-xylene	66.4	34-106		%REC	1	8/18/2008 10:39 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_080821C	QC Batch: 48210			PrepDate:	8/20/2008	Analyst: **AMT**
Mercury	ND	0.10		mg/Kg	1	8/21/2008 09:51 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference	Results are wet unless otherwise specified
	DO	Surrogate Diluted Out	

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: MB-48195	SampType: MBLK	TestCode: 6010_S	Units: mg/Kg	Prep Date: 8/20/2008	RunNo: 98573
Client ID: PBS	Batch ID: 48195	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 8/20/2008	SeqNo: 1525561

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									
Molybdenum	ND	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	ND	1.0									

Sample ID: LCS-48195	SampType: LCS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 8/20/2008	RunNo: 98573
Client ID: LCSS	Batch ID: 48195	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 8/20/2008	SeqNo: 1525562

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	47.944	2.0	50.00	0	95.9	80	120				
Arsenic	47.089	1.0	50.00	0	94.2	80	120				
Barium	50.632	1.0	50.00	0	101	80	120				
Beryllium	48.828	1.0	50.00	0	97.7	80	120				
Cadmium	47.929	1.0	50.00	0	95.9	80	120				
Chromium	47.465	1.0	50.00	0	94.9	80	120				
Cobalt	50.372	1.0	50.00	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: LCS-48195	SampType: LCS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 8/20/2008	RunNo: 98573
Client ID: LCSS	Batch ID: 48195	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 8/20/2008	SeqNo: 1525562

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	51.775	2.0	50.00	0	104	80	120				
Lead	49.814	1.0	50.00	0	99.6	80	120				
Molybdenum	49.420	1.0	50.00	0	98.8	80	120				
Nickel	48.588	1.0	50.00	0	97.2	80	120				
Selenium	44.769	1.0	50.00	0	89.5	80	120				
Silver	45.717	1.0	50.00	0	91.4	80	120				
Thallium	42.880	1.0	50.00	0	85.8	80	120				
Vanadium	50.647	1.0	50.00	0	101	80	120				
Zinc	47.542	1.0	50.00	0	95.1	80	120				

Sample ID: 100507-005A-DUP	SampType: DUP	TestCode: 6010_S	Units: mg/Kg	Prep Date: 8/20/2008	RunNo: 98573
Client ID: ZZZZZZ	Batch ID: 48195	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 8/20/2008	SeqNo: 1525642

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	1.019	1.0						1.030	1.01	20	
Barium	122.973	1.0						120.1	2.37	20	
Beryllium	ND	1.0						0	0	20	
Cadmium	0.386	1.0						0.3632	0	20	
Chromium	14.338	1.0						13.86	3.39	20	
Cobalt	6.590	1.0						6.363	3.50	20	
Copper	20.379	2.0						19.33	5.29	20	
Lead	3.208	1.0						2.807	13.3	20	
Molybdenum	ND	1.0						0	0	20	
Nickel	11.777	1.0						11.29	4.19	20	
Selenium	1.476	1.0						1.081	30.9	20	R
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	35.182	1.0						34.54	1.84	20	
Zinc	66.444	1.0						63.39	4.70	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: 100507-005A-MS	SampType: MS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 8/20/2008	RunNo: 98573
Client ID: ZZZZZZ	Batch ID: 48195	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 8/20/2008	SeqNo: 1525643

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	68.298	2.0	125.0	0	54.6	24	109				
Arsenic	89.823	1.0	125.0	1.030	71.0	52	106				
Barium	213.902	1.0	125.0	120.1	75.1	31	129				
Beryllium	91.371	1.0	125.0	0	73.1	55	110				
Cadmium	87.905	1.0	125.0	0.3632	70.0	51	110				
Chromium	102.233	1.0	125.0	13.86	70.7	50	114				
Cobalt	97.973	1.0	125.0	6.363	73.3	51	109				
Copper	124.182	2.0	125.0	19.33	83.9	55	122				
Lead	91.234	1.0	125.0	2.807	70.7	45	110				
Molybdenum	90.009	1.0	125.0	0	72.0	52	109				
Nickel	103.038	1.0	125.0	11.29	73.4	47	111				
Selenium	87.061	1.0	125.0	1.081	68.8	48	108				
Silver	93.887	1.0	125.0	0	75.1	55	110				
Thallium	81.419	1.0	125.0	0	65.1	43	105				
Vanadium	130.589	1.0	125.0	34.54	76.8	54	115				
Zinc	156.968	1.0	125.0	63.39	74.9	39	120				

Sample ID: 100507-005A-MSD	SampType: MSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 8/20/2008	RunNo: 98573
Client ID: ZZZZZZ	Batch ID: 48195	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 8/20/2008	SeqNo: 1525644

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	74.477	2.0	125.0	0	59.6	24	109	68.30	8.66	20	
Arsenic	96.788	1.0	125.0	1.030	76.6	52	106	89.82	7.46	20	
Barium	222.664	1.0	125.0	120.1	82.1	31	129	213.9	4.01	20	
Beryllium	98.319	1.0	125.0	0	78.7	55	110	91.37	7.33	20	
Cadmium	94.108	1.0	125.0	0.3632	75.0	51	110	87.90	6.82	20	
Chromium	108.444	1.0	125.0	13.86	75.7	50	114	102.2	5.90	20	
Cobalt	105.257	1.0	125.0	6.363	79.1	51	109	97.97	7.17	20	
Copper	131.833	2.0	125.0	19.33	90.0	55	122	124.2	5.98	20	
Lead	97.937	1.0	125.0	2.807	76.1	45	110	91.23	7.09	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **100507-005A-MSD**	SampType: **MSD**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **8/20/2008**	RunNo: **98573**		
Client ID: **ZZZZZZ**	Batch ID: **48195**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **8/20/2008**	SeqNo: **1525644**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	97.380	1.0	125.0	0	77.9	52	109	90.01	7.87	20	
Nickel	109.884	1.0	125.0	11.29	78.9	47	111	103.0	6.43	20	
Selenium	93.941	1.0	125.0	1.081	74.3	48	108	87.06	7.60	20	
Silver	100.414	1.0	125.0	0	80.3	55	110	93.89	6.72	20	
Thallium	87.801	1.0	125.0	0	70.2	43	105	81.42	7.54	20	
Vanadium	138.396	1.0	125.0	34.54	83.1	54	115	130.6	5.80	20	
Zinc	163.715	1.0	125.0	63.39	80.3	39	120	157.0	4.21	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: MB-48153A	SampType: MBLK	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 8/19/2008	RunNo: 98606
Client ID: PBS	Batch ID: 48153	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 8/21/2008	SeqNo: 1526110

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: LCS-48153	SampType: LCS	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 8/19/2008	RunNo: 98606
Client ID: LCSS	Batch ID: 48153	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 8/21/2008	SeqNo: 1526111

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	269.877	5.0	250.0	0	108	80	120				

Sample ID: 100438-014A-DUP	SampType: DUP	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 8/19/2008	RunNo: 98606
Client ID: B-14B-1	Batch ID: 48153	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 8/21/2008	SeqNo: 1526122

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	100.928	5.0						127.2	23.0	20	R

Sample ID: 100438-014A-MS	SampType: MS	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 8/19/2008	RunNo: 98606
Client ID: B-14B-1	Batch ID: 48153	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 8/21/2008	SeqNo: 1526123

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	303.293	5.0	250.0	127.2	70.5	45	110				

Sample ID: MB-48153B	SampType: MBLK	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 8/19/2008	RunNo: 98606
Client ID: PBS	Batch ID: 48153	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 8/21/2008	SeqNo: 1526124

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: 100438-028A-DUP	SampType: DUP	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 8/19/2008	RunNo: 98606
Client ID: B-19B-2	Batch ID: 48153	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 8/21/2008	SeqNo: 1526135

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	8.052	5.0						8.850	9.44	20	

Sample ID: 100438-028A-MS	SampType: MS	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 8/19/2008	RunNo: 98606
Client ID: B-19B-2	Batch ID: 48153	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 8/21/2008	SeqNo: 1526136

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	183.632	5.0	250.0	8.850	69.9	45	110				

Sample ID: 100438-028A-MSD	SampType: MSD	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 8/19/2008	RunNo: 98606
Client ID: B-19B-2	Batch ID: 48153	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 8/21/2008	SeqNo: 1526137

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	169.866	5.0	250.0	8.850	64.4	45	110	183.6	7.79	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: MB-48154	SampType: MBLK	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 8/19/2008	RunNo: 98515
Client ID: PBS	Batch ID: 48154	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 8/21/2008	SeqNo: 1526172

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: LCS-48154	SampType: LCS	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 8/19/2008	RunNo: 98515
Client ID: LCSS	Batch ID: 48154	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 8/21/2008	SeqNo: 1526173

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	267.995	5.0	250.0	0	107	80	120				

Sample ID: 100438-045A-DUP	SampType: DUP	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 8/19/2008	RunNo: 98515
Client ID: B-20B-1	Batch ID: 48154	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 8/21/2008	SeqNo: 1526178

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	119.809	5.0						129.4	7.66	20	

Sample ID: 100438-045A-MS	SampType: MS	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 8/19/2008	RunNo: 98515
Client ID: B-20B-1	Batch ID: 48154	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 8/21/2008	SeqNo: 1526179

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	327.300	5.0	250.0	129.4	79.2	45	110				

Sample ID: 100438-045A-MSD	SampType: MSD	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 8/19/2008	RunNo: 98515
Client ID: B-20B-1	Batch ID: 48154	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 8/21/2008	SeqNo: 1526180

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	263.610	5.0	250.0	129.4	53.7	45	110	327.3	21.6	20	R

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID: MB-48213	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 8/20/2008	RunNo: 98610
Client ID: PBW	Batch ID: 48213	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/21/2008	SeqNo: 1526215

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.0050									
Arsenic	ND	0.010									
Barium	0.002	0.0030									
Beryllium	ND	0.0030									
Cadmium	ND	0.0030									
Chromium	0.002	0.0030									
Cobalt	ND	0.0030									
Copper	ND	0.0050									
Lead	ND	0.0050									
Molybdenum	ND	0.0050									
Nickel	0.000959	0.0050									
Selenium	ND	0.010									
Silver	ND	0.0030									
Thallium	ND	0.015									
Vanadium	ND	0.0030									
Zinc	ND	0.010									

Sample ID: LCS-48213	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 8/20/2008	RunNo: 98610
Client ID: LCSW	Batch ID: 48213	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/21/2008	SeqNo: 1526216

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.972	0.0050	1.000	0	97.2	85	115				
Arsenic	0.964	0.010	1.000	0	96.4	85	115				
Barium	0.993	0.0030	1.000	0.001541	99.2	85	115				
Beryllium	0.973	0.0030	1.000	0	97.3	85	115				
Cadmium	0.960	0.0030	1.000	0	96.0	85	115				
Chromium	0.922	0.0030	1.000	0.001713	92.0	85	115				
Cobalt	0.988	0.0030	1.000	0	98.8	85	115				
Copper	0.967	0.0050	1.000	0	96.7	85	115				
Lead	1.013	0.0050	1.000	0	101	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID: LCS-48213	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 8/20/2008	RunNo: 98610
Client ID: LCSW	Batch ID: 48213	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/21/2008	SeqNo: 1526216

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.966	0.0050	1.000	0	96.6	85	115				
Nickel	0.959	0.0050	1.000	0.0009591	95.8	85	115				
Selenium	0.950	0.010	1.000	0	95.0	85	115				
Silver	0.926	0.0030	1.000	0	92.6	85	115				
Thallium	0.866	0.015	1.000	0	86.6	85	115				
Vanadium	0.986	0.0030	1.000	0	98.6	85	115				
Zinc	0.953	0.010	1.000	0	95.3	85	115				

Sample ID: 100504-007B-DUP	SampType: DUP	TestCode: 6010_W	Units: mg/L	Prep Date: 8/20/2008	RunNo: 98610
Client ID: ZZZZZZ	Batch ID: 48213	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/21/2008	SeqNo: 1526218

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.010						0	0	20	
Lead	ND	0.0050						0	0	20	

Sample ID: 100504-007B-MS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 8/20/2008	RunNo: 98610
Client ID: ZZZZZZ	Batch ID: 48213	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/21/2008	SeqNo: 1526219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.361	0.010	2.500	0	94.4	76	120				
Lead	2.442	0.0050	2.500	0	97.7	71	118				

Sample ID: 100504-007B-MSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 8/20/2008	RunNo: 98610
Client ID: ZZZZZZ	Batch ID: 48213	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/21/2008	SeqNo: 1526220

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.387	0.010	2.500	0	95.5	76	120	2.361	1.10	20	
Lead	2.470	0.0050	2.500	0	98.8	71	118	2.442	1.18	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WD

Sample ID: MB-48225	SampType: MBLK	TestCode: 6010_WD	Units: mg/L	Prep Date: 8/20/2008	RunNo: 98676
Client ID: PBW	Batch ID: 48225	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/22/2008	SeqNo: 1527363

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.0050									
Arsenic	ND	0.010									
Barium	ND	0.0030									
Beryllium	ND	0.0030									
Cadmium	ND	0.0030									
Chromium	0.000975	0.0030									
Cobalt	ND	0.0030									
Copper	ND	0.0050									
Lead	0.002	0.0050									
Molybdenum	ND	0.0050									
Nickel	ND	0.0050									
Selenium	ND	0.010									
Silver	ND	0.0030									
Thallium	ND	0.015									
Vanadium	ND	0.0030									
Zinc	ND	0.010									

Sample ID: LCS-48225	SampType: LCS	TestCode: 6010_WD	Units: mg/L	Prep Date: 8/20/2008	RunNo: 98676
Client ID: LCSW	Batch ID: 48225	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/22/2008	SeqNo: 1527364

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.933	0.0050	1.000	0	93.3	85	115				
Arsenic	0.969	0.010	1.000	0	96.9	85	115				
Barium	0.966	0.0030	1.000	0	96.6	85	115				
Beryllium	0.944	0.0030	1.000	0	94.4	85	115				
Cadmium	0.952	0.0030	1.000	0	95.2	85	115				
Chromium	0.954	0.0030	1.000	0.0009752	95.3	85	115				
Cobalt	0.968	0.0030	1.000	0	96.8	85	115				
Copper	0.935	0.0050	1.000	0	93.5	85	115				
Lead	0.989	0.0050	1.000	0.002199	98.7	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WD

Sample ID: LCS-48225	SampType: LCS	TestCode: 6010_WD	Units: mg/L	Prep Date: 8/20/2008	RunNo: 98676
Client ID: LCSW	Batch ID: 48225	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/22/2008	SeqNo: 1527364

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.955	0.0050	1.000	0	95.5	85	115				
Nickel	0.943	0.0050	1.000	0	94.3	85	115				
Selenium	0.967	0.010	1.000	0	96.7	85	115				
Silver	0.927	0.0030	1.000	0	92.7	85	115				
Thallium	0.872	0.015	1.000	0	87.2	85	115				
Vanadium	0.956	0.0030	1.000	0	95.6	85	115				
Zinc	0.957	0.010	1.000	0	95.7	85	115				

Sample ID: 100438-041E-DUP	SampType: DUP	TestCode: 6010_WD	Units: mg/L	Prep Date: 8/20/2008	RunNo: 98676
Client ID: B32-GW	Batch ID: 48225	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/22/2008	SeqNo: 1527366

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.0050						0	0	20	
Arsenic	ND	0.010						0	0	20	
Barium	0.151	0.0030						0.1500	0.651	20	
Beryllium	ND	0.0030						0	0	20	
Cadmium	ND	0.0030						0	0	20	
Chromium	0.001	0.0030						0.001312	0	20	
Cobalt	ND	0.0030						0	0	20	
Copper	0.002	0.0050						0.001708	0	20	
Lead	ND	0.0050						0	0	20	
Molybdenum	ND	0.0050						0	0	20	
Nickel	0.001	0.0050						0.001085	0	20	
Selenium	ND	0.010						0.008383	0	20	
Silver	ND	0.0030						0	0	20	
Thallium	ND	0.015						0	0	20	
Vanadium	0.002	0.0030						0.001557	0	20	
Zinc	0.012	0.010						0.01566	24.0	20	R

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WD

Sample ID: 100438-041E-MS	SampType: MS	TestCode: 6010_WD	Units: mg/L	Prep Date: 8/20/2008	RunNo: 98676
Client ID: B32-GW	Batch ID: 48225	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/22/2008	SeqNo: 1527367

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	2.451	0.0050	2.500	0	98.1	77	122				
Arsenic	2.443	0.010	2.500	0	97.7	76	120				
Barium	2.520	0.0030	2.500	0.1500	94.8	70	119				
Beryllium	2.466	0.0030	2.500	0	98.7	77	121				
Cadmium	2.329	0.0030	2.500	0	93.1	76	120				
Chromium	2.279	0.0030	2.500	0.001312	91.1	75	120				
Cobalt	2.299	0.0030	2.500	0	92.0	75	118				
Copper	2.448	0.0050	2.500	0.001708	97.8	77	126				
Lead	2.439	0.0050	2.500	0	97.5	71	118				
Molybdenum	2.389	0.0050	2.500	0	95.6	76	121				
Nickel	2.319	0.0050	2.500	0.001085	92.7	73	120				
Selenium	2.382	0.010	2.500	0.008383	94.9	73	127				
Silver	2.415	0.0030	2.500	0	96.6	64	130				
Thallium	2.260	0.015	2.500	0	90.4	67	119				
Vanadium	2.460	0.0030	2.500	0.001557	98.3	79	119				
Zinc	2.303	0.010	2.500	0.01566	91.5	67	122				

Sample ID: 100438-041E-MSD	SampType: MSD	TestCode: 6010_WD	Units: mg/L	Prep Date: 8/20/2008	RunNo: 98676
Client ID: B32-GW	Batch ID: 48225	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/22/2008	SeqNo: 1527368

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	2.498	0.0050	2.500	0	99.9	77	122	2.451	1.87	20	
Arsenic	2.490	0.010	2.500	0	99.6	76	120	2.443	1.91	20	
Barium	2.584	0.0030	2.500	0.1500	97.4	70	119	2.520	2.52	20	
Beryllium	2.547	0.0030	2.500	0	102	77	121	2.466	3.23	20	
Cadmium	2.386	0.0030	2.500	0	95.4	76	120	2.329	2.43	20	
Chromium	2.341	0.0030	2.500	0.001312	93.6	75	120	2.279	2.66	20	
Cobalt	2.357	0.0030	2.500	0	94.3	75	118	2.299	2.46	20	
Copper	2.516	0.0050	2.500	0.001708	101	77	126	2.448	2.73	20	
Lead	2.459	0.0050	2.500	0	98.4	71	118	2.439	0.841	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WD

Sample ID: 100438-041E-MSD	SampType: MSD	TestCode: 6010_WD	Units: mg/L	Prep Date: 8/20/2008	RunNo: 98676
Client ID: B32-GW	Batch ID: 48225	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 8/22/2008	SeqNo: 1527368

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	2.453	0.0050	2.500	0	98.1	76	121	2.389	2.61	20	
Nickel	2.379	0.0050	2.500	0.001085	95.1	73	120	2.319	2.58	20	
Selenium	2.427	0.010	2.500	0.008383	96.8	73	127	2.382	1.89	20	
Silver	2.477	0.0030	2.500	0	99.1	64	130	2.415	2.54	20	
Thallium	2.302	0.015	2.500	0	92.1	67	119	2.260	1.84	20	
Vanadium	2.528	0.0030	2.500	0.001557	101	79	119	2.460	2.72	20	
Zinc	2.364	0.010	2.500	0.01566	94.0	67	122	2.303	2.63	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
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CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W

Sample ID: MB-48123	SampType: MBLK	TestCode: 7470_W	Units: µg/L	Prep Date: 8/18/2008	RunNo: 98539
Client ID: PBW	Batch ID: 48123	TestNo: EPA 7470A		Analysis Date: 8/19/2008	SeqNo: 1525061

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: LCS-48123	SampType: LCS	TestCode: 7470_W	Units: µg/L	Prep Date: 8/18/2008	RunNo: 98539
Client ID: LCSW	Batch ID: 48123	TestNo: EPA 7470A		Analysis Date: 8/19/2008	SeqNo: 1525062

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.171	0.20	10.00	0	91.7	85	115				

Sample ID: 100412-001C-MS	SampType: MS	TestCode: 7470_W	Units: µg/L	Prep Date: 8/18/2008	RunNo: 98539
Client ID: ZZZZZZ	Batch ID: 48123	TestNo: EPA 7470A		Analysis Date: 8/19/2008	SeqNo: 1525063

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.588	0.20	10.00	0	95.9	70	130				

Sample ID: 100412-001C-MSD	SampType: MSD	TestCode: 7470_W	Units: µg/L	Prep Date: 8/18/2008	RunNo: 98539
Client ID: ZZZZZZ	Batch ID: 48123	TestNo: EPA 7470A		Analysis Date: 8/19/2008	SeqNo: 1525064

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.892	0.20	10.00	0	98.9	70	130	9.588	3.12	20	

Qualifiers:

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- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
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  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID: MB-48156	SampType: MBLK	TestCode: 7470_W_DIS	Units: µg/L	Prep Date: 8/19/2008	RunNo: 98555
Client ID: PBW	Batch ID: 48156	TestNo: EPA 7470A		Analysis Date: 8/19/2008	SeqNo: 1525279

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID: LCS-48156	SampType: LCS	TestCode: 7470_W_DIS	Units: µg/L	Prep Date: 8/19/2008	RunNo: 98555
Client ID: LCSW	Batch ID: 48156	TestNo: EPA 7470A		Analysis Date: 8/19/2008	SeqNo: 1525280

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.827	0.20	10.00	0	108	85	115				

Sample ID: 100462-003A-MS	SampType: MS	TestCode: 7470_W_DIS	Units: µg/L	Prep Date: 8/19/2008	RunNo: 98555
Client ID: ZZZZZZ	Batch ID: 48156	TestNo: EPA 7470A		Analysis Date: 8/19/2008	SeqNo: 1525281

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	8.058	0.20	10.00	0	80.6	70	130				

Sample ID: 100462-003A-MSD	SampType: MSD	TestCode: 7470_W_DIS	Units: µg/L	Prep Date: 8/19/2008	RunNo: 98555
Client ID: ZZZZZZ	Batch ID: 48156	TestNo: EPA 7470A		Analysis Date: 8/19/2008	SeqNo: 1525282

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.348	0.20	5.000	0	87.0	70	130	8.058	59.8	20	R

Sample ID: 100462-003A-DUP	SampType: DUP	TestCode: 7470_W_DIS	Units: µg/L	Prep Date: 8/19/2008	RunNo: 98555
Client ID: ZZZZZZ	Batch ID: 48156	TestNo: EPA 7470A		Analysis Date: 8/19/2008	SeqNo: 1525284

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: MB-48210	SampType: MBLK	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/20/2008	RunNo: 98653
Client ID: PBS	Batch ID: 48210	TestNo: EPA 7471A		Analysis Date: 8/21/2008	SeqNo: 1527022

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID: LCS-48210	SampType: LCS	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/20/2008	RunNo: 98653
Client ID: LCSS	Batch ID: 48210	TestNo: EPA 7471A		Analysis Date: 8/21/2008	SeqNo: 1527023

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.848	0.10	0.8300	0	102	80	120				

Sample ID: 100486-001A-MS	SampType: MS	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/20/2008	RunNo: 98653
Client ID: ZZZZZZ	Batch ID: 48210	TestNo: EPA 7471A		Analysis Date: 8/21/2008	SeqNo: 1527024

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.987	0.10	0.8300	0.1371	102	70	130				

Sample ID: 100486-001A-MSD	SampType: MSD	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/20/2008	RunNo: 98653
Client ID: ZZZZZZ	Batch ID: 48210	TestNo: EPA 7471A		Analysis Date: 8/21/2008	SeqNo: 1527025

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.012	0.10	0.8300	0.1371	105	70	130	0.9866	2.52	20	

Sample ID: 100486-001A-DUP	SampType: DUP	TestCode: 7471_S	Units: mg/Kg	Prep Date: 8/20/2008	RunNo: 98653
Client ID: ZZZZZZ	Batch ID: 48210	TestNo: EPA 7471A		Analysis Date: 8/21/2008	SeqNo: 1527027

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.131	0.10						0.1371	4.74	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_DM_LL

Sample ID: LCS-48183	SampType: LCS	TestCode: 8015_W_DM_	Units: mg/L	Prep Date: 8/19/2008	RunNo: 98580
Client ID: LCSW	Batch ID: 48183	TestNo: EPA 8015B(M	EPA 3510C	Analysis Date: 8/20/2008	SeqNo: 1525725

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	0.654	0.050	1.000	0	65.4	43	105				
Surr: p-Terphenyl	0.050		0.08000		62.6	37	134				

Sample ID: MB-48183MS	SampType: MS	TestCode: 8015_W_DM_	Units: mg/L	Prep Date: 8/19/2008	RunNo: 98580
Client ID: ZZZZZZ	Batch ID: 48183	TestNo: EPA 8015B(M	EPA 3510C	Analysis Date: 8/20/2008	SeqNo: 1525726

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	0.626	0.050	1.000	0	62.6	43	105				
Surr: p-Terphenyl	0.050		0.08000		63.1	37	134				

Sample ID: MB-48183MSD	SampType: MSD	TestCode: 8015_W_DM_	Units: mg/L	Prep Date: 8/19/2008	RunNo: 98580
Client ID: ZZZZZZ	Batch ID: 48183	TestNo: EPA 8015B(M	EPA 3510C	Analysis Date: 8/20/2008	SeqNo: 1525727

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	0.681	0.050	1.000	0	68.1	43	105	0.6260	8.35	20	
Surr: p-Terphenyl	0.049		0.08000		61.1	37	134		0	0	

Sample ID: MB-48183	SampType: MBLK	TestCode: 8015_W_DM_	Units: mg/L	Prep Date: 8/19/2008	RunNo: 98580
Client ID: PBW	Batch ID: 48183	TestNo: EPA 8015B(M	EPA 3510C	Analysis Date: 8/20/2008	SeqNo: 1525728

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	0.050									
ORO	ND	0.050									
Surr: p-Terphenyl	0.058		0.08000		73.0	37	134				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_GP LL

Sample ID: I080820LCS2	SampType: LCS	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 98608
Client ID: LCSW	Batch ID: I08VW136	TestNo: EPA 8015B(M		Analysis Date: 8/20/2008	SeqNo: 1526181

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	1.025	0.050	1.000	0	103	77	122				
Surr: Bromofluorobenzene (FID)	102.060		100.0		102	76	127				

Sample ID: I080820MB1MS	SampType: MS	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 98608
Client ID: ZZZZZZ	Batch ID: I08VW136	TestNo: EPA 8015B(M		Analysis Date: 8/20/2008	SeqNo: 1526182

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	1.045	0.050	1.000	0	104	77	122				
Surr: Bromofluorobenzene (FID)	104.898		100.0		105	76	127				

Sample ID: I080820MB1MSD	SampType: MSD	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 98608
Client ID: ZZZZZZ	Batch ID: I08VW136	TestNo: EPA 8015B(M		Analysis Date: 8/20/2008	SeqNo: 1526183

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.993	0.050	1.000	0	99.3	77	122	1.045	5.10	20	
Surr: Bromofluorobenzene (FID)	102.154		100.0		102	76	127		0	0	

Sample ID: I080820MB1	SampType: MBLK	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 98608
Client ID: PBW	Batch ID: I08VW136	TestNo: EPA 8015B(M		Analysis Date: 8/20/2008	SeqNo: 1526184

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	0.050									
Surr: Bromofluorobenzene (FID)	98.996		100.0		99.0	76	127				

Sample ID: 100437-006ADUP	SampType: DUP	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 98608
Client ID: ZZZZZZ	Batch ID: I08VW136	TestNo: EPA 8015B(M		Analysis Date: 8/20/2008	SeqNo: 1526186

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	0.050						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_GP LL

Sample ID: 100437-006ADUP	SampType: DUP	TestCode: 8015_W_GP	Units: mg/L	Prep Date:	RunNo: 98608
Client ID: ZZZZZZ	Batch ID: I08VW136	TestNo: EPA 8015B(M		Analysis Date: 8/20/2008	SeqNo: 1526186

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (FID)	96.018		100.0		96.0	76	127		0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: MB-48129	SampType: MBLK	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/18/2008	RunNo: 98484
Client ID: PBS	Batch ID: 48129	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/18/2008	SeqNo: 1524319

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	2.0									
4,4'-DDE	ND	2.0									
4,4'-DDT	ND	2.0									
Aldrin	ND	1.0									
alpha-BHC	ND	1.0									
alpha-Chlordane	ND	1.0									
beta-BHC	ND	1.0									
Chlordane	ND	8.5									
delta-BHC	ND	1.0									
Dieldrin	ND	2.0									
Endosulfan I	ND	1.0									
Endosulfan II	ND	2.0									
Endosulfan sulfate	ND	2.0									
Endrin	ND	2.0									
Endrin aldehyde	ND	2.0									
Endrin ketone	ND	2.0									
gamma-BHC	ND	1.0									
gamma-Chlordane	ND	1.0									
Heptachlor	ND	1.0									
Heptachlor epoxide	ND	1.0									
Methoxychlor	ND	5.0									
Toxaphene	ND	50									
Surr: Tetrachloro-m-xylene	9.198		16.67		55.2	34	106				
Surr: Decachlorobiphenyl	9.793		16.67		58.7	31	132				

Sample ID: LCS-48129	SampType: LCS	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/18/2008	RunNo: 98484
Client ID: LCSS	Batch ID: 48129	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/18/2008	SeqNo: 1524320

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aldrin	14.361	1.0	16.67	0	86.2	59	111				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: LCS-48129	SampType: LCS	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/18/2008	RunNo: 98484
Client ID: LCSS	Batch ID: 48129	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/18/2008	SeqNo: 1524320

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	13.787	2.0	16.67	0	82.7	57	105				
Endrin	12.772	2.0	16.67	0	76.6	52	139				
gamma-BHC	13.775	1.0	16.67	0	82.6	58	111				
Heptachlor	14.215	1.0	16.67	0	85.3	59	114				
Surr: Tetrachloro-m-xylene	12.351		16.67		74.1	34	106				
Surr: Decachlorobiphenyl	13.298		16.67		79.8	31	132				

Sample ID: 100463-001AMS	SampType: MS	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/18/2008	RunNo: 98484
Client ID: ZZZZZZ	Batch ID: 48129	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/18/2008	SeqNo: 1524321

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	14.821	2.0	16.67	0	88.9	33	122				
Aldrin	15.461	1.0	16.67	0	92.7	36	118				
Dieldrin	15.195	2.0	16.67	0	91.2	35	116				
Endrin	14.819	2.0	16.67	0	88.9	39	140				
gamma-BHC	14.897	1.0	16.67	0	89.4	34	117				
Heptachlor	15.295	1.0	16.67	0	91.8	37	121				
Surr: Tetrachloro-m-xylene	13.445		16.67		80.7	34	106				
Surr: Decachlorobiphenyl	15.278		16.67		91.7	31	132				

Sample ID: 100463-001AMSD	SampType: MSD	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/18/2008	RunNo: 98484
Client ID: ZZZZZZ	Batch ID: 48129	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/18/2008	SeqNo: 1524322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	15.078	2.0	16.67	0	90.5	33	122	14.82	1.72	20	
Aldrin	15.696	1.0	16.67	0	94.2	36	118	15.46	1.51	20	
Dieldrin	15.431	2.0	16.67	0	92.6	35	116	15.20	1.54	20	
Endrin	15.134	2.0	16.67	0	90.8	39	140	14.82	2.11	20	
gamma-BHC	15.102	1.0	16.67	0	90.6	34	117	14.90	1.37	20	
Heptachlor	15.558	1.0	16.67	0	93.3	37	121	15.30	1.70	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: 100463-001AMSD	SampType: MSD	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/18/2008	RunNo: 98484
Client ID: ZZZZZZ	Batch ID: 48129	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/18/2008	SeqNo: 1524322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Tetrachloro-m-xylene	13.557		16.67		81.3	34	106		0	20	
Surr: Decachlorobiphenyl	15.515		16.67		93.1	31	132		0	20	

Sample ID: 100438-043ADUP	SampType: DUP	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/18/2008	RunNo: 98484
Client ID: Composite B32-GW-	Batch ID: 48129	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/18/2008	SeqNo: 1526802

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	2.0						0	0	20	
4,4'-DDE	5.813	2.0						5.779	0.572	20	
4,4'-DDT	1.344	2.0						1.404	0	20	
Aldrin	ND	1.0						0	0	20	
alpha-BHC	ND	1.0						0	0	20	
alpha-Chlordane	ND	1.0						0	0	20	
Chlordane	ND	8.5						0	0	20	
Chlorothalonil	ND	2.0						0	0	20	
delta-BHC	ND	1.0						0	0	20	
Dieldrin	ND	2.0						0	0	20	
Endosulfan I	ND	1.0						0	0	20	
Endosulfan II	ND	2.0						0	0	20	
Endosulfan sulfate	ND	2.0						0	0	20	
Endrin	ND	2.0						0	0	20	
Endrin aldehyde	ND	2.0						0	0	20	
Endrin ketone	ND	2.0						0	0	20	
gamma-BHC	ND	1.0						0	0	20	
gamma-Chlordane	ND	1.0						0	0	20	
Heptachlor	ND	1.0						0	0	20	
Heptachlor epoxide	ND	1.0						0	0	20	
Methoxychlor	ND	5.0						0	0	20	
Toxaphene	ND	50						0	0	20	
Surr: Tetrachloro-m-xylene	11.463		16.67		68.8	34	106		0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: 100438-043ADUP	SampType: DUP	TestCode: 8081_S	Units: µg/Kg	Prep Date: 8/18/2008	RunNo: 98484
Client ID: Composite B32-GW-	Batch ID: 48129	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 8/18/2008	SeqNo: 1526802

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	13.283		16.67		79.7	31	132		0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **A080818LCS1** SampType: **LCS** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **LCSW** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	18.370	0.50	20.00	0	91.9	70	130				
Benzene	38.590	0.50	40.00	0	96.5	70	130				
Chlorobenzene	19.820	0.50	20.00	0	99.1	70	130				
MTBE	17.560	0.50	20.00	0	87.8	70	130				
Toluene	39.290	0.50	40.00	0	98.2	70	130				
Trichloroethene	19.680	0.50	20.00	0	98.4	70	130				
Surr: 1,2-Dichloroethane-d4	20.920		25.00		83.7	70	130				
Surr: 4-Bromofluorobenzene	22.640		25.00		90.6	70	130				
Surr: Dibromofluoromethane	23.690		25.00		94.8	70	130				
Surr: Toluene-d8	24.650		25.00		98.6	70	130				

Sample ID: **A080818MB2MS** SampType: **MS** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **ZZZZZZ** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	17.160	0.50	20.00	0	85.8	70	130				
Benzene	37.460	0.50	40.00	0	93.6	70	130				
Chlorobenzene	19.070	0.50	20.00	0	95.4	70	130				
Toluene	37.950	0.50	40.00	0	94.9	70	130				
Trichloroethene	19.170	0.50	20.00	0	95.9	70	130				
Surr: 1,2-Dichloroethane-d4	20.730		25.00		82.9	70	130				
Surr: 4-Bromofluorobenzene	22.490		25.00		90.0	70	130				
Surr: Dibromofluoromethane	23.520		25.00		94.1	70	130				
Surr: Toluene-d8	24.580		25.00		98.3	70	130				

Sample ID: **A080818MB2MSD** SampType: **MSD** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **ZZZZZZ** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	16.400	0.50	20.00	0	82.0	70	130	17.16	4.53	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: A080818MB2MSD	SampType: MSD	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 98464
Client ID: ZZZZZZ	Batch ID: A08VW195	TestNo: EPA 8260B		Analysis Date: 8/18/2008	SeqNo: 1524100

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.850	0.50	40.00	0	94.6	70	130	37.46	1.04	20	
Chlorobenzene	19.340	0.50	20.00	0	96.7	70	130	19.07	1.41	20	
Toluene	38.310	0.50	40.00	0	95.8	70	130	37.95	0.944	20	
Trichloroethene	19.290	0.50	20.00	0	96.5	70	130	19.17	0.624	20	
Surr: 1,2-Dichloroethane-d4	20.750		25.00		83.0	70	130		0	20	
Surr: 4-Bromofluorobenzene	22.580		25.00		90.3	70	130		0	20	
Surr: Dibromofluoromethane	23.350		25.00		93.4	70	130		0	20	
Surr: Toluene-d8	24.740		25.00		99.0	70	130		0	20	

Sample ID: A080818MB2	SampType: MBLK	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 98464
Client ID: PBW	Batch ID: A08VW195	TestNo: EPA 8260B		Analysis Date: 8/18/2008	SeqNo: 1524101

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	0.50									
1,1,1-Trichloroethane	ND	0.50									
1,1,2,2-Tetrachloroethane	ND	0.50									
1,1,2-Trichloroethane	ND	0.50									
1,1-Dichloroethane	ND	0.50									
1,1-Dichloroethene	ND	0.50									
1,1-Dichloropropene	ND	0.50									
1,2,3-Trichlorobenzene	ND	0.50									
1,2,3-Trichloropropane	ND	0.50									
1,2,4-Trichlorobenzene	ND	0.50									
1,2,4-Trimethylbenzene	ND	0.50									
1,2-Dibromo-3-chloropropane	ND	0.50									
1,2-Dibromoethane	ND	0.50									
1,2-Dichlorobenzene	ND	0.50									
1,2-Dichloroethane	ND	0.50									
1,2-Dichloropropane	ND	0.50									
1,3,5-Trimethylbenzene	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **A080818MB2**	SampType: **MBLK**	TestCode: **8260_WP_LL**	Units: **µg/L**		Prep Date:				RunNo: **98464**		
Client ID: **PBW**	Batch ID: **A08VW195**	TestNo: **EPA 8260B**			Analysis Date: **8/18/2008**				SeqNo: **1524101**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dichlorobenzene	ND	0.50									
1,3-Dichloropropane	ND	0.50									
1,4-Dichlorobenzene	ND	0.50									
2,2-Dichloropropane	ND	0.50									
2-Chlorotoluene	ND	0.50									
4-Chlorotoluene	ND	0.50									
4-Isopropyltoluene	ND	0.50									
Benzene	ND	0.50									
Bromobenzene	ND	0.50									
Bromodichloromethane	ND	0.50									
Bromoform	ND	0.50									
Bromomethane	ND	0.50									
Carbon tetrachloride	ND	0.50									
Chlorobenzene	ND	0.50									
Chloroethane	ND	0.50									
Chloroform	ND	0.50									
Chloromethane	ND	0.50									
cis-1,2-Dichloroethene	ND	0.50									
cis-1,3-Dichloropropene	ND	0.50									
Dibromochloromethane	ND	0.50									
Dibromomethane	ND	0.50									
Dichlorodifluoromethane	ND	0.50									
Ethylbenzene	ND	0.50									
Hexachlorobutadiene	ND	0.50									
Isopropylbenzene	ND	0.50									
m,p-Xylene	ND	1.0									
Methylene chloride	ND	1.0									
n-Butylbenzene	ND	0.50									
n-Propylbenzene	ND	0.50									
Naphthalene	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **A080818MB2** SampType: **MBLK** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **PBW** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	ND	0.50									
sec-Butylbenzene	ND	0.50									
Styrene	ND	0.50									
tert-Butylbenzene	ND	0.50									
Tetrachloroethene	ND	0.50									
Toluene	ND	0.50									
trans-1,2-Dichloroethene	ND	0.50									
Trichloroethene	ND	0.50									
Trichlorofluoromethane	ND	0.50									
Vinyl chloride	ND	0.50									
Surr: 1,2-Dichloroethane-d4	19.370		25.00		77.5	70	130				
Surr: 4-Bromofluorobenzene	21.840		25.00		87.4	70	130				
Surr: Dibromofluoromethane	22.210		25.00		88.8	70	130				
Surr: Toluene-d8	24.270		25.00		97.1	70	130				

Sample ID: **100438-041A** SampType: **DUP** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **B32-GW** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	0.50						0	0	20	
1,1,1-Trichloroethane	ND	0.50						0	0	20	
1,1,2,2-Tetrachloroethane	ND	0.50						0	0	20	
1,1,2-Trichloroethane	ND	0.50						0	0	20	
1,1-Dichloroethane	ND	0.50						0	0	20	
1,1-Dichloroethene	ND	0.50						0	0	20	
1,1-Dichloropropene	ND	0.50						0	0	20	
1,2,3-Trichlorobenzene	ND	0.50						0	0	20	
1,2,3-Trichloropropane	ND	0.50						0	0	20	
1,2,4-Trichlorobenzene	ND	0.50						0	0	20	
1,2,4-Trimethylbenzene	ND	0.50						0	0	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **100438-041A** SampType: **DUP** TestCode: **8260_WP_LL** Units: **µg/L** Prep Date: RunNo: **98464**
Client ID: **B32-GW** Batch ID: **A08VW195** TestNo: **EPA 8260B** Analysis Date: **8/18/2008** SeqNo: **1524103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.50						0	0	20	
1,2-Dibromoethane	ND	0.50						0	0	20	
1,2-Dichlorobenzene	ND	0.50						0	0	20	
1,2-Dichloroethane	ND	0.50						0	0	20	
1,2-Dichloropropane	ND	0.50						0	0	20	
1,3,5-Trimethylbenzene	ND	0.50						0	0	20	
1,3-Dichlorobenzene	ND	0.50						0	0	20	
1,3-Dichloropropane	ND	0.50						0	0	20	
1,4-Dichlorobenzene	ND	0.50						0	0	20	
2,2-Dichloropropane	ND	0.50						0	0	20	
2-Butanone	ND	10						0	0	20	
2-Chloroethyl vinyl ether	ND	0.50						0	0	20	
2-Chlorotoluene	ND	0.50						0	0	20	
2-Hexanone	ND	10						0	0	20	
4-Chlorotoluene	ND	0.50						0	0	20	
4-Isopropyltoluene	ND	0.50						0	0	20	
4-Methyl-2-pentanone	ND	10						0	0	20	
Acetone	ND	10						0	0	20	
Acrolein	ND	10						0	0	20	
Acrylonitrile	ND	10						0	0	20	
Benzene	ND	0.50						0	0	20	
Bromobenzene	ND	0.50						0	0	20	
Bromochloromethane	ND	0.50						0	0	20	
Bromodichloromethane	ND	0.50						0	0	20	
Bromoform	ND	0.50						0	0	20	
Bromomethane	ND	0.50						0	0	20	
Carbon disulfide	ND	0.50						0	0	20	
Carbon tetrachloride	ND	0.50						0	0	20	
Chlorobenzene	ND	0.50						0	0	20	
Chloroethane	ND	0.50						0	0	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: 100438-041A	SampType: DUP	TestCode: 8260_WP_LL	Units: µg/L	Prep Date:	RunNo: 98464
Client ID: B32-GW	Batch ID: A08VW195	TestNo: EPA 8260B		Analysis Date: 8/18/2008	SeqNo: 1524103

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloroform	ND	0.50						0	0	20	
Chloromethane	ND	0.50						0	0	20	
cis-1,2-Dichloroethene	ND	0.50						0	0	20	
cis-1,3-Dichloropropene	ND	0.50						0	0	20	
Cyclohexanone	ND	50						0	0	20	
Di-isopropyl ether	ND	0.50						0	0	0	
Dibromochloromethane	ND	0.50						0	0	20	
Dibromomethane	ND	0.50						0	0	20	
Dichlorodifluoromethane	ND	0.50						0	0	20	
Ethyl Acetate	ND	10						0	0	20	
Ethyl Ether	ND	10						0	0	20	
Ethyl tert-butyl ether	ND	0.50						0	0	0	
Ethylbenzene	ND	0.50						0	0	20	
Freon-113	ND	0.50						0	0	20	
Hexachlorobutadiene	ND	0.50						0	0	20	
Iodomethane	ND	0.50						0	0	20	
Isopropylbenzene	ND	0.50						0	0	20	
m,p-Xylene	ND	1.0						0	0	20	
Methylene chloride	ND	1.0						0	0	20	
MTBE	ND	0.50						0	0	20	
n-Butylbenzene	ND	0.50						0	0	20	
n-Propylbenzene	ND	0.50						0	0	20	
Naphthalene	ND	0.50						0	0	20	
o-Xylene	ND	0.50						0	0	20	
sec-Butylbenzene	ND	0.50						0	0	20	
Styrene	ND	0.50						0	0	20	
Tert-amyl methyl ether	ND	0.50						0	0	0	
Tert-Butanol	ND	10						0	0	0	
tert-Butylbenzene	ND	0.50						0	0	20	
Tetrachloroethene	ND	0.50						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_LL

Sample ID: **100438-041A**	SampType: **DUP**	TestCode: **8260_WP_LL**	Units: µg/L		Prep Date:				RunNo: **98464**		
Client ID: **B32-GW**	Batch ID: **A08VW195**	TestNo: **EPA 8260B**			Analysis Date: **8/18/2008**				SeqNo: **1524103**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	ND	0.50						0	0	20	
trans-1,2-Dichloroethene	ND	0.50						0	0	20	
trans-1,3-Dichloropropene	ND	0.50						0	0	20	
Trichloroethene	ND	0.50						0	0	20	
Trichlorofluoromethane	ND	0.50						0	0	20	
Vinyl acetate	ND	10						0	0	20	
Vinyl chloride	ND	0.50						0	0	20	
Xylenes, Total	ND	1.5						0	0	0	
Surr: 1,2-Dichloroethane-d4	20.450		25.00		81.8	70	130		0	0	
Surr: 4-Bromofluorobenzene	22.000		25.00		88.0	70	130		0	0	
Surr: Dibromofluoromethane	23.490		25.00		94.0	70	130		0	0	
Surr: Toluene-d8	24.640		25.00		98.6	70	130		0	0	

Qualifiers:

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SIERRA
ANALYTICAL

19 August 2008

Diane Galvan
Advanced Technology Labs
3275 Walnut Avenue
Signal Hill, CA 90755

RE:NA

Work Order No.: 0808289

Attached are the results of the analyses for samples received by the laboratory on 08/18/08 07:50.

The samples were received by Sierra Analytical Labs, Inc. with a chain of custody record attached or completed at the submittal of the samples.

The analyses were performed according to the prescribed method as outlined by EPA, Standard Methods, and A.S.T.M.

The remaining portions of the samples will be disposed of within 30 days from the date of this report.
If you require any additional retaining time, please advise us.

Sincerely,

Richard K. Forsyth

Laboratory Director

Sierra Analytical Labs, Inc. is certified by the California Department of Health Services (DOHS), Environmental Laboratory Accredidation Program (ELAP) No. 2320.

26052 Merit Circle Suite 105, Laguna Hills, California 92653
Telephone: (949) 348-9389 Fax: (949) 348-9115
E-Mail: sierralabs@earthlink.net

SIERRA ANALYTICAL

Advanced Technology Labs 3275 Walnut Avenue Signal Hill CA, 90755	Project: NA Project Number: PO # SC03845 Project Manager: Diane Galvan	**Reported:** 08/19/08 16:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
100438-042B	0808289-01	Soil	08/13/08 00:00	08/18/08 07:50
100438-043B	0808289-02	Soil	08/13/08 00:00	08/18/08 07:50

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 5 °C, and accompanied by chain of custody documentation.
PRESERVATION: Samples requiring preservation were verified prior to sample preparation and analysis.
HOLDING TIMES: All holding times were met, unless otherwise noted in the report with data qualifiers.
QA/QC CRITERIA: All quality objective criteria were met, except as noted in the report with data qualifiers.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

26052 MERIT CIRCLE SUITE 105, LAGUNA HILLS, CALIFORNIA 92653
TELEPHONE: (949) 348-9389 FAX: (949) 348-9115
E-MAIL: SIERRALABS @ SIERRALABS.NET

SIERRA
ANALYTICAL

19 August 2008

Diane Galvan
Advanced Technology Labs
3275 Walnut Avenue
Signal Hill, CA 90755

RE:NA

Work Order No.: 0808289

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Richard K. Forsyth

Laboratory Director

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SIERRA ANALYTICAL

Advanced Technology Labs 3275 Walnut Avenue Signal Hill CA, 90755	Project: NA Project Number: PO # SC03845 Project Manager: Diane Galvan	**Reported:** 08/19/08 16:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
100438-042B	0808289-01	Soil	08/13/08 00:00	08/18/08 07:50
100438-043B	0808289-02	Soil	08/13/08 00:00	08/18/08 07:50

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SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO # SC03845	Reported:
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/19/08 16:24

Chlorinated Herbicides by EPA Method 8151A

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
100438-042B (0808289-01) Soil Sampled: 08/13/08 00:00 Received: 08/18/08 07:50									
2,4,5-T	ND	1.6	µg/kg	1	B8H1829	08/18/08	08/19/08 08:31	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*83.9 %*		*35-150*	"	"	"	"	
100438-043B (0808289-02) Soil Sampled: 08/13/08 00:00 Received: 08/18/08 07:50									
2,4,5-T	ND	1.6	µg/kg	1	B8H1829	08/18/08	08/19/08 08:31	EPA 8151A	
2,4,5-TP (Silvex)	ND	1.6	"	"	"	"	"	"	
2,4-D	ND	1.6	"	"	"	"	"	"	
2,4-DB	ND	4.0	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	2.0	"	"	"	"	"	"	
4-Nitrophenol	ND	2.0	"	"	"	"	"	"	
Acifluorfen	ND	1.6	"	"	"	"	"	"	
Bentazon	ND	1.6	"	"	"	"	"	"	
Chloramben	ND	1.6	"	"	"	"	"	"	
Dalapon	ND	20	"	"	"	"	"	"	
DCPA diacid	ND	1.6	"	"	"	"	"	"	
Dicamba	ND	1.6	"	"	"	"	"	"	
Dichlorprop	ND	1.6	"	"	"	"	"	"	
Dinoseb	ND	1.6	"	"	"	"	"	"	
Pentachlorophenol	ND	1.6	"	"	"	"	"	"	
Picloram	ND	1.6	"	"	"	"	"	"	
Surrogate: 2,4-Dichlorophenylacetic Acid		*66.0 %*		*35-150*	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO # SC03845	Reported:
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/19/08 16:24

Chlorinated Herbicides by EPA Method 8151A - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8H1829 - EPA 8151A Herbicides										
Blank (B8H1829-BLK1)				Prepared: 08/18/08 Analyzed: 08/19/08						
2,4,5-T	ND	1.6	µg/kg							
2,4,5-TP (Silvex)	ND	1.6	"							
2,4-D	ND	1.6	"							
2,4-DB	ND	4.0	"							
3,5-Dichlorobenzoic acid	ND	2.0	"							
4-Nitrophenol	ND	2.0	"							
Acifluorfen	ND	1.6	"							
Bentazon	ND	1.6	"							
Chloramben	ND	1.6	"							
Dalapon	ND	20	"							
DCPA diacid	ND	1.6	"							
Dicamba	ND	1.6	"							
Dichlorprop	ND	1.6	"							
Dinoseb	ND	1.6	"							
Pentachlorophenol	ND	1.6	"							
Picloram	ND	1.6	"							
Surrogate: 2,4-Dichlorophenylacetic Acid	*47.8*		"	*100*		*47.8*	*35-150*			
LCS (B8H1829-BS1)				Prepared: 08/18/08 Analyzed: 08/19/08						
2,4,5-T	8.15	1.6	µg/kg	10.0		81.5	20-150			
2,4,5-TP (Silvex)	10.8	1.6	"	10.0		108	20-150			
Dichlorprop	4.44	1.6	"	10.0		44.4	20-150			
Dinoseb	9.07	1.6	"	10.0		90.7	20-150			
Duplicate (B8H1829-DUP1)	**Source: 0808289-01**			Prepared: 08/18/08 Analyzed: 08/19/08						
2,4,5-T	ND	1.6	µg/kg		ND				30	
2,4,5-TP (Silvex)	ND	1.6	"		ND				30	
Dichlorprop	ND	1.6	"		ND				30	
Dinoseb	ND	1.6	"		ND				30	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO # SC03845	Reported:
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/19/08 16:24

Chlorinated Herbicides by EPA Method 8151A - Quality Control

Sierra Analytical Labs, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8H1829 - EPA 8151A Herbicides										
Matrix Spike (B8H1829-MS1)	**Source: 0808288-01**			Prepared: 08/18/08		Analyzed: 08/19/08				
2,4,5-T	8.33	1.6	µg/kg	10.0	ND	83.3	20-150			
2,4,5-TP (Silvex)	11.7	1.6	"	10.0	ND	117	20-150			
Dichlorprop	5.62	1.6	"	10.0	ND	56.2	20-150			
Dinoseb	10.7	1.6	"	10.0	ND	107	20-150			
Matrix Spike Dup (B8H1829-MSD1)	**Source: 0808288-01**			Prepared: 08/18/08		Analyzed: 08/19/08				
2,4,5-T	7.77	1.6	µg/kg	10.0	ND	77.7	20-150	6.96	30	
2,4,5-TP (Silvex)	11.3	1.6	"	10.0	ND	113	20-150	3.48	30	
Dichlorprop	5.43	1.6	"	10.0	ND	54.3	20-150	3.44	30	
Dinoseb	9.69	1.6	"	10.0	ND	96.9	20-150	9.91	30	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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E-Mail: sierralabs @ sierralabs.net

SIERRA ANALYTICAL

Advanced Technology Labs	Project: NA	
3275 Walnut Avenue	Project Number: PO # SC03845	**Reported:**
Signal Hill CA, 90755	Project Manager: Diane Galvan	08/19/08 16:24

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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E-Mail: sierralabs @ sierralabs.net

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755-5225
www.atlglobal.com
TEL: (562) 989-4045 FAX: (562) 989-4040

CHAIN-OF-CUSTODY RECORD

8808289

QC Level: CT

Subcontractor:

Sierra Laboratories
26052 Merit Circle Suite 105
Laguna Hills, CA 92653

TEL: (949) 348-9389
FAX: (949) 348-9115
Acct #:

15-Aug-08

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 8151		
01	100438-042B / Composite B32-GW-1, B1-GW	Soil	8/13/2008	4OZG	1		
02	100438-043B / Composite B32-GW-4, B1-GW	Soil	8/13/2008	4OZG	1		

General Comments: Please email sample receipt acknowledgement to the PM.
Please use PO#: SC03845 Please fax results by:Normal TAT
Please send report to Diane Galvan

B35

		Date/Time			Date/Time
Relinquished by:		8/15/08	Received by:		8/15/08 7:00
Relinquished by:		8/18/08 750	Received by:		8/18/08 750

CHAIN OF CUSTODY RECORD

Pg 1 of 5

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: 8/15/08

Method of Transport: Client ☐ ATL ☐ CA OverN ☑ FEDEX ☐ Other: GSO

Sample Condition Upon Receipt
1. CHILLED 10.4°C 3.0°C Y ☐ N ☐ 4. SEALED Y ☐ N ☑
2. HEADSPACE (VOA) Y ☐ N ☑ 5. # OF SPLS MATCH COC Y ☑ N ☐
3. CONTAINER INTACT Y ☑ N ☐ 6. PRESERVED Y ☑ N ☐

Client: GEOCON CONSULTANTS, INC.
Attn: Lauren Winzer
Address: 6671 Brisa Street
City Livermore State CA Zip Code 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

Project Name: I-80 EB TIF Project #: E8128-06-04 Sampler: (Printed Name) Lauren Winzer / (Signature) Chris Merritt

Relinquished by: (Signature and Printed Name) Lauren Mpl	Date: 8/14/08	Time: 1630	Received by: (Signature and Printed Name) Kal	Date: 8/15/08	Time: 10:05
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Lauren Winzer 8/13/08
Print Name Date
Lauren Mpl
Signature

Send Report To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:
See pg. 4 & 5

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested

SPECIFY APPROPRIATE MATRIX

PRESERVATION

Q A / Q C
RTNE ☐
CT ☑
SWRCB ☐
Logcode _____
OTHER _____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metals) LEAD	8015B (GRO) / BTEX	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000) HOLD	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	REMARKS
	100438-001	B-03A-0	8/13/08	0725				X						X				E	1	P	
	2	B-03B-0		0730				X													
	3	B-05A-0		0735									X								
	4	B-05A-1		0738				X													
	5	B-05B-0		0740									X								
	6	B-05B-1		0745				X													
	7	B-11A-0		0750				X													
	8	B-11B-0		0755				X													
	9	B-12A-0		0800				X													
	10	B-12B-0	↓	0805				X						↓				↓	↓	↓	

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=Zn(AC)$_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: White with report, Yellow to folder, Pink to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☑ FEDEX ☐ Other: _____

Sample Condition Upon Receipt:
1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC. | Address: 6671 Brisa Street | TEL: (925) 371-5900
Attn: Lauren Wincze | City Livermore State CA Zip Code 94550 | FAX: (925) 371-5915

Project Name: I-80 EB TIF | Project #: E8128-06-04 | Sampler: (Printed Name) Lauren Wincze / Chris Merritt (Signature)

Relinquished by: (Signature and Printed Name) Lauren Wincze Date: 8/14/08 Time: 1630 | Received by: (Signature and Printed Name) Kal Date: 8/15/08 Time: 1805

Relinquished by: (Signature and Printed Name) Date: Time: | Received by: (Signature and Printed Name) Date: Time:

Relinquished by: (Signature and Printed Name) Date: Time: | Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Lauren Wincze 8/13/08
Print Name / Date
Lauren Wincze
Signature

Send Report To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State ____ Zip ____

Bill To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State ____ Zip ____

Special Instructions/Comments:
See pg. 4 #5

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides) | 8082 (PCB) | 8260B (Volatiles) | 8270C (BNA) | 6010B (Total Metals) LEAD | 8015B (GRO) / BTEX | 8015B (DRO) | 8021 (BTEX) | TITLE 22 / CAM 17 (6010 / 7000) HOLD

SPECIFY APPROPRIATE MATRIX: SOIL | WATER | GROUND WATER | WASTEWATER

PRESERVATION

Q A / Q C: RTNE ☐ CT ☐ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	Container(s): TAT	#	Type	REMARKS
	100438 - 11	B-14A-0	8/13/08	0830	E	1	P	
	12	B-14A-1		0835				
	13	B-14B-0		0840				
	14	B-14B-1		0845				
	15	B-16A-0		0905				
	16	B-16B-0		0910				
	17	B-17A-0		0910				
	18	B-17A-1		0915				
	19	B-17A-2		0920				
	20	B-19A-0	↓	0845	↓	↓	↓	

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr | B= Emergency Next workday | C= Critical 2 Workdays | D= Urgent 3 Workdays | E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: White with report, Yellow to folder, Pink to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____
Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☑ FEDEX ☐ Other: _____

Sample Condition Upon Receipt
1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC. Address: 6671 Brisa Street TEL: (925) 371-5900
Attn: Lauren Wincze City Livemore State CA Zip Code 94550 FAX: (925) 371-5915

Project Name: I-80 EB TIF Project #: EB28-06-04 Sampler: (Printed Name) Lauren Wincze/Chris Merritt (Signature)

Relinquished by: (Signature and Printed Name) Date: 3/14/08 Time: 1430 Received by: (Signature and Printed Name) Date: 5/15/08 Time: 1065
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: Lauren Wincze 8/13/08 (Print Name / Date)
Signature

Send Report To: Attn: _____ Co: SAME AS ABOVE Address _____ City _____ State _____ Zip _____

Bill To: Attn: _____ Co: SAME AS ABOVE Address _____ City _____ State _____ Zip _____

Special Instructions/Comments: See pg. 4 of 5

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides), 8082 (PCB), 8260B (Volatiles), 8270C (BNA), 6010B (Total Metal) LEAD, 8015B (GRO) / BTEX, 8015B (DRO), 8021 (BTEX), TITLE 22 / CAM 17 (6010 / 7000), HOLD

SPECIFY APPROPRIATE MATRIX: SOIL, WATER, GROUND WATER, WASTEWATER

PRESERVATION

Q A / Q C: RTNE ☐ CT ☑ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s) #	Container(s) Type	REMARKS
	109438-21	B-19A-1	3/13/08	0850	E	1	P	
	22	B-19A-2		0855				
	23	B-17B-0		0925				
	24	B-17B-1		0927				
	25	B-17B-2		0930				
	26	B-19B-0		0858				
	27	B-19B-1		0901				
	28	B-19B-2		0905				
	29	B-20A-0		0950				
	30	B-20A-1	↓	0955	↓	↓	↓	

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____
Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☑ FEDEX ☐ Other: _____

Sample Condition Upon Receipt: 1. CHILLED Y☐ N☐ 4. SEALED Y☐ N☐ 2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐ 3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC.
Attn: Lauren Wincze
Address: 6671 Brisa Street
City Livermore State CA Zip Code 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

Project Name: I-80 EB TIF Project #: E8128-06-04 Sampler: (Printed Name) Lauren Wincze / Chris Merritt (Signature)

Relinquished by: (Signature and Printed Name) [signature] Date: 8/14/08 Time: 1630 Received by: (Signature and Printed Name) [signature] Date: 8/15/08 Time: 1005

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Lauren Wincze 8/13/08
Print Name Date
[signature]
Signature

Send Report To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:
pesticides, herbicides, metals sample composite → 2 - 2-point composites:
(1) B1-GW-1 AND B32-GW-1
(2) B1-GW-4 AND B32-GW-4

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides) | 8082 (PCB) | 8260B (Volatiles) | 8270C (BNA) | 6010B (Total Metal) LEAD | 8015B (GRO) / BTEX | 8015B (DRO) | 8021 (BTEX) | TITLE 22 / CAM 17 (6010 / 7000) | HOLD Herbicides - 8151A

SPECIFY APPROPRIATE MATRIX: SOIL | WATER | GROUND WATER | WASTEWATER

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s): #	Type	PRESERVATION	REMARKS
	100438 - 31	B22A-0	8/13/08	0945	E		P		
	32	B22A-1		0950					
	33	B22A-2		0955					
	34	B22B-0		0957					
	35	B22B-1		1000					
	36	B22B-2		1005			↓		
	37	B32-GW-1		1105	E	1	T		composite w/ B1-GW-1
	38	B32-GW-4		1110					comp w/ B1-GW-4
	39	B1-GW-1		1214					composite w/ B32-GW-1
	40	B1-GW-4	↓	1235	↓	↓	↓		composite w/ B32-GW-4

QA/QC: RTNE ☐ CT ☑ SWRCB ☐ Logcode ____ OTHER ____

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: White with report, Yellow to folder, Pink to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: ______

Logged By: ______ Date: ______

Method of Transport: Client ☐ ATL ☐ CA OverN ☒ FEDEX ☐ Other: ______

Sample Condition Upon Receipt:
1. CHILLED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐
3. CONTAINER INTACT Y☐ N☐
4. SEALED Y☐ N☐
5. # OF SPLS MATCH COC Y☐ N☐
6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC. Address: 6671 Brisa Street TEL: (925) 371-5900
Attn: Lauren Wincze City: Livemore State: CA Zip Code: 94550 FAX: (925) 371-5915

Project Name: I-80 EB TIF Project #: E8128-06-04 Sampler: (Printed Name) Lauren Wincze / (Signature) Chris Merritt

Relinquished by: (Signature and Printed Name)	Date	Time	Received by: (Signature and Printed Name)	Date	Time
[signature]	8/14/08	1630	[signature]	8/15/08	10:05

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: Lauren Wincze 8/14/08
Print Name / Date
[signature]
Signature

Send Report To: Attn: ______ Co: SAME AS ABOVE Address: ______ City ______ State ______ Zip ______

Bill To: Attn: ______ Co: SAME AS ABOVE Address: ______ City ______ State ______ Zip ______

Special Instructions/Comments: metals - total and dissolved - lab to filter.

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides), 8082 (PCB), 8260B (Volatiles), 8270C (BNA), 6010B (Total Metal), 8015B (GRO) / BTEX, 8015B (DRO) + Motor oil + Kerosine, 8021 (BTEX), TITLE 22 / CAM 17 (6010 / 7000) - total & dissolved

Specify Appropriate Matrix: SOIL, WATER, GROUND WATER, WASTEWATER

ITEM	LAB USE ONLY: Batch #: Lab No.	Sample I.D. / Location	Date	Time	8260B (Volatiles)	8015B (DRO)	TITLE 22 / CAM 17	Matrix: GROUND WATER	TAT	Container #	Container Type	Preservation	REMARKS
	100438 - 41	B32-GW	8/13/08	1440	X	X	X	X	E	10	V, L, P	H, N, C	

QA/QC: RTNE ☐ CT ☒ SWRCB ☐ Logcode ______ OTHER ______

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: White with report, Yellow to folder, Pink to submitter.

Carmen Aguila

From: Lauren Wincze [wincze@geoconinc.com]
Sent: Friday, August 15, 2008 11:45 AM
To: Carmen Aguila
Subject: I-80 EB TIF project

Hi Carmen:
Per my phone conversation with Margo earlier, please note that sample B22A-0, listed at the top of page 4 of the COC, is to be placed on HOLD, and should NOT be analyzed for total lead at this time. Thanks and have a good weekend!
-Lauren

****

Lauren Wincze
Senior Staff Geologist
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
925.371.5900-p
925.371.5915-f

August 27, 2008

RECEIVED
SEP 02 2008
By

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 100363

RE: EB I-80, E8128-06-04

Attention: Chris Giuntoli

Enclosed are the results for sample(s) received on August 12, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

CLIENT: Geocon Consultants, Inc. **Lab Order:** 100363
Project: EB I-80, E8128-06-04

Lab ID: 100363-027 **Collection Date:** 8/11/2008
Client Sample ID: Composite B25-0, 26-0, 27-0, 28-0 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (STLC)						
WET			**WET/ EPA 7420**			
RunID: AA2_080827B	QC Batch: 48330			PrepDate:	8/25/2008	Analyst: **AMT**
Lead	0.77	0.25		mg/L	1	8/27/2008 11:57 AM

Lab ID: 100363-029 **Collection Date:** 8/11/2008
Client Sample ID: Composite B29-0, 30-0, 31-0, 32-0 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (STLC)						
WET			**WET/ EPA 7420**			
RunID: AA2_080827B	QC Batch: 48330			PrepDate:	8/25/2008	Analyst: **AMT**
Lead	1.4	0.25		mg/L	1	8/27/2008 11:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *27-Aug-08*

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_ST

Sample ID: MB-48330A	SampType: MBLK	TestCode: 7420_ST	Units: mg/L	Prep Date: 8/25/2008	RunNo: 98843
Client ID: PBS	Batch ID: 48330	TestNo: WET/ EPA 74 WET		Analysis Date: 8/27/2008	SeqNo: 1529743

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: LCS-48330	SampType: LCS	TestCode: 7420_ST	Units: mg/L	Prep Date: 8/25/2008	RunNo: 98843
Client ID: LCSS	Batch ID: 48330	TestNo: WET/ EPA 74 WET		Analysis Date: 8/27/2008	SeqNo: 1529744

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.962	0.25	5.000	0	99.2	80	120				

Sample ID: 100350-044A-DUP	SampType: DUP	TestCode: 7420_ST	Units: mg/L	Prep Date: 8/25/2008	RunNo: 98843
Client ID: ZZZZZZ	Batch ID: 48330	TestNo: WET/ EPA 74 WET		Analysis Date: 8/27/2008	SeqNo: 1529754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25						0	0	20	

Sample ID: 100350-044A-MS	SampType: MS	TestCode: 7420_ST	Units: mg/L	Prep Date: 8/25/2008	RunNo: 98843
Client ID: ZZZZZZ	Batch ID: 48330	TestNo: WET/ EPA 74 WET		Analysis Date: 8/27/2008	SeqNo: 1529755

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.309	0.25	5.000	0	86.2	80	120				

Sample ID: 100350-044A-MSD	SampType: MSD	TestCode: 7420_ST	Units: mg/L	Prep Date: 8/25/2008	RunNo: 98843
Client ID: ZZZZZZ	Batch ID: 48330	TestNo: WET/ EPA 74 WET		Analysis Date: 8/27/2008	SeqNo: 1529756

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.308	0.25	5.000	0	86.2	80	120	4.309	0.0410	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Diane Galvan

From: Chris Giuntoli [giuntoli@geoconinc.com]
Sent: Monday, August 25, 2008 10:43 AM
To: Diane Galvan
Subject: RE: Results - EB I-80 (100141) AND (100363)

Hi Diane,

Please run the following analyses for samples reported under Workorder No. 100141:

Sample: B13-0, B14-0, B15-0, and B16-0 composite - WET and TCLP for lead on 48-Hour TAT; and
Sample B17-0, B18-0, B19-0, and B-20-0 composite – WET for lead on 48-hour TAT.

Please run the following analyses for samples reported under Workorder No. 100363:

Sample: B25-0, B26-0, B27-0, and B28-0 composite - WET for lead on 48-Hour TAT; and
Sample B29-0, B30-0, B31-0, and B-32-0 composite – WET for lead on 48-hour TAT.

Thanks,
Chris

August 27, 2008

RECEIVED
SEP 02 2008
By

Rick Day
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 100141

RE: I 80 E. TRUCK SCALE, E8128-06-04

Attention: Rick Day

Enclosed are the results for sample(s) received on July 29, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

Addendum
100141add.pdf

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

CLIENT: Geocon Consultants, Inc. **Lab Order:** 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

Lab ID: 100141-048 **Collection Date:** 7/25/2008
Client Sample ID: Composite B13-0,B14-0,B15-0,B16-0 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (STLC)						
WET				**WET/ EPA 7420**		
RunID: AA2_080827B QC Batch: 48330				PrepDate:	8/25/2008	Analyst: **AMT**
Lead	6.9	0.25		mg/L	1	8/27/2008 11:56 AM
LEAD BY ATOMIC ABSORPTION (TCLP)						
EPA3010A				**EPA 1311/ 7420**		
RunID: AA2_080827A QC Batch: 48353				PrepDate:	8/26/2008	Analyst: **AMT**
Lead	ND	0.25		mg/L	1	8/27/2008 11:13 AM

Lab ID: 100141-050 **Collection Date:** 7/25/2008
Client Sample ID: Composite B17-0,B18-0,B19-0,B20-0 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (STLC)						
WET				**WET/ EPA 7420**		
RunID: AA2_080827B QC Batch: 48330				PrepDate:	8/25/2008	Analyst: **AMT**
Lead	2.2	0.25		mg/L	1	8/27/2008 11:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill CA 90755 Tel 562 989-4045 Fax 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_ST

Sample ID: MB-48330A	SampType: MBLK	TestCode: 7420_ST	Units: mg/L	Prep Date: 8/25/2008	RunNo: 98843
Client ID: PBS	Batch ID: 48330	TestNo: WET/ EPA 74 WET		Analysis Date: 8/27/2008	SeqNo: 1529743

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: LCS-48330	SampType: LCS	TestCode: 7420_ST	Units: mg/L	Prep Date: 8/25/2008	RunNo: 98843
Client ID: LCSS	Batch ID: 48330	TestNo: WET/ EPA 74 WET		Analysis Date: 8/27/2008	SeqNo: 1529744

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.962	0.25	5.000	0	99.2	80	120				

Sample ID: 100350-044A-DUP	SampType: DUP	TestCode: 7420_ST	Units: mg/L	Prep Date: 8/25/2008	RunNo: 98843
Client ID: ZZZZZZ	Batch ID: 48330	TestNo: WET/ EPA 74 WET		Analysis Date: 8/27/2008	SeqNo: 1529754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25						0	0	20	

Sample ID: 100350-044A-MS	SampType: MS	TestCode: 7420_ST	Units: mg/L	Prep Date: 8/25/2008	RunNo: 98843
Client ID: ZZZZZZ	Batch ID: 48330	TestNo: WET/ EPA 74 WET		Analysis Date: 8/27/2008	SeqNo: 1529755

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.309	0.25	5.000	0	86.2	80	120				

Sample ID: 100350-044A-MSD	SampType: MSD	TestCode: 7420_ST	Units: mg/L	Prep Date: 8/25/2008	RunNo: 98843
Client ID: ZZZZZZ	Batch ID: 48330	TestNo: WET/ EPA 74 WET		Analysis Date: 8/27/2008	SeqNo: 1529756

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.308	0.25	5.000	0	86.2	80	120	4.309	0.0410	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE. E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_TC

Sample ID: MB-48353A	SampType: MBLK	TestCode: 7420_TC	Units: mg/L	Prep Date: 8/26/2008	RunNo: 98839
Client ID: PBS	Batch ID: 48353	TestNo: EPA 1311/74	EPA3010A	Analysis Date: 8/27/2008	SeqNo: 1529682

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: MB-48331A TCLP	SampType: MBLK	TestCode: 7420_TC	Units: mg/L	Prep Date: 8/26/2008	RunNo: 98839
Client ID: PBS	Batch ID: 48353	TestNo: EPA 1311/74	EPA3010A	Analysis Date: 8/27/2008	SeqNo: 1529683

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: LCS-48353	SampType: LCS	TestCode: 7420_TC	Units: mg/L	Prep Date: 8/26/2008	RunNo: 98839
Client ID: LCSS	Batch ID: 48353	TestNo: EPA 1311/74	EPA3010A	Analysis Date: 8/27/2008	SeqNo: 1529684

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.998	0.25	1.000	0	99.8	80	120				

Sample ID: 100350-003A-DUP	SampType: DUP	TestCode: 7420_TC	Units: mg/L	Prep Date: 8/26/2008	RunNo: 98839
Client ID: ZZZZZZ	Batch ID: 48353	TestNo: EPA 1311/74	EPA3010A	Analysis Date: 8/27/2008	SeqNo: 1529689

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.330	0.25						0.3219	2.38	20	

Sample ID: 100350-006A-MS	SampType: MS	TestCode: 7420_TC	Units: mg/L	Prep Date: 8/26/2008	RunNo: 98839
Client ID: ZZZZZZ	Batch ID: 48353	TestNo: EPA 1311/74	EPA3010A	Analysis Date: 8/27/2008	SeqNo: 1529691

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.472	0.25	2.500	0.2968	87.0	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_TC

Sample ID: **100350-006A-MSD**	SampType: **MSD**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date: **8/26/2008**	RunNo: **98839**						
Client ID: **ZZZZZZ**	Batch ID: **48353**	TestNo: **EPA 1311/74 EPA3010A**		Analysis Date: **8/27/2008**	SeqNo: **1529692**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.476	0.25	2.500	0.2968	87.2	70	130	2.472	0.150	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Diane Galvan

From: Chris Giuntoli [giuntoli@geoconinc.com]
Sent: Monday, August 25, 2008 10:43 AM
To: Diane Galvan
Subject: RE: Results - EB I-80 (100141) AND (100363)

Hi Diane,

Please run the following analyses for samples reported under Workorder No. 100141:

Sample: B13-0, B14-0, B15-0, and B16-0 composite - WET and TCLP for lead on 48-Hour TAT; and
Sample B17-0, B18-0, B19-0, and B-20-0 composite – WET for lead on 48-hour TAT.

Please run the following analyses for samples reported under Workorder No. 100363:

Sample: B25-0, B26-0, B27-0, and B28-0 composite - WET for lead on 48-Hour TAT; and
Sample B29-0, B30-0, B31-0, and B-32-0 composite – WET for lead on 48-hour TAT.

Thanks,
Chris

September 10, 2008

Rick Day
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196

RECEIVED
SEP 19 2008
By

Workorder No.: 100141

RE: I 80 E. TRUCK SCALE, E8128-06-04

Attention: Rick Day

Enclosed are the results for sample(s) received on July 29, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Project: I 80 E. TRUCK SCALE, E8128-06-04
Lab Order: 100141

CASE NARRATIVE

Analytical Comments for Method 6010

RPD for Duplicate (DUP) is outside criteria for sample 100141-036ADUP; however, the Laboratory Control Sample (LCS) validated the analytical batch.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: 9/10/2008

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	100141
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Date Received**	7/29/2008 8:00:00 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	LKN

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
100141-025A	B13-0	140	mg/Kg	48700	5.0	1	7/25/2008	9/10/2008
100141-026A	B14-0	200	mg/Kg	48700	5.0	1	7/25/2008	9/10/2008
100141-027A	B15-0	150	mg/Kg	48700	5.0	1	7/25/2008	9/10/2008
100141-028A	B16-0	77	mg/Kg	48700	5.0	1	7/25/2008	9/10/2008
100141-033A	B17-0	45	mg/Kg	48700	5.0	1	7/25/2008	9/10/2008
100141-034A	B18-0	100	mg/Kg	48700	5.0	1	7/25/2008	9/10/2008
100141-035A	B19-0	37	mg/Kg	48700	5.0	1	7/25/2008	9/10/2008
100141-036A	B20-0	37	mg/Kg	48700	5.0	1	7/25/2008	9/10/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
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Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *10-Sep-08*

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-48700**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **9/10/2008**	RunNo: **99334**
Client ID: **PBS**	Batch ID: **48700**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **9/10/2008**	SeqNo: **1537957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-48700**	SampType: **LCS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **9/10/2008**	RunNo: **99334**
Client ID: **LCSS**	Batch ID: **48700**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **9/10/2008**	SeqNo: **1537958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	248.664	5.0	250.0	0	99.5	80	120				

Sample ID: **100141-036ADUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **9/10/2008**	RunNo: **99334**
Client ID: **B20-0**	Batch ID: **48700**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **9/10/2008**	SeqNo: **1537974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	30.377	5.0						37.47	20.9	20	R

Sample ID: **100141-036AMS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **9/10/2008**	RunNo: **99334**
Client ID: **B20-0**	Batch ID: **48700**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **9/10/2008**	SeqNo: **1537975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	212.345	5.0	250.0	37.47	70.0	45	110				

Sample ID: **100141-036AMSD**	SampType: **MSD**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **9/10/2008**	RunNo: **99334**
Client ID: **B20-0**	Batch ID: **48700**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **9/10/2008**	SeqNo: **1537976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	197.050	5.0	250.0	37.47	63.8	45	110	212.3	7.47	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Diane Galvan

From: Chris Giuntoli [giuntoli@geoconinc.com]
Sent: Monday, September 08, 2008 11:17 AM
To: Diane Galvan
Subject: Lab Order Nos. 100141 and 100363

Hi Diane,

Please run the following individual soil samples for total lead on a 48-hour rush:

Lab Order No. 100141:
B13-0, B14-0, B15-0, B16-0, B-17-0, B18-0, B19-0, and B20-0.

Lab Oder No. 100363:
B25-0, B26-0, B27-0, B28-0, B29-0, B30-0, B31-0, and B32-0.

Thanks,
Chris

****

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, California 94550
Office - (925) 371-5900
Fax - (925) 371-5915
Cell - (925) 525-4204

September 10, 2008

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

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ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 100363

RE: EB I-80, E8128-06-04

Attention: Chris Giuntoli

Enclosed are the results for sample(s) received on August 12, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

100363.add2.pdf

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

CLIENT: Geocon Consultants, Inc.
Project: EB I-80, E8128-06-04
Lab Order: 100363

CASE NARRATIVE

Analytical Comments for Method 6010

RPD for Duplicate (DUP) is outside criteria for sample 100848-021ADUP; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: 9/10/2008

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	100363
Project:	EB I-80, E8128-06-04	**Date Received**	8/12/2008 8:15:00 AM
Project No:	E8128-06-04	**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	SRB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
100363-009A	B25-0	140	mg/Kg	48656	5.0	1	8/11/2008	9/9/2008
100363-010A	B26-0	33	mg/Kg	48656	5.0	1	8/11/2008	9/9/2008
100363-011A	B27-0	32	mg/Kg	48656	5.0	1	8/11/2008	9/9/2008
100363-012A	B28-0	29	mg/Kg	48656	5.0	1	8/11/2008	9/9/2008
100363-017A	B29-0	92	mg/Kg	48656	5.0	1	8/11/2008	9/9/2008
100363-018A	B30-0	93	mg/Kg	48656	5.0	1	8/11/2008	9/9/2008
100363-019A	B31-0	58	mg/Kg	48656	5.0	1	8/11/2008	9/9/2008
100363-020A	B32-0	29	mg/Kg	48656	5.0	1	8/11/2008	9/9/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *10-Sep-08*

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-48656A**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **9/9/2008**	RunNo: **99278**
Client ID: **PBS**	Batch ID: **48656**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **9/9/2008**	SeqNo: **1537036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: **LCS-48656**	SampType: **LCS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **9/9/2008**	RunNo: **99278**
Client ID: **LCSS**	Batch ID: **48656**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **9/9/2008**	SeqNo: **1537037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	281.335	5.0	250.0	0	113	80	120				

Sample ID: **100848-004A-DUP**	SampType: **DUP**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **9/9/2008**	RunNo: **99278**
Client ID: **ZZZZZZ**	Batch ID: **48656**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **9/9/2008**	SeqNo: **1537048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	37.816	5.0						34.74	8.48	20	

Sample ID: **100848-004A-MS**	SampType: **MS**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **9/9/2008**	RunNo: **99278**
Client ID: **ZZZZZZ**	Batch ID: **48656**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **9/9/2008**	SeqNo: **1537049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	262.448	5.0	250.0	34.74	91.1	45	110				

Sample ID: **MB-48656B**	SampType: **MBLK**	TestCode: **6010_SPB**	Units: **mg/Kg**	Prep Date: **9/9/2008**	RunNo: **99278**
Client ID: **PBS**	Batch ID: **48656**	TestNo: **EPA 6010B**	**EPA 3050M**	Analysis Date: **9/9/2008**	SeqNo: **1537050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: 100848-021A-DUP	SampType: DUP	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 9/9/2008	RunNo: 99278
Client ID: ZZZZZZ	Batch ID: 48656	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 9/9/2008	SeqNo: 1537061

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	44.639	5.0						96.99	73.9	20	R

Sample ID: 100848-021A-MS	SampType: MS	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 9/9/2008	RunNo: 99278
Client ID: ZZZZZZ	Batch ID: 48656	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 9/9/2008	SeqNo: 1537062

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	283.611	5.0	250.0	96.99	74.6	45	110				

Sample ID: 100848-021A-MSD	SampType: MSD	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 9/9/2008	RunNo: 99278
Client ID: ZZZZZZ	Batch ID: 48656	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 9/9/2008	SeqNo: 1537063

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	254.188	5.0	250.0	96.99	62.9	45	110	283.6	10.9	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Diane Galvan

From: Chris Giuntoli [giuntoli@geoconinc.com]
Sent: Monday, September 08, 2008 11:17 AM
To: Diane Galvan
Subject: Lab Order Nos. 100141 and 100363

Hi Diane,

Please run the following individual soil samples for total lead on a 48-hour rush:

Lab Order No. 100141:
B13-0, B14-0, B15-0, B16-0, B-17-0, B18-0, B19-0, and B20-0.

Lab Oder No. 100363:
B25-0, B26-0, B27-0, B28-0, B29-0, B30-0, B31-0, and B32-0.

Thanks,
Chris

****

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, California 94550
Office - (925) 371-5900
Fax - (925) 371-5915
Cell - (925) 525-4204

September 18, 2008

Rick Day
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 100141

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SEP 29 2008
By

RE: I 80 E. TRUCK SCALE, E8128-06-04

Attention: Rick Day

Enclosed are the results for sample(s) received on July 29, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

100141add3.pdf

for Eddie F. Rodriguez
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

CLIENT: Geocon Consultants, Inc. **Lab Order:** 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

Lab ID: 100141-025 **Collection Date:** 7/25/2008
Client Sample ID: B13-0 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (STLC)						
		WET/ EPA 7420				
RunID: AA2_080918A	QC Batch: R99673			PrepDate:		Analyst: **RQ**
Lead	6.4	0.25		mg/L	1	9/18/2008

Lab ID: 100141-026 **Collection Date:** 7/25/2008
Client Sample ID: B14-0 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (STLC)						
		WET/ EPA 7420				
RunID: AA2_080918A	QC Batch: R99673			PrepDate:		Analyst: **RQ**
Lead	8.7	0.25		mg/L	1	9/18/2008

Lab ID: 100141-027 **Collection Date:** 7/25/2008
Client Sample ID: B15-0 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (STLC)						
		WET/ EPA 7420				
RunID: AA2_080918A	QC Batch: R99673			PrepDate:		Analyst: **RQ**
Lead	9.0	0.25		mg/L	1	9/18/2008

Lab ID: 100141-028 **Collection Date:** 7/25/2008
Client Sample ID: B16-0 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (STLC)						
		WET/ EPA 7420				
RunID: AA2_080918A	QC Batch: R99673			PrepDate:		Analyst: **RQ**
Lead	3.6	0.25		mg/L	1	9/18/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: Geocon Consultants, Inc. **Lab Order:** 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

Lab ID: 100141-033 **Collection Date:** 7/25/2008
Client Sample ID: B17-0 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (STLC)				**WET/ EPA 7420**		
RunID: AA2_080918A	QC Batch: R99673			PrepDate:		Analyst: **RQ**
Lead	1.1	0.25		mg/L	1	9/18/2008

Lab ID: 100141-034 **Collection Date:** 7/25/2008
Client Sample ID: B18-0 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (STLC)				**WET/ EPA 7420**		
RunID: AA2_080918A	QC Batch: R99673			PrepDate:		Analyst: **RQ**
Lead	2.6	0.25		mg/L	1	9/18/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *18-Sep-08*

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

BatchID: R99673

Sample ID: MB-48863	SampType: MBLK	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 99673
Client ID: PBS	Batch ID: R99673	TestNo: WET/ EPA 74		Analysis Date: 9/18/2008	SeqNo: 1543865

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: LCS-48863	SampType: LCS	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 99673
Client ID: LCSS	Batch ID: R99673	TestNo: WET/ EPA 74		Analysis Date: 9/18/2008	SeqNo: 1543866

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.991	0.25	5.000	0	99.8	80	120				

Sample ID: 100363-018ADUP	SampType: DUP	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 99673
Client ID: ZZZZZZ	Batch ID: R99673	TestNo: WET/ EPA 74		Analysis Date: 9/18/2008	SeqNo: 1543877

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	3.175	0.25						3.155	0.632	20	

Sample ID: 100363-018AMS	SampType: MS	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 99673
Client ID: ZZZZZZ	Batch ID: R99673	TestNo: WET/ EPA 74		Analysis Date: 9/18/2008	SeqNo: 1543878

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	7.746	0.25	5.000	3.155	91.8	80	120				

Sample ID: 101003-001A-DUP	SampType: DUP	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 99673
Client ID: ZZZZZZ	Batch ID: R99673	TestNo: WET/ EPA 74		Analysis Date: 9/18/2008	SeqNo: 1543889

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
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CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

BatchID: R99673

Sample ID: 101003-001A-MS	SampType: MS	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 99673
Client ID: ZZZZZZ	Batch ID: R99673	TestNo: WET/ EPA 74		Analysis Date: 9/18/2008	SeqNo: 1543894

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.443	0.25	5.000	0	88.9	80	120				

Sample ID: 101003-001A-MSD	SampType: MSD	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 99673
Client ID: ZZZZZZ	Batch ID: R99673	TestNo: WET/ EPA 74		Analysis Date: 9/18/2008	SeqNo: 1543895

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.396	0.25	5.000	0	87.9	80	120	4.443	1.06	20	

Sample ID: MB-48863B	SampType: MBLK	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 99673
Client ID: PBS	Batch ID: R99673	TestNo: WET/ EPA 74		Analysis Date: 9/18/2008	SeqNo: 1543896

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Diane Galvan

From: Chris Giuntoli [giuntoli@geoconinc.com]
Sent: Monday, September 15, 2008 5:08 PM
To: Diane Galvan
Subject: RE: Additional Results - I 80 E. TRUCK SCALE (100141)

Hi Diane,

For Workorder No. 100141, please run WET lead on a 72-Hour TAT for the following samples:

B13-0, B14-0, B15-0, B16-0, B17-0, and B18-0.

Thanks,
Chris

September 18, 2008

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 100363

RECEIVED
SEP 29 2008
By

RE: EB I-80, E8128-06-04

Attention: Chris Giuntoli

Enclosed are the results for sample(s) received on August 12, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, Ca 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Project: EB I-80, E8128-06-04
Lab Order: 100363

CASE NARRATIVE

Analytical Comments for Method 8081

Sample 100363-029A holding time for extraction was exceeded. The client was informed on 09/18/08 and instructed the laboratory to proceed with the analysis.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *18-Sep-08*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B25-0
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-009		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (STLC)						
		WET/ EPA 7420				
RunID: AA2_080918A	QC Batch: R99673			PrepDate:		Analyst: **RQ**
Lead	4.8	0.25		mg/L	1	9/18/2008

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories
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Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *18-Sep-08*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B29-0
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-017		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (STLC)						
			WET/ EPA 7420			
RunID: AA2_080918A	QC Batch: R99673			PrepDate:		Analyst: **RQ**
Lead	3.1	0.25		mg/L	1	9/18/2008

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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Advanced Technology Laboratories

Print Date: *18-Sep-08*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B30-0
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-018		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (STLC)				**WET/ EPA 7420**		
RunID: AA2_080918A	QC Batch: R99673			PrepDate:		Analyst: **RQ**
Lead	3.2	0.25		mg/L	1	9/18/2008

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories
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Advanced Technology Laboratories

Print Date: *18-Sep-08*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B31-0
Lab Order:	100363	**Collection Date:**	8/11/2008
Project:	EB I-80, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100363-019		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (STLC)				**WET/ EPA 7420**		
RunID: AA2_080918A	QC Batch: R99673			PrepDate:		Analyst: **RQ**
Lead	1.7	0.25		mg/L	1	9/18/2008

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Lab Order: 100363
Project: EB I-80, E8128-06-04
Lab ID: 100363-029

Client Sample ID: Composite B29-0, 30-0, 31-0, 32-0
Collection Date: 8/11/2008
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY WET EXTRACTION						
EPA 3510C				**WET/ EPA 8081A**		
RunID: GC9_080917A	QC Batch: 48920				PrepDate: 9/17/2008	Analyst: **VLT**
4,4'-DDD	ND	0.000056	H	mg/L	1	9/17/2008 08:38 PM
4,4'-DDE	0.00038	0.000056	H	mg/L	1	9/17/2008 08:38 PM
4,4'-DDT	0.00014	0.000056	H	mg/L	1	9/17/2008 08:38 PM
Surr: Decachlorobiphenyl	39.0	29-137	H	%REC	1	9/17/2008 08:38 PM
Surr: Tetrachloro-m-xylene	69.8	47-117	H	%REC	1	9/17/2008 08:38 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

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Advanced Technology Laboratories

1275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *18-Sep-08*

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

BatchID: R99673

Sample ID: MB-48863	SampType: MBLK	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 99673
Client ID: PBS	Batch ID: R99673	TestNo: WET/ EPA 74		Analysis Date: 9/18/2008	SeqNo: 1543865

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: LCS-48863	SampType: LCS	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 99673
Client ID: LCSS	Batch ID: R99673	TestNo: WET/ EPA 74		Analysis Date: 9/18/2008	SeqNo: 1543866

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.991	0.25	5.000	0	99.8	80	120				

Sample ID: 100363-018ADUP	SampType: DUP	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 99673
Client ID: B30-0	Batch ID: R99673	TestNo: WET/ EPA 74		Analysis Date: 9/18/2008	SeqNo: 1543877

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	3.175	0.25						3.155	0.632	20	

Sample ID: 100363-018AMS	SampType: MS	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 99673
Client ID: B30-0	Batch ID: R99673	TestNo: WET/ EPA 74		Analysis Date: 9/18/2008	SeqNo: 1543878

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	7.746	0.25	5.000	3.155	91.8	80	120				

Sample ID: 101003-001A-DUP	SampType: DUP	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 99673
Client ID: ZZZZZZ	Batch ID: R99673	TestNo: WET/ EPA 74		Analysis Date: 9/18/2008	SeqNo: 1543889

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

BatchID: R99673

Sample ID: **101003-001A-MS**	SampType: **MS**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date:	RunNo: **99673**
Client ID: **ZZZZZZ**	Batch ID: **R99673**	TestNo: **WET/ EPA 74**		Analysis Date: **9/18/2008**	SeqNo: **1543894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.443	0.25	5.000	0	88.9	80	120				

Sample ID: **101003-001A-MSD**	SampType: **MSD**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date:	RunNo: **99673**
Client ID: **ZZZZZZ**	Batch ID: **R99673**	TestNo: **WET/ EPA 74**		Analysis Date: **9/18/2008**	SeqNo: **1543895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.396	0.25	5.000	0	87.9	80	120	4.443	1.06	20	

Sample ID: **MB-48863B**	SampType: **MBLK**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date:	RunNo: **99673**
Client ID: **PBS**	Batch ID: **R99673**	TestNo: **WET/ EPA 74**		Analysis Date: **9/18/2008**	SeqNo: **1543896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
1275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4047

Advanced Technology Laboratories

Date: *18-Sep-08*

CLIENT: Geocon Consultants, Inc.
Work Order: 100363
Project: EB I-80, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

BatchID: 48920

Sample ID: **MB-48920**	SampType: **MBLK**	TestCode: **8081_ST**	Units: **mg/L**	Prep Date: **9/17/2008**	RunNo: **99659**
Client ID: **PBS**	Batch ID: **48920**	TestNo: **WET/ EPA 80**	**EPA 3510C**	Analysis Date: **9/17/2008**	SeqNo: **1543721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	0.000056									
4,4'-DDE	ND	0.000056									
4,4'-DDT	ND	0.000056									
Surr: Decachlorobiphenyl	0.000476		0.0005556		85.8	29	137				
Surr: Tetrachloro-m-xylene	0.000514		0.0005556		92.5	47	117				

Sample ID: **LCS-48920**	SampType: **LCS**	TestCode: **8081_ST**	Units: **mg/L**	Prep Date: **9/17/2008**	RunNo: **99659**
Client ID: **LCSS**	Batch ID: **48920**	TestNo: **WET/ EPA 80**	**EPA 3510C**	Analysis Date: **9/17/2008**	SeqNo: **1543722**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aldrin	0.000511	0.000028	0.0005556	0	91.9	63	115				
Dieldrin	0.00051	0.000056	0.0005556	0	91.8	62	111				
Endrin	0.000654	0.000056	0.0005556	0	118	45	137				
gamma-BHC	0.000505	0.000028	0.0005556	0	90.9	62	115				
Heptachlor	0.000495	0.000028	0.0005556	0	89.1	60	113				
Surr: Decachlorobiphenyl	0.000459		0.0005556		82.7	29	137				
Surr: Tetrachloro-m-xylene	0.000492		0.0005556		88.6	47	117				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Diane Galvan

From: Chris Giuntoli [giuntoli@geoconinc.com]
Sent: Monday, September 15, 2008 5:10 PM
To: Diane Galvan
Subject: RE: Additional Results - EB I-80 (100363)

Hi Diane,

For Workorder No. 100363, please run WET lead on a 72-Hour TAT for the following samples:

B25-0, B29-0, B30-0, and B31-0.

Thanks,
Chris

Diane Galvan

From: Chris Giuntoli [giuntoli@geoconinc.com]
Sent: Monday, September 15, 2008 5:17 PM
To: Diane Galvan
Subject: Workorder No. 100363

Hi Diane,

For Workorder No. 100363, can you also run WET for 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT on sample Composite B29-0, B30-0, B31-0, B32-0 on a 72-Hr TAT.

Thanks,
Chris

****

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, California 94550
Office - (925) 371-5900
Fax - (925) 371-5915
Cell - (925) 525-4204

September 22, 2008

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 100438

RE: I-80 EB TIF, E8128-06-04

Attention: Chris Giuntoli

RECEIVED
SEP 29 2008
By

Enclosed are the results for sample(s) received on August 15, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

100438add2.pdf

Eddie F. Rodriguez
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Project: I-80 EB TIF, E8128-06-04
Lab Order: 100438

CASE NARRATIVE

Analytical Comments for Mehod 8081

Dilution was necessary for sample 100438-042A, due to sample matrix.

Advanced Technology Laboratories
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CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	Composite B32-GW-1, B1-GW-1
Lab Order:	100438	**Collection Date:**	8/13/2008
Project:	I-80 EB TIF, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100438-042A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY WET EXTRACTION						
	EPA 3510C			**WET/ EPA 8081A**		
RunID: GC10_080919A	QC Batch: 48989			PrepDate:	9/19/2008	Analyst: **VLT**
4,4'-DDD	ND	0.000056	H	mg/L	1	9/19/2008 06:22 PM
4,4'-DDE	0.0028	0.00056	H	mg/L	10	9/19/2008 06:42 PM
4,4'-DDT	0.00097	0.000056	H	mg/L	1	9/19/2008 06:22 PM
Surr: Decachlorobiphenyl	79.8	29-137	H	%REC	10	9/19/2008 06:42 PM
Surr: Decachlorobiphenyl	54.0	29-137	H	%REC	1	9/19/2008 06:22 PM
Surr: Tetrachloro-m-xylene	110	47-117	H	%REC	10	9/19/2008 06:42 PM
Surr: Tetrachloro-m-xylene	86.4	47-117	H	%REC	1	9/19/2008 06:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4046

Advanced Technology Laboratories

Date: *22-Sep-08*

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_ST

Sample ID: **LCS-48989**	SampType: **LCS**	TestCode: **8081_ST**	Units: **mg/L**	Prep Date: **9/19/2008**	RunNo: **99751**
Client ID: **LCSS**	Batch ID: **48989**	TestNo: **WET/ EPA 80**	**EPA 3510C**	Analysis Date: **9/19/2008**	SeqNo: **1545401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aldrin	0.000567	0.000028	0.0005556	0	102	63	115				
Dieldrin	0.000538	0.000056	0.0005556	0	96.8	62	111				
Endrin	0.000536	0.000056	0.0005556	0	96.5	45	137				
gamma-BHC	0.000527	0.000028	0.0005556	0	94.8	62	115				
Heptachlor	0.000534	0.000028	0.0005556	0	96.1	60	113				
Surr: Decachlorobiphenyl	0.000552		0.0005556		99.3	29	137				
Surr: Tetrachloro-m-xylene	0.00053		0.0005556		95.4	47	117				

Sample ID: **MB-48989**	SampType: **MBLK**	TestCode: **8081_ST**	Units: **mg/L**	Prep Date: **9/19/2008**	RunNo: **99751**
Client ID: **PBS**	Batch ID: **48989**	TestNo: **WET/ EPA 80**	**EPA 3510C**	Analysis Date: **9/19/2008**	SeqNo: **1545402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	0.000056									
4,4'-DDE	ND	0.000056									
4,4'-DDT	ND	0.000056									
Surr: Decachlorobiphenyl	0.000582		0.0005556		105	29	137				
Surr: Tetrachloro-m-xylene	0.000498		0.0005556		89.7	47	117				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

August 29, 2008

RECEIVED
SEP 05 2008
By

ACCREDITED IN ACCORDANCE WITH nelac

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 100438

RE: I-80 EB TIF, E8128-06-04

Attention: Chris Giuntoli

Enclosed are the results for sample(s) received on August 15, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

100438add.pdf
(ADL)

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

CLIENT: Geocon Consultants, Inc.
Project: I-80 EB TIF, E8128-06-04
Lab Order: 100438

CASE NARRATIVE

Analytical Comments for Method 7420

Matrix Spike (MS) and /or Matrix Spike Duplicate (MSD) are/is outside recovery criteria for samples 100438-045AMS and 100438-045AMSD; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: 8/29/2008

ANALYTICAL RESULTS

LEAD BY ATOMIC ABSORPTION (STLC)
WET/ EPA 7420

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	100438
Project:	I-80 EB TIF, E8128-06-04	**Date Received**	8/15/2008 10:05:00 AM
Project No:	E8128-06-04	**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	AMT

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
100438-002A	B-03B-0	ND	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-004A	B-05A-1	ND	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-009A	B-12A-0	0.47	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-014A	B-14B-1	0.26	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-015A	B-16A-0	0.30	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-016A	B-16B-0	0.36	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-017A	B-17A-0	0.50	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-018A	B-17A-1	0.35	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-022A	B-19A-2	0.37	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-023A	B-17B-0	0.44	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-024A	B-17B-1	0.32	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-030A	B-20A-1	0.45	mg/L	R98908	0.25	1	8/13/2008	8/28/2008
100438-045A	B-20B-1	0.63	mg/L	R98908	0.25	1	8/13/2008	8/28/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *29-Aug-08*

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_ST

Sample ID: MB-48360A	SampType: MBLK	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 98908
Client ID: PBS	Batch ID: R98908	TestNo: WET/ EPA 74		Analysis Date: 8/28/2008	SeqNo: 1531033

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: LCS-48360	SampType: LCS	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 98908
Client ID: LCSS	Batch ID: R98908	TestNo: WET/ EPA 74		Analysis Date: 8/28/2008	SeqNo: 1531034

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.012	0.25	5.000	0	100	80	120				

Sample ID: 100438-023A-DUP	SampType: DUP	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 98908
Client ID: B-17B-0	Batch ID: R98908	TestNo: WET/ EPA 74		Analysis Date: 8/28/2008	SeqNo: 1531045

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.406	0.25						0.4404	8.04	20	

Sample ID: 100438-023A-MS	SampType: MS	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 98908
Client ID: B-17B-0	Batch ID: R98908	TestNo: WET/ EPA 74		Analysis Date: 8/28/2008	SeqNo: 1531046

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.558	0.25	5.000	0.4404	82.4	80	120				

Sample ID: 100438-045A-DUP	SampType: DUP	TestCode: 7420_ST	Units: mg/L	Prep Date:	RunNo: 98908
Client ID: B-20B-1	Batch ID: R98908	TestNo: WET/ EPA 74		Analysis Date: 8/28/2008	SeqNo: 1531052

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.528	0.25						0.6346	18.3	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
2275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 100438
Project: I-80 EB TIF, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_ST

Sample ID: **100438-045A-MS**	SampType: **MS**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date:	RunNo: **98908**
Client ID: **B-20B-1**	Batch ID: **R98908**	TestNo: **WET/ EPA 74**		Analysis Date: **8/28/2008**	SeqNo: **1531053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	3.353	0.25	5.000	0.6346	54.4	80	120				S

Sample ID: **100438-045A-MSD**	SampType: **MSD**	TestCode: **7420_ST**	Units: **mg/L**	Prep Date:	RunNo: **98908**
Client ID: **B-20B-1**	Batch ID: **R98908**	TestNo: **WET/ EPA 74**		Analysis Date: **8/28/2008**	SeqNo: **1531054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	3.534	0.25	5.000	0.6346	58.0	80	120	3.353	5.26	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Diane Galvan

From: Lauren Wincze [wincze@geoconinc.com]
Sent: Tuesday, August 26, 2008 12:15 PM
To: Diane Galvan
Cc: 'Chris Giuntoli'
Subject: WO#100438

Hi Diane:
Please run the following samples for soluble WET lead, under an urgent, 3-day TAT. Thanks so much.

B-03B-0, B-05A-1, B-12A-0, B-14B-1, B-16A-0, B-16B-0, B-17A-0, B-17A-1, B-19A-2, B-17B-0, B-17B-1, B-20A-1, AND B-20B-1.

****

Lauren Wincze
Senior Staff Geologist
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
925.371.5900-p
925.371.5915-f

September 26, 2008

Rick Day
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

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OCT 0 3 2008
By

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 100141

RE: I 80 E. TRUCK SCALE, E8128-06-04

Attention: Rick Day

Enclosed are the results for sample(s) received on July 29, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B14-0
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-026A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (TCLP)						
	EPA3010A			**EPA 1311/ 7420**		
RunID: AA2_080926A	QC Batch: 49078			PrepDate:	9/25/2008	Analyst: **AMT**
Lead	0.34	0.25		mg/L	1	9/26/2008 11:31 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *26-Sep-08*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	B15-0
Lab Order:	100141	**Collection Date:**	7/25/2008
Project:	I 80 E. TRUCK SCALE, E8128-06-04	**Matrix:**	SOIL
Lab ID:	100141-027A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LEAD BY ATOMIC ABSORPTION (TCLP)						
	EPA3010A			**EPA 1311/ 7420**		
RunID: AA2_080926A	QC Batch: 49078			PrepDate:	9/25/2008	Analyst: **AMT**
Lead	0.38	0.25		mg/L	1	9/26/2008 11:32 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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Advanced Technology Laboratories
2323 Walnut Avenue, Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *26-Sep-08*

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

BatchID: 49078

Sample ID: MB-49078A	SampType: MBLK	TestCode: 7420_TC	Units: mg/L	Prep Date: 9/25/2008	RunNo: 99972
Client ID: PBS	Batch ID: 49078	TestNo: EPA 1311/ 74 EPA3010A		Analysis Date: 9/26/2008	SeqNo: 1549183

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: MB-49071A TCLP	SampType: MBLK	TestCode: 7420_TC	Units: mg/L	Prep Date: 9/25/2008	RunNo: 99972
Client ID: PBS	Batch ID: 49078	TestNo: EPA 1311/ 74 EPA3010A		Analysis Date: 9/26/2008	SeqNo: 1549184

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.125	0.25									

Sample ID: LCS-49078	SampType: LCS	TestCode: 7420_TC	Units: mg/L	Prep Date: 9/25/2008	RunNo: 99972
Client ID: LCSS	Batch ID: 49078	TestNo: EPA 1311/ 74 EPA3010A		Analysis Date: 9/26/2008	SeqNo: 1549185

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.962	0.25	1.000	0	96.2	80	120				

Sample ID: 100827-017A-DUP	SampType: DUP	TestCode: 7420_TC	Units: mg/L	Prep Date: 9/25/2008	RunNo: 99972
Client ID: ZZZZZZ	Batch ID: 49078	TestNo: EPA 1311/ 74 EPA3010A		Analysis Date: 9/26/2008	SeqNo: 1549189

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.343	0.25						1.159	14.7	20	

Sample ID: 100827-017A-MS	SampType: MS	TestCode: 7420_TC	Units: mg/L	Prep Date: 9/25/2008	RunNo: 99972
Client ID: ZZZZZZ	Batch ID: 49078	TestNo: EPA 1311/ 74 EPA3010A		Analysis Date: 9/26/2008	SeqNo: 1549190

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	3.704	0.25	2.500	1.159	102	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 100141
Project: I 80 E. TRUCK SCALE, E8128-06-04

ANALYTICAL QC SUMMARY REPORT

BatchID: 49078

Sample ID: 100827-017A-MSD	SampType: MSD	TestCode: 7420_TC	Units: mg/L	Prep Date: 9/25/2008	RunNo: 99972
Client ID: ZZZZZZ	Batch ID: 49078	TestNo: EPA 1311/ 74 EPA3010A		Analysis Date: 9/26/2008	SeqNo: 1549191

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	3.723	0.25	2.500	1.159	103	70	130	3.704	0.500	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

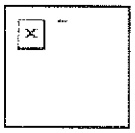
Diane Galvan

From: Chris Giuntoli [giuntoli@geoconinc.com]
Sent: Wednesday, September 24, 2008 2:40 PM
To: Diane Galvan
Subject: RE: Additional Results - I 80 E. TRUCK SCALE (100141)

Hi Diane,

Please run TCLPs for lead on a 48-Hr TAT on samples B14-0 and B-15-0.

Thanks,
Chris



File Copy

REVISED ASBESTOS AND DETERIORATED LEAD-CONTAINING PAINT SURVEY

CORDELIA TRUCK INSPECTION FACILITY
EASTBOUND INTERSTATE 80
SOLANO COUNTY, CALIFORNIA

PREPARED FOR:
CALIFORNIA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
111 GRAND AVENUE
OAKLAND, CALIFORNIA

PREPARED BY:
GEOCON CONSULTANTS, INC.
6671 BRISA STREET
LIVERMORE, CALIFORNIA

GEOCON

GEOCON PROJECT No. E8128-06-03

JULY 2008

GEOCON
CONSULTANTS, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. E8128-06-03
July 24, 2008

Mr. Michael Lohman
Mark Thomas & Company
1243 Alpine Road, Suite 222
Walnut Creek, California 94596

Subject: REVISED ASBESTOS AND DETERIORATED LEAD-CONTAINING PAINT SURVEY
CORDELIA TRUCK INSPECTION FACILITY (EASTBOUND INTERSTATE 80)
SOLANO COUNTY, CALIFORNIA

Dear Mr. Lohman:

We have performed an asbestos and deteriorated lead-containing paint (LCP) survey of the eastbound Interstate 80 Cordelia Truck Inspection Facility located in Solano County, California (the Site). The scope of services provided by Geocon included surveying the storage shed, truck inspection bays, restrooms, and truck scale offices at the Site for suspect asbestos-containing materials and deteriorated LCP, collecting bulk samples, and submitting the samples to laboratories for analyses.

The accompanying report summarizes the services performed and the results of laboratory testing.

The contents of this report reflect the views of Geocon, who are responsible for the facts and accuracy of the data presented herein. This report does not constitute a standard, specification, or regulation.

If there are any questions concerning the contents of this report, or if Geocon may be of further service, please contact me at your convenience.

Sincerely,

GEOCON CONSULTANTS, INC.

David Watts, CAC
Senior Project Scientist

Chris Giuntoli, CAC
Senior Project Scientist

DAW:CGG:ls

(5 + 2 CD) Addressee
(1) Chris Wilson – Caltrans District 4

TABLE OF CONTENTS

ASBESTOS AND DETERIORATED LEAD PAINT SURVEY REPORT Page

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ASBESTOS AND DETERIORATED LEAD PAINT SURVEY REPORT

1.0 INTRODUCTION

1.1 Site Description

The subject site consists of the storage shed, truck inspection bays, restrooms, and truck scale offices at the eastbound Interstate 80 (I-80) Cordelia Truck Inspection Facility (TIF) located in Solano County, California (the Site). The approximate project location is depicted on the Vicinity Map, Figure 1, and Site Plan, Figure 2.

1.2 Objectives

Our objectives were to assess the potential presence and quantity of asbestos and deteriorated lead-containing paint (LCP) at the Site prior to planned demolition activities. The information obtained from this investigation will be used by the State of California Department of Transportation (Caltrans) for waste profiling, determining California Occupational Safety and Health Administration (Cal/OSHA) applicability, and coordinating asbestos and LCP disturbance activities.

> *It was <u>not</u> Geocon's intent during this inspection to conduct an evaluation of lead-based paint hazards in accordance with HUD guidelines. HUD protocol generally requires a very extensive sampling strategy that includes sampling of paint on each surface type (e.g., wall, ceiling, window sill, window frame, door frame, molding, etc.) in each room.*

2.0 BACKGROUND

2.1 Asbestos

The *Code of Federal Regulations (CFR),* 40 CFR 61, Subpart M, National Emissions Standards for Hazardous Air Pollutants (NESHAP) and Federal Occupational Safety and Health Administration (FED OSHA) classify asbestos-containing material (ACM) as any material or product that contains *more than* 1% asbestos. Nonfriable ACM is classified by NESHAP as either Category I or Category II material defined as follows:

- **Category I** – asbestos-containing packings, gaskets, resilient floor coverings, and asphalt roofing products.
- **Category II** – all remaining types of non-friable asbestos-containing material not included in Category I that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Regulated asbestos-containing material (RACM), a hazardous waste when friable, is classified as any manufactured material that contains *greater than* 1% asbestos by dry weight *and* is:

- Friable; or
- Category I material that has become friable; or
- Category I material that has been subjected to sanding grinding, cutting or abrading; or
- Category II non-friable material that has a high probability of becoming crumbled, pulverized, or reduced to a powder during demolition or renovation activities.

Activities that disturb materials containing *any* amount of asbestos are subject to certain requirements of the Cal/OSHA asbestos standard contained in Title 8, California Code of Regulations (CCR) Section 1529. Typically, removal or disturbance of more than 100 square feet of material containing more than 0.1% asbestos must be performed by a registered asbestos abatement contractor, but associated waste labeling is not required if the material contains 1% or less asbestos. When the asbestos content of a material exceeds 1%, virtually all requirements of the standard become effective.

Materials containing more than 1% asbestos are also subject to NESHAP regulations (40 CFR Part 61, Subpart M). RACM (friable ACM and nonfriable ACM that will become friable during demolition or renovation operations) must be removed from buildings prior to demolition or renovation. Certain nonfriable ACM and materials containing 1% or less asbestos may remain in buildings during demolition; however, there are waste handling/disposal issues and Cal/OSHA work requirements that must be followed. Contractors are responsible for segregating and characterizing waste streams prior to disposal.

With respect to potential worker exposure, notification, and registration requirements, Cal/OSHA defines asbestos-containing construction material (ACCM) as construction material that contains more than 0.1% asbestos (Title 8, CCR 341.6).

2.2 Lead Paint

Construction activities (including demolition) that disturb materials or paints containing *any* amount of lead are subject to certain requirements of the Cal/OSHA lead standard contained in Title 8, CCR, Section 1532.1. Deteriorated paint is defined by Title 17, CCR, Division 1, Chapter 8, §35022 as a surface coating that is cracking, chalking, flaking, chipping, peeling, non-intact, failed, or otherwise separating from a component. Demolition of a deteriorated LCP component would require waste characterization and appropriate disposal. Intact LCP on a component is currently accepted by most landfill facilities; however, contractors are responsible for segregating and characterizing waste streams prior to disposal.

For a solid waste containing lead, the waste is classified as California hazardous when: 1) the total lead content exceeds the respective Total Threshold Limit Concentration (TTLC) of 1,000 milligrams per kilogram (mg/kg); or 2) the soluble lead content exceeds the respective Soluble Threshold Limit

Concentration (STLC) of 5 milligrams per liter (mg/l) based on the standard Waste Extraction Test (WET). A waste has the potential for exceeding the lead STLC when the waste's total lead content is greater than or equal to ten times the respective STLC value since the WET uses a 1:10 dilution ratio. Hence, when total lead is detected at a concentration greater than or equal to 50 mg/kg, and assuming that 100 percent of the total lead is soluble, soluble lead analysis is required. Lead-containing waste is classified as "Resource, Conservation, and Recovery Act" (RCRA) hazardous, or Federal hazardous, when the soluble lead content exceeds the Federal regulatory level of 5 mg/l based on the Toxicity Characteristic Leaching Procedure (TCLP).

The above regulatory criteria are based on chemical concentrations. Wastes may also be classified as hazardous based on other criteria such as ignitability; however, for the purposes of this investigation, toxicity (i.e., lead concentrations) is the primary factor considered for waste classification since waste generated during the construction activities would not likely warrant testing for ignitability or other criteria. Waste that is classified as either California hazardous or RCRA hazardous requires management as a hazardous waste.

Potential hazards exist to workers who remove or cut through LCP coatings during demolition. Dust containing hazardous concentrations of lead may be generated during scraping or cutting materials coated with lead-containing paint. Torching of these materials may produce lead oxide fumes. Therefore, air monitoring and/or respiratory protection may be required during the demolition of materials coated with LCP. Guidelines regarding regulatory provisions for construction work where workers may be exposed to lead are presented in the Title 8, CCR, Section 1532.1.

3.0 HISTORY

3.1 Previous Survey Activities

Previous asbestos or LCP survey reports of the Site were not available for our review.

3.2 Architectural Plans

Architectural plans of the Site were not available for our review.

4.0 SCOPE OF SERVICES

Mr. David Watts, a California-Certified Asbestos Consultant (CAC), certification No. 98-2404 (expiration September 16, 2008), and Certified Lead Paint Inspector/Assessor and Project Monitor with the California Department of Public Health (DPH), certification numbers I-1734 and M-1734 (expiration December 4, 2008) completed an asbestos and deteriorated LCP survey of the Site on May 9, 2008.

The three modular/portable trailers present at the Site at the time of our survey reportedly will be removed from the Site prior to demolition of the remaining site structures (see Figure 2). Consequently, the three modular/portable trailers were not included in our asbestos and deteriorated LCP survey at the Site.

The eastbound I-80 TIF Relocation Project will require acquisition of private property parcels on land south of the existing Caltrans ROW. Existing residential and agricultural structures are present on some of the parcels proposed for acquisition. Asbestos and deteriorated LCP surveys will be conducted at structures to be impacted by the TIF Relocation Project following acquisition of these properties and prior to planned building demolition work. Consequently, private property structures outside the TIF were not included in the current scope of work.

4.1 Asbestos

Suspect ACM were grouped into homogeneous areas with representative samples randomly collected from each. In addition, each potential ACM was evaluated for quantity and friability. A total of 48 bulk asbestos samples were collected from the Site.

Geocon's procedures for inspection and sampling are discussed below:

- Collected bulk asbestos samples after first wetting friable material with a light mist of water. The samples were then cut from the substrate and transferred to a labeled container. Note that when multiple samples were collected, the sampling locations were distributed throughout the homogeneous area (spaces where the material was observed).
- Relinquished bulk asbestos samples to EMSL Analytical, Inc., a California-licensed laboratory, for asbestos analysis in accordance with EPA Test Method 600/R-93/116 using polarized light microscopy (PLM) under standard chain-of-custody procedures. EMSL Analytical, Inc. is a laboratory accredited by the National Institute of Standards and Technology National Voluntary Laboratory Accreditation Program (NIST-NVLAP) for bulk asbestos fiber analysis. The laboratory analyses were requested on a 5-workday turn-around-time.

Sample locations are presented on the Site Plan, Figure 2. Geocon sample group identification numbers, material descriptions, approximate quantities, friability assessments, and photo references are summarized in Table 1. Photos of suspect asbestos-containing materials are presented with the Site Photographs.

4.2 Deteriorated LCP

A total of six bulk paint samples were collected from the Site. Geocon's sampling procedures are discussed below:

- Collected representative bulk samples of suspect LCP using techniques presented in HUD guidelines. In addition, each painted area was evaluated for evidence of deterioration such as flaking or cracking.
- Relinquished LCP samples to Advanced Technology Laboratories, a California-licensed laboratory, for lead analyses in accordance with EPA Test Method 6010 under standard chain-of-custody procedures. Advanced Technology Laboratories is accredited by the DPH for lead analysis. The laboratory analyses were requested on a 7-workday turn-around-time.

Sample locations are presented on the Site Plan, Figure 2. Geocon paint sample identification numbers, paint descriptions, approximate peeling/flaking quantities, and photo references are summarized on Table 2. Photos of deteriorated paints sampled by Geocon are presented with the Site Photographs.

5.0 INVESTIGATIVE RESULTS

5.1 Asbestos Analytical Results

Chrysotile asbestos at a concentration of 10% was detected in samples representing approximately 10 square feet of nonfriable asphalt roofing mastic used on the TIF bays roof.

Chrysotile asbestos at a concentration of 10% was detected in samples representing approximately 100 square feet of nonfriable duct tape used on the TIF bays ducting systems.

Chrysotile asbestos at a concentration of less than (<) 1% was detected in samples representing joint compound associated with approximately 200 square feet of nonfriable gypsum board wall/ceiling systems used in the restrooms. The composite asbestos content (gypsum board and joint compound) was 0.20% using PLM point count analysis (1,000 points).

Chrysotile asbestos at a concentration of 40% was detected in samples representing approximately 100 square feet of nonfriable cementitious panels used in the scale office building.

Chrysotile asbestos at a concentration of <1% was detected in a sample representing joint compound associated with approximately 2,500 square feet of nonfriable gypsum board wall/ceiling systems used in the scale office building. The composite asbestos content (gypsum board and joint compound) was 0.20% using PLM point count analysis (1,000 points).

Chrysotile asbestos at a concentration of 2% (in nonfriable tile) and 10% (in nonfriable mastic) was detected in samples representing approximately 100 square feet of multi-layer floor tile used in the scale office building sergeant's office.

No asbestos fibers were observed in samples of the remaining suspect materials at the Site. Summaries of the analytical laboratory test results for asbestos are presented on Table 1.

5.2 Paint Analytical Results

Samples representing approximately 200 square feet of peeling and flaking beige paint used on the storage shed (interior and exterior) exhibited total lead concentrations of 1,100 and 2,000 mg/kg, and a soluble (TCLP) lead concentration of 1.2 mg/l.

Samples representing approximately 100 square feet of peeling and flaking beige paint used on the TIF bays exterior exhibited total lead concentrations of 6,200 and 5,200 mg/kg, and a soluble (TCLP) lead concentration of 0.26 mg/l.

Samples representing approximately 200 square feet of peeling and flaking gray paint used on the TIF bays interior exhibited total lead concentrations of 3,600 and 1,800 mg/kg, and a soluble (TCLP) lead concentration of 1.8 mg/l.

Summaries of the analytical laboratory test results for paint are presented on Table 2.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Asbestos

Based on the analytical test results, we recommend that asbestos-containing cementitious panels (a Category II nonfriable/nonhazardous material) used in the scale office building be removed and disposed of by a licensed and certified asbestos abatement contractor prior to any activities that would disturb the material. Contractors are responsible for informing the landfill of the contractor's intent to dispose of asbestos waste. Some landfills may require additional waste characterization. Contractors are responsible for segregating and characterizing waste streams prior to disposal.

NESHAP regulations do not require that asbestos-containing asphalt roofing mastic, duct tape, resilient floor tile systems (Category I nonfriable/nonhazardous materials), or gypsum board wall systems identified during our survey be removed prior to demolition or treated as hazardous waste. However, the disturbance of these materials is still covered by the Cal/OSHA asbestos standard. Demolition must be performed by a licensed and certified asbestos abatement contractor if the asbestos-containing asphalt roofing mastic, duct tape, resilient floor tile systems, and gypsum board wall systems identified during our survey are left in-place during demolition. Contractors are responsible for segregating and characterizing waste streams prior to disposal. Contractors are responsible for informing the landfill of the contractor's intent to dispose of asbestos-containing waste.

Geocon also recommends the notification of contractors (that will be conducting renovation, demolition, or related activities) and building tenants of the presence of asbestos in their areas (i.e., provide the tenants and contractor[s] with a copy of this report and a list of asbestos removed by asbestos abatement contractor[s] during subsequent abatement activities). Contractors and/or tenants should be instructed not to disturb asbestos during their work.

In accordance with Bay Area Air Quality Management District (BAAQMD) Regulation 11, Rule 2, written notification is required ten working days prior to commencement of *any* demolition activity (whether asbestos is present or not). In accordance with Title 8, CCR 341.9, written notification to the nearest Cal/OSHA district office is required at least 24 hours prior to certain asbestos-related work.

6.2 Lead Paint

Deteriorated paint identified during our survey is a California hazardous waste based on total lead content. Consequently, the deteriorated paint should be removed and disposed of prior to renovation, demolition, or other activities that would disturb the material.

Contractors performing deteriorated LCP removal should be required to use personnel who have lead-related construction certification as supervisors or workers, as appropriate, from the California DPH for LCP removal work. Deteriorated paint at the Site requires removal prior to demolition or

renovation for waste segregation purposes: to separate potentially hazardous waste (Category III concentrated lead such as loose or deteriorated paint, paint sludge, vacuum debris, and vacuum filters) from typically nonhazardous demolition debris (Category II intact lead-painted architectural components such as doors, windows, framework, cladding, and trim). Category I waste is low lead waste (typically nonhazardous) such as construction materials, filtered wash water, and plastic sheeting. Contractors are responsible for segregating and characterizing waste streams prior to disposal. Contractors are responsible for informing the landfill of the contractor's intent to dispose of California hazardous waste and/or architectural components containing intact LCP. Some landfills may require additional waste characterization.

Geocon recommends that all paints at the Site be treated as lead-containing for purposes of determining the applicability of the Cal/OSHA lead standard during any future maintenance, renovation, and demolition activities. This recommendation is based on LCP sample results and the fact that lead was a common ingredient of paints manufactured before 1978 and is still an ingredient of some industrial paints. In accordance with Title 8, CCR, Section 1532.1(p), written notification to the nearest Cal/OSHA district office is required at least 24 hours prior to certain lead-related work.

7.0 REPORT LIMITATIONS

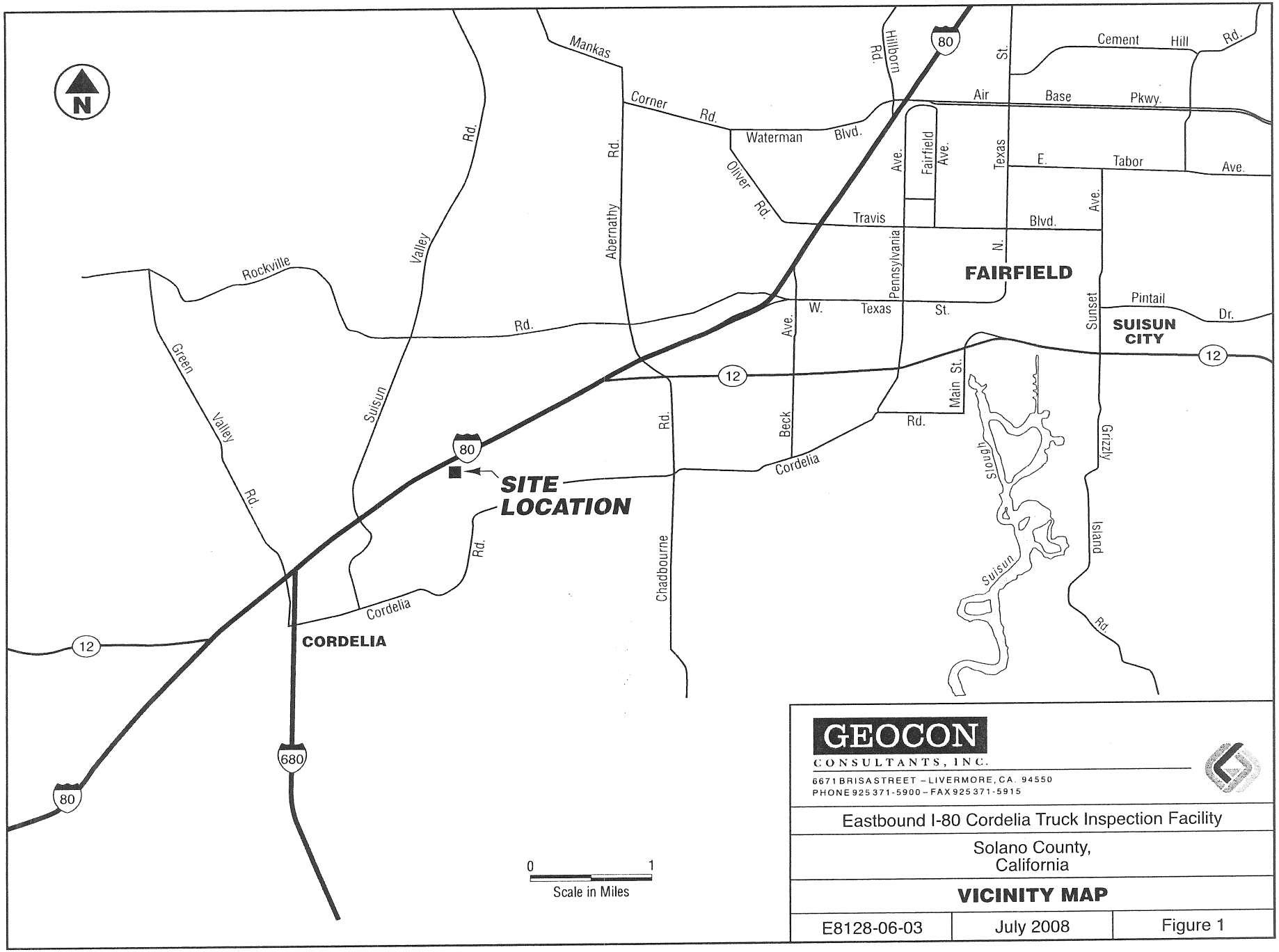
This report has been prepared exclusively for Mark Thomas & Company and Caltrans. The information contained herein is only valid as of the date of the report, and will require an update to reflect additional information obtained.

The asbestos and deteriorated LCP survey was conducted in conformance with generally accepted standards of practice for identifying and evaluating asbestos and LCP in structures. The survey addressed only the structures identified in Section 1.1. Due to the nature of building surveys, asbestos and LCP use, and laboratory analytical limitations, some asbestos or deteriorated LCP in the structures may not have been identified. Building spaces, such as wall cavities, crawlspaces, voids, and pipe chases, may have been concealed to Geocon's investigator. Previous building renovation work such as paneling and flooring additions may have concealed or covered spaces or materials, or may have partially demolished materials and left debris in inaccessible areas. Additionally, renovation activities may have partially replaced asbestos with indistinguishable non-asbestos. Asbestos and/or LCP may exist in areas not accessible or sampled in conjunction with our scope of services.

During renovation or demolition operations, suspect materials may be uncovered which are different from those accessible for sampling during this assessment. Personnel in charge of renovation/demolition should be alerted to note materials uncovered during such activities that differ substantially from those included in this or previous assessment reports. The contractor should be alerted to the possibility of suspect flooring beneath carpeted areas. If additional suspect materials are found, they should be treated as ACM until/unless sampling and analysis indicate otherwise.

This report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein. Therefore, the report should be deemed conclusive with respect to only the information obtained. We make no warranty, express or implied, with respect to the content of this report or any subsequent reports, correspondence, or consultation. Geocon strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

The contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. This report does not constitute a standard, specification, or regulation.



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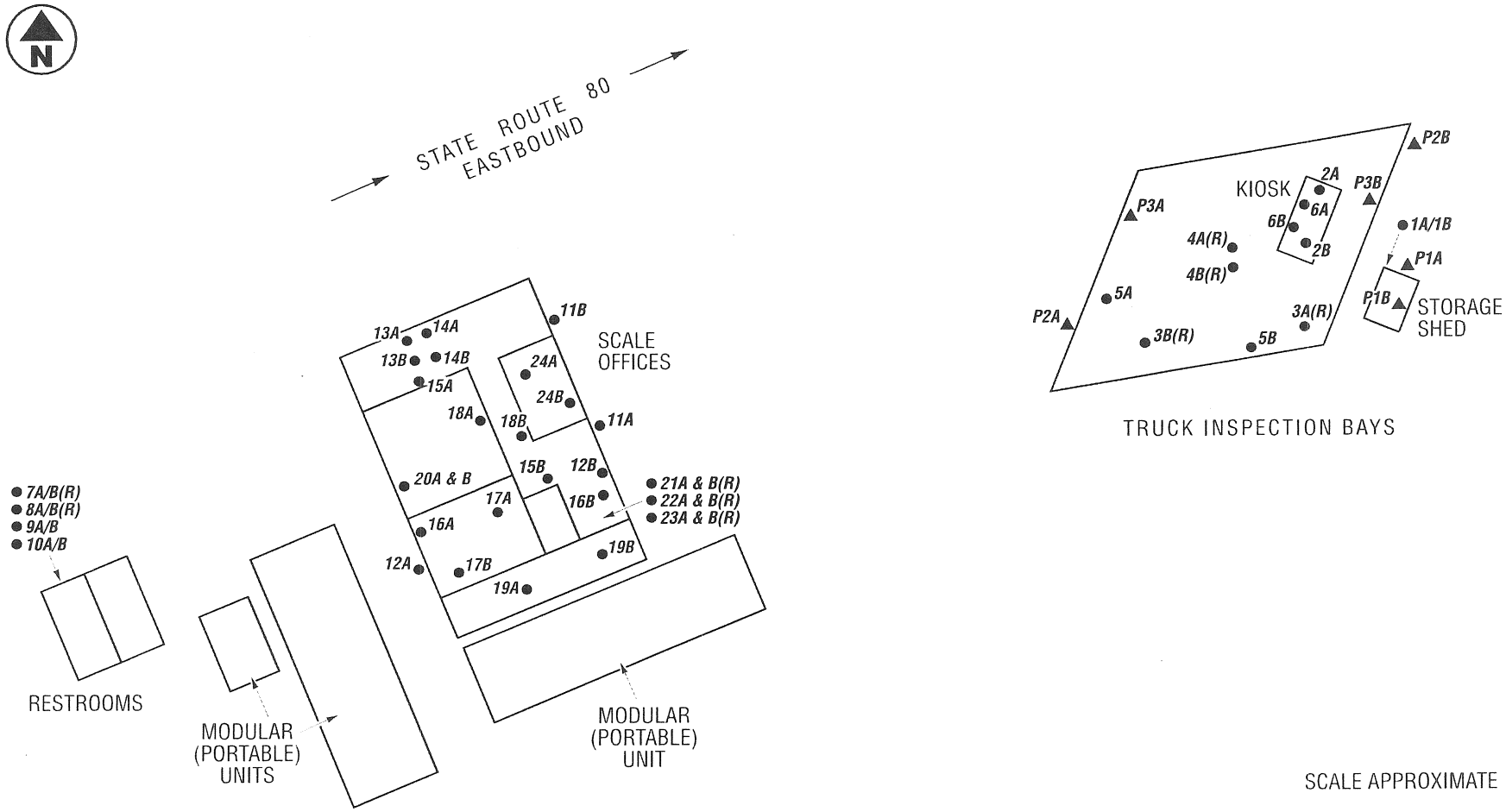
Eastbound I-80 Cordelia Truck Inspection Facility

Solano County, California

VICINITY MAP

E8128-06-03	July 2008	Figure 1



SCALE APPROXIMATE

LEGEND:

- ● Approximate Asbestos Sample Location
- ▲ Approximate Paint Sample Location
- *(R)* Roof

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SITE PLAN

E8128-06-03	July 2008	Figure 2

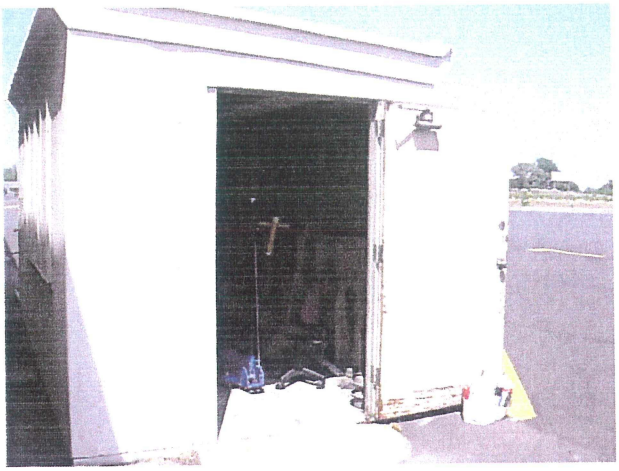

Photo 1 – Storage shed

Photo 2 – Storage shed top

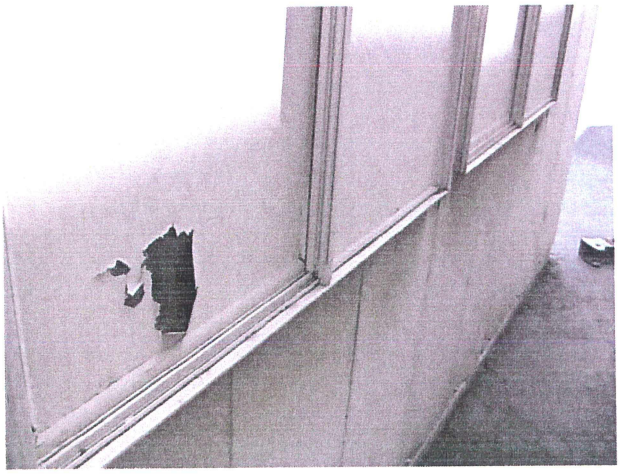

Photo 3 – Storage shed exterior

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PHOTOGRAPHS 1, 2, & 3		
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Photo 4 – Storage shed interior

Photo 5 – Truck inspection bays

Photo 6 – Inspection bays exterior

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PHOTOGRAPHS 4, 5, & 6		
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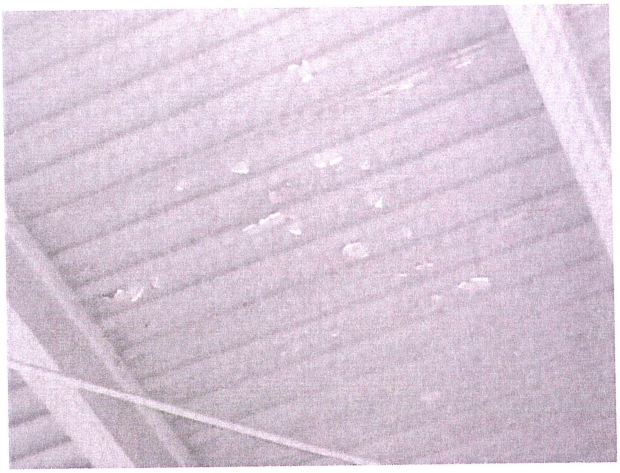

Photo 7 – Inspection bays interior

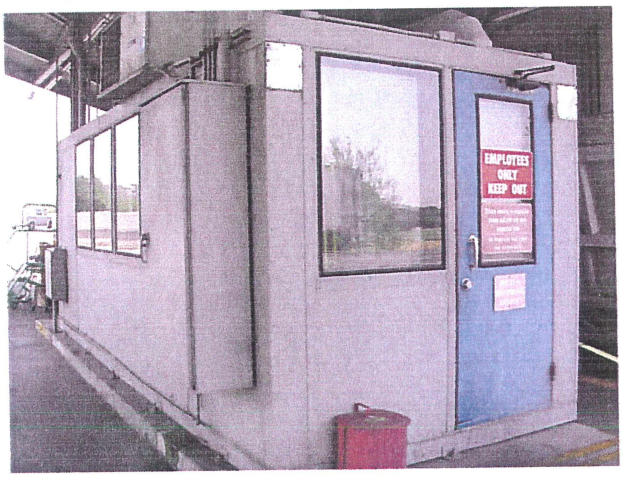

Photo 8 – Inspection bays kiosk

Photo 9 – Kiosk ducting

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PHOTOGRAPHS 7, 8, & 9		
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Photo 10 – Inspection bays roof

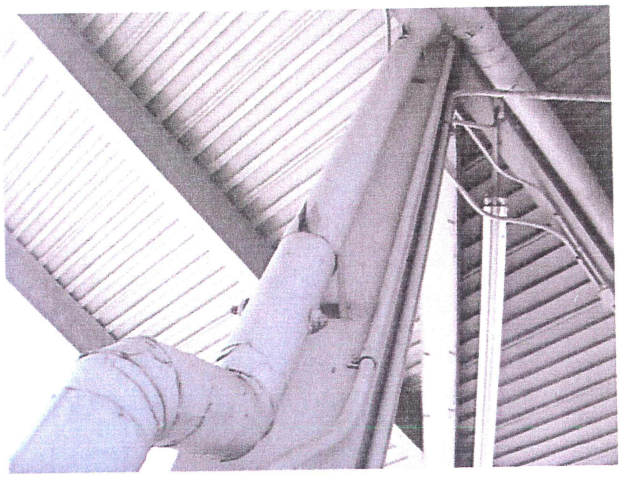

Photo 11 – Inspection bays ducting

Photo 12 – Kiosk flooring

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PHOTOGRAPHS 10, 11, & 12		
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Photo 13 – Restrooms

Photo 14 – Restrooms roofing

Photo 15 – Restrooms interior

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PHOTOGRAPHS 13, 14, & 15		
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Photo 16 – Restrooms interior

Photo 17 – Scale office building

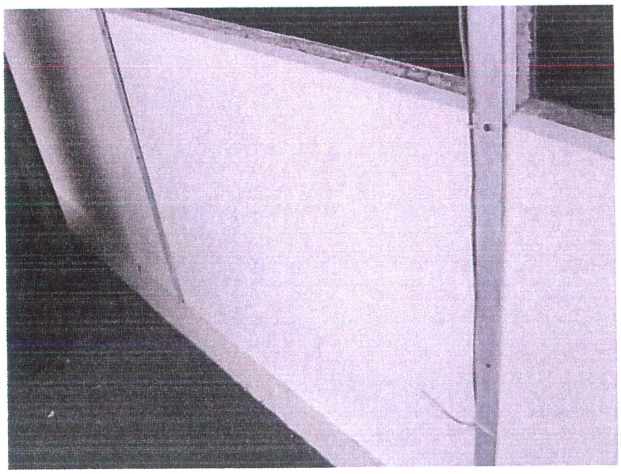

Photo 18 – Scale office building exterior

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PHOTOGRAPHS 16, 17, & 18		
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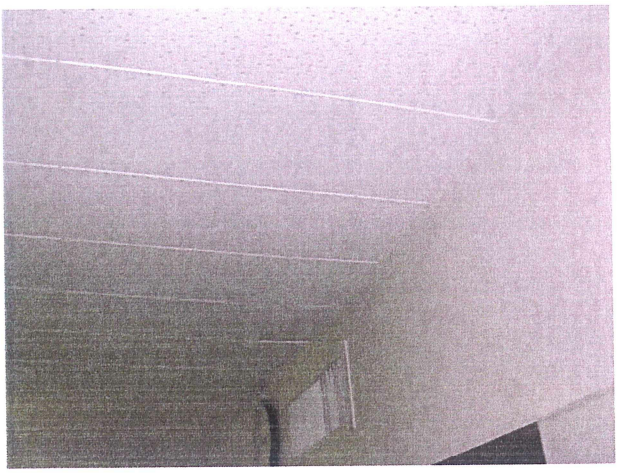

Photo 19 – Scale office building ceiling

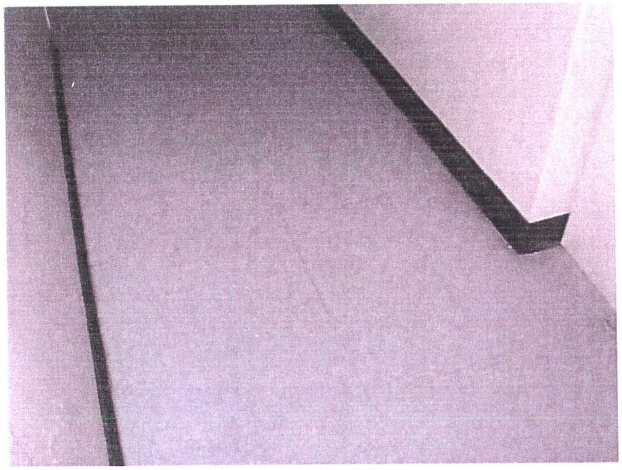

Photo 20 – Scale office building corridor

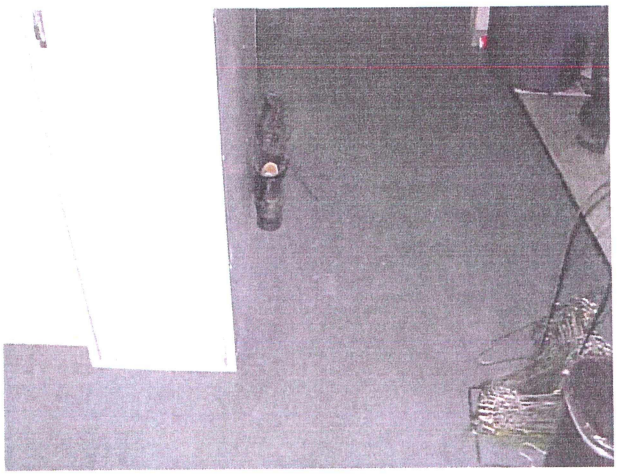

Photo 21 – Scale office building locker room

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PHOTOGRAPHS 19, 20, & 21		
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Photo 22 – Scale office building resilient sheet flooring

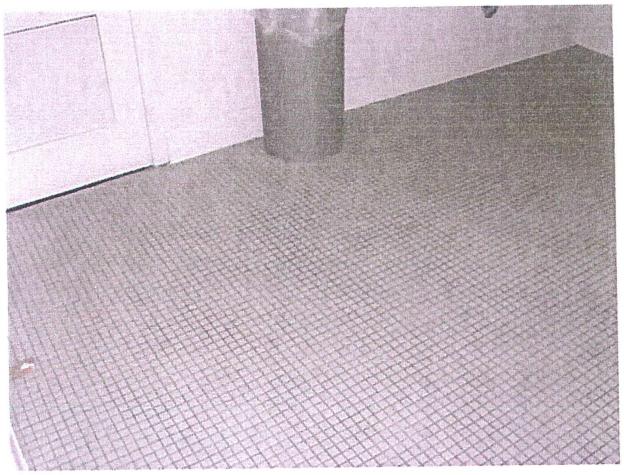

Photo 23 – Scale office building restroom

Photo 24 – Scale office building roofing

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PHOTOGRAPHS 22, 23, & 24		
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Photo 25 – Scale office building roofing

Photo 26 – Scale office building sergeant's office

Photo 27 – Scale office building equipment room

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PHOTOGRAPHS 25, 26, & 27		
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Photo 28 – Scale office building water heater

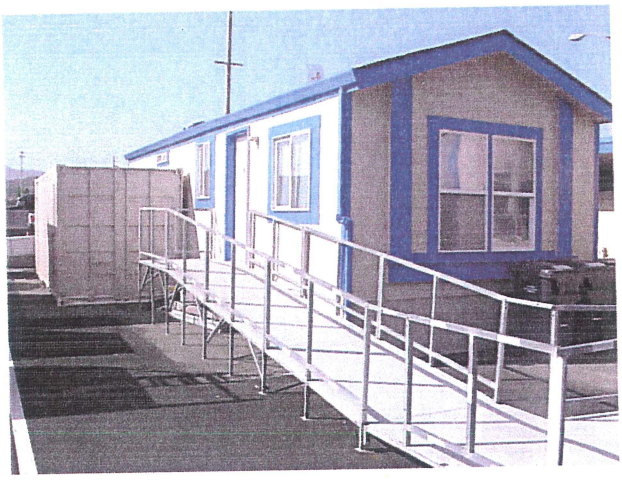

Photo 29 – Modular (portable) office and storage units (not surveyed)

Photo 30 – Modular (portable) office unit (not surveyed)

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PHOTOGRAPHS 28, 29, & 30		
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TABLE 1
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS - ASBESTOS
EASTBOUND I-80 TRUCK INSPECTION FACILITY IN CORDELIA, CALIFORNIA

Polarized Light Microscopy (PLM) - EPA Test Method 600/R-93/116

Sample Group ID	Description of Suspect Material	Approximate Quantity	Friable	Site Photo	Asbestos Content
1	Window putty (shed)	NA	NA	3	ND
2	Duct tape (TIF kiosk)	NA	NA	9	ND
3	Asphalt and gravel roofing (TIF bays)	NA	NA	10	ND
4	**Asphalt roofing mastic (TIF bays)**	**10 square feet**	**No**	**10**	**10%**
5	**Duct tape (TIF bays)**	**100 square feet**	**No**	**11**	**10%**
6	Black, resilient floor tile (TIF kiosk)	NA	NA	12	ND
7	Asphalt and gravel roofing (restrooms)	NA	NA	14	ND
8	Asphalt roofing mastic (restrooms)	NA	NA	14	ND
9	**Gypum board wall systems (restrooms)**	**200 square feet**	**Yes**	**15 & 16**	**0.20%* (GB/JC comp)**
10	Base coving (restrooms)	NA	NA	15	ND
11	**Cementitious panels (scale offices)**	**100 square feet**	**No**	**18**	**40%**
12	Window putty (scale offices)	NA	NA	18	ND
13	Ceiling tile mastic (scale offices)	NA	NA	19	ND
14	Ceiling tiles (scale offices)	NA	NA	19	ND
15	Gray, resilient floor tile (scale offices)	NA	NA	20	ND
16	Base coving (scale offices)	NA	NA	20	ND
17	Carpet mastic (scale offices)	NA	NA	21	ND
18	**Gypum board wall systems (scale offices)**	**2,500 square feet**	**Yes**	**20**	**0.20%* (GB/JC comp)**
19	White, resilient sheet flooring (scale offices)	NA	NA	22	ND
20	Ceramic tile systems (scale offices)	NA	NA	23	ND
21	Asphalt and gravel roofing (scale offices)	NA	NA	24	ND
22	Asphalt roofing mastic (scale offices)	NA	NA	25	ND
23	Asphalt roofing roll (scale offices)	NA	NA	25	ND
24	**Multi-layer, resilient floor tile systems (sergeant's office)**	**100 square feet**	**No**	**26**	**2% (tile) & 10% (mastic)**

Notes:

NA = Not applicable

ND = No asbestos fibers detected

* Material analyzed using PLM Point Count Methodology (1,000 points)

GB/JC comp = Gypsum board and joint compound composite

TABLE 2
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS - PAINT
EASTBOUND I-80 TRUCK INSPECTION FACILITY IN CORDELIA, CALIFORNIA

Total and Soluble Lead

Sample ID	Paint Description	Approximate Quantity Peeling & Flaking	Site Photos	Total Lead (mg/kg)	TCLP Lead (mg/l)
P1A P1B	Beige paint (shed interior/exterior)	200 square feet	2 & 4	1,100 2,000	1.2
P2A P2B	Beige paint (TIF bays exterior)	100 square feet	6	6,200 5,200	0.26
P3A P3B	Gray paint (TIF bays interior)	200 square feet	7	3,600 1,800	1.8

Notes:
mg/kg = milligrams per kilogram (EPA Test Method 6010)
mg/l = milligrams per liter
TCLP = Toxicity Characteristic Leaching Procedure (EPA Test Method 1311)

APPENDIX A

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EMSL Order: 090803253

EMSL Proj:
Analysis Date: 5/15/2008
Report Date: 5/27/2008

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	Location	Appearance	% Fibrous	% Non-Fibrous	% Type
1A, Window putty *090803253-0001*	Shed	Grey, Beige Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
1B, Window putty *090803253-0002*	Shed	Grey, Beige Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
2A, Duct tape *090803253-0003*	TIF bay kiosk	White Fibrous Homogeneous	50% Cellulose	50% Non-fibrous (other)	None Detected
2B, Duct tape *090803253-0004*	TIF bay kiosk	White Fibrous Homogeneous	50% Cellulose	50% Non-fibrous (other)	None Detected
3A, Asphalt roofing *090803253-0005*	TIF bay	Black, Grey Non-Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (other)	None Detected
3B, Asphalt roofing *090803253-0006*	TIF bay	Black, Grey Non-Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (other)	None Detected
4A, Asphalt roofiing, mastic *090803253-0007*	TIF bay	Black, Grayish Fibrous Heterogeneous		90% Non-fibrous (other)	10% Chrysotile

Analyst(s)

Yulia Grozman (79)

Baojia Ke, Laboratory Manager
or other approved signatory

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			Non-Asbestos		Asbestos
Sample	Location	Appearance	% Fibrous	% Non-Fibrous	% Type
4B, Asphalt roofiing, mastic *090803253-0008*	TIF bay	Black, Grayish Fibrous Heterogeneous		90% Non-fibrous (other)	**10% Chrysotile**
5A, Duct tape *090803253-0009*	TIF bay	Gray, White Non-Fibrous Heterogeneous		90% Non-fibrous (other)	**10% Chrysotile**
5B, Duct tape *090803253-0010*	TIF bay	Gray, White Non-Fibrous Heterogeneous		90% Non-fibrous (other)	**10% Chrysotile**
6A-A, VFT 1 *090803253-0011*	TIF bay	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
6A-B, VFT 2 *090803253-0011A*	TIF bay	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
6A-C, Mastic *090803253-0011B*	TIF bay	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
6B-A, VFT 1 *090803253-0012*	TIF bay	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
6B-B, VFT 2 *090803253-0012A*	TIF bay	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**

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			Non-Asbestos			Asbestos
Sample	Location	Appearance	% Fibrous		% Non-Fibrous	% Type
6B-C, Mastic *090803253-0012B*	TIF bay	Yellow Non-Fibrous Homogeneous			100% Non-fibrous (other)	None Detected
7A-A, Sheeting *090803253-0013*	Restroom	Black, Grey Non-Fibrous Heterogeneous	10%	Glass	90% Non-fibrous (other)	None Detected
7A-B, Insulation *090803253-0013A*	Restroom	Tan Fibrous Homogeneous	40% 30%	Cellulose Glass	30% Perlite	None Detected
7B-A, Sheeting *090803253-0014*	Restroom	Black, Gray Non-Fibrous Heterogeneous	10%	Glass	90% Non-fibrous (other)	None Detected
7B-B, Insulation *090803253-0014A*	Restroom	Tan Fibrous Homogeneous	40% 30%	Cellulose Glass	30% Perlite	None Detected
8A, Ashalt roofing mastic *090803253-0015*	Restroom	Black, Grayish Non-Fibrous Heterogeneous	10%	Cellulose	90% Non-fibrous (other)	None Detected
8B, Ashalt roofing mastic *090803253-0016*	Restroom	Black, Grayish Non-Fibrous Heterogeneous	10%	Cellulose	90% Non-fibrous (other)	None Detected

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			Non-Asbestos		Asbestos
Sample	Location	Appearance	% Fibrous	% Non-Fibrous	% Type
9A-A, Drywall *090803253-0017*	Restroom	White, Brown Fibrous Heterogeneous	15% Cellulose	85% Non-fibrous (other)	None Detected
9A-B, Joint compound *090803253-0017A*	Restroom	Beige, White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	<1% Chrysotile
9B-A, Drywall *090803253-0018*	Restroom	White, Brown Fibrous Heterogeneous	15% Cellulose	85% Non-fibrous (other)	None Detected
9B-B, Joint compound *090803253-0018A*	Restroom	Beige, Blue Non-Fibrous Heterogeneous		100% Non-fibrous (other)	<1% Chrysotile
10A-A, Cove base *090803253-0019*	Restroom	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
10A-B, Mastic *090803253-0019A*	Restroom	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
10B-A, Cove base *090803253-0020*	Restroom	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

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			Non-Asbestos		Asbestos
Sample	Location	Appearance	% Fibrous	% Non-Fibrous	% Type
10B-C, Mastic *090803253-0020A*	Restroom	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
11A, Cementitious panel *090803253-0021*	Scale office	Grey, Black Fibrous Heterogeneous		60% Non-fibrous (other)	**40% Chrysotile**
11B, Cementitious panel *090803253-0022*	Scale office	Grey, Blue Fibrous Heterogeneous		60% Non-fibrous (other)	**40% Chrysotile**
12A, Window putty *090803253-0023*	Scale office	Gray Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
12B, Window putty *090803253-0024*	Scale office	Gray Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
13A, Mastic *090803253-0025*	Scale office	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
13B, Mastic *090803253-0026*	Scale office	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**

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			Non-Asbestos			Asbestos
Sample	Location	Appearance	% Fibrous		% Non-Fibrous	% Type
14A, Ceiling tiles *090803253-0027*	Scale office	Yellow, White Fibrous Heterogeneous	95%	Cellulose	5% Non-fibrous (other)	None Detected
14B, Ceiling tiles *090803253-0028*	Scale office	Yellow, White Fibrous Heterogeneous	95%	Cellulose	5% Non-fibrous (other)	None Detected
15A-A, VFT *090803253-0029*	Scale office	Grayish Non-Fibrous Homogeneous			100% Non-fibrous (other)	None Detected
15A-B, Mastic *090803253-0029A*	Scale office	Yellow Non-Fibrous Homogeneous			100% Non-fibrous (other)	None Detected
15B-A, VFT *090803253-0030*	Scale office	Grayish Non-Fibrous Homogeneous			100% Non-fibrous (other)	None Detected
15B-B, Mastic *090803253-0030A*	Scale office	Yellow Non-Fibrous Homogeneous			100% Non-fibrous (other)	None Detected
16A-A, Cove base *090803253-0031*	Scale office	Black Non-Fibrous Homogeneous			100% Non-fibrous (other)	None Detected
16A-B, Mastic *090803253-0031A*	Scale office	White Non-Fibrous Homogeneous			100% Non-fibrous (other)	None Detected

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			Non-Asbestos		Asbestos
Sample	Location	Appearance	% Fibrous	% Non-Fibrous	% Type
16B, Cove base *090803253-0032*	Scale office	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
17A-A, Mastic 1 *090803253-0033*	Scale offices	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
17A-B, Mastic 2 *090803253-0033A*	Scale offices	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
17B-A, Carpet mastic 1 *090803253-0034*	Scale offices	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
17B-B, Carpet mastic 2 *090803253-0034A*	Scale offices	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
17B-C, Carpet mastic 3 *090803253-0034B*	Scale offices	Orange Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
18A-A, Gypsum board system *090803253-0035*	Scale offices	White, Brown Fibrous Heterogeneous	10% Cellulose 5% Glass	85% Non-fibrous (other)	None Detected

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			Non-Asbestos		Asbestos
Sample	**Location**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
18A-B, Joint compound *090803253-0035A*	Scale offices	Beige Non-Fibrous Heterogeneous		100% Non-fibrous (other)	<1% Chrysotile
18B-A, Gypsum board system *090803253-0036*	Scale offices	White, Brown Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
18B-B, Joint compound *090803253-0036A*	Scale offices	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
19A-A, Linoleum *090803253-0037*	Scale offices	White Fibrous Heterogeneous	20% Cellulose 10% Glass 10% Synthetic	60% Non-fibrous (other)	None Detected
19A-B, Mastic *090803253-0037A*	Scale offices	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
19B-A, Linoleum *090803253-0038*	Scale offices	White Fibrous Homogeneous	20% Cellulose 10% Glass 10% Synthetic	60% Non-fibrous (other)	None Detected
19B-B,Mastic *090803253-0038A*	Scale offices	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

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			Non-Asbestos			Asbestos
Sample	Location	Appearance	% Fibrous		% Non-Fibrous	% Type
20A-A, Ceramic tile systems *090803253-0039*	Scale offices	Cream Non-Fibrous Homogeneous			100% Non-fibrous (other)	None Detected
20A-B, Grout *090803253-0039A*	Scale offices	Gray Non-Fibrous Homogeneous			100% Non-fibrous (other)	None Detected
20B-A, Ceramic tile systems *090803253-0040*	Scale offices	Grayish Non-Fibrous Heterogeneous			100% Non-fibrous (other)	None Detected
20B-B, Grout *090803253-0040A*	Scale offices	Gray Non-Fibrous Homogeneous			100% Non-fibrous (other)	None Detected
20B-C, Mastic *090803253-0040B*	Scale offices	White Non-Fibrous Homogeneous			100% Non-fibrous (other)	None Detected
21A-A, Asphalt gravel roofing *090803253-0041*	Scale offices	White, Grey Non-Fibrous Heterogeneous	10%	Glass	90% Non-fibrous (other)	None Detected
21A-B, Insulation *090803253-0041A*	Scale offices	Tan Fibrous Homogeneous	40% 30%	Cellulose Min. Wool	30% Perlite	None Detected

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Sample	Location	Appearance	% Fibrous		% Non-Fibrous	% Type
21B-A, Asphalt gravel roofing *090803253-0042*	Scale offices	White, Grey Non-Fibrous Heterogeneous	10%	Glass	90% Non-fibrous (other)	None Detected
21B-B, Insulation *090803253-0042A*	Scale offices	Tan Fibrous Homogeneous	40% 30%	Cellulose Min. Wool	30% Perlite	None Detected
22A, Asphalt roofing mastic *090803253-0043*	Scale offices	Black, Grayish Non-Fibrous Heterogeneous	10%	Cellulose	90% Non-fibrous (other)	None Detected
22B, Asphalt roofing mastic *090803253-0044*	Scale offices	Black, Grayish Non-Fibrous Heterogeneous	10%	Cellulose	90% Non-fibrous (other)	None Detected
23A, Asphalt roofing mastic *090803253-0045*	Scale offices	Black, White Fibrous Heterogeneous	20%	Synthetic	80% Non-fibrous (other)	None Detected
23B, Asphalt roofing mastic *090803253-0046*	Scale offices	Black, White Fibrous Heterogeneous	20%	Synthetic	80% Non-fibrous (other)	None Detected
24A-A, VFT 1 *090803253-0047*	Scale offices	Cream Non-Fibrous Homogeneous			100% Non-fibrous (other)	None Detected

Analyst(s)

Yulia Grozman (79)

Baojia Ke, Laboratory Manager
or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client.Samples received in good condition unless otherwise noted.
NVLAP Lab Code 101048-3

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **David Watts**
Geocon Consultants
6671 Brisa Street
Livermore, CA 94550

Fax: (925) 371-5915 Phone: (925) 371-5900
Project: **E8128-06-03, Cordelia TIF, Solano County, CA**

Customer ID: GECN21
Customer PO: E8128-06-03
Received: 05/12/08 9:45 AM
EMSL Order: 090803253

EMSL Proj:
Analysis Date: 5/15/2008
Report Date: 5/27/2008

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	Location	Appearance	% Fibrous	% Non-Fibrous	% Type
24A-B, Mastic 1 *090803253-0047A*	Scale offices	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
24A-C, VFT 2 *090803253-0047B*	Scale offices	Green Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile
24A-D, Mastic 2 *090803253-0047C*	Scale offices	Black Non-Fibrous Heterogeneous		90% Non-fibrous (other)	10% Chrysotile
24B-A, VFT 1 *090803253-0048*	Scale offices	Cream Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
24B-B, Mastic 1 *090803253-0048A*	Scale offices	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
24B-C, VFT 2 *090803253-0048B*	Scale offices	Green Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile
24B-D, Mastic 2 *090803253-0048C*	Scale offices	Black Non-Fibrous Homogeneous		90% Non-fibrous (other)	10% Chrysotile

Analyst(s)

Yulia Grozman (79)

Baojia Ke, Laboratory Manager
or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client.Samples received in good condition unless otherwise noted.
NVLAP Lab Code 101048-3

THIS IS THE LAST PAGE OF THE REPORT.

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **David Watts**
Geocon Consultants
6671 Brisa Street
Livermore, CA 94550

Fax: (925) 371-5915 Phone: (925) 371-5900
Project: **E8128-06-03, Cordelia TIF, Solano County, CA**

Customer ID: GECN21
Customer PO: E8128-06-03
Received: 05/12/08 9:45 AM
EMSL Order: 090803253

EMSL Proj:
Analysis Date: 5/23/2008
Report Date: 5/23/2008

Asbestos Analysis of Bulk Material via EPA 600/R-93/116. Quantitation using the 1,000 Point Count Procedure

			Non-Asbestos		Asbestos
Sample	**Location**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
9A-C, Joint compound, gypsum board Composite *090803253-0017B*	Restroom	White Fibrous Homogeneous		99.80% Non-fibrous (other)	**0.20% Chrysotile**
9B-C, Joint compound, gypsum board Composite *090803253-0018B*	Restroom	White Fibrous Homogeneous		99.80% Non-fibrous (other)	**0.20% Chrysotile**
18A-C, Joint compound, gypsum board Composite *090803253-0035B*	Scale offices	White Fibrous Homogeneous		99.80% Non-fibrous (other)	**0.20% Chrysotile**

Analyst(s)

Nonette Patron (3)

Baojia Ke, Laboratory Manager
or other approved signatory

NVLAP Lab Code 101048-3

PLMPointCount-1

THIS IS THE LAST PAGE OF THE REPORT.

Chain of Custody Form 1 of 2

Analyze sample sets until positive: ☐ Yes ☒ No

Project No.: E8128-06-03 | Client Name: GEOCON | Analytical Fee (per sample): $ PLM | Date(s) Inspected: 8 + 9 MAY 2008

Report Results to: D. WATTS | Office Location: LIVERMORE, CA | Other Comments: STD TAT 120 days

Consultants Ph. #: (925) 371-5900 | Consultants Fax #: (925) 371-5915 | Site Address: SOLANO COUNTY, CA

Site Name: CORDELIA TIF | Building No.:

Material Code	Sample Number: Site No.	Bldg. No.	Material Link No.	Samples Collected: A	B	C	D	E	F	G	H	I	J	K	Not Sampled	Material Description
			1	X	X											WINDOW PUTTY (SHED)
			2	X	X											DUCT TAPE (TIF BAY KIOSK)
			3	X	X											ASPHALT/GRAVEL ROOFING (TIF BAYS)
			4	X	X											ASPHALT ROOFING MASTIC (")
			5	X	X											DUCT TAPE (")
			6	X	X											VFT-BLACK (TIF BAY KIOSK)
			7	X	X											ASPHALT/GRAVEL ROOFING (REST ROOMS)
			8	X	X											ASPHALT ROOFING MASTIC (")
			9	X	X											GYPSUM BOARD SYSTEMS (")
			10	X	X											BASE COVING (")
			11	X	X											CEMENTITIOUS PANELS (SCALE OFFICES)
			12	X	X											WINDOW PUTTY
			13	X	X											MASTIC (CEILING TILES)
			14	X	X											CEILING TILES
			15	X	X											VFT-GRAY
			16	X	X											BASE COVING

Relinquished by: Print Name: D. WATTS | Signature: | Date/Time: 9 MAY 2008 0500

Received by: Print Name: | Signature: UPS | Date/Time: 9 MAY 2008 0500

Relinquished by: Print Name: | Signature: | Date/Time:

Received by: Print Name: | Signature: | Date/Time: 5/19/08 945pm

32

Flooring
FT = Ceramic floor tile grout/mastic (M)
= Floor material-Generic(M)
MAS = Floor mastic(M)
T = Vinyl composite tile floor (M)
S = Vinyl composite sheet floor (M)
LC = Floor leveling compound (M)
ERR = Terrazzo flooring (M)

Wall/Ceiling/Other
ACOU = Textured acoustical (sprayed) (S)
BBM = Baseboard mastic (M)
CM = Ceiling (unspecified type) (M)
CS = Ceiling (unspecified type) (S)
CP = Ceiling panel - Lay-in (M)
CMAS = Ceiling mastic (M)
CT = Ceiling tile - Splined or nailed (M)
CTG = Ceiling tile - Glued (M)
CWT = Ceramic wall tile grout & mastic(M)
DEBM = Debris (unspecified) (M)
DEBS = Debris (unspecified) (S)
DEBT = Debris (unspecified) (TSI)
DOOR = Door core insulation - Fire door (M)
OFM = Other friable material (M)
OFS = Other friable material (S)
OFNFM = Other nonfriable material (M)
OFNFS = Other nonfriable materials (S)
PL = Plaster (wall or ceiling) (S)
SHR = Sheetrock (no joint compound) (M)
SHRJC = Sheetrock with joint compound (M)
STUC = Stucco (S)
FP = Structural fireproofing (S)
TRAN = Transite panel (M)
TX = Surface texturing on walls/ceiling (S)
WM = Wall (unspecified type) (M)
WS = Wall (unspecified type) (S)
WT = Wall tile - Splined or nailed (M)
WTG = Wall tile - Glued on (M)

Fitting/TSI
FI = Fitting insulation (type not specified) (TSI)
FICHW = Fitting - Chilled water system (TSI)
FICON = Fitting - Condensate (TSI)
FIDCW = Fitting - Domestic cold water (TSI)
FIDHW = Fitting - Domestic hot water (TSI)
FIHHW = Fitting - Heating hot water (TSI)
FISTM = Fitting - Steam (TSI)
DI = Duct insulation (TSI)
DTAPE = HVAC - Duct joint tape/compound (M)
DFLEX = HVAC - Flexible duct/flex duct joint (M)
DFLUE = Mech equipment - Flue insulation (TSI)
MGSKT = Mech equipment-Gasket (M)
MTANK = Mech equipment-Tank insulation (TSI)
PI = Pipe insulation (type not specified) (TSI)
PICHW = Pipe insulation-Chilled water system (TSI)
PICON = Pipe insulation-Condensate (TSI)
PIDCW = Pipe insulation-Domestic cold water (TSI)
PIDHW = Pipe insulation-Domestic hot water (TSI)
PIHHW = Pipe insulation-Heating hot water (TSI)
PISTM = Pipe insulation-Steam (TSI)
PTRAN = Pipe-Transite (M)

Roofing
RF = Roofing material (M)
REAG = Asphalt and gravel (M)
REAT = Asphalt roof tile (M)
REFLS = Flashing (M)
REFLT = Felt material (M)
REMES = Penetration mastic (M)
REROL = Rolled sheet type (M)
RTRAN = Transite shingle (M)

(M) = Miscellaneous material
(S) = Surfacing material
(TSI) = Thermal System Insulation

Chain of Custody Form

Analyze sample sets until positive: Yes ☒ No

Project No.: E8128-06-03 | Client Name: GEOCON | Analytical Fee (per sample): $ PLM | Date(s) Inspected: 8+9 MAY 2008

Report Results to: D. WATTS | Office Location: LIVERMORE, CA | Other Comments: STD TAT

Consultants Ph. #: (925) 371-5900 | Consultants Fax #: (925) 371-5915 | Site Address: SOLANO COUNTY, CA

Site Name: CORDELIA TIF | Building No.:

Material Code	Sample Number: Site No.	Bldg. No.	Material Link No.	Samples Collected: A	B	C	D	E	F	G	H	I	J	K	Not Sampled	Material Description
			17	X	X											CARPET MASTIC (SCALE OFFICES)
			18	X	X											GYPSUM BOARD SYSTEMS
			19	X	X											RSF (WHITE)
			20	X	X											CERAMIC TILE SYSTEMS
			21	X	X											ASPHALT / GRAVEL ROOFING
			22	X	X											ASPHALT ROOFING MASTIC
			23	X	X											ASPHALT ROOFING ROLL
			24	X	X											VFT - MULTI LAYER

Relinquished by: Print Name: D. WATTS | Signature: D. WATTS | Date/Time: 9 MAY 2008 0500

Received by: Print Name: UPS | Signature: UPS | Date/Time: 9 MAY 2008 0500

Relinquished by: Print Name: | Signature: | Date/Time:

Received by: Print Name: | Signature: | Date/Time: 5/12/08 745

Flooring
- CTF - Ceramic floor tile grout/mastic (M)
- FM - Floor material (generic)(M)
- FMS - Floor mastic(M)
- VCT - Vinyl composite tile floor (M)
- VSH - Vinyl composite sheet floor (M)
- FLL - Floor leveling compound (M)
- TZZ - Terrazzo flooring (M)

Wall/Ceiling/Other
- ACOU - Textured acoustical (sprayed) (S)
- BBM - Baseboard mastic (M)
- CEI - Ceiling (unspecified type) (M)
- CS - Ceiling (unspecified type) (S)
- CP - Ceiling panel - Lay-in (M)
- CMAS - Ceiling mastic (M)
- CT - Ceiling tile - Splined or nailed (M)
- CTG - Ceiling tile - Glued (M)
- CWT - Ceramic wall tile grout & mastic(M)
- DEBRI - Debris (unspecified) (M)
- DEBS - Debris (unspecified) (S)
- DEBT - Debris (unspecified) (TSI)
- DOOR - Door core insulation - Fire door (M)
- OFM - Other friable material (M)
- OFS - Other friable material (S)
- ONFM - Other nonfriable material (M)
- ONFS - Other nonfriable materials (S)
- PL - Plaster (wall or ceiling) (S)
- SHR - Sheetrock (no joint compound) (M)
- SHRJC - Sheetrock with joint compound (M)
- STUC - Stucco (S)
- FP - Structural fireproofing (S)
- TRAN - Transite panel (M)
- TX - Surface texturing on walls/ceiling (S)
- WEI - Wall (unspecified type) (M)
- WS - Wall (unspecified type) (S)
- WT - Wall tile - Splined or nailed (M)
- WTG - Wall tile - Glued (M)

Fitting/TSI
- FI - Fitting insulation (type not specified) (TSI)
- FICHW - Fitting - Chilled water system (TSI)
- FICON - Fitting - Condensate (TSI)
- FIDCW - Fitting - Domestic cold water (TSI)
- FIDHW - Fitting - Domestic hot water (TSI)
- FIHHW - Fitting - Heating hot water (TSI)
- FISTM - Fitting - Steam (TSI)
- DI - Duct insulation (TSI)
- DTAPE - HVAC - Duct joint tape/compound (M)
- DFLEX - HVAC - Flexible duct/flex duct joint (M)
- DFEQUIP - Mech equipment - Flue insulation (TSI)
- MGSKT - Mech equipment-Gasket (M)
- MTANK - Mech equipment-Tank insulation (TSI)
- PI - Pipe insulation (type not specified) (TSI)
- PICHW - Pipe insulation-Chilled water system (TSI)
- PICON - Pipe insulation-Condensate (TSI)
- PIDCW - Pipe insulation-Domestic cold water (TSI)
- PIDHW - Pipe insulation-Domestic hot water (TSI)
- PIHHW - Pipe insulation-Heating hot water (TSI)
- PISTM - Pipe insulation-Steam (TSI)
- PTRAN - Pipe-Transite (M)

Roofing
- RF - Roofing material (M)
- RFAG - Asphalt and gravel (M)
- RFAT - Asphalt roof tile (M)
- RFFLS - Flashing (M)
- RFFLT - Felt material (M)
- RFPENS - Penetration mastic (M)
- RFROL - Rolled sheet types (M)
- RTRAN - Transite shingles (M)

(M) - Miscellaneous material
(S) - Surfacing material
(TSI) - Thermal System Insulation

10

May 16, 2008

Dave Watts
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 098716

RE: CORDELIA TIF, E8128-06-03

Attention: Dave Watts

Enclosed are the results for sample(s) received on May 12, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

for Eddie F. Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Project: CORDELIA TIF, E8128-06-03
Lab Order: 098716

CASE NARRATIVE

Analytical Comments for Method 6010

Dilution was necessary for samples 098716-001A, 098716-002A, 098716-003A, 098716-004A, 098716-005A and 098716-006A, due to sample matrix.

CLIENT: Geocon Consultants, Inc. **Lab Order:** 098716
Project: CORDELIA TIF, E8128-06-03

Lab ID: 098716-001 **Collection Date:** 5/8/2008 3:11:00 PM
Client Sample ID: P1A **Matrix:** PAINT CHIPS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080515I	QC Batch: 45668			PrepDate: 5/15/2008		Analyst: **CL**
Lead	1100	80		mg/Kg	20	5/16/2008 03:24 PM

Lab ID: 098716-002 **Collection Date:** 5/8/2008 3:14:00 PM
Client Sample ID: P1B **Matrix:** PAINT CHIPS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080515I	QC Batch: 45668			PrepDate: 5/15/2008		Analyst: **CL**
Lead	2000	80		mg/Kg	20	5/16/2008 03:28 PM

Lab ID: 098716-003 **Collection Date:** 5/8/2008 3:21:00 PM
Client Sample ID: P2A **Matrix:** PAINT CHIPS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080515I	QC Batch: 45668			PrepDate: 5/15/2008		Analyst: **CL**
Lead	6200	80		mg/Kg	20	5/16/2008 03:33 PM

Lab ID: 098716-004 **Collection Date:** 5/8/2008 3:22:00 PM
Client Sample ID: P2B **Matrix:** PAINT CHIPS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080515I	QC Batch: 45668			PrepDate: 5/15/2008		Analyst: **CL**
Lead	5200	80		mg/Kg	20	5/16/2008 03:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: Geocon Consultants, Inc. **Lab Order:** 098716
Project: CORDELIA TIF, E8128-06-03

Lab ID: 098716-005 **Collection Date:** 5/8/2008 4:11:00 PM
Client Sample ID: P3A **Matrix:** PAINT CHIPS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080515I	QC Batch: 45668			PrepDate:	5/15/2008	Analyst: **CL**
Lead	3600	80		mg/Kg	20	5/16/2008 03:41 PM

Lab ID: 098716-006 **Collection Date:** 5/8/2008 4:14:00 PM
Client Sample ID: P3B **Matrix:** PAINT CHIPS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_080515I	QC Batch: 45668			PrepDate:	5/15/2008	Analyst: **CL**
Lead	1800	80		mg/Kg	20	5/16/2008 03:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: Geocon Consultants, Inc.
Work Order: 098716
Project: CORDELIA TIF, E8128-06-03

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-45668**	SampType: **MBLK**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **5/15/2008**	RunNo: **94605**
Client ID: **PBS**	Batch ID: **45668**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **5/15/2008**	SeqNo: **1458234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.265	1.0									

Sample ID: **LCS-45668**	SampType: **LCS**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **5/15/2008**	RunNo: **94605**
Client ID: **LCSS**	Batch ID: **45668**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **5/15/2008**	SeqNo: **1458235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	46.946	1.0	50.00	0.2646	93.4	80	120				

Sample ID: **098744-003AMS**	SampType: **MS**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **5/15/2008**	RunNo: **94605**
Client ID: **ZZZZZZ**	Batch ID: **45668**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **5/15/2008**	SeqNo: **1458237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	121.447	1.0	125.0	41.76	63.8	45	110				

Sample ID: **098744-003AMSD**	SampType: **MSD**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **5/15/2008**	RunNo: **94605**
Client ID: **ZZZZZZ**	Batch ID: **45668**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **5/15/2008**	SeqNo: **1458238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	126.972	1.0	125.0	41.76	68.2	45	110	121.4	4.45	20	

Sample ID: **098755-001ADUP**	SampType: **DUP**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **5/15/2008**	RunNo: **94605**
Client ID: **ZZZZZZ**	Batch ID: **45668**	TestNo: **EPA 6010B**	**EPA 3050B**	Analysis Date: **5/16/2008**	SeqNo: **1458445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	892.571	20						919.2	2.94	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CHAIN OF CUSTODY RECORD

Pg 1 of 1

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: 5/12/08

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: UPS

Sample Condition Upon Receipt:
1. CHILLED Y☐ N☑ 4. SEALED Y☐ N☑
2. HEADSPACE (VOA) Y☐ N☐ N/A 5. # OF SPLS MATCH COC Y☑ N☐
3. CONTAINER INTACT Y☑ N☐ 6. PRESERVED Y☐ N☑

Client: GEOCON CONSULTANTS, INC.
Attn:
Address: 6671 Brisa Street
City Livermore State CA Zip Code 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

Project Name: CORDELIA TIF Project #: E8128-06-03 Sampler: (Printed Name) D. WATTS (Signature)

Relinquished by: (Signature and Printed Name)	Date: 9MAY08	Time: 1600	Received by: (Signature and Printed Name) GSO	Date: 9MAY08	Time: 1600
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date: 5/12/08	Time: 10:00
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter
D. WATTS 8MAY08
Print Name Date
Signature

Send Report To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: _____
Co: SAME AS ABOVE
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:
PAINT CHIPS (TOTAL Pb)
ANTICIPATE SOLUBLE REQUESTS.

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested

SPECIFY APPROPRIATE MATRIX

PRESERVATION

QA/QC: RTNE ☐ CT ☑ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal) — Pb	8015B (GRO) / BTEX	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	SOIL	WATER	GROUND WATER	WASTEWATER	PAINT CHIPS	TAT	Container(s) #	Container(s) Type	REMARKS
	098716-001	P1A	8MAY08	1511				X									X		E	1	A-P	
	2	P1B		1514																		
	3	P2A		1521																		
	4	P2B		1522																		
	5	P3A		1611																		
	6	P3B		1614																		

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: White with report. Yellow to folder. Pink to submitter

May 23, 2008

Dave Watts
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 098716

RE: CORDELIA TIF, E8128-06-03

Attention: Dave Watts

Enclosed are the results for sample(s) received on May 12, 2008 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: 5/23/2008

ANALYTICAL RESULTS

LEAD BY ATOMIC ABSORPTION (TCLP)
EPA 1311/ 7420

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	098716
Project:	CORDELIA TIF, E8128-06-03	**Date Received**	5/12/2008 10:00:00 AM
Project No:		**Matrix:**	PAINT CHIPS
Analyte:	Lead	**Analyst:**	AMT

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
098716-008A	Composite P1A & P1B	1.2	mg/L	R94962	0.25	1	5/8/2008	5/23/2008
098716-009A	Composite P2A & P2B	0.26	mg/L	R94962	0.25	1	5/8/2008	5/23/2008
098716-010A	Composite P3A & P3B	1.8	mg/L	R94962	0.25	1	5/8/2008	5/23/2008

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: Geocon Consultants, Inc.
Work Order: 098716
Project: CORDELIA TIF, E8128-06-03

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_TC

Sample ID: **MB-45882**	SampType: **MBLK**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date:				RunNo: **94962**		
Client ID: **PBS**	Batch ID: **R94962**	TestNo: **EPA 1311/ 74**		Analysis Date: **5/23/2008**				SeqNo: **1464128**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **MB-45857A TCLP**	SampType: **MBLK**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date:				RunNo: **94962**		
Client ID: **PBS**	Batch ID: **R94962**	TestNo: **EPA 1311/ 74**		Analysis Date: **5/23/2008**				SeqNo: **1464129**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25									

Sample ID: **LCS-45882A**	SampType: **LCS**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date:				RunNo: **94962**		
Client ID: **LCSS**	Batch ID: **R94962**	TestNo: **EPA 1311/ 74**		Analysis Date: **5/23/2008**				SeqNo: **1464130**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.154	0.25	1.000	0	115	80	120				

Sample ID: **098899-001A-DUP**	SampType: **DUP**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date:				RunNo: **94962**		
Client ID: **ZZZZZZ**	Batch ID: **R94962**	TestNo: **EPA 1311/ 74**		Analysis Date: **5/23/2008**				SeqNo: **1464135**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25						0	0	20	

Sample ID: **098899-001A-MS**	SampType: **MS**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date:				RunNo: **94962**		
Client ID: **ZZZZZZ**	Batch ID: **R94962**	TestNo: **EPA 1311/ 74**		Analysis Date: **5/23/2008**				SeqNo: **1464136**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.929	0.25	2.500	0	117	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Geocon Consultants, Inc.
Work Order: 098716
Project: CORDELIA TIF, E8128-06-03

ANALYTICAL QC SUMMARY REPORT

TestCode: 7420_TC

Sample ID: **098899-001A-MSD**	SampType: **MSD**	TestCode: **7420_TC**	Units: **mg/L**	Prep Date:	RunNo: **94962**
Client ID: **ZZZZZZ**	Batch ID: **R94962**	TestNo: **EPA 1311/ 74**		Analysis Date: **5/23/2008**	SeqNo: **1464137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.877	0.25	2.500	0	115	70	130	2.929	1.76	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Diane Galvan

From: David Watts [watts@geoconinc.com]
Sent: Tuesday, May 20, 2008 11:18 AM
To: Diane Galvan
Subject: RE: Results - CORDELIA TIF (098716)

Please composite P1A & P1B and run a TCLP.
Please composite P2A & P2B and run a TCLP.
Please composite P3A & P3B and run a TCLP.

72-hr TATs. Thanks.

PREPARED FOR:
MARK THOMAS & COMPANY
1243 ALPINE ROAD, SUITE 222
WALNUT CREEK, CALIFORNIA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PREPARED BY:
GEOCON CONSULTANTS, INC.
6671 BRISA STREET
LIVERMORE, CALIFORNIA

GEOCON

GEOCON PROJECT No. E8128-06-03

SEPTEMBER 2008

GEOCON
CONSULTANTS, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. E8128-06-03
September 26, 2008

Michael Lohman
Mark Thomas & Company
1243 Alpine Road, Suite 222
Walnut Creek, California 94596

Subject: EASTBOUND I-80 CORDELIA TRUCK SCALE RELOCATION PROJECT
FAIRFIELD, SOLANO COUNTY, CALIFORNIA
REVISED INITIAL SITE ASSESSMENT

Dear Mr. Lohman:

We have performed an Initial Site Assessment (ISA) of the eastbound Interstate (I)-80 Cordelia Truck Scale Relocation Project (the Site) located in Fairfield, Solano County, California.

The accompanying report presents the details of the ISA conducted at your request as part of the eastbound I-80 Cordelia Truck Scale Relocation Project on behalf of the State of California Department of Transportation. The report summarizes our findings relative to potential hazardous waste facilities identified within the project boundaries that may impact right-of-way property acquisition and construction of the proposed highway improvements.

Please contact us should you have any questions concerning the contents of this ISA Report or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.

Lauren Wincze
Sr. Staff Geologist

Chris Giuntoli, REA
Project Manager

LJW:CGG:ls

(9) Addressee
(1) Mr. Chris Wilson, Caltrans – District 4

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LIST OF ACRONYMS

ACM	Asbestos-containing material
ADL	Aerially deposited lead
AIRS	Aerometric Information Retrieval System
APN	Assessor parcel number
AST	Aboveground storage tank
ASTM	American Society for Testing and Materials
BAAQMD	Bay Area Air Quality Management District
BTEX	Benzene, toluene, ethylbenzene, and total xylenes
CA-FID	California Facility Inventory Database
Caltrans	State of California Department of Transportation
CHP	California Highway Patrol
CSWRCB	California State Water Resources Control Board
DMG	Division of Mines and Geology
DWR	California Department of Water Resources
EDR	Environmental Data Resources
ERNS	Emergency Response Notification System
ESA	Environmental study area
FINDS	Facility Index System
ft	Feet
HAZNET	Hazardous
HOV	High Occupancy Vehicle
I	Interstate
ISA	Initial site assessment
Kg	Kilogram
LCP	Lead-containing paint
LQG	Large quantity generator
LUST	Leaking underground storage tank
Map ID No.	Map identification number
mg/kg	Milligrams per kilogram
mg/l	Milligrams per liter
µg/l	Micrograms per liter
MTBE	Methyl tertiary butyl ether
MTCo	Mark Thomas & Company
PG&E	Pacific Gas and Electric
PM	Post Mile
RCRA	Resource Conservation and Recovery Act
ROW	right-of-way
SCDRM	Solano County Department of Resource Management
SFB-RWQCB	San Francisco Bay - Regional Water Quality Control Board

Sol	Solano
SPRR	Southern Pacific Railroad
SR	State Route
SQG	Small Quantity Generator
SWEEPS UST	Statewide Environmental Evaluation and Planning System
TCLP	Toxicity Characteristic Leaching Procedure
TIF	Truck Inspection Facility
TPH	Total petroleum hydrocarbons
TPHd	Total petroleum hydrocarbons as diesel
TPHg	Total petroleum hydrocarbons as gasoline
TRIS	Toxic chemical release inventory system
UPRR	Union Pacific Railroad
USGS	United States Geological Survey
UST	Underground storage tank
WET	Waste extraction test
WET-DI	Waste extraction test – deionized water
Yds^3	Cubic yards

EXECUTIVE SUMMARY

Geocon Consultants, Inc. performed an initial site assessment (ISA) of the eastbound Interstate 80 (I-80) Cordelia Truck Scale Relocation Project. The project area consists of eastbound I-80 (Solano [SOL] Post Mile [PM] 14.0 to 15.7, a distance of 1.7 miles), and State Route 12 (SR-12) East (SOL PM L1.8 to L2.0, a distance of 0.2 mile) (the Site), and surrounding land in the vicinity of Fairfield, Solano County, California. The project consists of transportation enhancements to the eastbound I-80 and SR-12 East corridors and construction of a new truck inspection facility (TIF).

The ISA was conducted as part of the eastbound I-80 Cordelia Truck Scale Relocation Project on behalf of the California Department of Transportation (Caltrans) to determine the presence of contaminated properties (hazardous waste facilities) within the defined environmental study area (ESA) that may impact right-of-way (ROW) property acquisition, temporary construction easements, and construction of the proposed improvements. The ISA included site reconnaissances and review of historical topographic maps, aerial photographs, as-built plans, regulatory databases, facility-related documents, and other site-related record sources.

The results of the ISA indicate that further evaluation of conditions within the existing ROW and on private properties proposed for full or partial acquisition for the improvement projects is recommended. More specifically, private properties within the project ESA with known current and/or historical agricultural uses should be evaluated for potential soil impacts from pesticides, herbicides, petroleum hydrocarbons, and metals.

Prior to final design for the proposed eastbound I-80 Cordelia Truck Scale Relocation Project, additional environmental inquiry (parcel owner interviews/private parcel surveys/document disclosure) and preliminary site investigations, including soil and groundwater sampling where warranted, should be performed to further evaluate potential environmental impairments within the project boundaries. Aerially deposited lead (ADL) at levels exceeding hazardous waste criteria have been identified in shallow soil along the unpaved shoulders and median within the existing I-80 ROW in portions of the project ESA. ADL studies should be performed at the SR-12 East corridor to determine lead levels in planned excavation areas and associated soil material management and disposal requirements. We further recommend that soil sampling be performed within existing Caltrans, and City or County ROW where soil excavation is planned adjacent to or downgradient from identified facilities with a moderate potential to impact the relocation project listed in Table 1. This work is recommended to evaluate management and disposal of potentially contaminated soil, and construction worker health and safety requirements.

Structures present within the existing Caltrans ROW (eastbound I-80 TIF) and those present on land proposed for full or partial Caltrans acquisition may contain Asbestos Containing Materials (ACM) and/or Lead Containing Paint (LCP). We conducted an ACM and LCP survey of the eastbound I-80 TIF, which is discussed under separate cover. ACM and LCP surveys must also be conducted at

other buildings proposed for demolition to satisfy Bay Area Air Quality Management District requirements (asbestos) and demolition waste disposal characterization (asbestos and lead).

A sewage holding tank/settling tank is reportedly located at the eastbound I-80 TIF, and is connected to a pump station at the westbound I-80 TIF. These structures, their contents, and any other subsurface utilities present in the proposed project area, will need to be removed and disposed in accordance with local and state requirements. The results of the site reconnaissances, historical and regulatory file research, and prior field investigations have not indicated the potential presence of abandoned underground storage tanks (USTs) within the existing Caltrans ROW. However, other undocumented USTs associated with former and existing residential and agricultural properties may exist within the project ESA. Where encountered, undocumented USTs, septic systems and domestic/agricultural wells should be properly removed or abandoned in accordance with Solano County and State requirements.

Yellow thermoplastic and paint striping that is removed during planned roadway improvements may require special handling and disposal requirements unless combined with sufficient asphalt grindings per Caltrans Special Provisions. Asbestos-containing pipe and treated-wood may also be encountered during construction of the planned highway improvements. Any encountered asbestos-containing pipe and treated-wood waste will require proper handling and disposal in accordance with regulatory requirements.

A Caltrans ISA Checklist summarizing the findings, conclusions, and recommendations of this ISA is also included as Appendix F.

INITIAL SITE ASSESSMENT

1.0 INTRODUCTION

This report presents the results of an initial site assessment (ISA) of the eastbound Interstate 80 (I-80) Cordelia Truck Scale Relocation Project performed by Geocon Consultants, Inc. conducted on behalf of the State of California Department of Transportation (Caltrans). The project area consists of eastbound I-80 (Solano [SOL] Post Mile [PM] 14.0 to 15.7, a distance of 1.7 miles), and State Route 12 (SR-12) East (SOL PM L1.8 to L2.0, a distance of 0.2 mile) (the Site), and surrounding land in the vicinity of Fairfield, Solano County, California. The approximate site location is depicted on the Vicinity Map, Figure 1 and Site Plan Overview, Figure 2.

1.1 Purpose and Scope of Services

The ISA was performed as part of the eastbound I-80 Cordelia Truck Scale Relocation Project and conducted on behalf of Caltrans to determine the presence of recognized environmental conditions and hazardous waste facilities within the defined environmental study area (ESA) of the eastbound I-80 Cordelia Truck Scale Relocation Project that may impact temporary construction easements and construction of the proposed highway improvements. The ISA was performed in general accordance with the *Caltrans Initial Site Assessment Guidance Document* and project-specific scoping.

The goal of the ISA was to determine the potential presence of "recognized environmental conditions" as defined by the American Society for Testing and Materials (ASTM) Designation E 1527-05 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.* Section 1.1.1 of the ASTM Standard E 1527-05 defines the term "recognized environmental conditions" as "*the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property."* The term as further defined by ASTM *"is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment."* "Historical recognized environmental conditions" are defined as an *"environmental condition which in the past would have been considered a recognized environmental condition, but which may or may not be considered a recognized environmental condition currently."*

The main components of this report, as specified by the Caltrans ISA Guidance and ASTM Standards include the following:

- **Physical Setting:** Physical setting references were reviewed and observations made to obtain information concerning the topographic, geologic, and hydrogeologic characteristics of the Site and vicinity. Such information may be indicative of the direction and/or extent that a contaminant could migrate in the event of a spill or release.
- **Site Reconnaissance:** The objective of the site reconnaissance is to observe conditions and activities for indications of evidence of recognized environmental conditions. Site reconnaissances were performed by making observations from public thoroughfares and Caltrans right-of-way (ROW).
- **Site History:** The purpose of consulting historical references is to develop a history of the previous uses of the Site and surrounding area in order to identify if past uses have led to recognized environmental conditions in connection with the Site. Historical sources reviewed included Caltrans as-built and ROW plans, aerial photographs, and topographic maps.
- **Records Review:** The objective of the records review is to obtain and review records that will help identify recognized environmental conditions at or potentially affecting the Site. We reviewed publicly available federal, state, and local regulatory agency records for facilities located within the project ESA.

1.2 Report Limitations

This ISA report has been prepared exclusively for Caltrans. The information obtained is only relevant for the dates of the records reviewed or as of the date of the latest site visit. Therefore, the information contained herein is only valid as of the date of the report and will require an update to reflect recent records and site observations. Due to the lack of sufficient right-of-entry permits, site reconnaissance of private parcels and property owner interviews were not performed.

This report is not a comprehensive site characterization and should not be construed as such. The findings and conclusions presented in this report are predicated on the site reconnaissance, a review of the historical usage of the Site, and a review of the specified regulatory records as presented in this report. It should be noted that wetlands delineation, asbestos and lead-containing paint structure surveys, lead in drinking water, radon, methane gas, and mold surveys were not included in the scope of services for this report.

Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of the ISA is implied within the intent of this report or any subsequent reports, correspondence or consultation, either express or implied. We strived to conduct the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

2.0 PHYSICAL SETTING

This section provides a brief description of the physical setting of the Site and surrounding vicinity

including topography, geologic and hydrogeologic conditions. Observations of onsite conditions are described in Section 3.0.

2.1 Existing Conditions and Improvements

The eastbound I-80 Cordelia Truck Scale Relocation Project has been proposed by Caltrans to improve traffic operations and safety and to provide route continuity. Two existing highway corridor segments within the project ESA include portions of eastbound I-80 and SR-12 East.

The eastbound I-80 corridor consists of an approximate 1.7-mile section of six and seven-lane highway in an east-west orientation beginning from directly east of the Dan Wilson Creek Bridge to the interchange with SR-12 East. This portion of I-80 includes a high occupancy vehicle lane (HOV). Other existing improvements along the I-80 corridor include the Suisun Creek Bridge and the existing I-80 eastbound Truck Inspection Facility (TIF). The portion of SR-12 East includes an approximate 0.2-mile segment of two-lane highway beginning at I-80 and ending directly west of Chadbourne Road.

Land south of the eastbound I-80 corridor consists of a mix of undeveloped, residential and agricultural use from the western end of the project ESA (at Dan Wilson Creek) to Hale Ranch Road, located south of the off-ramp from SR-12 East to Chadbourne Road. The Anheuser-Busch/Budweiser Plant is located east of the I-80/SR-12 East interchange. Land use adjacent to the I-80/SR-12 East interchange consists of commercial development.

Land use adjacent to SR-12 East, between I-80 and Chadbourne Road, consists of paved parking lots associated with the Anheuser-Busch/Budweiser Plant to the south, and undeveloped, vegetated land to the north. Site Plans (approximate 2005 aerial photographs) depicting existing site improvements and adjacent development are presented as Figures 2a and 2b.

2.2 Proposed Improvements

One build alternative is proposed for the improvements to the eastbound I-80 Cordelia Truck Scale Relocation Project. Under the proposed build alternative, the eastbound I-80 Cordelia Truck Scale facility would be reconstructed approximately 2,500 feet east of its present location. The new facility would be a Class B (Class B defined as an independent command facility of the California Highway Patrol [CHP] located along a major highway route) Commercial Vehicle Enforcement Facility which will have the capacity to inspect all eastbound I-80 trucks passing the facility. The facility would contain a minimum of four sets of scales to accommodate two lines of empty and loaded trucks. The new facility would contain seven truck inspection bays and a roadway along the outer edge of an oval to allow weighed trucks to be driven around into the inspection bay or to be re-weighed. A single story operations building would be constructed to facilitate the vehicle inspection and weighing process.

The exit ramp from eastbound I-80 to the new truck scale facility would utilize the existing eastbound I-80 exit ramp location and geometry, which consists of a dedicated exit ramp and a shared through-exit lane. The new exit ramp would continue as a two lane roadway through the existing truck scale facility, and be widened to four lanes immediately west of Suisun Creek. The new exit ramp would cross over Suisun Creek on a new bridge before entering the new truck scale facility. Truck traffic would be sorted along the approach roadway into the appropriate lane by means of weigh-in-motion scales and signal bridges. Trucks leaving the facility would utilize a new two lane eastbound roadway that splits approximately 1,300 feet east of the facility with one lane merging onto eastbound I-80 and the second lane connecting to the eastbound I-80 to eastbound SR-12 East connector.

The eastbound I-80 connector to eastbound SR-12 East would be reconstructed as a two lane ramp crossing over ("braided with") the truck scale entrance ramp to eastbound I-80. The connector bridge and associated retaining wall would be constructed to a three lane width to accommodate future planned improvements, although the exit from I-80 proposed with this project would consist of a two lane connection (a dedicated SR-12 East lane and a shared through-exit lane). The new dedicated lane on I-80 would begin approximately 2,500 feet west of the exit point to the connector. The two lane connector would continue east becoming SR-12 East, with the truck scale entrance ramp joining as an auxiliary lane that would end at the SR-12 East/Chadbourne Road interchange exit ramp. Once construction of the new truck scales is completed and the new facility is operational, the existing facility would be removed. Construction work on existing bridge structures is not proposed as part of the eastbound I-80 Cordelia Truck Scales Relocation Project.

Full and partial private property acquisitions on land adjoining existing Caltrans ROW will be required to accommodate the proposed project improvements. These private properties are discussed in Section 3.0. Mark Thomas and Company (MTCo) provided preliminary geometric maps detailing the eastbound I-80 Cordelia Truck Scales Relocation Project. Figures provided by MTCo depicting the eastbound I-80 Cordelia Truck Scales Relocation Project Vicinity and proposed private property parcels for land acquisition are presented in Appendix A and B, respectively.

2.3 Review of USGS Topographic Map

Review of the 1980 United States Geologic Survey (USGS) map for the Fairfield South, California quadrangle indicates that the project ESA is located at an approximate elevation of 25 feet (ft) above mean sea level. The Site is generally flat; a hill with an approximate elevation of 300 ft, is situated southwest of the existing truck scale facility. Suisun Creek crosses the I-80 corridor immediately east of the existing truck scale facility and flows south into Suisun Bay. Eastbound I-80 and a weighing station are depicted at the Site. Land adjacent to and south of eastbound I-80 within the project ESA is depicted as a mix of rural residential and orchard use. A commercial facility depicted adjacent south of the eastern terminus of the project ESA appeared similar to the Anheuser-Busch/Budweiser Plant observed during the site reconnaissance. A Southern Pacific Railroad (SPRR) (currently Union Pacific

Railroad [UPRR]) track oriented southwest-northeast is depicted further south of the project ESA. Land north of the project ESA is depicted as westbound I-80 and an associated weighing station, beyond which is a mix of agricultural (orchard) and rural residential land use. The I-80 corridor extends in an approximate southwest to northeast orientation away from the western and eastern ends of the project ESA. Generally rural residential and agricultural (orchard) land use is depicted further west and east of the project ESA.

2.4 Soil and Geologic Conditions

Information concerning the general soil and geologic conditions in proximity to the Site was obtained from a review of the USGS *Geologic Map of the San Francisco Bay Region* (2006) and from the California State Water Resources Control Board (CSWRCB) GeoTracker website (http://geotracker.waterboards.ca.gov) for information about subsurface conditions at leaking underground storage tank (LUST) facilities within the project ESA. The project ESA is located within the depression of the central portion of the Coast Ranges Geomorphic Province, and is primarily composed of Quaternary alluvial sedimentary deposits. The Coast Ranges consist of northwest-trending ranges and valleys, bounded by the Pacific Ocean to the west and the Great Valley to the east, and situated sub-parallel to the San Andreas Fault.

According to subsurface investigation reports available through GeoTracker, soils encountered at facilities located near the project ESA generally consist of sandy and silty clay from the surface to depths of at least approximately 15 ft.

We reviewed the United States Department of Agriculture's National Resources Conservation Service online Soil Survey database (http://websoilsurvey.nrcs.usda.gov/app/), which provided information regarding surface soils at the Site. In general, Site soils consist of silty clays identified as the Sycamore Silty Clay loam. This soil component is generally characterized by slow infiltration rates, well drained, with intermediate water holding capacity.

We also reviewed the California Department of Conservation, Division of Mines and Geology (DMG) map presented in *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos*, dated August 2000, which provided information regarding areas in California where natural occurrences of asbestos may be an issue. Based on information presented on the DMG map, ultramafic rock units were not indicated at or in the vicinity of the Site.

2.5 Regional Groundwater Occurrence

Information regarding groundwater within the project ESA was obtained through the City of Fairfield and the Solano Irrigation District, which provide water service to properties within the project ESA. We also checked the CSWRCB GeoTracker website for groundwater information at LUST facilities within the project ESA.

The project ESA is situated in the northeastern portion of the San Francisco Bay Hydrologic Region, in the Fairfield-Suisun Groundwater Basin. Groundwater quality within the basin is generally suitable for urban, residential, and agricultural uses with only local impairments. Drinking water is mainly derived from surface water sources, including Lake Berryessa and the Sacramento Delta, and may also originate from deep groundwater production wells.

Based on site investigation reports prepared for LUST facilities in the vicinity of the ESA, first encountered groundwater within the project ESA is at depths of less than 10 ft and generally flows to the southwest. However, groundwater depth and flow are influenced by local hydrogeologic conditions, topographic features, pumping wells, irrigation, and septic system recharge. We further checked the California Department of Water Resources (DWR) Groundwater Level Data website (http://wdl.water.ca.gov/gw/) for wells within the site vicinity. The database identified recent water level data for wells in the vicinity of the project ESA, which indicated groundwater depths between approximately 10 and 15 ft.

3.0 SITE RECONNAISSANCE

We performed reconnaissances of the Site on April 16 and May 8, 2008. The purpose of the reconnaissances were to survey the existing eastbound I-80 and SR-12 East corridors, adjacent roadway connectors, and private property conditions within and adjacent to the ESA. We also performed a walkover of the TIF. The site reconnaissances were conducted from public thoroughfares and Caltrans-owned property to attempt to identify visual indicators of potential hazardous waste facilities/impacts. Site Plans depicting the project boundaries and potential hazardous waste facilities with indicated Map Identification Numbers (Map ID Nos.) are presented on Figures 2a and 2b. Table 1 lists the identified facilities along with their respective Map ID Nos., potential impact (low and moderate risk) to the project ESA, and potential ROW acquisitions. Photographs of the project ESA including the identified facilities taken during the site reconnaissances are also attached. Information presented hereinafter is based on observations noted during the site reconnaissances.

3.1 Existing Improvements

Within the project ESA, eastbound I-80 is a six and seven-lane highway aligned in an approximate east-west orientation with a mix of paved/unpaved median and shoulders from directly east of the Dan Wilson Creek Bridge to the SR-12 interchange, and associated entrance and exits ramps. A Caltrans

TIF (Map ID No. 1) is located adjacent to eastbound I-80 approximately ⅓ mile east of Dan Wilson Creek. The Caltrans ROW along eastbound I-80 also includes the Suisun Creek Bridge (Bridge No. 23-0106) and the 12-80 Connector at the I-80/SR-12 East interchange (Bridge No. 23-199F).

The SR-12 East segment within the project ESA is a two-lane highway with paved median and unpaved shoulders aligned in an approximate east-west orientation from the I-80/SR-12 East interchange to the Chadbourne Road undercrossing (Bridge No. 23-0200).

The eastbound I-80 and SR-12 East corridors have had extensive exposure to historical automotive vehicle emissions. The potential exists for elevated lead levels from aerially deposited lead (ADL) to be present in shallow soils near these corridors within the project ESA. Also, yellow thermoplastic and paint striping, potentially containing lead chromate, was observed on roadway surfaces within the project ESA. Suspect asbestos-containing materials (ACMs) and possible lead-containing paint (LCP) may be present at the structures associated with TIF located adjacent to eastbound I-80.

The eastbound I-80 TIF consists of five structures and asphalt paved areas. The structures include the following:

- A single-story, on-slab building that contains a control room and offices situated on the western portion of the facility; a modular addition is located on the southern portion of the building and contains locker-rooms.
- A single-story on-slab building containing restrooms is located west of the office building.
- A modular structure used as a training classroom, and a storage trailer are located between the restroom structure and the control room/office building.
- A three-sided metal-frame structure, on a concrete slab, containing four truck bays is situated on the northern portion of the facility; this structure contains an inspection shed.
- A storage building is located adjacent to the eastern side of the truck bay structure; the shed was observed to contain bags of "oil-dri" and miscellaneous tools.

Remaining portions of the TIF included asphalt paved areas that appeared to be in good condition, with no cracks or patches observed. Two truck lanes, each with a sub-grade scale, are located adjacent to the northern side of the control room/office building. The scales appeared to be in good condition and no staining or evidence of a spill of petroleum or hazardous substances was observed in the vicinity of the scales. According to information obtained from Mr. Nader Ebrahimi of Caltrans, the scale equipment does not include hydraulics, and therefore does not utilize oil. The scale equipment reportedly uses mechanical and electrical parts. Several storm drains were observed throughout the TIF and appeared to be connected to outfall pipes that discharge to a drainage ditch located along the southern boundary of the facility. The storm drains and ditch were observed to be in good condition and did not contain any liquids at the time of the walkover.

Properties proposed for partial or full acquisition were also viewed from public thoroughfares for evidence of potential hazardous waste impacts. These include 13 parcels with the following Solano County Assessor's parcel numbers (APNs):

1. 0027-26-0120 (partial parcel acquisition);
2. 0027-27-2070 (full parcel acquisition);
3. 0027-27-2130 (full parcel acquisition);
4. 0027-27-2120 (full parcel acquisition);
5. 0027-27-2080 (partial parcel acquisition);
6. 0027-27-2140 (full parcel acquisition);
7. 0027-27-2180 (partial parcel acquisition);
8. 0027-27-2160 (partial parcel acquisition);
9. 0027-25-2080 (partial parcel acquisition);
10. 0027-25-2090 (full parcel acquisition);
11. 0027-25-2100 (full parcel acquisition);
12. 0027-25-2110 (full parcel acquisition); and
13. 0027-20-0560 (full parcel acquisition).

Portions of properties that may be included for full or partial Caltrans land acquisition with Solano County APNs 0027-26-0120, 0027-27-2080, 0027-27-2140, 0027-27-2180, 0027-27-2160, and 0027-25-2080 appear to be either currently or formerly used for agricultural purposes and residual agricultural chemicals may be present in soils at these properties. Additionally, residential and associated structures are present on parcels with Solano County APNs 0027-27-2080 and 0027-25-2080 and these structures may contain suspect ACMs and potential LCP.

Evidence of other potential hazardous waste impacts within the existing eastbound I-80 and SR-12 East ROW was not observed during the site reconnaissance.

3.2 Adjacent Property Conditions

Observations of adjacent property and facility conditions noted during site reconnaissance are summarized hereinafter. Land west of the project ESA, west of the Dan Wilson Creek Bridge, generally consists of residential and commercial development. Residential and agricultural land is located south of the eastbound I-80 corridor between the Dan Wilson Creek Bridge and the interchange with SR-12 East. Commercial facilities associated with the use, storage and disposal of hazardous materials/wastes are generally located adjacent to the eastbound I-80 interchange with SR-12 East, at the eastern end of the project ESA. These facilities include automobile dealerships, maintenance facilities, and construction and service companies. The TIF is bounded by agricultural land to the east, west and south, and by I-80 to the north.

Features suggestive of the former presence of service station improvements noted during the site reconnaissances or obtained from regulatory record and historical research were observed at vacant land located at 4000 Russell Road (Valine Ranch property, former Old Fruit Bowl Mobil Station [Map ID No. 2]), adjacent to the westbound I-80 ROW east of Suisun Creek.

4.0 SITE HISTORY

This section provides a brief description of the history of the project ESA and surrounding vicinity based on review of historical documentation, Caltrans as-built plans and ROW maps provided by MTCo., as well as aerial photographs, and topographic maps provided by Environmental Data Resources (EDR). Additionally, an Update Phase I Environment Site Assessment report for an adjacent proposed roadway corridor was provided for our review by MTCo.

4.1 Review of As-built and ROW Plans

We reviewed the following Caltrans as-built and ROW drawings provided by the Client for segments of the I-80/SR-12 roadways and associated structures:

1. *Plans for Construction on State Highway in Solano County, between Route 8 near Cordelia and 0.3 mile east of Chadbourne Road with connection to Route 74 at Cordelia*, dated January 13, 1963.
2. *Project Plans for Construction on State Highway, in Solano County about 2.8 miles west of Fairfield between 1.2 miles east and 1.9 miles east of Route 21*, dated August 26, 1970.
3. *Project Plans for Construction on State Highway, in Solano County at various locations from 0.2 mile west of Green Valley Road Overcrossing to 0.4 mile east of Route 80/12 separation in Fairfield*, dated July 10, 1972.
4. *Project Plans for Construction on State Highway, in Solano County in and near Fairfield on Route 80 from 0.1 mile west of Suisun Creek Bridge to 0.8 mile east of Abernathy Road Overcrossing and on Route 12 from Route 80 to 0.9 mile east of Route 80*, dated February 8, 1988.
5. *Project Plans for Highway Construction on State Highway, in Solano County near Cordelia from Cordelia Underpass to 0.5 mile east of Cordelia underpass*, dated February 26, 1988.

Review of the referenced documents identified a structure indicative of a service station adjacent to the current westbound I-80 corridor east of Suisun Creek (1963 plans). This structure is at the approximate location of the former Old Fruit Bowl Mobil Station (Valine property) (Map ID No. 2) discussed in detail in Section 5.2. Additionally, plans for the Dan Wilson Creek Bridge and Suisun Creek Bridge indicate the use of asbestos sheet packing as guard rail shims on the bridges; however, these bridge structures will not be included as part of the proposed eastbound-I-80 Cordelia Truck Scales Relocation Project. The plans also indicate roadway widening and bridge modifications occurred along portions of I-80 and associated bridges in the late 1980s within the project ESA.

4.2 Aerial Photographs

Historical aerial photographs depicting the project ESA were obtained through EDR and are described below. Copies of the aerial photographs are presented in Appendix C.

1937 Aerial Photographs - Coverage for the four 1937 aerial photographs includes the entire project ESA, which generally consists of undeveloped land, local roads, agricultural land, and residences. Two creeks/streams are located at the western boundary of, and within, the project ESA, which appear to be

Dan Wilson Creek and Suisun Creek, respectively. Roads in the general configuration of the current I-80, and SR-12 East corridors are present, including the intersections of roads. More specifically, an overcrossing of SR-12 West at I-80 is present.

1957 Aerial Photographs - Coverage for the four 1957 aerial photographs indicates that no significant changes have occurred, except that the roadways along the current I-80 corridor appear to be expanded into a divided highway. A service station is present at the 4000 Russell Road property (Old Fruit Bowl Mobil Station [Map ID No. 2]). An additional bridge has been constructed at the I-80/SR-12 interchange. SR-12 appears to be a two-lane road at this time and additional commercial and/or industrial development is evident northeast of the intersection of the current I-80 corridor.

1965 Aerial Photographs - Coverage for the three aerial photographs includes generally the same area as the previous photographs; however greater detail is visible due to the larger scale. Caltrans TIFs are present adjacent to eastbound and westbound I-80 east of the Suisun Creek Bridge. The I-80 overcrossings at Suisun Valley Road and Abernathy Road have been constructed. Commercial and residential development is present northeast of the intersection of SR-12 and I-80.

1970 Aerial Photographs - The project ESA included on the two photographs do not indicate significant changes relative to the previous photographs. Commercial buildings are present at the 4088 Russell Road and 4974 Abernathy Road properties (Moore Tractor Company [Map ID No. 3]), and Concrete Pipe Distributors [Map ID No. 4], respectively). Commercial/industrial development is evident south of the intersection of SR-12 and I-80.

1982 Aerial Photographs - Coverage of the project ESA is included on two 1982 aerial photographs. Commercial/industrial development has occurred along SR-12 East, adjacent to the eastern end of the project ESA. Properties adjacent to the eastbound I-80 corridor appear to consist of agricultural land.

1993 Aerial Photographs - Coverage provided on the two 1993 photographs indicates that the eastern portion of SR-12 has been expanded into a multi-lane, divided freeway and the I-80/SR-12 East interchange has been constructed. Land adjacent to the eastbound I-80 corridor still generally consists of residences and agricultural fields; however, the Anheuser-Busch/Budweiser plant and the Pacific Gas & Electric (PG&E) substation are present in the eastern portion of the project ESA. Some commercial/industrial development is present at the western end of the project ESA.

1998 Aerial Photographs - No significant changes are noted relative to the 1993 photographs, except that additional commercial/industrial structures, which appear to be the current auto dealerships, have been constructed adjacent to the eastern end of the project ESA, south of SR-12 East.

4.3 Review of Historical USGS Topographic Maps

We reviewed the following historical USGS topographic maps to obtain information relative to the previous development and uses of the Site and properties located in the site vicinity: 1898 15-Minute Karquinez Quad, 1901 15-Minute Carquinez Quadrangle, 1902 30-Minute Napa Quadrangle, 1918 7.5-Minute Suisun Quadrangle, 1947 15-Minute Port Chicago Quadrangle, 1950, 1968, and 1980 7.5-Minute Fairfield South Quadrangles, and 1951, 1968, and 1980 7.5-Minute Cordelia Quadrangles. A review of the USGS topographic maps is presented hereinafter, and copies of the topographic maps provided by EDR are presented in Appendix D.

1898 Topographic Map - The project ESA is depicted generally as undeveloped land; however, some roadways and structures are depicted in the eastern portion. Suisun Creek is shown running generally north-south, and intersecting the project ESA. The SPRR track is depicted south of the general vicinity of the current SR-12 East corridor. A few unidentified roads are also shown oriented generally north-south toward Cordelia, where a number of buildings are present in the central portion of the ESA. Fairfield and Suisun City are depicted with numerous grid-pattern roads and structures. The San Francisco and Ogden Railroad Line is shown running north, across the wetland area of Grizzly Bay, and through Suisun City and Fairfield, respectively.

1901, 1902, and 1918 Topographic Maps – There were no notable changes to the project ESA depicted relative to the 1898 map.

1947 Topographic Map – The map depicts SR-12 West oriented generally east-west in the vicinity of the SPRR track near the intersection with Route 40 (current I-80), west of Cordelia. SR-40 (identified as American Canyon Road) is oriented northeast-southwest, in the general configuration of the current I-80 corridor. A road identified as Route 21 is shown oriented generally north-south through Cordelia, and intersects the SPRR line and Route 40. Additional roadways are also depicted in the vicinity of Route 40, adjacent to the project ESA. The current SR-12 East corridor is depicted as vacant land.

1950 and 1951 Topographic Maps – The project ESA is not depicted with notable changes relative to the 1947 map; however, additional details are shown due to the smaller map scale. The portion of Route 40 north of the intersection at Route 12 is depicted as a dual highway with a median strip, includes four lanes in each direction, and is identified both as Route 40 and Route 12. The portion of Roadways that appear similar to the current Suisun Valley and Abernathy Roads, are all depicted as secondary highways. Route 12 east of Route 40 follows the current east-west alignment of West Texas Street (located north of the project ESA) and extends east into central Fairfield.

1968 Topographic Maps – The interchanges of Route 12 and I-80 (previously identified as Route 40), appear similar to their current configuration. “Weighing stations” are identified adjacent to eastbound and westbound I-80, approximately 1,000 feet south of Suisun Creek (at the current locations of the

existing TIFs within the project ESA). Land adjacent to the I-80 corridor is depicted as a mix of agricultural (orchards and vineyards) and rural residential use. Land adjacent to Route 12, northeast of the project ESA, is shaded in pink and orange, indicating urban and residential development. The land currently occupied by the SR-12 East corridor is depicted as a mix of agricultural (orchards and vineyards) use and undeveloped land.

1980 Topographic Maps – The I-80 corridor has been widened into a dual highway with a median strip, and appears similar to its current configuration. New commercial buildings are depicted adjacent to the western end of the project ESA, and a commercial facility that appears to be the Anheuser-Busch/Budweiser Plant is shown east of the I-80/SR-12 East interchange.

4.4 Review of Sanborn Maps

Sanborn Maps covering the project ESA were requested, but were not available through EDR.

4.5 Review of Environmental Reports

We reviewed an *Update Phase I Environmental Site Assessment/Initial Site Assessment* (Baseline, 2007) for the North Connector Project located north of the project ESA. The report documented historical land use on nearby properties north of the project ESA, and identified known and potential environmental concerns. The following summarizes portions of the Baseline report as they pertain to known or potential environmental concerns for the project ESA.

Private Properties

- An interview with the property owner of Concrete Pipe Distributors, located at 4974 Abernathy Road (west of the I-80/SR-12 East interchange) identified a prior underground storage tank (UST) removed from near the northwest corner of the east barn at the property in approximately 1985. The owner was not aware of any hazardous material releases at the property. Observations made during the site reconnaissance noted small quantity containers (3-gallon) of fuel and two pole-mounted electrical transformers at the property. No evidence of hazardous material releases was apparent at the property. Records reviewed at the Solano County Department of Resource Management (SCDRM) identified several unlabeled 55-gallon drums at the property in a 1994 inspection report. These drums (a total of 16) were subsequently reported to be owned by Moore Tractor Company (the adjoining business) and reported to contain waste oil and undetermined liquids. The owner of the drums reported that they would be removed within 30 days. No further indications of agency follow up regarding this issue was noted in SCDRM files.
- An interview with the property owner at Moore Tractor Company, located at 4088 Russell Road identified a current 200-gallon diesel aboveground storage tank (AST) and 55-gallon drums of hydraulic and waste oil at the facility (SCDRM inspections at the property indicated the diesel AST was a 500-gallon capacity). The owner was not aware of any hazardous materials releases at the property. Observations made during the site reconnaissance noted, in addition to the reported 200-gallon diesel AST, a 2,000-gallon water AST and a 395-gallon container of "Light Water containing three percent hydrocarbon fuels and six percent polar solvents" at the property. No evidence of hazardous material releases was apparent at the property.

- Records were reviewed at the SCDRM for the Valine property, located at 4000 Russell Road, located adjacent to Westbound I-80, north of the project ESA. According to information presented in agency files, the property was a gas station from 1946 to 1972 and five USTs were removed from the property in November 2000. Petroleum hydrocarbons and gasoline-related constituents were identified in soil and groundwater at the former UST location and the property is under SCDRM oversight (See Section 5.2 for additional details).

Project-wide Land Conditions

- Land in the Project area was primarily used for agricultural purposes until the 1920s, when U.S. Highway 40 (currently I-80 corridor) was constructed through the region. After this period, commercial, residential and light-industrial property uses have increased in the area over time.
- ADL may be present in shallow soils adjacent to and near the intersection of SR-12 East and Chadbourne Road, adjacent to the eastern end of the project ESA, as well as any Caltrans ROW.
- Historical agricultural land use in the region may have resulted in residual agricultural chemicals to be present in shallow soils.

We also reviewed a *Revised Final Site Investigation Report* (Geocon, 2007) for the Solano County I-80 HOV Project located along the I-80 corridor, which includes the project ESA. The report presented laboratory analytical results for shallow soil samples collected from the median and shoulders of the I-80 corridor from Red Top Road to the Putah South Canal. The purpose of the investigation was to evaluate potential impacts from ADL within the project boundaries and Caltrans ROW. A total of 101 borings were advanced throughout the project corridor and soil samples were generally collected from each boring at approximate depths of 0 to 0.5 foot, 1 to 1.5 ft, 2 to 2.5 ft. Soil samples contained total lead concentrations ranging from less than (<)5 milligrams per kilogram (mg/kg) to 2,800 mg/kg. Soluble (Waste Extraction Test [WET]) lead levels for 71 of the samples ranged from 1.3 milligrams per liter (mg/l) to 220 mg/l. Soluble (WET-DI) lead concentrations for 30 of the samples ranged from <0.25 mg/l to 5.6 mg/l. Soluble (Toxicity Characteristic Leaching Procedure [TCLP]) lead levels for 16 of the samples ranged from <1.2 mg/l to 15 mg/l. Based on the sample results and potential excavation scenarios for the project, soil generated from some areas may require management as a California hazardous waste, though not a Resource Conservation and Recovery Act (RCRA) waste.

4.6 Interview

We conducted an interview with CHP Lieutenant Mike Ferrell, who provided information regarding the current and historical operations at the eastbound I-80 TIF. Lt. Ferrell has worked at the facility since 2002. He stated that the facility was constructed and operational by 1958, which included the control room/office building. The metal-frame inspection structure was reportedly constructed sometime later, and the modular portion of the office building was added in the late 1980s or early 1990s.

Lt. Ferrell indicated that ASTs and USTs have never been present at the facility and hazardous materials stored onsite include small quantities of cleaning supplies. He also indicated that there are no

wells, including dry wells, located at the TIF. A pole-mounted electrical transformer at the Westbound I-80 TIF provides power to the eastbound I-80 TIF. A sewage holding tank/settling tank is reportedly located directly west of the control room/office building, which is accessed via two manholes. The holding tank is equipped with an electric pump, and is connected via piping beneath the I-80 ROW, to a three-tank septic system located at the westbound I-80 TIF. According to Lt. Ferrell, the septic system is connected to the municipal sewer.

Lt. Ferrell stated that the facility maintains a hazardous materials response protocol to quickly address spills that occur from vehicles passing through the facility, which includes documentation and reporting to the appropriate regulating agency. He stated that spills occur approximately three times per year, and typically are contained on pavement; he did not recall an incident that impacted soil or groundwater. Lt. Ferrell stated that the most recent spill occurred in January 2008, involving an etching agent. Lt. Ferrell indicated that he was not aware of any environmental issues on adjacent properties.

5.0 REGULATORY AGENCY RECORDS

This section describes the review of regulatory agency database and GeoTracker records for listed facilities located within the project ESA.

5.1 Database Review

EDR performed a search of federal, state, and local databases for the Site and surrounding areas. A complete copy of the report entitled *EDR DataMap Area Study*, dated April 14, 2008, is presented in Appendix E.

5.1.1 Project ESA

The existing I-80 corridor is listed in the referenced EDR database search report, in the following databases: California Facility Inventory Database (CA-FID UST), Statewide Environmental Evaluation and Planning System (SWEEPS UST), and UST. A site identified as Caltrans, with and address of Russell (I-80) Rd., Suisun City, is listed as an inactive UST facility.

5.1.2 Adjacent Properties

Based on the database search performed by EDR, the following sections provide additional information regarding listed properties located within approximately ¼-mile upgradient, ⅛-mile crossgradient (based on reported groundwater flow direction to the southwest), or adjacent to the project ESA. Additional information for Valine property is presented in the Regulatory Case Document Review Section (5.2) of this report.

LUST Listings

Review of the EDR Report indicates that there are six facilities in the vicinity of the project ESA are referenced on the Leaking UST (LUST) database.

The following table provides a summary of listed LUST cases:

NAME	ADDRESS	SUBSTANCE	AFFECTED MEDIA	STATUS
Old Fruitbowl Mobil Station, Valine Property	4000 Russell Road	Petroleum hydrocarbons	Soil and Groundwater (drinking water aquifer)	Case Closed in January 2008 (see Section 5.2)
Fairfield Suisun Sewer District	1010 Chadbourne Road	Diesel	Soil and Groundwater	Case Closed in 1998
Mangels Ranch Property.	287 Suisun Valley Road	Gasoline	Soil	Case Closed in 1998
Texaco Terminal Stations Inc./JS&J Ser Shell	100 Suisun Valley Road	Gasoline	Soil and Groundwater	Case Closed in 2001
Shell	4450 Central Way	Gasoline	Soil and Groundwater	Case Closed in 1996
Campbell's Carpet	4731 Central Way	Gasoline and MTBE	Soil and Groundwater	Case Closed in 1998

UST/AST Listings

The EDR Report indicates that there are five facilities are referenced at and in the vicinity of the project ESA as containing registered USTs or ASTs. The Valine property at 4000 Russell Road is also included in the LUST listing and is discussed in more detail in Section 5.2. The other listed facilities include:

- ARCO AM/PM, Cordelia, 4449 Central Place,
- Nella Oil Company #28 Flyers, 4444 Central Place, and
- Anheuser-Busch, Inc., 3101 Busch Drive.

RCRA SQG, FINDS and HAZNET Listings

Three facilities at or in the vicinity of the project ESA are referenced on the HAZNET database and include: Anheuser-Busch Inc, at 3101 Busch Drive, Wal-Mart, at 300 Chabourne Road, and Texaco Terminal Stations Inc., at 100 Suisun Valley Road.

Based on a review of the listings, the Anheuser-Busch facility may be located at property proposed for partial Caltrans acquisition as part of the proposed improvement project. In addition to the UST database, this facility is also listed in the following: Emergency Response Notification System (ERNS), Resource Conservation and Recovery Act Small Quantity Generator (RCRA-SQG), Facility Index

System (FINDS), HAZNET (lists facilities that have filed hazardous waste manifests), the Toxics Release Inventory System (TRIS), and Aerometric Information Retrieval System (AIRS).

Information available from the EDR report regarding the Anheuser-Busch Inc. facility indicates that it is a RCRA Small Quantity Generator (SQG), which generates between 100 and 1,000 kilograms (kg) of hazardous waste per month, and was a large quantity generator (LQG) until 2004. The FINDS listing relates to chemical use, storage and disposal. Wastes removed from the facility include, but are not limited to, contaminated soil from site cleanups, and asbestos-containing waste. An ERNS Site Report for the facility documents an ammonia spill from a refrigeration unit occurred in 1990. In addition, the facility is reportedly registered with the Bay Area Air Quality Management District (BAAQMD), AIRS, and TRIS, for air emissions. No violations are reported for the facility.

5.2 Regulatory Case Document Review

Additional EDR database details and information obtained from a review of available CSWRCB GeoTracker website (http://geotracker.waterboards.ca.gov) reports and SCDRM case files for identified potential hazardous waste facilities located within approximately ¼-mile upgradient, ⅛-mile crossgradient (based on reported groundwater flow directions), or adjacent to the ESA are presented hereinafter.

Former Old Fruit Bowl Mobil Station (Valine Property), 4000 Russell Road (Map ID No. 2). The facility is a former service station located adjacent to Westbound I-80, north of the project ESA. A review of GeoTracker database and case file information indicates that a total of five steel USTs (one 10,000-gallon diesel, two 6,000-gallon gasoline, and two 1,000-gallon gasoline tanks) were removed from the facility in November 2000 by L&S Environmental under observation by a SCDRM inspector. A *Tank Closure Summary Report* (L&S Environmental, 2001) presented the results of the UST removal work, which stated that the USTs were in good condition with no holes observed. However, discolored soil and petroleum odors were noted in the excavation. Groundwater was encountered at a depth of approximately 6 ft and free product and surface sheen were present throughout the UST pit. Ten soil samples were collected from the UST pit and had reported concentrations up to 1,800 mg/kg total petroleum hydrocarbons (TPH) as gasoline (TPHg), 700 mg/kg TPH as diesel (TPHd), and low levels of benzene, toluene, ethylbenzene, and xylenes (BTEX). Methyl-tertiary-butyl ether (MTBE) was not detected in the soil samples. Approximately 250 cubic yards (yds^3) of impacted soil were removed from the tank pit and approximately 20,000 gallons of contaminated water was pumped from the excavation. A water sample collected from the pit following pumping contained 4,000 micrograms per liter (µg/l) of TPHd, 1,400 µg/l of TPHg and low levels of BTEX. The L&S Environmental report concluded that contamination was detected in the excavation below groundwater to a depth of 12 ft and that the lateral extent of groundwater impact was unknown.

The *Report of Site Investigation and No Further Action Required Request* (Stephen G. Muir, 2007) presented information of investigations conducted subsequent to 2001 at the property. The report noted that the former gas station operated at the property from about 1946 to 1972, when I-80 was constructed. In December 2006, six soil borings were advanced within and adjacent to the former UST pit to depths between 9 and 15 ft. Soil samples did not contain detectable levels of TPHg, BTEX or MTBE. TPHd was detected at concentrations ranging from <1.0 to 9.2 mg/kg. A groundwater sample collected from one boring contained 380 mg/l TPHd, while TPHg, BTEX, and MTBE were not detected above laboratory reporting limits. The approximate 250 yds^3 of stockpiled soil generated in

2000 remains on visqueen plastic and was mixed with animal manure to facilitate biodegradation of petroleum hydrocarbons in the material. The Stephen G. Muir 2007 report concluded that an estimated 95% of the in-place impacted soil was removed in the initial 2000 excavation. The aerial extent of impact is estimated at approximately 1,200 square feet and that residual TPHd-impacted soil is generally at a depth below the base of the former excavation (greater than 10 ft). Additionally, closure was recommended based on the future use of the property as an area of Caltrans acquisition that would place the property beneath pavement. The SCDRM and San Francisco Bay Regional Water Quality Control Board (SFB-RWQCB) issued case closure in January 2008. Based on information presented in SCDRM case files and GeoTracker database, and the property location, this property presents a low risk for impacting the project ESA. A photograph of this facility is presented as Photo No. 12.

Moore Tractor Company, 4088 Russell Road (Map ID No. 3). The facility is currently a tractor sales and service facility located north the project ESA. According to SCDRM files, bulk automotive fluids stored at the property include a 500-gallon AST containing diesel fuel (noted as a 200-gallon diesel AST in the Baseline, 2007 report [Section 4.5]), engine oil, and waste oil. A 1993 SCDRM inspection report noted a cement sump associated with a wash rack at the property. Violations noted in inspection logs from the 1990s and early 2000s included insufficient container labeling, an overflowing sump, onsite automotive fluid spills, and improper drum storage practices. Based on information presented in SCDRM case files and the past operations at the property, this facility presents a low risk for impacting construction activities associated with the proposed improvement project. A photograph of this facility is presented as Photo No. 13.

Pacific Gas and Electric (PG&E) Electrical Substation, Hale Ranch Road (Map ID No. 5). The facility is a current PG&E electrical substation located within the project ESA. This facility was not identified as an active release site or associated with any regulatory remedial/investigative action. Based on the regulatory status, this facility has a low risk for impacting construction activities associated with the I-80/SR-12 Improvement Project. A photograph of this facility is presented as Photo No. 5.

5.3 Orphan Properties

The EDR *Orphan Summary* identifies properties that have incomplete address information and could not be specifically plotted. A total of 12 properties were listed in the *Orphan Summary*. Two of the properties listed on the *Orphan Summary* are located within or adjacent to the project ESA and include the following:

- EB I-80 at CHP Scales in Fairfield – a reported ERNS listing due to a spill of anhydrous ammonia from a truck onto the ground surface in 1993. The incident reportedly did not impact any waterways or require cleanup.

- Fairfield STP, located south of Highway 80 and Busch Lane, east of Abernathy – listed as a known or suspect abandoned, inactive or uncontrolled hazardous waste site, with no further remedial action planned. The site was reportedly archived in 1989.

Copies of the EDR *Orphan Summary* and individual EDR Site Reports for the listed facilities are presented in Appendix E.

undocumented USTs, septic systems and domestic/agricultural wells should be properly removed or abandoned in accordance with Solano County and State requirements.

Yellow thermoplastic and paint striping that is removed during planned roadway improvements may require special handling and disposal requirements unless combined with sufficient asphalt grindings per Caltrans Special Provisions. Asbestos-containing pipe and treated-wood may also be encountered during construction of the planned highway improvements. Any encountered asbestos-containing pipe or treated-wood waste will require proper handling and disposal in accordance with regulatory requirements.

A Caltrans ISA Checklist summarizing the findings, conclusions, and recommendations of this ISA is also included as Appendix F.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The results of the ISA indicate that further evaluation of conditions within the existing ROW and on private properties proposed for full or partial acquisition for the improvement projects is recommended. More specifically, private properties within the project ESA with known current and/or historical agricultural uses should be evaluated for potential soil impacts from pesticides, herbicides, petroleum hydrocarbons, and metals.

Prior to final design for the proposed eastbound I-80 Cordelia Truck Scale Relocation Project, additional environmental inquiry (parcel owner interviews/private parcel surveys/document disclosure) and preliminary site investigations, including soil and groundwater sampling where warranted, should be performed to further evaluate potential environmental impairments within the project boundaries. ADL at levels exceeding hazardous waste criteria have been identified in shallow soil along the unpaved shoulders and median within the existing eastbound I-80 ROW in portions of the project ESA. ADL studies should be performed at the SR-12 East corridor to determine lead levels in planned excavation areas and associated soil material management and disposal requirements. We further recommend that soil sampling be performed within existing Caltrans, and City or County ROW where soil excavation is planned adjacent to or downgradient from identified facilities with a moderate potential to impact the relocation project listed in Table 1. This work is recommended to evaluate management and disposal of potentially contaminated soil, and construction worker health and safety requirements. Based on information presented on the California Department of Conservation, DMG map reviewed for the general presence of ultramafic rock units and areas in California where naturally occurring asbestos is likely to be present, ultramafic rock units were not indicated at or in the vicinity of the Site.

Structures present within the existing Caltrans ROW (eastbound I-80 TIF) and those present on land proposed for full or partial Caltrans acquisition (residential and associated structures present on Solano County APN 0027-27-2080 and 0027-25-2080 properties) may contain suspect ACMs and potential LCP. We conducted an ACM and LCP survey of the eastbound I-80 TIF, which is discussed under separate cover. ACM and LCP surveys must also be conducted at other buildings proposed for demolition to satisfy BAAQMD requirements (asbestos) and demolition waste disposal characterization (asbestos and lead).

A sewage holding tank/settling tank is reportedly located at the eastbound I-80 TIF, and is connected to a pump station at the westbound I-80 TIF. These structures, their contents, and any other subsurface utilities present in the proposed project area, will need to be removed and disposed in accordance with local and state requirements. The results of the site reconnaissances, historical and regulatory file research, and prior field investigations have not indicated the potential presence of abandoned USTs within the existing Caltrans ROW. However, other undocumented USTs associated with former and existing residential and agricultural properties may exist within the project ESA. Where encountered,

7.0 REFERENCES

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Baseline Environmental Consulting, *Updated Phase I Environmental Site Assessment/Initial Site Assessment, North Connector Project, Solano County, California*, December 17, 2007 (Baseline, 2007).

California Department of Conservation, Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos*, August 2000.

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Solano County Department of Resource Management, *various files*.

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United States Geological Survey, *Fairfield South and Cordelia, California 7.5-minute topographic maps*, 1961 (photorevised 1980).

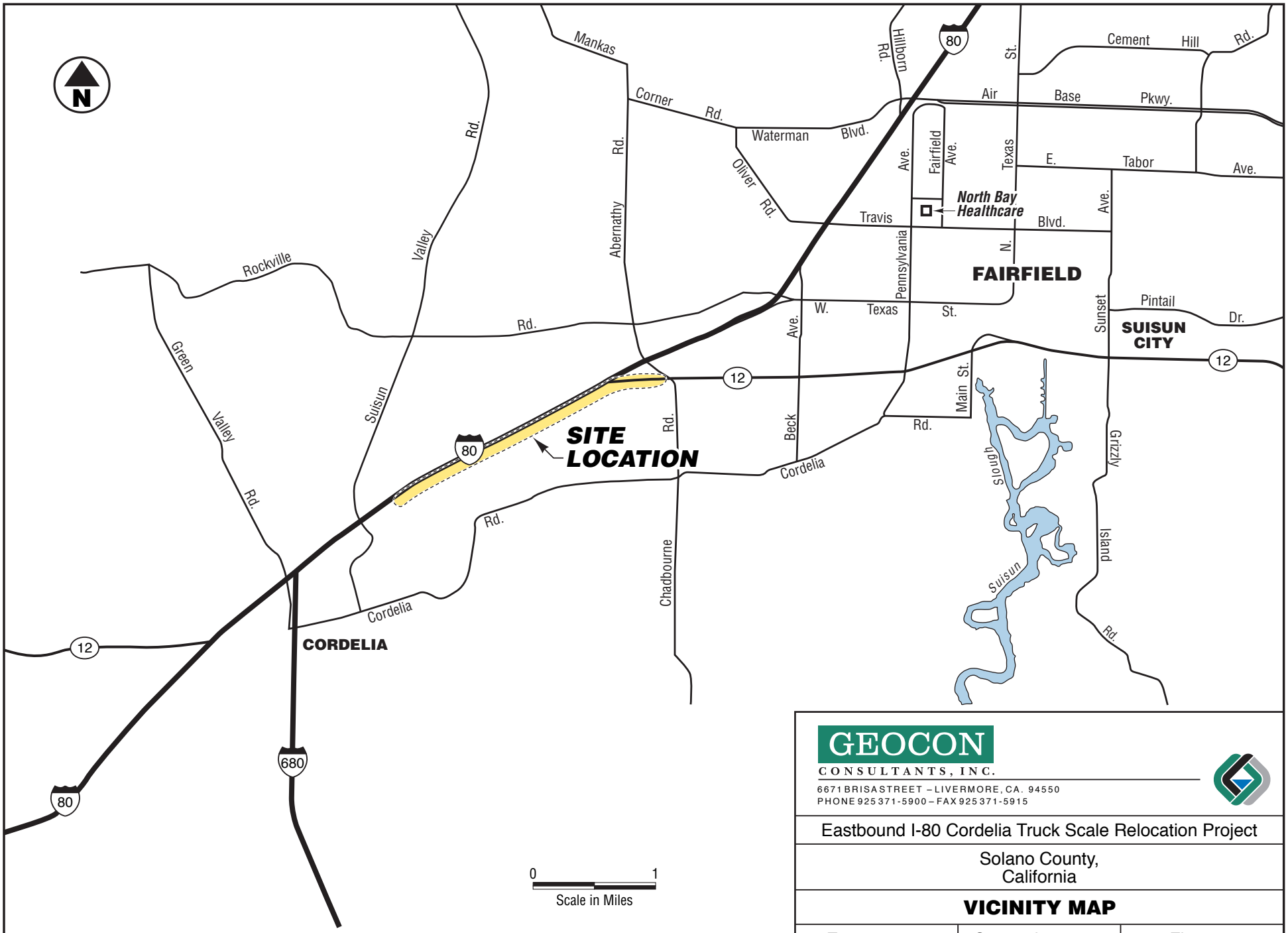
United States Geological Survey, *Geologic Map of the San Francisco Bay Region,*2006.

TABLE 1
SUMMARY OF IDENTIFIED POTENTIAL HAZARDOUS WASTE FACILITIES AND RECOMMENDATIONS
EASTBOUND I-80 CORDELIA TRUCK SCALE RELOCATION PROJECT

Map ID No.	Facility	Address	Solano County APN	Potential Impact to ROW and Acquisitions	Information Source(s)	Known and/or Potential Environmental Impacts	Regulatory Status	Potential Impact to Eastbound I-80 Cordelia Truck Scale Relocation Project and Recommendations
1	**I-80 Eastbound Truck Inspection Facility**	**Existing ROW in western portion of project ESA**	**NA**	**Moderate Impact to Existing I-80 ROW**	**Recon**	**Existing structures to be removed.**	**NA**	**Asbestos and lead-containing paint surveys should be conducted at the TIF prior to any planned renovation or demolition to evaluate worker health & safety, abatement and waste disposal options and comply with applicable regulations, including Bay Area Air Quality Management District requirements. Subsurface structures, including sewage holding tanks, should be removed and disposed in accordance with State and County requirements.**
2	Former Old Fruit Bowl Mobil Station (Valine Ranch Property)	4000 Russell Road	0027-27-1060	Low Impact to ESA	SCDRM Files LUST	The property is a former service station (operated from 1946 to 1972) located west of and adjacent to I-80 north of the project ESA. Five USTs removed in 2000 under observation by SCDRM. Onsite petroleum impacts to soil and groundwater identified. Impacted soil over-excavated and stockpiled for onsite remediation and groundwater pumped for offsite disposal. Residual petroleum impacted soil stockpile remains onsite.	SCDRM and SFRWQCB approved case closure in January 2008.	This facility is located north of I-80 WB and presents a low risk of impacting the project Site, as petroleum-impacted soil has been excavated and is stockpiled onsite. According to the closure document, stockpiled soil is to be reused onsite as existing road base or disposed.
3	Moore Tractor Company	4088 Russell Road	0027-51-0040	Low Impact to ESA	Recon Prior Phase I SCDRM Files	Currently an operating tractor sales and service facility. SCDRM inspections reported bulk automotive fluids stored at the property including a 500-gallon diesel fuel AST (noted as a 200-gallon diesel AST in a Baseline, 2007 report [Section 4.5]), engine oil, and waste oil. A cement sump associated with a wash rack was also noted. Past SCDRM violations have included an overflowing sump, onsite automotive fluid spills, and improper drum storage.	No pending regulatory action or active violations are noted for this facility.	This facility is located southwest of the I-80/SR-12 East interchange and north of the project ESA. The facility presents a low risk of impacting the project Site based on proposed construction area boundaries.
4	Concrete Pipe Distributors	4974 Abernathy Road	0027-51-0070	Low Impact to ESA	Recon Prior Phase I	Currently a concrete pipe distributor. A prior UST was reportedly removed in approximately 1985. No SCDRM information regarding the removal. 55-gallon drums from the adjacent Moore Tractor Co. were observed stored at the facility in 1994.	No pending regulatory action or active violations are noted for this facility.	This facility is located north of I-80 EB and presents a low risk of impacting the project Site based on proposed construction area boundaries.
5	Pacific Gas & Electric substation	South of the I-80/SR-12 East interchange	0027-25-2080	Low Impact to ESA	Recon	Active PG&E electrical substation with fluid-cooled pad-mounted transformers. Possible polychlorinated biphenyl (PCB) compound impacts to soil at the facility.	No pending regulatory action or active violations are noted for this facility.	This facility is located south of I-80 EB, in the central portion of the project ESA, and presents a low risk of impacting the project Site based on proposed construction area boundaries.
NA	**I-80/SR-12 East**	**ROW Acquisition**	**0027-26-0120, 0027-27-2080, 0027-27-2140, 0027-27-2180, 0027-27-2160, 0027-25-2080**	**Moderate Impact to New ROW**	**Recon**	**Properties with Solano County APNs 0027-26-0120, 0027-27-2080, 0027-27-2140, 0027-27-2180, 0027-27-2160, and 0027-25-2080 appear to be either currently or formerly used for agricultural purposes and residual agricultural chemicals may be present in shallow soils at these properties.**	**NA**	**Properties with current or historical agricultural land use may contain residual agricultural chemicals in shallow soil. Conduct soil and groundwater investigations for pesticides, herbicides, petroleum hydrocarbons, and metals, as applicable, on land proposed for full or partial acquisition based on past agricultural land usage to evaluate soil reuse and soil/groundwater disposal options.**
NA	**I-80/SR-12 East**	**ROW Acquisition**	**0027-27-2080 and 027-25-2080**	**Moderate Impact to New ROW**	**Recon**	**Residential and associated structures present on parcels proposed for acquisition with Solano County APNs 0027-27-2080 and 0027-25-2080 may contain suspect ACMs and potential LCP.**	**NA**	**Asbestos and lead-containing paint surveys should be conducted prior to any planned renovation or demolition of buildings either within the Caltrans ROW or on properties proposed for full or partial takes to evaluate worker health & safety, abatement and waste disposal options and comply with applicable regulations, including Bay Area Air Quality Management District requirements.**
NA	**I-80/SR-12 East**	**Existing Corridors**	**NA**	**Existing I-80/ SR-12 East ROW**	**Recon Prior Nearby ADL Study**	**Planned excavation and grading within existing ROW**	**NA**	**Perform shallow soil sampling to evaluate potential ADL in soil for worker health & safety and soil disposal options related to historical automobile exhaust emissions.**
NA	**I-80/SR-12 East**	**Existing Corridors**	**NA**	**Existing I-80/ SR-12 East ROW**	**Recon**	**Planned excavation and pavement work within existing ROW**	**NA**	**Further evaluate potential hazardous waste issues or provide construction special provisions for thermoplastic traffic paint, asbestos pipe, and proper abandonment of wells, septic systems, and encountered unidentified USTs.**

Properties and locations listed in **BOLD** print have a moderate risk of impacting the project ESA and are recommended for further evaluation.

Notes: ESA – Environmental Study Area
UST – Underground Storage Tank
AST – Aboveground Storage Tank
I – Interstate
EB – Eastbound
SCDRM – Solano County Department of Resource Management
SFBRWQCB – San Francisco Bay Regional Water Quality Control Board
LUST – Leaking UST
TIF – Truck Inspection Facility
WB - Westbound
NA – Not Applicable
ROW – Right-of-way
ADL – Aerially Deposited Lead
SR – State Route



GEOCON
CONSULTANTS, INC.
6671 BRISA STREET – LIVERMORE, CA. 94550
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Eastbound I-80 Cordelia Truck Scale Relocation Project

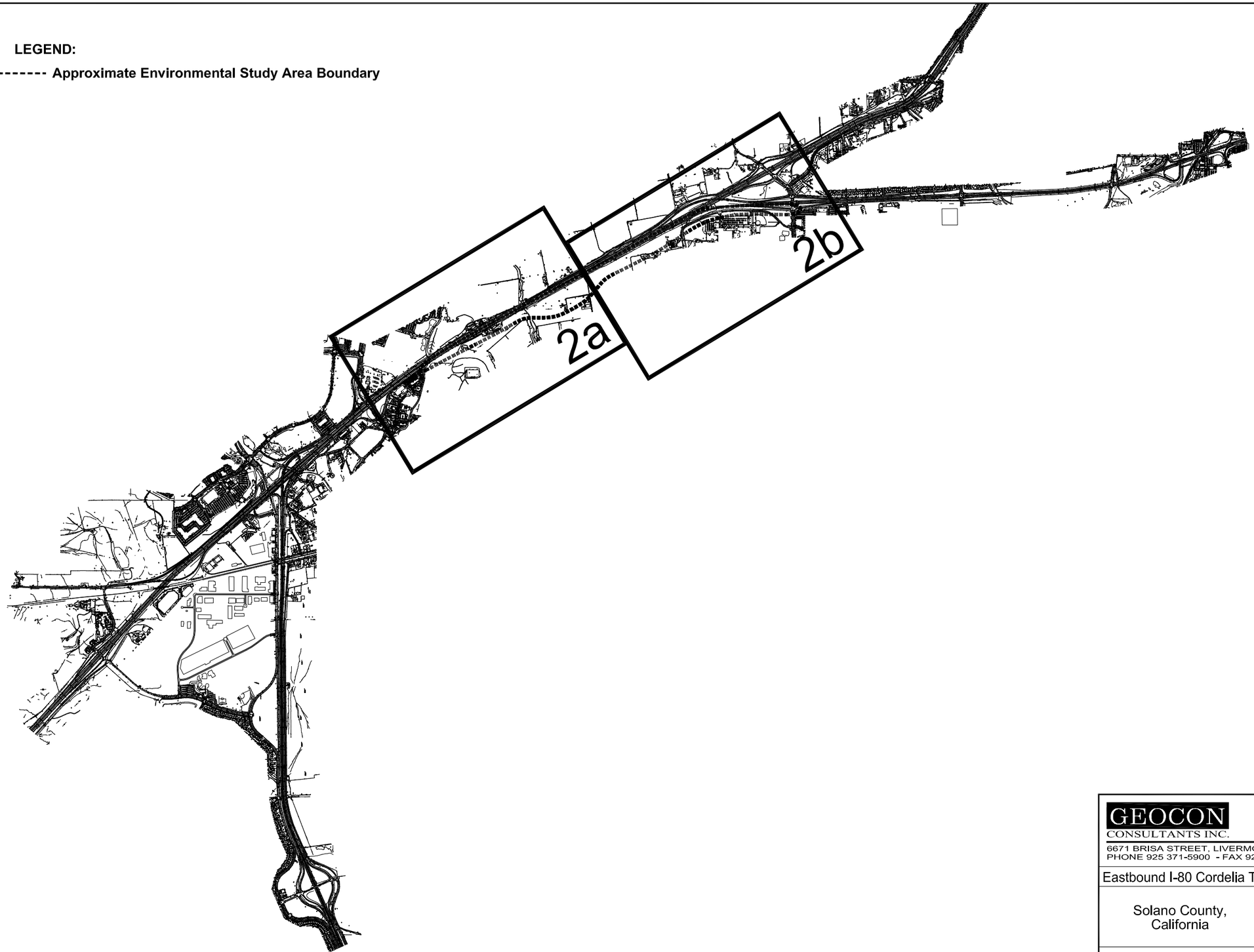
Solano County, California

VICINITY MAP

E8128-06-03	September 2008	Figure 1

LEGEND:

---------- **Approximate Environmental Study Area Boundary**



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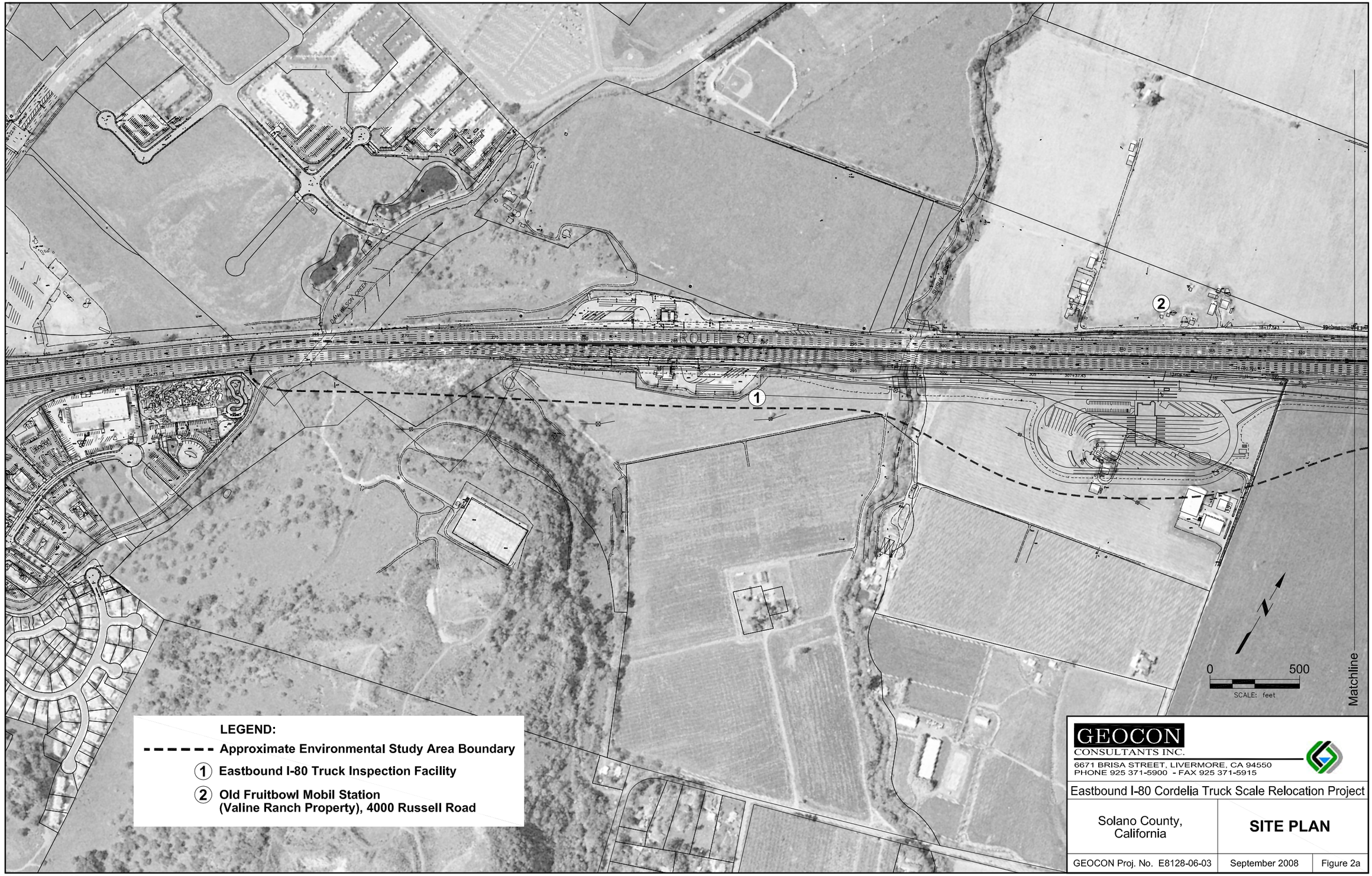
Eastbound I-80 Cordelia Truck Scale Relocation Project

Solano County, California

SITE PLAN

GEOCON Proj. No. E8128-06-03 | September 2008 | Figure 2

PRMAGeocon0508.DWG



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Eastbound I-80 Cordelia Truck Scale Relocation Project

Solano County, California

SITE PLAN

GEOCON Proj. No. E8128-06-03 | September 2008 | Figure 2a

PRMAGeocon0508.DWG

Matchline

0 500
SCALE: feet

LEGEND:

- **Approximate Environmental Study Area Boundary**
- **(3) Moore Tractor Company, 4088 Russell Road**
- **(4) Concrete Pipe Distributors, 4974 Abernathy Road**
- **(5) PG&E Substation, Hale Ranch Road**

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Eastbound I-80 Cordelia Truck Scale Relocation Project

Solano County, California

SITE PLAN

GEOCON Proj. No. E8128-06-03 | September 2008 | Figure 2b

PRMAGeocon0508.DWG

Photo 1 – Scales at eastbound I-80 TIF viewed from the south.

Photo 2 – Four-bay metal-framed inspection structure at TIF, viewed from the south.

Photo 3 – Drainage ditch located along southern boundary of the TIF, viewed from the north.

Photo 4 – Agricultural land at 3999 Hale Ranch Road, viewed from the east.

Photo 5 – PG&E Substation located on west side of Hale Ranch Road.

Photo 6 – Residence on Hale Ranch Road, directly south of eastbound I-80.

Photo 7 – Eastbound I-80 and SR-12 overcrossing on ramp to westbound I-80.

Photo 8 – Chadbourne Road off ramp from SR-12 East viewed from the east.

Photo 9 – Chadbourne Road and SR-12 overcrossing, viewed from the south.

Photo 10 – Eastbound I-80 at the western end of the Site, viewed from the west.

Photo 11 – Eastbound I-80 and the SR-12 Interchange, viewed from the west.

Photo 12 – Former Old Fruit Bowl Mobil Station (Valine Ranch Property) at 4000 Russell Road (Map ID No. 2)

Photo 13 – Moore Tractor at 4088 Russell Road, viewed from the southwest (Map ID No. 3).

Photo 14 –Concrete Pipe Distributors at 4974 Abernathy Road, viewed from the southwest (Map ID No. 4).

APPENDIX A

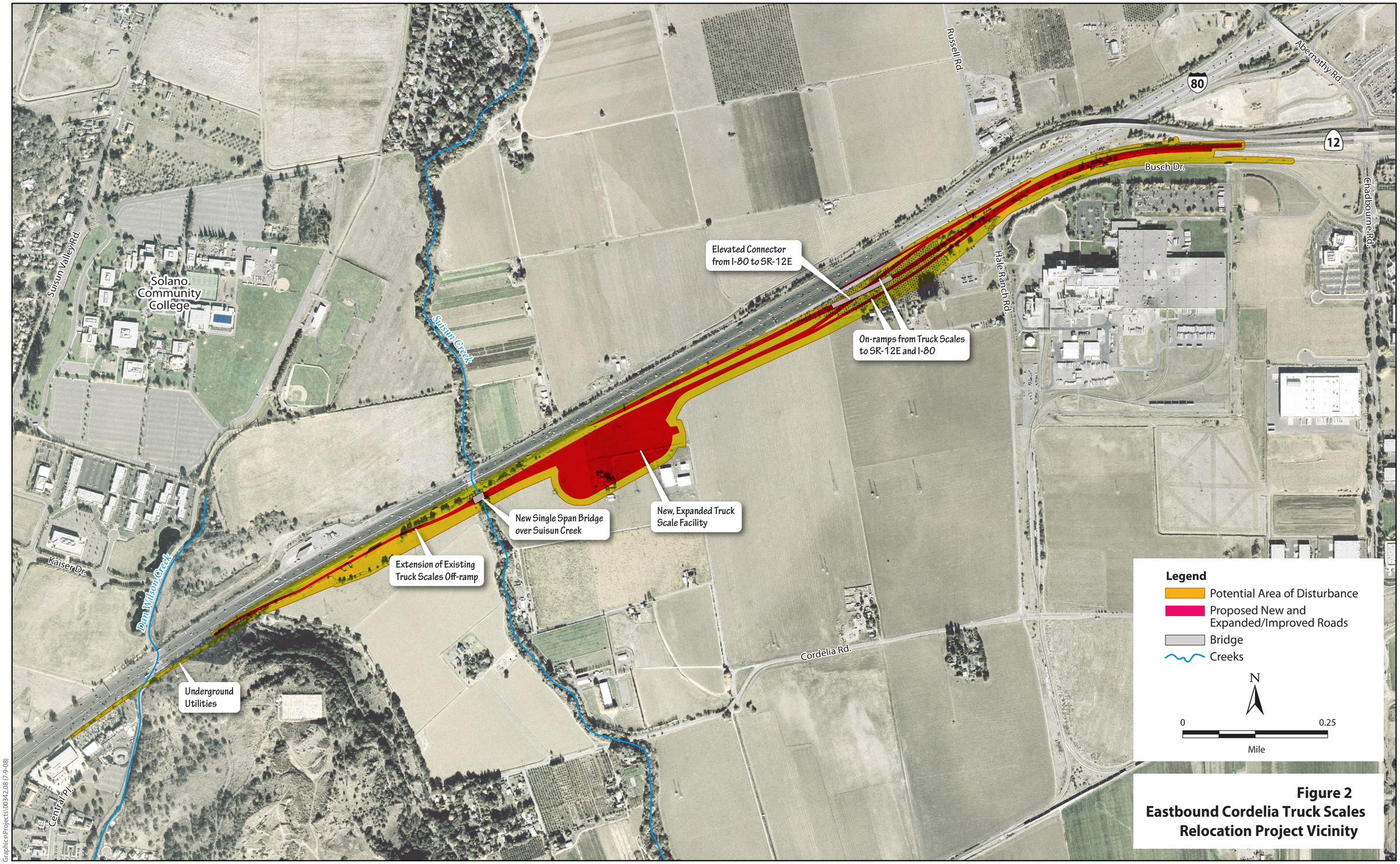
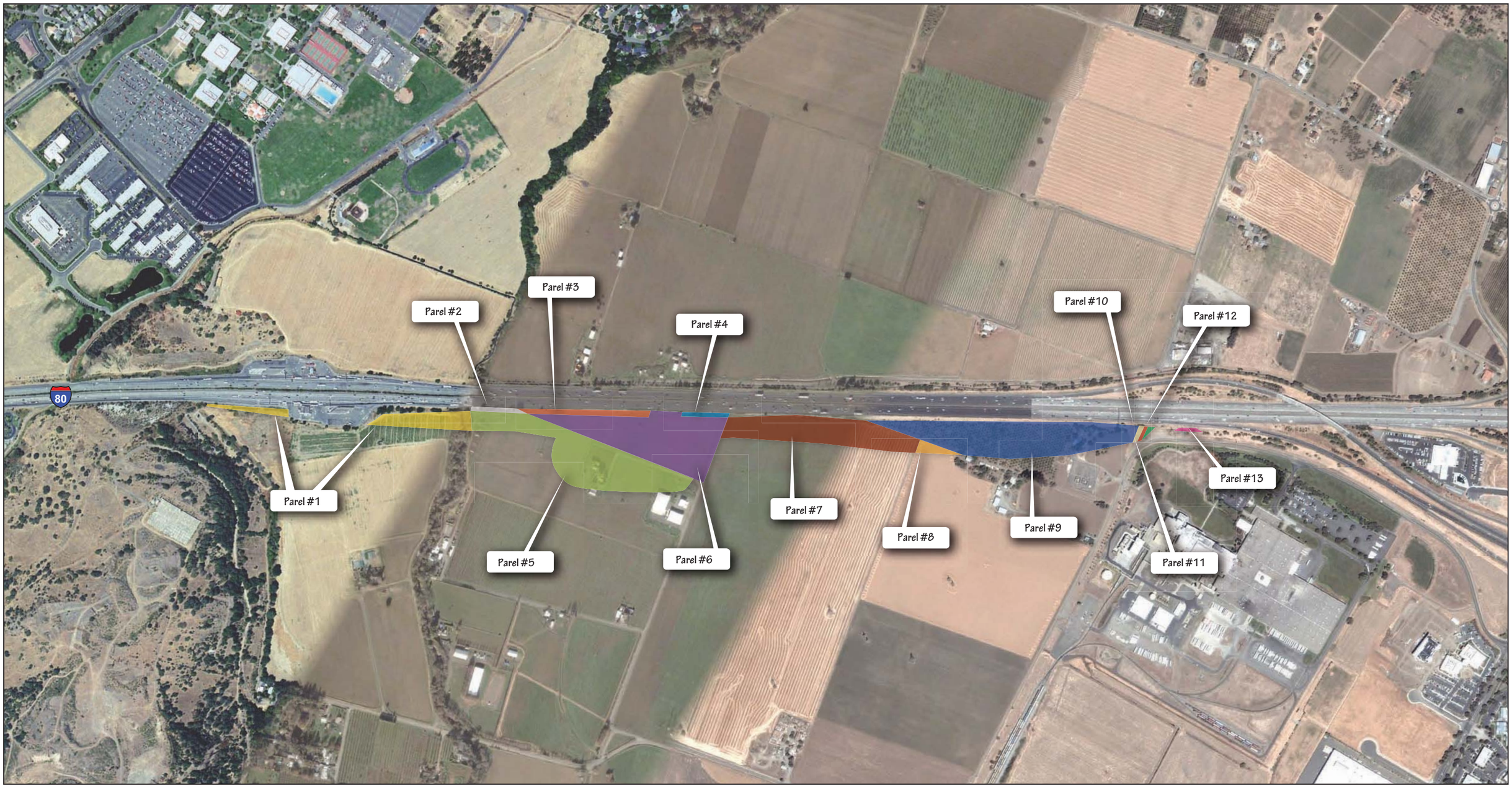


Figure 2
Eastbound Cordelia Truck Scales Relocation Project Vicinity

Graphics\Projects\00342.08 (7-9-08)

APPENDIX B



Legend

- Parcel 1: 142,035 sf
- Parcel 2: 10,584 sf
- Parcel 3: 48,381 sf
- Parcel 4: 16,749 sf
- Parcel 5: 417,002 sf
- Parcel 6: 439,492 sf
- Parcel 7: 272,045 sf
- Parcel 8: 22,619 sf
- Parcel 9: 446,374 sf
- Parcel 10: 4,849 sf
- Parcel 11: 3,454 sf
- Parcel 12: 3,316 sf
- Parcel 13: 5,398 sf

NOT TO SCALE

CirclePoint®
The *whole* view.

Figure 4-1
Property to Be Aquired for the Project

Source: Google Earth, 2008; CirclePoint, 2008

population of the community.

- The low-income or minority population is more than 10 percentage points higher than the City or County average.

The demographic make up of the Project area does not meet either of these criteria. As a result environmental justice consideration are not discussed further in this report.

4.0 IMPACTS AND MITIGATION

4.1 LAND USE IMPACTS

4.1.1 Existing Development

The project would impact primarily agricultural lands and undeveloped lands all located within Solano County. The following table lists the parcels that would be impacted by the project. The parcels are listed in order from west to east and correspond to Figure 4-1.

Table 4-1: Property Acquisition and Displacements for the Project

Parcel Number[7]	APN[8]	Existing Use	Partial or Full Acquisition	Displacement	Area to be acquired for the Project (square feet)
1	0027-26-0120	Agricultural	Partial	No	142,305 (3.3 acres)
2	0027-27-2070	Undeveloped land	Full	No	10,584 (0.2 acres)
3	0027-27-2130	Undeveloped land	Full	No	48,381 (1.1 acres)
4	0027-27-2120	Undeveloped land	Full	No	16,749 (0.4 acres)
5	0027-27-2080	Agricultural/Fairwind Farms	Partial	Yes. One residence and associated buildings.	417,002 (9.6 acres)
6	0027-27-2140	Agricultural[9]	Full	No	439,492 (10.1 acres)
7	0027-27-2180	Agricultural	Partial	No	272,045 (6.2 acres)

[7] Corresponds to Figure 4-1

[8] APN = Assessor Parcel Number

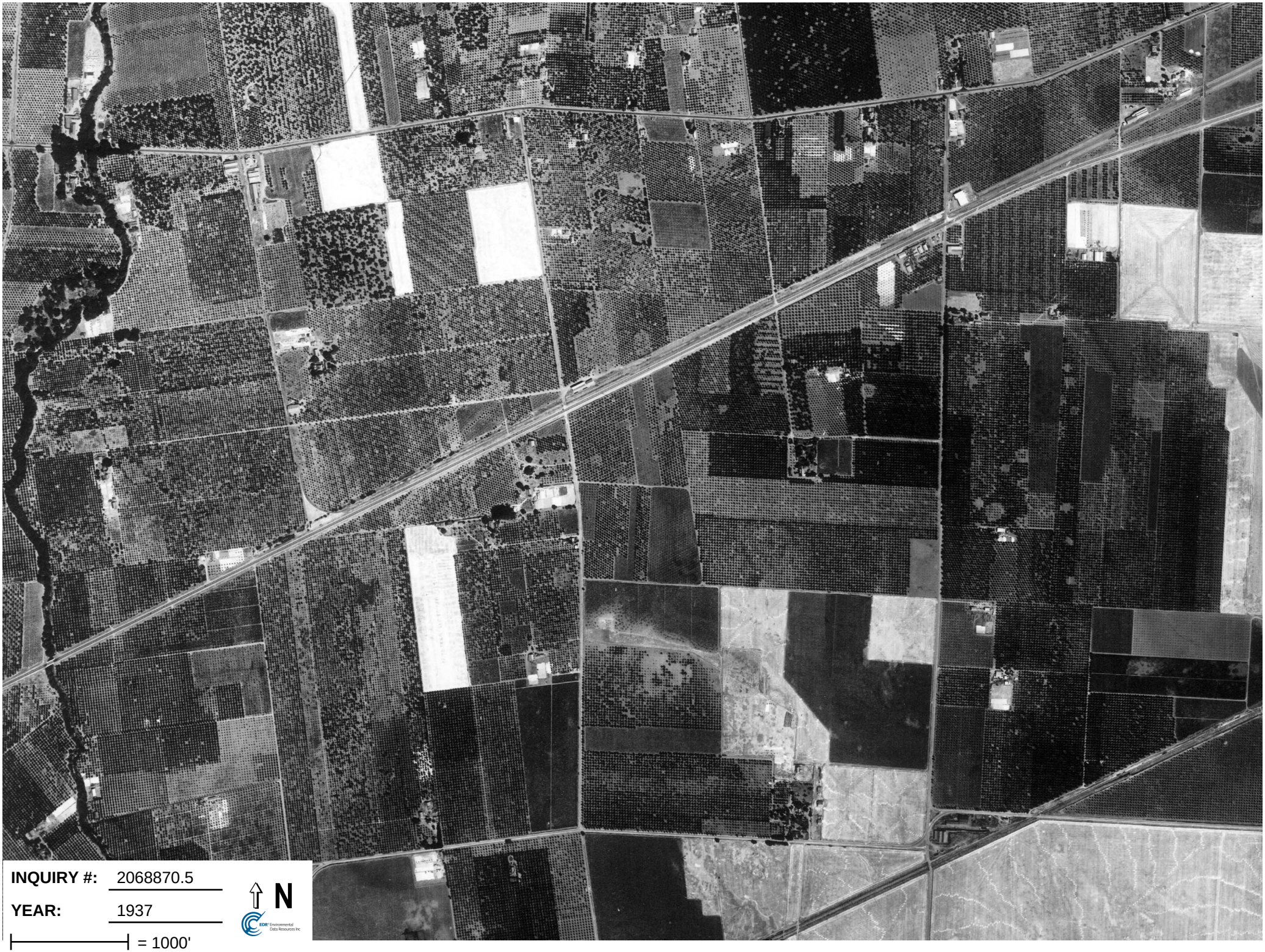
[9] An agricultural conservation easement held by the Solano Land Trust

8	0027-27-2160	Agricultural	Partial	No	22,619 (0.5 acres)
9	0027-25-2080	Agricultural/residence/ substation	Partial	Yes. One residence and associated buildings	446,374 (10.2 acres)
10	0027-25-2090	Undeveloped land	Full	No	4,849 (0.1 acres)
11	0027-25-2100	Undeveloped land	Full	No	3,454 (0.1 acres)
12	0027-25-2110	Undeveloped land	Full	No	3,316 (0.1 acres)
13	0028-20-0560	Undeveloped land	Full	No	5,396 (0.1 acres)

Several small parcels of undeveloped land would be acquired and used for the project as well as portions of several larger agricultural parcels. The project would require the demolition of two existing residences and several associated buildings (barns, sheds, etc.). On residence located on parcel number 5 (APN 0027-27-2080) would be displaced to accommodate the new truck scales facility. The other residence located on parcel number 9 (APN 0027-25-2080) would be displaced to accommodate the braided on-ramps to I-80 and eastbound State Route 12.

It does not appear that access to any parcels in the project area would be severed by the project. All parcels for which only a portion of the parcel would be impacted by the project (listed as Partial acquisitions in Table 4-1) are currently in agricultural use and would appear to be able to remain in agricultural production with the exception of parcel number 9 (APN 0027-25-2080). The majority of this parcel that is currently in agricultural production would be impacted by the project for the braided on-ramps to I-80 and eastbound State Route 12. The remaining portion of this parcel contains an electrical substation which would not be impacted by the project.

APPENDIX C



INQUIRY #: 2068870.5

YEAR: 1937

= 1000'

N

EDR Environmental Data Resources Inc

INQUIRY #: 2068870.5

YEAR: 1937

= 1000'

N

EDR Environmental Data Resources Inc

INQUIRY #: 2068870.5
YEAR: 1957
= 1000'
N
EDR Environmental Data Resources Inc

INQUIRY #: 2068870.5
YEAR: 1957
= 1000'
N
EDR Environmental Data Resources Inc

INQUIRY #: 2068870.5
YEAR: 1965
= 750'
N
EDR Environmental Data Resources Inc

INQUIRY #: 2068870.5

YEAR: 1965

N

= 750'

INQUIRY #: 2068870.5

YEAR: 1970

= 1000'

N

EDR Environmental Data Resources Inc

INQUIRY #: 2068870.5

YEAR: 1970

= 1000'

N

EDR Environmental Data Resources Inc

INQUIRY #: 2068870.5
YEAR: 1982
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EDR Environmental Data Resources Inc

INQUIRY #: 2068870.5
YEAR: 1982
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INQUIRY #: 2068870.5

YEAR: 1993

N

= 1000'

INQUIRY #: 2068870.5
YEAR: 1993
= 1000'
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EDR Environmental Data Resources Inc

INQUIRY #: 2068870.5
YEAR: 1998
= 1000'
N
EDR Environmental Data Resources Inc

INQUIRY #: 2068870.5

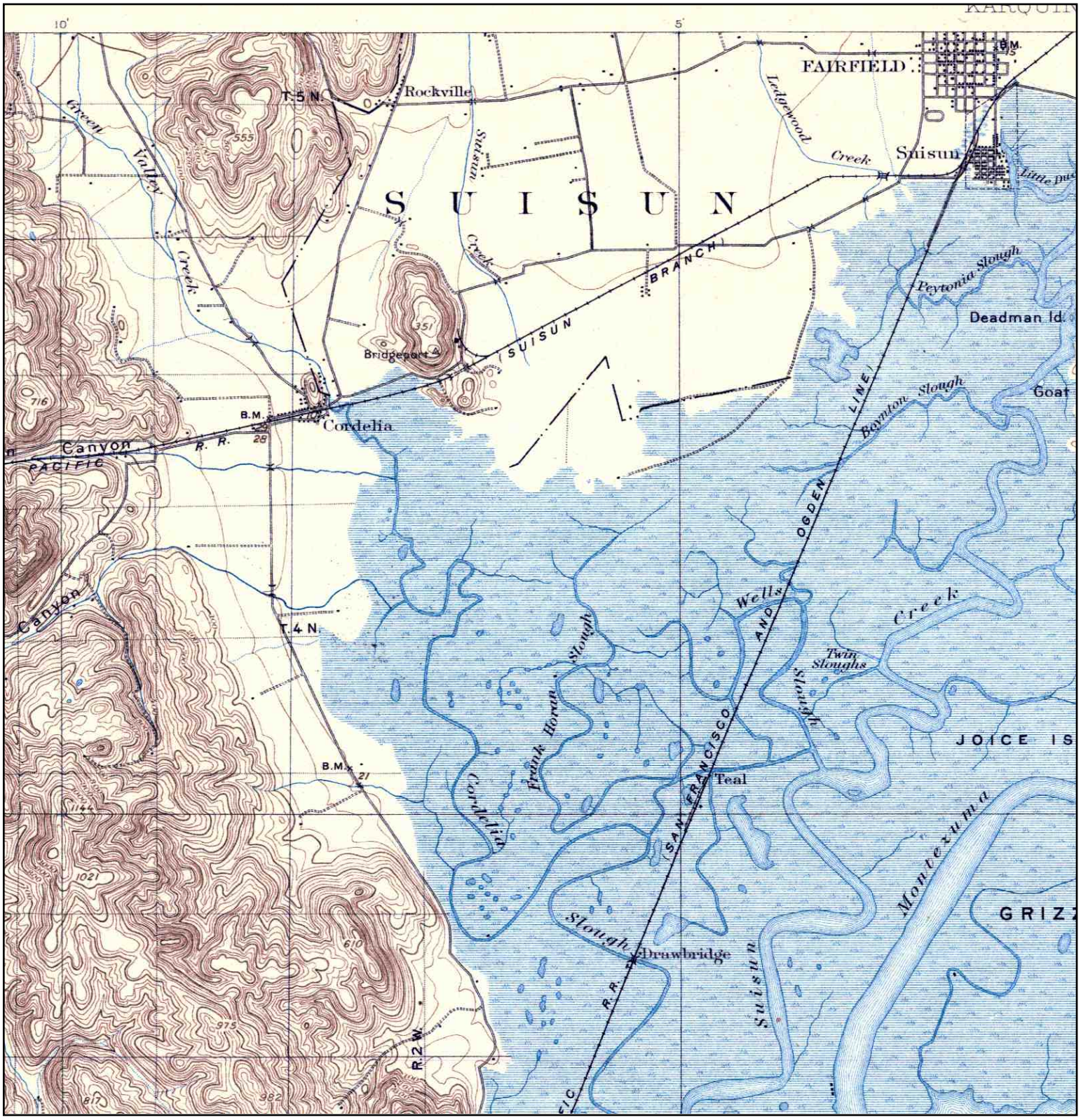
YEAR: 1998

N

= 1000'

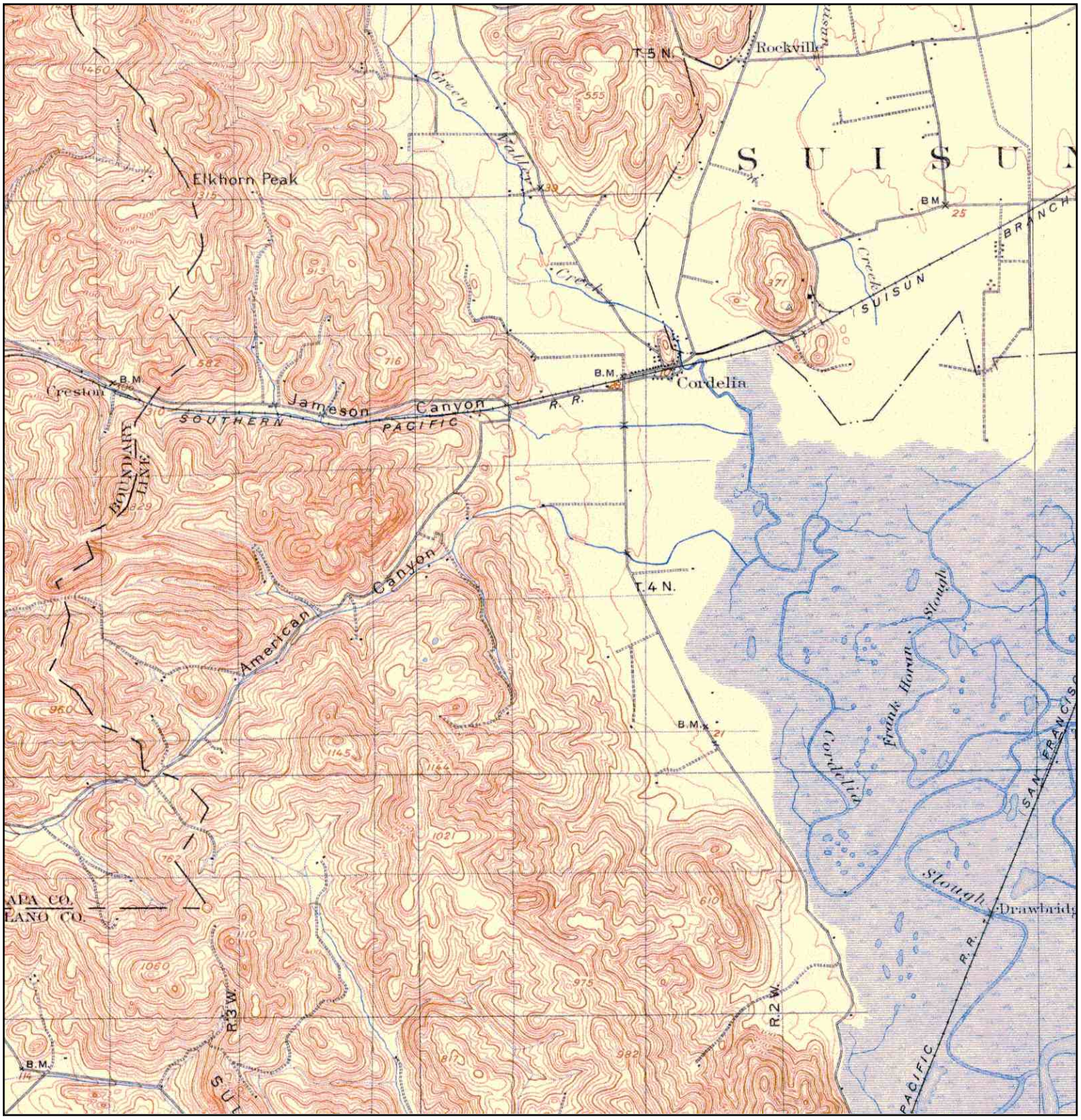
APPENDIX D

Historical Topographic Map



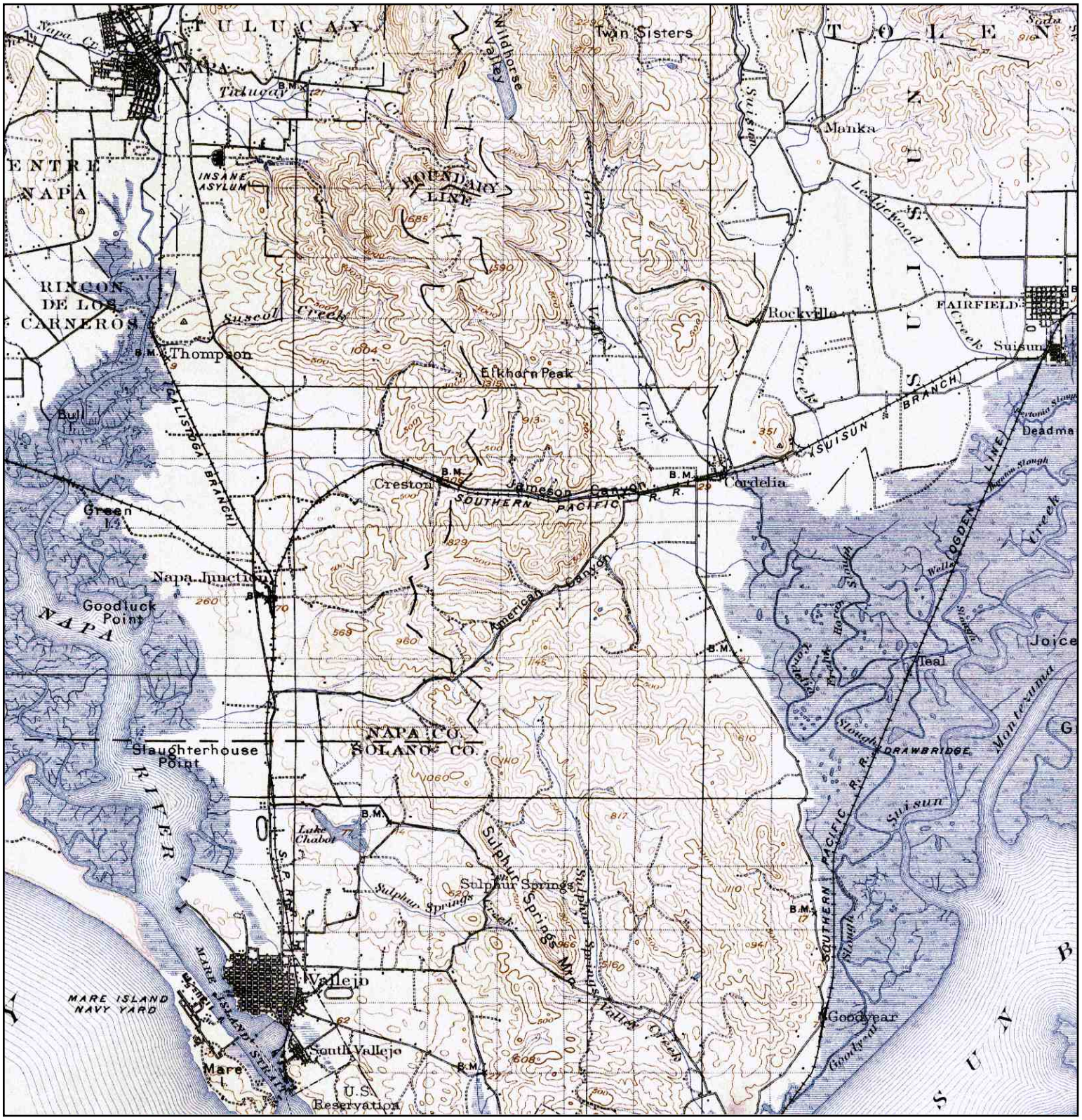
N	TARGET QUAD NAME: KARQUINES MAP YEAR: 1898 SERIES: 15 SCALE: 1:62500	SITE NAME: I-80/680/12 ADDRESS: I-80/680/12 Cordelia, CA 94534 LAT/LONG: 38.2321 / 122.11	CLIENT: GeoCon Environmental Cons. CONTACT: Chris Giuntoli INQUIRY#: 2068870.4 RESEARCH DATE: 11/05/2007

Historical Topographic Map



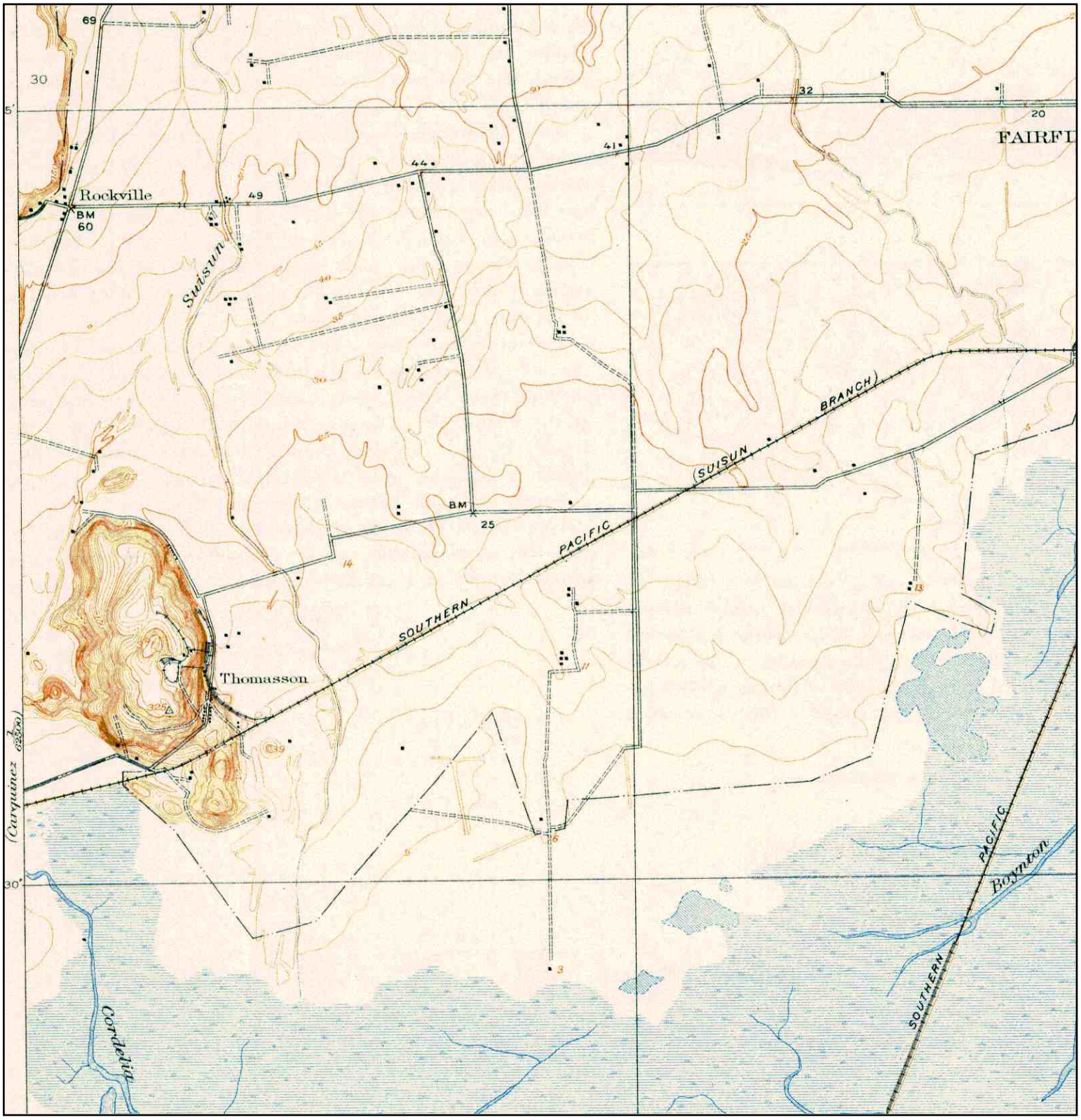
N	TARGET QUAD NAME: CARQUINEZ MAP YEAR: 1901 SERIES: 15 SCALE: 1:62500	SITE NAME: I-80/680/12 ADDRESS: I-80/680/12 Cordelia, CA 94534 LAT/LONG: 38.2321 / 122.11	CLIENT: GeoCon Environmental Cons. CONTACT: Chris Giuntoli INQUIRY#: 2068870.4 RESEARCH DATE: 11/05/2007

Historical Topographic Map



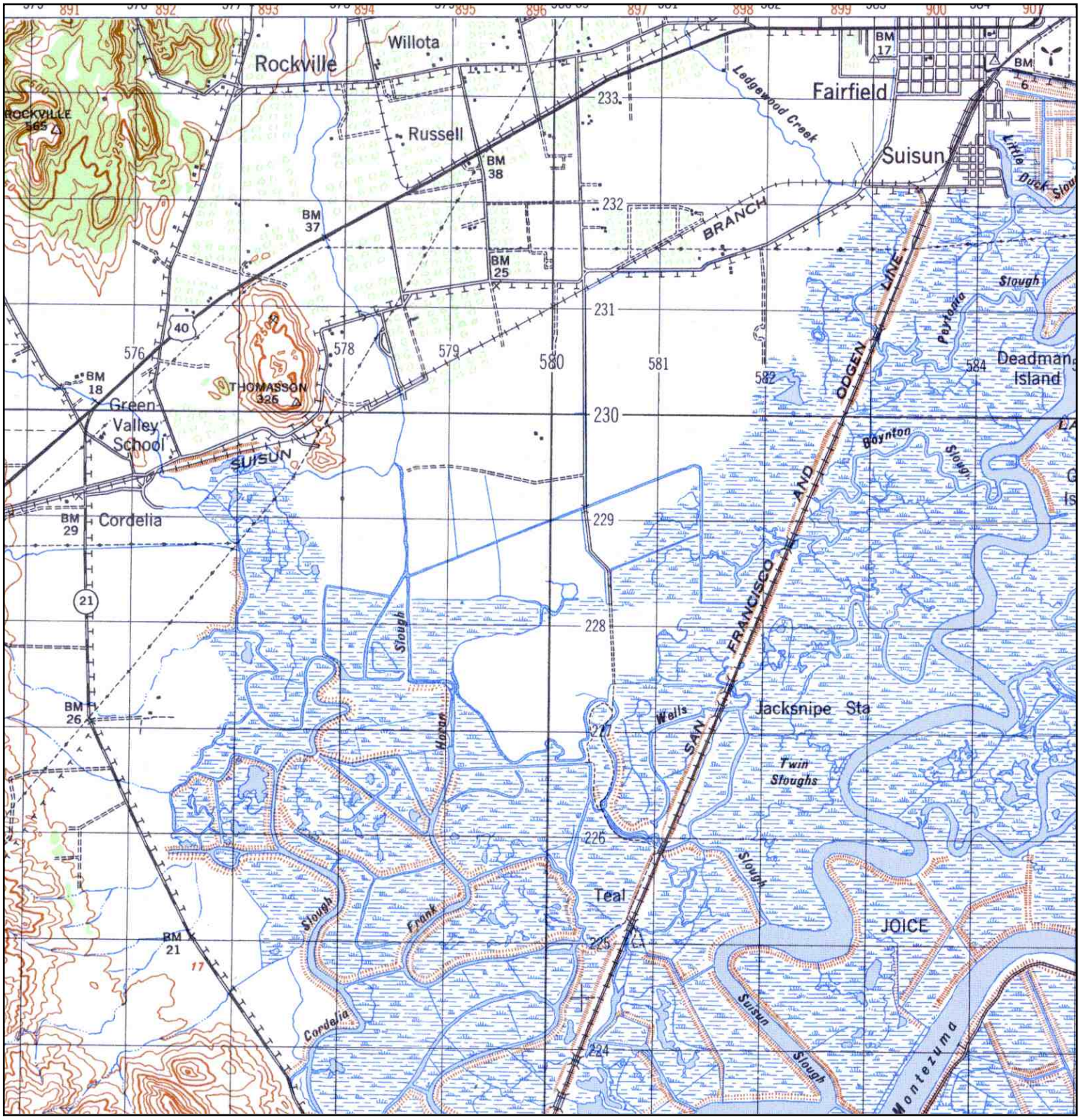
N	TARGET QUAD NAME: NAPA MAP YEAR: 1902 SERIES: 30 SCALE: 1:125000	SITE NAME: I-80/680/12 ADDRESS: I-80/680/12 Cordelia, CA 94534 LAT/LONG: 38.2321 / 122.11	CLIENT: GeoCon Environmental Cons. CONTACT: Chris Giuntoli INQUIRY#: 2068870.4 RESEARCH DATE: 11/05/2007

Historical Topographic Map



N	TARGET QUAD NAME: SUISUN MAP YEAR: 1918 SERIES: 7.5 SCALE: 1:31680	SITE NAME: I-80/680/12 ADDRESS: I-80/680/12 Cordelia, CA 94534 LAT/LONG: 38.2321 / 122.11	CLIENT: GeoCon Environmental Cons. CONTACT: Chris Giuntoli INQUIRY#: 2068870.4 RESEARCH DATE: 11/05/2007

Historical Topographic Map

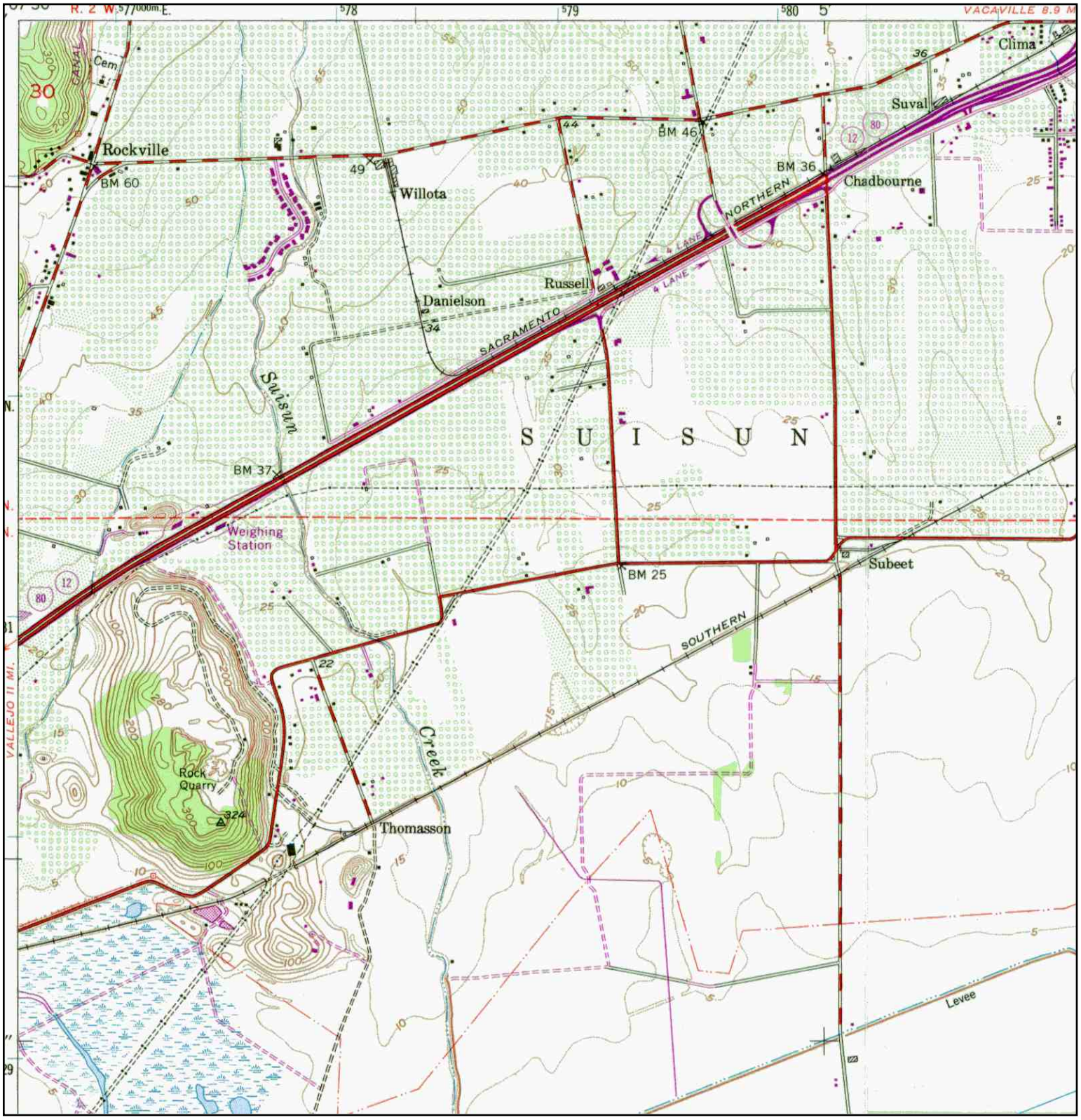


N	TARGET QUAD NAME: PORT CHICAGO MAP YEAR: 1947 SERIES: 15 SCALE: 1:50000	SITE NAME: I-80/680/12 ADDRESS: I-80/680/12 Cordelia, CA 94534 LAT/LONG: 38.2321 / 122.11	CLIENT: GeoCon Environmental Cons. CONTACT: Chris Giuntoli INQUIRY#: 2068870.4 RESEARCH DATE: 11/05/2007

Historical Topographic Map

N	TARGET QUAD NAME: FAIRFIELD SOUTH MAP YEAR: 1950 SERIES: 7.5 SCALE: 1:24000	SITE NAME: I-80/680/12 ADDRESS: I-80/680/12 Cordelia, CA 94534 LAT/LONG: 38.2321 / 122.11	CLIENT: GeoCon Environmental Cons. CONTACT: Chris Giuntoli INQUIRY#: 2068870.4 RESEARCH DATE: 11/05/2007

Historical Topographic Map



N	TARGET QUAD NAME: FAIRFIELD SOUTH MAP YEAR: 1968 PHOTOREVISED FROM:1949 SERIES: 7.5 SCALE: 1:24000	SITE NAME: I-80/680/12 ADDRESS: I-80/680/12 Cordelia, CA 94534 LAT/LONG: 38.2321 / 122.11	CLIENT: GeoCon Environmental Cons. CONTACT: Chris Giuntoli INQUIRY#: 2068870.4 RESEARCH DATE: 11/05/2007

Historical Topographic Map

N	TARGET QUAD NAME: FAIRFIELD SOUTH MAP YEAR: 1980 PHOTOREVISED FROM:1949 SERIES: 7.5 SCALE: 1:24000	SITE NAME: I-80/680/12 ADDRESS: I-80/680/12 Cordelia, CA 94534 LAT/LONG: 38.2321 / 122.11	CLIENT: GeoCon Environmental Cons. CONTACT: Chris Giuntoli INQUIRY#: 2068870.4 RESEARCH DATE: 11/05/2007

APPENDIX E

EDR DataMap® Area Study

Eastbound I-80 CT SR Project
Rockville, CA 94534

April 14, 2008

Inquiry number 02193429.1r

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

ROCKVILLE, CA 94534
ROCKVILLE, CA 94534

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records within the requested search area for the following databases:

FEDERAL RECORDS

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
Delisted NPL	National Priority List Deletions
NPL LIENS	Federal Superfund Liens
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
LIENS 2	CERCLA Lien Information
CORRACTS	Corrective Action Report
RCRA-TSDF	RCRA - Transporters, Storage and Disposal
RCRA-LQG	RCRA - Large Quantity Generators
RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generator
RCRA-NonGen	RCRA - Non Generators
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROL	Sites with Institutional Controls
HMIRS	Hazardous Materials Information Reporting System
DOT OPS	Incident and Accident Data
US CDL	Clandestine Drug Labs
US BROWNFIELDS	A Listing of Brownfields Sites
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
LUCIS	Land Use Control Information System
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
ODI	Open Dump Inventory
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
MINES	Mines Master Index File
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System

RADINFO Radiation Information Database
RAATS RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

CA BOND EXP. PLAN Bond Expenditure Plan
SCH School Property Evaluation Program
Toxic Pits Toxic Pits Cleanup Act Sites
SWF/LF Solid Waste Information System
WMUDS/SWAT Waste Management Unit Database
SWRCY Recycler Database
SLIC Statewide SLIC Cases
HIST UST Hazardous Substance Storage Container Database
LIENS Environmental Liens Listing
CHMIRS California Hazardous Material Incident Report System
Notify 65 Proposition 65 Records
VCP Voluntary Cleanup Program Properties
DRYCLEANERS Cleaner Facilities
WIP Well Investigation Program Case List
CDL Clandestine Drug Labs
HAULERS Registered Waste Tire Haulers Listing

TRIBAL RECORDS

INDIAN RESERV Indian Reservations
INDIAN ODI Report on the Status of Open Dumps on Indian Lands
INDIAN LUST Leaking Underground Storage Tanks on Indian Land
INDIAN UST Underground Storage Tanks on Indian Land

EDR PROPRIETARY RECORDS

Manufactured Gas Plants EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL RECORDS

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 09/11/2007 has revealed that there is 1

RCRA-SQG site within the searched area.

Site	Address	Map ID	Page
ANHEUSER-BUSCH INC	***3101 BUSCH DR***	***5***	***12***

ERNS: The Emergency Response Notification System records and stores information on reported releases of oil and hazardous substances. The source of this database is the U.S. EPA.

A review of the ERNS list, as provided by EDR, and dated 12/31/2007 has revealed that there is 1 ERNS site within the searched area.

Site	Address	Map ID	Page
3101 BUSCH DR. ANHEUSER BUSCH	3101 BUSCH DR. ANHEUSER	4	12

TRIS: The Toxic Chemical Release Inventory System identifies facilities that release toxic chemicals to the air, water, and land in reportable quantities under SARA Title III, Section 313. The source of this database is the U.S. EPA.

A review of the TRIS list, as provided by EDR, and dated 12/31/2005 has revealed that there is 1 TRIS site within the searched area.

Site	Address	Map ID	Page
ANHEUSER-BUSCH INC	***3101 BUSCH DR***	***5***	***12***

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 01/04/2008 has revealed that there is 1 FINDS site within the searched area.

Site	Address	Map ID	Page
ANHEUSER-BUSCH INC	***3101 BUSCH DR***	***5***	***12***

STATE AND LOCAL RECORDS

HIST Cal-Sites: Formerly known as ASPIS, this database contains both known and potential hazardous substance sites. The source is the California Department of Toxic Substance Control. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

A review of the HIST Cal-Sites list, as provided by EDR, and dated 08/08/2005 has revealed that there

are 2 HIST Cal-Sites sites within the searched area.

Site	Address	Map ID	Page
SOUTHERN PACIFIC, SUISUN	***END OF CHADBORNE RD***	***3***	***7***
MANGELS RANCH	***287 SUISUN VALLEY RD***	***7***	***27***

CA WDS: California Water Resources Control Board - Waste Discharge System.

A review of the CA WDS list, as provided by EDR, and dated 06/19/2007 has revealed that there is 1 CA WDS site within the searched area.

Site	Address	Map ID	Page
FAIRFIELD SUISUN SEWER DISTRCT	***1010 CHADBOURNE RD***	***6***	***24***

Cortese: The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

A review of the Cortese list, as provided by EDR, and dated 04/01/2001 has revealed that there are 4 Cortese sites within the searched area.

Site	Address	Map ID	Page
VALINE PROPERTY	***4000 RUSSELL***	***2***	***4***
SOUTHERN PACIFIC, SUISUN	***END OF CHADBORNE RD***	***3***	***7***
MANGELS RANCH PROPERTY	***287 SUISUN VALLEY RD***	***7***	***31***
TEXACO TERMINAL STATIONS INC	***100 SUISUN VALLEY RD***	***8***	***33***

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 01/07/2008 has revealed that there are 9 LUST sites within the searched area.

Site	Address	Map ID	Page
VALINE PROPERTY	***4000 RUSSELL***	***2***	***4***
Facility Status: Post remedial action monitoring			
VALINE PROPERTY	4000 RUSSELL RD	2	6
FAIRFIELD SUISUN SEWER DISTRCT	***1010 CHADBOURNE RD***	***6***	***24***
Facility Status: Case Closed			
MANGELS RANCH PROPERTY	***287 SUISUN VALLEY RD***	***7***	***31***
Facility Status: Case Closed			
TEXACO TERMINAL STATIONS INC	***100 SUISUN VALLEY RD***	***8***	***33***
Facility Status: Case Closed			
TERMINAL STATIONS INC/JS&J SER	100 SUISUN VALLEY RD	8	40
SHELL	4450 CENTRAL WY	10	41
Facility Status: Case Closed			

EXECUTIVE SUMMARY

Site	Address	Map ID	Page
CAMPBELL'S CARPET Facility Status: Case Closed	4731 CENTRAL WY	11	42
CAMBELL'S CARPETS (FORMER)	4731 CENTRAL WAY	11	44

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there is 1 CA FID UST site within the searched area.

Site	Address	Map ID	Page
CAL TRANS	RUSSELL (I-80) RD	1	3

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 01/07/2008 has revealed that there are 4 UST sites within the searched area.

Site	Address	Map ID	Page
CAL TRANS	***RUSSELL (I-80) RD***	***1***	***3***
VALINE PROPERTY	4000 RUSSELL RD	2	5
ARCO AM/PM, CORDELIA	4449 CENTRAL	9	40
NELLA OIL COMPANY #28 FLYERS	4444 CENTRAL PL	9	40

AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the AST list, as provided by EDR, and dated 11/01/2007 has revealed that there is 1 AST site within the searched area.

Site	Address	Map ID	Page
ANHEUSER-BUSCH, INC.	3101 BUSCH DR.	5	22

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 3 SWEEPS UST sites within the searched area.

Site	Address	Map ID	Page
CAL TRANS	***RUSSELL (I-80) RD***	***1***	***3***

EXECUTIVE SUMMARY

Site	Address	Map ID	Page
WAL-MART	*300 CHADBOURNE*	*5*	*22*
TEXACO TERMINAL STATIONS INC	*100 SUISUN VALLEY RD*	*8*	*33*

DEED: The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes .

A review of the DEED list, as provided by EDR, and dated 04/01/2008 has revealed that there is 1 DEED site within the searched area.

Site	Address	Map ID	Page
SOUTHERN PACIFIC, SUISUN	*END OF CHADBORNE RD*	*3*	*7*

RESPONSE: Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

A review of the RESPONSE list, as provided by EDR, and dated 02/26/2008 has revealed that there are 2 RESPONSE sites within the searched area.

Site	Address	Map ID	Page
SOUTHERN PACIFIC, SUISUN	*END OF CHADBORNE RD*	*3*	*7*
MANGELS RANCH	*287 SUISUN VALLEY RD*	*7*	*27*

HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency

A review of the HAZNET list, as provided by EDR, and dated 12/31/2006 has revealed that there are 3 HAZNET sites within the searched area.

Site	Address	Map ID	Page
ANHEUSER-BUSCH INC	*3101 BUSCH DR*	*5*	*12*
WAL-MART	*300 CHADBOURNE*	*5*	*22*
TEXACO TERMINAL STATIONS INC	*100 SUISUN VALLEY RD*	*8*	*33*

AIRS: Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies

A review of the AIRS list, as provided by EDR, and dated 12/31/2005 has revealed that there is 1 AIRS site within the searched area.

EXECUTIVE SUMMARY

Site	Address	Map ID	Page
ANHEUSER-BUSCH INC	*3101 BUSCH DR*	*5*	*12*

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 02/26/2008 has revealed that there are 2 ENVIROSTOR sites within the searched area.

Site	Address	Map ID	Page
SOUTHERN PACIFIC, SUISUN	*END OF CHADBORNE RD*	*3*	*7*
Facility Status: Certified / Operation & Maintenance			
MANGELS RANCH	*287 SUISUN VALLEY RD*	*7*	*27*
Facility Status: Certified			

EXECUTIVE SUMMARY

Please refer to the end of the findings report for unmapped orphan sites due to poor or inadequate address information.

MAP FINDINGS SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	0
CERC-NFRAP	0
LIENS 2	0
CORRACTS	0
RCRA-TSDF	0
RCRA-LQG	0
RCRA-SQG	1
RCRA-CESQG	0
RCRA-NonGen	0
US ENG CONTROLS	0
US INST CONTROL	0
ERNS	1
HMIRS	0
DOT OPS	0
US CDL	0
US BROWNFIELDS	0
DOD	0
FUDS	0
LUCIS	0
CONSENT	0
ROD	0
UMTRA	0
ODI	0
DEBRIS REGION 9	0
MINES	0
TRIS	1
TSCA	0
FTTS	0
HIST FTTS	0
SSTS	0
ICIS	0
PADS	0
MLTS	0
RADINFO	0
FINDS	1
RAATS	0
STATE AND LOCAL RECORDS	
HIST Cal-Sites	2
CA BOND EXP. PLAN	0
SCH	0
Toxic Pits	0
SWF/LF	0

MAP FINDINGS SUMMARY

Database	Total Plotted
CA WDS	1
WMUDS/SWAT	0
Cortese	4
SWRCY	0
LUST	9
CA FID UST	1
SLIC	0
UST	4
HIST UST	0
AST	1
LIENS	0
SWEEPS UST	3
CHMIRS	0
Notify 65	0
DEED	1
VCP	0
DRYCLEANERS	0
WIP	0
CDL	0
RESPONSE	2
HAZNET	3
AIRS	1
HAULERS	0
ENVIROSTOR	2
TRIBAL RECORDS	
INDIAN RESERV	0
INDIAN ODI	0
INDIAN LUST	0
INDIAN UST	0
EDR PROPRIETARY RECORDS	
Manufactured Gas Plants	0

NOTES:

Sites may be listed in more than one database

1 **CAL TRANS** **CA FID UST** **S101630640**
RUSSELL (I-80) RD **N/A**
SUISUN, CA 94585

CA FID UST:

Facility ID:	48002039
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	RUSSELL (I-80) RD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	SUISUN 94585
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

---

1 **CAL TRANS** **UST** **U003139282**
RUSSELL (I-80) RD **SWEEPS UST** **N/A**
SUISUN CITY, CA 94585

UST:

Region:	SOLANO
Facility Id:	30016
Facility Status:	Inactive
Facility Phone:	Not reported
Program:	23U
Inventory Number:	1
Inventory Type:	Underground Storage Tank (1)
Inventory Description:	Not reported
Permit Expire/ Last service:	CONSULTATION - PHONE/COUNTER
Last Service Date:	06/17/03

SWEEPS UST:

Status:	Not reported
Comp Number:	30016
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

2 **VALINE PROPERTY** **LUST** **S105026809**
4000 RUSSELL **Cortese** **N/A**
SUISUN, CA 94585

LUST:

Region:	STATE
Case Type:	Drinking Water Aquifer affected
Cross Street:	Not reported
Enf Type:	Not reported
Funding:	VER
How Discovered:	Tank Closure
How Stopped:	Close Tank
Leak Cause:	UNK
Leak Source:	UNK
Global Id:	T0609591158
Stop Date:	2001-07-02 00:00:00
Confirm Leak:	Not reported
Workplan:	2001-07-02 00:00:00
Prelim Assess:	Not reported
Pollution Char:	2005-07-05 00:00:00
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	2007-07-11 00:00:00
Close Date:	Not reported
Discover Date:	2001-07-02 00:00:00
Enforcement Dt:	Not reported
Release Date:	2001-07-02 00:00:00
Review Date:	2001-07-02 00:00:00
Enter Date:	2001-07-02 00:00:00
MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Max MTBE GW ppb:	Not reported
Max MTBE Soil ppb:	Not reported
County:	48
Org Name:	Not reported
Reg Board:	San Francisco Bay Region
Status:	Post remedial action monitoring
Chemical:	12034, 80066
Contact Person:	Not reported
Responsible Party:	LORAINE VALLINE
RP Address:	4000 RUSSEL ROAD
Interim:	Not reported
Oversight Prgm:	LUST
MTBE Class:	*
MTBE Conc:	0
MTBE Fuel:	0
MTBE Tested:	MTBE Detected. Site tested for MTBE and MTBE detected
Staff:	KA
Staff Initials:	MCK
Lead Agency:	Local Agency
Local Agency:	48000L
Hydr Basin #:	Not reported
Beneficial:	AGR, PROC, IND, MUN
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	No
Local Case #:	80007
Case Number:	48-0362

VALINE PROPERTY (Continued) **S105026809**

Qty Leaked: 0
Abate Method: Not reported
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:
Region: 2
Facility Status: Preliminary site assessment workplan submitted
Facility Id: 48-0362
Case Number: 80007
How Discovered: Tank Closure
Leak Cause: UNK
Leak Source: UNK
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: 7/2/2001
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

Cortese:
Region: CORTESE
Facility Addr2: Not reported

---

2 **VALINE PROPERTY** **UST** **U004014030**
4000 RUSSELL RD **N/A**
SUISUN CITY, CA 94534

UST:
Local Agency: 48000
Facility ID: 80007

UST:
Region: SOLANO
Facility Id: 80007
Facility Status: Inactive
Facility Phone: 7078640700
Program: 23U
Inventory Number: 1
Inventory Type: Underground Storage Tank (1)
Inventory Description: Not reported
Permit Expire/ Last service: Not reported
Last Service Date: Not reported

Region: SOLANO
Facility Id: 80007
Facility Status: Inactive
Facility Phone: 7078640700
Program: 23U

VALINE PROPERTY (Continued) **U004014030**

Inventory Number: 2
Inventory Type: Underground Storage Tank (1)
Inventory Description: Not reported
Permit Expire/ Last service: Not reported
Last Service Date: Not reported

Region: SOLANO
Facility Id: 80007
Facility Status: Inactive
Facility Phone: 7078640700
Program: 23U
Inventory Number: 3
Inventory Type: Underground Storage Tank (1)
Inventory Description: Not reported
Permit Expire/ Last service: Not reported
Last Service Date: Not reported

Region: SOLANO
Facility Id: 80007
Facility Status: Inactive
Facility Phone: 7078640700
Program: 23U
Inventory Number: 4
Inventory Type: Underground Storage Tank (1)
Inventory Description: Not reported
Permit Expire/ Last service: Not reported
Last Service Date: Not reported

Region: SOLANO
Facility Id: 80007
Facility Status: Inactive
Facility Phone: 7078640700
Program: 23U
Inventory Number: 5
Inventory Type: Underground Storage Tank (1)
Inventory Description: Not reported
Permit Expire/ Last service: Not reported
Last Service Date: Not reported

---

2 **VALINE PROPERTY** **LUST** **S107261695**
4000 RUSSELL RD **N/A**
FAIRFIELD, CA 94533

LUST:
Region: SOLANO
Facility ID: 80007
Facility Status: Active
Facility Phone: 7078640700
Program: 29S
Inventory Number: 1
Inventory Type: Aquifer Impact (112)
Inventory Description: Not reported
Last service/permit exp: SITE VISITS
Last service date: 09/12/07

3 **SOUTHERN PACIFIC, SUISUN** **Cortese** **S101272908**
END OF CHADBORNE RD **RESPONSE** **N/A**
FAIRFIELD, CA 94533 **DEED**
ENVIROSTOR
HIST Cal-Sites

Cortese:
Region: CORTESE
Facility Addr2: Not reported

RESPONSE:

Facility ID:	48400001
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	0.3
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	CLAUDE JEMISON
Supervisor:	Barbara Cook
Division Branch:	North Coast
Site Code:	200444
Assembly:	08
Senate:	05
Special Program Status:	Not reported
Status:	Certified / Operation & Maintenance
Status Date:	1998-08-25 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.1733333333333
Longitude:	-122.078888888889
Alias Name:	SOUTHERN PACIFIC / SUISUN CITY SOUTHERN PACIFIC DERAILMENT CAD089186928 48400001 200444 SUISUN TRAIN DERAILMENT
Alias Type:	Alternate Name Alternate Name Alternate Name Envirostor ID Number Project Code (Site Code) EPA Identification Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Completed Five-Year Review.Completed RA.The cap was in good condition. There was no evidence of any activities prohibited by the Deed Restriction.Issued I or SE Order.Recorded Deed Restriction prohibiting any alteration to the cap and residential use.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Plan
Completed Date:	06/20/97
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Design
Completed Date:	06/20/97
Completed Area Name:	PROJECT WIDE

SOUTHERN PACIFIC, SUISUN (Continued) **S101272908**

Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	06/06/02
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	02/21/97
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	09/22/97
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	04/10/97
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	10/21/91
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	11/17/87
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	05/15/98
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	04/10/97
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	08/25/98
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	"Unilateral Order (I/SE, RAO, EPA AO)"
Completed Date:	09/08/94
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	10/12/83
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	DEED/LUC Site Inspection/Visit
Completed Date:	02/15/08
Confirmed:	30462
Confirmed Description:	Phosphorus (white)
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2008
Media Affected:	SED, SURFW
Media Affected Desc:	Sediments
Media Affected Desc:	Surface water affected
Management Required:	REM, DAY, ELD, HOS, LUC, FEN, MON, EX, GW, NOWN, NDAM, NSUB, SCH, FOOD, COV, RES

SOUTHERN PACIFIC, SUISUN (Continued) **S101272908**

Management Required Desc: Activities prohibited which disturb the remedy and monitoring systems without approval
Management Required Desc: Day care center prohibited
Management Required Desc: Elder Care Center Prohibited
Management Required Desc: Hospital use prohibited
Management Required Desc: Land Use covenant
Management Required Desc: Maintain Fencing to control access
Management Required Desc: Maintain monitoring of Groundwater
Management Required Desc: No Excavation or activities which disturb the soil at any depth without approval
Management Required Desc: No groundwater extraction at any depth without approval
Management Required Desc: Notify after change of property owner
Management Required Desc: Notify damages to remedy and monitoring systems upon discovery
Management Required Desc: Notify prior to subsurface work
Management Required Desc: Public or private school for persons under 21 prohibited
Management Required Desc: Raising of food prohibited
Management Required Desc: Requires surface covers
Management Required Desc: Residence use prohibited
Potential: 30462
Potenital Description: Phosphorus (white)
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAILROAD RIGHT OF WAY

DEED:
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED / OPERATION & MAINTENANCE
Deed Date(s): 5/15/1998

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 0.3
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: CLAUDE JEMISON
Supervisor: Barbara Cook
Division Branch: North Coast
Facility ID: 48400001
Site Code: 200444
Assembly: 08
Senate: 05
Special Program: Not reported
Status: Certified / Operation & Maintenance
Status Date: 1998-08-25 00:00:00
Restricted Use: YES
Funding: Responsible Party
Latitude: 38.1733333333333
Longitude: -122.078888888889
Alias Name: SOUTHERN PACIFIC / SUISUN CITY
SOUTHERN PACIFIC DERAILMENT

SOUTHERN PACIFIC, SUISUN (Continued) **S101272908**

	CAD089186928
	48400001
	200444
	SUISUN TRAIN DERAILMENT
Alias Type:	Alternate Name
	Alternate Name
	Alternate Name
	Envirostor ID Number
	Project Code (Site Code)
	EPA Identification Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Completed Five-Year Review.Completed RA.The cap was in good condition. There was no evidence of any activities prohibited by the Deed Restriction.Issued I or SE Order.Recorded Deed Restriction prohibiting any alteration to the cap and residential use.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Plan
Completed Date:	06/20/97
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Design
Completed Date:	06/20/97
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	06/06/02
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	02/21/97
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	09/22/97
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	04/10/97
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	10/21/91
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	11/17/87
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	05/15/98
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	04/10/97
Completed Area Name:	PROJECT WIDE

SOUTHERN PACIFIC, SUISUN (Continued) **S101272908**

Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	08/25/98
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	"Unilateral Order (I/SE, RAO, EPA AO)"
Completed Date:	09/08/94
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	10/12/83
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	DEED/LUC Site Inspection/Visit
Completed Date:	02/15/08
Confirmed:	30462
Confirmed Description:	Phosphorus (white)
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2008
Media Affected:	SED, SURFW
Media Affected Desc:	Sediments
Media Affected Desc:	Surface water affected
Management Required:	REM, DAY, ELD, HOS, LUC, FEN, MON, EX, GW, NOWN, NDAM, NSUB, SCH, FOOD, COV, RES
Management Required Desc:	Activities prohibited which disturb the remedy and monitoring systems without approval
Management Required Desc:	Day care center prohibited
Management Required Desc:	Elder Care Center Prohibited
Management Required Desc:	Hospital use prohibited
Management Required Desc:	Land Use covenant
Management Required Desc:	Maintain Fencing to control access
Management Required Desc:	Maintain monitoring of Groundwater
Management Required Desc:	No Excavation or activities which disturb the soil at any depth without approval
Management Required Desc:	No groundwater extraction at any depth without approval
Management Required Desc:	Notify after change of property owner
Management Required Desc:	Notify damages to remedy and monitoring systems upon discovery
Management Required Desc:	Notify prior to subsurface work
Management Required Desc:	Public or private school for persons under 21 prohibited
Management Required Desc:	Raising of food prohibited
Management Required Desc:	Requires surface covers
Management Required Desc:	Residence use prohibited
Potential:	30462
Potenital Description:	Phosphorus (white)
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAILROAD RIGHT OF WAY

HISTORICAL CAL-SITES:

Facility ID:	48400001
Region:	2
Region Name:	BERKELEY
Branch:	NC
Branch Name:	NORTH COAST

SOUTHERN PACIFIC, SUISUN (Continued) **S101272908**

File Name: SOUTHERN PACIFIC DERAILMENT
State Senate District: 08251998
Status: COM - CERTIFIED OPERATION AND MAINTENANCE, ALL PLANNED ACTIVITIES IMPLEMENTED REMEDIATION CONTINUES
Status Name: CERTIFIED / OPERATION & MAINTENANCE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Controlled
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: LNAKASHI
Supervisor Responsible for Site: Not reported
Region Water Control Board: SF
Region Water Control Board Name: SAN FRANCISCO BAY
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 08
State Senate District Code: 05

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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4 **3101 BUSCH DR. ANHEUSER BUSCH INC.** **ERNS** **90181959**
3101 BUSCH DR. ANHEUSER BUSCH INC. **N/A**
FAIRFIELD, CA

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

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5 **ANHEUSER-BUSCH INC** **RCRA-SQG** **1000224747**
3101 BUSCH DR **FINDS** **94533NHSRB31**
FAIRFIELD, CA 94533 **HAZNET**
TRIS
AIRS

RCRA-SQG:
Date form received by agency: 02/20/2004
Facility name: ANHEUSER-BUSCH INC
Facility address: 3101 BUSCH DR
FAIRFIELD, CA 94533
EPA ID: CAD080711252
Mailing address: P O BOX AB
FAIRFIELD, CA 94534
Contact: BRIAN R HUBINGER
Contact address: Not reported

ANHEUSER-BUSCH INC (Continued) **1000224747**

Not reported
Contact country: Not reported
Contact telephone: (707) 429-7674
Contact email: BRIAN.HUBINGER@ANHEUSER-BUSCH.COM
EPA Region: 09
Land type: Private
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: ANHEUSER-BUSCH CO
Owner/operator address: P O BOX AB
FAIRFIELD, CA 94534
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 10/01/1972
Owner/Op end date: Not reported

Owner/operator name: ANHEUSER-BUSCH CO
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 10/01/1972
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No
Off-site waste receiver: Commercial status unknown

Universal Waste Summary:
Waste type: Batteries
Accumulated waste on-site: Unknown
Generated waste on-site: Unknown

ANHEUSER-BUSCH INC (Continued) **1000224747**

Waste type: Lamps
Accumulated waste on-site: Unknown
Generated waste on-site: Unknown

Waste type: Pesticides
Accumulated waste on-site: Unknown
Generated waste on-site: Unknown

Waste type: Thermostats
Accumulated waste on-site: Unknown
Generated waste on-site: Unknown

Historical Generators:
Date form received by agency: 02/20/2004
Facility name: ANHEUSER-BUSCH INC
Classification: Large Quantity Generator

Date form received by agency: 03/06/2002
Facility name: ANHEUSER-BUSCH INC
Site name: ANHEUSER BUSCH INC
Classification: Large Quantity Generator

Date form received by agency: 09/01/1996
Facility name: ANHEUSER-BUSCH INC
Classification: Small Quantity Generator

Date form received by agency: 02/03/1992
Facility name: ANHEUSER-BUSCH INC
Site name: ANHEUSER BUSCH INC
Classification: Large Quantity Generator

Date form received by agency: 08/14/1980
Facility name: ANHEUSER-BUSCH INC
Classification: Large Quantity Generator

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 09/08/1988
Date achieved compliance: 09/08/1988
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: LDR - General
Date violation determined: 09/08/1988
Date achieved compliance: 09/08/1988
Violation lead agency: State
Enforcement action: Not reported

ANHEUSER-BUSCH INC (Continued) **1000224747**

Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:

Evaluation date: 09/08/1988
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: LDR - General
Date achieved compliance: 09/08/1988
Evaluation lead agency: State

Evaluation date: 09/08/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 09/08/1988
Evaluation lead agency: State

Evaluation date: 08/07/1985
Evaluation: COMPLIANCE SCHEDULE EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 06/11/1985
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

FINDS:

Other Pertinent Environmental Activity Identified at Site

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

California - Hazardous Waste Tracking System - Datamart

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

TRIS (Toxics Release Inventory System) contains information from

ANHEUSER-BUSCH INC (Continued) **1000224747**

facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Gepaid:	CAD080711252
Contact:	ANHEUSER BUSCH INC
Telephone:	3145772000
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	PO BOX AB
Mailing City,St,Zip:	FAIRFIELD, CA 945330666
Gen County:	Solano
TSD EPA ID:	AZD081705402
TSD County:	99
Waste Category:	Off-specification, aged, or surplus inorganics
Disposal Method:	Not reported
Tons:	.0100
Facility County:	Solano

Gepaid:	CAD080711252
Contact:	ANHEUSER BUSCH INC
Telephone:	3145772000
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	PO BOX AB
Mailing City,St,Zip:	FAIRFIELD, CA 945330666
Gen County:	Solano
TSD EPA ID:	AZD081705402
TSD County:	99
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Disposal, Land Fill
Tons:	.5000
Facility County:	Solano

Gepaid:	CAD080711252
Contact:	ANHEUSER BUSCH INC
Telephone:	3145772000
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	PO BOX AB
Mailing City,St,Zip:	FAIRFIELD, CA 945330666
Gen County:	Solano
TSD EPA ID:	AZD081705402
TSD County:	99

ANHEUSER-BUSCH INC (Continued) **1000224747**

Waste Category: Not reported
Disposal Method: Treatment, Incineration
Tons: 1.6500
Facility County: Solano

Gepaid: CAD080711252
Contact: ANHEUSER BUSCH INC
Telephone: 3145772000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: PO BOX AB
Mailing City,St,Zip: FAIRFIELD, CA 945330666
Gen County: Solano
TSD EPA ID: AZD081705402
TSD County: 99
Waste Category: Off-specification, aged, or surplus inorganics
Disposal Method: Treatment, Tank
Tons: .1500
Facility County: Solano

Gepaid: CAD080711252
Contact: ANHEUSER BUSCH INC
Telephone: 3145772000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: PO BOX AB
Mailing City,St,Zip: FAIRFIELD, CA 945330666
Gen County: Solano
TSD EPA ID: AZD081705402
TSD County: 99
Waste Category: Unspecified oil-containing waste
Disposal Method: Treatment, Incineration
Tons: .0000
Facility County: Solano

Click this hyperlink while viewing on your computer to access
171 additional CA_HAZNET: record(s) in the EDR Site Report.

EMI:

Year: 1987
Carbon Monoxide Emissions Tons/Yr: 48
Air Basin: SF
Facility ID: 606
Air District Name: BA
SIC Code: 2082
Air District Name: BAY AREA AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 13
Reactive Organic Gases Tons/Yr: 13
Carbon Monoxide Emissions Tons/Yr: 16
NOX - Oxides of Nitrogen Tons/Yr: 96
SOX - Oxides of Sulphur Tons/Yr: 6
Particulate Matter Tons/Yr: 2
Part. Matter 10 Micrometers & Smllr Tons/Yr: 2

Year: 1990

ANHEUSER-BUSCH INC (Continued) **1000224747**

Carbon Monoxide Emissions Tons/Yr:	48
Air Basin:	SF
Facility ID:	606
Air District Name:	BA
SIC Code:	2082
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	13
Reactive Organic Gases Tons/Yr:	12
Carbon Monoxide Emissions Tons/Yr:	16
NOX - Oxides of Nitrogen Tons/Yr:	94
SOX - Oxides of Sulphur Tons/Yr:	4
Particulate Matter Tons/Yr:	2
Part. Matter 10 Micrometers & Smllr Tons/Yr:	2

Year:	1993
Carbon Monoxide Emissions Tons/Yr:	48
Air Basin:	SF
Facility ID:	606
Air District Name:	BA
SIC Code:	2082
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	14
Reactive Organic Gases Tons/Yr:	13
Carbon Monoxide Emissions Tons/Yr:	15
NOX - Oxides of Nitrogen Tons/Yr:	95
SOX - Oxides of Sulphur Tons/Yr:	10
Particulate Matter Tons/Yr:	12
Part. Matter 10 Micrometers & Smllr Tons/Yr:	7

Year:	1995
Carbon Monoxide Emissions Tons/Yr:	48
Air Basin:	SF
Facility ID:	606
Air District Name:	BA
SIC Code:	2082
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	11
Reactive Organic Gases Tons/Yr:	11
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	10
Part. Matter 10 Micrometers & Smllr Tons/Yr:	5

Year:	1996
Carbon Monoxide Emissions Tons/Yr:	48
Air Basin:	SF
Facility ID:	606
Air District Name:	BA
SIC Code:	2082
Air District Name:	BAY AREA AQMD

ANHEUSER-BUSCH INC (Continued) **1000224747**

Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	11
Reactive Organic Gases Tons/Yr:	11
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	10
Part. Matter 10 Micrometers & Smllr Tons/Yr:	5

Year:	1997
Carbon Monoxide Emissions Tons/Yr:	48
Air Basin:	SF
Facility ID:	606
Air District Name:	BA
SIC Code:	2082
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	10
Reactive Organic Gases Tons/Yr:	8
Carbon Monoxide Emissions Tons/Yr:	17
NOX - Oxides of Nitrogen Tons/Yr:	231
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	3
Part. Matter 10 Micrometers & Smllr Tons/Yr:	2

Year:	1998
Carbon Monoxide Emissions Tons/Yr:	48
Air Basin:	SF
Facility ID:	606
Air District Name:	BA
SIC Code:	2082
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	11
Reactive Organic Gases Tons/Yr:	9
Carbon Monoxide Emissions Tons/Yr:	129
NOX - Oxides of Nitrogen Tons/Yr:	17
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	4
Part. Matter 10 Micrometers & Smllr Tons/Yr:	3

Year:	1999
Carbon Monoxide Emissions Tons/Yr:	48
Air Basin:	SF
Facility ID:	606
Air District Name:	BA
SIC Code:	2082
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	16
Reactive Organic Gases Tons/Yr:	14
Carbon Monoxide Emissions Tons/Yr:	134
NOX - Oxides of Nitrogen Tons/Yr:	17

ANHEUSER-BUSCH INC (Continued) **1000224747**

SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	4
Part. Matter 10 Micrometers & Smllr Tons/Yr:	3
Year:	2000
Carbon Monoxide Emissions Tons/Yr:	48
Air Basin:	SF
Facility ID:	606
Air District Name:	BA
SIC Code:	2082
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	16
Reactive Organic Gases Tons/Yr:	14
Carbon Monoxide Emissions Tons/Yr:	134
NOX - Oxides of Nitrogen Tons/Yr:	17
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	4
Part. Matter 10 Micrometers & Smllr Tons/Yr:	3
Year:	2001
Carbon Monoxide Emissions Tons/Yr:	48
Air Basin:	SF
Facility ID:	606
Air District Name:	BA
SIC Code:	2082
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Y
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	22
Reactive Organic Gases Tons/Yr:	20
Carbon Monoxide Emissions Tons/Yr:	128
NOX - Oxides of Nitrogen Tons/Yr:	17
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	9
Part. Matter 10 Micrometers & Smllr Tons/Yr:	5
Year:	2002
Carbon Monoxide Emissions Tons/Yr:	48
Air Basin:	SF
Facility ID:	606
Air District Name:	BA
SIC Code:	2082
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	23
Reactive Organic Gases Tons/Yr:	21
Carbon Monoxide Emissions Tons/Yr:	135
NOX - Oxides of Nitrogen Tons/Yr:	18
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	9
Part. Matter 10 Micrometers & Smllr Tons/Yr:	5
Year:	2003
Carbon Monoxide Emissions Tons/Yr:	48

ANHEUSER-BUSCH INC (Continued) **1000224747**

Air Basin:	SF
Facility ID:	606
Air District Name:	BA
SIC Code:	2082
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	25
Reactive Organic Gases Tons/Yr:	23
Carbon Monoxide Emissions Tons/Yr:	126
NOX - Oxides of Nitrogen Tons/Yr:	16
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	9
Part. Matter 10 Micrometers & Smllr Tons/Yr:	5

Year:	2004
Carbon Monoxide Emissions Tons/Yr:	48
Air Basin:	SF
Facility ID:	606
Air District Name:	BA
SIC Code:	2082
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	35.135
Reactive Organic Gases Tons/Yr:	34.0060346
Carbon Monoxide Emissions Tons/Yr:	115.489
NOX - Oxides of Nitrogen Tons/Yr:	15.006
SOX - Oxides of Sulphur Tons/Yr:	0.223
Particulate Matter Tons/Yr:	68
Part. Matter 10 Micrometers & Smllr Tons/Yr:	34.10088

Year:	2005
Carbon Monoxide Emissions Tons/Yr:	48
Air Basin:	SF
Facility ID:	606
Air District Name:	BA
SIC Code:	2082
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	35.135
Reactive Organic Gases Tons/Yr:	34.0060346
Carbon Monoxide Emissions Tons/Yr:	115.489
NOX - Oxides of Nitrogen Tons/Yr:	15.006
SOX - Oxides of Sulphur Tons/Yr:	.223
Particulate Matter Tons/Yr:	68
Part. Matter 10 Micrometers & Smllr Tons/Yr:	34.10088

5 **ANHEUSER-BUSCH, INC.** **AST** **A100175913**
3101 BUSCH DR. **N/A**
FAIRFIELD, CA 94533

AST:
Owner: ANHEUSER-BUSCH, INC.
Total Gallons: 70000

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5 **WAL-MART** **HAZNET** **S103994840**
300 CHADBOURNE **SWEEPS UST** **N/A**
FAIRFIELD, CA 94533

HAZNET:
Gepaid: CAL000111609
Contact: WAL-MART STORES INC
Telephone: 5012731949
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: DEPT 8013
Mailing City,St,Zip: BENTONVILLE, AR 727168013
Gen County: Solano
TSD EPA ID: CAD982444481
TSD County: San Bernardino
Waste Category: Other organic solids
Disposal Method: Transfer Station
Tons: .0225
Facility County: Solano

Gepaid: CAL000111609
Contact: JAMIE HUENS/ENVIRONMENTAL MGR
Telephone: 4792048453
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 508 SW 8TH STREET
Mailing City,St,Zip: Bentonville, AR 727120505
Gen County: Solano
TSD EPA ID: WAD991281767
TSD County: 99
Waste Category: Alkaline solution without metals (pH > 12.5)
Disposal Method: Not reported
Tons: 0.01
Facility County: Solano

Gepaid: CAL000111609
Contact: MARTHA LARSON LICENSE COORD
Telephone: 5012731949
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: DEPT 8013
Mailing City,St,Zip: BENTONVILLE, AR 727168013
Gen County: Solano
TSD EPA ID: Not reported
TSD County: 99
Waste Category: Polychlorinated biphenyls and material containing PCB's
Disposal Method: Recycler
Tons: 0.23
Facility County: Not reported

WAL-MART (Continued) **S103994840**

Gepaid:	CAL000111609
Contact:	WAL-MART STORES INC
Telephone:	5012731949
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	DEPT 8013
Mailing City,St,Zip:	BENTONVILLE, AR 727168013
Gen County:	Solano
TSD EPA ID:	CAL000048571
TSD County:	Santa Clara
Waste Category:	Waste oil and mixed oil
Disposal Method:	Transfer Station
Tons:	.2293
Facility County:	Solano

Gepaid:	CAL000111609
Contact:	WAL-MART STORES INC
Telephone:	5012731949
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	DEPT 8013
Mailing City,St,Zip:	BENTONVILLE, AR 727168013
Gen County:	Solano
TSD EPA ID:	CAD044003556
TSD County:	Yolo
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Not reported
Tons:	3.3360
Facility County:	Solano

Click this hyperlink while viewing on your computer to access
2 additional CA_HAZNET: record(s) in the EDR Site Report.

SWEEPS UST:

Status:	A
Comp Number:	30151
Number:	9
Board Of Equalization:	Not reported
Ref Date:	11-02-93
Act Date:	11-02-93
Created Date:	08-25-93
Tank Status:	A
Owner Tank Id:	1
Swrcb Tank Id:	48-000-030151-000001
Actv Date:	11-02-93
Capacity:	1000
Tank Use:	OIL
Stg:	W
Content:	WASTE OIL
Number Of Tanks:	1

6 **FAIRFIELD SUISUN SEWER DISTRCT** **LUST S104162054**
1010 CHADBOURNE RD **CA WDS N/A**
FAIRFIELD, CA 94533

LUST:

Region:	STATE
Case Type:	Other ground water affected
Cross Street:	Not reported
Enf Type:	F
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Not reported
Leak Cause:	Structure Failure
Leak Source:	Tank
Global Id:	T0609500070
Stop Date:	1991-08-07 00:00:00
Confirm Leak:	Not reported
Workplan:	Not reported
Prelim Assess:	Not reported
Pollution Char:	Not reported
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	Not reported
Close Date:	1998-07-20 00:00:00
Discover Date:	1991-08-07 00:00:00
Enforcement Dt:	Not reported
Release Date:	1991-08-07 00:00:00
Review Date:	2000-03-16 00:00:00
Enter Date:	1991-08-07 00:00:00
MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Max MTBE GW ppb:	Not reported
Max MTBE Soil ppb:	Not reported
County:	48
Org Name:	Not reported
Reg Board:	San Francisco Bay Region
Status:	Case Closed
Chemical:	Diesel
Contact Person:	Not reported
Responsible Party:	BLANK RP
RP Address:	Not reported
Interim:	No
Oversight Prgm:	LUST
MTBE Class:	*
MTBE Conc:	0
MTBE Fuel:	0
MTBE Tested:	Not Required to be Tested.
Staff:	MRC
Staff Initials:	MCK
Lead Agency:	Local Agency
Local Agency:	48000L
Hydr Basin #:	Suisun-Fairfield Val
Beneficial:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	No
Local Case #:	30039
Case Number:	48-0075

FAIRFIELD SUISUN SEWER DISTRCT (Continued) **S104162054**

Qty Leaked: Not reported
Abate Method: No Action Taken - no action has as yet been taken at the site
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:
Region: 2
Facility Status: Case Closed
Facility Id: 48-0075
Case Number: 30039
How Discovered: Tank Closure
Leak Cause: Structure Failure
Leak Source: Tank
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

CA WDS:
Facility ID: San Francisco Bay 482005001
Facility Type: Municipal/Domestic - Facility that treats sewage or a mixture of predominantly sewage and other waste from districts, municipalities, communities, hospitals, schools, and publicly or privately owned systems (excluding individual subsurface leaching systems disposing of less than 1,000 gallons per day).
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number: CA0038024 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion: 2
Facility Telephone: Not reported
Facility Contact: RICHARD F. LUTHY JR.
Agency Name: FAIRFIELD-SUISUN SEWER DISTRCT
Agency Address: 1010 CHADBOURNE RD
Agency City,St,Zip: FAIRFIELD 94585
Agency Contact: RICHARD F. LUTHY JR.
Agency Telephone: Not reported
Agency Type: Special District (Includes districts established under general acts, sanitary districts, water districts irrigation districts, etc.)
SIC Code: 4952
SIC Code 2: Not reported
Primary Waste: Domestic Sewage combined with Industrial Waste
Primary Waste Type: Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste: Not reported

FAIRFIELD SUISUN SEWER DISTRCT (Continued) **S104162054**

Secondary Waste Type:	Not reported
Design Flow:	18
Baseline Flow:	13
Reclamation:	Producer: Reclamation requirements that have been issued to a producer of reclaimed water that does not use the product.
POTW:	POTW has a local pretreatment program that has been approved by the U.S. EPA (or the regional board if the state is delegated the Federal Pretreatment Program) as being in conformance with federal prtreatment regulations [40CFR Part 403].
Treat To Water:	Major Threat to Water Quality. A violation could render unusable a ground water or surface water resource used as a significant drink water supply, require closure of an area used for contact recreation, result in long-term deleterious effects on shell fish spawning or growth areas of aquatic resources, or directly expose the public to toxic substances.
Complexity:	Category A - Any major NPDES facility, any non-NPDES facility (particularly those with toxic wastes) that would be a major if discharge was made to surface or ground waters, or any Class I disposal site. Includes any small-volume complex facility (particularly those with toxicwastes) with numerous discharge points, leak detection systems or ground water monitoring wells.
Facility ID:	San Francisco Bay 48I001983
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	2
Facility Telephone:	7074298930
Facility Contact:	GITI HERAVIAN
Agency Name:	FAIRFIELD SUISUN SEWER DIST.
Agency Address:	1014 Chadbourne Rd
Agency City,St,Zip:	Fairfield 945349700
Agency Contact:	RICHARD F LUTHY JR
Agency Telephone:	7074298930
Agency Type:	?
SIC Code:	0
SIC Code 2:	Not reported
Primary Waste:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to

FAIRFIELD SUISUN SEWER DISTRCT (Continued) **S104162054**

represent no threat to water quality.

Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

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7 **MANGELS RANCH** **RESPONSE** **S103934438**
287 SUISUN VALLEY RD **ENVIROSTOR** **N/A**
FAIRFIELD, CA 94534 **HIST Cal-Sites**

RESPONSE:

Facility ID:	48020001
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	5.4
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	JACINTO SOTO
Supervisor:	Karen Toth
Division Branch:	North Coast
Site Code:	201141
Assembly:	08
Senate:	05
Special Program Status:	Not reported
Status:	Certified
Status Date:	2003-11-14 00:00:00
Restricted Use:	NO
Funding:	Orphan Funds
Latitude:	38.2302777777778
Longitude:	-122.131944444444
Alias Name:	MANGLES RANCH 201141 48020001 27-370-230
Alias Type:	Alternate Name APN Envirostor ID Number Project Code (Site Code)
APN:	27-370-230
APN Description:	Not reported
Comments:	RAW - Final Removal Action Workplan (RAW) approved. The RAW requires that soil contaminated with toxaphene above the residential cleanup level of 360 micrograms per kilogram be excavated and disposed offsite.Mangels Ranch Removal Action Workplan Fact Sheet"Notice of Public Comment Period, Draft Removal Action Workplan"Approval of Removal Action Completion Report."RA - Removal Action approved. Approximately 3,500 cubic yards of contaminated soil were disposed of offsite."COST - SETTL - DTSC settled with the current property owner and the trustees of the estate which were the previous owners."FDNC - DTSC issued a Final Determination of Non-Compliance with the order on March 26, 2002 for failure to submit documents required under the I&SE Order.""ORDER - ISE - In April 2000, an Imminent and Substantial Endangerment Determination and Order and Remedial Action Order was issued to G & H Properties by

MANGELS RANCH (Continued) **S103934438**

DTSC."CERTIFICATION - The site was certified as cleaned to residential standards requiring no further remedial action.VCA - G & H entered into a Voluntary Cleanup Agreement (VCA) with the Department of Toxic Substances Control (DTSC).NOE approved along with the Final Removal Action Workplan.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	06/19/02
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	11/14/03
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fact Sheets
Completed Date:	05/15/02
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	05/15/02
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	11/14/03
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	06/19/02
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Final Determination of non-compliance
Completed Date:	03/26/02
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	"Unilateral Order (I/SE, RAO, EPA AO)"
Completed Date:	04/07/00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	11/14/03
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	09/24/98
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Settlement - Administrative
Completed Date:	10/18/04
Confirmed:	30023
Confirmed Description:	Toxaphene
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil

MANGELS RANCH (Continued) **S103934438**

Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 30023
Potenital Description: Toxaphene
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: AGRICULTURAL - ORCHARD

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 5.4
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: JACINTO SOTO
Supervisor: Karen Toth
Division Branch: North Coast
Facility ID: 48020001
Site Code: 201141
Assembly: 08
Senate: 05
Special Program: Not reported
Status: Certified
Status Date: 2003-11-14 00:00:00
Restricted Use: NO
Funding: Orphan Funds
Latitude: 38.2302777777778
Longitude: -122.131944444444
Alias Name: MANGLES RANCH
201141
48020001
27-370-230
Alias Type: Alternate Name
APN
Envirostor ID Number
Project Code (Site Code)
APN: 27-370-230
APN Description: Not reported
Comments: RAW - Final Removal Action Workplan (RAW) approved. The RAW requires that soil contaminated with toxaphene above the residential cleanup level of 360 micrograms per kilogram be excavated and disposed offsite.Mangels Ranch Removal Action Workplan Fact Sheet"Notice of Public Comment Period, Draft Removal Action Workplan"Approval of Removal Action Completion Report."RA - Removal Action approved. Approximately 3,500 cubic yards of contaminated soil were disposed of offsite."COST - SETTL - DTSC settled with the current property owner and the trustees of the estate which were the previous owners."FDNC - DTSC issued a Final Determination of Non-Compliance with the order on March 26, 2002 for failure to submit documents required under the I&SE Order.""ORDER - ISE - In April 2000, an Imminent and Substantial Endangerment Determination and Order and Remedial Action Order was issued to G & H Properties by DTSC."CERTIFICATION - The site was certified as cleaned to

MANGELS RANCH (Continued) **S103934438**

residential standards requiring no further remedial action.VCA - G & H entered into a Voluntary Cleanup Agreement (VCA) with the Department of Toxic Substances Control (DTSC).NOE approved along with the Final Removal Action Workplan.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	06/19/02
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	11/14/03
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fact Sheets
Completed Date:	05/15/02
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	05/15/02
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	11/14/03
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	06/19/02
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Final Determination of non-compliance
Completed Date:	03/26/02
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	"Unilateral Order (I/SE, RAO, EPA AO)"
Completed Date:	04/07/00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	11/14/03
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	09/24/98
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Settlement - Administrative
Completed Date:	10/18/04
Confirmed:	30023
Confirmed Description:	Toxaphene
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED

MANGELS RANCH (Continued) **S103934438**

Management Required Desc: Not reported
Potential: 30023
Potenital Description: Toxaphene
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: AGRICULTURAL - ORCHARD

HISTORICAL CAL-SITES:
Facility ID: 48020001
Region: 2
Region Name: BERKELEY
Branch: NC
Branch Name: NORTH COAST
File Name: MANGLES RANCH
State Senate District: 11142003
Status: CERT - CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT
Status Name: CERTIFIED
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: STATE
Type Name: STATE FUNDED SITE
NPL: Not Listed
SIC Code: 02
SIC Name: AGRICULTURAL PRODUCTION - LIVESTOCK
Access: Controlled
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: JSOTO
Supervisor Responsible for Site: Not reported
Region Water Control Board: SF
Region Water Control Board Name: SAN FRANCISCO BAY
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 08
State Senate District Code: 05

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7 **MANGELS RANCH PROPERTY** **LUST** **S103396371**
287 SUISUN VALLEY RD **Cortese** **N/A**
FAIRFIELD, CA 94533

LUST:
Region: STATE
Case Type: Soil only
Cross Street: Not reported
Enf Type: Not reported
Funding: Not reported

MANGELS RANCH PROPERTY (Continued) **S103396371**

How Discovered:	Tank Closure
How Stopped:	Not reported
Leak Cause:	UNK
Leak Source:	UNK
Global Id:	T0609500315
Stop Date:	1998-08-14 00:00:00
Confirm Leak:	Not reported
Workplan:	Not reported
Prelim Assess:	Not reported
Pollution Char:	Not reported
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	Not reported
Close Date:	1998-07-22 00:00:00
Discover Date:	1998-08-14 00:00:00
Enforcement Dt:	Not reported
Release Date:	1998-08-14 00:00:00
Review Date:	1998-08-26 00:00:00
Enter Date:	1998-08-14 00:00:00
MTBE Date:	1965-01-02 00:00:00
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Max MTBE GW ppb:	0
Max MTBE Soil ppb:	Not reported
County:	48
Org Name:	Not reported
Reg Board:	San Francisco Bay Region
Status:	Case Closed
Chemical:	Gasoline
Contact Person:	Not reported
Responsible Party:	BLANK RP
RP Address:	Not reported
Interim:	Not reported
Oversight Prgm:	LUST
MTBE Class:	Not reported
MTBE Conc:	1
MTBE Fuel:	1
MTBE Tested:	MTBE Detected. Site tested for MTBE and MTBE detected
Staff:	MRC
Staff Initials:	MCK
Lead Agency:	Local Agency
Local Agency:	48000L
Hydr Basin #:	Suisun-Fairfield Val
Beneficial:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	No
Local Case #:	80093
Case Number:	48-0346
Qty Leaked:	Not reported
Abate Method:	Not reported
Operator:	Not reported
Water System Name:	Not reported
Well Name:	Not reported
Distance To Lust:	0
Waste Discharge Global ID:	Not reported
Waste Disch Assigned Name:	Not reported

MANGELS RANCH PROPERTY (Continued) **S103396371**

Summary: Not reported

LUST:
Region: 2
Facility Status: Case Closed
Facility Id: 48-0346
Case Number: 80093
How Discovered: Tank Closure
Leak Cause: UNK
Leak Source: UNK
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

Cortese:
Region: CORTESE
Facility Addr2: 287 SUISUN VALLEY RD

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8 **TEXACO TERMINAL STATIONS INC** **HAZNET** **S102438817**
100 SUISUN VALLEY RD **LUST** **N/A**
FAIRFIELD, CA 94533 **Cortese**
SWEEPS UST

HAZNET:
Gepaid: CAC002569846
Contact: LARRY EMCHICK
Telephone: 9094835290
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 7365 CARNELIAN AVE STE 224
Mailing City,St,Zip: RANCHO CUCAMONGA, CA 91730
Gen County: Solano
TSD EPA ID: CAD044003556
TSD County: Solano
Waste Category: Unspecified oil-containing waste
Disposal Method: Transfer Station
Tons: 3.83
Facility County: Solano

Gepaid: CAC002569846
Contact: LARRY EMCHICK
Telephone: 9094835290
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 7365 CARNELIAN AVE STE 224
Mailing City,St,Zip: RANCHO CUCAMONGA, CA 91730
Gen County: Solano
TSD EPA ID: CAT080033681
TSD County: Solano
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Tons: 0.16

TEXACO TERMINAL STATIONS INC (Continued) **S102438817**

Facility County: Solano

Gepaid: CAC002569846
Contact: LARRY EMCHICK
Telephone: 9094835290
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 7365 CARNELIAN AVE STE 224
Mailing City,St,Zip: RANCHO CUCAMONGA, CA 91730
Gen County: Solano
TSD EPA ID: CAT080013352
TSD County: Solano
Waste Category: Unspecified organic liquid mixture
Disposal Method: Recycler
Tons: 0.37
Facility County: Solano

Gepaid: CAC002569846
Contact: LARRY EMCHICK
Telephone: 9094835290
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 7365 CARNELIAN AVE STE 224
Mailing City,St,Zip: RANCHO CUCAMONGA, CA 91730
Gen County: Solano
TSD EPA ID: CAD044003556
TSD County: Solano
Waste Category: Waste oil and mixed oil
Disposal Method: Transfer Station
Tons: 0.75
Facility County: Solano

Gepaid: CAC002569846
Contact: LARRY EMCHICK
Telephone: 9094835290
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 7365 CARNELIAN AVE STE 224
Mailing City,St,Zip: RANCHO CUCAMONGA, CA 91730
Gen County: Solano
TSD EPA ID: CAT080033681
TSD County: Solano
Waste Category: Unspecified oil-containing waste
Disposal Method: Disposal, Land Fill
Tons: 0.98
Facility County: Solano

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

LUST:
Region: STATE
Case Type: Other ground water affected
Cross Street: Not reported
Enf Type: F
Funding: Not reported
How Discovered: Tank Closure

TEXACO TERMINAL STATIONS INC (Continued) **S102438817**

How Stopped: Not reported
Leak Cause: Structure Failure
Leak Source: Tank
Global Id: T0609500154
Stop Date: 1987-11-10 00:00:00
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: 1987-08-26 00:00:00
Pollution Char: 1987-12-31 00:00:00
Remed Plan: Not reported
Remed Action: 1990-06-06 00:00:00
Monitoring: 1991-09-03 00:00:00
Close Date: 2001-07-02 00:00:00
Discover Date: 1987-11-10 00:00:00
Enforcement Dt: Not reported
Release Date: 1987-11-10 00:00:00
Review Date: 2001-07-02 00:00:00
Enter Date: 1991-02-06 00:00:00
MTBE Date: 1965-01-02 00:00:00
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: 2
Max MTBE Soil ppb: Not reported
County: 48
Org Name: Not reported
Reg Board: San Francisco Bay Region
Status: Case Closed
Chemical: Gasoline
Contact Person: Not reported
Responsible Party: BLANK RP
RP Address: Not reported
Interim: Yes
Oversight Prgm: LUST
MTBE Class: Not reported
MTBE Conc: 1
MTBE Fuel: 1
MTBE Tested: MTBE Detected. Site tested for MTBE and MTBE detected
Staff: MRC
Staff Initials: MCK
Lead Agency: Local Agency
Local Agency: 48000L
Hydr Basin #: Suisun-Fairfield Val
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: 30113
Case Number: 48-0164
Qty Leaked: Not reported
Abate Method: Pump and Treat Ground Water - generally employed to remove dissolved contaminants
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported

TEXACO TERMINAL STATIONS INC (Continued) **S102438817**

Summary: VOC'S,METALS IN GW,FP REMAINS ON SITE 9/91,FP 8/92,NDS REM PLAN

LUST:
Region: 2
Facility Status: Case Closed
Facility Id: 48-0164
Case Number: 30113
How Discovered: Tank Closure
Leak Cause: Structure Failure
Leak Source: Tank
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: 8/26/1987
Pollution Characterization Began: 12/31/1987
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: 6/6/1990
Date Post Remedial Action Monitoring Began: 9/3/1991

Cortese:
Region: CORTESE
Facility Addr2: Not reported

SWEEPS UST:
Status: Not reported
Comp Number: 30113
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 48-000-030113-000001
Actv Date: Not reported
Capacity: 12000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: DIESEL
Number Of Tanks: 6

Status: Not reported
Comp Number: 30113
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 48-000-030113-000002
Actv Date: Not reported
Capacity: 12000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: DIESEL

TEXACO TERMINAL STATIONS INC (Continued) **S102438817**

Number Of Tanks: Not reported

Status: Not reported
Comp Number: 30113
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 48-000-030113-000003
Actv Date: Not reported
Capacity: 12000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: DIESEL
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 30113
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 48-000-030113-000004
Actv Date: Not reported
Capacity: 12000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: DIESEL
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 30113
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 48-000-030113-000005
Actv Date: Not reported
Capacity: 10000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: DIESEL
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 30113
Number: Not reported
Board Of Equalization: Not reported

TEXACO TERMINAL STATIONS INC (Continued) **S102438817**

Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 48-000-030113-000006
Actv Date: Not reported
Capacity: 10000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: LEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 30113
Number: 9
Board Of Equalization: 44-028121
Ref Date: 10-22-93
Act Date: 02-17-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 1-UL27799
Swrcb Tank Id: 48-000-030113-000007
Actv Date: 10-22-93
Capacity: 10000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: 6

Status: A
Comp Number: 30113
Number: 9
Board Of Equalization: 44-028121
Ref Date: 10-22-93
Act Date: 02-17-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 2-UL27796
Swrcb Tank Id: 48-000-030113-000008
Actv Date: 10-22-93
Capacity: 10000
Tank Use: M.V. FUEL
Stg: P
Content: PRM UNLEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 30113
Number: 9
Board Of Equalization: 44-028121
Ref Date: 10-22-93
Act Date: 02-17-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 3-UL27788
Swrcb Tank Id: 48-000-030113-000009

TEXACO TERMINAL STATIONS INC (Continued) **S102438817**

Actv Date: 10-22-93
Capacity: 20000
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: Not reported

Status: A
Comp Number: 30113
Number: 9
Board Of Equalization: 44-028121
Ref Date: 10-22-93
Act Date: 02-17-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 4-UL27813
Swrcb Tank Id: 48-000-030113-000010
Actv Date: 10-22-93
Capacity: 20000
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: Not reported

Status: A
Comp Number: 30113
Number: 9
Board Of Equalization: 44-028121
Ref Date: 10-22-93
Act Date: 02-17-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 5
Swrcb Tank Id: 48-000-030113-000011
Actv Date: 10-22-93
Capacity: 20000
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: Not reported

Status: A
Comp Number: 30113
Number: 9
Board Of Equalization: 44-028121
Ref Date: 10-22-93
Act Date: 02-17-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: 6
Swrcb Tank Id: 48-000-030113-000012
Actv Date: 10-22-93
Capacity: 200
Tank Use: OIL
Stg: W
Content: WASTE OIL
Number Of Tanks: Not reported

8 **TERMINAL STATIONS INC/JS&J SERVICE INC** **LUST** **S106114289**
100 SUISUN VALLEY RD **N/A**
FAIRFIELD, CA 94533

LUST:
Region: SOLANO
Facility ID: 30113
Facility Status: Inactive
Facility Phone: 7078640231
Program: 29S
Inventory Number: 1
Inventory Type: LOP - Closed Site (128)
Inventory Description: Not reported
Last service/permit exp: REVIEW REPORTS /POST REM MONIT
Last service date: 07/14/04

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9 **ARCO AM/PM, CORDELIA** **UST** **U003113036**
4449 CENTRAL **N/A**
FAIRFIELD, CA 94534

UST:
Local Agency: 48000
Facility ID: 30006

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9 **NELLA OIL COMPANY #28 FLYERS** **UST** **U003947064**
4444 CENTRAL PL **N/A**
FAIRFIELD, CA 94533

UST:
Region: SOLANO
Facility Id: 31001
Facility Status: Active
Facility Phone: 7072070351
Program: 23U
Inventory Number: 1
Inventory Type: Gas Station - Retail (111)
Inventory Description: Not reported
Permit Expire/ Last service: LETTER/REPORT REVIEW 04/30/08, 04/30/08
Last Service Date: 04/20/07

Region: SOLANO
Facility Id: 31001
Facility Status: Active
Facility Phone: 7072070351
Program: 23U
Inventory Number: 2
Inventory Type: Gas Station - Retail (111)
Inventory Description: Not reported
Permit Expire/ Last service: ROUTINE - INITIAL (INVENTORIED) 04/30/08, 04/30/08
Last Service Date: 03/27/07

Region: SOLANO
Facility Id: 31001
Facility Status: Active
Facility Phone: 7072070351

NELLA OIL COMPANY #28 FLYERS (Continued) **U003947064**

Program: 23U
Inventory Number: 3
Inventory Type: Gas Station - Retail (111)
Inventory Description: Not reported
Permit Expire/ Last service: ROUTINE - INITIAL (INVENTORIED) 04/30/08, 04/30/08
Last Service Date: 03/27/07

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10 **SHELL** **LUST** **S105194641**
4450 CENTRAL WY **N/A**
SUISUN, CA 94585

LUST:
Region: STATE
Case Type: Other ground water affected
Cross Street: Not reported
Enf Type: F
Funding: Not reported
How Discovered: Tank Closure
How Stopped: Not reported
Leak Cause: Structure Failure
Leak Source: Tank
Global Id: T0609500136
Stop Date: 1986-11-07 00:00:00
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: 1987-04-22 00:00:00
Pollution Char: 1992-07-13 00:00:00
Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 1996-04-11 00:00:00
Discover Date: 1986-11-07 00:00:00
Enforcement Dt: Not reported
Release Date: 1986-11-07 00:00:00
Review Date: 1996-04-11 00:00:00
Enter Date: 1986-11-07 00:00:00
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 48
Org Name: Not reported
Reg Board: San Francisco Bay Region
Status: Case Closed
Chemical: Gasoline
Contact Person: Not reported
Responsible Party: BLANK RP
RP Address: Not reported
Interim: Yes
Oversight Prgm: LUST
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 1
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Staff: MRC
Staff Initials: MCK
Lead Agency: Local Agency

SHELL (Continued) **S105194641**

Local Agency: 48000L
Hydr Basin #: Suisun-Fairfield Val
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: 30064
Case Number: 48-0145
Qty Leaked: Not reported
Abate Method: Excavate and Treat - remove contaminated soil and treat (includes spreading or land farming), Remove Free Product - remove floating product from water table, Excavate and Dispose - remove contaminated soil and dispose in approved site
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: ARCHIVED 11/1/96 CONTROL NO 120-125 SRC 0904775

LUST:
Region: 2
Facility Status: Case Closed
Facility Id: 48-0145
Case Number: 30064
How Discovered: Tank Closure
Leak Cause: Structure Failure
Leak Source: Tank
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: 4/22/1987
Pollution Characterization Began: 7/13/1992
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

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11 **CAMPBELL'S CARPET** **LUST** **S103396363**
4731 CENTRAL WY **N/A**
FAIRFIELD, CA 94533

LUST:
Region: STATE
Case Type: Other ground water affected
Cross Street: Not reported
Enf Type: Not reported
Funding: Not reported
How Discovered: Tank Closure
How Stopped: Not reported
Leak Cause: UNK
Leak Source: UNK
Global Id: T0609500299
Stop Date: 1989-01-01 00:00:00
Confirm Leak: 1998-07-21 00:00:00
Workplan: Not reported
Prelim Assess: Not reported

CAMPBELL'S CARPET (Continued) **S103396363**

Pollution Char: 1998-07-21 00:00:00
Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 1998-09-14 00:00:00
Discover Date: 1989-01-01 00:00:00
Enforcement Dt: Not reported
Release Date: 1989-01-01 00:00:00
Review Date: 1998-10-15 00:00:00
Enter Date: 1998-07-21 00:00:00
MTBE Date: 1965-01-02 00:00:00
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: 6100
Max MTBE Soil ppb: Not reported
County: 48
Org Name: Not reported
Reg Board: San Francisco Bay Region
Status: Case Closed
Chemical: Gasoline
Contact Person: Not reported
Responsible Party: BLANK RP
RP Address: Not reported
Interim: Not reported
Oversight Prgm: LUST
MTBE Class: Not reported
MTBE Conc: 1
MTBE Fuel: 1
MTBE Tested: MTBE Detected. Site tested for MTBE and MTBE detected
Staff: MRC
Staff Initials: MCK
Lead Agency: Local Agency
Local Agency: 48000L
Hydr Basin #: Suisun-Fairfield Val
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: 30160
Case Number: 48-0327
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:
Region: 2
Facility Status: Case Closed
Facility Id: 48-0327
Case Number: 30160
How Discovered: Tank Closure
Leak Cause: UNK

CAMPBELL'S CARPET (Continued) **S103396363**

Leak Source: UNK
Date Leak Confirmed: 7/21/1998
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: 7/21/1998
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

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11 **CAMBELL'S CARPETS (FORMER)** **LUST** **S106114284**
4731 CENTRAL WAY **N/A**
FAIRFIELD, CA 94533

LUST:
Region: SOLANO
Facility ID: 30160
Facility Status: Inactive
Facility Phone: Not reported
Program: 29S
Inventory Number: 1
Inventory Type: LOP - Closed Site (128)
Inventory Description: Not reported
Last service/permit exp: ISSUANCE OF A CLOSURE DOCUMENT
Last service date: 09/14/98

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
FAIRFIELD	S101482540	INTERSTATE 80 AND SUISUN VALLEY ROAD	INTERSTATE 80 / SUISUN VALLEY ROAD	94533	ENVIROSTOR
FAIRFIELD	S106933425	UNITED PARCEL SERVICE	5000 CORDELIA RD	94533	SWEEPS UST
FAIRFIELD	1003878388	SUISUN TRAIN DERAILMENT	END OF CHADBORNE RD	94533	CERC-NFRAP
FAIRFIELD	S101482527	EXPLOSIVE TECHNOLOGY, INC	EXPLOSIVE TECHNOLOGY ROAD / HIGHWAY 12	94533	ENVIROSTOR
FAIRFIELD	S108540829	FAIRFIELD MARINE SERVICE LLC	101 GROBRIC CT STE A	94534	DRYCLEANERS
FAIRFIELD	93322280	EB I-80 AT CHP SCALES IN FAIRFIELD	EB I-80 AT CHP SCALES IN FAIRFIELD	94533	ERNS
FAIRFIELD	1000180422	IT CORP MONTEZUMA FACILITY	LITTLE HONKER BAY ROAD AT COLLINS	94533	FINDS, RCRA-TSDF, CERC-NFRAP, RCRA-NonGen
FAIRFIELD	S108540512	ADVANCED MARINE CENTER	4229 LOZANO LN STE A	94534	DRYCLEANERS
FAIRFIELD	1003878427	FAIRFIELD STP	S OF HWY 80 & BUSCH LN	94533	CERC-NFRAP
FAIRFIELD	S105023727	PRICE COMPANY	UNKNOWN GREEN VALLEY RD	94533	LUST, Cortese
FAIRFIELD	94407066	WESTBOUND I-80 WEST OF TEXAS STREET	WESTBOUND I-80 WEST OF TEXAS STREET	94533	ERNS
SOLANO	S107616299	CHEVRON PIPELINE	COUNTY WIDE-SOLANO	94533	LUST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 01/31/2008
Date Data Arrived at EDR: 02/08/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 38

Source: EPA
Telephone: N/A
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 01/31/2008
Date Data Arrived at EDR: 02/04/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 42

Source: EPA
Telephone: N/A
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 01/31/2008
Date Data Arrived at EDR: 02/08/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 38

Source: EPA
Telephone: N/A
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 01/09/2008
Date Data Arrived at EDR: 02/05/2008
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 15

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 03/20/2008
Next Scheduled EDR Contact: 06/16/2008
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 12/03/2007
Date Data Arrived at EDR: 12/06/2007
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 76

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 03/17/2008
Next Scheduled EDR Contact: 06/16/2008
Data Release Frequency: Quarterly

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/08/2008
Date Data Arrived at EDR: 03/07/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/12/2007
Date Data Arrived at EDR: 12/18/2007
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 64

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/03/2008
Next Scheduled EDR Contact: 06/02/2008
Data Release Frequency: Quarterly

RCRA-TSDF: RCRA - Transporters, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 09/11/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/18/2008
Date Data Arrived at EDR: 01/31/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 03/31/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/18/2008
Date Data Arrived at EDR: 01/31/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 03/31/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Varies

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 01/23/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 54

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 01/23/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 10/31/2007
Date Data Arrived at EDR: 01/17/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 60

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 01/17/2008
Next Scheduled EDR Contact: 04/14/2008
Data Release Frequency: Annually

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 02/14/2008
Date Data Arrived at EDR: 02/27/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 22

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/27/2008
Next Scheduled EDR Contact: 05/26/2008
Data Release Frequency: Varies

CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/28/2008
Next Scheduled EDR Contact: 06/23/2008
Data Release Frequency: Quarterly

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 01/03/2008
Date Data Arrived at EDR: 01/17/2008
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 01/17/2008
Next Scheduled EDR Contact: 03/10/2008
Data Release Frequency: Semi-Annually

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 02/08/2008
Next Scheduled EDR Contact: 05/05/2008
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 08/31/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 41

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 04/03/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 03/10/2008
Next Scheduled EDR Contact: 06/09/2008
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 01/14/2008
Date Data Arrived at EDR: 01/22/2008
Date Made Active in Reports: 01/30/2008
Number of Days to Update: 8

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/31/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 07/13/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 03/17/2008
Next Scheduled EDR Contact: 06/16/2008
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 12/28/2007
Date Data Arrived at EDR: 12/28/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 27

Source: EPA, Region 9
Telephone: 415-972-3336
Last EDR Contact: 03/24/2008
Next Scheduled EDR Contact: 06/23/2008
Data Release Frequency: Varies

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/20/2007
Date Data Arrived at EDR: 01/03/2008
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 48

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/26/2008
Next Scheduled EDR Contact: 06/23/2008
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 04/27/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 69

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/29/2008
Next Scheduled EDR Contact: 06/16/2008
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/14/2008
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/22/2008
Date Made Active in Reports: 01/30/2008
Number of Days to Update: 8

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 03/17/2008
Next Scheduled EDR Contact: 06/16/2008
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/22/2008
Date Made Active in Reports: 01/30/2008
Number of Days to Update: 8

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 03/17/2008
Next Scheduled EDR Contact: 06/16/2008
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 45

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/14/2008
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/27/2007
Date Data Arrived at EDR: 08/13/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 59

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 04/14/2008
Next Scheduled EDR Contact: 07/14/2008
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 12/04/2007
Date Data Arrived at EDR: 02/07/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 39

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 02/07/2008
Next Scheduled EDR Contact: 05/05/2008
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 02/07/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 39

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 03/31/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/29/2008
Date Data Arrived at EDR: 01/31/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/31/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 01/04/2008
Date Data Arrived at EDR: 01/10/2008
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 41

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/31/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 03/03/2008
Next Scheduled EDR Contact: 06/02/2008
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/06/2007
Date Made Active in Reports: 04/13/2007
Number of Days to Update: 38

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/13/2008
Next Scheduled EDR Contact: 06/09/2008
Data Release Frequency: Biennially

STATE AND LOCAL RECORDS

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/25/2008
Next Scheduled EDR Contact: 05/26/2008
Data Release Frequency: No Update Planned

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 02/26/2008
Date Data Arrived at EDR: 02/27/2008
Date Made Active in Reports: 03/27/2008
Number of Days to Update: 29

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/27/2008
Next Scheduled EDR Contact: 02/25/2008
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 02/11/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: No Update Planned

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 03/10/2008
Date Data Arrived at EDR: 03/12/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 33

Source: Integrated Waste Management Board
Telephone: 916-341-6320
Last EDR Contact: 03/12/2008
Next Scheduled EDR Contact: 06/09/2008
Data Release Frequency: Quarterly

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 03/03/2008
Next Scheduled EDR Contact: 06/02/2008
Data Release Frequency: Quarterly

CA WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 03/17/2008
Next Scheduled EDR Contact: 06/16/2008
Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 05/29/2001
Date Made Active in Reports: 07/26/2001
Number of Days to Update: 58

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 01/07/2008
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 36

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 04/09/2008
Next Scheduled EDR Contact: 07/07/2008
Data Release Frequency: Quarterly

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 04/14/2008
Next Scheduled EDR Contact: 07/14/2008
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 02/05/2008
Next Scheduled EDR Contact: 05/05/2008
Data Release Frequency: Varies

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 03/31/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 03/03/2008
Next Scheduled EDR Contact: 06/02/2008
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 01/01/2008
Date Data Arrived at EDR: 01/23/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 04/03/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Quarterly

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 03/24/2008
Next Scheduled EDR Contact: 06/23/2008
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 04/07/2008
Next Scheduled EDR Contact: 07/07/2008
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 01/07/2008
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 36

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 04/09/2008
Next Scheduled EDR Contact: 07/07/2008
Data Release Frequency: Quarterly

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 01/07/2008
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 36

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 01/09/2008
Next Scheduled EDR Contact: 07/07/2008
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 04/07/2008
Next Scheduled EDR Contact: 04/07/2008
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 03/31/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 03/31/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 03/03/2008
Next Scheduled EDR Contact: 06/02/2008
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 03/03/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 03/31/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 02/25/2008
Next Scheduled EDR Contact: 05/26/2008
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 01/07/2008
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 30

Source: SWRCB
Telephone: 916-480-1028
Last EDR Contact: 04/09/2008
Next Scheduled EDR Contact: 07/07/2008
Data Release Frequency: Semi-Annually

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 03/24/2008
Date Data Arrived at EDR: 03/25/2008
Date Made Active in Reports: 04/09/2008
Number of Days to Update: 15

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 03/24/2008
Next Scheduled EDR Contact: 06/23/2008
Data Release Frequency: Varies

HIST UST: Hazardous Substance Storage Container Database
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 02/05/2008
Date Data Arrived at EDR: 02/06/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/05/2008
Next Scheduled EDR Contact: 05/05/2008
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities
Registered Aboveground Storage Tanks.

Date of Government Version: 11/01/2007
Date Data Arrived at EDR: 11/27/2007
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 79

Source: State Water Resources Control Board
Telephone: 916-341-5712
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: Quarterly

SWEEPS UST: SWEEPS UST Listing
Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CHMIRS: California Hazardous Material Incident Report System
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/23/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 42

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

NOTIFY 65: Proposition 65 Records

Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 04/14/2008
Next Scheduled EDR Contact: 07/14/2008
Data Release Frequency: No Update Planned

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 04/01/2008
Date Data Arrived at EDR: 04/02/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 12

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/02/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Semi-Annually

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 02/26/2008
Date Data Arrived at EDR: 02/27/2008
Date Made Active in Reports: 03/27/2008
Number of Days to Update: 29

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/27/2008
Next Scheduled EDR Contact: 05/26/2008
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 07/31/2007
Date Data Arrived at EDR: 07/31/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 9

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 04/14/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 10/25/2007
Date Data Arrived at EDR: 01/23/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 22

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 01/23/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: Varies

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 09/30/2007
Date Data Arrived at EDR: 10/15/2007
Date Made Active in Reports: 11/07/2007
Number of Days to Update: 23

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 02/19/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: Varies

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 02/26/2008
Date Data Arrived at EDR: 02/27/2008
Date Made Active in Reports: 03/27/2008
Number of Days to Update: 29

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/27/2008
Next Scheduled EDR Contact: 05/26/2008
Data Release Frequency: Quarterly

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 10/04/2007
Date Made Active in Reports: 11/07/2007
Number of Days to Update: 34

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 02/08/2008
Next Scheduled EDR Contact: 05/05/2008
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 04/17/2007
Date Made Active in Reports: 05/10/2007
Number of Days to Update: 23

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 01/18/2008
Next Scheduled EDR Contact: 04/14/2008
Data Release Frequency: Varies

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 02/26/2008
Date Data Arrived at EDR: 02/27/2008
Date Made Active in Reports: 03/27/2008
Number of Days to Update: 29

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/27/2008
Next Scheduled EDR Contact: 05/26/2008
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 02/12/2008
Date Data Arrived at EDR: 02/14/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 29

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 04/14/2008
Next Scheduled EDR Contact: 06/09/2008
Data Release Frequency: Varies

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 02/08/2008
Next Scheduled EDR Contact: 05/05/2008
Data Release Frequency: Semi-Annually

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 02/25/2008
Next Scheduled EDR Contact: 05/26/2008
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/14/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 21

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 02/20/2008
Date Data Arrived at EDR: 03/04/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 13

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 03/12/2008
Date Data Arrived at EDR: 03/14/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 6

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 02/28/2008
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 17

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2008
Date Data Arrived at EDR: 02/26/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 20

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/21/2008
Date Data Arrived at EDR: 02/26/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 23

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/05/2007
Date Data Arrived at EDR: 10/02/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 9

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land
A listing of underground storage tank locations on Indian Land.

Date of Government Version: 03/12/2008
Date Data Arrived at EDR: 03/14/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 6

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 02/28/2008
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 17

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/14/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 21

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 02/25/2008
Date Data Arrived at EDR: 02/26/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 23

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 09/05/2007
Date Data Arrived at EDR: 10/02/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 9

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 12/21/2007
Date Data Arrived at EDR: 12/21/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 34

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 12/21/2007
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 02/21/2008
Date Data Arrived at EDR: 02/26/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 23

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 02/20/2008
Date Data Arrived at EDR: 03/04/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 13

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 02/15/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Quarterly

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/28/2008
Date Data Arrived at EDR: 01/29/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 16

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 01/28/2008
Date Data Arrived at EDR: 01/29/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 10

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 03/07/2008
Date Data Arrived at EDR: 03/11/2008
Date Made Active in Reports: 03/27/2008
Number of Days to Update: 16

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 02/25/2008
Next Scheduled EDR Contact: 05/26/2008
Data Release Frequency: Semi-Annually

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 01/16/2008
Date Data Arrived at EDR: 01/17/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 28

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 01/17/2008
Next Scheduled EDR Contact: 02/04/2008
Data Release Frequency: Semi-Annually

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 12/17/2007
Date Data Arrived at EDR: 12/18/2007
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 52

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 04/04/2008
Next Scheduled EDR Contact: 06/02/2008
Data Release Frequency: Quarterly

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 07/07/1999
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 04/14/2008
Next Scheduled EDR Contact: 07/14/2008
Data Release Frequency: No Update Planned

HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/29/2007
Date Data Arrived at EDR: 01/22/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 23

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities

Solid Waste Facilities in Los Angeles County.

Date of Government Version: 02/12/2008
Date Data Arrived at EDR: 02/21/2008
Date Made Active in Reports: 03/27/2008
Number of Days to Update: 35

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 02/14/2008
Next Scheduled EDR Contact: 05/12/2008
Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/01/2008
Date Data Arrived at EDR: 03/20/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 25

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 03/12/2008
Next Scheduled EDR Contact: 06/09/2008
Data Release Frequency: Varies

Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 05/30/2007
Date Data Arrived at EDR: 07/11/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 29

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 02/11/2008
Date Data Arrived at EDR: 02/21/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 22

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 02/11/2008
Next Scheduled EDR Contact: 05/12/2008
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 02/26/2008
Date Data Arrived at EDR: 02/27/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 16

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 02/25/2008
Next Scheduled EDR Contact: 05/12/2008
Data Release Frequency: Semi-Annually

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 02/04/2008
Date Data Arrived at EDR: 02/21/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 22

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 01/28/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: Semi-Annually

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 29

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 04/07/2008
Next Scheduled EDR Contact: 06/23/2008
Data Release Frequency: Semi-Annually

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 04/07/2008
Next Scheduled EDR Contact: 06/23/2008
Data Release Frequency: Annually

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 03/03/2008
Date Data Arrived at EDR: 03/20/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 25

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 06/02/2008
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 03/03/2008
Date Data Arrived at EDR: 03/25/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 20

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 06/02/2008
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 03/03/2008
Date Data Arrived at EDR: 03/18/2008
Date Made Active in Reports: 04/09/2008
Number of Days to Update: 22

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 03/06/2008
Next Scheduled EDR Contact: 06/02/2008
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 07/23/2007
Date Data Arrived at EDR: 07/23/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 17

Source: Placer County Health and Human Services
Telephone: 530-889-7312
Last EDR Contact: 03/17/2008
Next Scheduled EDR Contact: 06/16/2008
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 08/06/2007
Date Data Arrived at EDR: 08/07/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 50

Source: Department of Public Health
Telephone: 951-358-5055
Last EDR Contact: 04/14/2008
Next Scheduled EDR Contact: 07/14/2008
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 08/06/2007
Date Data Arrived at EDR: 08/07/2007
Date Made Active in Reports: 09/24/2007
Number of Days to Update: 48

Source: Health Services Agency
Telephone: 951-358-5055
Last EDR Contact: 04/14/2008
Next Scheduled EDR Contact: 07/14/2008
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Contaminated Sites
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/11/2008
Date Data Arrived at EDR: 02/27/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 16

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 02/27/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: Quarterly

ML - Regulatory Compliance Master List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/11/2008
Date Data Arrived at EDR: 02/27/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 16

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 02/27/2008
Next Scheduled EDR Contact: 04/28/2008
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 03/18/2008
Date Data Arrived at EDR: 03/19/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 26

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 03/03/2008
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 05/16/2005
Date Data Arrived at EDR: 05/18/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 29

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 04/02/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/2007
Date Data Arrived at EDR: 02/05/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 9

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 11/28/2007
Date Data Arrived at EDR: 03/13/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 32

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 04/02/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Varies

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 03/03/2008
Date Data Arrived at EDR: 03/04/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 03/03/2008
Next Scheduled EDR Contact: 06/02/2008
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 03/03/2008
Date Data Arrived at EDR: 03/04/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 10
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 03/03/2008
Next Scheduled EDR Contact: 06/02/2008
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 02/01/2008
Date Data Arrived at EDR: 02/26/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 17
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 04/14/2008
Next Scheduled EDR Contact: 07/14/2008
Data Release Frequency: Semi-Annually

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 01/31/2008
Date Data Arrived at EDR: 02/01/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 13
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 04/07/2008
Next Scheduled EDR Contact: 07/07/2008
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 01/09/2008
Date Data Arrived at EDR: 01/11/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 34
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 04/07/2008
Next Scheduled EDR Contact: 07/07/2008
Data Release Frequency: Semi-Annually

SANTA CLARA COUNTY:

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22
Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/24/2008
Next Scheduled EDR Contact: 06/23/2008
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 02/01/2008
Date Data Arrived at EDR: 02/05/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 9
Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 04/14/2008
Next Scheduled EDR Contact: 06/23/2008
Data Release Frequency: Varies

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 03/04/2008
Date Data Arrived at EDR: 03/04/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 10

Source: City of San Jose Fire Department
Telephone: 408-277-4659
Last EDR Contact: 03/03/2008
Next Scheduled EDR Contact: 06/02/2008
Data Release Frequency: Annually

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 09/24/2007
Date Data Arrived at EDR: 10/23/2007
Date Made Active in Reports: 11/07/2007
Number of Days to Update: 15

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/24/2008
Next Scheduled EDR Contact: 06/23/2008
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 01/07/2008
Date Data Arrived at EDR: 01/30/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 9

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/24/2008
Next Scheduled EDR Contact: 06/23/2008
Data Release Frequency: Quarterly

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/22/2008
Date Data Arrived at EDR: 01/22/2008
Date Made Active in Reports: 02/14/2008
Number of Days to Update: 23

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 01/21/2008
Next Scheduled EDR Contact: 04/21/2008
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 05/04/2007
Date Data Arrived at EDR: 05/04/2007
Date Made Active in Reports: 05/24/2007
Number of Days to Update: 20

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 03/31/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Semi-Annually

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 02/27/2008
Date Data Arrived at EDR: 03/25/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 20

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/12/2008
Next Scheduled EDR Contact: 06/09/2008
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 08/01/2007
Date Data Arrived at EDR: 08/29/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 28

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/19/2008
Next Scheduled EDR Contact: 05/19/2008
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 02/27/2008
Date Data Arrived at EDR: 03/25/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 20

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/12/2008
Next Scheduled EDR Contact: 06/09/2008
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 12/26/2007
Date Data Arrived at EDR: 01/09/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 30

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/09/2008
Next Scheduled EDR Contact: 07/07/2008
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 01/29/2008
Date Data Arrived at EDR: 02/20/2008
Date Made Active in Reports: 03/14/2008
Number of Days to Update: 23

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 04/14/2008
Next Scheduled EDR Contact: 07/14/2008
Data Release Frequency: Annually

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 06/15/2007
Date Made Active in Reports: 08/20/2007
Number of Days to Update: 66

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 03/14/2008
Next Scheduled EDR Contact: 06/09/2008
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 09/30/2007
Date Data Arrived at EDR: 12/04/2007
Date Made Active in Reports: 12/31/2007
Number of Days to Update: 27

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/03/2008
Next Scheduled EDR Contact: 06/30/2008
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 02/15/2008
Date Data Arrived at EDR: 02/28/2008
Date Made Active in Reports: 04/09/2008
Number of Days to Update: 41

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 02/28/2008
Next Scheduled EDR Contact: 05/26/2008
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 12/21/2007
Date Made Active in Reports: 01/10/2008
Number of Days to Update: 20

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 03/10/2008
Next Scheduled EDR Contact: 06/09/2008
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 10/01/2007
Date Data Arrived at EDR: 11/09/2007
Date Made Active in Reports: 01/15/2008
Number of Days to Update: 67

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 03/17/2008
Next Scheduled EDR Contact: 06/16/2008
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 04/27/2007
Date Made Active in Reports: 06/08/2007
Number of Days to Update: 42

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 04/07/2008
Next Scheduled EDR Contact: 07/07/2008
Data Release Frequency: Annually

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

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Eastbound I-80 CT SR Project

122° 08´ 00″ | 122° 06´ 00″ | 122° 04´ 00″

38° 14´ 00″

Fairfield-Suisun City

Green Valley

Fairfield

Fairfield-Suisun City

- Listed Sites
- Earthquake Epicenters (Richter 5 or greater)
- Search Boundary
- Roads
- Major Roads
- Waterways
- Railroads
- Contour Lines
- Pipelines
- Powerlines
- Fault Lines
- Water
- Superfund Sites
- Federal DOD Sites
- Indian Reservations BIA
- 100-Yr Flood Zones
- National Wetland Inventory

N

Rockville, CA

0 1/4 1/2

Scale in Miles

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EDR Site Report™

EB I-80 AT CHP SCALES IN FAIRFIE
EB I-80 AT CHP SCALES IN FAIRFIELD
FAIRFIELD, CA 94533

Inquiry Number:

April 18, 2008

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

TABLE OF CONTENTS

The EDR-Site Report™ is a comprehensive presentation of government filings on a facility identified in a search of over 4 million government records from more than 600 federal, state and local environmental databases. The report is divided into three sections:

Section 1: Facility Summary . . . . . Page 3

Summary of facility filings including a review of the following areas: waste management, waste disposal, multi-media issues, and Superfund liability.

Section 2: Facility Detail Reports . . . . . Page 4

All available detailed information from databases where sites are identified.

Section 3: Databases Searched and Update Information. . . . . Page 5

Name, source, update dates, contact phone number and description of each of the databases searched for this report.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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SECTION 1: FACILITY SUMMARY

FACILITY AREA	FACILITY 1 **EB I-80 AT CHP SCALES IN FAIRFIELD** EB I-80 AT CHP SCALES IN FAIRFIELD FAIRFIELD, CA 94533 EDR ID #93322280
WASTE MANAGEMENT Facility generates hazardous waste (RCRA)	NO
Facility treats, stores, or disposes of hazardous waste on-site (RCRA/TSDF)	NO
Facility has received Notices of Violations (RCRA/VIOL)	NO
Facility has been subject to RCRA administrative actions (RAATS)	NO
Facility has been subject to corrective actions (CORRACTS)	NO
Facility handles PCBs (PADS)	NO
Facility uses radioactive materials (MLTS)	NO
Facility manages registered aboveground storage tanks (AST)	NO
Facility manages registered underground storage tanks (UST)	NO
Facility has reported leaking underground storage tank incidents (LUST)	NO
Facility has reported emergency releases to the soil (ERNS)	**YES - p4**
Facility has reported hazardous material incidents to DOT (HMIRS)	NO
WASTE DISPOSAL Facility is a Superfund Site (NPL)	NO
Facility has a known or suspect abandoned, inactive or uncontrolled hazardous waste site (CERCLIS)	NO
Facility has a reported Superfund Lien on it (LIENS)	NO
Facility is listed as a state hazardous waste site (SHWS)	NO
Facility has disposed of solid waste on-site (SWF/LF)	NO
MULTIMEDIA Facility uses toxic chemicals and has notified EPA under SARA Title III, Section 313 (TRIS)	NO
Facility produces pesticides and has notified EPA under Section 7 of FIFRA (SSTS)	NO
Facility manufactures or imports toxic chemicals on the TSCA list (TSCA)	NO
Facility has inspections under FIFRA, TSCA or EPCRA (FTTS)	NO
Facility is listed in EPA's index system (FINDS)	NO
Facility is listed in a county/local unique database (LOCAL)	NO
POTENTIAL SUPERFUND LIABILITY Facility has a list of potentially responsible parties PRP	NO
TOTAL (YES)	1

SECTION 2: FACILITY DETAIL REPORTS

WASTE MANAGEMENT

Facility has reported emergency releases to the soil

DATABASE: Emergency Response Notification System (ERNS)

EB I-80 AT CHP SCALES IN FAIRFIELD
EB I-80 AT CHP SCALES IN FAIRFIELD
FAIRFIELD, CA 94533
EDR ID #93322280

ERNS:

Site ID:	93322280
Site location:	EB I-80 AT CHP SCALES IN FAIRFIELD FAIRFIELD, CA 94533-
County:	SOLANO
Report number:	Not reported
EPA region:	09
Spill date:	04/21/1993
Spill time:	12:20
Medium affected:	Land
Damage:	False
Damage $ amount:	0.00
Number of injured:	0
Number of fatalities:	0
Notes:	Not reported
Discharger:	UNKNOWN
Discharger address:	Not reported Not reported
Discharger county:	Not reported
C.G. Unit:	Not reported
EPA notified:	True
Initial report:	True
Updated report:	True
Spill cause:	Not reported
Spilled material:	ANHYDROUS AMMONIA
Spill total qty:	0.00 UNK
In water:	0.00 UNK
DOT #:	UN1005
CAS:	766441
Quantity (lbs):	0.00
Description:	DEFECTIVE VALVE
Action:	NO WATERWAYS INVOLVED, NO CLEANUP
Comments:	THE CALLER IS REPORTING THAT THEY CAN'T FIND THE STEEL OR IF IT CAME FROM THEIR TRUCK OR NOT

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

To maintain currency of the following federal, state and local databases, EDR contacts the appropriate government agency on a monthly or quarterly basis as required.

Elapsed ASTM days: Provides confirmation that this report meets or exceeds the 90-day updating requirement of the ASTM standard.

WASTE MANAGEMENT

RCRA-TSDF: RCRA - Transporters, Storage and Disposal
Source: Environmental Protection Agency
Telephone: 703-308-0035
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/06/2008 Date of Last EDR Contact: 03/06/2008
Database Release Frequency: Quarterly Date of Next Scheduled Update: 05/19/2008

RCRA-LQG: RCRA - Large Quantity Generators
Source: Environmental Protection Agency
Telephone: 703-308-0035
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/06/2008 Date of Last EDR Contact: 03/06/2008
Database Release Frequency: Quarterly Date of Next Scheduled Update: 05/19/2008

RCRA-SQG: RCRA - Small Quantity Generators
Source: Environmental Protection Agency
Telephone: 703-308-0035
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/06/2008 Date of Last EDR Contact: 03/06/2008
Database Release Frequency: Quarterly Date of Next Scheduled Update: 05/19/2008

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generator
Source: Environmental Protection Agency
Telephone: 703-308-0035
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/06/2008 Date of Last EDR Contact: 03/06/2008
Database Release Frequency: Varies Date of Next Scheduled Update: 05/19/2008

RCRA-NonGen: RCRA - Non Generators
Source: Environmental Protection Agency
Telephone: 703-308-0035
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/06/2008 Date of Last EDR Contact: 03/06/2008
Database Release Frequency: Varies Date of Next Scheduled Update: 05/19/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2005
Database Release Frequency: Biennially
Date of Last EDR Contact: 03/13/2008
Date of Next Scheduled Update: 06/09/2008

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 03/03/2008
Date of Next Scheduled Update: 06/02/2008

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/12/2007
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/03/2008
Date of Next Scheduled Update: 06/02/2008

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-566-0500
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 12/04/2007
Database Release Frequency: Annually
Date of Last EDR Contact: 02/07/2008
Date of Next Scheduled Update: 05/05/2008

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/15/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/31/2008
Date of Next Scheduled Update: 06/30/2008

CA AST: Aboveground Petroleum Storage Tank Facilities
Source: State Water Resources Control Board
Telephone: 916-341-5712
Registered Aboveground Storage Tanks.

Date of Government Version: 11/01/2007
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/28/2008
Date of Next Scheduled Update: 04/28/2008

CA UST: Active UST Facilities
Source: SWRCB
Telephone: 866-480-1028
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 01/07/2008
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 04/09/2008
Date of Next Scheduled Update: 07/07/2008

CA LUST: Geotracker's Leaking Underground Fuel Tank Report
Source: State Water Resources Control Board
Telephone: Not reported
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 01/07/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/09/2008
Date of Next Scheduled Update: 07/07/2008

ERNS: Emergency Response Notification System
Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2007
Database Release Frequency: Annually
Date of Last EDR Contact: 01/23/2008
Date of Next Scheduled Update: 04/21/2008

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 10/31/2007
Database Release Frequency: Annually
Date of Last EDR Contact: 04/16/2008
Date of Next Scheduled Update: 07/14/2008

WASTE DISPOSAL

NPL: National Priority List
Source: EPA
Telephone: Not reported
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 01/31/2008
Date Made Active at EDR: 03/17/2008
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 02/08/2008
Elapsed ASTM Days: 38
Date of Last EDR Contact: 01/28/2008

Proposed NPL: Proposed National Priority List Sites
Source: EPA
Telephone: Not reported
A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 01/31/2008
Date Made Active at EDR: 03/17/2008
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 02/04/2008
Elapsed ASTM Days: 42
Date of Last EDR Contact: 01/28/2008

DELISTED NPL: National Priority List Deletions
Source: EPA
Telephone: Not reported
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 01/31/2008
Date Made Active at EDR: 03/17/2008
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 02/08/2008
Elapsed ASTM Days: 38
Date of Last EDR Contact: 01/28/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA
Telephone: 703-412-9810
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 01/09/2008
Date Made Active at EDR: 02/20/2008
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 02/05/2008
Elapsed ASTM Days: 15
Date of Last EDR Contact: 04/18/2008

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Source: EPA
Telephone: 703-412-9810
Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 12/03/2007
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/17/2008
Date of Next Scheduled Update: 06/16/2008

ROD: Records Of Decision
Source: EPA
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 01/14/2008
Database Release Frequency: Annually
Date of Last EDR Contact: 03/31/2008
Date of Next Scheduled Update: 06/30/2008

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 202-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Made Active at EDR: 03/30/1994
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 02/02/1994
Elapsed ASTM Days: 56
Date of Last EDR Contact: 02/19/2008

CA SWF/LF (SWIS): Solid Waste Information System
Source: Integrated Waste Management Board
Telephone: 916-341-6320
Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 03/10/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/12/2008
Date of Next Scheduled Update: 06/09/2008

MULTIMEDIA

TRIS: Toxic Chemical Release Inventory System
Source: EPA
Telephone: 202-566-0250
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2006
Database Release Frequency: Annually
Date of Last EDR Contact: 02/29/2008
Date of Next Scheduled Update: 06/16/2008

SSTS: Section 7 Tracking Systems
Source: EPA
Telephone: 202-564-4203
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2006
Database Release Frequency: Annually
Date of Last EDR Contact: 04/14/2008
Date of Next Scheduled Update: 07/14/2008

TSCA: Toxic Substances Control Act
Source: EPA
Telephone: 202-260-5521
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Database Release Frequency: N/A
Date of Last EDR Contact: 04/14/2008
Date of Next Scheduled Update: 07/14/2008

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/15/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/17/2008
Date of Next Scheduled Update: 06/16/2008

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA
Telephone: 202-566-1667
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 01/15/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/17/2008
Date of Next Scheduled Update: 06/16/2008

FINDS: Facility Index System/Facility Registry System
Source: EPA
Telephone: Not reported
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 01/04/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/31/2008
Date of Next Scheduled Update: 06/30/2008

RMP: Risk Management Plans
Source: Environmental Protection Agency
Telephone: 202-564-8600
When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/01/2007
Database Release Frequency: Varies
Date of Last EDR Contact: 02/15/2008
Date of Next Scheduled Update: 05/19/2008

STORMWATER: Storm Water General Permits
Source: Environmental Protection Agency
Telephone: 202-564-0746
A listing of all facilities with Storm Water General Permits.

Date of Government Version: 06/02/2005
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/31/2008
Date of Next Scheduled Update: 06/30/2008

US ENG CONTROLS: Engineering Controls Sites List
Source: Environmental Protection Agency
Telephone: 703-603-8905
A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/18/2008
Database Release Frequency: Varies
Date of Last EDR Contact: 03/31/2008
Date of Next Scheduled Update: 06/30/2008

US INST CONTROL: Sites with Institutional Controls
Source: Environmental Protection Agency
Telephone: 703-603-8905
A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/18/2008
Database Release Frequency: Varies
Date of Last EDR Contact: 03/31/2008
Date of Next Scheduled Update: 06/30/2008

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
Source: EPA Region 1
Telephone: 617-918-1313
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 03/12/2008
Database Release Frequency: Varies
Date of Last EDR Contact: 02/15/2008
Date of Next Scheduled Update: 05/19/2008

RADINFO: Radiation Information Database
Source: Environmental Protection Agency
Telephone: 202-343-9775
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/29/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/31/2008
Date of Next Scheduled Update: 04/28/2008

LUCIS: Land Use Control Information System
Source: Department of the Navy
Telephone: 843-820-7326
LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Database Release Frequency: Varies
Date of Last EDR Contact: 03/10/2008
Date of Next Scheduled Update: 06/09/2008

CDL: Clandestine Drug Labs
Source: Drug Enforcement Administration
Telephone: 202-307-1000
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/28/2008
Date of Next Scheduled Update: 06/23/2008

CA HIST CAL-SITES: Historical Calsites Database
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 02/25/2008
Date of Next Scheduled Update: 05/26/2008

CA CA BOND EXP. PLAN: Bond Expenditure Plan
Source: Department of Health Services
Telephone: 916-255-2118
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 05/31/1994
Date of Next Scheduled Update: Not reported

CA SCH: School Property Evaluation Program
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 02/26/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/27/2008
Date of Next Scheduled Update: 02/25/2008

CA TOXIC PITS: Toxic Pits Cleanup Act Sites
Source: State Water Resources Control Board
Telephone: 916-227-4364
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 02/11/2008
Date of Next Scheduled Update: 04/28/2008

CA WMUDS/SWAT: Waste Management Unit Database
Source: State Water Resources Control Board
Telephone: 916-227-4448
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/03/2008
Date of Next Scheduled Update: 06/02/2008

CA CA WDS: Waste Discharge System
Source: State Water Resources Control Board
Telephone: 916-341-5227
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/17/2008
Date of Next Scheduled Update: 06/16/2008

CA CORTESE: "Cortese" Hazardous Waste & Substances Sites List
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 01/21/2008
Date of Next Scheduled Update: 04/21/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

CA SWRCY: Recycler Database
Source: Department of Conservation
Telephone: 916-323-3836
A listing of recycling facilities in California.

Date of Government Version: 01/07/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/09/2008
Date of Next Scheduled Update: 07/07/2008

CA CA FID UST: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-341-5851
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 12/28/1998
Date of Next Scheduled Update: Not reported

CA SLIC: Statewide SLIC Cases
Source: State Water Resources Control Board
Telephone: 866-480-1028
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 01/07/2008
Database Release Frequency: Varies
Date of Last EDR Contact: 01/09/2008
Date of Next Scheduled Update: 07/07/2008

CA Sacramento Co. CS: CS - Contaminated Sites
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/11/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/27/2008
Date of Next Scheduled Update: 04/28/2008

CA CS: Contaminated Sites
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/28/2008
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/21/2008
Date of Next Scheduled Update: 04/21/2008

CA HIST LUST SANTA CLARA: Fuel Leak Site Activity Report
Source: Santa Clara Valley Water District
Telephone: 408-265-2600
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 03/24/2008
Date of Next Scheduled Update: 06/23/2008

CA AOCONCERN: San Gabriel Valley Areas of Concern
Source: EPA Region 9
Telephone: 415-972-3178
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/1998
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 04/14/2008
Date of Next Scheduled Update: 07/14/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

CA HIST UST: Hazardous Substance Storage Container Database
Source: State Water Resources Control Board
Telephone: 916-341-5851
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 07/26/2001
Date of Next Scheduled Update: Not reported

CA LIENS: Environmental Liens Listing
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 02/05/2008
Database Release Frequency: Varies
Date of Last EDR Contact: 02/05/2008
Date of Next Scheduled Update: 05/05/2008

CA PERCHLORATE 2: Perchlorate Confirmed Contaminant Sites
Source: State Water Resources Control Board
Telephone: 916-341-5687
Perchlorate confirmed contaminant sites are regulated by the SWRCB and/or DTSC.

Date of Government Version: 02/26/2008
Database Release Frequency: Varies
Date of Last EDR Contact: 02/27/2008
Date of Next Scheduled Update: 05/26/2008

CA CONTRA COSTA CO. SITE LIST: Site List
Source: Contra Costa Health Services Department
Telephone: 925-646-2286
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 03/07/2008
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 02/25/2008
Date of Next Scheduled Update: 05/26/2008

CA SAN JOSE HAZMAT: Hazardous Material Facilities
Source: City of San Jose Fire Department
Telephone: 408-277-4659
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 03/04/2008
Database Release Frequency: Annually
Date of Last EDR Contact: 03/03/2008
Date of Next Scheduled Update: 06/02/2008

CA Fresno Co. CUPA: CUPA Resources List
Source: Dept. of Community Health
Telephone: 559-445-3271
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 01/16/2008
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 04/18/2008
Date of Next Scheduled Update: 07/14/2008

CA PLACER CO. MS: Master List of Facilities
Source: Placer County Health and Human Services
Telephone: 530-889-7312
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 07/23/2007
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 03/17/2008
Date of Next Scheduled Update: 06/16/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

CA SWEEPS UST: SWEEPS UST Listing
Source: State Water Resources Control Board
Telephone: Not reported
Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1980's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 06/03/2005
Date of Next Scheduled Update: Not reported

CA CHMIRS: California Hazardous Material Incident Report System
Source: Office of Emergency Services
Telephone: 916-845-8400
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/2005
Database Release Frequency: Varies
Date of Last EDR Contact: 02/19/2008
Date of Next Scheduled Update: 05/19/2008

CA NOTIFY 65: Proposition 65 Records
Source: State Water Resources Control Board
Telephone: 916-445-3846
Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/1993
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 04/14/2008
Date of Next Scheduled Update: 07/14/2008

CA LA Co. Site Mitigation: Site Mitigation List
Source: Community Health Services
Telephone: 323-890-7806
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 05/30/2007
Database Release Frequency: Annually
Date of Last EDR Contact: 02/11/2008
Date of Next Scheduled Update: 05/12/2008

CA Orange Co. Industrial Site: List of Industrial Site Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Petroleum and non-petroleum spills.

Date of Government Version: 03/03/2008
Database Release Frequency: Annually
Date of Last EDR Contact: 03/06/2008
Date of Next Scheduled Update: 06/02/2008

CA DEED: Deed Restriction Listing
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 04/01/2008
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 04/02/2008
Date of Next Scheduled Update: 06/30/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

CA VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 02/26/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/27/2008
Date of Next Scheduled Update: 05/26/2008

CA DRYCLEANERS: Cleaner Facilities
Source: Department of Toxic Substance Control
Telephone: 916-327-4498
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 07/31/2007
Database Release Frequency: Annually
Date of Last EDR Contact: 04/14/2008
Date of Next Scheduled Update: 06/30/2008

CA LOS ANGELES CO. HMS: HMS: Street Number List
Source: Department of Public Works
Telephone: 626-458-3517
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/29/2007
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 02/11/2008
Date of Next Scheduled Update: 05/12/2008

CA VENTURA CO. BWT: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 02/27/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/12/2008
Date of Next Scheduled Update: 06/09/2008

CA WIP: Well Investigation Program Case List
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 10/25/2007
Database Release Frequency: Varies
Date of Last EDR Contact: 01/23/2008
Date of Next Scheduled Update: 04/21/2008

CA CDL: Clandestine Drug Labs
Source: Department of Toxic Substances Control
Telephone: 916-255-6504
A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 09/30/2007
Database Release Frequency: Varies
Date of Last EDR Contact: 02/19/2008
Date of Next Scheduled Update: 04/21/2008

CA Sacramento Co. ML: ML - Regulatory Compliance Master List
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/11/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/27/2008
Date of Next Scheduled Update: 04/28/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

CA SAN DIEGO CO. HMMD: Hazardous Materials Management Division Database
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 05/16/2005
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/02/2008
Date of Next Scheduled Update: 06/30/2008

CA San Bern. Co. Permit: Hazardous Material Permits
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 03/18/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/03/2008
Date of Next Scheduled Update: 12/03/2007

CA San Mateo Co. BI: Business Inventory
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 01/31/2008
Database Release Frequency: Annually
Date of Last EDR Contact: 04/07/2008
Date of Next Scheduled Update: 07/07/2008

CA RESPONSE: State Response Sites
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 02/26/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/27/2008
Date of Next Scheduled Update: 05/26/2008

CA HAZNET: Facility and Manifest Data
Source: California Environmental Protection Agency
Telephone: 916-255-1136
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2006
Database Release Frequency: Annually
Date of Last EDR Contact: 02/08/2008
Date of Next Scheduled Update: 05/05/2008

CA EMI: Emissions Inventory Data
Source: California Air Resources Board
Telephone: 916-322-2990
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2005
Database Release Frequency: Varies
Date of Last EDR Contact: 04/18/2008
Date of Next Scheduled Update: 07/14/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

CA ENVIROSTOR: EnviroStor Database
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 02/26/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/27/2008
Date of Next Scheduled Update: 05/26/2008

CA HAULERS: Registered Waste Tire Haulers Listing
Source: Integrated Waste Management Board
Telephone: 916-341-6422
A listing of registered waste tire haulers.

Date of Government Version: 02/12/2008
Database Release Frequency: Varies
Date of Last EDR Contact: 04/14/2008
Date of Next Scheduled Update: 06/09/2008

CA SAN DIEGO CO. SAM: Environmental Case Listing
Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 11/28/2007
Database Release Frequency: Varies
Date of Last EDR Contact: 04/02/2008
Date of Next Scheduled Update: 06/30/2008

CA DAY CARE: Licensed Child Care Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Date of Government Version: 01/15/2008
Database Release Frequency: N/A
Date of Last EDR Contact: 12/21/2007
Date of Next Scheduled Update: Not reported

POTENTIAL SUPERFUND LIABILITY

PRP: Potentially Responsible Parties
Source: EPA
Telephone: 202-564-6064
A listing of verified Potentially Responsible Parties

Date of Government Version: 01/24/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/31/2008
Date of Next Scheduled Update: 06/30/2008

EDR Site Report™

FAIRFIELD STP
S OF HWY 80 & BUSCH LN
FAIRFIELD, CA 94533

Inquiry Number:

April 18, 2008

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

TABLE OF CONTENTS

The EDR-Site Report™ is a comprehensive presentation of government filings on a facility identified in a search of over 4 million government records from more than 600 federal, state and local environmental databases. The report is divided into three sections:

Section 1: Facility Summary . . . . . Page 3

Summary of facility filings including a review of the following areas: waste management, waste disposal, multi-media issues, and Superfund liability.

Section 2: Facility Detail Reports . . . . . Page 4

All available detailed information from databases where sites are identified.

Section 3: Databases Searched and Update Information. . . . . Page 6

Name, source, update dates, contact phone number and description of each of the databases searched for this report.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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SECTION 1: FACILITY SUMMARY

FACILITY AREA	FACILITY 1 **FAIRFIELD STP** S OF HWY 80 & BUSCH LN FAIRFIELD, CA 94533 EDR ID #1003878427 EPA #CAD980498521
WASTE MANAGEMENT Facility generates hazardous waste (RCRA)	NO
Facility treats, stores, or disposes of hazardous waste on-site (RCRA/TSDF)	NO
Facility has received Notices of Violations (RCRA/VIOL)	NO
Facility has been subject to RCRA administrative actions (RAATS)	NO
Facility has been subject to corrective actions (CORRACTS)	NO
Facility handles PCBs (PADS)	NO
Facility uses radioactive materials (MLTS)	NO
Facility manages registered aboveground storage tanks (AST)	NO
Facility manages registered underground storage tanks (UST)	NO
Facility has reported leaking underground storage tank incidents (LUST)	NO
Facility has reported emergency releases to the soil (ERNS)	NO
Facility has reported hazardous material incidents to DOT (HMIRS)	NO
WASTE DISPOSAL Facility is a Superfund Site (NPL)	NO
Facility has a known or suspect abandoned, inactive or uncontrolled hazardous waste site (CERCLIS)	**YES - p4 (NFRAP)**
Facility has a reported Superfund Lien on it (LIENS)	NO
Facility is listed as a state hazardous waste site (SHWS)	NO
Facility has disposed of solid waste on-site (SWF/LF)	NO
MULTIMEDIA Facility uses toxic chemicals and has notified EPA under SARA Title III, Section 313 (TRIS)	NO
Facility produces pesticides and has notified EPA under Section 7 of FIFRA (SSTS)	NO
Facility manufactures or imports toxic chemicals on the TSCA list (TSCA)	NO
Facility has inspections under FIFRA, TSCA or EPCRA (FTTS)	NO
Facility is listed in EPA's index system (FINDS)	NO
Facility is listed in a county/local unique database (LOCAL)	NO
POTENTIAL SUPERFUND LIABILITY Facility has a list of potentially responsible parties PRP	NO
TOTAL (YES)	1

SECTION 2: FACILITY DETAIL REPORTS

WASTE DISPOSAL

DATABASE: No Further Remedial Action Planned (CERCLIS/NFRAP)

FAIRFIELD STP
S OF HWY 80 & BUSCH LN
FAIRFIELD, CA 94533
EDR ID #1003878427

CERC-NFRAP:

Site ID:	0901749
EPA ID:	CAD980498521
Facility County:	SOLANO
Short Name:	FAIRFIELD STP
Congressional District:	04
IFMS ID:	Not reported
SMSA Number:	8720
USGC Hydro Unit:	18050001
Federal Facility:	Not a Federal Facility
DMNSN Number:	0.00
Site Orphan Flag:	N
RCRA ID:	Not reported
USGS Quadrangle:	Not reported
Site Init By Prog:	Not reported
NFRAP Flag:	NFA
Parent ID:	Not reported
RST Code:	Not reported
EPA Region:	09
Classification:	Not reported
Site Settings Code:	Not reported
NPL Status:	Not on the NPL
DMNSN Unit Code:	Not reported
RBRAC Code:	Not reported
RResp Fed Agency Code:	Not reported
Non NPL Status:	NFRAP
Non NPL Status Date:	19891213
Site Fips Code:	06095
CC Concurrence Date:	Not reported
CC Concurrence FY:	Not reported
Alias EPA ID:	Not reported
Site FUDS Flag:	Not reported

CERCLIS-NFRAP Site Contact Name(s):

Contact ID:	9270067
Contact Name:	Matt Mitguard
Contact Tel:	(415) 972-3096
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported

Contact ID:	13000666
Contact Name:	Nuria Muniz
Contact Tel:	(415) 972-3811
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported

CERCLIS-NFRAP Site Alias Name(s):

Alias ID:	101
Alias Name:	FAIRFIELD STP
Alias Address:	E OF ABERNATHY FAIRFIELD, CA 94533
Alias Comments:	Not reported

Site Description: Not reported

CERCLIS-NFRAP Assessment History:

Action Code:	001
Action:	DISCOVERY
Date Started:	Not reported
Date Completed:	09/01/1979
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	EPA Fund-Financed
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

Action Code:	001
Action:	PRELIMINARY ASSESSMENT
Date Started:	Not reported
Date Completed:	05/01/1980
Priority Level:	Low
Operable Unit:	SITEWIDE

Primary Responsibility:	EPA Fund-Financed
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

Action Code:	002
Action:	PRELIMINARY ASSESSMENT
Date Started:	Not reported
Date Completed:	12/13/1989
Priority Level:	NFRAP (No Futher Remedial Action Planned
Operable Unit:	SITEWIDE
Primary Responsibility:	EPA Fund-Financed
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

Action Code:	001
Action:	ARCHIVE SITE
Date Started:	Not reported
Date Completed:	12/13/1989
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	EPA In-House
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

To maintain currency of the following federal, state and local databases, EDR contacts the appropriate government agency on a monthly or quarterly basis as required.

Elapsed ASTM days: Provides confirmation that this report meets or exceeds the 90-day updating requirement of the ASTM standard.

WASTE MANAGEMENT

RCRA-TSDF: RCRA - Transporters, Storage and Disposal
Source: Environmental Protection Agency
Telephone: 703-308-0035
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/06/2008 — Date of Last EDR Contact: 03/06/2008
Database Release Frequency: Quarterly — Date of Next Scheduled Update: 05/19/2008

RCRA-LQG: RCRA - Large Quantity Generators
Source: Environmental Protection Agency
Telephone: 703-308-0035
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/06/2008 — Date of Last EDR Contact: 03/06/2008
Database Release Frequency: Quarterly — Date of Next Scheduled Update: 05/19/2008

RCRA-SQG: RCRA - Small Quantity Generators
Source: Environmental Protection Agency
Telephone: 703-308-0035
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/06/2008 — Date of Last EDR Contact: 03/06/2008
Database Release Frequency: Quarterly — Date of Next Scheduled Update: 05/19/2008

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generator
Source: Environmental Protection Agency
Telephone: 703-308-0035
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/06/2008 — Date of Last EDR Contact: 03/06/2008
Database Release Frequency: Varies — Date of Next Scheduled Update: 05/19/2008

RCRA-NonGen: RCRA - Non Generators
Source: Environmental Protection Agency
Telephone: 703-308-0035
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/06/2008 — Date of Last EDR Contact: 03/06/2008
Database Release Frequency: Varies — Date of Next Scheduled Update: 05/19/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2005
Database Release Frequency: Biennially
Date of Last EDR Contact: 03/13/2008
Date of Next Scheduled Update: 06/09/2008

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 03/03/2008
Date of Next Scheduled Update: 06/02/2008

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/12/2007
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/03/2008
Date of Next Scheduled Update: 06/02/2008

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-566-0500
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 12/04/2007
Database Release Frequency: Annually
Date of Last EDR Contact: 02/07/2008
Date of Next Scheduled Update: 05/05/2008

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/15/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/31/2008
Date of Next Scheduled Update: 06/30/2008

CA AST: Aboveground Petroleum Storage Tank Facilities
Source: State Water Resources Control Board
Telephone: 916-341-5712
Registered Aboveground Storage Tanks.

Date of Government Version: 11/01/2007
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/28/2008
Date of Next Scheduled Update: 04/28/2008

CA UST: Active UST Facilities
Source: SWRCB
Telephone: 866-480-1028
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 01/07/2008
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 04/09/2008
Date of Next Scheduled Update: 07/07/2008

CA LUST: Geotracker's Leaking Underground Fuel Tank Report
Source: State Water Resources Control Board
Telephone: Not reported
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 01/07/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/09/2008
Date of Next Scheduled Update: 07/07/2008

ERNS: Emergency Response Notification System
Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2007
Database Release Frequency: Annually
Date of Last EDR Contact: 01/23/2008
Date of Next Scheduled Update: 04/21/2008

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 10/31/2007
Database Release Frequency: Annually
Date of Last EDR Contact: 04/16/2008
Date of Next Scheduled Update: 07/14/2008

WASTE DISPOSAL

NPL: National Priority List
Source: EPA
Telephone: Not reported
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 01/31/2008
Date Made Active at EDR: 03/17/2008
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 02/08/2008
Elapsed ASTM Days: 38
Date of Last EDR Contact: 01/28/2008

Proposed NPL: Proposed National Priority List Sites
Source: EPA
Telephone: Not reported
A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 01/31/2008
Date Made Active at EDR: 03/17/2008
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 02/04/2008
Elapsed ASTM Days: 42
Date of Last EDR Contact: 01/28/2008

DELISTED NPL: National Priority List Deletions
Source: EPA
Telephone: Not reported
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 01/31/2008
Date Made Active at EDR: 03/17/2008
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 02/08/2008
Elapsed ASTM Days: 38
Date of Last EDR Contact: 01/28/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA
Telephone: 703-412-9810
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 01/09/2008
Date Made Active at EDR: 02/20/2008
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 02/05/2008
Elapsed ASTM Days: 15
Date of Last EDR Contact: 04/18/2008

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Source: EPA
Telephone: 703-412-9810
Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 12/03/2007
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/17/2008
Date of Next Scheduled Update: 06/16/2008

ROD: Records Of Decision
Source: EPA
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 01/14/2008
Database Release Frequency: Annually
Date of Last EDR Contact: 03/31/2008
Date of Next Scheduled Update: 06/30/2008

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 202-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Made Active at EDR: 03/30/1994
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 02/02/1994
Elapsed ASTM Days: 56
Date of Last EDR Contact: 02/19/2008

CA SWF/LF (SWIS): Solid Waste Information System
Source: Integrated Waste Management Board
Telephone: 916-341-6320
Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 03/10/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/12/2008
Date of Next Scheduled Update: 06/09/2008

MULTIMEDIA

TRIS: Toxic Chemical Release Inventory System
Source: EPA
Telephone: 202-566-0250
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2006
Database Release Frequency: Annually
Date of Last EDR Contact: 02/29/2008
Date of Next Scheduled Update: 06/16/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

SSTS: Section 7 Tracking Systems
Source: EPA
Telephone: 202-564-4203
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2006
Database Release Frequency: Annually
Date of Last EDR Contact: 04/14/2008
Date of Next Scheduled Update: 07/14/2008

TSCA: Toxic Substances Control Act
Source: EPA
Telephone: 202-260-5521
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Database Release Frequency: N/A
Date of Last EDR Contact: 04/14/2008
Date of Next Scheduled Update: 07/14/2008

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/15/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/17/2008
Date of Next Scheduled Update: 06/16/2008

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA
Telephone: 202-566-1667
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 01/15/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/17/2008
Date of Next Scheduled Update: 06/16/2008

FINDS: Facility Index System/Facility Registry System
Source: EPA
Telephone: Not reported
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 01/04/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/31/2008
Date of Next Scheduled Update: 06/30/2008

RMP: Risk Management Plans
Source: Environmental Protection Agency
Telephone: 202-564-8600
When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/01/2007
Database Release Frequency: Varies
Date of Last EDR Contact: 02/15/2008
Date of Next Scheduled Update: 05/19/2008

STORMWATER: Storm Water General Permits
Source: Environmental Protection Agency
Telephone: 202-564-0746
A listing of all facilities with Storm Water General Permits.

Date of Government Version: 06/02/2005
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/31/2008
Date of Next Scheduled Update: 06/30/2008

US ENG CONTROLS: Engineering Controls Sites List
Source: Environmental Protection Agency
Telephone: 703-603-8905
A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/18/2008
Database Release Frequency: Varies
Date of Last EDR Contact: 03/31/2008
Date of Next Scheduled Update: 06/30/2008

US INST CONTROL: Sites with Institutional Controls
Source: Environmental Protection Agency
Telephone: 703-603-8905
A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/18/2008
Database Release Frequency: Varies
Date of Last EDR Contact: 03/31/2008
Date of Next Scheduled Update: 06/30/2008

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
Source: EPA Region 1
Telephone: 617-918-1313
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 03/12/2008
Database Release Frequency: Varies
Date of Last EDR Contact: 02/15/2008
Date of Next Scheduled Update: 05/19/2008

RADINFO: Radiation Information Database
Source: Environmental Protection Agency
Telephone: 202-343-9775
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/29/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/31/2008
Date of Next Scheduled Update: 04/28/2008

LUCIS: Land Use Control Information System
Source: Department of the Navy
Telephone: 843-820-7326
LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Database Release Frequency: Varies
Date of Last EDR Contact: 03/10/2008
Date of Next Scheduled Update: 06/09/2008

CDL: Clandestine Drug Labs
Source: Drug Enforcement Administration
Telephone: 202-307-1000
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/28/2008
Date of Next Scheduled Update: 06/23/2008

CA HIST CAL-SITES: Historical Calsites Database
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 02/25/2008
Date of Next Scheduled Update: 05/26/2008

CA CA BOND EXP. PLAN: Bond Expenditure Plan
Source: Department of Health Services
Telephone: 916-255-2118
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 05/31/1994
Date of Next Scheduled Update: Not reported

CA SCH: School Property Evaluation Program
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 02/26/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/27/2008
Date of Next Scheduled Update: 02/25/2008

CA TOXIC PITS: Toxic Pits Cleanup Act Sites
Source: State Water Resources Control Board
Telephone: 916-227-4364
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 02/11/2008
Date of Next Scheduled Update: 04/28/2008

CA WMUDS/SWAT: Waste Management Unit Database
Source: State Water Resources Control Board
Telephone: 916-227-4448
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/03/2008
Date of Next Scheduled Update: 06/02/2008

CA CA WDS: Waste Discharge System
Source: State Water Resources Control Board
Telephone: 916-341-5227
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/17/2008
Date of Next Scheduled Update: 06/16/2008

CA CORTESE: "Cortese" Hazardous Waste & Substances Sites List
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 01/21/2008
Date of Next Scheduled Update: 04/21/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

CA SWRCY: Recycler Database
Source: Department of Conservation
Telephone: 916-323-3836
A listing of recycling facilities in California.

Date of Government Version: 01/07/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/09/2008
Date of Next Scheduled Update: 07/07/2008

CA CA FID UST: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-341-5851
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 12/28/1998
Date of Next Scheduled Update: Not reported

CA SLIC: Statewide SLIC Cases
Source: State Water Resources Control Board
Telephone: 866-480-1028
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 01/07/2008
Database Release Frequency: Varies
Date of Last EDR Contact: 01/09/2008
Date of Next Scheduled Update: 07/07/2008

CA Sacramento Co. CS: CS - Contaminated Sites
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/11/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/27/2008
Date of Next Scheduled Update: 04/28/2008

CA CS: Contaminated Sites
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/28/2008
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/21/2008
Date of Next Scheduled Update: 04/21/2008

CA HIST LUST SANTA CLARA: Fuel Leak Site Activity Report
Source: Santa Clara Valley Water District
Telephone: 408-265-2600
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 03/24/2008
Date of Next Scheduled Update: 06/23/2008

CA AOCONCERN: San Gabriel Valley Areas of Concern
Source: EPA Region 9
Telephone: 415-972-3178
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/1998
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 04/14/2008
Date of Next Scheduled Update: 07/14/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

CA HIST UST: Hazardous Substance Storage Container Database
Source: State Water Resources Control Board
Telephone: 916-341-5851
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 07/26/2001
Date of Next Scheduled Update: Not reported

CA LIENS: Environmental Liens Listing
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 02/05/2008
Database Release Frequency: Varies
Date of Last EDR Contact: 02/05/2008
Date of Next Scheduled Update: 05/05/2008

CA PERCHLORATE 2: Perchlorate Confirmed Contaminant Sites
Source: State Water Resources Control Board
Telephone: 916-341-5687
Perchlorate confirmed contaminant sites are regulated by the SWRCB and/or DTSC.

Date of Government Version: 02/26/2008
Database Release Frequency: Varies
Date of Last EDR Contact: 02/27/2008
Date of Next Scheduled Update: 05/26/2008

CA CONTRA COSTA CO. SITE LIST: Site List
Source: Contra Costa Health Services Department
Telephone: 925-646-2286
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 03/07/2008
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 02/25/2008
Date of Next Scheduled Update: 05/26/2008

CA SAN JOSE HAZMAT: Hazardous Material Facilities
Source: City of San Jose Fire Department
Telephone: 408-277-4659
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 03/04/2008
Database Release Frequency: Annually
Date of Last EDR Contact: 03/03/2008
Date of Next Scheduled Update: 06/02/2008

CA Fresno Co. CUPA: CUPA Resources List
Source: Dept. of Community Health
Telephone: 559-445-3271
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 01/16/2008
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 04/18/2008
Date of Next Scheduled Update: 07/14/2008

CA PLACER CO. MS: Master List of Facilities
Source: Placer County Health and Human Services
Telephone: 530-889-7312
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 07/23/2007
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 03/17/2008
Date of Next Scheduled Update: 06/16/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

CA SWEEPS UST: SWEEPS UST Listing
Source: State Water Resources Control Board
Telephone: Not reported
Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1980's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 06/03/2005
Date of Next Scheduled Update: Not reported

CA CHMIRS: California Hazardous Material Incident Report System
Source: Office of Emergency Services
Telephone: 916-845-8400
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/2005
Database Release Frequency: Varies
Date of Last EDR Contact: 02/19/2008
Date of Next Scheduled Update: 05/19/2008

CA NOTIFY 65: Proposition 65 Records
Source: State Water Resources Control Board
Telephone: 916-445-3846
Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/1993
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 04/14/2008
Date of Next Scheduled Update: 07/14/2008

CA LA Co. Site Mitigation: Site Mitigation List
Source: Community Health Services
Telephone: 323-890-7806
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 05/30/2007
Database Release Frequency: Annually
Date of Last EDR Contact: 02/11/2008
Date of Next Scheduled Update: 05/12/2008

CA Orange Co. Industrial Site: List of Industrial Site Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Petroleum and non-petroleum spills.

Date of Government Version: 03/03/2008
Database Release Frequency: Annually
Date of Last EDR Contact: 03/06/2008
Date of Next Scheduled Update: 06/02/2008

CA DEED: Deed Restriction Listing
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 04/01/2008
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 04/02/2008
Date of Next Scheduled Update: 06/30/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

CA VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 02/26/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/27/2008
Date of Next Scheduled Update: 05/26/2008

CA DRYCLEANERS: Cleaner Facilities
Source: Department of Toxic Substance Control
Telephone: 916-327-4498
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 07/31/2007
Database Release Frequency: Annually
Date of Last EDR Contact: 04/14/2008
Date of Next Scheduled Update: 06/30/2008

CA LOS ANGELES CO. HMS: HMS: Street Number List
Source: Department of Public Works
Telephone: 626-458-3517
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/29/2007
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 02/11/2008
Date of Next Scheduled Update: 05/12/2008

CA VENTURA CO. BWT: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 02/27/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/12/2008
Date of Next Scheduled Update: 06/09/2008

CA WIP: Well Investigation Program Case List
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 10/25/2007
Database Release Frequency: Varies
Date of Last EDR Contact: 01/23/2008
Date of Next Scheduled Update: 04/21/2008

CA CDL: Clandestine Drug Labs
Source: Department of Toxic Substances Control
Telephone: 916-255-6504
A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 09/30/2007
Database Release Frequency: Varies
Date of Last EDR Contact: 02/19/2008
Date of Next Scheduled Update: 04/21/2008

CA Sacramento Co. ML: ML - Regulatory Compliance Master List
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/11/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/27/2008
Date of Next Scheduled Update: 04/28/2008

CA SAN DIEGO CO. HMMD: Hazardous Materials Management Division Database
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 05/16/2005
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/02/2008
Date of Next Scheduled Update: 06/30/2008

CA San Bern. Co. Permit: Hazardous Material Permits
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 03/18/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/03/2008
Date of Next Scheduled Update: 12/03/2007

CA San Mateo Co. BI: Business Inventory
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 01/31/2008
Database Release Frequency: Annually
Date of Last EDR Contact: 04/07/2008
Date of Next Scheduled Update: 07/07/2008

CA RESPONSE: State Response Sites
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 02/26/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/27/2008
Date of Next Scheduled Update: 05/26/2008

CA HAZNET: Facility and Manifest Data
Source: California Environmental Protection Agency
Telephone: 916-255-1136
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2006
Database Release Frequency: Annually
Date of Last EDR Contact: 02/08/2008
Date of Next Scheduled Update: 05/05/2008

CA EMI: Emissions Inventory Data
Source: California Air Resources Board
Telephone: 916-322-2990
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2005
Database Release Frequency: Varies
Date of Last EDR Contact: 04/18/2008
Date of Next Scheduled Update: 07/14/2008

SECTION 3: DATABASES SEARCHED AND UPDATE DATES

...Continued...

CA ENVIROSTOR: EnviroStor Database
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 02/26/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/27/2008
Date of Next Scheduled Update: 05/26/2008

CA HAULERS: Registered Waste Tire Haulers Listing
Source: Integrated Waste Management Board
Telephone: 916-341-6422
A listing of registered waste tire haulers.

Date of Government Version: 02/12/2008
Database Release Frequency: Varies
Date of Last EDR Contact: 04/14/2008
Date of Next Scheduled Update: 06/09/2008

CA SAN DIEGO CO. SAM: Environmental Case Listing
Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 11/28/2007
Database Release Frequency: Varies
Date of Last EDR Contact: 04/02/2008
Date of Next Scheduled Update: 06/30/2008

CA DAY CARE: Licensed Child Care Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Date of Government Version: 01/15/2008
Database Release Frequency: N/A
Date of Last EDR Contact: 12/21/2007
Date of Next Scheduled Update: Not reported

POTENTIAL SUPERFUND LIABILITY

PRP: Potentially Responsible Parties
Source: EPA
Telephone: 202-564-6064
A listing of verified Potentially Responsible Parties

Date of Government Version: 01/24/2008
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/31/2008
Date of Next Scheduled Update: 06/30/2008

APPENDIX F

Initial Site Assessment (ISA) Checklist

Project Information

District 4 County SOL Route Eastbound I-80 and SR-12 East Kilometer Post (Post Mile) I-80 PM 14.0 to 15.7; SR-12 PM 1.8 to 2.0 EA: 0A530

Description:
The purpose of the Eastbound I-80 Cordelia Truck Scale Relocation Project is to improve traffic operations and safety, and to provide route continuity in the area of Solano County. The proposed project involves demolition of the existing eastbound I-80 truck inspection facility (TIF) and construction of a new TIF approximately 2,500 feet further east along eastbound I-80. The proposed project also includes reconstruction of the eastbound I-80 connector to SR-12 East. Additionally, full and partial private property takes will be required to accommodate the proposed improvements.

Is the project on the HW Study Minimal-Risk Projects List (HW1)? No

Project Manager Mr. Dale Dennis phone # 925-686-0619

Project Engineer Mr. Mike Lohman phone # 925-938-0383

Project Screening

Attach the project location map to this checklist to show location of all known and/or potential HW sites identified.

1. Project Features: New R/W? Yes Excavation? Yes Railroad Involvement? No

   Structure demolition/modification? Yes Subsurface utility relocation? Yes

2. Project Setting Eastbound I-80 and SR-12 East in a mixed commercial/agricultural/residential area.

   Rural or Urban Mix of Rural and Urban.

   Current land uses Eastbound I-80 and SR-12 East highway corridors (Caltrans ROW), commercial, residential, and agricultural properties (potential full or partial property acquisitions).

   Adjacent land uses North – Caltrans ROW, commercial, residential; agricultural. East – Commercial, residential. West – Commercial, residential, agricultural. South – Agricultural, residential.
   (industrial, light industry, commercial, agricultural, residential, etc.)

3. Check federal, State, and local environmental and health regulatory agency records as necessary, to see if any known hazardous waste site is in or near the project area. If a known site is identified, show its location on the attached map and attach additional sheets, as needed, to provide pertinent information for the proposed project.

4. Conduct Field Inspection. Date 4/16/08 and 5/8/08 Identified localized areas of petroleum impacts to soil and groundwater from prior UST operations at and near the project area.

   STORAGE STRUCTURES / PIPELINES:

   Underground tanks Yes — Surface tanks None
   Sumps Yes (sewage holding tank at TIF) — Ponds None
   Drums Unknown — Basins None
   Transformers None — Landfill None
   Other

Initial Site Assessment (ISA) Checklist

(continued)

CONTAMINATION: (spills, leaks, illegal dumping, etc.)

Surface staining None Oil sheen None

Odors None Vegetation damage None

Other _____

HAZARDOUS MATERIALS: (asbestos, lead, etc.) Asbestos-containing material and lead-containing paint surveys of structures to be demolished will be provided under separate cover. Includes the TIF, and residential and associated buildings on properties with Solano County APNs 0027-27-2080 and 0027-27-2160.

Buildings Yes Spray-on fireproofing Unknown

Pipe wrap Unknown Friable tile Unknown

Acoustical plaster Unknown Serpentine N/A

Paint Yes Other Possible aerially deposited lead in surface soil near highways, and possible pesticides, herbicides, petroleum hydrocarbons, and metals in soil from historical agricultural land use.

5. Additional record search, as necessary, of subsequent land uses that could have resulted in a hazardous waste site. Use the attached map to show the location of potential hazardous waste sites. See ISA Report.

6. Other comments and/or observations: Abandon the sewage holding/settling tank at the TIF and properly abandon any undocumented underground storage tanks, septic systems, or domestic/agricultural wells if encountered during the project. At proposed road widening locations where groundwater may be encountered during construction, groundwater sampling should be conducted to evaluate groundwater management options.

ISA Determination

Does the project have potential hazardous waste involvement? Yes If there is known or potential hazardous waste involvement, is additional ISA work needed before task orders can be prepared for the Investigation? Yes If "YES," explain; then give an estimate of additional time required:

The ISA identified the potential for ADL, pesticides, herbicides, metals, and petroleum hydrocarbons in soil;and asbestos-containing materials and lead-containing paint at buildings proposed to be demolished in the Project Area. Additionally, groundwater should be sampled in proposed construction areas where groundwater is likely to be encountered. Soil and groundwater investigations to collect samples for lead, pesticides, herbicides, metals, and petroleum hydrocarbons in soil, and metals, petroleum hydrocarbons, and volatile organic compounds in groundwater is recommended (12-16 weeks to complete). The ISA was prepared by Geocon Consultants, Inc., and dated September 2008.

A brief memo should be prepared to transmit the ISA conclusions to the Project Manager and Project Engineer.

ISA Conducted by _____ **Date** 9/24/08

Geocon Consultants, Inc.

GEOTECHNICAL DESIGN & MATERIALS REPORT

I-80 EB CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA
04-Sol-80, 12-PM 14.0/15.7, L1.8/L2.0 EA 0A5351 CU 04264

For

HDR ENGINEERING, INC.
2121 N. California Blvd., Suite 475
Walnut Creek, CA 94596-7334

PARIKH CONSULTANTS, INC.

2360 Qume Drive, Suite A, San Jose, CA 95131
(408) 452-9000

May 17, 2010

Job No. 208123.GDR

PARIKH
Practicing in the Geosciences

Geotechnical ■
Environmental ■
Materials Testing ■
Construction Inspection ■

HDR ENGINEERING, INC.
2121 N. California Blvd., Suite 475
Walnut Creek, CA 94596-7334

Job No.: 208123.GDR
May 17, 2010

Attn: Mr. Carl Haack

Sub: GEOTECHNICAL DESIGN & MATERIALS REPORT
I-80 EB Cordelia Truck Scales Relocation Project, Solano County, California
04-Sol-80, 12-PM 14.0/15.7, L1.8/L2.0 EA 0A5351 CU 04264

Dear Mr. Carl Haack:

Transmitted herewith is the Geotechnical Design & Materials Report for the subject project. The report was prepared in accordance with the scope of work outlined in our proposal. The report has incorporated Caltrans 65% review comments.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning our findings or conclusions, please feel free to contact this office.

Very truly yours,
PARIKH CONSULTANTS, INC.

Gary Parikh, P.E., G.E., 666
Project Manager

Attachment: Geotechnical Design & Materials Report

"Approved as to impact on State facilities and conformance with applicable State standards and practices, and the technical oversight were performed as described in the California Department of Transportation A&E Consultant Services Manual."

Caltrans_____

Title_____

Date_____

Caltrans_____

Title_____

Date_____

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Appendix C

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GEOTECHNICAL DESIGN & MATERIALS REPORT
I-80 EB CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA
04-Sol-80, 12-PM 14.0/15.7, L1.8/L2.0 EA 0A5351 CU 04264

1. INTRODUCTION

This report presents the results of our geotechnical engineering investigation for the proposed "I-80 EB Cordelia Truck Scales Relocation Project", hereinafter referred to as "PROJECT" in Solano County, California. The work was performed in general accordance with the scope of work outlined in our proposal to HDR Engineering, Inc. (Designer). The general locations of the ramps are shown on the Project Location Map, Plate 1A and 95% Submittal - Title and Location Map, Plate 1B.

This report addresses design of roadway portion of the project including cut and fill for the new I-80 widening, SR-12E connector, on-ramps and off-ramp, earth retaining walls, overhead signpost structures, communication tower and structural pavement sections. The investigation included review of readily available soils and geologic literature pertaining to the site including as-built "Log of Test Borings" (LOTB), site reconnaissance, obtaining representative soil samples and logging soil materials encountered in exploratory borings, laboratory testing of the representative soil samples, performing engineering analyses, and preparation of this report.

The purpose of this report is to document subsurface geotechnical conditions, provide analyses of anticipated site conditions as they pertain to the project described herein, and to recommend design and construction criteria for the roadway portions of the project. This report also establishes a geotechnical baseline to be used in assessing the existence and scope of changed site conditions, if any. The following deliverables are separately prepared by PARIKH Consultants, Inc. (PARIKH).

- Foundation Report for "Suisun Creek Bridge".
- Foundation Report for "Commercial Vehicle Enforcement Facility (CVEF)".
- Foundation Report for "Eastbound (EB) 80 to SR-12E Connector (Connector)".
- Foundation Report for "Retaining Walls at E80-E12/E80 On-Ramp Separation" (Retaining Wall Nos. 1 through 4).

The report is intended for use by the project roadway design engineer, construction personnel, bidders and contractors for information and reference purposes only and should not be construed as project specifications.

Due to limitations inherent in geotechnical investigations, it is neither uncommon to encounter

unforeseen variations in the subsurface soil conditions during construction nor is it practical to determine all such variations during an acceptable program of drilling and sampling for a project of this scope. Such variations, when encountered, generally require additional engineering services to attain a properly constructed project. We therefore, recommend that a contingency fund be provided to accommodate any additional charges resulting from technical services that may be required during construction.

2. EXISTING FACILITIES AND PROPOSED IMPROVEMENTS

Existing Facilities

The proposed project site is located in Solano County, California. Interstate-80 (I-80) is an east/west connector between San Francisco Bay Area and Sacramento. I-80 is a 10-lane divided freeway with four mixed flow lanes and one HOV lane in each direction.

Proposed Improvements

The existing truck scales were constructed in 1958. The lack of sufficient capacity to accommodate the current volume of truck traffic, and trucks entering and exiting the existing facility pose a safety hazard on I-80. The level of truck traffic on this stretch of I-80 is anticipated to increase dramatically over the next 30 years. As a result, the new truck scales facility would be designed with increased capacity to accommodate future truck traffic. The Department of Transportation (Caltrans) proposes to rebuild the EB Cordelia truck scales at a new location (between Suisun Creek on the west and Raines Drain Channel on the east) on I-80 in Solano County, California.

The project includes relocation and reconstruction of the EB Cordelia truck scales and associated braided highway on-ramps and longer off-ramps. The following are the key elements of the project.

Truck Scales and Associated Ramp

1. The project encompasses approximately 2 miles along EB I-80 (PM 14.0 to PM 15.7) and State Route-12 (SR-12) (PM L1.8 to PM L2.0);

2. The EB Cordelia Truck Scale facility (named as "Commercial Vehicle Enforcement Facility") would be reconstructed approximately 2500 feet to the east of its present location. A single story operation building would be constructed to facilitate the vehicle inspection and weighing process;

3. New EB off-ramp from I-80 to the truck scales – The new one-lane off-ramp would become two-lane and continue as a two-lane facility through the existing truck scale site, and widen to four lanes immediately west of Suisun Creek, The new off-ramp would cross over Suisun Creek on a new bridge before entering the new Commercial Vehicle Enforcement Facility;

4. New EB truck on-ramp to EB I-80 and SR-12E – A new three-lane EB roadway split approximately 1300 feet east of the facility with two lanes merging into EB I-80 and the other lane connecting to the SR-12E connector;

5. The two-lane EB I-80 connector to SR-12E would be constructed as a ramp crossing over the truck on-ramp to EB I-80.

6. I-80 widening – Average 12 feet for 1.5 miles on EB I-80 to provide standard shoulder and a 2,950 feet long Auxiliary Lane to the SR-12E connector.

Special Structures and Building

Based on the "General Plan" (Plan) provided by the designer, the general locations and other information of the special structures within the project limits are described below.

1. Suisun Creek Bridge – The proposed bridge structure for the EB I-80 off-ramp will be constructed on the southeast side of the existing EB Suisun Creek Bridge along I-80. The proposed bridge structure will be a single-span structure with a width of 38 feet and a length of 80 feet long along the "Control Line".

2. Commercial Vehicle Enforcement Facility (CVEF) – A new relocated truck scales will be constructed along the EB I-80 in Cordelia, Solano County. The CVEF will include "Inspection Building", "Generator Building" and "Communication Tower". Each building will be a single-story structure. Inspection building will have six inspection pits below the floor level and three tunnels.

3. "EB 80 to SR-12E Connector" (Connector) – The connector will be constructed on the east side of the relocated CVEF for the truck on-ramp to EB I-80. The alternative of "Box Culvert Separation Structure" (Box Structure) has been selected. In this alternative, the box structure will be constructed for new truck on-ramp to EB I-80 (which will cross under the EB SR-12). Fill will be placed adjacent to the proposed box structure. The connector will be partly on the box structure and partly on the embankment fill retained by the MSE walls.

4. Relocated 18-inch diameter Solano Irrigation District (SID) irrigation water main beneath Suisun Creek.

Based on the "Typical Cross Sections" of the "95% Submittal" (Submittal), minor cut and fill will be required for the pavement construction. Minor excavation is planned for the slopes between EB I-80/SR-12E and the truck off-ramp and on-ramps. Fill will be required at the CVEF. Sliver fill will be required at the following locations:

- EB I-80 widening;
- Truck off-ramp;
- Truck on-ramp to SR-12;
- Truck on-ramp to EB I-80.

Embankment fill will be required at the following locations:

- EB SR-12 (approach embankments of the connector);
- Truck on-ramp to EB SR-12.

Our recommendations presented in this report are based on the above information. Any major deviation should be reported to PARIKH for consideration.

3. PERTINENT REPORTS AND INVESTIGATION

The Geotechnical Design and Materials Report of "I-80 HOV Project – Red Top Road to Air Base Parkway, 04-Sol-80-KP 18.3/32.3 EA 04-OA5311" dated August 2007 prepared by PARIKH (Ref. 1) and Foundation Investigation Report of "Suisun Creek Bridge (Widen)" dated February 2007 prepared by PARIKH (Ref. 2) were reviewed for the proposed project.

4. PHYSICAL SETTING

4.1 Climate

The project site is located in the southwest part of Solano County, California. The climate of the project site ranges from a warm, Mediterranean climate in the summer and fall to cooler winter temperature. Based on the data from "Western Regional Climate Center" (Ref. 3), the temperature ranges in the project vicinity are from 55° F to 88° F in summer and from 39° F to 58° F in winter. The average annual precipitation is approximately 22.8 inches. About 95% of the total annual precipitation falls in October through April; the summer months are usually without any measurable precipitation.

4.2 Topography

The topography of the project site is generally flat with farmland on both sides of I-80. The ground elevation slightly rises from the west towards the east. There is a hillock on the west side of the existing truck scales near the beginning of the project.

4.3 Surface Drainage Features

Solano County is divided into two drainage regions or "Drainage Provinces". They are San Francisco Bay Province and Sacramento River Province. The project site is located within the San Francisco Bay Province. It appears that the site drainage is generally by sheet flow, or collected by local drainage systems or nearby creeks. Main drainages within the project limits include Dan Wilson Creek, Suisun Creek, Raines Drain and their tributaries, which drain into San Francisco Bay through Suisun Bay.

4.4 Man-Made and Natural Features of Engineering and Construction Significance

There is an existing truck scale facility along eastbound I-80. Suisun Creek crosses I-80 (near the beginning of the project) within the project limit. Raines Drain, a man-made concrete lined channel crosses I-80 approximately in the middle of the project site. These three features are the main existing components of the project site.

4.5 Regional Geology and Seismicity

The proposed project lies within the southwest portion of Solano County, which is the western gateway to the Sacramento Valley. The regional structure of the area is similar to other portions of the Northern California Coast Ranges, which consist of a complex series of northwest-trending synclines and anticlines with a number of northwest-trending faults. The Northern California Coast Ranges extends across Solano County from the marshlands on the east to the foothills on the west.

The project site is located within a seismically active region. Based on "California Seismic Hazard Map, 2008" (Ref.4), a "Fault Map" showing the site location relative to the major active faults in the vicinity is presented in Plate 4. Significant earthquakes, which have occurred in this area, are generally associated with crustal movements along well-defined active fault zones. Faults in the vicinity of the site with a moderate to high potential for surface rupture include the Green Valley Fault, Cordelia Fault and Vaca Fault Zone.

5. EXPLORATION

5.1 Drilling and Sampling

Based on the preliminary plans and readily available geotechnical data in the area, forty-five borings were drilled and seven Cone Penetration Tests (CPTs) were conducted at selected locations to the depths ranging from 20 feet to 101.5 feet. Approximate locations of these borings are shown on the Site Plans (Plates 2A through 2D).

The details of the field exploration are included in Appendix A. The as-built LOTBs from the Geotechnical Design and Materials Report "I-80 HOV Project – Red Top Road to Air Base Parkway" and from the Foundation Investigation Report "Suisun Creek Bridge (Widen)" are included in Appendix A.

The borings were advanced with a truck-mounted drill rig using 8-inch diameter hollow stem augers. The borings were drilled under the technical supervision of our engineer, who classified and logged the soils encountered during drilling and supervised the collection of

soil samples at various depths for visual examination and laboratory testing. The soil samples were obtained during drilling by driving a 2.5-inch Inside Diameter (I.D.) Modified California sampler or a 1.375-inch I.D. Standard Penetration Test sampler into the subsurface soils under the impact of a 140-pound hammer having a free fall of 30 inches. The blow counts required to drive the sampler for the last 12 inches are presented on the LOTB, Appendix A. After visual examination, the collected samples were sealed and transported to our laboratory for further evaluation and testing. The boring locations, stations, and relevant information are summarized in Table 1.

The descriptions of the soil materials encountered in the exploratory borings and relevant boring information are presented on the LOTB attached in Appendix A. The laboratory test methods and results are presented in Appendix B. The logs presented in Appendix A were prepared from the field logs which were edited after visual re-examination of the soil samples in the laboratory and results of classification tests on selected soil samples as indicated on the LOTB.

TABLE 1: SUMMARY OF BORINGS

Location	Boring No.	Station (ft)[2]	Offset (ft)	Boring Depth (ft)	Approx. Ground Elev. (ft)	Approx. Groundwater Elev. (ft)
I-80/Truck Off-Ramp	A-09-101	"D1" Line 82+25	4.0 Rt.	30	33.0	20.0
	A-09-102	"D1" Line 90+12	27.5 Rt.	30	35.0	23.0
	A-09-103	"D1" Line 94+21	11.5 Rt.	50	34.0	26.0
	A-09-104	"D1" Line 101+35	13.5 Rt.	50	32.0	21.0
	A-09-105	"D1" Line 103+48	33.5 Rt.	50	31.5	23.5
	A-09-122	"D1" Line 103+53	83.0 Rt.	50	31.0	24.0
	A-09-123	"D1" Line 76+34	14.5 Rt.	30	31.0	26.0
CVEF Site	A-09-106	"D1" Line 105+77	199.5 Rt.	20	30.0	21.0
	A-09-107	"D1" Line 107+27	50.5 Rt.	20	30.0	23.0
	A-09-108	"D1" Line 107+77	459.0 Rt.	20	29.0	22.0
	A-09-109	"D1" Line 109+46	273.0 Rt.	20	29.0	22.0
	A-09-110	"D1" Line 114+31	54.5 Rt.	20	29.0	23.0
	A-09-111	"D1" Line 114+35	454.0 Rt.	20	28.0	21.0
	A-09-112	"D1" Line 114+44	270.5 Lt.	60	28.5	19.5
	A-09-113	"D1" Line 116+29	219.0 Lt.	40	28.0	20.0

TABLE 1: SUMMARY OF BORINGS (CONTINUED)

Location	Boring No.	Station (ft)[2]	Offset (ft)	Boring Depth (ft)	Approx. Ground Elev. (ft)	Approx. Groundwater Elev. (ft)
Truck On-ramp to EB I-80	A-09-114	"D1" Line 121+28	35.5 Rt.	30	30.0	23.0
	A-09-116	"D1" Line 129+62	312.0 Rt.	50	31.5	24.5
SR-12E	A-09-115	"12CON" Line 127+60	10.0 Lt.	50	31.0	24.0
SR-12/Truck On-ramp to SR-12E	A-09-117	"12CON" Line 146+82	78.5 Rt.	50	40.5	27.5
	A-09-124	"12CON" Line 148+11	26.0 Lt.	30	38.0	25.5
	A-09-118	"12CON" Line 150+87	60.0 Rt.	50	40.5	27.5
	A-09-125	"12CON" Line 152+80	14.0 Lt.	30	40.0	27.5
	A-09-119	"12CON" Line 155+20	8.0 Rt.	50	40.0	32.0
	A-09-120	"12CON" Line 163+41	74.0 Rt.	30	40.0	33.0
	A-09-121	"12CON" Line 168+07	50.0 Rt.	30	38.0	31.0
Overhead Sign Structures	A-09-116	"D1" Line 129+62	312.0 Rt.	50	31.5	24.5
	A-09-126	"D1" Line 84+73	106.0 Rt.	30	34.0	22.0
	A-09-127	"12CON" Line 172+00	25.5 Rt.	35	35.0	12.0
	A-09-128	"D1" Line 110+03	22.0 Rt.	30	30.0	26.5
Comm. Tower	A-09-112	"D1" Line 114+44	270.5 Lt.	60	28.5	19.5
18-Inch HDPE Suisun Creek	CPT-09-129	"D1" Line 96+79	149.0 Rt.	65	34.5	19.0
	CPT-09-130	"D1" Line 97+36	200.0 Rt.	70	33.0	-
	A-09-130	"D1" Line 97+36	170.0 Rt.	50	33.0	25.0
	A-09-131	"D1" Line 97+85	176.0 Rt.	35	34.0	16.0
	A-09-132	"D1" Line 98+60	186.5 Rt.	35	34.0	19.0
	CPT-09-133	"D1" Line 98+94	186.5 Rt.	60	33.5	23.0
	CPT-09-134	"D1" Line 99+41	186.5 Lt.	65	33.5	-
Suisun Creek Bridge	R-09-SC-001	"D1" Line 97+44	27.0 Rt.	101.5	34.0	22.0
	CPT-09-SC-001	"D1" Line 99+37	48.5 Rt.	100	34.5	22.0
CVEF Structure	A-09-TS-001	"D1" Line 110+67	103.5 Rt.	100	28.5	21.5
	A-09-TS-002	"D1" Line 110+86	225.5 Lt.	100	28.0	15.0
	A-09-TS-003	"D1" Line 111+88	68.0 Lt.	60	33.0	25.0
	CPT-09-TS-001	"D1" Line 110+96	300.5 Rt.	99.5	28.0	23.5
EB I-80 To SR 12E Connector	R-09-CN-001	"12CON" Line 131+82	26.0 Rt.	81.5	33.0	-
	R-09-CN-002	"12CON" Line 134+63	13.0 Rt.	101.5	33.0	27.0
	R-09-CN-003	"12CON" Line 136+92	16.0 Rt.	101.5	32.5	26.5
	R-09-CN-004	"12CON" Line 142+30	24.5 Lt.	81.5	38.0	28.5
	CPT-09-CN-001	"12CON" Line 139+36	32.5 Rt.	99.5	34.5	25.5

(1) Borings A-09-135, A-09-136 and A-09-137were drilled but not used in this project.
(2) Boring location stations and offset are stated to the nearest foot to be consistent with the LOTB, however they were not surveyed.

5.2 Geologic Mapping

No site-specific geological mapping was performed because of the flat nature of the project site and lack of surface geologic feature.

5.3 Geophysical Studies

Based on the geologic map, the project site is underlain by alluvial fan deposits and natural levee deposits. The subsurface soils are relatively uniform and no difficult subsurface soil conditions (such as rock formation) are anticipated. Geophysical techniques such as cross-hole surveys, seismic refraction and reflection are unnecessary for this type of geologic condition.

5.4 Instrumentation

The subject was considered and was determined to be not applicable to the project.

5.5 Exploration Notes

The exploratory borings encountered localized fill, alluvial deposits predominantly consisting of stiff to hard lean clay with pocket/lens of loose to dense sand. In general, drilling did not encounter any unusual conditions. No caving of the drilled holes was observed during drilling.

6. GEOTECHNICAL TESTING

6.1 In-Situ Testing

In-situ testing consists of recording blow counts during sampling (using both Modified California sampler or Standard Penetration Test Sampler) in the field. Except for the local pockets/lenses of soft to firm lean clay (SPT-N values between 4 and 11) and loose silty sand (SPT-N value of 5), the SPT-N values were typically on the order of 14 to "practical refusal" (more than 50). Based on the typical SPT-N values for the soil materials encountered in the field exploration, the subsurface soil conditions generally consist of stiff to hard cohesive soils. The in-situ test results are presented on the LOTB in Appendix A.

6.2 Laboratory Testing

Laboratory tests performed included the following: Laboratory determination of Moisture-Density (California Test Method T226), Atterberg Limits (California Test Method T204), Grain Size Distribution Analysis (California Test Method T203), Unconfined Compression Test (California Test Method T221), R-value Test (California Test Method T301), Corrosion Test (California Test Method T-643) and Consolidation Test (California Test Method T219). The laboratory test results are included in Appendix B.

In general, the natural moisture contents of the subsurface soils range from 5% to 44%. The unconfined compressive strengths of the cohesive soils ranged from 0.4 tsf to 1.4 tsf. Laboratory unconfined compression test results; moisture content and wet density of the subsurface soils are presented on the LOTB at the appropriate sample depths.

7. GEOTECHNICAL CONDITIONS

7.1 Site Geology

General geologic features pertaining to the site were evaluated with reference to the "Geologic Map of Cordelia and Fairfield South 7.5' Quadrangle, Solano and Napa Counties, California by Stephen P. Bezore, David L. Wagner, and Janet M. Sowers, California Geological Survey, 2002" (Ref. 5). Based on the geologic map, majority of the project site is mapped as alluvial fan deposits (Qhf) (Holocene) and natural levee deposits (Qhl) (Holocene) along the Dan Wilson Creek.

Holocene alluvial fan deposits are the most aerially extensive Quaternary map unit in the region. These deposits are the sediments deposited by streams emanating from mountain canyons onto alluvial valley floors or alluvial plains as debris flow, hyperconcentrated mudflows, or stream flows. The particle size of the deposits typically decreases down slope from the fan apex. In places, Holocene deposits (Qhf) may be only a thin veneer over Pleistocene deposits (Qpf). Holocene natural levee deposits (Qhl) are formed by streams that overtop their banks and deposit sediment adjacent to the channel. The general geology of the project area is shown on the Geologic Map, Plate 3A. Descriptions

of the main geologic units are as follows:

Qhf - Alluvial fan deposits (Holocene): Moderately to poorly sorted and moderately to poorly bedded sand, gravel, silt, and clay deposited where streams emanate from upland regions onto more gently sloping valley floors or plains.

Qhl - Alluvial fan levee deposits (Holocene): loose, moderately- to well-sorted sand with some silt and clay deposited by streams that overtop their banks during flooding.

7.1.1 Lithology

Alluvial fan deposit, without any rock unit, was encountered during the field exploration. Pockets/lenses of medium dense to dense sands and/or trace to little fine to coarse gravels were encountered at various depths. Detailed description of subsurface soil conditions are presented in Section 7.2.

7.1.2 Structure

The fault that is closest to the project site is Cordelia Fault, which is a strike-slip fault. The structures of the geological units such as bedding, folds, fracture, jointing, and foliation had been considered and were determined to be not applicable for the project.

7.1.3 Existing Slope Stability

The project site is in the vicinity of the farmland and there is no existing slope within the project site. Slope stability is not a geotechnical concern.

7.2 Subsurface Soil Conditions

Based on the boring data and the as-built LOTB of the "I-80 HOV Project – Red Top Road to Air Base Parkway", the subsurface soil condition at the project site consist of medium dense sands, underlain by soft to very stiff lean clays with pockets/lenses of medium dense to dense sands, underlain by very stiff to hard lean clays/medium dense to dense sands in general. Samples of soft to firm clay and loose sand are summarized in

Table 2 below.

TABLE 2: SAMPLES OF SOFT TO FIRM CLAYS AND LOOSE SAND

Location	Boring Nos.	Sample Depth (feet)		Measured Groundwater Depths (ft)
		Soft to Firm Clay	Loose Sand	
I-80 and truck off-Ramp	A-09-101	5.5, 9.0	-	13
	A-09-102	9.0	-	12
	A-09-103	-	***9.5***	8
Suisun Creek Bridge	R-09-SC-001	10.5	-	12
CVEF Site	A-09-107	1.5, 4.0	-	7
	A-09-109	2.5, 4.0	-	7
	A-09-110	4.0	-	6
	A-09-112	1.5, 4.0, ***34.0***	-	9
	A-09-113	4.0, ***14.0, 19.0***	-	8
CVEF Structure	A-09-TS-003	***9.0, 19.0***	-	8
	A-09-TS-001	2.0, 4.0	-	7
	A-09-TS-002	2.5, 4.0, ***19.0, 34.0***	-	13
SR-12E/truck on-ramp to SR-12E	A-09-117	***14.0, 19.0***	-	13
	A-09-118	9.0, ***19.0***	-	13
	A-09-119	***9.0, 14.0, 19.0***	-	8
	A-09-124	***14.0, 19.0***	-	12.5
	A-09-125	9.0, ***14.0***	-	12.5
Overhead Sign Structures	A-09-127	1.5, 19.0	-	23
	A-09-128	1.5	***4.5***	4
EB I-80 to SR-12E Connector	R-09-CN-001	25.5, 30.5, 35.5	-	-
	R-09-CN-002	***30.5, 40.5, 45.5, 50.5***	-	6
	R-09-CN-003	***35.5, 40.5, 45.5, 60.5***	-	6
	R-09-CN-004	***10.5, 15.5, 25.5, 40.5***	-	9.5
18" HDPE Suisun Creek	A-09-130	4.0, ***9.0***	-	8
	A-09-131	***14.0***	-	18
	A-09-132	4.0	2.5, 9.0	15
	A-09-135	***14.0***	-	7

Note: Sample depth in bold and italic is sample below measured groundwater

Based on Table 2, it is found that

- Loose sands were only encountered in few soil borings in the 2009 field exploration.

- Soft to firm clays were mostly recorded in the samples within the top five feet, between the depths of nine feet to nineteen feet and between the depths of thirty feet to sixty feet along the proposed EB I-80 to SR-12E Connector.

Embankment fill will be constructed for the proposed EB I-80 to SR-12E Connector. Settlement evaluation due to the placement of fill will be discussed in Section 8.3.1.

Detailed descriptions of the materials encountered in the exploratory borings are presented in the LOTB in Appendix A. It should be noted that these descriptions and related information depict subsurface conditions only at the locations indicated and on the particular date noted on the LOTB. Because of the variability from place to place within soil/rock in general, subsurface soil conditions at other locations may differ from conditions occurring at the locations explored. The abrupt stratum changes shown on the logs may be gradational and relatively minor changes in soil types within a stratum may not be noted due to field limitations. Also, the passage of time may result in a change in the soil conditions at the locations due to environmental changes.

7.3 Water

7.3.1 Surface Water

The project site is in the vicinity of the farmland and the overall terrain at the project site is level. The topography along the EB I-80 slightly rises up from the west to the east. The surface water/drainage is by sheet flow and is collected in local storm drain systems.

There are two primary drainage patterns in Solano County. The drainages in the western third of the county, which includes the project site, drains south into San Francisco Bay through Suisun Bay. The eastern two-third of Solano County drains east and southeast into Sacramento River.

7.3.1.1 Scour

The only creek within the project limits is the Suisun Creek. The issue of

scour at the Suisun Creek will be discussed in the Foundation Report of Suisun Creek Bridge. Scour should not be a geotechnical concern for roadway portion of the project.

7.3.1.2 Erosion

The existing slopes have established landscaping to help control erosion. Therefore erosion is not a concern for this project.

7.3.2 Groundwater

Groundwater was encountered at the depths between 3.5 feet and 18 feet below existing ground surface and between Elevation +12.0 feet and Elevation +33.0 feet during the field exploration in January and June 2009.

In our opinion, the groundwater level is anticipated to vary with the passage of time due to seasonal groundwater fluctuation, surface and subsurface flows, ground surface run-off, change in the water level in the nearby creeks and other environmental factors which may not have been present at the time of our investigation.

7.4 Project Site Seismicity

7.4.1 Ground Motions

The project is located in a seismically active part of northern California. Many faults that exist in the San Francisco Bay Area are capable of producing earthquakes that may cause strong ground shaking at the site. The attached Fault Map (Plate 4) presents the locations of the fault systems relative to the project site.

Maximum credible earthquake magnitudes for some of the major faults in the area are determined by Caltrans' recently developed online ARS tool. These maximum credible earthquake magnitudes represent the largest earthquakes that could occur on the given fault based on the current understanding of the regional

tectonic structure. The distances from the site to the faults are summarized below.

TABLE 3 – EARTHQUAKE DATA

Fault (Fault ID)	Maximum Moment Magnitude of Fault, M_{Max}	Fault Type	Estimated Distance From Project Site (miles)
Cordelia fault (212)	6.7	Right Lateral Strike Slip	0.7
Great Valley fault (213)	6.9	Right Lateral Strike Slip	2.0
Vaca fault zone (14)	6.9	Right Lateral Strike Slip	8.3

Based on available geological and seismic data, the possibility of the site to experience strong ground shaking should be considered moderate to high.

7.4.2 Ground Rupture

No active fault passes through the project sites, the potential for ground surface rupture due to faulting within the project limits is considered low.

8. GEOTECHNICAL ANALYSES AND DESIGN

8.1 Dynamic Analysis

8.1.1 Parameter Selection

Caltrans has updated the 1996 Seismic Hazard map with the new 2007 Caltrans Deterministic PGA Map and the Caltrans ARS Online (Ver. 1.0.4) for the development of response spectra for design. The development of the design ARS curve is based on several input parameters, including site location (longitude/latitude), average shear wave velocity for the top 30m/100 feet (VS30), and other site parameters, such as fault characteristics, site-to-fault distances.

The new design methods incorporate both deterministic and probabilistic seismic hazards to produce the Design Response Spectrum. According to the design manual, we have also reviewed and compared the probabilistic response spectrum from 2008 USGS Deaggregation Hazard (beta) web site for the 5% in 50 years

probability of exceedance (or 975 year return period).

8.1.2 Analysis

Based on the plans, no new major cut slope is planned for the project. Stability analysis of the new embankments on both sides of the connector was performed using Program STABL5M. The stability under seismic condition was analyzed using pseudo-static approach. The embankment was analyzed as a static condition, and the horizontal force was expressed as a product of a seismic coefficient and the weight of the potential sliding mass. Results of the stability analyses are described in Section 8.3.2.

8.1.3 Liquefaction Potential

Liquefaction is a phenomenon in which saturated cohesionless soils are subject to a temporary but essentially total loss of shear strength under the reversing, cyclic shear stresses associated with earthquake shaking. Submerged cohesionless sands and silts of low relative density are the type of soils, which usually are susceptible to liquefaction. Clays are generally not susceptible to liquefaction.

Based on the LOTB of the borings drilled in 2009 and the as-built LOTB, the project site is generally underlain by firm to very stiff clays with occasional pockets/lenses of loose to dense sands.

With reference to Table 2, analyses of the liquefaction potential of the loose sand deposits were based on Borings A-09-103, A-09-128, A-09-132 and R-09-CN-004. The analyses were performed using the procedure developed by Seed and Idriss (1982) for a magnitude 6.5 earthquake, on the nearby Cordelia Fault, resulting in a peak ground acceleration of about 0.6 g. This method compares the estimates of the earthquake-induced shear stress to the susceptibility of soil liquefaction. It is estimated that the maximum post-liquefaction settlements may be on the order of 1 to 3 inches.

In our opinion, the liquefaction potential at the project site is low to moderate. The

isolated pockets/lenses of loose sands are potentially liquefiable if saturated. Based on the evaluation, the impact of the post-liquefaction settlement of the potentially liquefiable sands on the roadway should be relatively small because:

- The potentially liquefiable soil layers are generally covered by predominantly cohesive soils, which tend to serve as a "soil mat" and should reduce the potential impact of liquefaction.
- The post-liquefaction settlement probably would be random and localized and could spread out over some distance/area.

8.2 Cuts and Excavations

Based on the "Typical Cross Sections" of the 95% PS&E Submittal, it appears that there is no major cut and excavation planned for the project. Minor cut and fill is planned for the construction of structural pavement section. Minor excavation will be required for the slope formations between the mainline and the ramps at the following locations:

- Between EB I-80 and the truck off-ramp;
- Between SR-12E and the truck on-ramp to EB I-80/SR-12E connector;
- Between truck on-ramp to EB I-80 and SR-12E.

8.2.1 Stability

There is no new major cut slope proposed for this project. In our opinion, the stability of the proposed minor cut slope should not be a geotechnical concern.

8.2.2 Rippability

The proposed cuts are anticipated to be in roadway fill and native soils. Based on the investigation, rippability does not appear to be a concern for construction.

8.2.3 Grading Factor

The on-site native soil meeting the project specifications may be used as engineered fill. For preliminary estimate, a grading factor of 0.9 may be assumed for the import materials based on our previous experience.

8.3 Embankments

Embankments are required for the proposed connector and truck on-ramp to EB I-80 and truck on-ramp to SR 12. Based on information provided, a maximum embankment height on the order of 28 feet is expected for the embankment of the connector. For the connector, the embankments at the southwest quadrant will be retained by Retaining Wall Nos. 1 and 2. The embankment at the northeast quadrant will be retained by Retaining Wall Nos. 3 and 4. These retaining walls will be MSE walls.

8.3.1 Settlement Evaluation

Based on the "95% PS&E Submittal", fill will be required at the following locations:

1. Sliver fill will be required along EB I-80 widening, truck off-ramp, truck on-ramp to EB I-80 and SR-12;
2. Embankment fill (MSE) will be required for the approach embankments on both sides of the proposed connector (SR-12E) and truck on-ramp to EB I-80 and SR-12E;
3. Two to five feet of fill will be required at the proposed CVEF.

The following are the thickness of the sliver fill/embankment fill and subsurface soils conditions at different project locations.

TABLE 4: THICKNESS OF SLIVER FILL/EMBANKMENT FILL

Project Location	Station (feet)	Approx. Max. Fill Thickness (ft)	Subsurface Soil Conditions
Truck off-ramp	"D1" 78+80 to 107+50 &	9	Firm to hard lean clays with occasional pockets /lenses of loose to dense sands
Truck Scales Lanes	"D1" 107+50 to 113+50	5	
Truck on-ramp to EB I-80	"D1" 120+50 to 149+61	3	
Truck on-ramp to SR-12E	"D2" 130+29 to 154+52	9	Stiff to very stiff lean clays with pockets/lenses
SR-12 E Connector	"12CON" 13+73 to	28.5	

Based on the estimated maximum fill thickness and the subsurface soil conditions, typical soil profiles of the borings at two areas were selected for settlement analyses. These two areas are the approach embankments on both sides of the EB 80 to SR-12E Connector (based on Borings R-09-CN-002 through R-09-CN-004),

and eastern end of Truck On-ramp to SR-12 (based on Borings A-09-117 and A-09-118).

The evaluation of the consolidation settlements under the new fill was based on the consolidation test results, understanding of the consolidation behavior of the clay and empirical correlations in the literatures. Based on the results of the settlement analyses, the maximum consolidation settlements are estimated to be on the order of 4 inches at the connector and 1 inch at truck scale on-ramp to SR 12, respectively. Majority of settlements are in the overconsolidated/elastic range. A 30-day settlement period is recommended for ground adjustment under the 28-foot embankment. This should be confirmed during construction. It is recommended that settlement platforms be installed and settlement be monitored per California Test 112. A minimum of four settlement platforms be installed along each of the approach embankment. These settlement platforms should be evenly distributed along the length of each approach embankment.

The calculations for the estimation of the consolidation settlement and the settlement period are contained in Appendix C of this report.

8.3.2 Evaluation of Embankment Stability

Based on the 95% PS&E Submittal, the proposed slope gradient of the embankment and sliver fill will be 4(H): 1(V) or flatter and 3(H): 1(V) along the SR-12E connector. Based on the results of the stability analyses, it is our opinion that the stability of the proposed embankments appear to be acceptable.

8.4 Earth Retaining Wall

It is our understanding that due to right-of-way and other geometric constraints, the project will require construction of four retaining walls. Information of approximate wall locations, type of walls, design loading cases, and maximum wall heights was provided by the designer and is summarized in Table 5.

TABLE 5: SUMMARY OF PROPOSED RETAINING WALLS

Wall No.	Wall Type	Location (Along approx. Sta.)	Maximum Height (ft)	Approx. Bottom of Wall Elev. (ft)	Total Length (ft)
RW 1	MSE Wall	"12CON" Line 131+14.19 to 135+04.19	24.65	32.0	385.00
RW 2	MSE/Caltrans Type 1	"12CON" Line 134+00.19 to 136+67.10	18.54	38.0	266.92
RW 3	MSE/Caltrans Type 1	"12CON" Line 136+75.76 to 145+31.71	17.90	42.0 – 47.0	864.92
RW 4	MSE Wall	"12CON" Line 138+43.19 to 154+58.73	28.39	32.0 – 39.0	1610.00

Refers to the Foundation Report of "Retaining Walls at E80-E12/E80 On-Ramp Separation" for details

8.5 Culverts and Reinforced Concrete Junction Box Structures

There is an existing Raines Drain Channel on the east side of the proposed CVEF site. A double box culvert (double 10' x 8' cells) and three Reinforced Concrete Junction Box (RCJB) structures are required to maintain the flow due to the new SR 12 off-ramp and EB I-80 widening. Based on Boring A-09-114, the subsurface soil in the vicinity of the proposed box culvert consists of very stiff to hard lean clays. Groundwater was measured at Elev. + 23.0 feet (depth of 7 feet below existing ground) during drilling in 2009.

The proposed reinforced concrete culvert may be designed in accordance with Caltrans Standard Plans D80. The proposed concrete culvert and RCJBs should be supported on a pad, which should be constructed as follows:

(a) Excavate approximately 1 foot of existing soil below the bottom of the concrete culvert and RCJBs. The excavation should extend 2 feet beyond the culvert footprint.

(b) Place a layer of subgrade enhancement engineering geotextile on the subgrade. The subgrade enhancement geotextile should conform to Caltrans Standard Specification (Section 88-1.08, Class B2).

(c) Place 2 feet of Caltrans Class 3 Aggregate Base over the subgrade enhancement geotextile. The Class 3 Aggregate Base should be compacted to 95-percent relative compaction per Caltrans Test 216.

(d) The subgrade enhancement geotextile should be wrapped on top of the compacted Class

3 Aggregate Base for a minimum overlap of two feet.

The Class 3 Aggregate Base can serve as a "local distribution bridge" for reducing load imposed on the underlying materials and provide a working platform.

For the proposed box culvert and RCJBs, the design vertical and lateral earth pressures should conform to Section 6.2.1 of Caltrans Bridge Design Specifications (BDS). Per Caltrans BDS, the recommended unit weight of soil (vertical pressure) is 140 pcf. The recommended lateral earth pressures for design should include two design conditions, 35 pcf and 100 pcf.

The wingwalls of the transition structures will not be designed as part of the box culvert, but may be designed in accordance with Caltrans Standard Plan D84. Wingwalls and the Raines Drain structures should be designed to resist the following applied lateral earth pressures (Equivalent Fluid Pressures) and design parameters:

(a) The recommended active pressure is 36 pcf EFP for the engineered fill.

(b) The recommended at-rest pressure is 55 pcf EFP for the engineered fill.

(c) The recommended passive resistance against the side of the wall footing is 330 pcf EFP.

(d) A coefficient of friction of 0.3 may be used to estimate the frictional resistance along the bottom of the footing. Only dead loads should be used to estimate the frictional resistance at the bottom of footings.

(e) Sliding resistance should be calculated using 100% of the base resistance only, or 100% of passive resistance behind the footing only, or using 50% of base resistance plus 50% of passive resistance.

(f) The effect of any surcharge (dead or live load) should be added to the preceding lateral earth pressures. Use equivalent earth pressure of not less than 2 feet of uniform soil weight at 125 pcf if the traffic (HS20 loading) is within a horizontal distance of one half of the wall height.

Recommended allowable bearing capacity for the wingwall is 3.0 kips per square foot. If soft soil material is encountered at the foundation subgrade of the wingwalls, a foundation

pad should be constructed similar to the concrete culvert.

8.5.1 Corrosion Investigation

The corrosion investigation for this project was performed in general accordance with the provisions of California Test Method 643. Chemical tests were performed on selected soil samples to evaluate the corrosion potential of the subsurface soil. A summary of the corrosion test results is presented in Table 6.

TABLE 6 - SUMMARY OF CORROSION TEST RESULTS

Boring No.	Station & Offset	Depth (ft)	Min. Resistivity (ohm-cm)	pH	Sulfate (ppm)	Chloride (ppm)
R-09-SC-001	"D1" Line 97+44, 27.0 Rt.	21	1260	7.71	21.2	13.4
A-09-TS-003	"D1" Line 111+88, 68.0 Rt.	14.5	1070	7.01	26.2	37.9
R-09-CN-002	12CON" Line 134+63, 13.0 Rt.	16	1740	7.72	37.9	20.9
R-09-CN-003	"12CON" Line 136+92, 16.0 Rt.	26	1880	7.74	31.7	25.8
A-09-106	"D1" Line 105+77, 199.5 Rt.	9.5	1800	7.74	14.9	33.8
A-09-114	"D1" Line 121+28, 35.5 Rt.	14.5	1450	7.14	21.0	15.5
A-09-118	"12CON" Line 150+87, 60.0 Rt.	24.5	1150	7.37	129.2	37.8

For selection of pipe material for culvert and storm drain applications, it is our understanding that AltPipe computer program is used by Caltrans to assist designers. AltPipe program is a web-based tool (http://dap1.dot.ca.gov//design/altpipe/) and updates and supersedes the previous CULVERT 4 program. The computations performed by AltPipe are based on the procedures and California Test Methods described in Chapter 850 of the Caltrans Highway Design Manual (HDM). AltPipe incorporates current requirements from the HDM supplemented by Caltrans Design Information Bulletin No. 83 (D.I.B. No. 83, June 30, 2003) for abrasion potential for material selection.

The AltPipe program is intended for final design by the civil or hydraulic designer. In addition to soil corrosivity data provided above, the input requires data such as Abrasion Level, 2-5 year Flow Velocity, and height of cover that should be determined while finalizing the drainage design.

Running of the AltPipe program was performed and the results with recommendation of the minimum thickness and protective measures for pipe culverts for the Alternative Pipe

Culvert are included in Appendix C.

8.6 Solano Irrigation District (SID) Pipe Relocations at Suisun Creek

The existing 18" SID irrigation water main beneath Suisun Creek is proposed to be relocated due to the construction of the "Suisun Creek Bridge". The SID relocations will generally require the following works:

- Install a new 20" inside diameter (22" outside diameter) HDPE pipe from the existing 18" SID pipe that crosses under I-80 just west of Suisun Creek. The portion of the new pipe that will be inside the new Caltrans right-of-way will be inside a 30" inside diameter steel casing;
- Install a new 18" pipe under Suisun Creek (20" outside diameter);
- The new 18" pipe under Suisun Creek will be reconnected to the existing 18" pipe at each end, and to an existing 12" pipe west of the creek;
- The boring of the SID pipe under Suisun Creek is proposed to be constructed by Horizontal Directional Drilling (HDD) method.

We understand that the pipe construction will be based on a "design-build" program. The following are the general subsurface soil conditions and the engineering properties at Borings A-09-130, A-09-131, A-09-132 and CPT-09-129, CPT-09-130, CPT-09-133, CPT-09-134.

1. The subsurface soils consist of firm to hard lean clays with occasional pockets/lenses of loose to medium dense sands with weak cementation;
2. Fine content of the silty sand and clayey sand was tested to be 15%, 34% and 43 %;
3. Plasticity Index of the lean clay was tested to be 22 and 25;
4. Unconfined compressive strengths were tested to be between 0.5 tsf and 2.3 tsf;
5. Groundwater table was measured between Elev. + 16.0 feet and Elev. +25.0 feet;
6. The undrained shear strength, dry unit weight and moisture content of the tested soil samples are shown in the boring logs of the LOTB.

The proposed SID Crossing Structure should be designed with the following allowable bearing capacity and applied lateral earth pressures (Equivalent Fluid Pressures):

(a) Recommended allowable bearing capacity is 3.0 kip per square foot.

(b) Recommended active pressure is 36 pcf EFP for the engineered fill.

8.7 Minor Structure Foundations

8.7.1 Soundwall

According to the designer, there is no soundwall required for this project.

8.7.2 Overhead Sign Structures

It is proposed to construct eight overhead sign structures along eastbound I-80 and SR-12E within the project limits. The overhead sign structures will be Caltrans Standard "Overhead Signs-Tubular Single Post Type II, Type V or Type VI". The proposed signpost structures will be about 17.75 feet to 19.75 feet above grade. The recommended foundation system will consist of 5 feet diameter "Cast-in-drilled-hole" (CIDH) piles, as per the Caltrans standard design.

8.7.2.1 Subsurface Soil Conditions

Soil borings were drilled in the vicinity of the proposed overhead signpost structures in January, June and July 2009. These borings were drilled to the depths between 20 feet and 60 feet. The subsurface soil conditions at each overhead signpost structure location are summarized in the Table 7 below.

TABLE 7: SUMMARY OF OVERHEAD SIGN STRUCTURES

Sign	Location	Post Type	Relevant Boring	Boring Depth (ft)	Subsurface Soil Conditions
B	"L" 184+00	V	A-09-126	30	Silty sand underlain by stiff to very stiff lean clay
D	"D1" 90+00	V	A-09-102	30	Very stiff to hard lean clay
F	"D1" 107+10	V	A-09-107	20	Firm to stiff lean clay
G	"L" 213+59	V	A-09-TS-003	60	Medium dense sand underlain by firm to very stiff lean clay
H	"D1" 113+70	V	A-09-110	20	Firm to very stiff lean clay
I	"D1" 122+05	II	A-09-114	30	Stiff to very stiff lean clay
K	"D1" 130+29	II	A-09-116	50	Stiff to very stiff lean clay
M	"12CON" 156+62	VI	A-09-119	50	Soft to very stiff lean clay
O	"12CON" 173+12	VI	A-09-127	35	Firm to very stiff lean clay

8.7.2.2 Pile Capacity

According to Caltrans Standard Plan (2006 Standard Plan S37), the recommended pile diameter is 5 feet and the recommended pile lengths for different post types are shown in the table above. According to Caltrans Standard Plan, the foundation design of the pile length in the standard plan is based on assuming a cohesionless foundation subgrade material with the angle of internal friction angle of 30 degrees and unit weight of 120 pcf. The total passive force within the pile length calculated based on the boring log (mainly cohesive soils) was compared with the total passive force calculated from the cohesionless soils with a friction angle of 30 degrees to verify the use of pile length from the standard plan. For Signs H, M and O (with the equivalent friction angle of the cohesive soils less than 30 degrees), pile capacity analyses were performed for the pile length based on the loads provided by the designer. The findings are summarized in Table 8 below.

TABLE 8: OVERHEAD SIGN LOADS AND PILE LENGTHS

Sign	Post Type	Vertical Load (Kip)	Shear (Kip)	Overturning Moment (Kip-ft)	Torsional Moment (Kip-ft)	Pile Length (ft)*
B	V	-	-	-	-	33.0
D	V	-	-	-	-	33.0
F	V	-	-	-	-	33.0
G	V	-	-	-	-	33.0
I	II	-	-	-	-	25.0
K	II	-	-	-	-	25.0
H	V	17.0	5.1	121.0	100.0	33.0
M	VI	27.1	15.6	514.7	283.7	33.0
O	VI	27.1	15.6	514.7	283.7	33.0

*Based on Caltrans Standard Plan S7 (May 2006)

Lateral pile analyses were performed for the 5-foot CIDH piles using the L-PILE program. Based on the results of the computer analyses, the maximum deflection at the pile head is less than 0.05 inches. According to the designer, the maximum pile head deflection is acceptable and the flexural (moment) and shear capacities of the piles were found to be in excess of the moment and shear resulted from the corresponding external loads.

Assumed soil profiles with strength parameters and the results of lateral pile analyses with the plots of the pile deflection, moment, shear and reaction along the pile length and torsional capacities analyses for Overhead Signs H, M and O are included in Appendix C.

The estimation of the CIDH concrete pile capacity in clay and sand are based on the adhesion factors per FHWA manual (O'Neil and Reese 1999). The pile capacity will be derived primarily from frictional resistance along the pile shafts. The pile capacity calculations for the overhead sign structures are provided in Appendix C.

Caltrans standard specification for "Cast-in-Place Concrete Piling" should be used for the construction of CIDH piles. Groundwater is expected during pile construction. Due to presence of sand layers, and groundwater, raveling or caving may be expected, which may require additional drilling and cleaning effort and may increase the concrete volume for the piles. The CIDH holes are not expected to remain open without implementation of appropriate measures. Temporary steel casing and slurry displacement method of construction should be used at all times to maintain the integrity of the piles. Caltrans Standard Specifications and SSPs should be used for construction and quality assurance procedures. All pile excavations should be observed by the Geotechnical Engineer prior to the placement of reinforcement and concrete so that if conditions differ from those anticipated, appropriate recommendations can be made.

It is prudent to make the contractor aware of these conditions so that appropriate steps can be taken to comply with the standards and maintain the integrity of the pile foundations.

The other minor structures for this project include the traffic signal systems. The foundation design of these minor structures should be according to the Caltrans Standard Plans. The subject was considered and was determined to be not applicable for the project.

9. STRUCTURAL PAVEMENT

R-value tests were conducted on representative samples collected at subgrade level. The test results are summarized in Table 9.

TABLE 9: SUMMARY OF R-VALUE TEST RESULTS

Test Boring	Approximate Station & Offset (ft)	Approx. Existing Ground Elev. (ft)	R-value
A-08-103	"D1" Line 94+21, 11.5 Rt.	34.0	31
A-08-105	"D1" Line 103+48, 33.5 Rt.	31.5	12
A-08-115	"12CON" Line 127+60, 10.0 Lt.	31.0	13
A-08-121	"12CON" Line 168+07, 50.0 Rt.	38.0	11
A-08-122	"D1" Line 103+53, 83.0 Rt.	31.0	14
A-08-124	"12CON" Line 148+11, 26.0 Lt.	38.0	10
A-08-125	"12CON" Line 152+80, 14.0 Lt.	40.0	10

The existing pavement sections should be referred to Typical Cross Sections X-1 through X-16.

Findings, Design Approach and Recommendations:

- As shown on the "Summary of R-Values", the R-values of the soil samples from the project site mainly ranged from 10 to 14 (except R-Value of 31 for the bulk sample from Boring A-08-103, which is considered not representative). An R-Value of 10 is assumed for native soil materials and imported soil materials in the design of structural pavement sections;
- The design is according to Caltrans Highway Design Manual (Ref.7), using HMA; Lean Concrete Base (LCB) and Aggregate Subbase. LCB is recommended as base materials for Traffic Index over 12 as per a direction from Caltrans;
- Proposed pavement section with 0.25 feet of ATPB layer is recommended from "L" Line Station 198+88 to Station 210+15 and from "L" Line Station 219+73 to Station 242+56 to match the existing pavement section with 0.25 feet of ATPB layer for the I-80 widening (Option 3 in Table 11A);
- Proposed pavement section with 0.20 feet of ATPB layer is recommended along "12 CON" Line 171+50 to 173+00 to match the existing pavement section with 0.20 feet of ATPB layer for the EB I-80 to SR-12 East Connector Ramp (Option 3 in Table 11E);

- The proposed concrete pavement sections are assumed to be with "Lateral Support" in the "Rigid Pavement Catalog" due to the proposed full depth shoulder section.

- Based on the Section 600 of the Highway Design Manual, a Subgrade Enhancement Geotextile (SEG) is required for flexible pavements when the R-value of the basement soil is less than 20. In our opinion, a SEG is recommended when compaction is a problem during construction with occurrence of "pumping" due to presence of saturated soft/loose native soil.

- Based on the "Geotechnical Design and Materials Report, I-80 HOV Project – Red Top Road to Air Base Parkway" dated August 2007 prepared by PARIKH, the recommended pavement structural section for the Maintenance Vehicle Pullout (MVP) is recommended to be 0.5 feet (150 mm) HMA (Type A) over 0.6 feet (180 mm) Aggregate Subbase (Class 4) for "L" Line.

- According to the designer, recommended pavement structural section for the Inspection Facility Parking Area and Ramp MVPs is 0.3 feet HMA (Type A) over 0.5 feet Aggregate Base (Class 3).

Based on Caltrans review comments, the following are the issues of geotechnical concern for the basement soil (within the native soils) of the pavement subgrade:

1. Majority of the Plasticity Index of the clayey soils are greater than 12. According to Index 314.4 of the Highway Design Manual with an expansive subgrade (Plasticity Index greater than 12), special engineering or construction considerations will be required.

2. High groundwater levels were measured in some of the soil borings. Seasonal groundwater fluctuation that may be anticipated will adversely affect construction of the pavement.

The location of the new pavement constructed on native basement soil, depth of pavement subgrade below original ground provided by the designer and anticipated groundwater depth based on the nearby soil borings are summarized in Table 10 below.

TABLE 10: SUMMARY OF DEPTH OF PAVEMENT SUBGRADE WITHIN NATIVE SOILS

Corridor	Alignment	Beginning Station	End Station	Pavement Section Depth (feet)	Max. Depth (below Original Ground) (ft)	Measured Groundwater Depth (feet)
I-80 Widening	"L"	171+89.84	264+00.16	3.1 to 3.4	3.4	6-12.5
Truck Scales Off-Ramp	"D 1"	75+56.6	89+90.0	2.2	2.53	5-13
Truck Scales On-Ramp to I-80	"D 1"	119+50.0	134+40.0	2.15 to 2.20	1.06	7
	"D 1"	136+20.0	150+41.05	2.15	0.54	7
Truck Scales On-Ramp to SR 12E	"D 2"	N/A	N/A	2.05	-	13
SR 12 Connector	"12 CON"	113+58.9	126+00.0	2.75	1.06	7
	"12 CON"	151+35.0	173+00.0	2.75	2.75	7-23

Assuming a rise of 5 feet in groundwater level from dry season to wet season and based on the table above, the pavement construction along the corridor of I-80 Widening, Truck Scales Off-Ramp and SR 12 Connector may encounter groundwater during pavement construction.

To help mitigate potential high groundwater level, Subgrade Enhancement Geotextile (SEG) should be used in area with high groundwater table according to Highway Design Manual (HDM) Section 614.5.

For expansive subgrade, following alternatives (according to HDM Section 614.4) are recommended as mitigation measure for this project:

a) Treating expansive soil with lime or other additives to reduce expansion in the presence of moisture.

b) Replacing the expansive material with a non-expansive material to a depth where the seasonal moisture content will remain nearly constant.

c) Waterproof membrane (such as geomembrane, asphalt saturated fabric) can be used to stabilize the moisture content of the expansive subgrade by minimizing the access of water through surface and subsurface drainage.

Based on the limited extent anticipated for the pavement construction with grading plane within the native soil, it appears that Alternative c is preferable since it is easier to construct and more cost effective than Alternatives a and b. Final alternative is to be selected by the designer with evaluation of factors such as the time of construction, actual quantities and cost comparison etc.

Based on the Traffic Indices provided by the designer (Approved by Caltrans Planning Department), the recommended typical structural pavement sections for 20-year design and 40-year design are shown in Tables 11A through 11F below.

Table 11A- EB I-80 Mainline ("L" LINE)

Design Life	Traffic Index (TI)	Design R-Value	Type of Pavement	Option	Sheet No.	Structural Pavement Section					
						JPCP	CRCP	HMA-A	ATPB	LCB	AS (4)
20	15.5	10	Flexible	1	1	-	-	0.75	-	0.75	1.80
		10	Flexible	2	2	-	-	2.00	-	-	-
		10	Flexible	3*	3	-	-	1.00	0.25	0.75	1.00
		10	Rigid	1	-	1.05	-	-	-	0.35	0.70
		10	Rigid	2	-	1.05	-	0.25	-	-	0.70
		10	Rigid	3	-	-	0.95	0.25	-	-	0.70
40	17.5	10	Rigid	1	-	1.15	-	-	-	0.35	0.70
		10	Rigid	2	-	1.15	-	0.25	-	-	0.70
		10	Rigid	3	-	-	1.00	0.25	-	-	0.70

Table 11B - EB I-80 Truck Off-ramp ("D1" LINE)

Design Life	Traffic Index (TI)	Design R-Value	Type of Pavement	Option	Sheet No.	Structural Pavement Section					
						JPCP	CRCP	HMA-A	ATPB	LCB	AS (4)
20	15.5	10	Flexible	1	1	-	-	0.75	-	0.75	1.80
		10	Flexible	2	2	-	-	2.00	-	-	-
		10	Rigid	1	-	1.05	-	-	-	0.35	0.70
		10	Rigid	2	-	1.05	-	0.25	-	-	0.70
		10	Rigid	3	-	-	0.95	0.25	-	-	0.70
40	17.5	10	Rigid	1	-	1.15	-	-	-	0.35	0.70
		10	Rigid	2	-	1.15	-	0.25	-	-	0.70
		10	Rigid	3	-	-	1.00	0.25	-	-	0.70

Table 11C –Truck On-ramp to EB I-80 ("D1" LINE 130+29.16 to 150+41.05)

Design Life	Traffic Index (TI)	Design R-Value	Type of Pavement	Option	Sheet No.	Structural Pavement Section					
						JPCP	CRCP	HMA-A	ATPB	LCB	AS (4)
20	15.5	10	Flexible	1	1	-	-	0.75	-	0.75	1.80
		10	Flexible	2	2	-	-	2.00	-	-	-
		10	Rigid	1	-	1.05		-	-	0.35	0.70
		10	Rigid	2	-	1.05	-	0.25	-	-	0.70
		10	Rigid	3	-	-	0.95	0.25	-	-	0.70
40	17.0	10	Rigid	1	-	1.10	-	-	-	0.35	0.70
		10	Rigid	2	-	1.10	-	0.25	-	-	0.70
		10	Rigid	3	-	-	0.95	0.25	-	-	0.70

Table 11D- Truck On-ramp to SR 12E (""D2" LINE)

Design Life	Traffic Index (TI)	Design R-Value	Type of Pavement	Option	Sheet No.	Structural Pavement Section			
						JPCP	HMA-A	LCB	AS (4)
20	12.5	10	Flexible	1	4	-	0.65	0.60	1.40
		10	Flexible	2	5	-	1.65	-	-
		10	Rigid	1	-	0.85	-	0.35	0.70
		10	Rigid	2	-	0.90	0.25	-	0.70
40	14.5	10	Flexible	1	6	-	0.75	0.70	1.65
		10	Flexible	2	7	-	1.95	-	-
		10	Rigid	1	-	1.00	-	0.35	0.70
		10	Rigid	2	-	1.00	0.25	-	0.70

Table 11E-EB I-80 to SR-12 East Connector Ramp ("12CON" LINE)

Design Life	Traffic Index (TI)	Design R-Value	Type of Pavement	Option	Sheet No.	Structural Pavement Section				
						JPCP	HMA-A	ATPB	LCB	AS (4)
20	13.0	10	Flexible	1	8	-	0.65	-	0.65	1.45
		10	Flexible	2	9	-	1.70	-	-	-
		10	Flexible	3*	10	-	0.55	0.20	0.65	1.35
		10	Rigid	1	-	0.85	-	-	0.35	0.70
		10	Rigid	2	-	0.90	0.25	-	-	0.70
40	14.5	10	Flexible	1	6	-	0.75	-	0.70	1.65
		10	Flexible	2	7	-	1.95	-	-	-
		10	Rigid	1	-	1.00	-	-	0.35	0.70
		10	Rigid	2	-	1.00	0.25	-	-	0.70

Table 11F-Commercial Vehicle Enforcement Facility ("S" LINE)

Design Life	Traffic Index (TI)	Design R-Value	Type of Pavement	Option	Sheet No.	Structural Pavement Section			
						CP	HMA-A	LCB	AS (4)
20	13.0	10	Flexible	1	8	-	0.65	0.65	1.45
		10	Flexible	2	9	-	1.70	-	-
		10	Rigid	1	-	0.85	-	0.35	0.70
		10	Rigid	2	-	0.90	0.25	-	0.70
40	15.0	10	Flexible	1	11	-	0.75	0.75	1.70
		10	Flexible	2	12	-	2.00	-	-
		10	Rigid	1	-	1.00	-	0.35	0.70
		10	Rigid	2	-	1.00	0.25	-	0.70

* Section designated to match existing pavement for the widening.

RHMA-G:Rubberized Asphalt Concrete (Type G)
CRCP: Continuously Reinforced Concrete Pavement
LCB: Lean Concrete Base
CP: Concrete Pavement
JPCP: Jointed Plain Concrete Pavement
HMA-A: Hot Mix Asphalt (Type A)
AS (4): Aggregate Subbase (Class 4)

Note: If RHMA (rubberized hot mix asphalt) is required, 0.15 feet to 0.2 feet can be taken from the HMA-A

According to Caltrans "Pavement Policy Bulletin" (August 2009), the thickness of lean concrete base shall be 0.35 feet and hot mix asphalt shall be 0.25 feet for all cases in the Caltrans concrete design tables.

10. MATERIAL SOURCES

There are several commercial sources of asphalt, concrete, and aggregate products in the vicinity of the project area. Some of the available commercial suppliers in the vicinity of the project area are listed in Table 12 below:

TABLE 12: SOURCES OF IMPORTED BORROW

Source	Location	Approx. Haul Distance (One way, miles)
Rinker Materials Corporation	1601 Cement Hill Road, Fairfield, CA	10.0
Solano Asphalt Maintenance Co.	2400 Cement Hill Road #C, Fairfield, CA	12.0
Syar Industries	4969 Vanden Road, Vacaville, CA	13.0
Hanson Aggregates	1725 Marina Vista Ave., Martinez, CA	17.0
Bertinoia Winters Aggregates	4499 Putah Creek Road, Winter, CA	25.0

11. MATERIAL DISPOSAL

Majority of the project will require fill/imported borrow material for the proposed project. Disposal of ADL and other contaminated material is beyond the scope of this report.

12. CONSTRUCTION CONSIDERATIONS

12.1 Construction Advisories

The following sections are written primarily for the engineer responsible for the preparation of plans and specifications. Since these sections identify potential construction issues related to the project, it may also be of use to the Agency's representatives involved in monitoring of construction activity. The field investigation performed by PARIKH primarily addresses design issues and was not planned specifically to identify construction issues.

Majority of the project consists of mainline/ramp widening, new ramp, embankment construction and pavement construction along the existing EB I-80; therefore traffic control is required to maintain traffic flow during construction. Several underground utilities exist at the site. The contractor should verify the utility lines at the project site, be aware of the existing conditions and plan the construction activities accordingly to minimize the construction impact on the integrity of the existing utilities.

In our opinion, conventional equipment may be used to excavate the on-site soil materials. The materials to be excavated may consist of firm to very stiff clays with varying amounts of loose to medium dense sands and gravels. Localized subgrade pumping may be encountered during earthwork construction depending on the weather, moisture condition of the subsurface soils, and surface drainage conditions. Equipment mobility may also be difficult if the subgrade is wet. In which case, the subgrade soils may require reworking, aeration, or over-excavation and replacing with dry granular fill to facilitate earthwork construction. It is possible that unknown old buried utilities or abandoned structures, concrete rubble etc. are located along the alignment. It might require special equipment and additional efforts to remove these buried objects.

Prospective contractors for the project must evaluate construction-related issues on the basis of their own knowledge and experience in the local area, on the basis of similar projects in other localities, or on the basis of field investigation on the site performed by them, taking into account their proposed construction methods and procedures. In addition, construction activities related to excavation and lateral earth support must conform to safety requirements of Occupational Safety Health Administration (OSHA) and other applicable municipal and State regulatory agencies.

12.2 Construction Consideration that Influence Specifications

The contractor should verify the existing utility line conditions. These locations should not be used for stockpiling of borrow materials. Any utility conflicts with proposed construction should also be reviewed prior to construction.

12.3 Construction Monitoring and Instrumentation

The construction monitoring and instrumentation subject was considered and was determined to be not applicable for the project.

12.4 Hazardous Waste Considerations

The project environmental study report should be referred to for further details about any hazardous materials within the project.

12.5 Differing Site Conditions

The soil conditions described in this report are based on available boring data. It should be noted that these borings depict subsurface soil conditions and groundwater conditions only at the locations drilled and at the time drilled. Because of the variability from place to place within soils in general, and the nature of geologic depositions, subsurface soil conditions and groundwater conditions could change between the explored boring locations.

Early communication should be made between the Resident Engineer, the Contractor and the Geotechnical Engineer as soon as conditions that differ from those established in this report are recognized by any of the parties. Additional recommendations could be provided if such conditions arise.

13. RECOMMENDATIONS AND SPECIFICATIONS

13.1 Summary of Recommendations

If the designer has questions or concerns with any of these recommendations, or, if conditions are found to be different during construction, the Geotechnical Engineer who prepared this report should be contacted. Additional fieldwork, analysis or changes in recommendations may be required during the construction phase. These services may be provided under a separate authorization, as necessary. A concise summary of the geotechnical recommendations is presented below:

- Design peak bedrock acceleration (PBA) = 0.6 g. Design peak ground acceleration (PGA) refers to Figure B.7 (SDC 1.4). (Ref.: Section 8.1)

- The boring data indicates that the subsurface soil conditions generally consist of stiff to very stiff lean clay with pockets/lenses of medium dense to dense sands. Groundwater was encountered at the depths between 3.5 feet and 18 feet below existing ground surface (between Elevation +12.0 feet and Elevation +33.0 feet) during the field exploration in 2009. The impact of liquefaction potential is considered low at the project site. (Ref.: Section 8.1.3)

- The settlement due to the placing of the embankment fill/sliver fill has been evaluated. The settlements were found to be on the order between 1 inch and 4 inches and mainly in the over-consolidated range. 30-day settlement period and settlement platforms for construction monitoring are recommended (Ref.: Section 8.3.1).

- Structural pavement sections for the project (Ref: Section 9):

13.2 Recommended Materials Specifications

13.2.1 Standard Specifications

Unless otherwise stated in the special provisions, all materials specifications should conform to Caltrans Standard Specifications, May 2006 edition (Ref. 10), including but not limited to the following: Earthwork, Structure Backfill, Pervious Backfill Material, Reinforcing Geofabric, Thermoplastic Pipes, Hot-Mix Asphalt, Aggregate Base and Aggregate Subbase etc.

13.2.2 Special Provisions

Imported Borrow:

Imported material should be in accordance with the specifications set forth in Caltrans Section 19. In particular the material placed within 4 feet of the finish pavement subgrade should meet the following requirements:

1. Free of organic or other deleterious materials.
2. An R-value of no less than 10.

Aggregate Base: Aggregate Base (Class 3) shall conform to the grading specified in the table below for the special provisions. It shall also be clean and free from organic matter and other deleterious substances. The percentage composition by weight of Class 3 aggregate base shall conform to the following grading as determined by California Test Method No. 202.

Gradation Requirement (Percent Passing ¾" Maximum)

Sieve Sizes	Operating Range	Contract Compliance
1":	100	100
¾"	90 – 100	87 – 100
No. 4	35 – 60	30 – 65
No. 30	10 – 30	5 – 35
No. 200	2 – 11	0 – 14

Gradation Requirement (Percent Passing 1 ½" Maximum)

Sieve Sizes	Operating Range	Contract Compliance
2"	100	100
1 ½"	90 – 100	87 – 100
1"	------	------
¾"	50 – 85	45 – 90
No. 4	24 – 45	20 – 50
No. 30	10 – 25	6 – 29
No. 200	2 – 11	0 – 14

Aggregate Base (Class 3) shall also conform to the quality requirements given on the following table:

Quality Requirements

California Test Method	Operating Range	Contract Compliance
Sand Equivalent (217)	25 min	22 Min.
Resistance (R-value) (301)	-	78 Min.
Durability Index	-	35 Min.

Aggregate Subbase: Aggregate Subbase (Class 4) shall conform to the provisions in Section 25 of the Standard Specifications and to the Special Provisions.

Aggregate Subbase (Class 4) shall be clean and free from organic matter and other deleterious substances. The percentage composition by weight of Class 4 aggregate subbase shall conform to the following grading as determined by California Test Method No. 202.

Gradation Requirement (Percent Passing)

Sieve Sizes	Operating Range	Contract Compliance
2 1/2 "	100	100
No. 4	30 – 65	25 – 70
No. 200	0 – 15	0 - 18

Aggregate Subbase (Class 4) shall also conform to the quality requirements given on the following table:

Quality Requirements

California Test Method	Operating Range	Contract Compliance
Sand Equivalent (217)	21 Min.	18 Min.
Resistance (R-value) (301)	-	50 Min.

14. INVESTIGATION LIMITATIONS

Our services consist of professional opinions and recommendations made in accordance with generally accepted geotechnical engineering principles and practices and are based on our field exploration and the assumption that the soil conditions do not deviate from observed conditions. No warranty, expressed or implied, of merchantability or fitness, is made or intended in connection with our work or by the furnishing of oral or written reports or findings. The scope of our services did not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in structures, soil, surface water, groundwater or air, below or around this site. Unanticipated soil conditions are commonly encountered and cannot be fully determined by taking soil samples and excavating test borings; different soil conditions may require that

additional expenditures be made during construction to attain a properly constructed project. Some contingency fund is thus recommended to accommodate these possible extra costs.

This report has been prepared for the Project as described earlier, to assist the engineer in the design of this project. In the event any changes in the design or location of the facilities are planned, or if any variations or undesirable conditions are encountered during construction, our findings and recommendations shall not be considered valid unless the changes or variations are reviewed and our recommendations modified or approved by us in writing.

This report is issued with the understanding that it is the designer's responsibility to ensure that the information and recommendations contained herein are incorporated into the project and that necessary steps are also taken to see that the recommendations are carried out in the field.

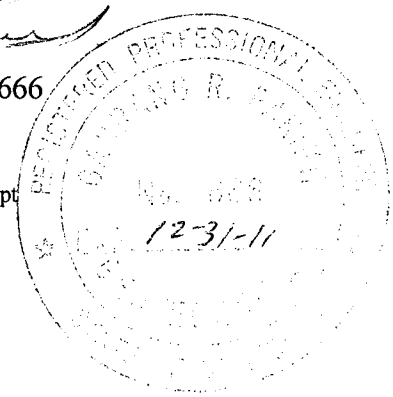
The findings in this report are valid as of the present date. However, changes in the soil conditions can occur with the passage of time, whether they are due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur, whether they result from legislation or from the broadening of knowledge. Accordingly, the findings in this report might be invalidated, wholly or partially, by changes outside of our control.

Very truly yours,
PARIKH CONSULTANTS, INC.

Alston Lam, P.E., G.E. 2605
Project Engineer

Gary Parikh, P.E., G.E. 666
Project Manager

S: Ongoing Projects\2008\208123\Cordelia Truck Scales Relocation Project GDMR (5-2010).rpt



REFERENCES

1. "Geotechnical Design and Materials Report, I-80 HOV Project – Red Top Road to Air Base Parkway" August 2007, Parikh Consultants, Inc.

2. "Foundation Investigation Report, Suisun Creek Bridge (Widen)" February 2007, PARIKH Consultants, Inc.

3. Western Regional Climate Center/Educational and Travel Pages/Average Temperatures/Northern California/Fairfield (www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca2934).

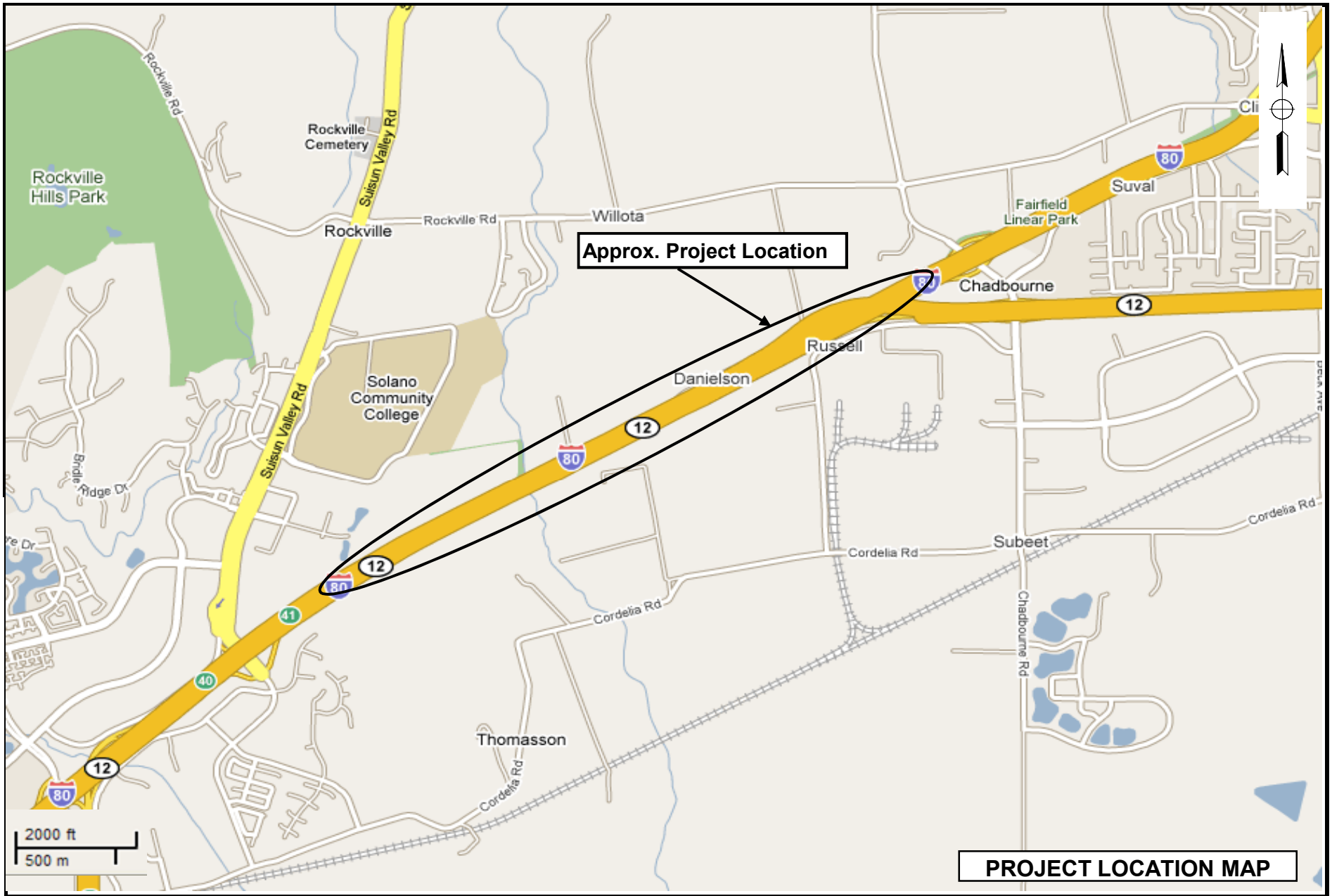
4. California Seismic Hazard Map, 2008 (Draft with FID Labels).

5. Caltrans Department of Transportation, June 2007, Soil & Rock Logging, Classification, and Presentation Manual, Office of Structural Foundations California Department of Transportation.

6. "Geologic Map of Cordelia and Fairfield South 7.5' Quadrangle, Solano County, California" (Stephen P. Bezore, David L. Wagner, and Janet M. Sowers, California Geological Survey, 2002).

7. California Department of Transportation, Highway Design Manual, fifth edition, July 2008.

8. California Department of Transportation, May 2006, Standard Specifications, Sections 1 through 95.



PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GDR	PLATE NO.: 1A

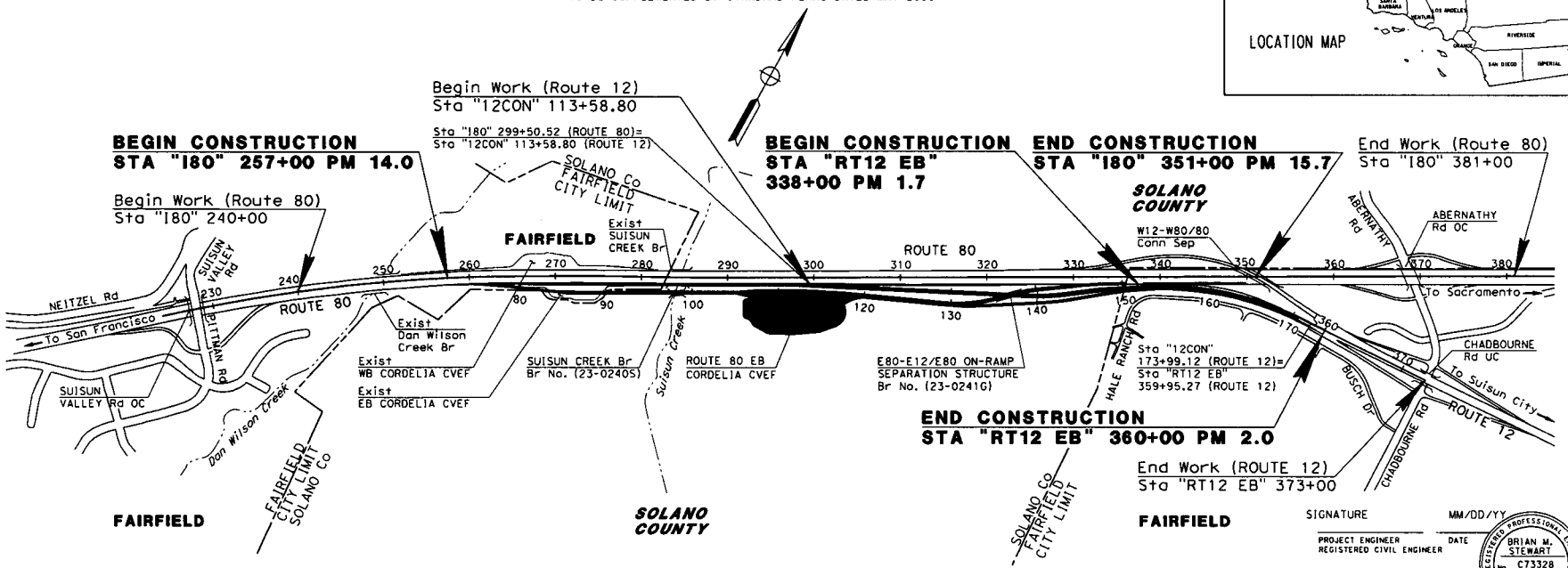
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR BUILDING CONSTRUCTION ON
STATE HIGHWAY

IN SOLANO COUNTY
IN AND NEAR FAIRFIELD
ON ROUTE 80 FROM 0.5 MILE EAST OF SUISUN VALLEY ROAD OVERCROSSING TO 0.4 MILE WEST OF ROUTE 80/12 EAST SEPARATION AND ON ROUTE 12 FROM 80/12 EAST JUNCTION TO 0.2 MILE WEST OF CHADBOURNE ROAD UNDERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



CVEF - COMMERCIAL VEHICLE ENFORCEMENT FACILITY

PRELIMINARY PLANS-SUBJECT TO REVISIONS
95 % SUBMITTAL 05/06/10

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

NO SCALE

SIGNATURE MM/DD/YY

PROJECT ENGINEER REGISTERED CIVIL ENGINEER DATE

BRIAN M. STEWART No. C73328 Exp.12-31-10 CIVIL

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

CONSULTANT DESIGN ENGINEER	CALTRANS DESIGN OVERSIGHT APPROVAL	REGISTRATION No.	LICENSE EXP DATE	DATE SIGNED
BRIAN STEWART	RONI BOURKHALIL	C50744	9/30/11	MM/DD/YY

APPROVED AS TO IMPACT ON STATE FACILITIES AND CONFORMANCE WITH APPLICABLE STATE STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.

HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

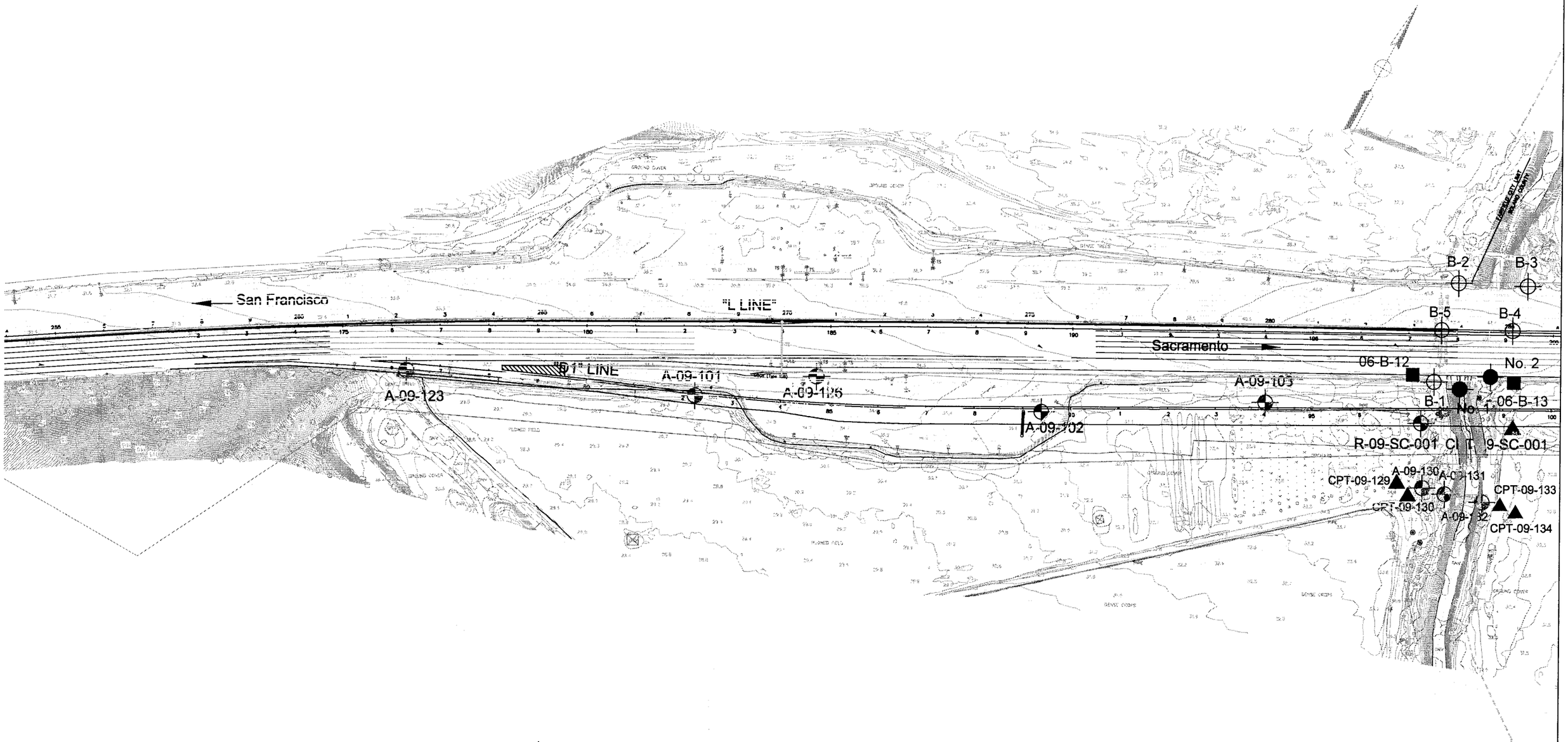
CONTRACT No. 04-0A5354

LAST REVISION	DATE PLOTTED =>
5-05-10	TIME PLOTTED =>

05\06\10
3:44:38 PM

PLATE 1B

BORDER LAST REVISED 8/1/2008 | CALTRANS WEB SITE IS: HTTP://WWW.DOT.CA.GOV/ | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => rmiclo DGN FILE => 40a535ab001.dgn | CU 04264 | EA 0A5351



LEGEND

A-09-101
Approximate auger boring location drilled in 2009

R-09-001
Approximate rotary wash boring location drilled in 2009

CPT-09-001
Approximate CPT location performed in 2009

No. 1
Approximate location of boring drilled in 1957 (Suisun Creek)

B-1
Approximate location of boring drilled in 1958 (Suisun Creek Bridge (Widen))

06-B-12
Approximate location of boring drilled in 2006 (Suisun Creek Bridge Widening)

SCALE 1 inch = 200 feet

Note: All units are in feet unless otherwise specified
Reference Map was provided by HDR Engineering, Inc.

SITE PLAN

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GDR

PLATE NO: 2A

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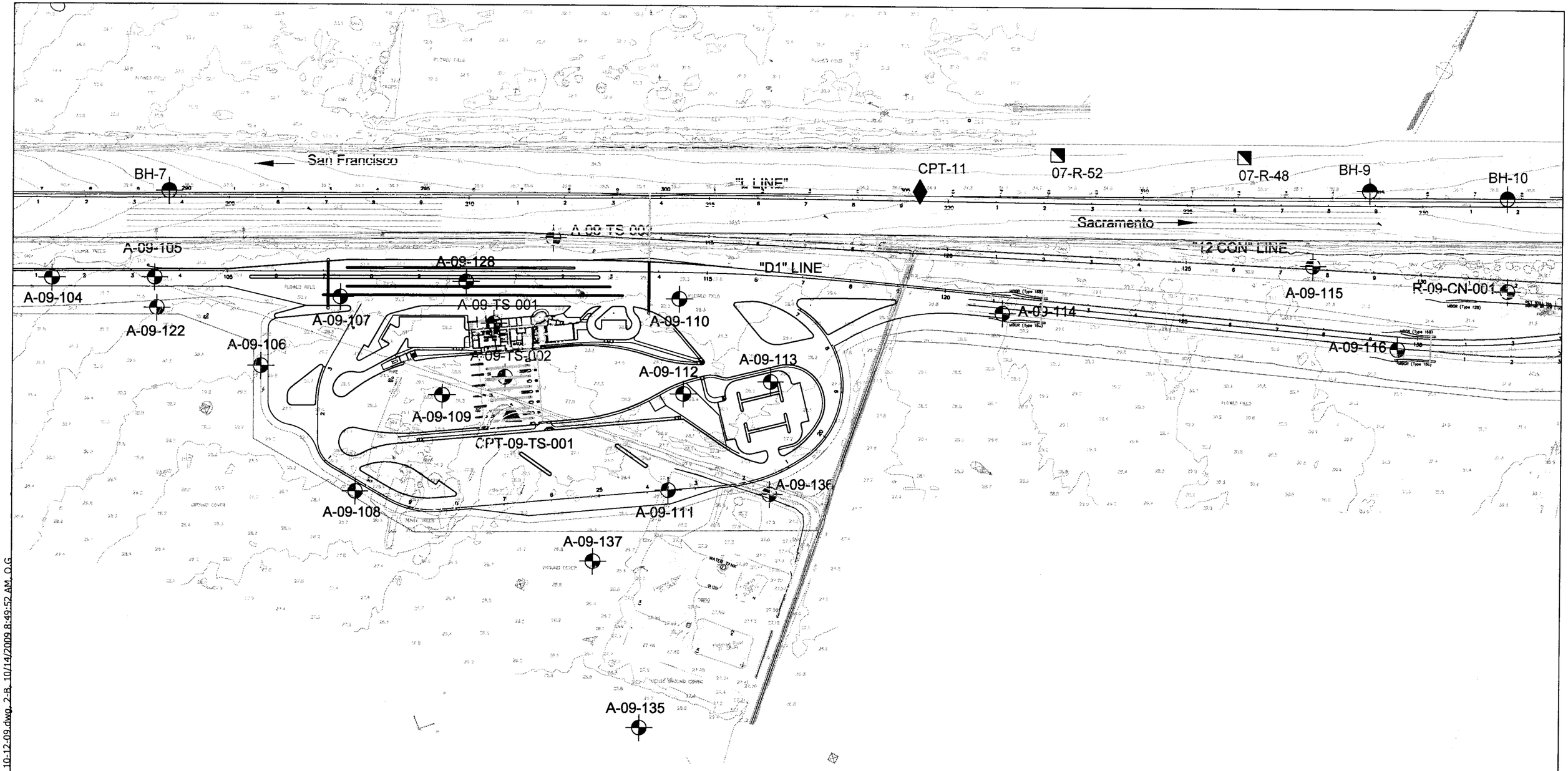

LEGEND

A-09-106
Approximate auger boring location drilled in 2009

R-09-004
Approximate rotary wash boring location drilled in 2009

CPT-09-001
Approximate CPT location performed in 2009

07-R-52
Approximate location of boring drilled in 2007 (I-80 HOV Lane Project)

A-09-001
Approximate location of boring drilled in 2001

CPT-11
Approximate location of CPT tested in 2001

SCALE 1 inch = 200 feet

Note: All units are in feet unless otherwise specified
Reference Map was provided by HDR Engineering, Inc.

SITE PLAN

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GDR | PLATE NO: 2B

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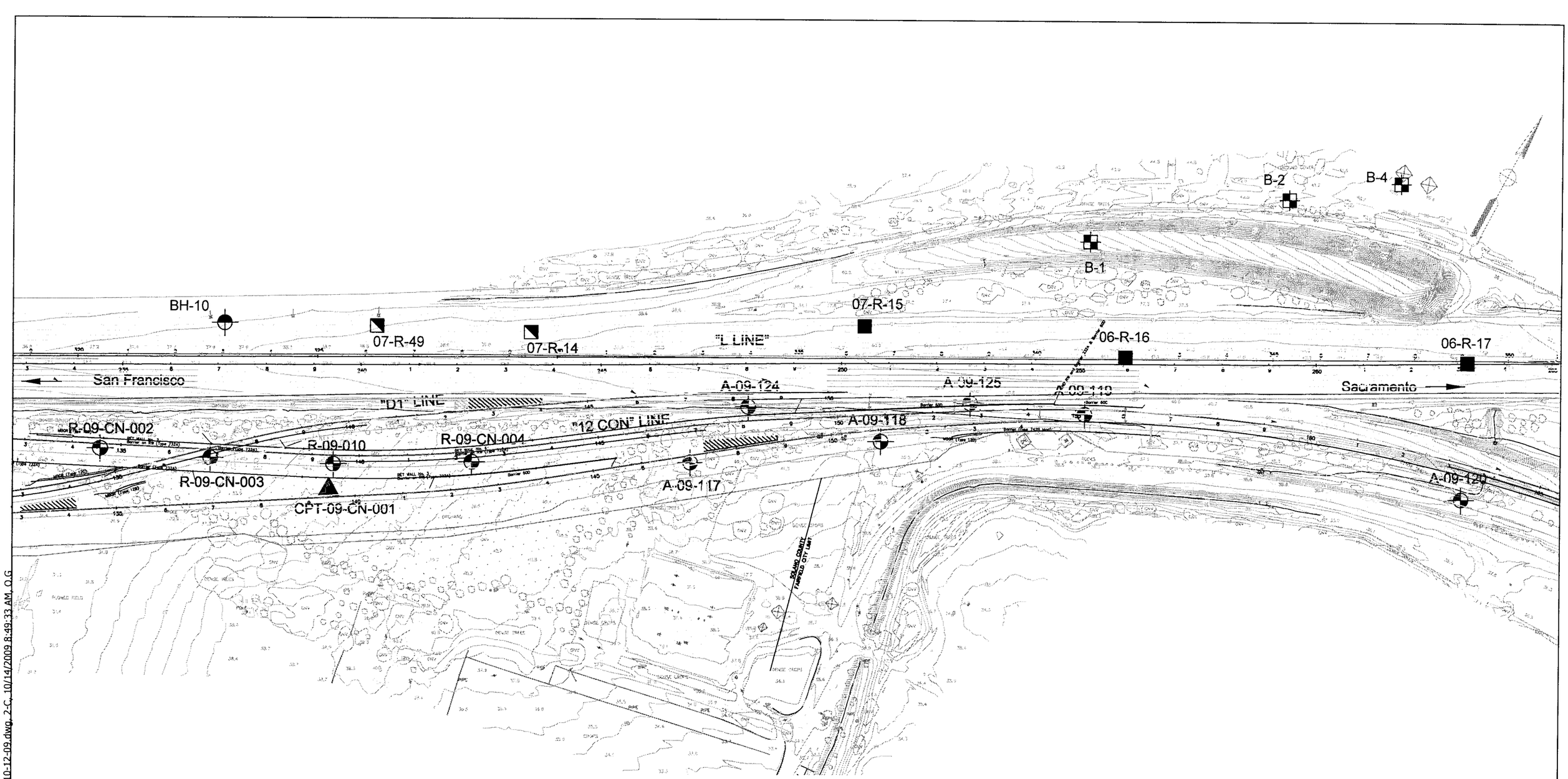

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LEGEND

A-09-101
Approximate auger boring location drilled in 2009

R-09-001
Approximate rotary wash boring location drilled in 2009

CPT-09-001
Approximate CPT location performed in 2009

B-3
Approximate location of boring drilled in 2006 (Suisun Creek Bridge Widening)

06-B-12
Approximate location of boring drilled in 2006 (Suisun Creek Bridge Widening)

07-R-52
Approximate location of boring drilled in 2007 (I-80 HOV Lane Project)

SCALE 1 inch = 200 feet

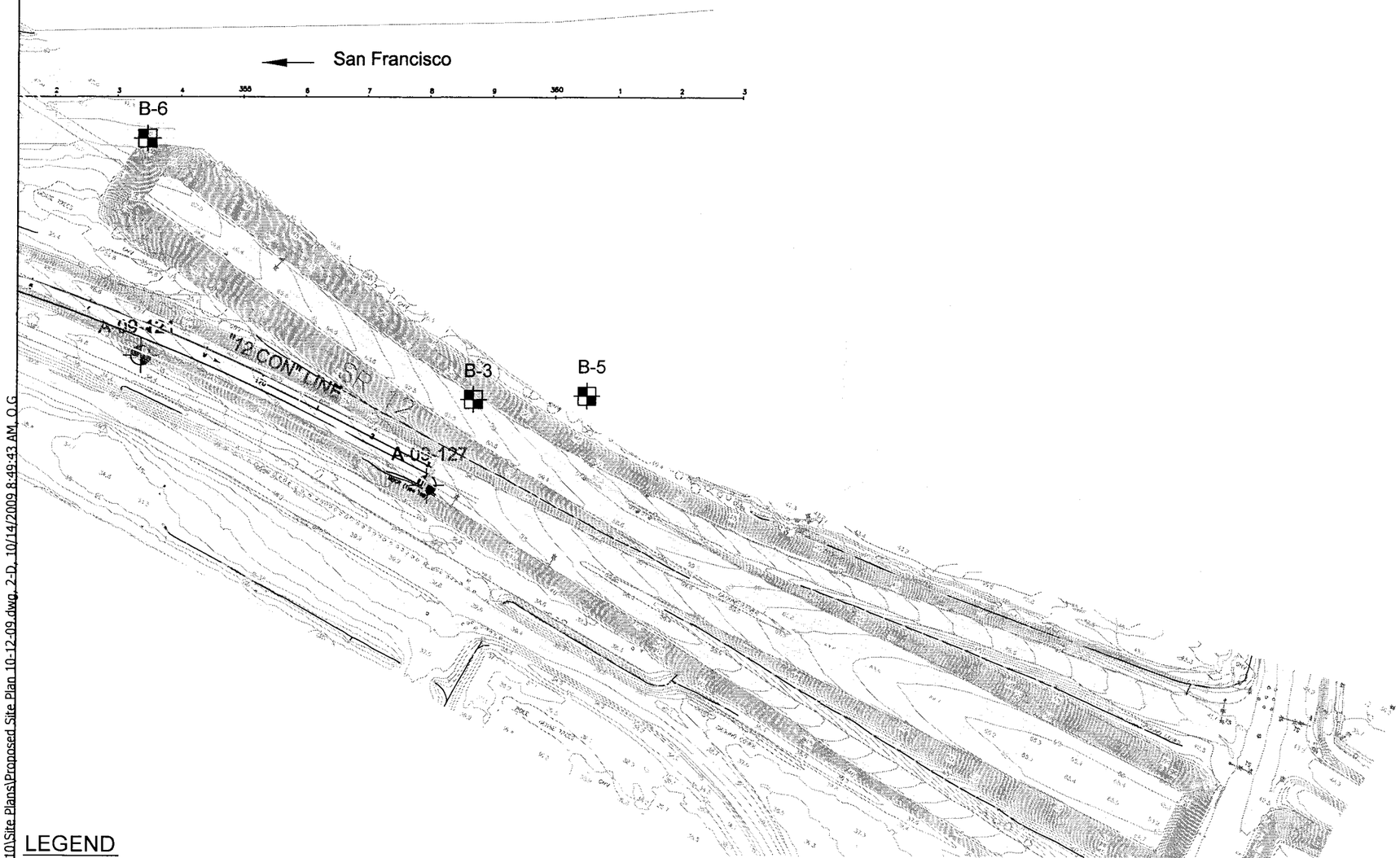
Note: All units are in feet unless otherwise specified
Reference Map was provided by HDR Engineering, Inc.

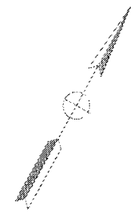
SITE PLAN

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GDR | PLATE NO: 2C





LEGEND

A-09-127
Approximate auger boring location drilled in 2009

B-3
Approximate location of boring drilled in 2006 (Suisun Creek Bridge Widening)

SCALE 1 inch = 200 feet

Note: All units are in feet unless otherwise specified
Reference Map was provided by HDR Engineering, Inc.

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GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GDR

PLATE NO: 2D

SITE PLAN

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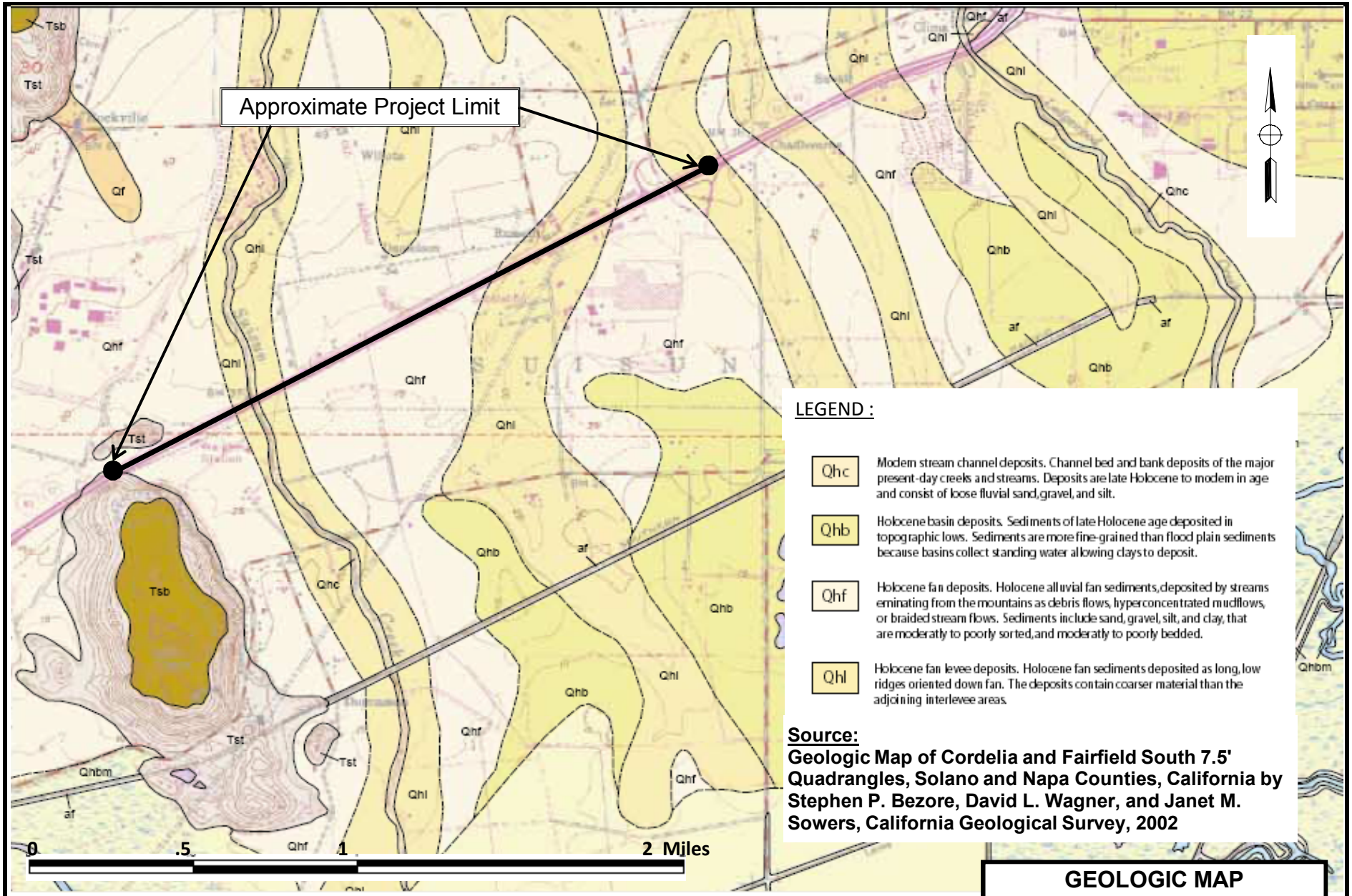


LEGEND :

Qhc	Modern stream channel deposits. Channel bed and bank deposits of the major present-day creeks and streams. Deposits are late Holocene to modern in age and consist of loose fluvial sand, gravel, and silt.
Qhb	Holocene basin deposits. Sediments of late Holocene age deposited in topographic lows. Sediments are more fine-grained than flood plain sediments because basins collect standing water allowing clays to deposit.
Qhf	Holocene fan deposits. Holocene alluvial fan sediments, deposited by streams eminating from the mountains as debris flows, hyperconcentrated mudflows, or braided stream flows. Sediments include sand, gravel, silt, and clay, that are moderatly to poorly sorted, and moderatly to poorly bedded.
Qhl	Holocene fan levee deposits. Holocene fan sediments deposited as long, low ridges oriented down fan. The deposits contain coarser material than the adjoining interlevee areas.

Source:
Geologic Map of Cordelia and Fairfield South 7.5' Quadrangles, Solano and Napa Counties, California by Stephen P. Bezore, David L. Wagner, and Janet M. Sowers, California Geological Survey, 2002

GEOLOGIC MAP

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GDR | **PLATE NO.: 3A**

MAP UNIT EXPLANATION

af	Artificial fill
Qhbm	Holocene estuarine deposits (bay mud). Holocene sediments deposited in a tidal marsh, estuary, delta, or lagoon.
Qhc	Modern stream channel deposits. Channel bed and bank deposits of the major present-day creeks and streams. Deposits are late Holocene to modern in age and consist of loose fluvial sand, gravel, and silt.
Qhb	Holocene basin deposits. Sediments of late Holocene age deposited in topographic lows. Sediments are more fine-grained than flood plain sediments because basins collect standing water allowing clays to deposit.
Qhf	Holocene fan deposits. Holocene alluvial fan sediments, deposited by streams eminating from the mountains as debris flows, hyperconcentrated mudflows, or braided stream flows. Sediments include sand, gravel, silt, and clay, that are moderatly to poorly sorted, and moderatly to poorly bedded.
Qhl	Holocene fan levee deposits. Holocene fan sediments deposited as long, low ridges oriented down fan. The deposits contain coarser material than the adjoining interlevee areas.
Qha	Holocene alluvium, undivided. Alluvium of Holocene age, deposited in fan, terrace, or basin environments. The unit is mapped where seperate types of deposits could not be delineated either due to complex interfingering of depositional environments or the limited size of the area.
Qf	Late Pleistocene to Holocene fan deposits. Gently sloping, fan-shaped, relatively undissected alluvial surfaces where late Pleistocene or Holocene age was uncertain or where the deposits of different age interfinger such that they could not be delineated at the map scale. Sediments include sand, gravel, silt, and clay, that were moderatly to poorly sorted, and moderately to poorly bedded.
Qa	Late Pleistocene to Hololcene alluvium, undivided. Alluvium deposited in small valleys where seperate fan, basin, and terrace units could not be delineated at the map scale, and where Holocene or Pleistocene age was uncertain. The unit includes flat, relatively undissected fan, terrace, and basin deposits, and small active stream channels.
Qpf	Late Pleistocene alluvium, undivided. Gently sloping, fan-shaped, alluvial surfaces where late Pleistocene age is indicated by slight dissection and/or development of alfisols.
Qop	Early or middle Pleistocene fan or terrace deposits. Moderately to deeply dissected alluvial deposits capped by alfisols, ultisols, or soils containing silica or calcic hardpan. Deposits are thin (<3 m thick) and form a veneer over bedrock.
Qls	Landslide deposits. Holocene and Pleistocene landslides. Arrows indicate direction of movement.
Tst	Ash-flow tuff (Pliocene). Pumicitic, locally welded, with bedded agglomeritic tuff.
Tsa	Andesites (Pliocene). Andesitic flows, breccias, and agglomerates.
Tsb	Basalt. Black basalt flows, massive with a scoria base.

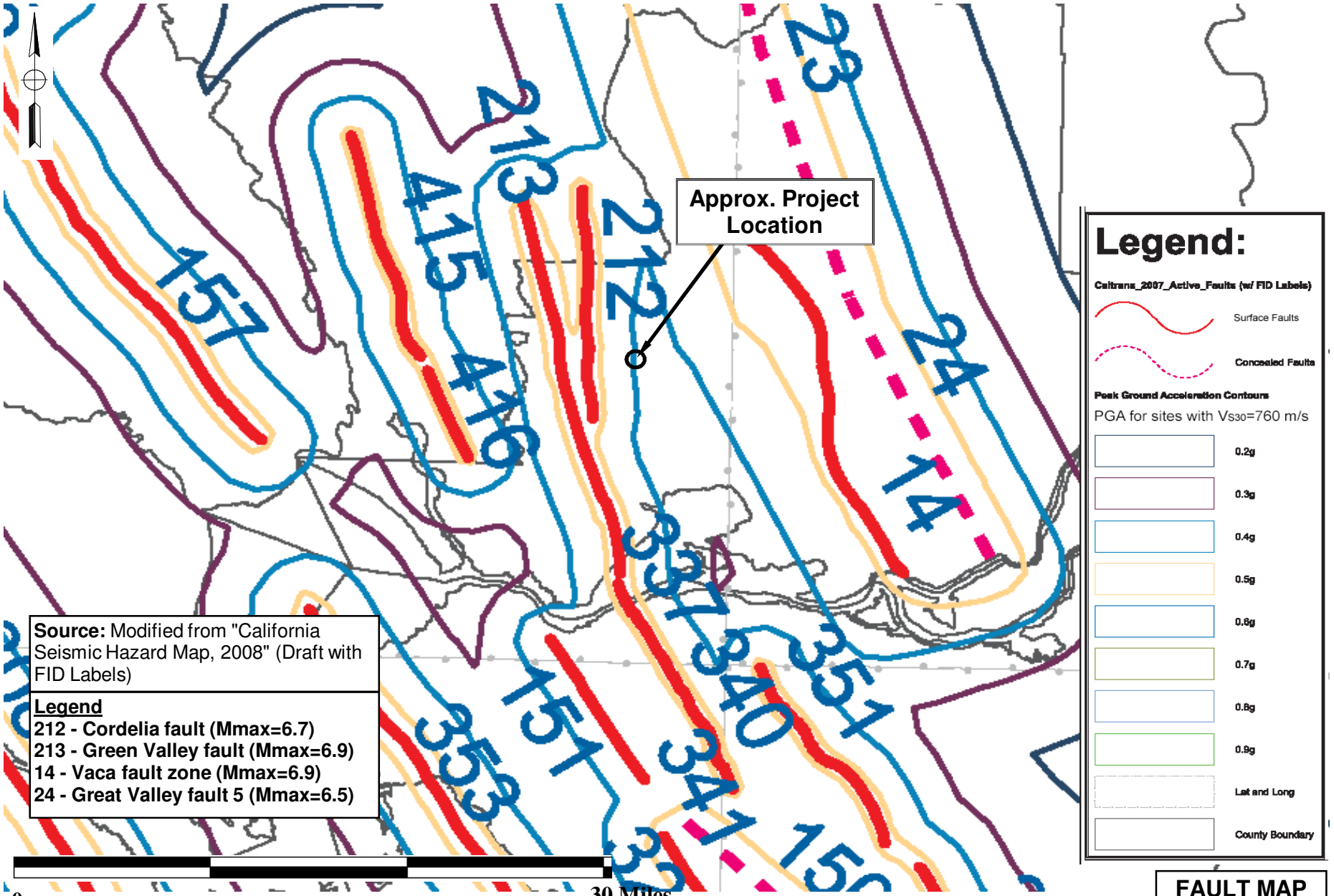
Source:
Geologic Map of Cordelia and Fairfield South 7.5' Quadrangles, Solano and Napa Counties, California by Stephen P. Bezore, David L. Wagner, and Janet M. Sowers, California Geological Survey, 2002

LEGEND

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GDR | **PLATE NO.: 3B**



FAULT MAP

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GDR

PLATE NO.: 4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER BRIAN M. STEWART No. C73328 Exp. 12-31-10 CIVIL STATE OF CALIFORNIA

HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

NOTES:

1. DIMENSIONS OF THE STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATION AS SHOWN ON PROFILE AND SUPERELEVATION DIAGRAM SHEETS OR AS DIRECTED BY THE ENGINEER.
3. EXTEND SUBBASE MATERIAL TO FILL SLOPE WHENEVER FILL SLOPE IS STEEPER THAN 4:1.
4. PLACE 0.25' (Min) HMA (TYPE A) UNDER DIKES AND CONCRETE BARRIERS. EXTEND TOP LAYER OF HMA PLACED ON SHOULDER UNDER DIKES AND BARRIER WITH NO JOINT AT THE EDGE OF SHOULDER.
5. FOR LOCATIONS AND TYPES OF AC DIKES AND CURBS SEE LAYOUTS, CONSTRUCTION DETAILS AND SUMMARY OF QUANTITY SHEETS.
6. FOR LOCATIONS AND LIMITS OF EDGE DRAIN SEE LAYOUTS.
7. FOR SIDEWALK UNDERDRAIN DETAILS, SEE CONSTRUCTION DETAILS.
8. FOR LOCATIONS OF DRAINAGE DITCHES AND FACILITIES, SEE DRAINAGE PLANS.
9. FOR AC CONFORM DETAILS, SEE CONSTRUCTION DETAILS.
10. FOR LOCATIONS, LIMITS AND DETAILS OF NEW RETAINING WALLS AND APPROACH WALLS SEE STRUCTURE PLANS.
11. SEE CONSTRUCTION DETAILS-DEMOLITION PLANS FOR LIMITS OF SAWCUT AND COLD PLANE AC.
12. FOR EXACT LOCATIONS AND TYPES OF CONCRETE BARRIERS AND GUARDRAILS SEE LAYOUTS, CONSTRUCTION DETAILS AND SUMMARY OF QUANTITY SHEETS.
13. WHERE SHOWN, CONSTRUCT CONCRETE BARRIER (TYPE 60C) TO MAXIMUM ALLOWABLE HEIGHT. SEE STANDARD PLAN A76A.
14. TIE BAR LOCATIONS FOR JPCP ARE PER STANDARD PLANS.

ABBREVIATIONS

CVEF	COMMERCIAL VEHICLE ENFORCEMENT FACILITY
RHMA-G	RUBBERIZED HMA-GAP GRADED
WIM	WEIGH IN MOTION

PAVEMENT STRUCTURAL SECTIONS

	EXISTING	NEW
1	0.10' OGAC 0.15' AC (TYPE A) PRF 0.11' AC (TYPE A) 0.75' PCC 0.33' CTB 0.17' AB 0.92' AS	1.15' JPCP 0.50' LCB 0.70' CL 4 AS
2	0.10' OGAC 0.74' AC (TYPE A) 0.89' CL 4 CTB 1.03' CL 4 AS	1.10' JPCP 0.50' LCB 0.70' CL 4 AS
3	0.10' OGAC 1.00' AC (TYPE A) 0.25' ATPB 0.43' AC (TYPE A) 0.50' CL 4 AS	1.00' JPCP 0.50' LCB 0.70' CL 4 AS
4	0.10' OGAC 0.74' AC (TYPE A) 0.84' CL 4 CTB 0.84' CL 4 AS	1.00' PCP 0.50' LCB 0.70' CL 4 AS
5	0.10' OGAC 1.00' AC (TYPE A) 0.25' ATPB 0.77' AC (TYPE A)	0.30' HMA (TYPE A) 0.50' AB (CL 3)
6	0.10' OGAC 1.00'-1.03' AC (TYPE A) 0.25' ATPB 0.43'-0.64' AC (TYPE A) 0.50' CL 4 AS	0.20' HMA (RHMA-G) 0.45' HMA (TYPE A) 0.65' LCB 1.45' CL 4 AS
7	0.10' OGAC 0.15' AC PRF 0.90' AC 0.20' ATPB 0.90' AB 1.70' AS	0.10' OGFC 0.15' HMA (RHMA-G) 0.60' HMA (TYPE A) 0.75' LCB 1.80' CL 4 AS
8	0.75' PCC 0.33' RMCTB 0.17' AB 0.75' AS	0.10' OGFC 0.15' HMA (RHMA-G) 0.90' HMA (TYPE A) 0.25' ATPB 0.75' LCB 1.00' CL 4 AS

DESIGN DESIGNATION

EASTBOUND ROUTE 80: "L" LINE

ADT (2015)	= 111,720	D	= 100%
ADT (2035)	= 328,281	T	= 4.6%
ESAL	= 73,546,224	V	= 80 mph
TI_{20}	= 15.5		

CVEF OFF RAMP: "D1" LINE (Sta 75+56.60 TO 130+29.16)

ADT (2015)	= 5,795	D	= 100%
ADT (2055)	= 18,520	T	= 100%
ESAL	= 220,876,480	V	= 50 mph
TI_{40}	= 17.5		

CVEF ON RAMP: "D1" LINE (Sta 130+29.16 TO 150+41.05)

ADT (2015)	= 5,795	D	= 100%
ADT (2055)	= 15,543	T	= 100%
ESAL	= 193,833,040	V	= 50 mph
TI_{40}	= 17.0		

CVEF ON RAMP TO EASTBOUND SR 12: "D2" LINE

ADT (2015)	= 1,320	D	= 100%
ADT (2055)	= 3,200	T	= 100%
ESAL	= 41,059,000	V	= 50 mph
TI_{40}	= 14.5		

EASTBOUND STATE ROUTE 12: "12CON" LINE

ADT (2015)	= 37,500	D	= 100%
ADT (2035)	= 40,100	T	= 5.1%
ESAL	= 16,219,300	V	= 60 mph
TI_{20}	= 13.0		

TYPICAL CROSS SECTIONS

NO SCALE

X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
Caltrans	CARL HAACK	S. PATEL	B. STEWART	AP	10/05/09

LAST REVISION 00-00-00 DATE PLOTTED => 10\05\09 TIME PLOTTED => 7:23:23 PM

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => IKukaneg DGN FILE => 40a535ca001.dgn | CU 04264 | EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

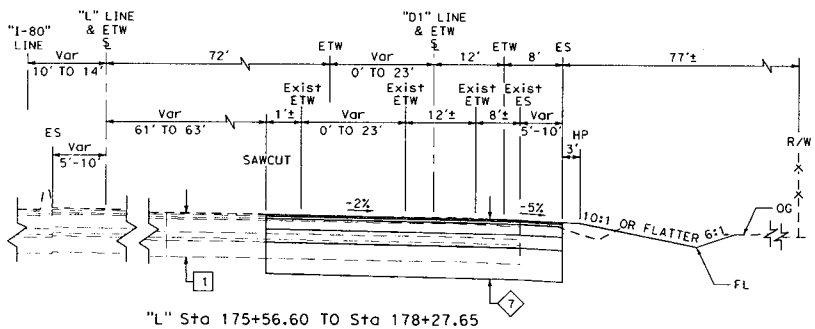
REGISTERED PROFESSIONAL ENGINEER — BRIAN M. STEWART — No. C73328 — Exp. 12-31-10 — CIVIL — STATE OF CALIFORNIA

HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

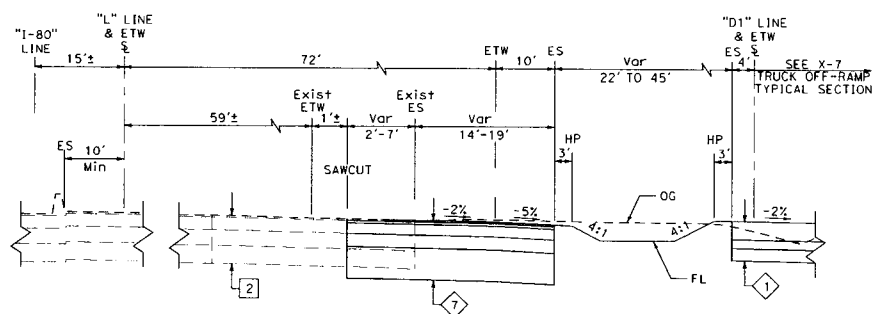
SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REVISED BY	AP
DATE REVISED	10/05/09
CALCULATED-DESIGNED BY	S. PATEL
CHECKED BY	B. STEWART
CONSULTANT FUNCTIONAL SUPERVISOR	CARL MAACK

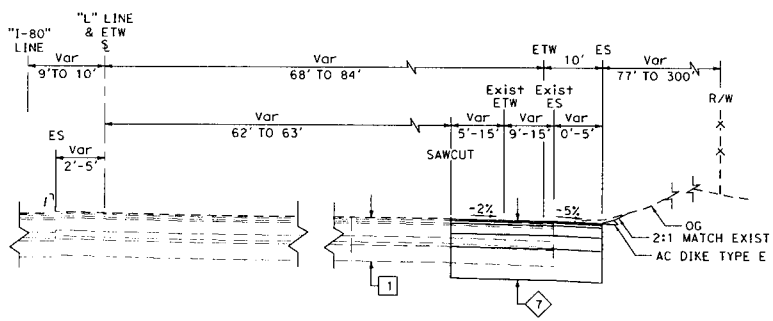
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION



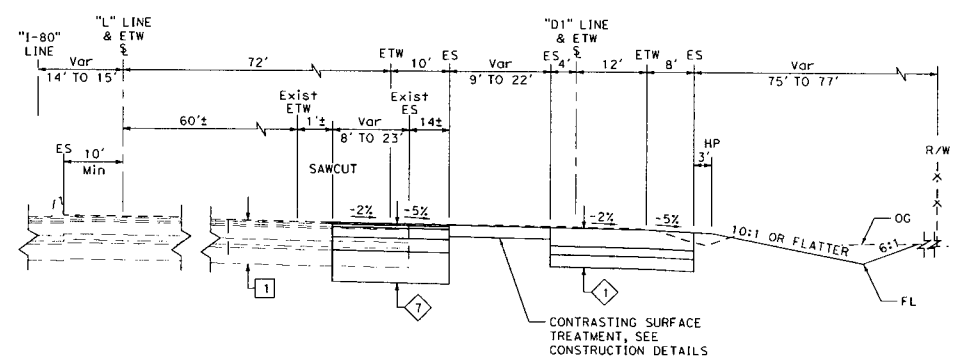
"L" Sta 175+56.60 TO Sta 178+27.65
"D1" Sta 75+56.60 TO Sta 78+27.48



"L" Sta 179+56.21 TO Sta 181+50.00



"L" Sta 171+89.65 TO Sta 175+56.60



"L" Sta 178+27.65 TO Sta 179+56.21

EB ROUTE 80

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTIONS, SEE Sht X-1.

TYPICAL CROSS SECTIONS

NO SCALE

X-2

LAST REVISION 00-00-00 DATE PLOTTED => 10/05/09 TIME PLOTTED => 7:26:25 PM

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => IKukaneg DGN FILE => 40o535ca0002.dgn | CU 04264 | EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

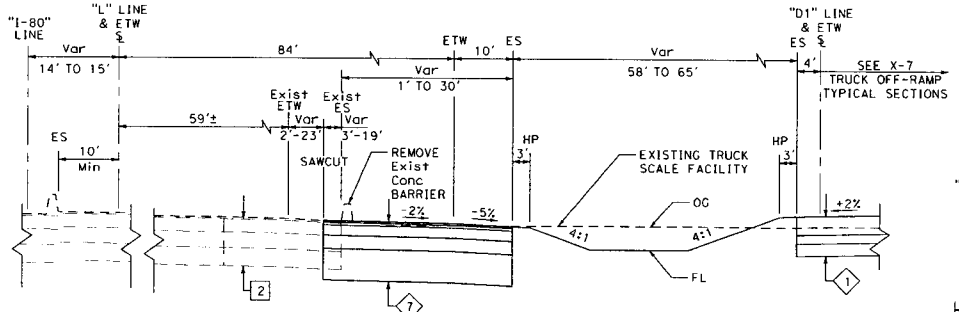
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

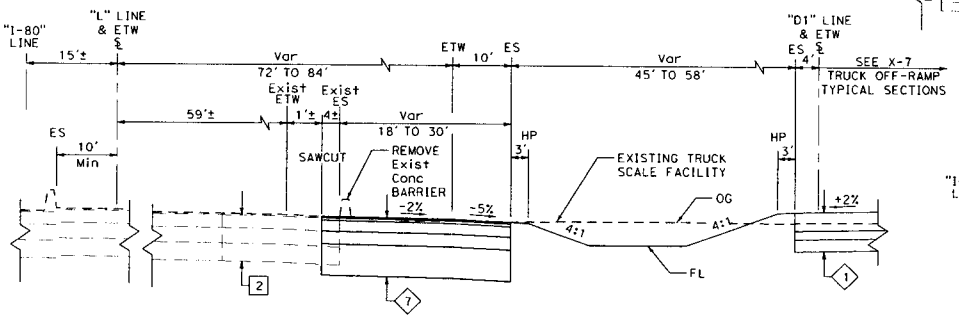
REGISTERED PROFESSIONAL ENGINEER — BRIAN M STEWART — No. C73328 — 12-31-10 — CIVIL — STATE OF CALIFORNIA

HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

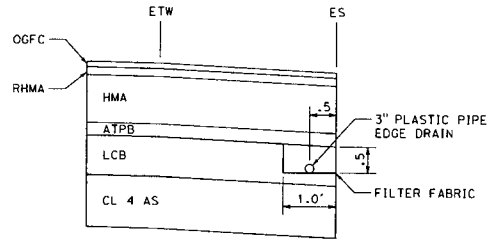
SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585



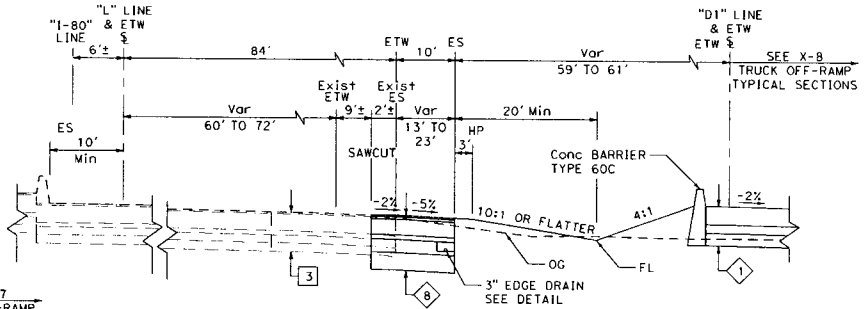
"L" Sta 184+00.00 TO Sta 191+00.00



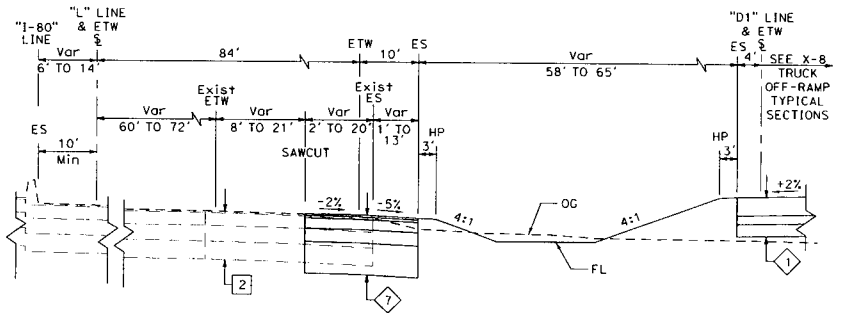
"L" Sta 181+50.00 TO Sta 184+00.00



SUBGRADE DRAIN DETAIL
NTS



"L" Sta 198+88.36 TO Sta 210+14.55



"L" Sta 191+00.00 TO Sta 197+44.72

EB ROUTE 80

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTIONS, SEE Sht X-1.

TYPICAL CROSS SECTIONS

NO SCALE

X-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
Caltrans	CARL HAACK	S. PATEL	B. STEWART	AP	10/05/09

LAST REVISION 00-00-00 DATE PLOTTED => 10/05/09 TIME PLOTTED => 7:36:00 PM

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => lKukaneg DGN FILE => 40a535ca003.dgn | CU 04264 | EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

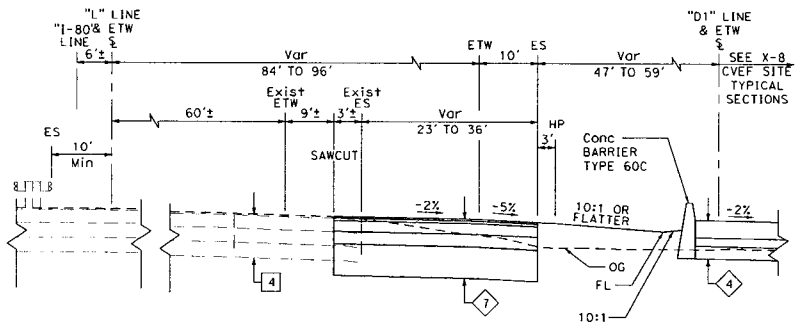
PLANS APPROVAL DATE

BRIAN M STEWART No. C73328 Exp 12-31-10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

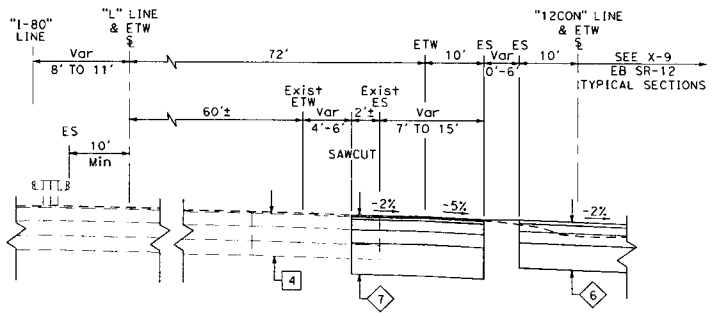
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

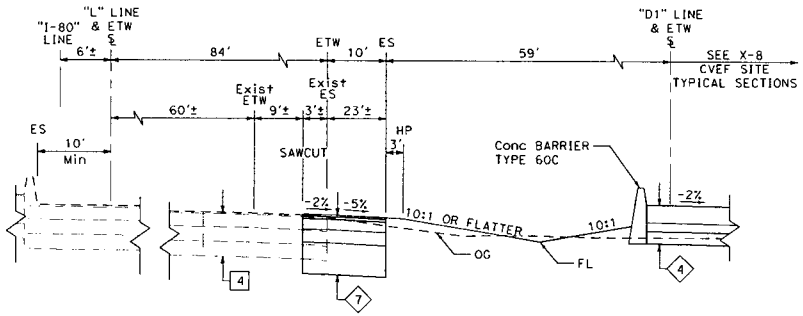
SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585



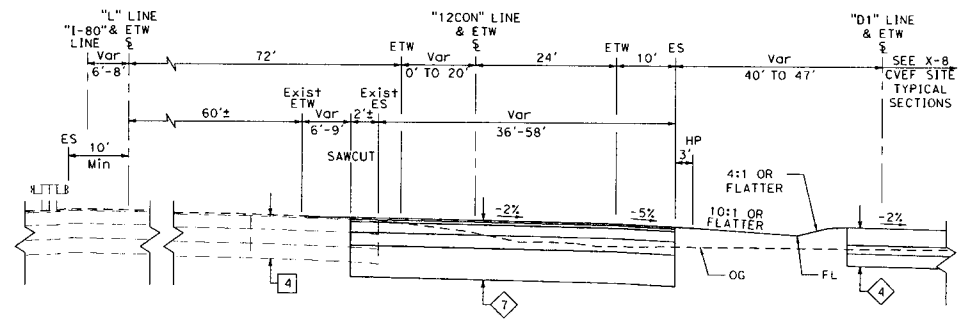
"L" Sta 211+18.39 TO Sta 213+58.80



"L" Sta 218+04.76 TO Sta 219+72.99



"L" Sta 210+14.55 TO Sta 211+18.39



"L" Sta 213+58.80 TO Sta 218+04.76
"12CON" Sta 113+58.80 TO Sta 118+03.70

EB ROUTE 80

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTIONS, SEE Sht X-1.

TYPICAL CROSS SECTIONS

NO SCALE

X-4

REVISED BY	DATE REVISED
AP	10/05/09

CALCULATED-DESIGNED BY: S. PATEL
CHECKED BY: B. STEWART
CONSULTANT FUNCTIONAL SUPERVISOR: CARL HAACK

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 10/05/09
TIME PLOTTED => 7:42:32 PM

BORDER LAST REVISED 4/11/2008
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
USERNAME => lKukaneg
DGN FILE => 40a535ca004.dgn
CU 04264
EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

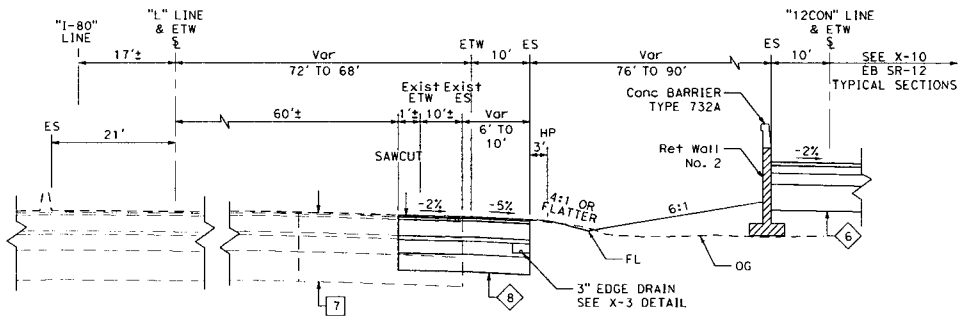
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

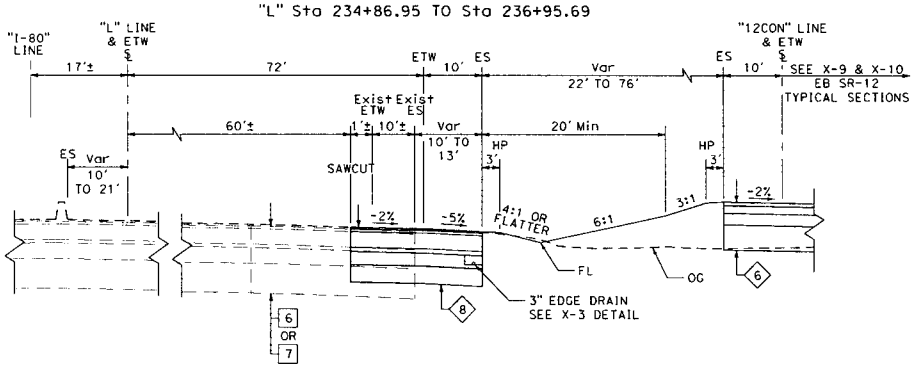
REGISTERED PROFESSIONAL ENGINEER — BRIAN W STEWART — No. C73328 — 12-31-10 — CIVIL — STATE OF CALIFORNIA

HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

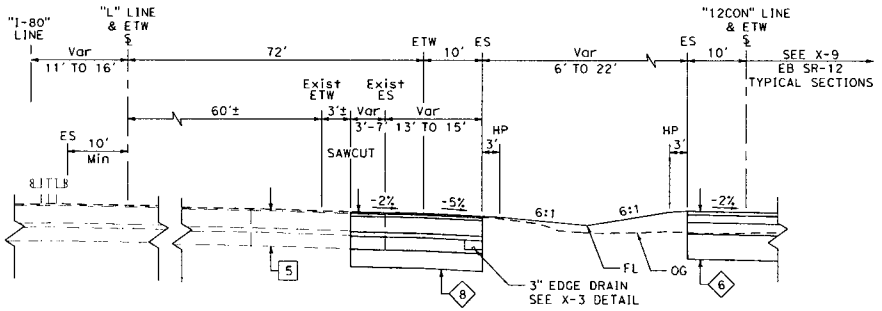
SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585



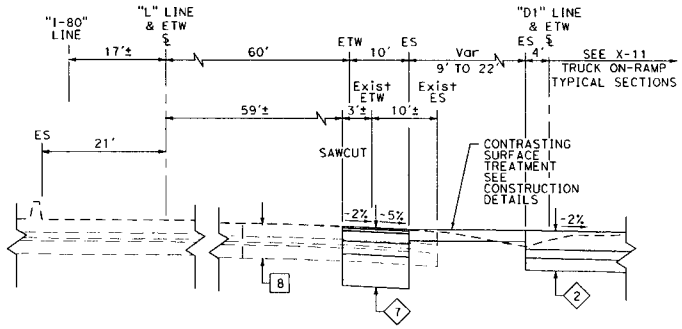
"L" Sta 234+86.95 TO Sta 236+95.69



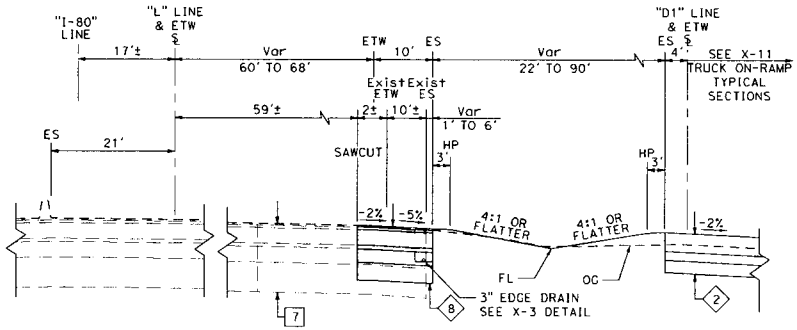
"L" Sta 223+93.37 TO Sta 234+86.95



"L" Sta 219+72.99 TO Sta 223+93.37



"L" Sta 242+24.77 TO Sta 243+77.66



"L" Sta 236+95.69 TO Sta 242+24.77

EB ROUTE 80

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTIONS, SEE Sht X-1.

TYPICAL CROSS SECTIONS

TYPICAL CROSS SECTIONS

NO SCALE

X-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | CONSULTANT FUNCTIONAL SUPERVISOR: CARL HAACK | CALCULATED-DESIGNED BY: S. PATEL | CHECKED BY: B. STEWART | REVISED BY: JK | DATE REVISED: 10/05/09

LAST REVISION 00-00-00 | DATE PLOTTED => 10/05/09 | TIME PLOTTED => 8:45:35 PM

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => lkukaneg | DGN FILE => 40a535ca005.dgn | CU 04264 | EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

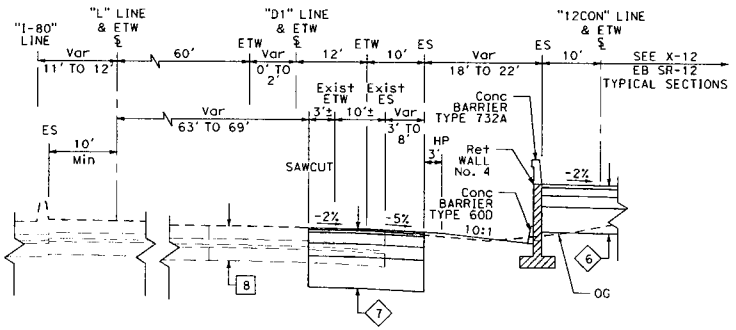
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

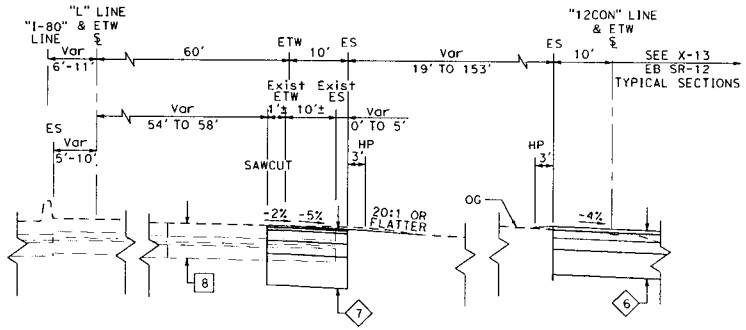
REGISTERED PROFESSIONAL ENGINEER — BRIAN M STEWART — No. C73328 — 12-31-10 — CIVIL — STATE OF CALIFORNIA

HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

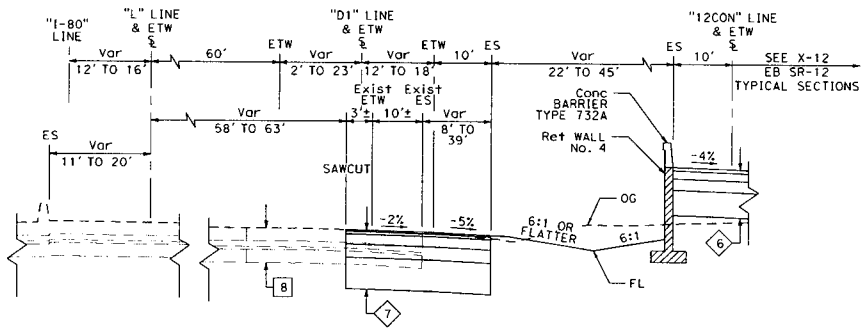
SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585



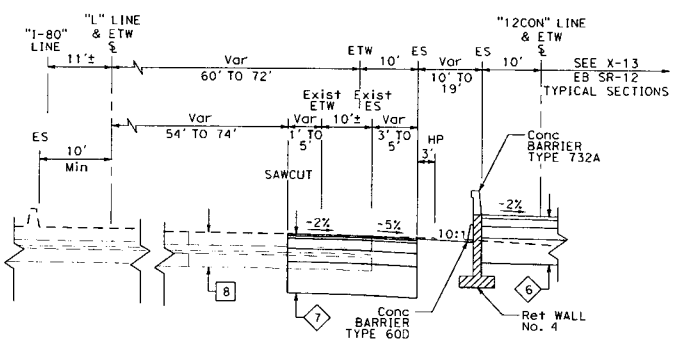
"L" Sta 249+01.57 TO Sta 250+12.95



"L" Sta 256+25.12 TO Sta 264+00.19



"L" Sta 243+77.66 TO Sta 249+01.57
"D1" Sta 144+04.19 TO Sta 150+41.05



"L" Sta 250+12.95 TO Sta 256+25.12

EB ROUTE 80

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTIONS, SEE Sht X-1.

TYPICAL CROSS SECTIONS

NO SCALE

X-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: CARL HAACK

CALCULATED-DESIGNED BY: S. PATEL
CHECKED BY: B. STEWART

REVISED BY: AP
DATE REVISED: 10/05/09

LAST REVISION: 00-00-00
DATE PLOTTED => 10/05/09
TIME PLOTTED => 8:27:40 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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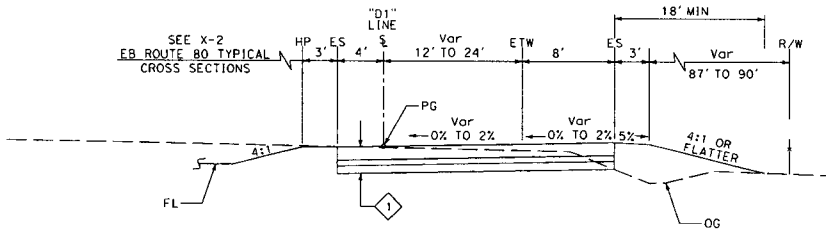
DGN FILE => 40a535ca006.dgn

CU 04264

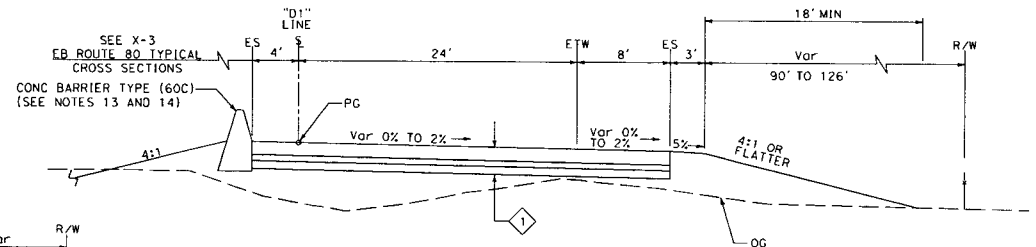
EA 0A5351



TRUCK OFF RAMP

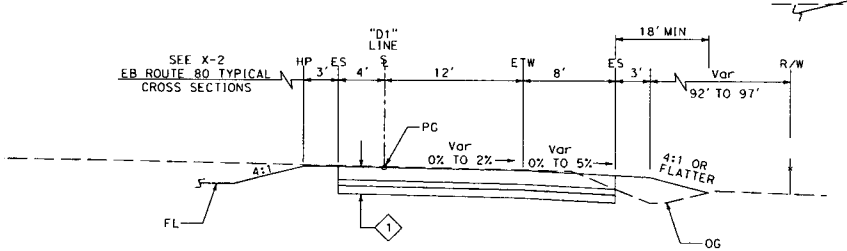
STA "D1" 81+48.38 TO 97+47.36

STA "D1" 98+87.36 TO 103+00



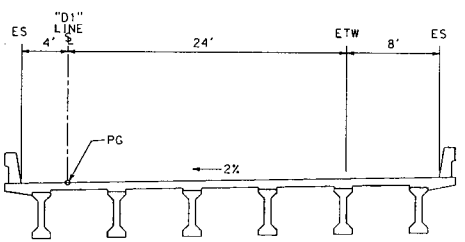
TRUCK OFF RAMP

STA "D1" 103+00 TO 105+00



TRUCK OFF RAMP

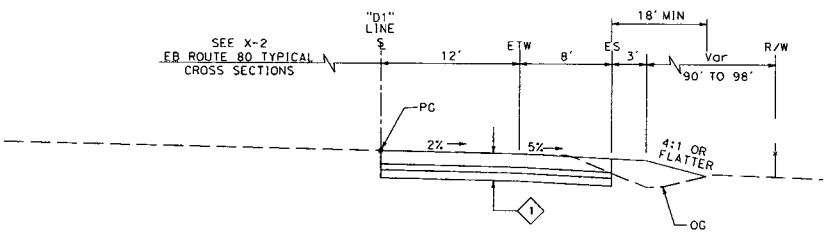
STA "D1" 78+27.11 TO 81+48.38



SUISUN CREEK BRIDGE

STA "D1" 97+47.36 TO 98+87.36

SEE STRUCTURE PLANS



TRUCK OFF RAMP GORE

STA "D1" 75+56.60 TO 78+27.11

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET X-1

TYPICAL CROSS SECTIONS

NO SCALE

X-7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7, L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

SEAN A. CHARLES No. 50767 Exp. 9/30/10 CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WMH CORPORATION
155 Grand Ave
Suite 1000
Oakland, CA 94612

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REVISED BY	DATE REVISED
GS	07/17/2009

CALCULATED/DESIGNED BY: S. CULATI/G. SIMARD
CHECKED BY: S. CHARLES

CONSULTANT FUNCTIONAL SUPERVISOR: SEAN A. CHARLES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

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LAST REVISION 06-24-09 DATE PLOTTED => 8/18/2009 TIME PLOTTED => 13:16:59 PM

BORDER LAST REVISED 4/11/2008

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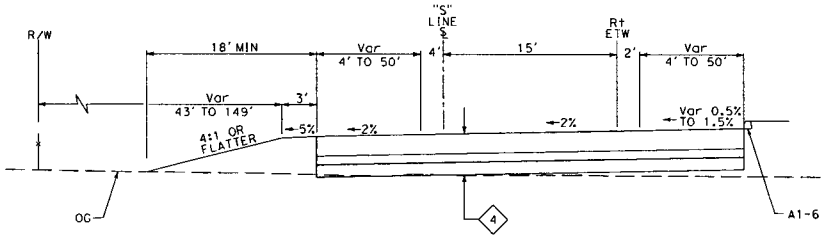
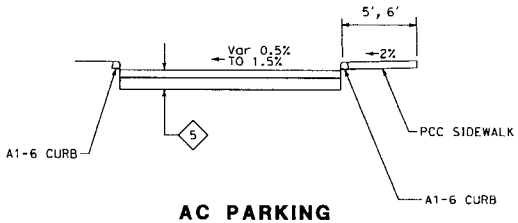
EA 0A5351



TRUCK SITE
STA "S" 16+95.00 TO 34+52.66



AC PARKING

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7, L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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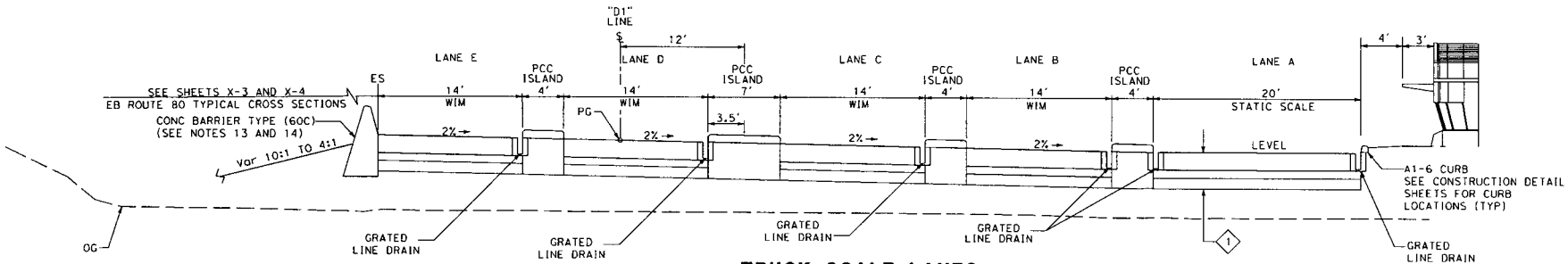
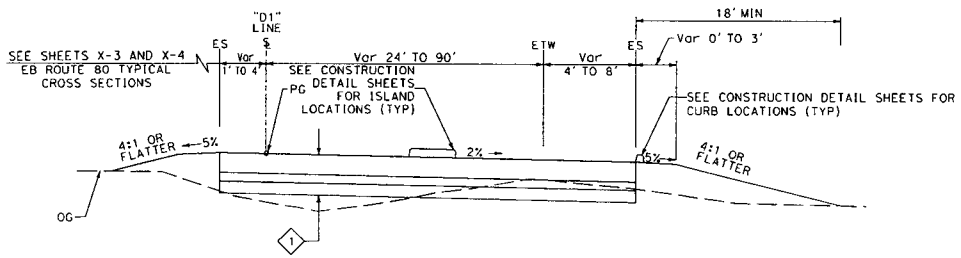
SEAN A CHARLES No. 50767 Exp. 9/30/10 CIVIL STATE OF CALIFORNIA REGISTERED PROFESSIONAL ENGINEER

WMH CORPORATION 155 Grand Ave Suite 1000 Oakland, CA 94612	SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585



TRUCK SCALE LANES
STA "D1" 107+50 TO 113+25



TRUCK OFF-RAMP
STA "D1" 105+00 TO 107+50
STA "D1" 113+25 TO 120+50

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET X-1

TYPICAL CROSS SECTIONS

NO SCALE

X-8

REVISED BY	GS			
DATE REVISED	07/17/2009			
CALCULATED-DESIGNED BY	S. GULATI/G. SIMARD			
CHECKED BY	S. CHARLES			
CONSULTANT FUNCTIONAL SUPERVISOR	SEAN A. CHARLES			
DEPARTMENT OF TRANSPORTATION				
STATE OF CALIFORNIA				

Gribbins

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LAST REVISION 06-24-09 | DATE PLOTTED => 6/18/2009 | TIME PLOTTED => 15:31:42 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 40a535ca008.dgn

CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — BRIAN M STEWART — No. C73328 — Exp 12-31-10 — CIVIL — STATE OF CALIFORNIA

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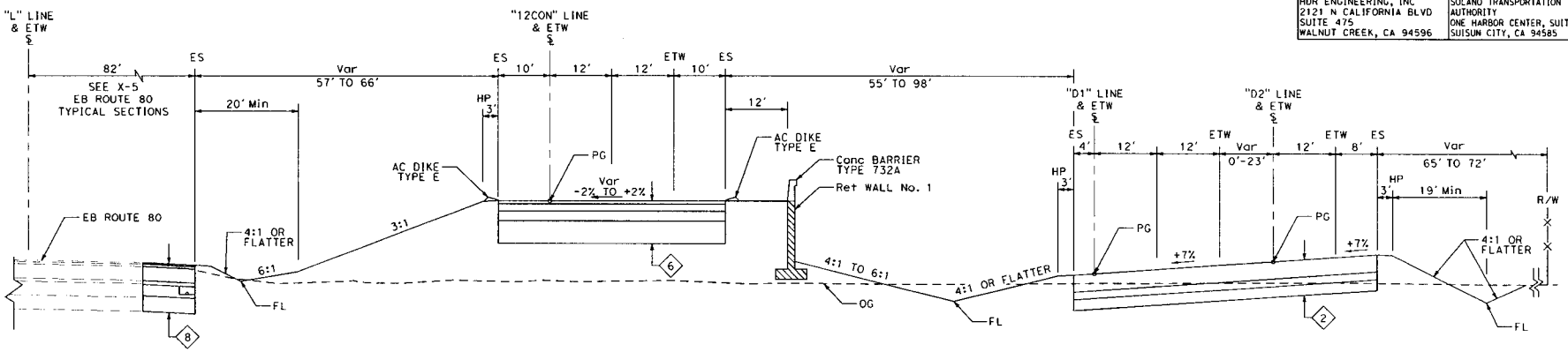
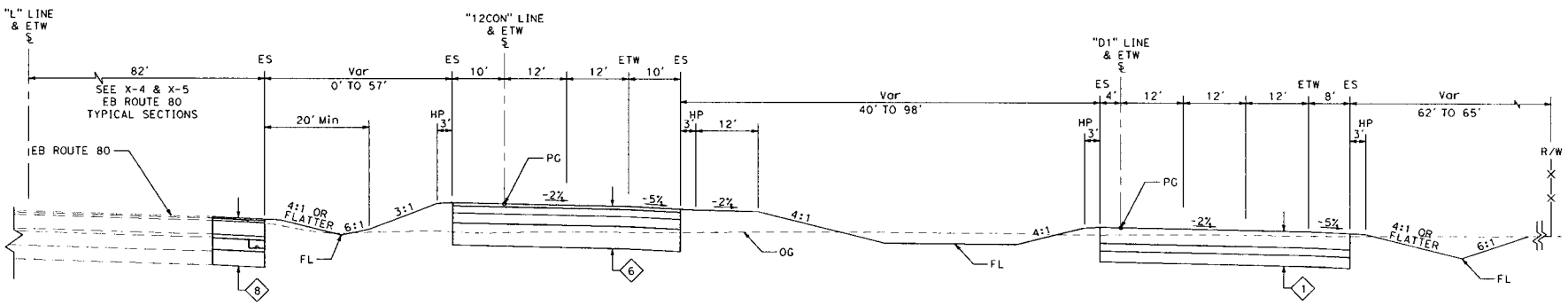
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585



EB SR-12
"12CON" Sta 131+18.00 TO Sta 132+92.29

TRUCK ON-RAMP TO EB I-80 AND EB SR-12
"D1" Sta 130+29.16 TO Sta 132+95.22
"D2" Sta 130+29.16 TO Sta 133+01.07



EB SR-12
"12CON" Sta 118+03.70 TO Sta 131+18.00

TRUCK ON-RAMP TO EB I-80 AND EB SR-12
"D1" Sta 120+50 TO Sta 130+29.16

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTIONS, SEE Sht X-1.

TYPICAL CROSS SECTIONS

NO SCALE

X-9

REVISED BY	DATE REVISED
JK	10/05/09

CALCULATED-DESIGNED BY: S. PATEL
CHECKED BY: B. STEWART
CONSULTANT FUNCTIONAL SUPERVISOR: CARL HAACK

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

LAST REVISION 00-00-00
DATE PLOTTED => 10/05/09
TIME PLOTTED => 8:23:05 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 40a535cc0009.dgn

CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

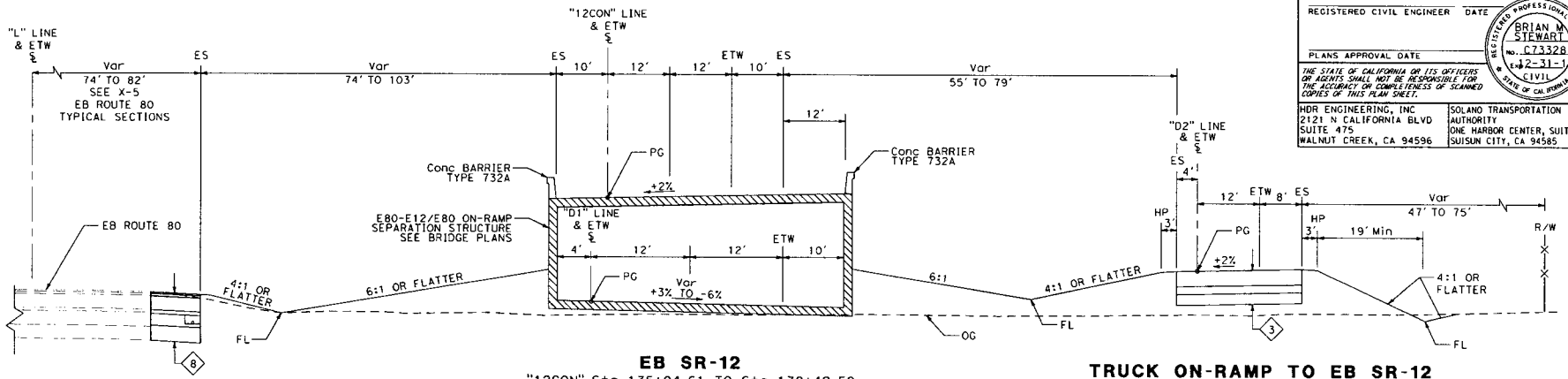
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER — BRIAN M STEWART — No. C73328 — Ex. 12-31-10 — CIVIL — STATE OF CALIFORNIA

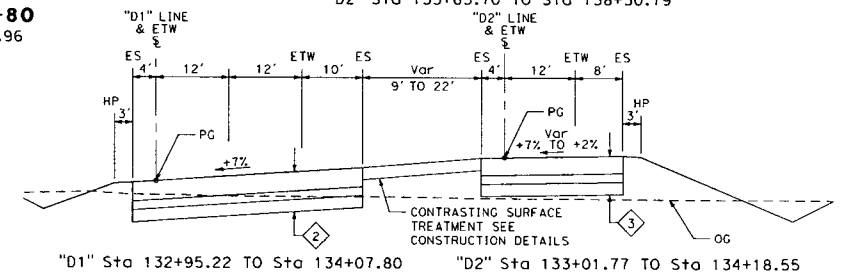
HDR ENGINEERING, INC 2121 N CALIFORNIA BLVD SUITE 475 WALNUT CREEK, CA 94596	SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585



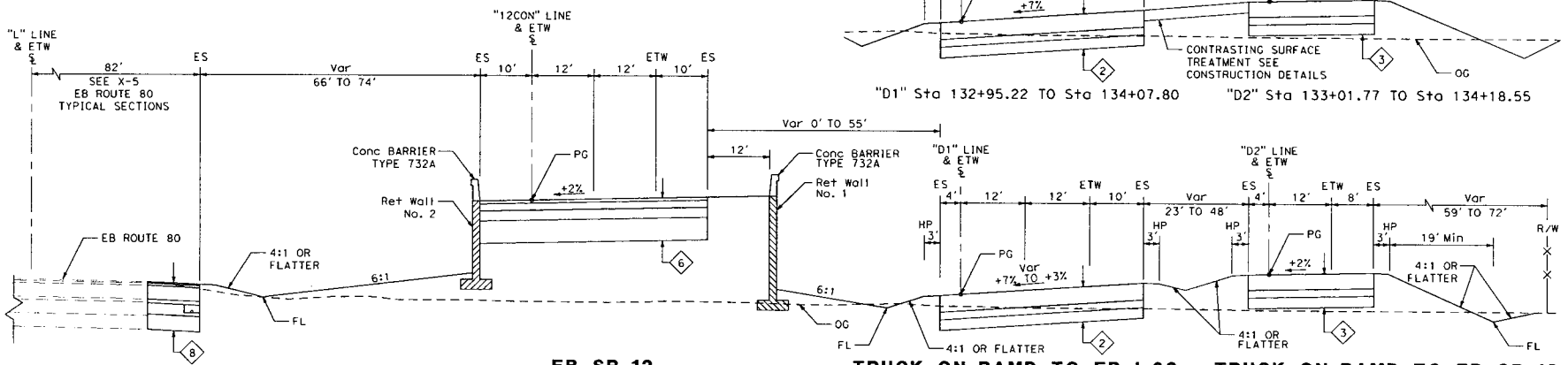
EB SR-12
"12CON" Sta 135+04.61 TO Sta 138+42.59

TRUCK ON-RAMP TO EB I-80
"D1" Sta 135+21.40 TO Sta 138+22.96

TRUCK ON-RAMP TO EB SR-12
"D2" Sta 135+65.70 TO Sta 138+50.79



"D1" Sta 132+95.22 TO Sta 134+07.80 "D2" Sta 133+01.77 TO Sta 134+18.55



EB SR-12
"12CON" Sta 132+92.29 TO Sta 135+04.61

TRUCK ON-RAMP TO EB I-80
"D1" Sta 132+95.22 TO Sta 135+21.40

TRUCK ON-RAMP TO EB SR-12
"D2" Sta 133+01.77 TO Sta 135+65.70

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTIONS, SEE Sht X-1.

TYPICAL CROSS SECTIONS
NO SCALE

X-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISED BY
	CARL HAACK	S. PATEL	AP
		CHECKED BY	DATE REVISED
		B. STEWART	10/05/09

LAST REVISION 00-00-00 DATE PLOTTED => 10/05/09 TIME PLOTTED => 8:03:05 PM

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => IKukaneg DGN FILE => 40a535ca010.dgn | CU 04264 | EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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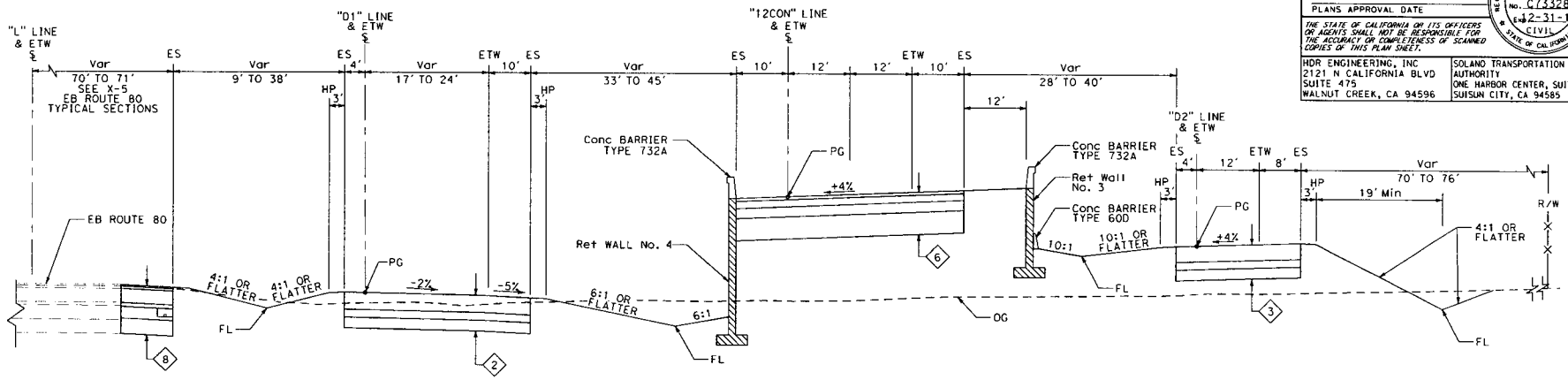
REGISTERED PROFESSIONAL ENGINEER — BRIAN M STEWART — No. C73328 — 12-31-10 — CIVIL — STATE OF CALIFORNIA

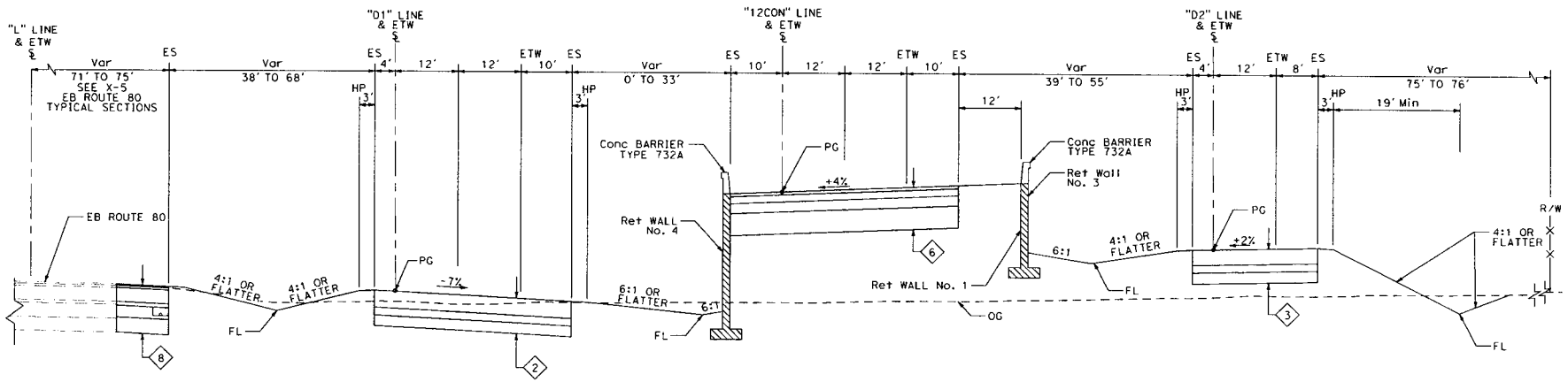
HDR ENGINEERING, INC 2121 N CALIFORNIA BLVD SUITE 475 WALNUT CREEK, CA 94596	SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585



TRUCK ON-RAMP TO EB I-80
"D1" Sta 140+49.96 TO Sta 144+04.19

EB SR-12
"12CON" Sta 141+54.43 TO Sta 145+30.00

TRUCK ON-RAMP TO EB SR-12
"D2" Sta 141+68.00 TO Sta 145+49.24



TRUCK ON-RAMP TO EB I-80
"D1" Sta 138+22.96 TO Sta 140+49.96

EB SR-12
"12CON" Sta 138+42.59 TO Sta 141+54.43

TRUCK ON-RAMP TO EB SR-12
"D2" Sta 138+50.79 TO Sta 141+68.00

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTIONS, SEE Sht X-1.

TYPICAL CROSS SECTIONS

NO SCALE

X-11

REVISED BY	AP		
DATE REVISED	10/05/09		
CALCULATED-DESIGNED BY	S. PATEL		
CHECKED BY	B. STEWART		
CONSULTANT FUNCTIONAL SUPERVISOR	CARL HAACK		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 10/05/09
TIME PLOTTED => 8:05:06 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 40a535ca011.dgn

CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

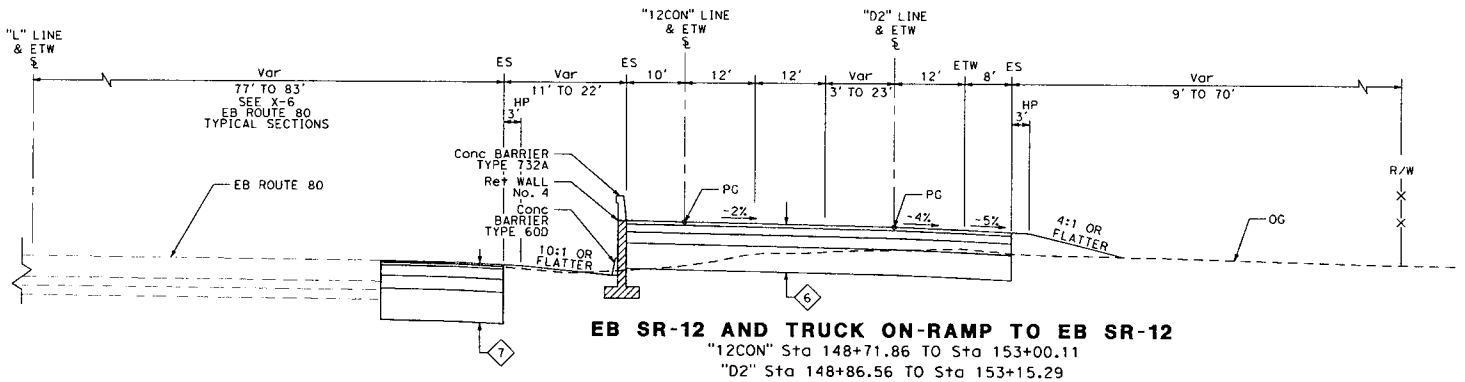
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER BRIAN M STEWART No. C73328 12-31-10 CIVIL STATE OF CALIFORNIA

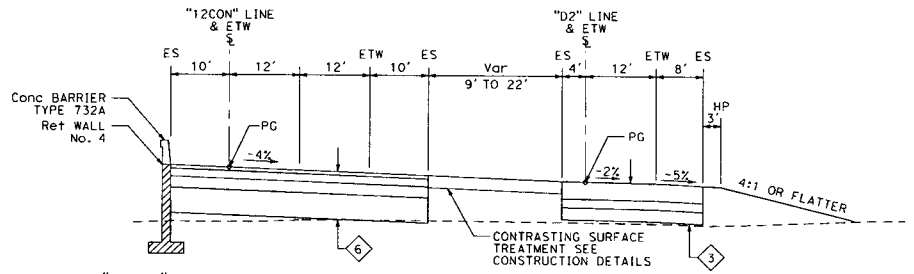
HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

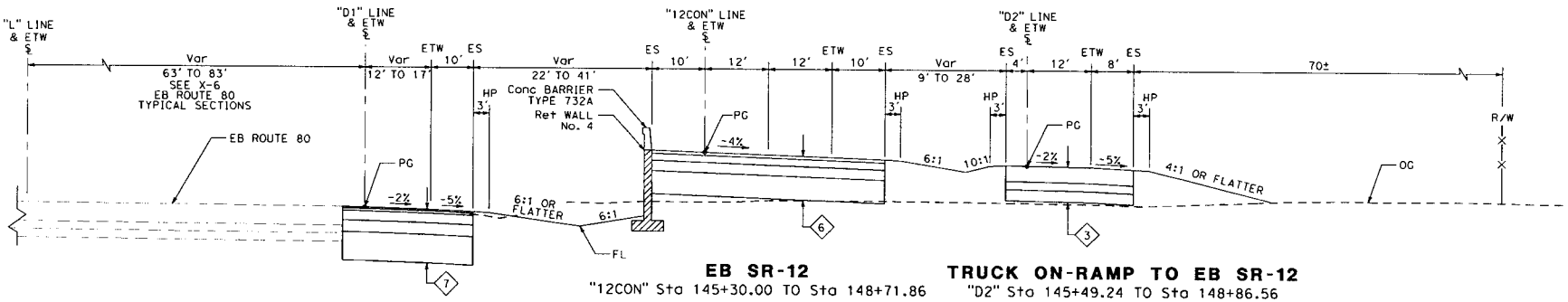


EB SR-12 AND TRUCK ON-RAMP TO EB SR-12

"12CON" Sta 148+71.86 TO Sta 153+00.11
"D2" Sta 148+86.56 TO Sta 153+15.29



"12CON" Sta 147+15.85 TO Sta 148+71.86 "D2" Sta 147+33.23 TO Sta 148+86.56



EB SR-12

"12CON" Sta 145+30.00 TO Sta 148+71.86

TRUCK ON-RAMP TO EB SR-12

"D2" Sta 145+49.24 TO Sta 148+86.56

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTIONS, SEE Sht X-1.

TYPICAL CROSS SECTIONS

NO SCALE

X-12

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CONSULTANT FUNCTIONAL SUPERVISOR: CARL HAACK
CALCULATED-DESIGNED BY: S. PATEL
CHECKED BY: B. STEWART
REVISED BY: AP
DATE REVISED: 10/05/09

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 40a535ca012.dgn

CU 04264

EA 0A5351

LAST REVISION 00-00-00 DATE PLOTTED => 10/05/09 TIME PLOTTED => 8:06:31 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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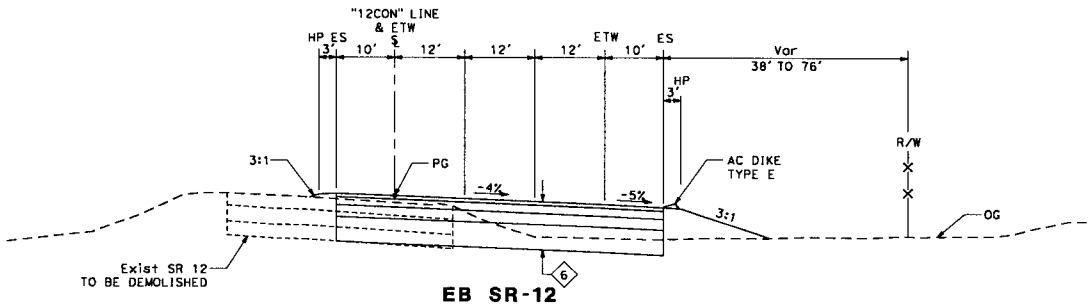
REGISTERED PROFESSIONAL ENGINEER — BRIAN M STEWART — No. C73328 — 12-31-10 — CIVIL — STATE OF CALIFORNIA

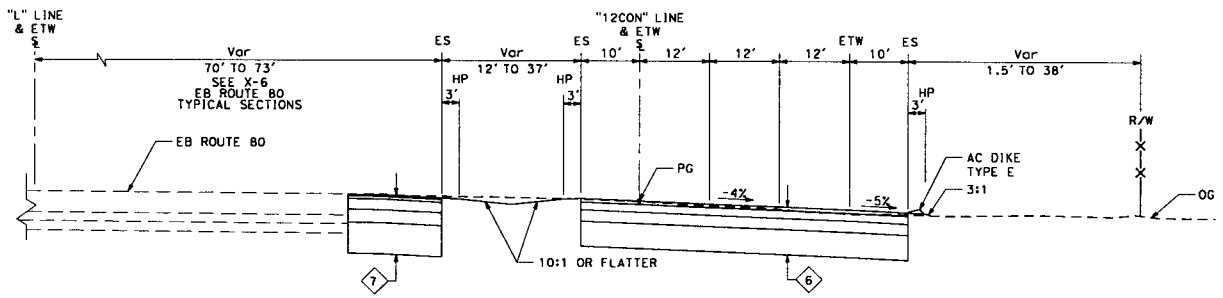
HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585



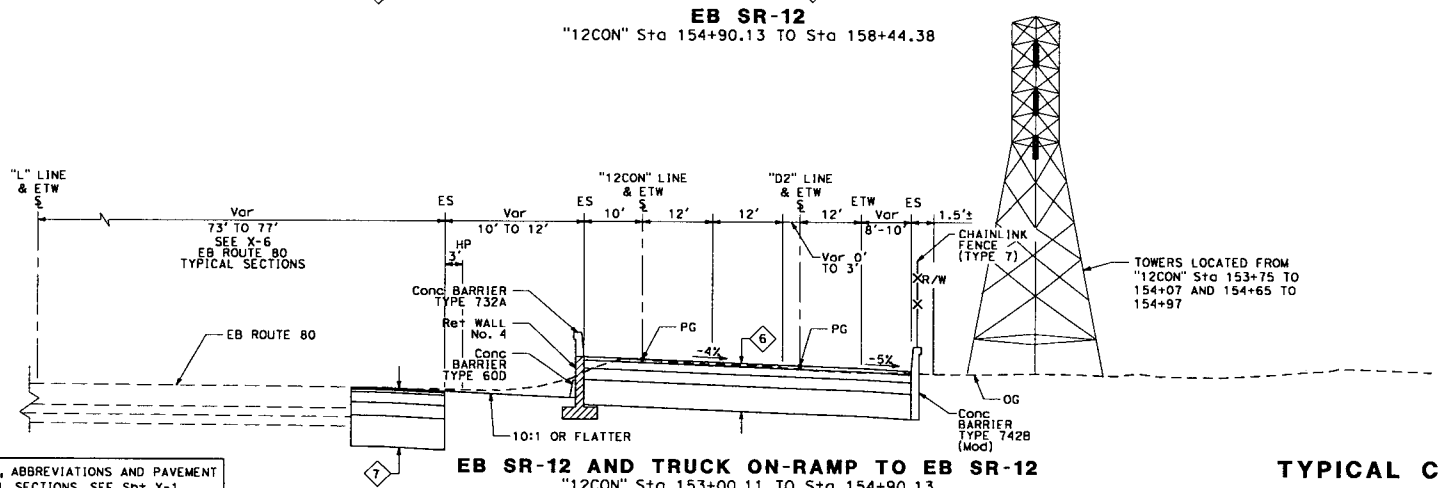
EB SR-12

"12CON" Sta 158+44.38 TO Sta 173+09.19



EB SR-12

"12CON" Sta 154+90.13 TO Sta 158+44.38



EB SR-12 AND TRUCK ON-RAMP TO EB SR-12

"12CON" Sta 153+00.11 TO Sta 154+90.13
"D2" Sta 153+15.29 TO Sta 154+51.66

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTIONS, SEE Sht X-1.

TYPICAL CROSS SECTIONS

NO SCALE

X-13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
Caltrans	CARL HAACK	S. PATEL	B. STEWART	AP	10/05/09

LAST REVISION 00-00-00 DATE PLOTTED => 10/05/09 TIME PLOTTED => 8:07:50 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => lkukaneg
DGN FILE => 40a535ca013.dgn

CU 04264

EA 0A5351

APPENDIX A

APPENDIX A

FIELD EXPLORATION

The test borings were advanced with a truck-mounted drill rig using 8-inch diameter hollow-stem auger and 5-inch diameter rotary wash drilling method. Selected drive samples were obtained from the borings at various depths using a 2.5 inches I.D. Modified California Sampler or a 1.375 inches I.D. Standard Penetration Sampler (ASTM Test Method No. 1586). The sampler was driven into the subsurface soils under the impact of a 140 pounds hammer having a free fall of 30 inches. The blow counts required to drive the sampler for the last 12 inches are presented on the boring logs in the Log of Test Borings (LOTB), Appendix A. (When correlating standard penetration data, the blow counts for the Modified California Sampler can be taken as roughly twice that for the Standard Penetration Test in similar soils). Pocket penetration tests were also performed on clay samples to evaluate their consistency. The borings were drilled under the technical supervision of our engineer, who visually classified in the field (according to the Unified Soil Classification System) and logged the soils encountered during drilling. The engineer supervised the collection and transportation of soil samples at various depths for visual examination and laboratory testing. Upon completion of drilling, all the borings were backfilled with cement grout and grouted to the ground surface.

The descriptions of the soils encountered and relevant boring information are presented on the boring logs in the LOTB in Appendix A. The logs presented in Appendix A were prepared from the field logs which were edited after visual re-examination of the soil samples in the laboratory and results of classification tests on selected soil samples as indicated on the logs.

The descriptions and related information presented on the boring logs in the LOTB depict subsurface conditions only at the locations indicated on the plan and on the particular date noted on the logs. Because of the variability from place to place within soil/rock in general, subsurface conditions at other locations may differ from conditions occurring at the locations explored. The abrupt stratum changes shown on the logs may be gradational and relatively minor changes in soil types within a stratum may not be noted on the logs due to field limitations. Also, the passage of time may result in a change in the soil conditions at these locations due to environmental changes.

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GM	SILTY GRAVEL SILTY GRAVEL with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL
SP	Poorly graded SAND Poorly graded SAND with GRAVEL
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SM	SILTY SAND SILTY SAND with GRAVEL
SC	CLAYEY SAND CLAYEY SAND with GRAVEL
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL
PT	PEAT
	COBBLES COBBLES and BOULDERS BOULDERS

Graphic/Symbol	Group Names
CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (PP) Pocket Penetrometer
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (TV) Pocket Torvane
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)
- (VS) Vane Shear (AASHTO T 223)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	80, 12	14.0/15.7 L1.8/L2.0		

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp 12/31/09 — GEOTECHNICAL — STATE OF CALIFORNIA

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

HDR ENGINEERING, INC.
2121 N CALIFORNIA BLVD, SUITE 475
WANUT CREEK, CA 94596

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APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 inches)
Very loose	0 – 4
Loose	5 – 10
Medium Dense	11 – 30
Dense	31 – 50
Very Dense	> 50

MOISTURE

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE

Description		Size
Boulder		> 12"
Cobble		3" to 12"
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

DATE PLOTTED =>

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G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY: DATE: JANUARY 2009 TO JULY 2009
SIGN OFF DATE	CHECKED BY	D. WANG	

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

A. LAM
PROJECT ENGINEER

BRIDGE NO.
POST MILES

SOIL LEGEND
LOG OF TEST BORINGS

CU 04264
EA 0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 09/11/09 | SHEET | OF

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/09 — GEOTECHNICAL — STATE OF CALIFORNIA

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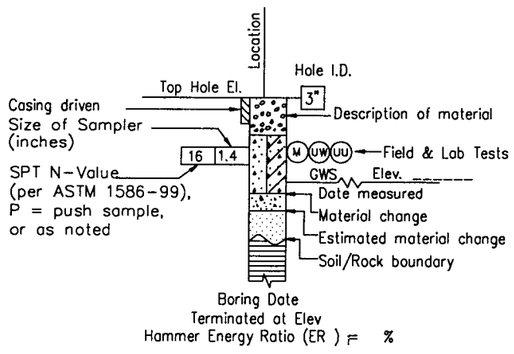
CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

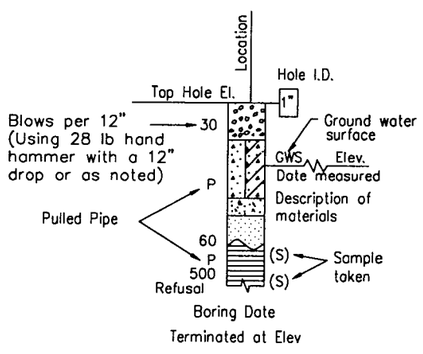
BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
Size	A	Auger Boring
Size	R P	Rotary drilled boring Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1–inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778–95)
□	O	Other
Note: Size in inches.		

CONSISTENCY OF COHESIVE SOILS				
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

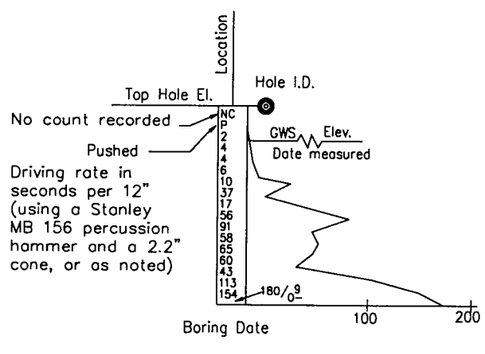
PLASTICITY OF FINE–GRAINED SOILS	
Description	Criteria
Nonplastic	A 1/8–inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



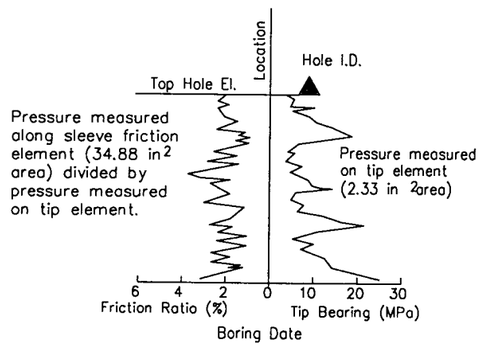
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

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SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 TO JULY 2009		

BRIDGE NO. ----------
POST MILES ----------

SOIL LEGEND
LOG OF TEST BORINGS

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES | SHEET | OF

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

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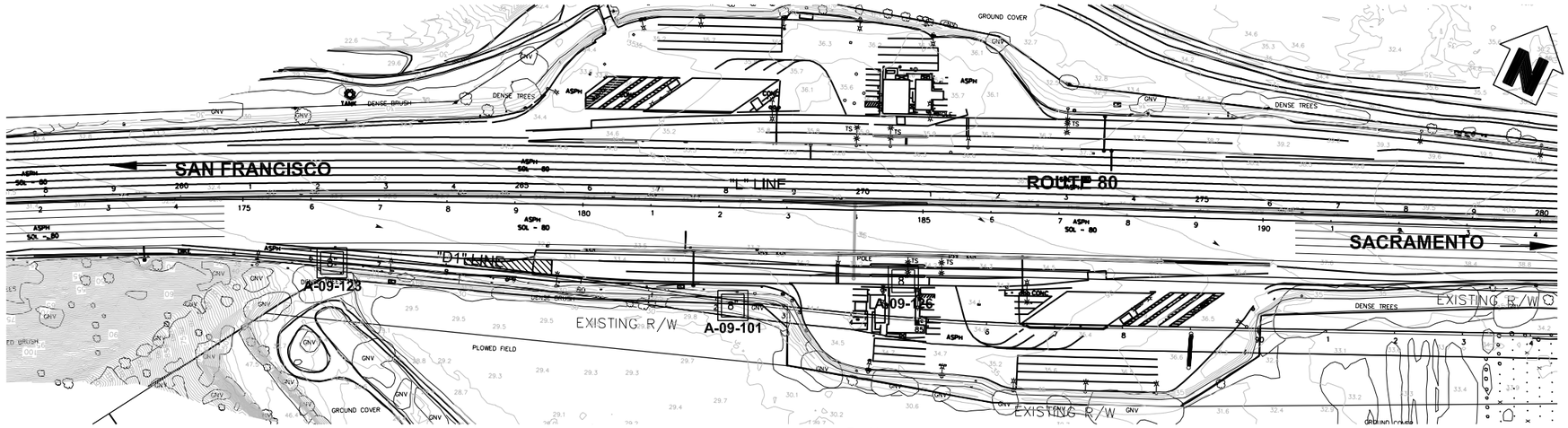

PLAN
1"=100'

BENCHMARK:
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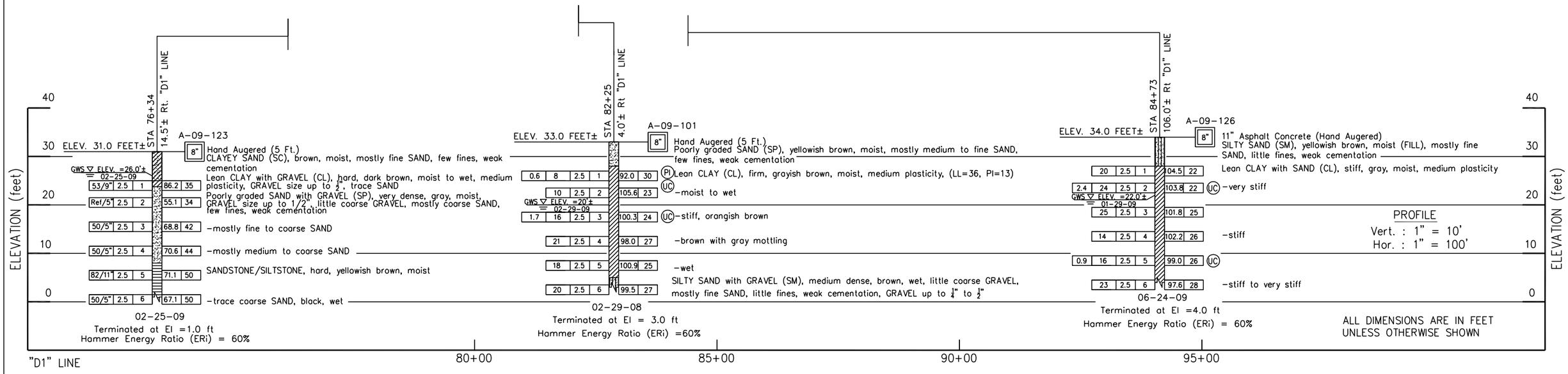

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– SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009-JULY 2009		

BRIDGE NO. –
POST MILES –

CORDELIA TRUCK SCALES RELOCATION PROJECT

LOG OF TEST BORINGS

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES										SHEET	OF
-										–	–

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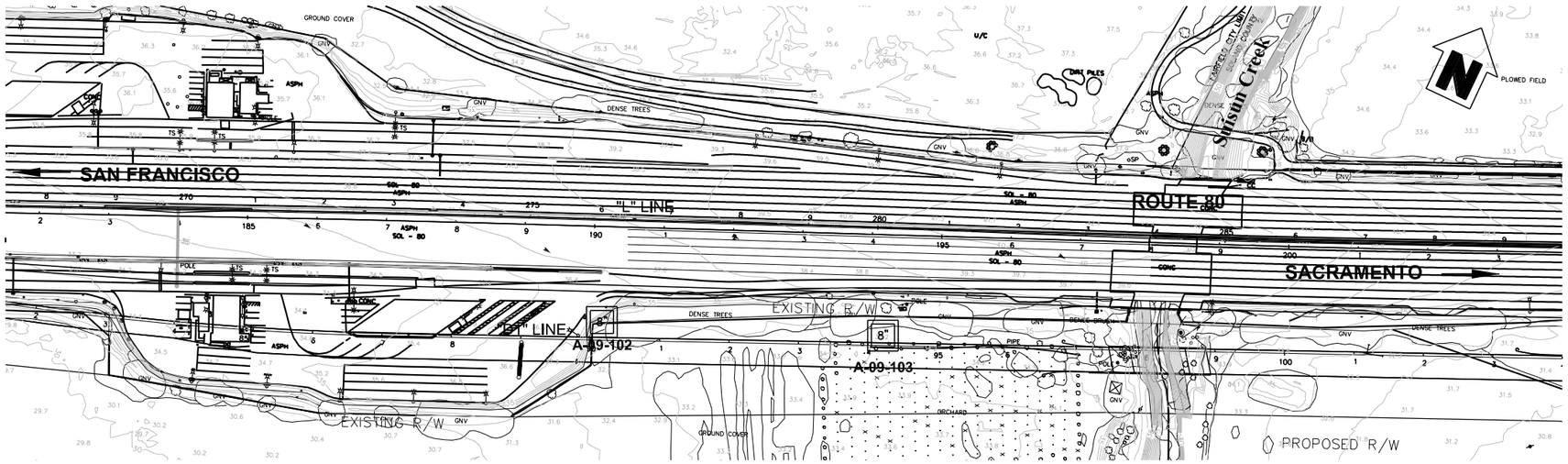

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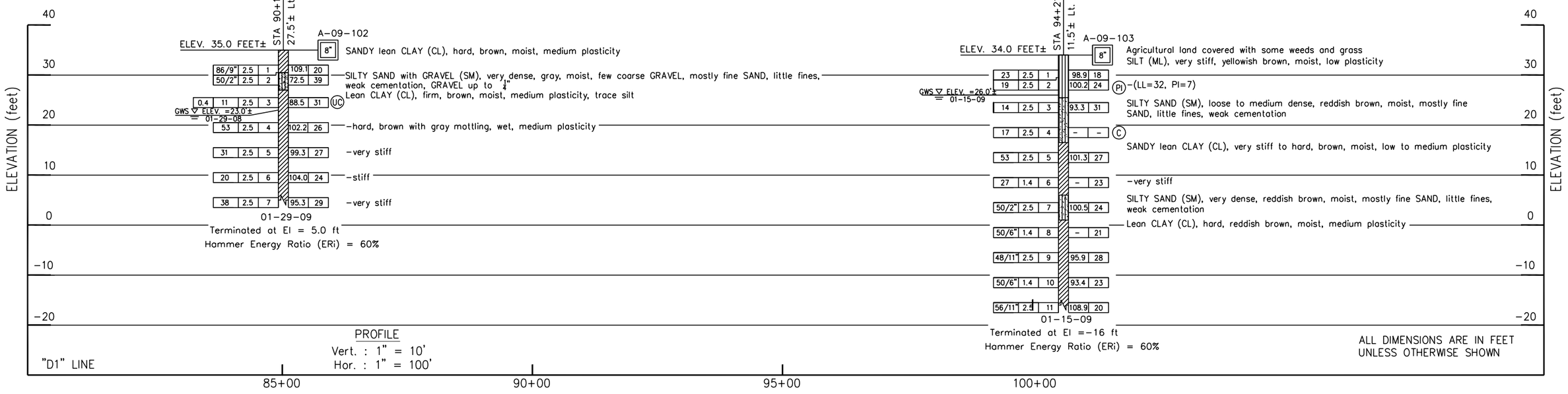

PROFILE
Vert. : 1" = 10'
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– SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009–JULY 2009			POST MILES –	LOG OF TEST BORINGS

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 0A5351

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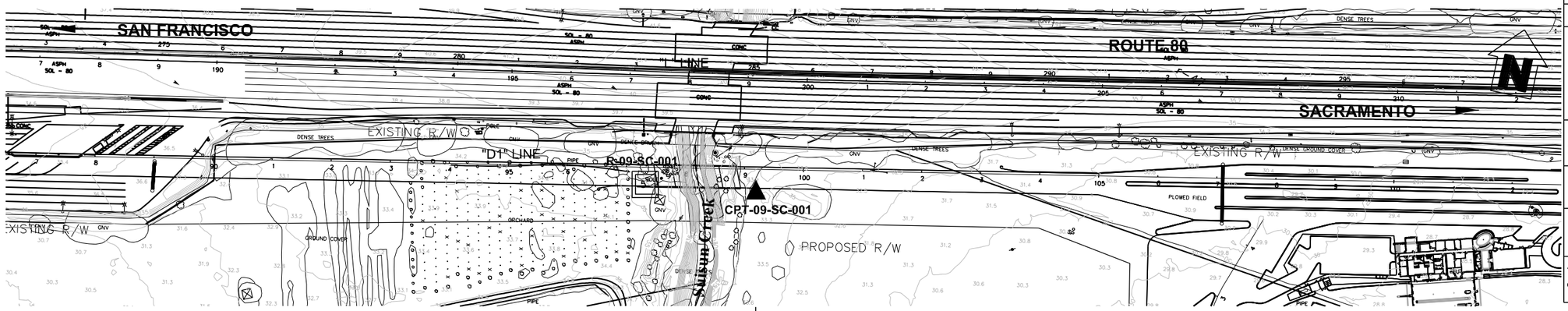

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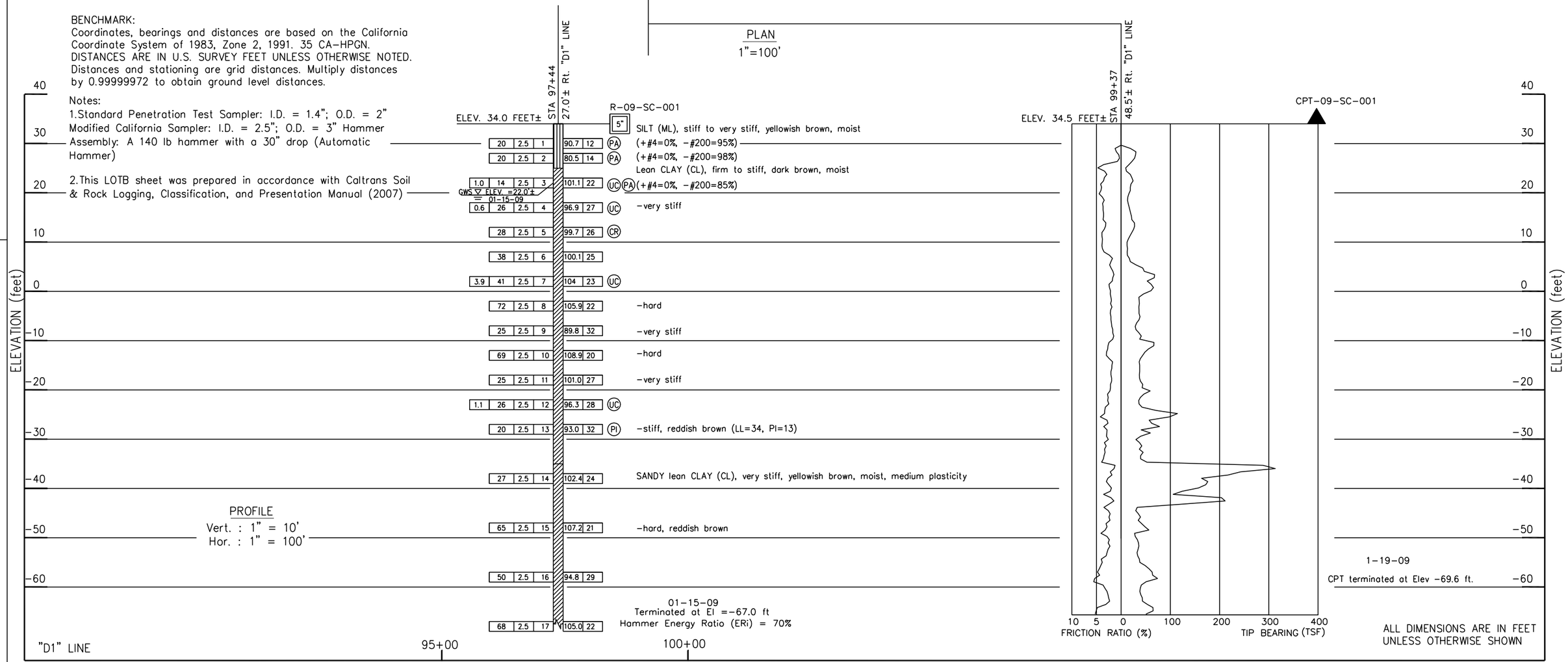

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G PARIKH DESIGN OVERSIGHT – SIGN OFF DATE	DRAWN BY CHECKED BY	O. GOUTHIER D. WANG	S. DUDDU FIELD INVESTIGATION BY: DATE: JANUARY 2009–JULY 2009	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER

BRIDGE NO. –
POST MILES –

CORDELIA TRUCK SCALES RELOCATION PROJECT

LOG OF TEST BORINGS

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

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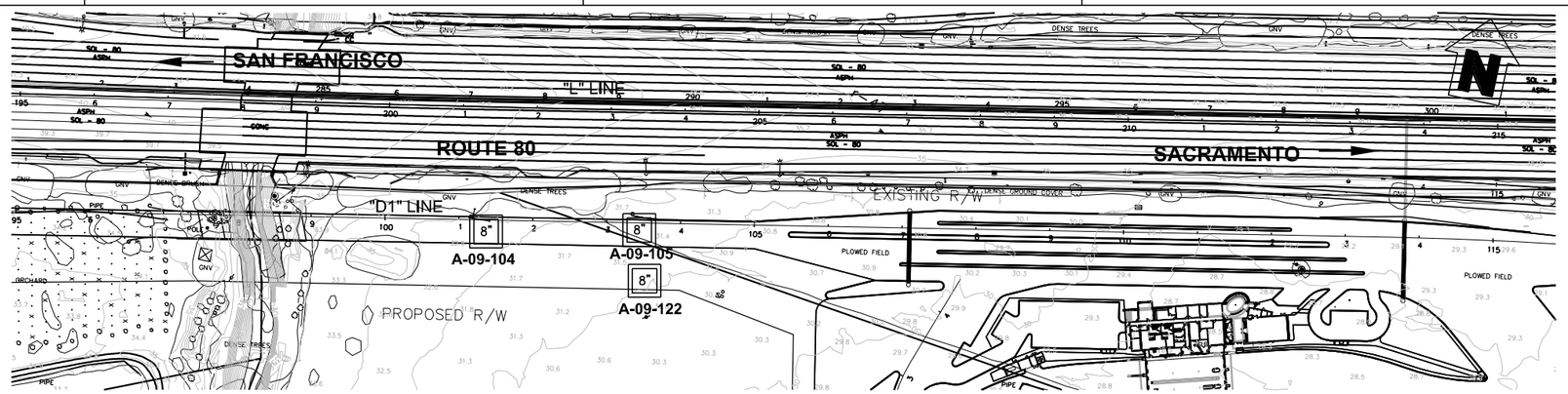

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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GEOTECHNICAL
STATE OF CALIFORNIA

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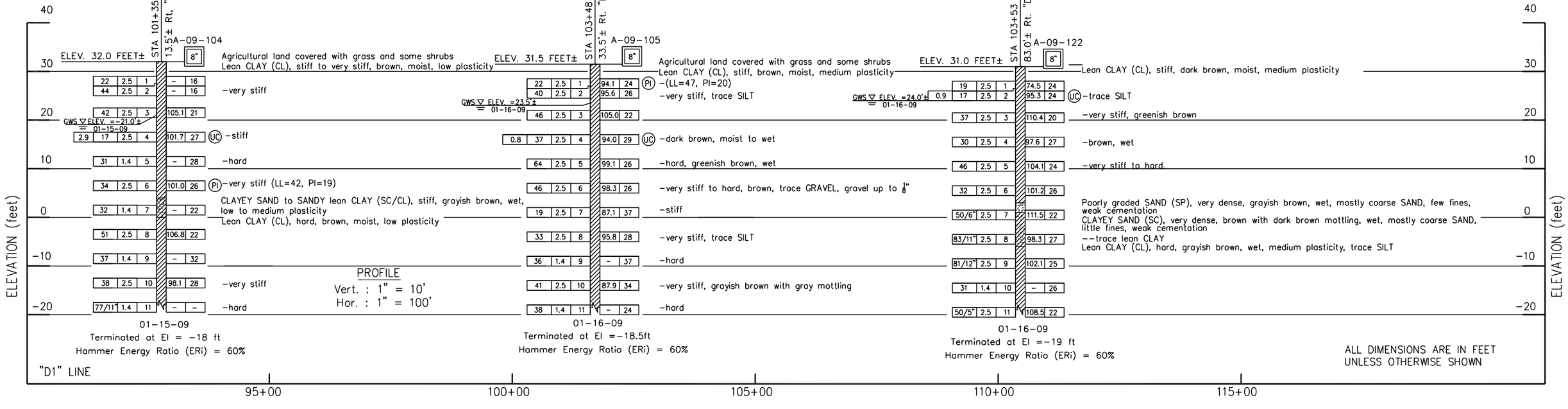

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– SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009–JULY 2009		

BRIDGE NO. –
POST MILES –

CORDELIA TRUCK SCALES RELOCATION PROJECT

LOG OF TEST BORINGS

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06–01–09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
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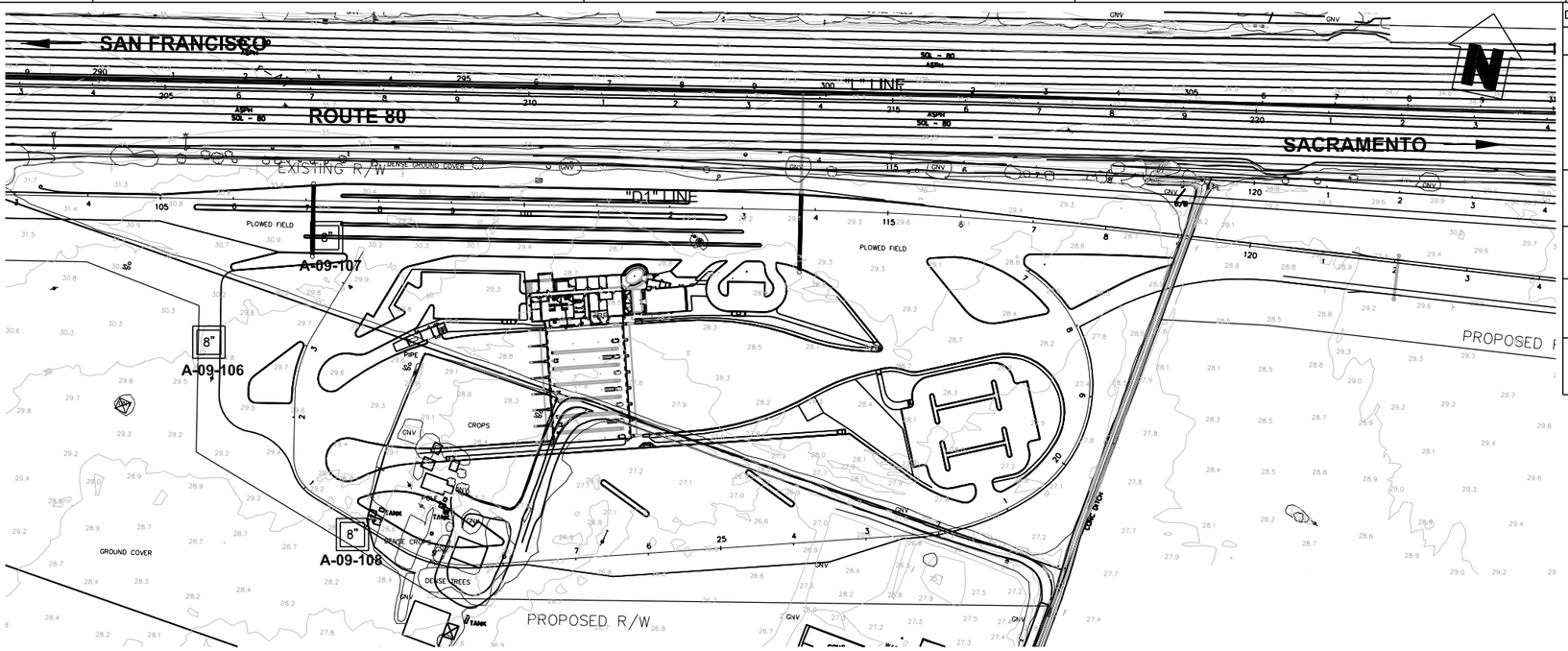

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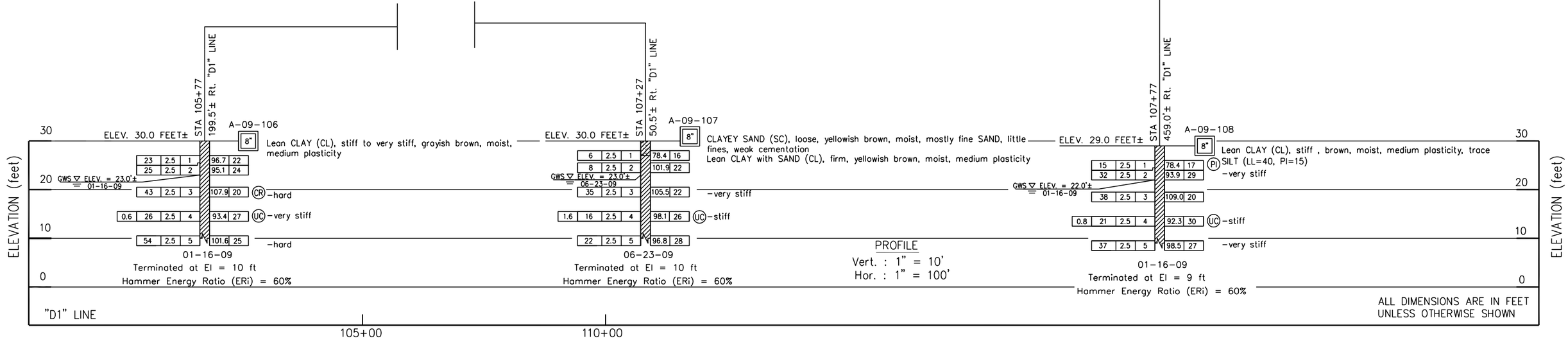

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DESIGN OVERSIGHT	CHECKED BY	D. WANG	FIELD INVESTIGATION BY: DATE: JANUARY 2009-JULY 2009		PROJECT ENGINEER	POST MILES –	LOG OF TEST BORINGS
– SIGN OFF DATE					CU 04264 EA 0A5351	DISREGARD PRINTS BEARING EARLIER REVISION DATES →	REVISION DATES: - SHEET – OF –

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

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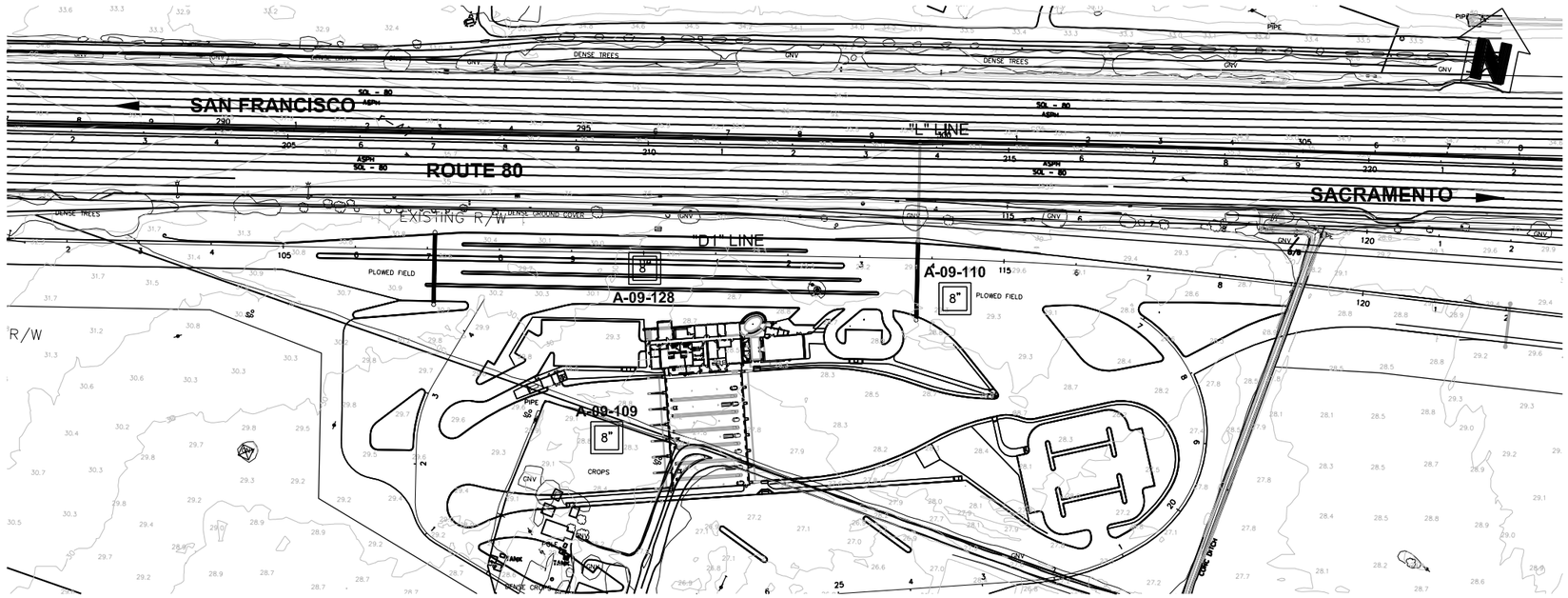

PLAN
1"=100'

BENCHMARK:
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Notes:
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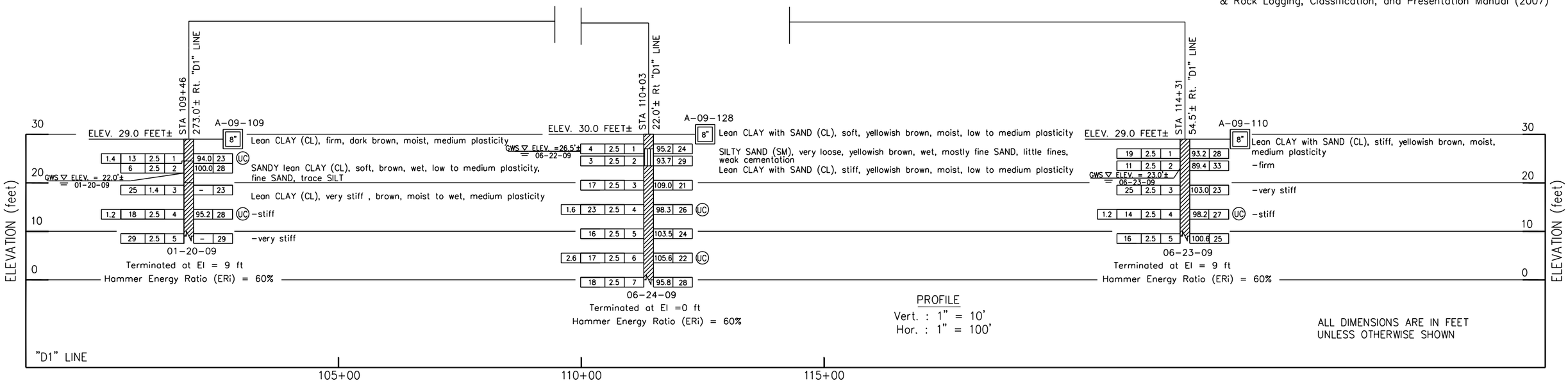

PROFILE
Vert. : 1" = 10'
Hor. : 1" = 100'

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

G PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY: DATE: JANUARY 2009-JULY 2009	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER
- SIGN OFF DATE	CHECKED BY	D. WANG			

BRIDGE NO. -
POST MILES -

CORDELIA TRUCK SCALES RELOCATION PROJECT

LOG OF TEST BORINGS

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES										SHEET	OF
-										-	-

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	80, 12	14.0/15.7 L1.8/L2.0	----	-----

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 — GEOTECHNICAL — STATE OF CALIFORNIA

PARIKH CONSULTANTS, INC.
2360 GUME DRIVE, SUITE A
SAN JOSE, CA 95131

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

HDR ENGINEERING, INC.
2121 N CALIFORNIA BLVD, SUITE 475
WANUT CREEK, CA 94596

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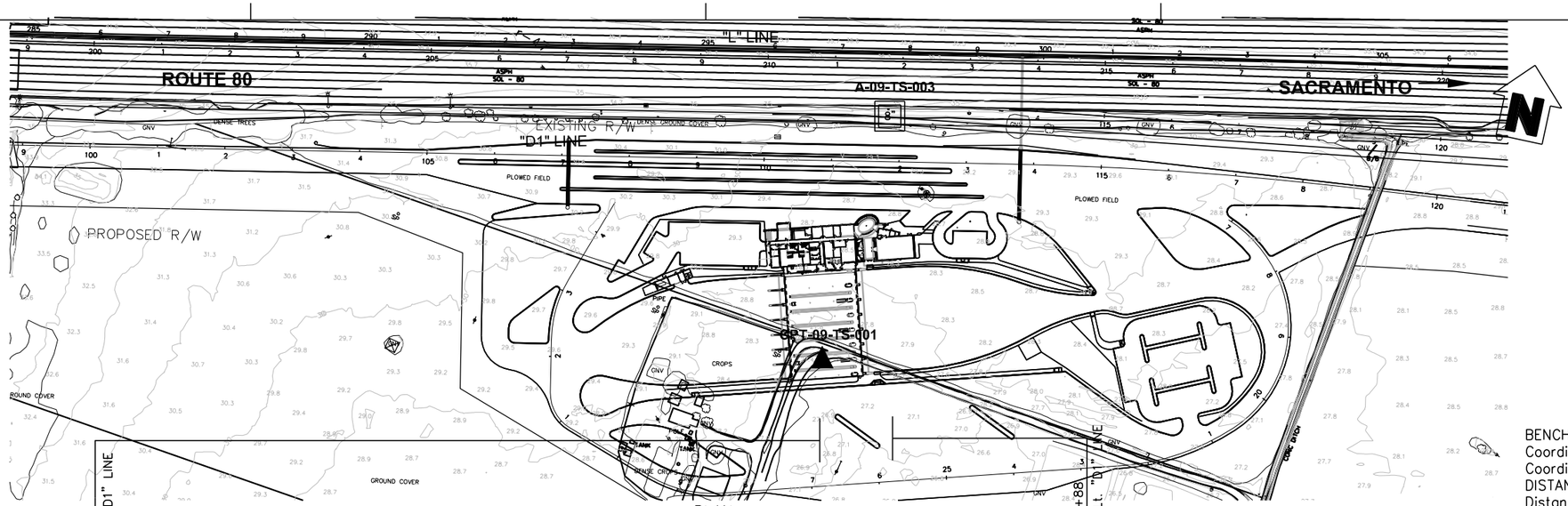

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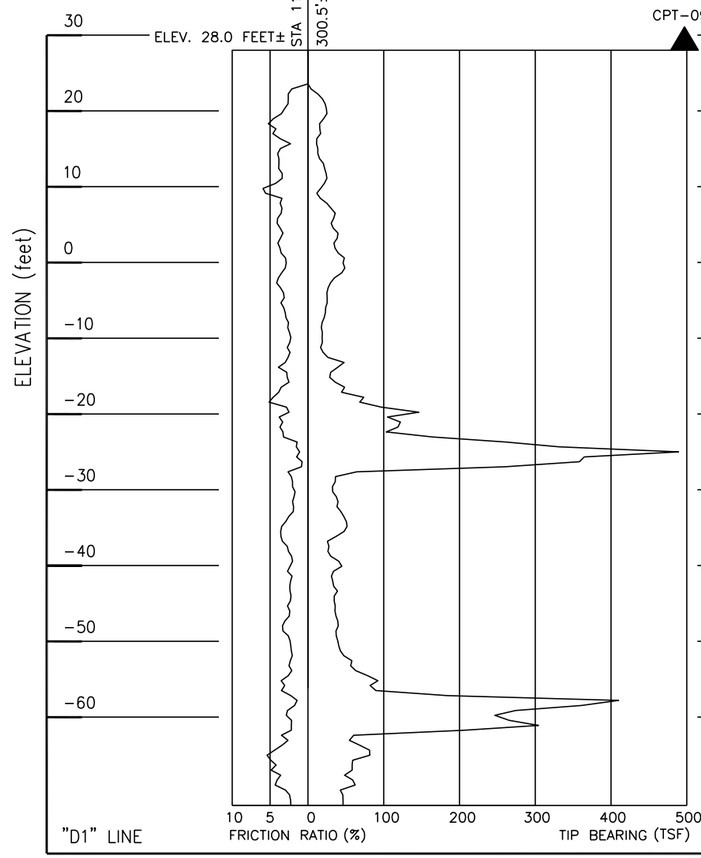

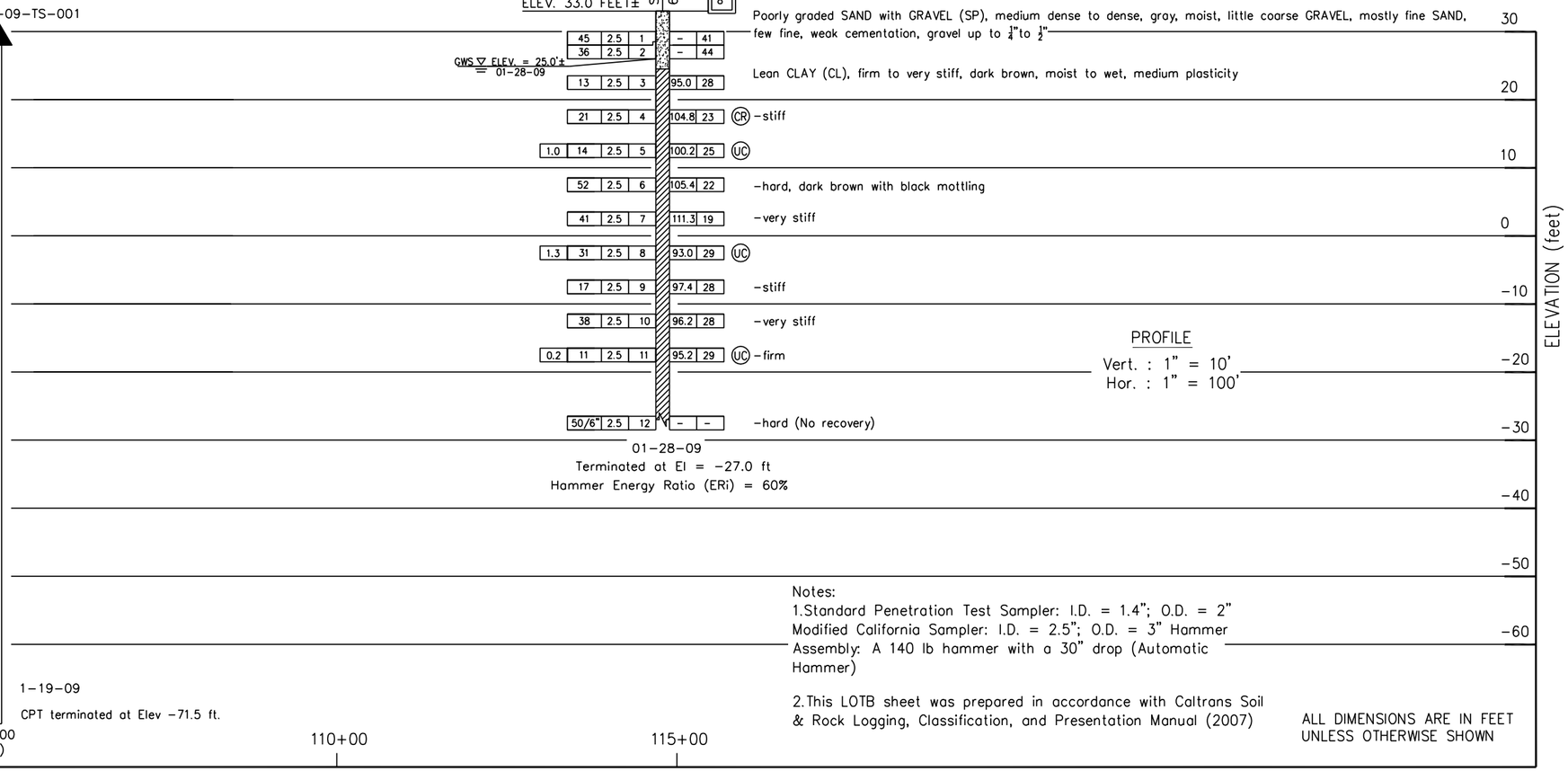

1-19-09

CPT terminated at Elev -71.5 ft.

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– SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009-JULY 2009		

BRIDGE NO. –
POST MILES –

CORDELIA TRUCK SCALES RELOCATION PROJECT

LOG OF TEST BORINGS

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES										SHEET	OF
-										–	–

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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PLANS APPROVAL DATE

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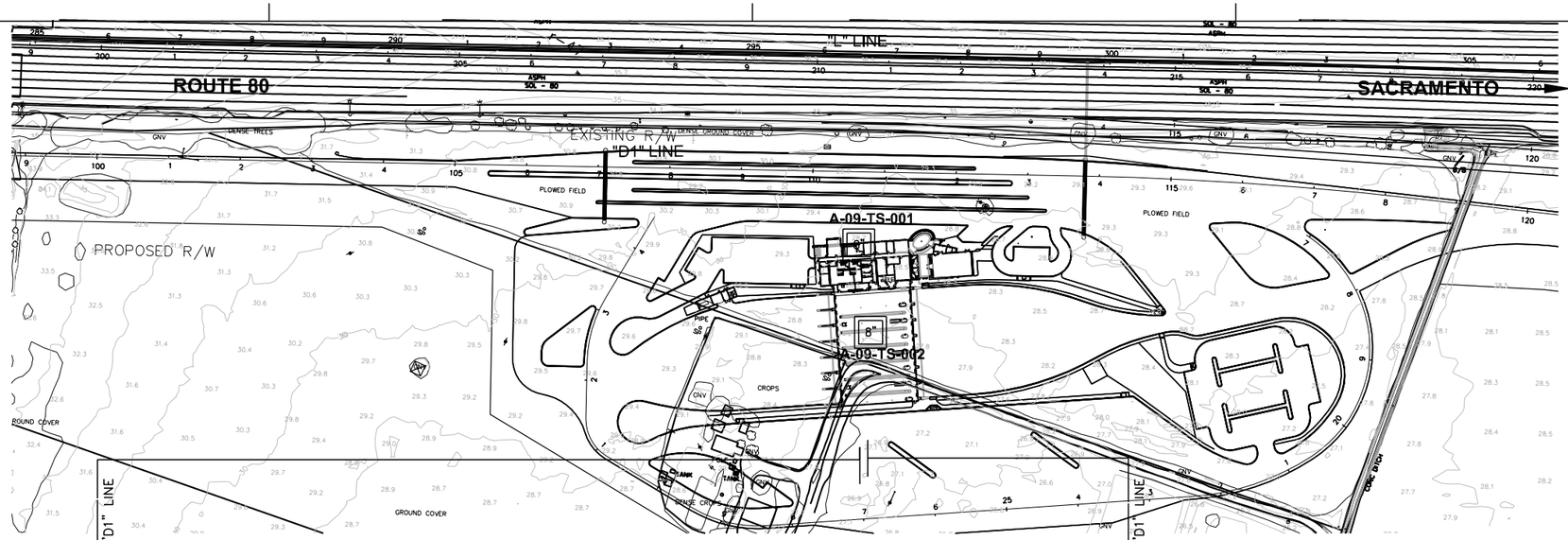

PLAN
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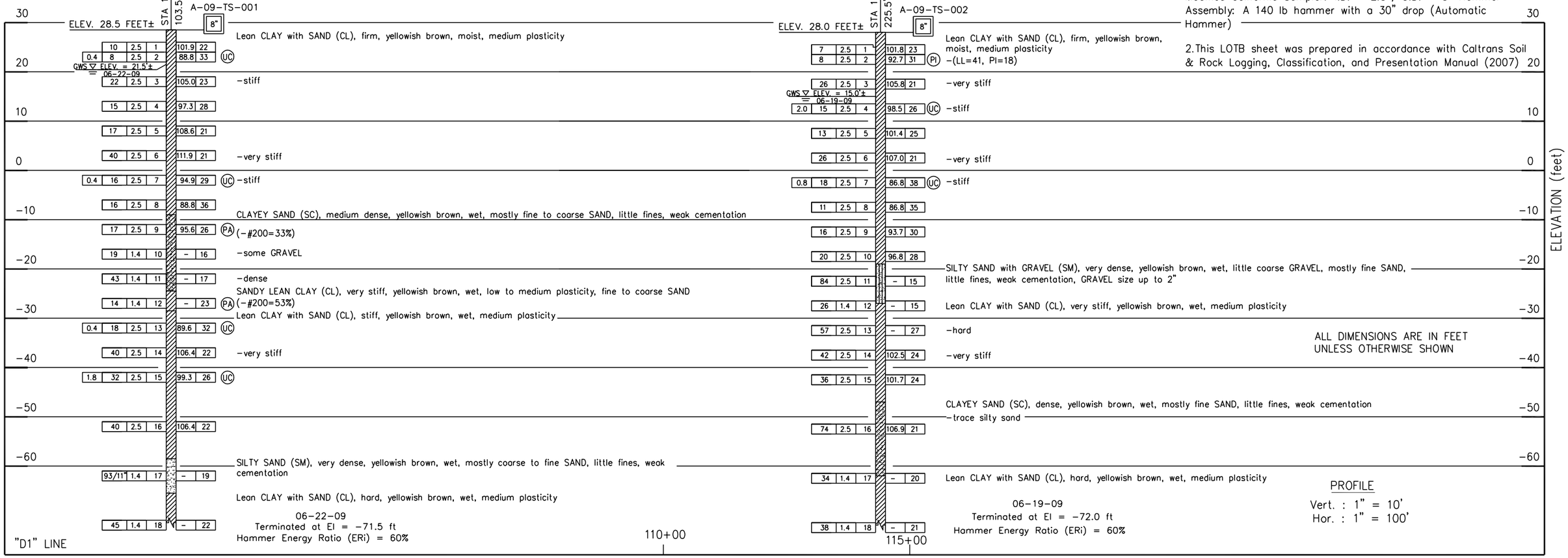

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PROFILE
Vert. : 1" = 10'
Hor. : 1" = 100'

G PARIKH	DRAWN BY	O. GOUTHIER	S. DUDDU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM
DESIGN OVERSIGHT	CHECKED BY	D. WANG	FIELD INVESTIGATION BY:		PROJECT ENGINEER
-			DATE: JANUARY 2009-JULY 2009		
SIGN OFF DATE					

BRIDGE NO. -
POST MILES -

CORDELIA TRUCK SCALES RELOCATION PROJECT

LOG OF TEST BORINGS

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES	SHEET	OF
-	-	-

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	80, 12	14.0/15.7 L1.8/L2.0	----	----

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 GEOTECHNICAL — STATE OF CALIFORNIA

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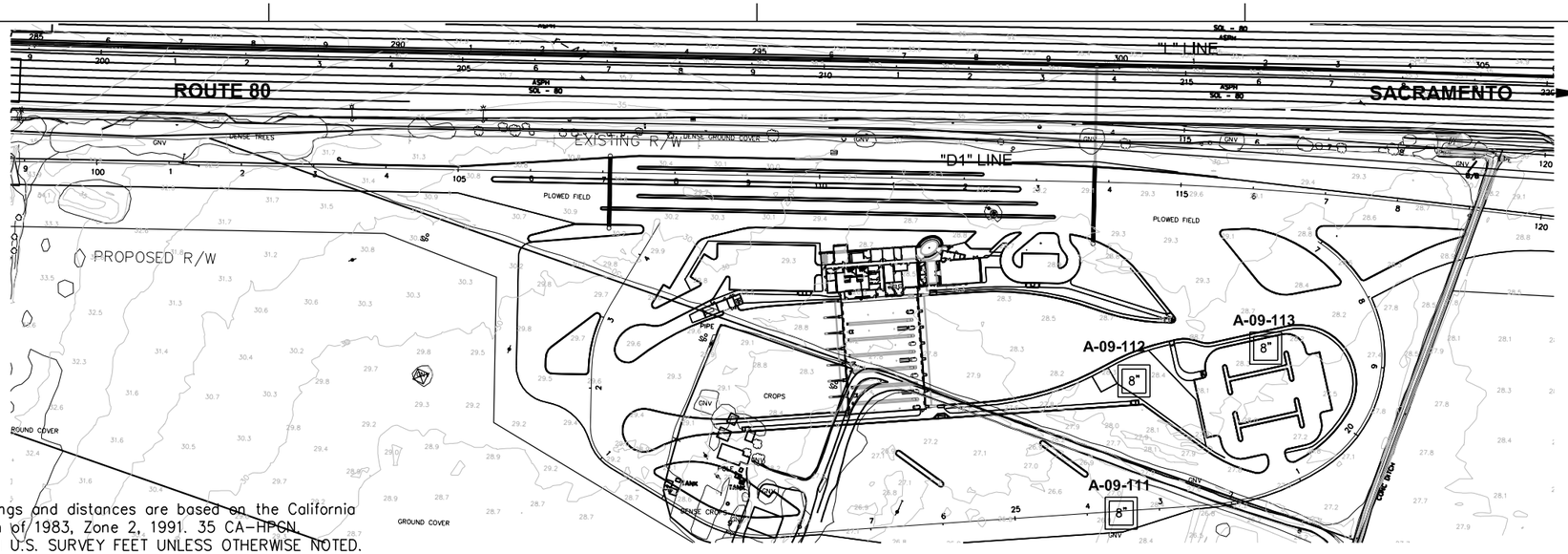

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PLAN
1"=100'

PROFILE
Vert. : 1" = 10'
Hor. : 1" = 100'

ELEVATION (feet)

"D1" LINE

110+00

115+00

STA 114+35 454.0'± Rt. "D1" LINE

A-09-111 — 8"

ELEV. 28.0 FEET±

Lean CLAY (CL), very stiff, yellowish brown to dark brown, moist to wet, medium plasticity

32	2.5	1	94.6	29	
24	2.5	2	96.5	27	
34	2.5	3	108.7	20	
1.5	28	2.5	4	94.1	28 (UC)
28	2.5	5	–	26	

GWS ▽ ELEV. = 21.0'± = 01-20-09

01-20-09
Terminated at El = 8.0 ft
Hammer Energy Ratio (ERi) = 60%

STA 114+44 270.5'± Rt. "D1" LINE

A-09-112 — 8"

ELEV. 28.5 FEET±

Lean CLAY with SAND (CL), firm, yellowish brown, moist, medium plasticity

11	2.5	1	87.9	28	
13	2.5	2	94.7	30	–stiff
29	2.5	3	106.4	21	–very stiff
12	2.5	4	98.1	28	(PI) –firm to stiff (LL=40, PI=17)
17	2.5	5	101.1	24	–stiff
47	2.5	6	108.9	21	–very stiff
38	2.5	7	113.2	20	
0.5	12	2.5	8	86.1	36 (UC) –firm to stiff
29	2.5	9	92.9	33	–very stiff
31	2.5	10	96.9	27	
0.5	21	2.5	11	96.2	28 (UC) –stiff
21	2.5	12	98.2	28	
68	2.5	13	96.6	29	–hard

GWS ▽ ELEV. =19.5'± = 06-23-09

06-23-09
Terminated at El =–31.6 ft
Hammer Energy Ratio (ERi) = 60%

STA 116+29 219.0'± Rt. "D1" LINE

A-09-113 — 8"

ELEV. 28.0 FEET±

Lean CLAY with SAND (CL), stiff, brown, moist, medium plasticity

15	2.5	1	93.6	29	
0.9	13	2.5	2	91.6	29 (UC)
21	2.5	3	102.6	24	
12	2.5	4	97.5	29	–firm to stiff
11	2.5	5	105.7	23	–firm
4.4	38	2.5	6	104.8	23 (UC) –very stiff
51	2.5	7	106.5	22	–hard
22	2.5	8	96.6	28	–stiff
1.5	28	2.5	9	103.2	23 (UC) –very stiff

GWS ▽ ELEV. =20.0'± = 06-23-09

06-23-09
Terminated at El =–11.7 ft
Hammer Energy Ratio (ERi) =60%

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G PARIKH	DRAWN BY	O. GOUTHIER	S. DUDDU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM	BRIDGE NO. –	CORDELIA TRUCK SCALES RELOCATION PROJECT
DESIGN OVERSIGHT	CHECKED BY	D. WANG	FIELD INVESTIGATION BY: DATE: JANUARY 2009–JULY 2009		PROJECT ENGINEER	POST MILES –	LOG OF TEST BORINGS
– SIGN OFF DATE					CU 04264 EA 0A5351	DISREGARD PRINTS BEARING EARLIER REVISION DATES →	REVISION DATES: - SHEET – OF –

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	80, 12	14.0/15.7 L1.8/L2.0	----	----

GEOTECHNICAL PROFESSIONAL DATE

PROFESSIONAL ENGINEER — REGISTERED — GARY PARIKH No. G.E. 666 Exp. 12/31/11 GEOTECHNICAL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

PARIKH CONSULTANTS, INC.
2360 GUME DRIVE, SUITE A
SAN JOSE, CA 95131

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

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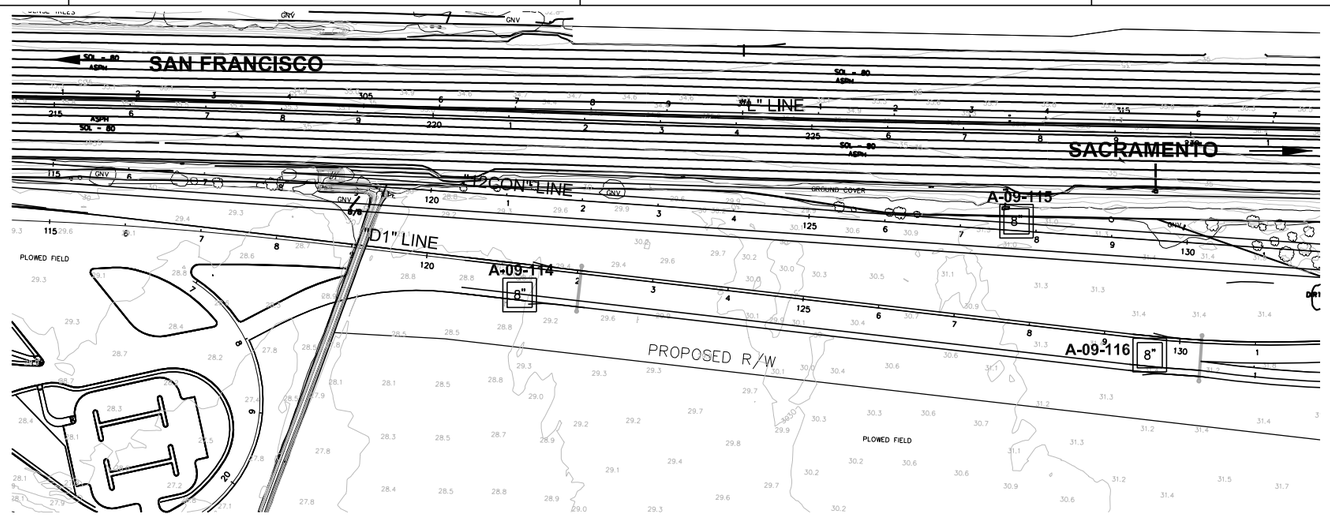

PLAN
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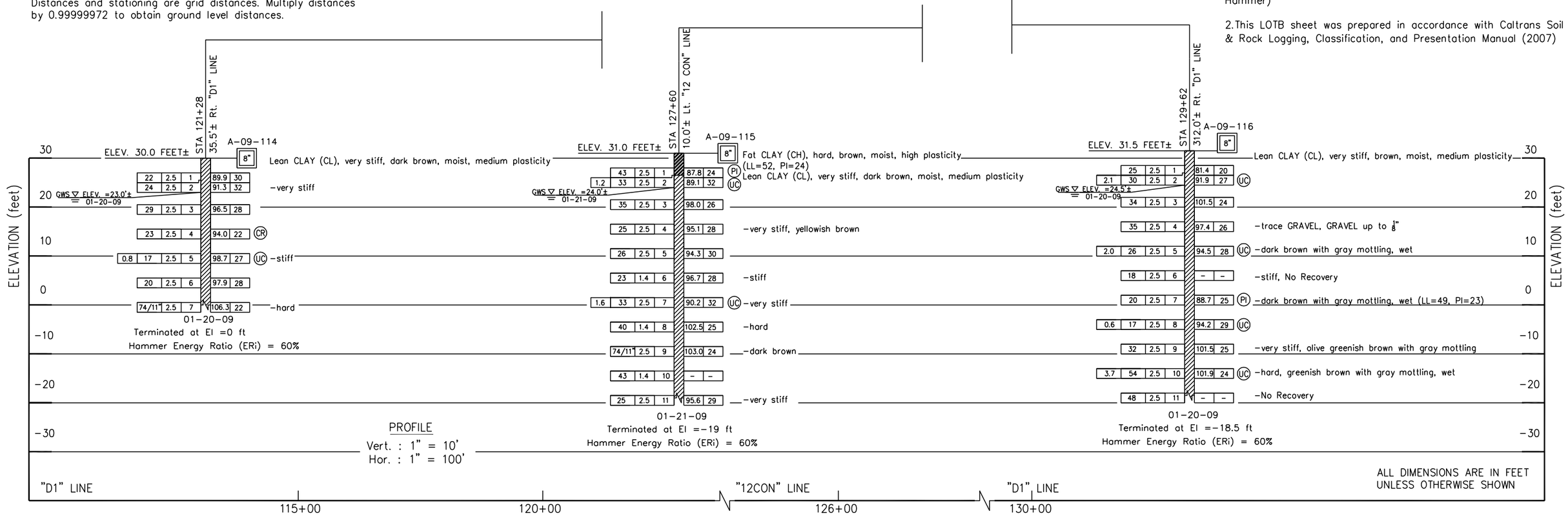

G PARIKH DESIGN OVERSIGHT – SIGN OFF DATE	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY: DATE: JANUARY 2009–JULY 2009	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER
	CHECKED BY	D. WANG			

BRIDGE NO. –
POST MILES –

CORDELIA TRUCK SCALES RELOCATION PROJECT

LOG OF TEST BORINGS

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES	SHEET	OF
-	–	–

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	80, 12	14.0/15.7 L1.8/L2.0	----	----

GEOTECHNICAL PROFESSIONAL — DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 — GEOTECHNICAL — STATE OF CALIFORNIA

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2360 GUME DRIVE, SUITE A
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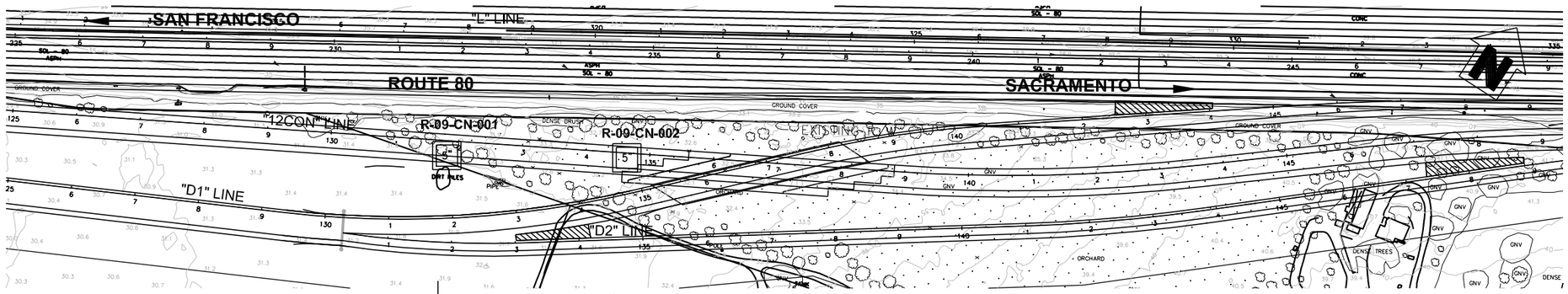

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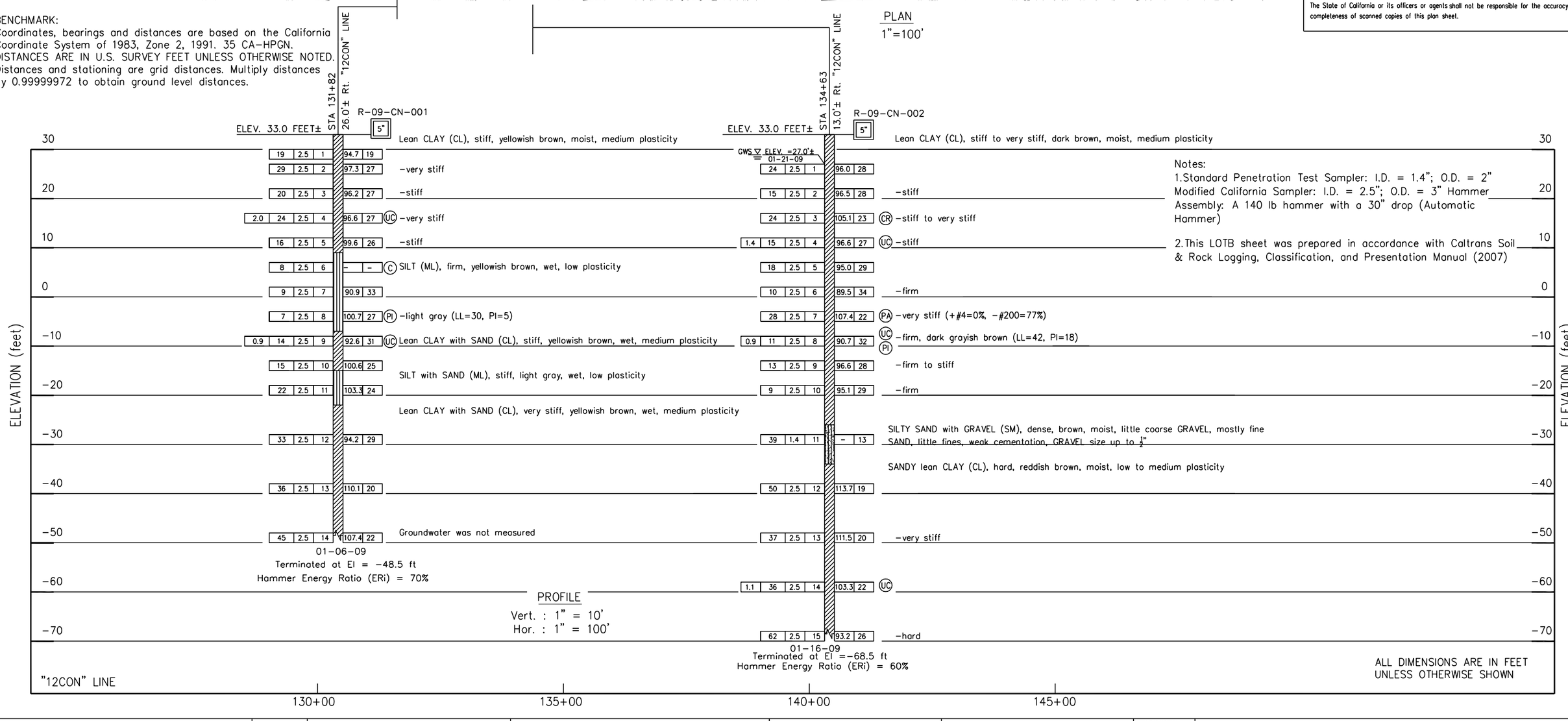

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–, SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009–JULY 2009		

BRIDGE NO. –
POST MILES –

CORDELIA TRUCK SCALES RELOCATION PROJECT

LOG OF TEST BORINGS

CU 04264
EA 0A5351

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

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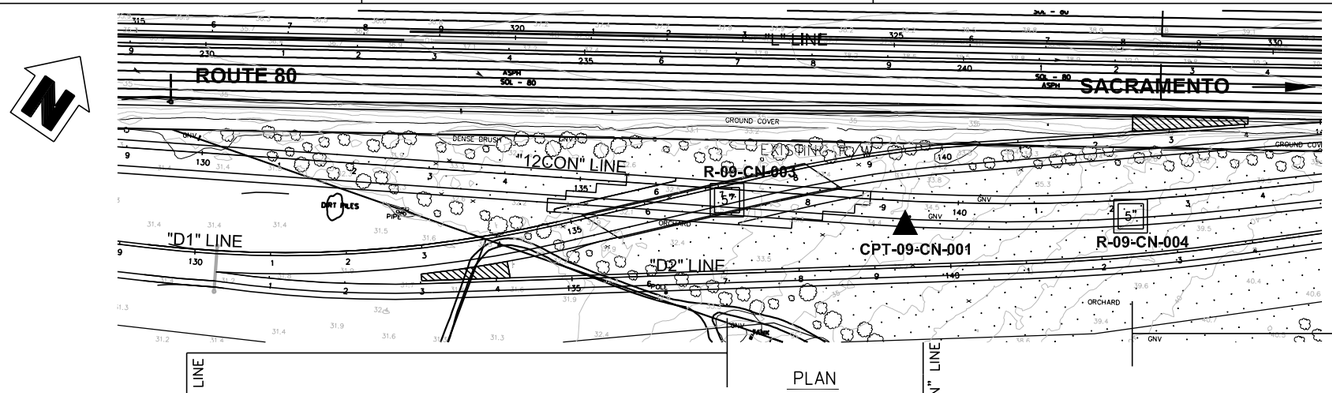

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PLANS APPROVAL DATE

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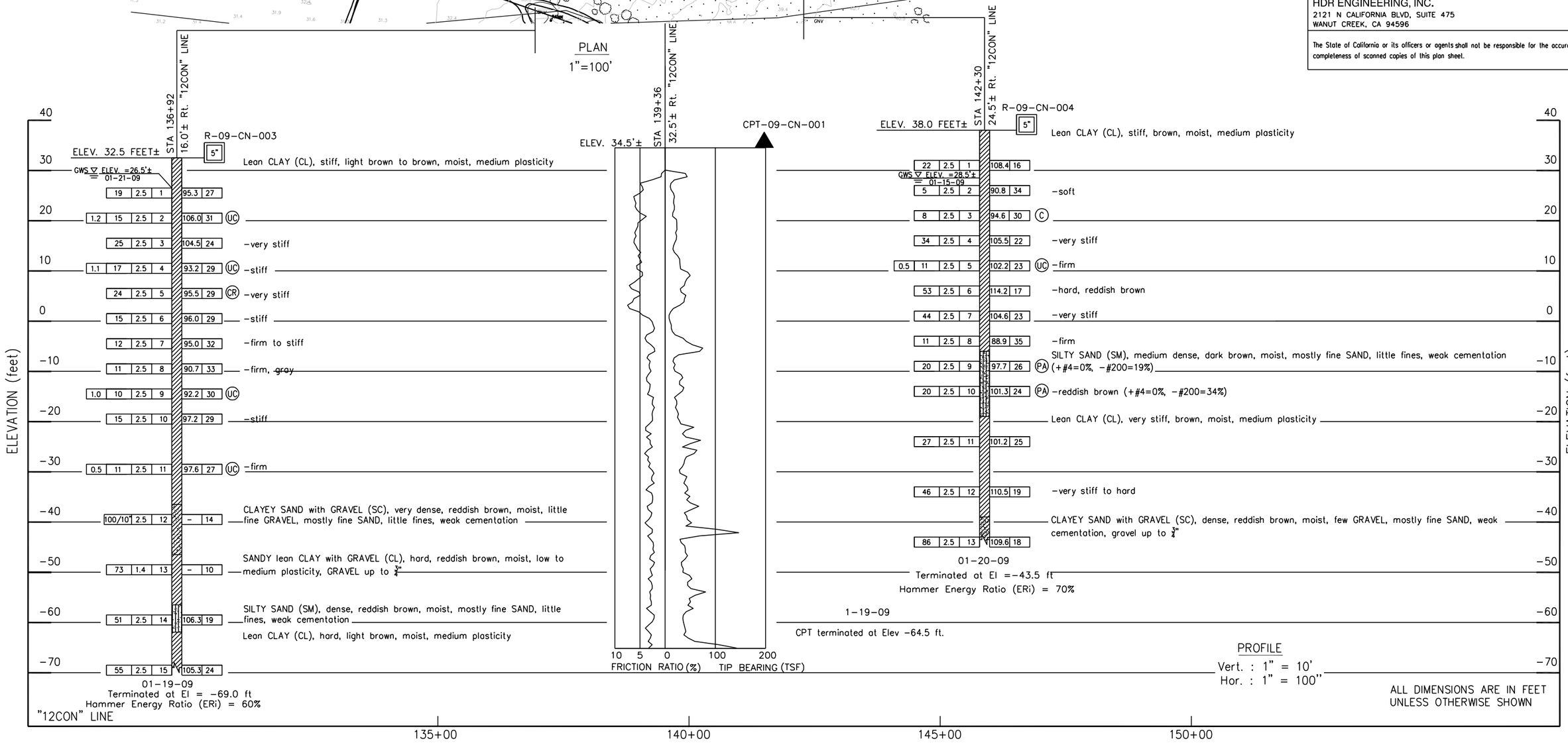

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– SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009-JULY 2009			POST MILES –	LOG OF TEST BORINGS

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

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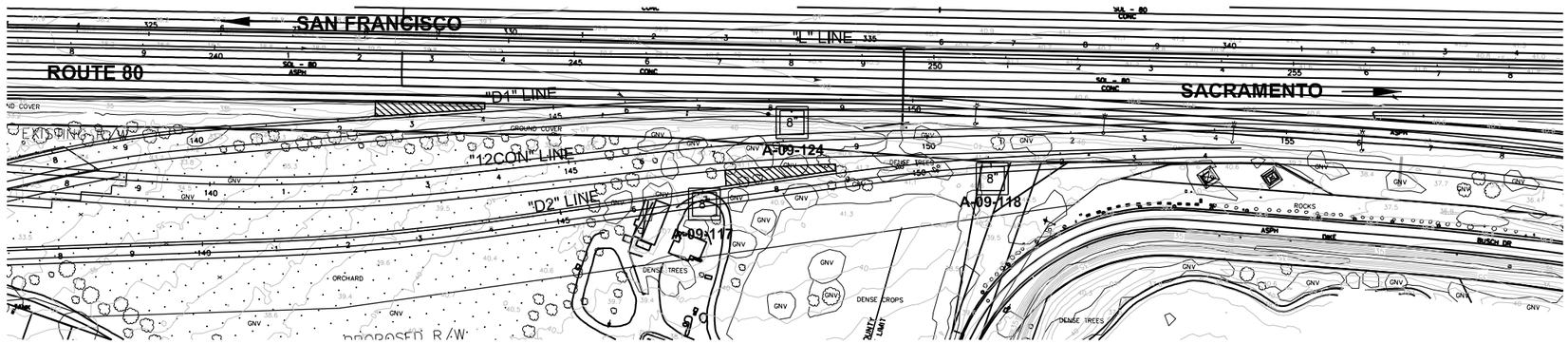

PLAN
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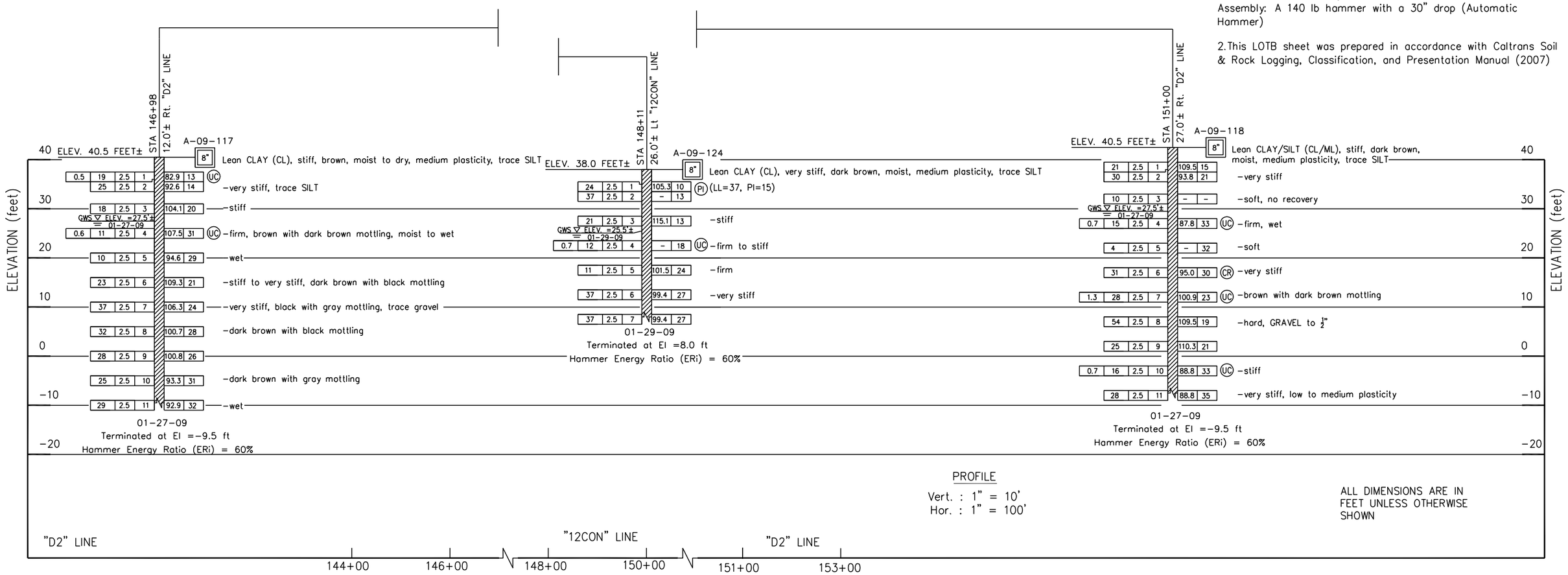

PROFILE
Vert. : 1" = 10'
Hor. : 1" = 100'

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

G PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER
– SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009-JULY 2009		

BRIDGE NO. –
POST MILES –

CORDELIA TRUCK SCALES RELOCATION PROJECT

LOG OF TEST BORINGS

CU 04264
EA 0A5351

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES | SHEET – | OF –

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	80, 12	14.0/15.7 L1.8/L2.0	----	----

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
GARY PARIKH
No. G.E. 666
Exp. 12/31/11
GEOTECHNICAL
STATE OF CALIFORNIA

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

HDR ENGINEERING, INC.
2121 N CALIFORNIA BLVD, SUITE 475
WANUT CREEK, CA 94596

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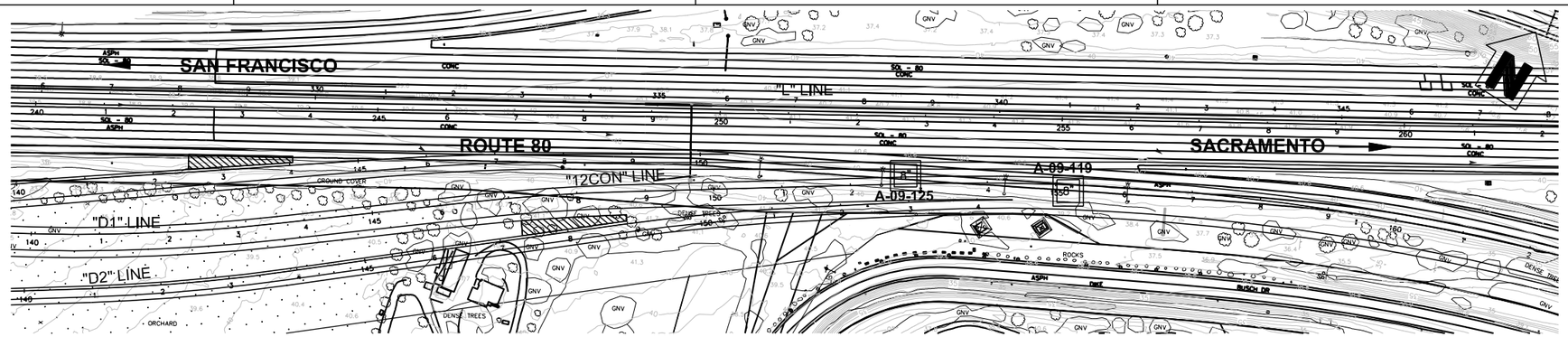
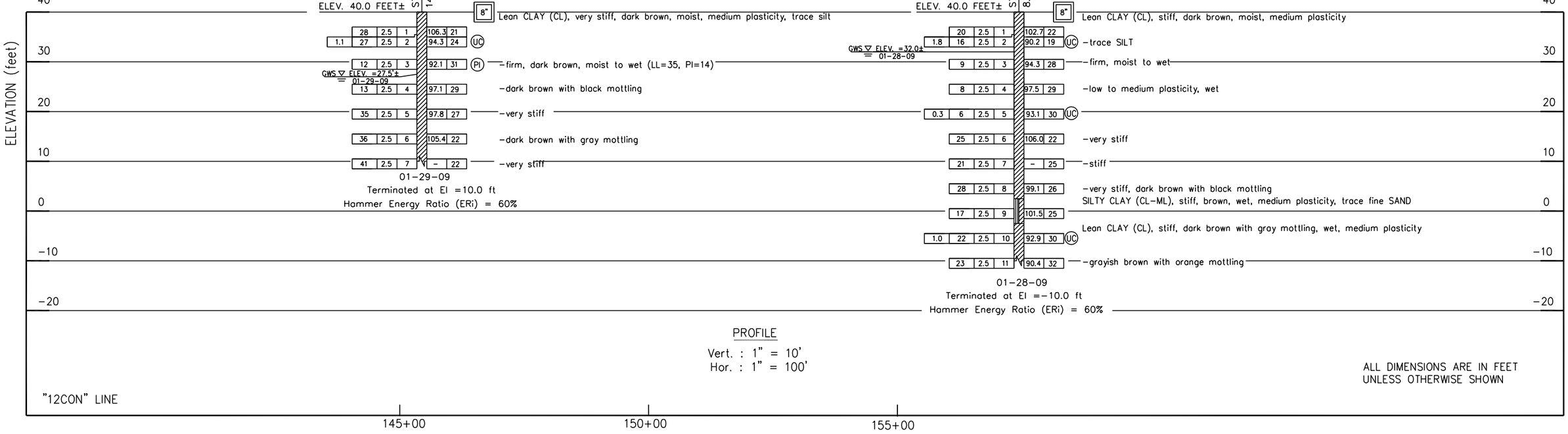


PLAN
1"=100'

BENCHMARK:
Coordinates, bearings and distances are based on the California Coordinate System of 1983, Zone 2, 1991. 35 CA-HPGN.
DISTANCES ARE IN U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
Distances and stationing are grid distances. Multiply distances by 0.99999972 to obtain ground level distances.

Notes:
1.Standard Penetration Test Sampler: I.D. = 1.4"; O.D. = 2"
Modified California Sampler: I.D. = 2.5"; O.D. = 3" Hammer Assembly: A 140 lb hammer with a 30" drop (Automatic Hammer)

2.This LOTB sheet was prepared in accordance with Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2007)



PROFILE
Vert. : 1" = 10'
Hor. : 1" = 100'

ALL DIMENSIONS ARE IN FEET
UNLESS OTHERWISE SHOWN

G PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. –	CORDELIA TRUCK SCALES RELOCATION PROJECT
– SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009-JULY 2009			POST MILES –	LOG OF TEST BORINGS

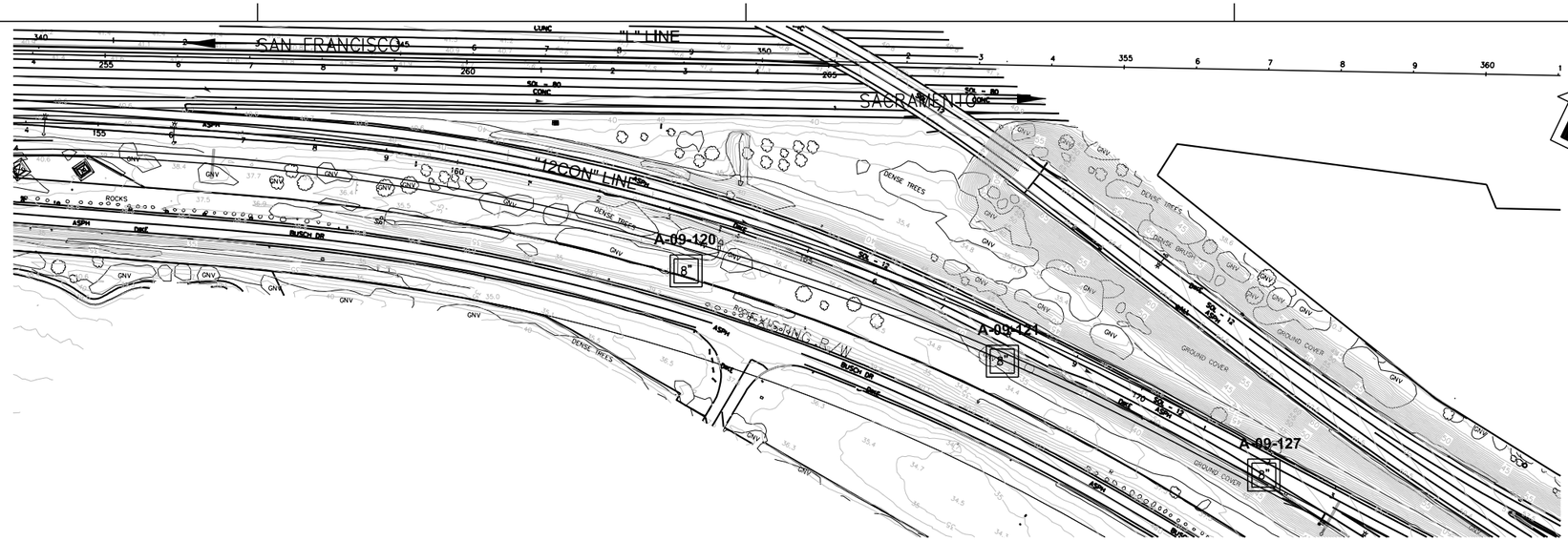
OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES										SHEET	OF
-										–	–



PLAN
1" : 100'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	80, 12	14.0/15.7 L1.8/L2.0	----	----

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 GEOTECHNICAL — STATE OF CALIFORNIA

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

HDR ENGINEERING, INC.
2121 N CALIFORNIA BLVD, SUITE 475
WANUT CREEK, CA 94596

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BENCHMARK:
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DISTANCES ARE IN U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
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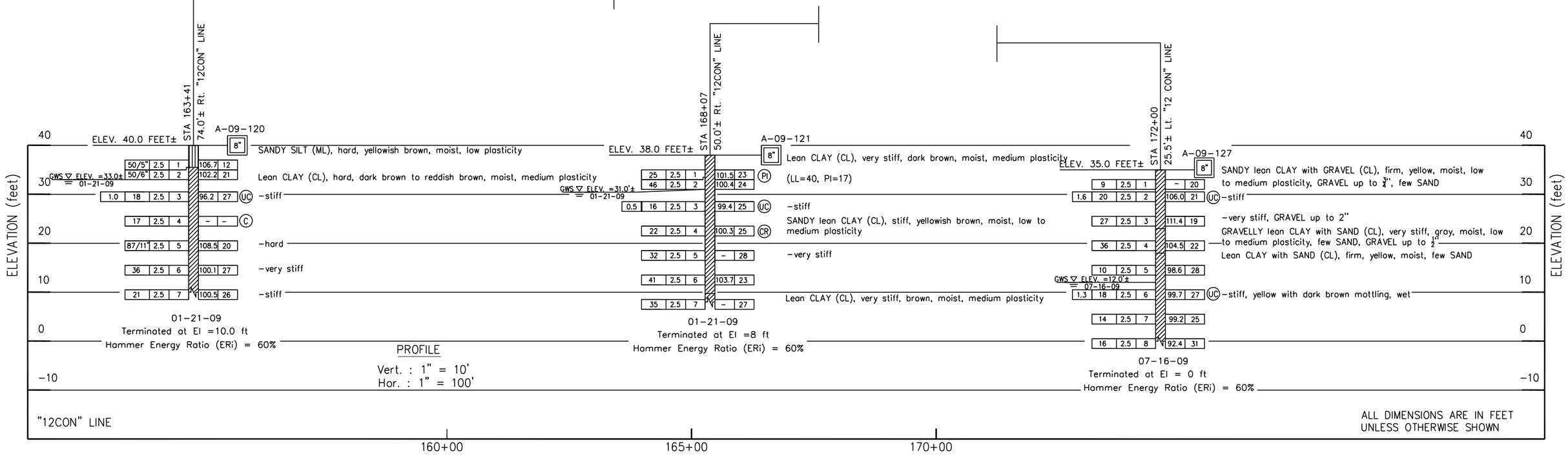
Notes:
1.Standard Penetration Test Sampler: I.D. = 1.4"; O.D. = 2"
Modified California Sampler: I.D. = 2.5"; O.D. = 3" Hammer Assembly: A 140 lb hammer with a 30" drop (Automatic Hammer)

2.This LOTB sheet was prepared in accordance with Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2007)



PROFILE
Vert. : 1" = 10'
Hor. : 1" = 100'

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

G PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. –	CORDELIA TRUCK SCALES RELOCATION PROJECT
– SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009–JULY 2009			POST MILES –	LOG OF TEST BORINGS

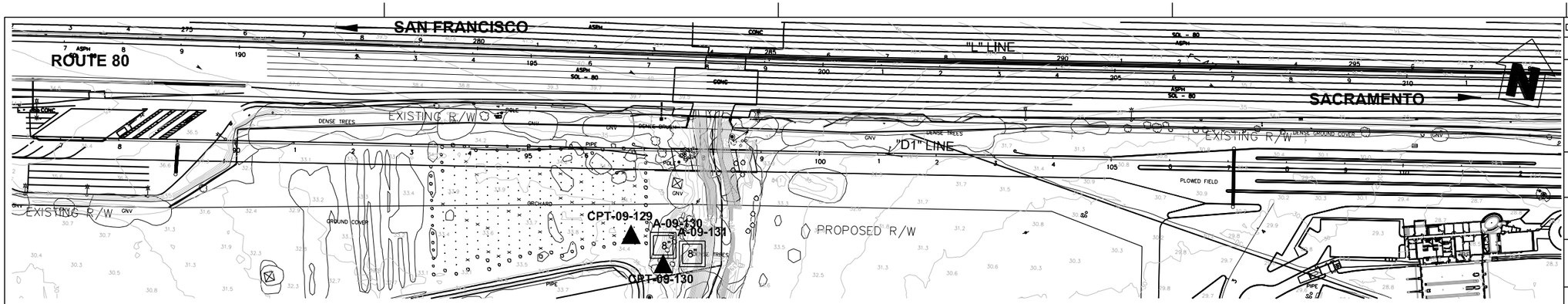
OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES	SHEET	OF
-	–	–



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	80, 12	14.0/15.7 L1.8/L2.0	----	-----

GEOTECHNICAL PROFESSIONAL — DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 — GEOTECHNICAL — STATE OF CALIFORNIA

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

HDR ENGINEERING, INC.
2121 N CALIFORNIA BLVD, SUITE 475
WANUT CREEK, CA 94596

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BENCHMARK:
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Distances and stationing are grid distances. Multiply distances by 0.99999972 to obtain ground level distances.

PLAN
1"=100'

Notes:
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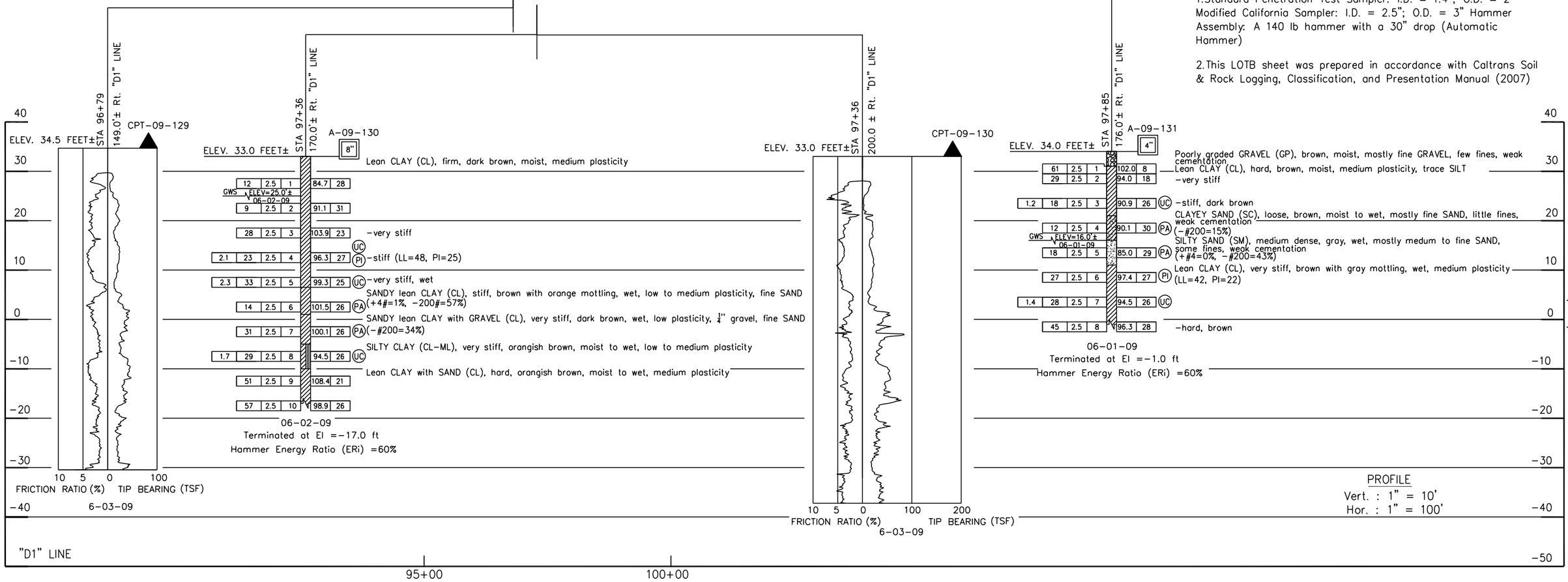
2.This LOTB sheet was prepared in accordance with Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2007)



PROFILE
Vert. : 1" = 10'
Hor. : 1" = 100'

G PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. –	CORDELIA TRUCK SCALES RELOCATION PROJECT
– SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009–JULY 2009			POST MILES –	LOG OF TEST BORINGS

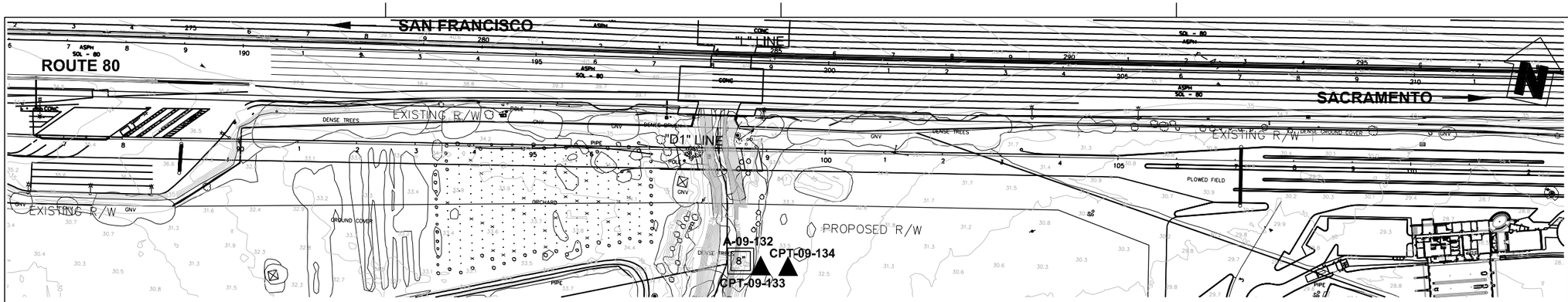
OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES	SHEET	OF
-	–	–



PLAN
1"=100'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	80, 12	14.0/15.7 L1.8/L2.0	----	----

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
GARY PARIKH
No. G.E. 666
Exp. 12/31/11
GEOTECHNICAL
STATE OF CALIFORNIA

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

HDR ENGINEERING, INC.
2121 N CALIFORNIA BLVD, SUITE 475
WANUT CREEK, CA 94596

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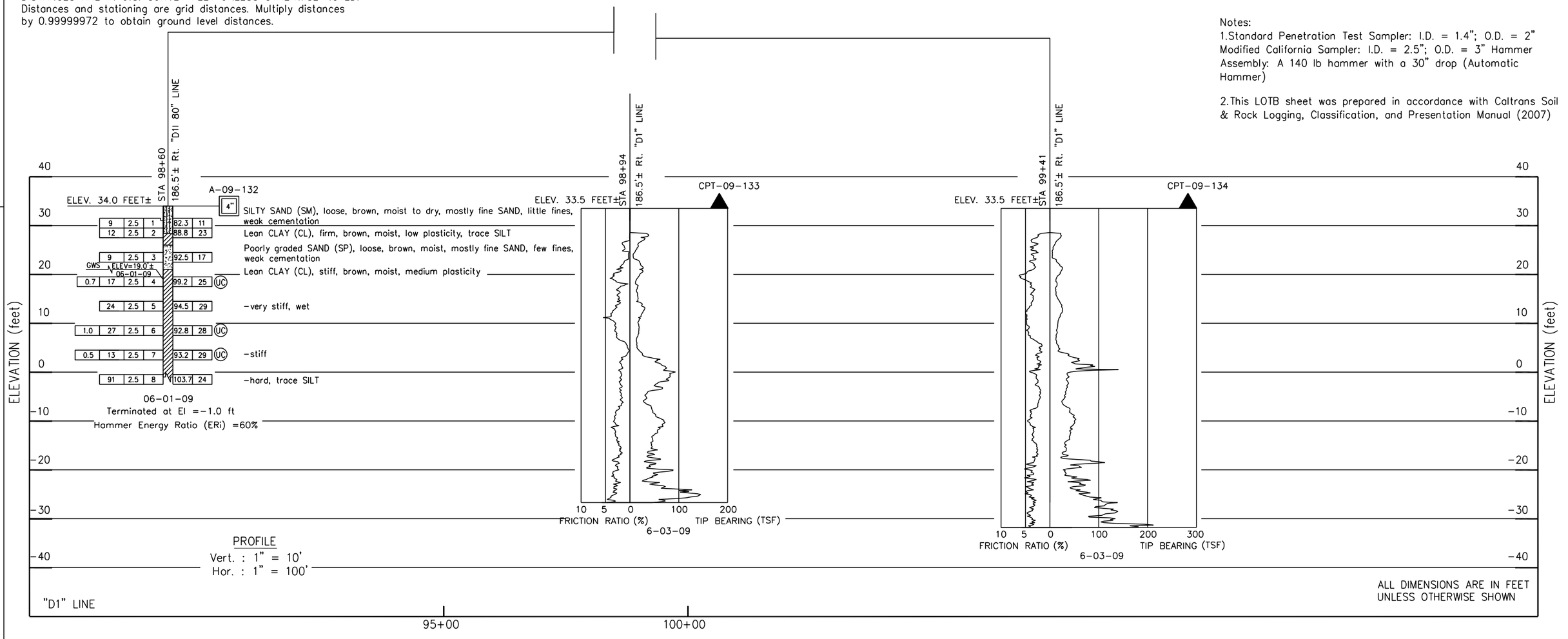

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– SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009-JULY 2009		

BRIDGE NO. –
POST MILES –

CORDELIA TRUCK SCALES RELOCATION PROJECT

LOG OF TEST BORINGS

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES										SHEET	OF
-										–	–

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	80, 12	14.0/15.7 L1.8/L2.0		

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 GEOTECHNICAL — STATE OF CALIFORNIA

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
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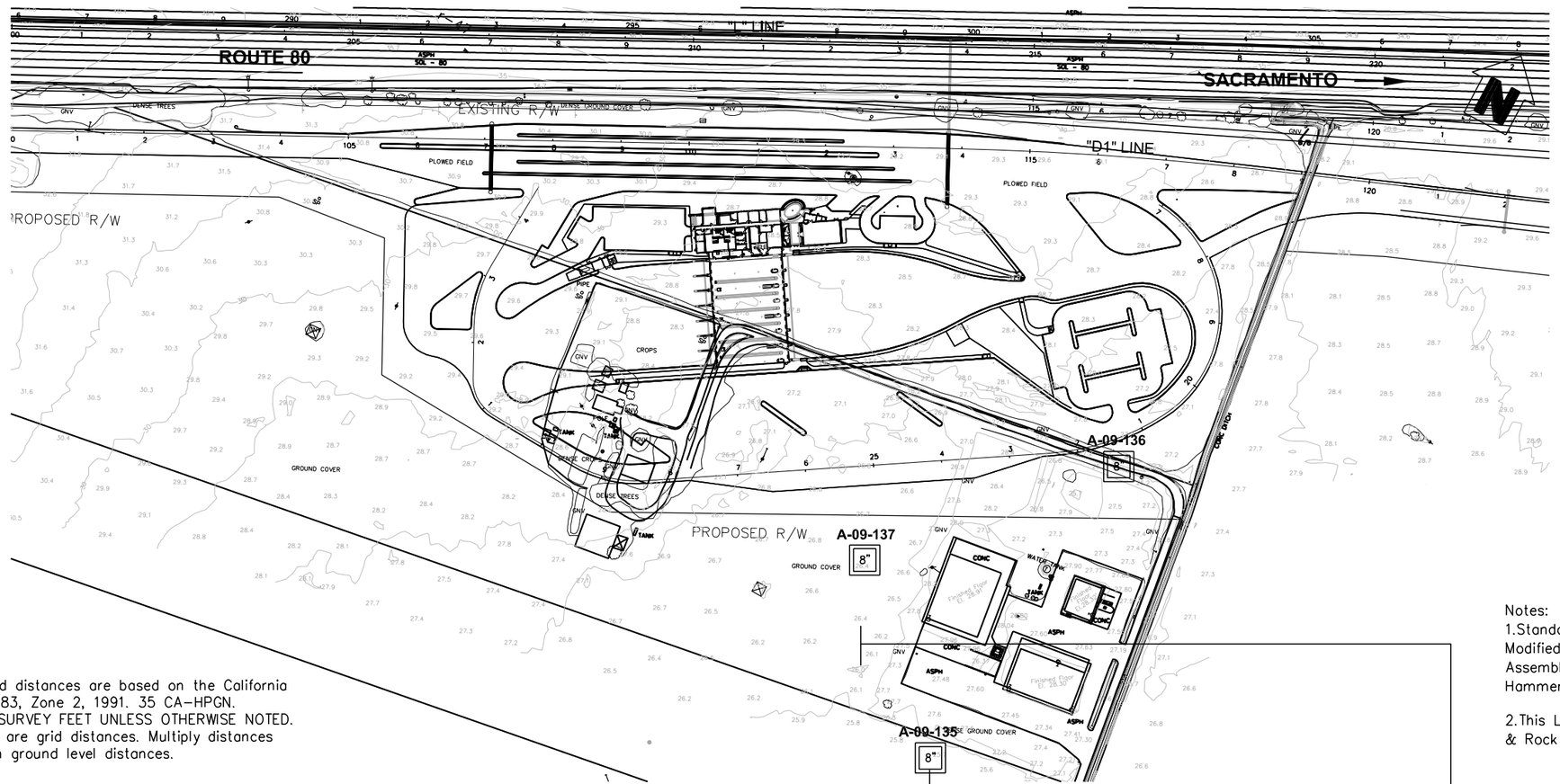

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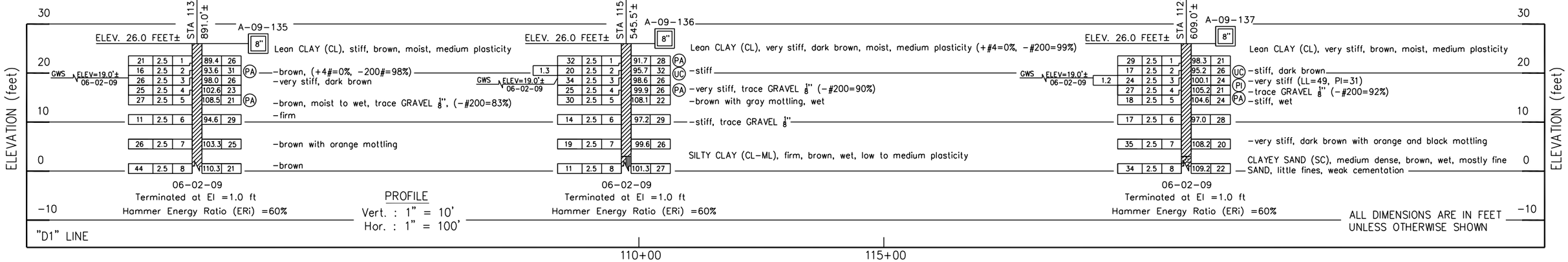


G PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER
– SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009–JULY 2009		

BRIDGE NO. –
POST MILES –

CORDELIA TRUCK SCALES RELOCATION PROJECT

LOG OF TEST BORINGS

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES	SHEET	OF
-	–	–

I-080-2(11)43

DIVISION OF ENGINEERING SERVICES – GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	KILOMETER POST - TOTAL PROJECT	Sheet No.	Total Sheets
04	Sol	80	18.3/32.3		

CERTIFIED ENGINEER — DATE 9/11/06

SUISUN CREEK BRIDGE (WIDEN)

LOG OF TEST BORINGS 2 OF 2

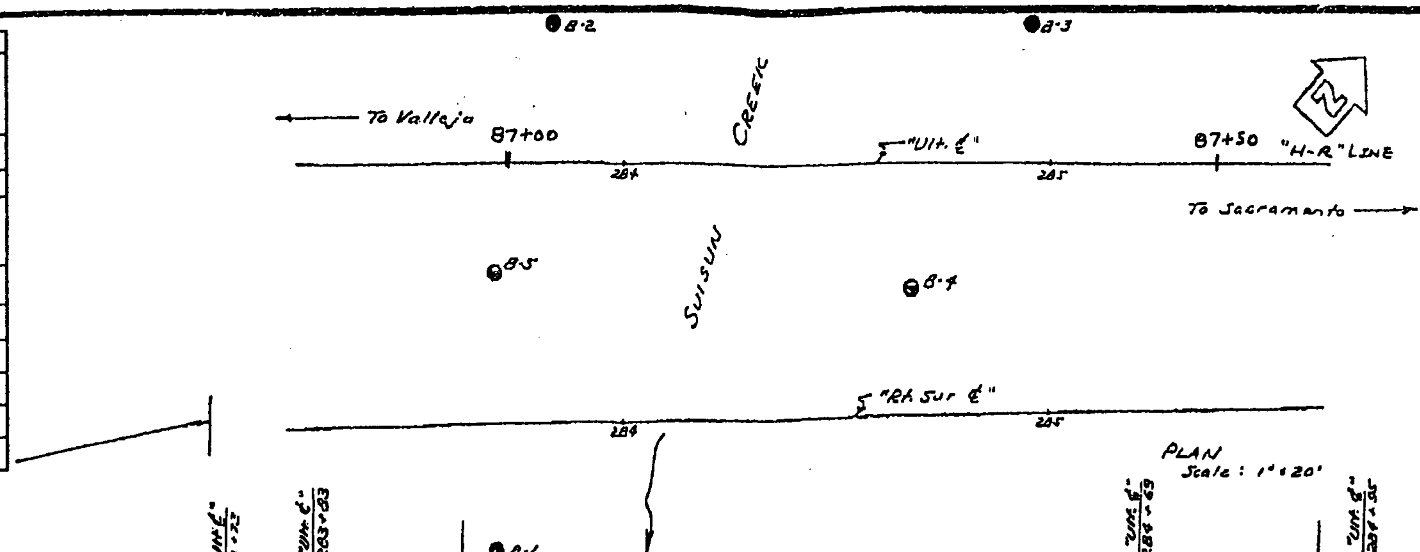
NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU: 04264
EA: 04-0A5311

BRIDGE No. 230007R

Sheet	of
11	11

Ult. Constr. CL Station x $\frac{1200}{3937}$ + 0.516 = "H-R" Line Station



BM - USC & GS Mon. H-129
a std. brass disc, S.W. wingwall
4' Rt. Sta. 283+83 = "Rt. Sur ℄"
Elev. 37.55

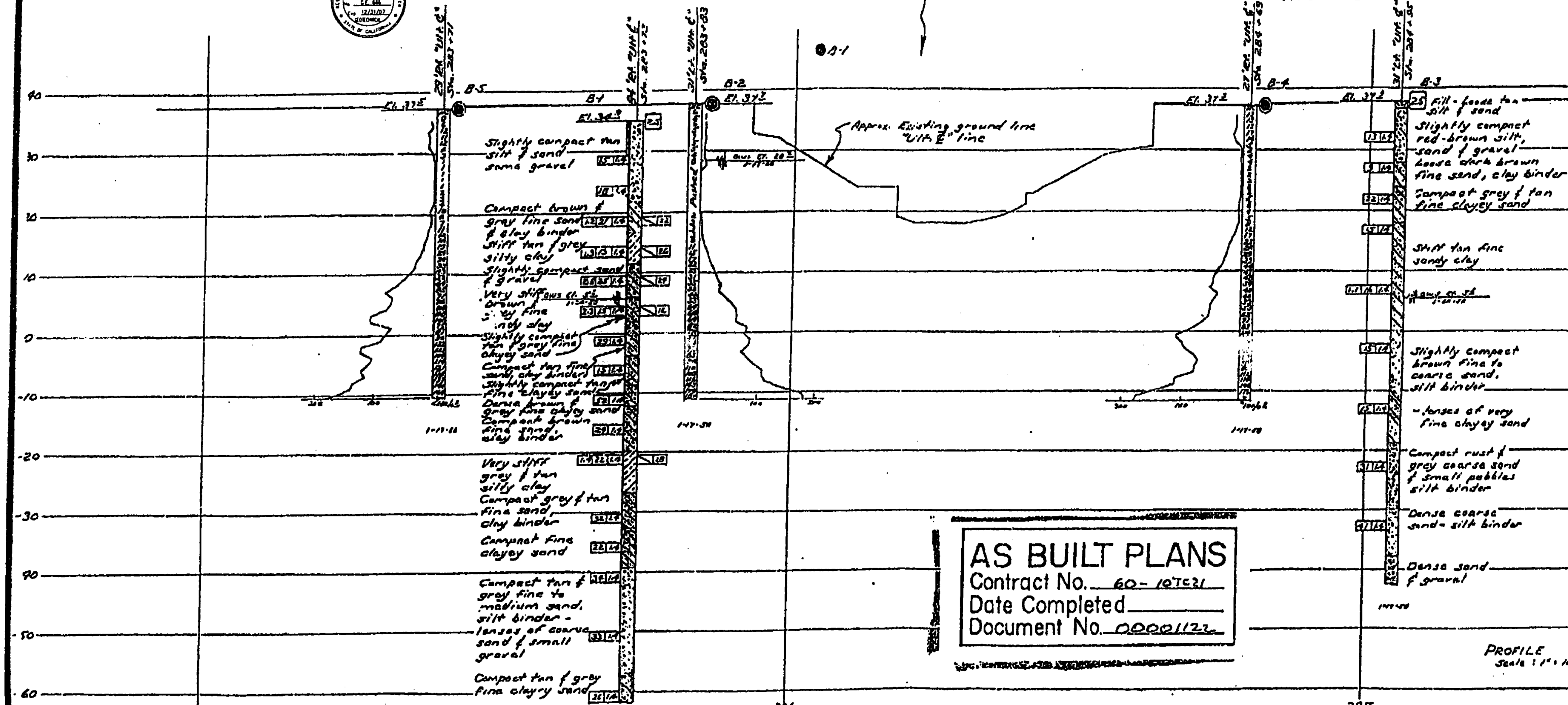
Revisions made to this Log of Test Borings from the original 1960 Log of Test Borings are the addition of the following table and notes:

Boring	Stations	Offset from "Ult. Construction CL" Line
B-1	87+00	25.60 m Rt.
B-2	87+03	9.45 m Lt.
B-3	87+37	9.45 m Lt.
B-4	87+29	8.23 m Rt.
B-5	86+99	8.84 m Rt.

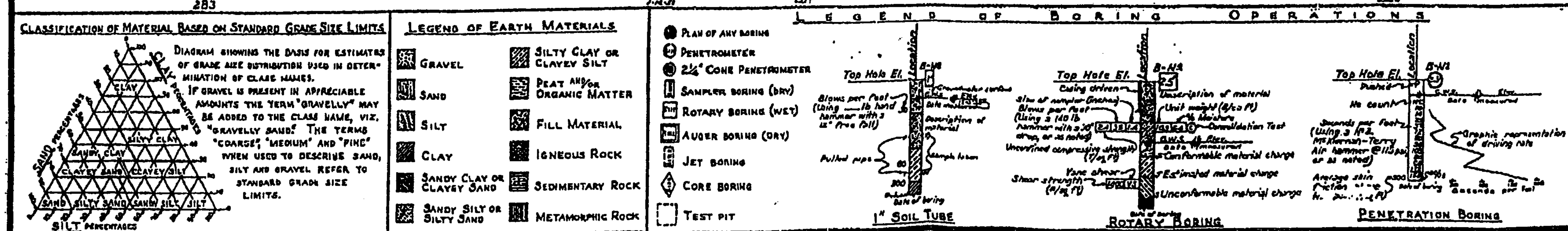
Ult. Constr. CL. Station (English) x 1200/3937 + 0.516 = "H-R" Line Station (Metric)

Notes:

1. See the General Plan and/or Foundation Plan for Metric Stationing.
2. The Division of Structure Design produced the data presented in the table above. The data are the metric locations for the "As-built" Test Boring referenced to the proposed new structure location. This table is presented on the As-Built Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested party.



AS BUILT PLANS
Contract No. 60-10TC21
Date Completed ______
Document No. 00001122



NOTES

[redacted]

Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

SUISUN CREEK BRIDGE WIDENING

LOG OF TEST BORINGS

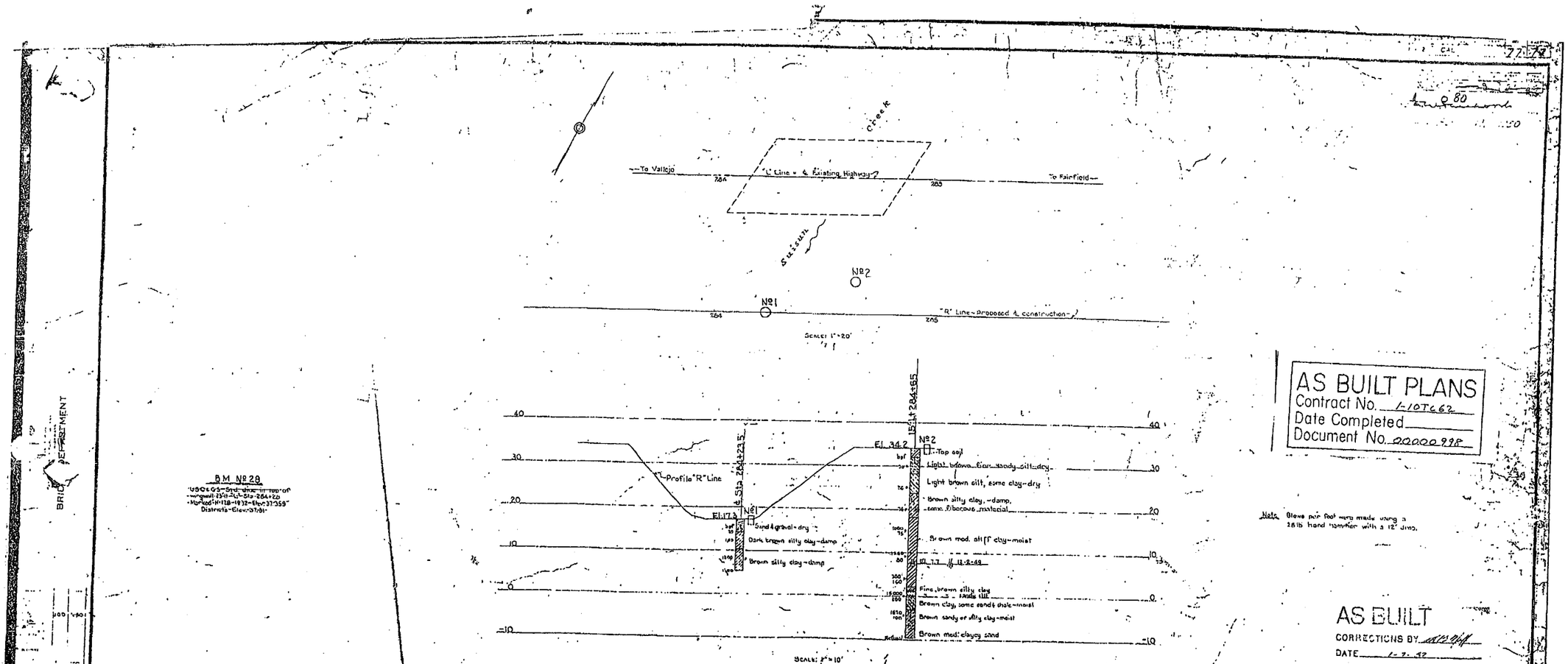
Scale As Noted | Bridge 23-07 | Drawing C-5896-11

BRIDGE DEPARTMENT

PR-5896-3

346

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.



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DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	18.3/32.3		

REGISTERED ENGINEER–GEOTECHNICAL

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. GE 666 — Exp. 12/31/07 — GEOTECHNICAL — STATE OF CALIFORNIA

PARIKH CONSULTANTS, INC.
356 SOUTH MILPITAS BLVD
MILPITAS CA 95035

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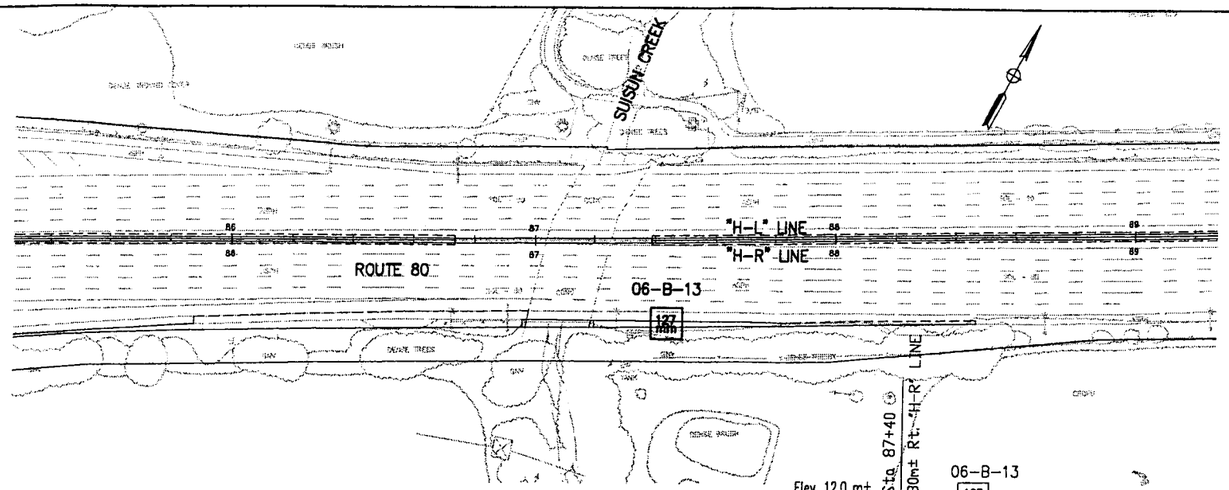
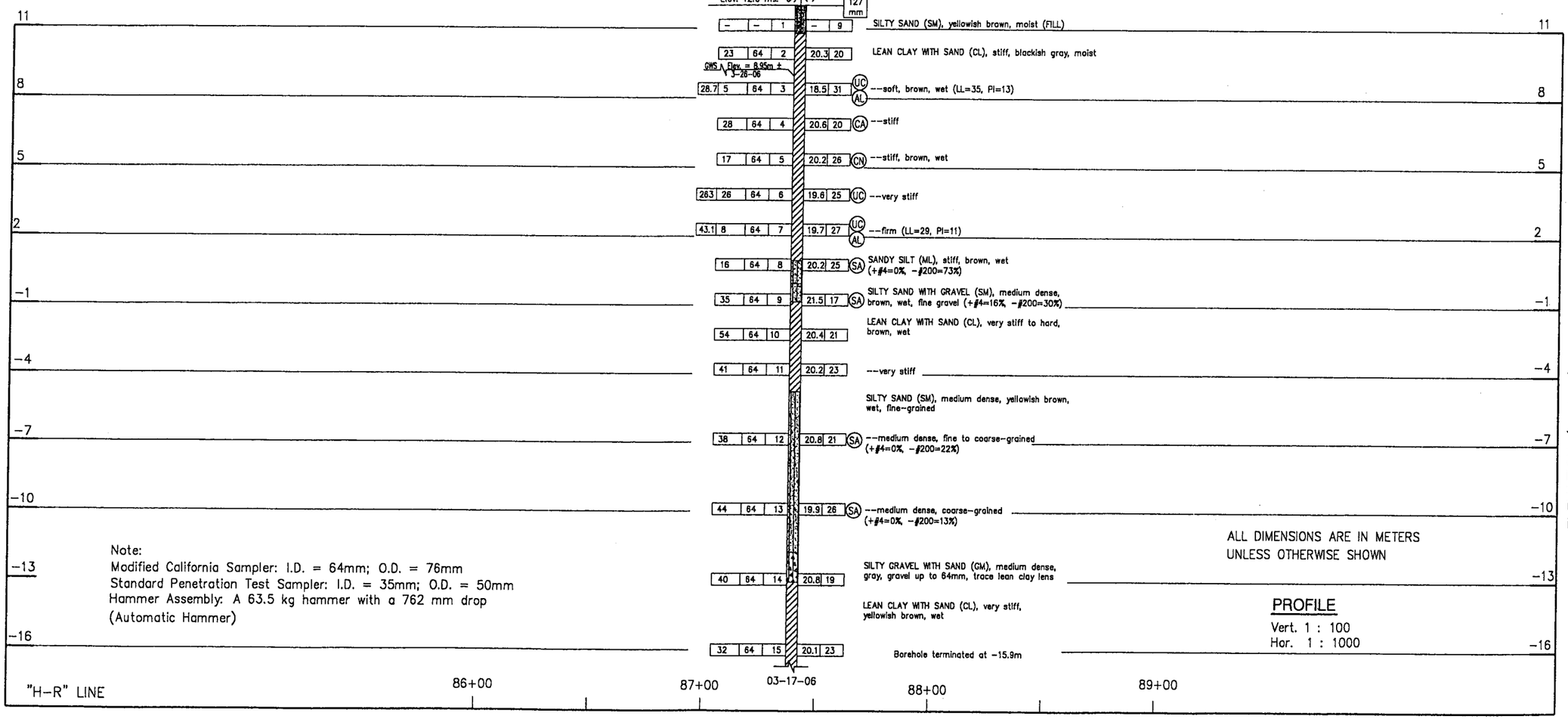
DRAFT



PLAN
1 : 1000

Benchmark:

The horizontal coordinate values are in the California Coordinate System (CCS 83) Zone 2 and based on the North American Datum of 1983 as adjusted to the California High Precision Network (HPGN) 92 Epoch 1991.35. The vertical control values are based on the North American Datum of 1988 (NAVD88) provided by National Geodetic Survey (NGS)

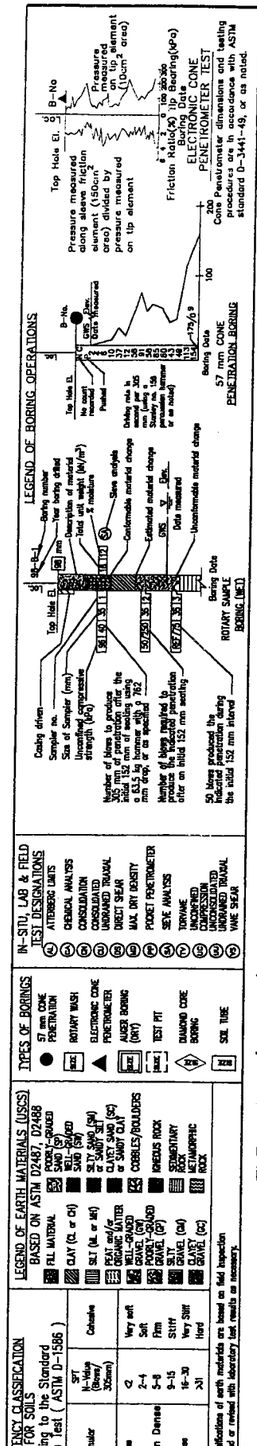


Note:
Modified California Sampler: I.D. = 64mm; O.D. = 76mm
Standard Penetration Test Sampler: I.D. = 35mm; O.D. = 50mm
Hammer Assembly: A 63.5 kg hammer with a 762 mm drop
(Automatic Hammer)

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

PROFILE

Vert. 1 : 100
Hor. 1 : 1000



DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN	By: R. LAIRD	Field Investigation by: L. S. BHANGOO
CHECKED	By: A. LAM	

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

A. LAM
PROJECT ENGINEER

STRUCTURE NO.	230007R
KILOMETER POST	–

SUISUN CREEK BRIDGE (WIDEN)

LOG OF TEST BORINGS 1 OF 1

ORIGINAL SCALE IN MILLIMETERS
FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 04264
EA 04-0A5311

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET | OF

PLATE A-1

LOTB1

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SOL	80	18.3/32.3		

REGISTERED ENGINEER--GEOTECHNICAL

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. GE 666 — Exp 12/31/07 — GEOTECHNICAL — STATE OF CALIFORNIA

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

PARIKH CONSULTANTS, INC.
356 SOUTH MILPITAS BLVD
MILPITAS CA 95035

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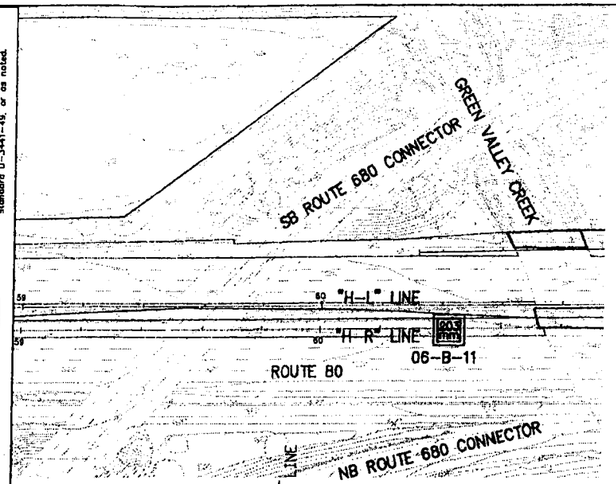
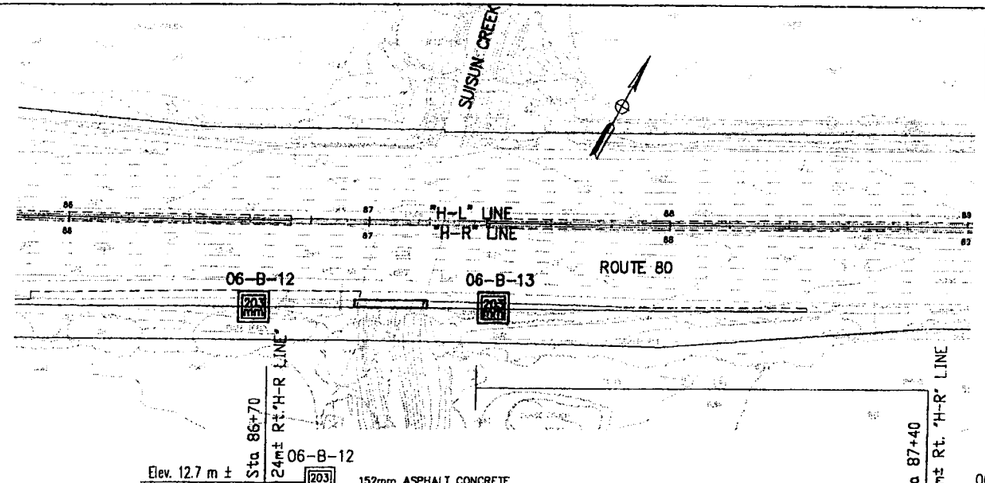
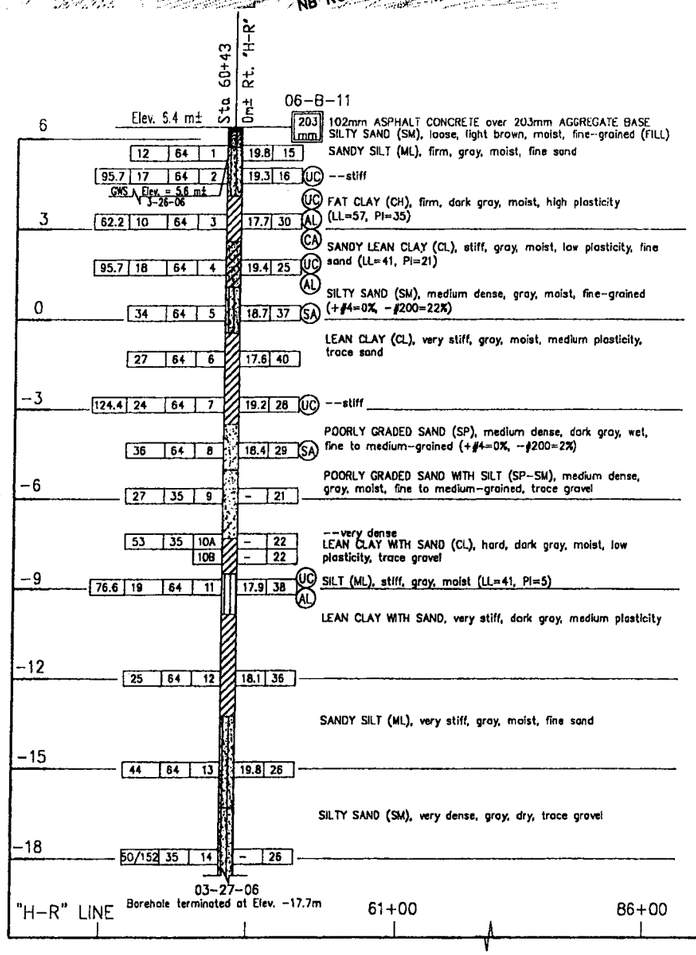
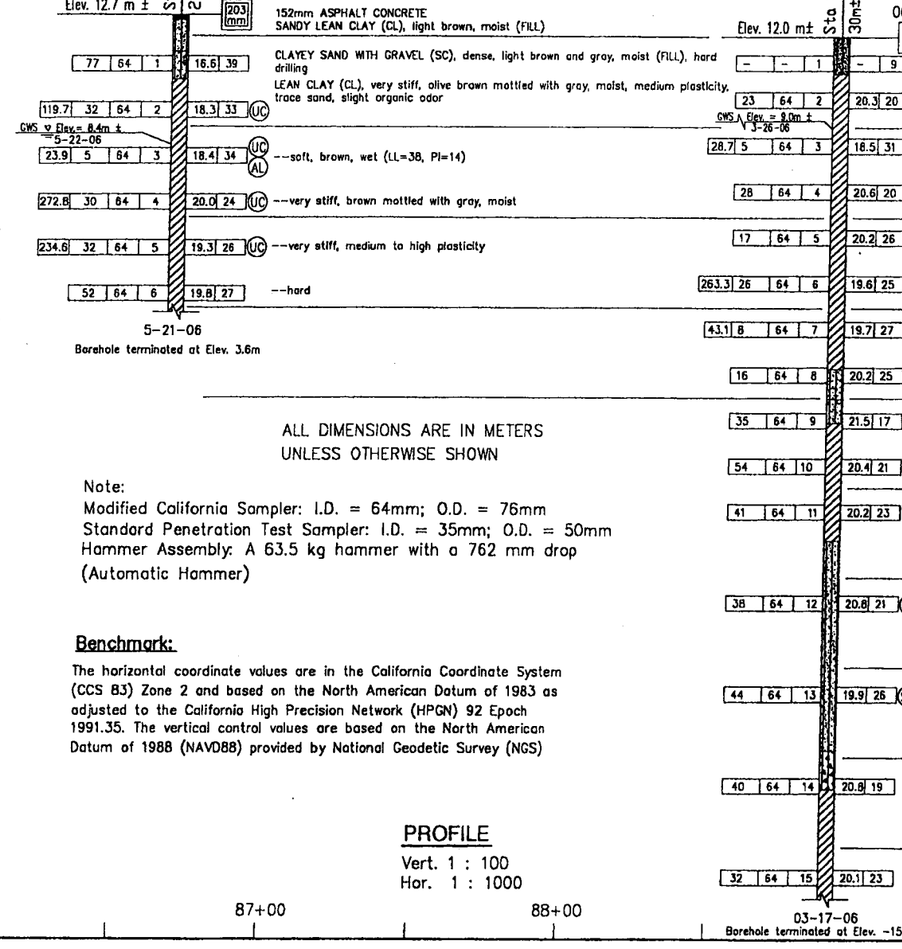




PLAN
1 : 1000





ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

Note:
Modified California Sampler: I.D. = 64mm; O.D. = 76mm
Standard Penetration Test Sampler: I.D. = 35mm; O.D. = 50mm
Hammer Assembly: A 63.5 kg hammer with a 762 mm drop (Automatic Hammer)

Benchmark:

The horizontal coordinate values are in the California Coordinate System (CCS 83) Zone 2 and based on the North American Datum of 1983 as adjusted to the California High Precision Network (HPGN) 92 Epoch 1991.35. The vertical control values are based on the North American Datum of 1988 (NAVD88) provided by National Geodetic Survey (NGS)

PROFILE
Vert. 1 : 100
Hor. 1 : 1000

LEGEND OF BORING OPERATIONS

IN-SITU, LAB & FIELD TEST DESIGNATIONS

TYPES OF BORINGS

LEGEND OF EARTH MATERIALS (USCS) BASED ON ASTM D2487, D2488

CONSISTENCY CLASSIFICATION FOR SOILS According to the Standard Penetration Test (ASTM D-1586)

NOTE: Visual classifications of earth materials are based on field inspection and or a confirmed or revised with laboratory test results as necessary.

DESIGN OVERSIGHT		DESIGN	By: S. PAMPATI	Field Investigation by: R. LIARD	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	STRUCTURE NO. -	I-80 HOV PROJECT: RED TOP ROAD TO AIR BASE PARKWAY
SIGN OFF DATE		CHECKED	By: A. LAM				KILOMETER POST -	LOG OF TEST BORINGS 5 OF 17

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 04264
EA 04-0A5311

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET | OF

LOTB1

PLATE A-5

Benchmark:

The horizontal coordinate values are in the California Coordinate System (CCS 83) Zone 2 and based on the North American Datum of 1983 as adjusted to the California High Precision Network (HPGN) 92 Epoch 1991.35. The vertical control values are based on the North American Datum of 1988 (NAVD88) provided by National Geodetic Survey (NGS)

Note:
Modified California Sampler: I.D. = 64mm; O.D. = 76mm
Standard Penetration Test Sampler: I.D. = 35mm; O.D. = 50mm
Hammer Assembly: A 63.5 kg hammer with a 762 mm drop
(Automatic Hammer)

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SOL	80	18.3/32.3		

Caltrans Metric

REGISTERED ENGINEER–GEOTECHNICAL

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/07 — GEOTECHNICAL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

PARIKH CONSULTANTS, INC.
356 SOUTH MILPITAS BLVD
MILPITAS CA 95035

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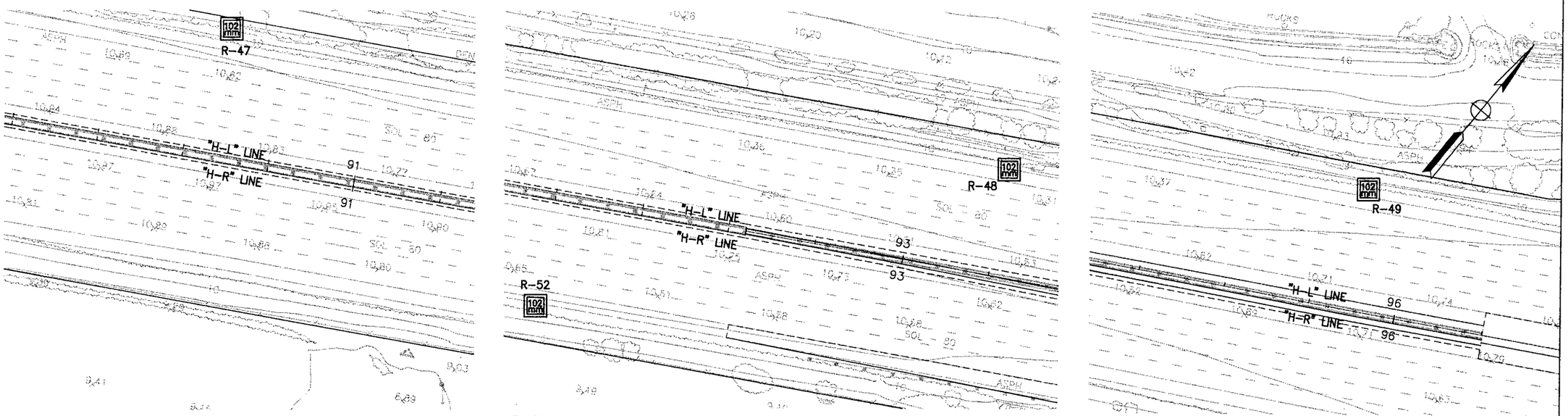
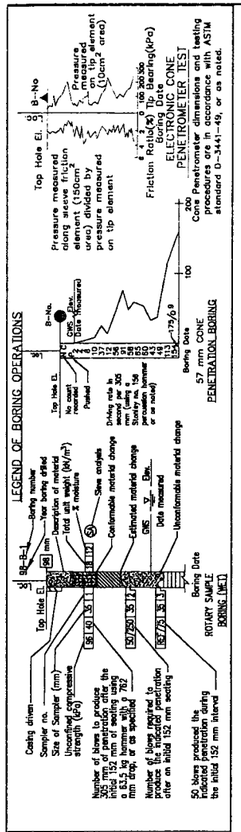


PLAN
1 : 500

PROFILE
Vert. 1 : 100
Hor. 1 : 1000



DESIGN OVERSIGHT		DESIGN By: L. TRAN	Field investigation by: L. BHANGOO
SIGN OFF DATE		CHECKED By: A. LAM	

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

A. LAM
PROJECT ENGINEER

STRUCTURE NO.	–
KILOMETER POST	–

I-80 HOV PROJECT: RED TOP ROAD TO AIR BASE PARKWAY

LOG OF TEST BORINGS 8 OF 17

ORIGINAL SCALE IN MILLIMETERS
FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 04264
EA 04-0A5311

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET | OF

LOTB1

PLATE A-8

Benchmark:

The horizontal coordinate values are in the California Coordinate System (CCS 83) Zone 2 and based on the North American Datum of 1983 as adjusted to the California High Precision Network (HPGN) 92 Epoch 1991.35. The vertical control values are based on the North American Datum of 1988 (NAVD88) provided by National Geodetic Survey (NGS)

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SOL	80	18.3/32.3		

REGISTERED ENGINEER–GEOTECHNICAL

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/07 — GEOTECHNICAL — STATE OF CALIFORNIA

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

PARIKH CONSULTANTS, INC.
356 SOUTH MILPITAS BLVD
MILPITAS CA 95035

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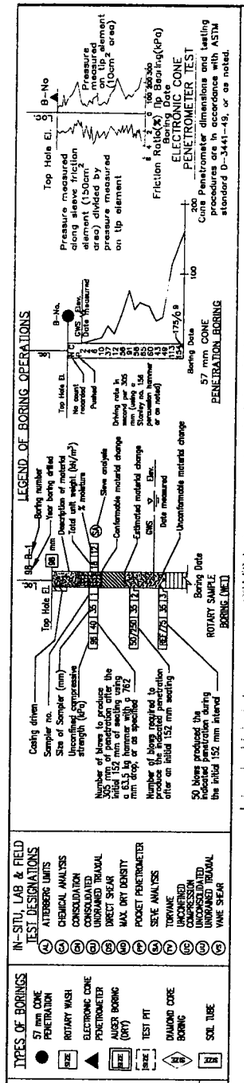

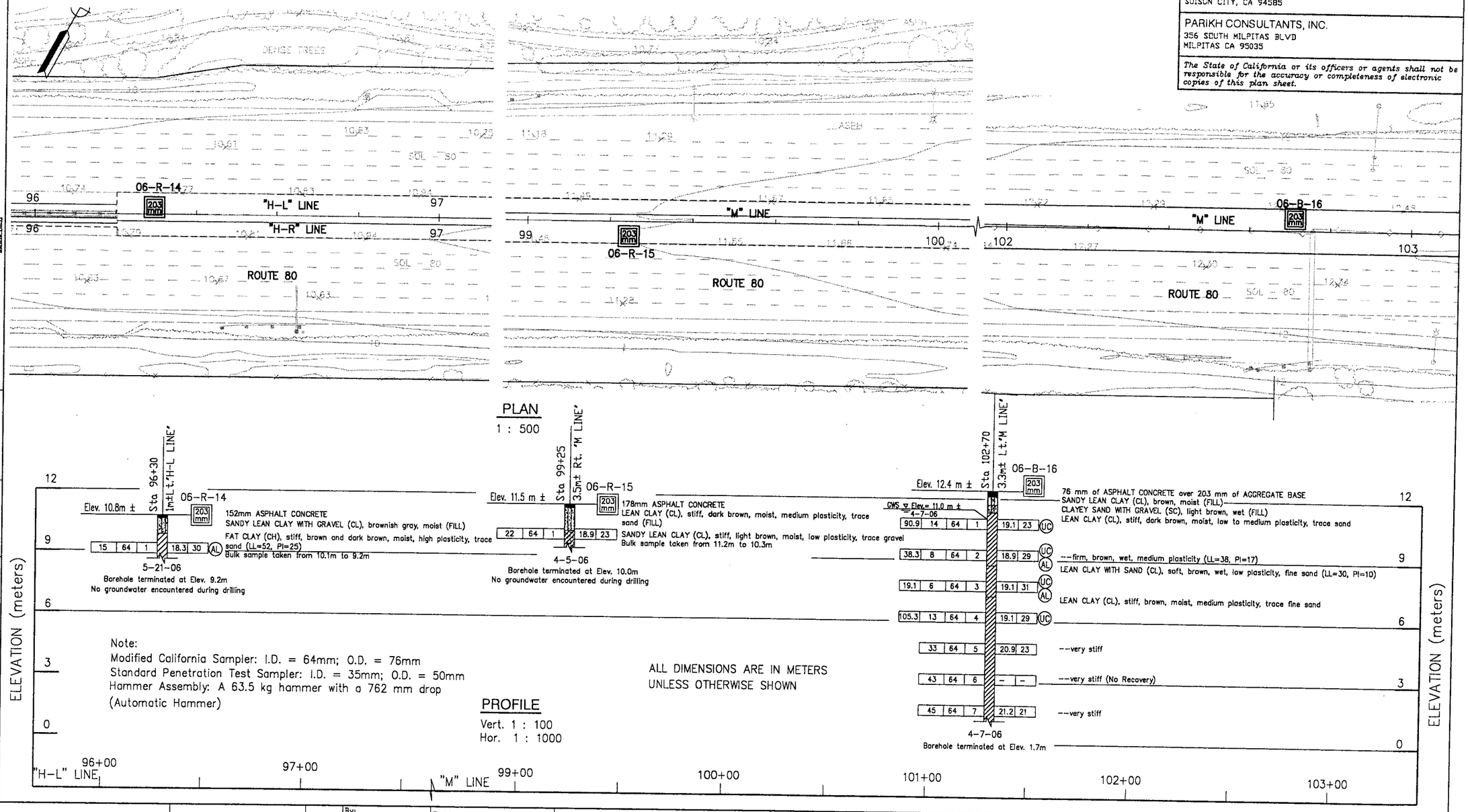

Note:
Modified California Sampler: I.D. = 64mm; O.D. = 76mm
Standard Penetration Test Sampler: I.D. = 35mm; O.D. = 50mm
Hammer Assembly: A 63.5 kg hammer with a 762 mm drop
(Automatic Hammer)

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

PROFILE
Vert. 1 : 100
Hor. 1 : 1000

IN-SITU, LAB & FIELD TEST DESIGNATIONS
ATTERBERG LIMITS
ORGANICAL ANALYSIS
CONSOLIDATION
CONSOLIDATED UNDRAINED TRIAXIAL
DIRECT SHEAR
MAX. DRY DENSITY
POCKET PENETROMETER
SIEVE ANALYSIS
TORVANE
UNCONFINED COMPRESSION
UNCONSOLIDATED UNDRAINED TRIAXIAL
VANE SHEAR

TYPES OF BORINGS
57 mm CONE PENETRATION
ROTARY WASH
ELECTRONIC CONE PENETROMETER
AUGER BORING (DRY)
TEST PIT
DIAMOND CORE BORING
SOIL TUBE

LEGEND OF EARTH MATERIALS (USCS) BASED ON ASTM D2487, D2488
FILL MATERIAL
CLAY (CL or CH)
SILT (ML or MH)
PEAT and/or ORGANIC MATTER
POORLY-GRADED SAND (SP)
SILTY SAND (SM)
CLAYEY SAND (SC)
COBBLES/BOULDERS
IGNEOUS ROCK
SEDIMENTARY ROCK
METAMORPHIC ROCK
POORLY-GRADED GRAVEL (GP)
SILTY GRAVEL (GM)
CLAYEY GRAVEL (GC)

CONSISTENCY CLASSIFICATION FOR SOILS
According to the Standard Penetration Test (ASTM D-1586)

SPT (N-Value) (Blows/ 305mm)	Granular	Cohesive	SPT (N-Value) (Blows/ 305mm)
0-4	Very loose	Very soft	<2
5-10	Loose	Soft	2-4
11-30	Medium Dense	Firm	5-8
31-50	Dense	Stiff	9-15
>50	Very Dense	Very Stiff	16-30
		Hard	>31

NOTE: Visual classifications of earth materials are based on field inspection and or a confirmed or revised with laboratory test results as necessary.

DESIGN	By: S. PAMPATI	Field Investigation by: R. LIARD
CHECKED	By: A. LAM	

DESIGN OVERSIGHT

SIGN OFF DATE

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

A. LAM
PROJECT ENGINEER

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS
0 10 20 30 40 50 60 70 80 90 100

CU 04264
EA 04-0A5311

STRUCTURE NO.	I-80 HOV PROJECT: RED TOP ROAD TO AIR BASE PARKWAY
–	
KILOMETER POST	LOG OF TEST BORINGS 9 OF 17
–	

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET | OF

LOTB1

PLATE A-9

Benchmark:

The horizontal coordinate values are in the California Coordinate System (CCS 83) Zone 2 and based on the North American Datum of 1983 as adjusted to the California High Precision Network (HPGN) 92 Epoch 1991.35. The vertical control values are based on the North American Datum of 1988 (NAVD88) provided by National Geodetic Survey (NGS)

Caltrans Metric

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SOL	80	18.3/32.3		

REGISTERED ENGINEER–GEOTECHNICAL

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. GE 666 — Exp 12/31/07 — GEOTECHNICAL — STATE OF CALIFORNIA

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

PARIKH CONSULTANTS, INC.
356 SOUTH MILPITAS BLVD
MILPITAS CA 95035

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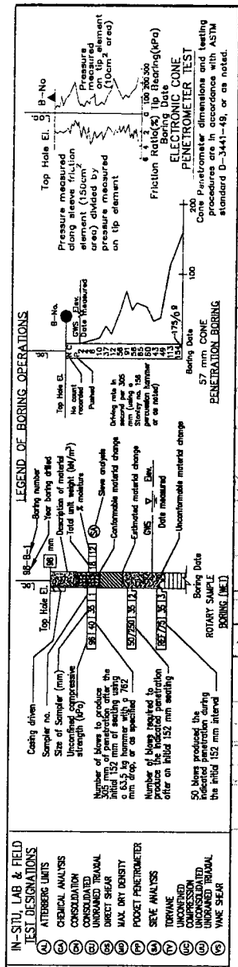

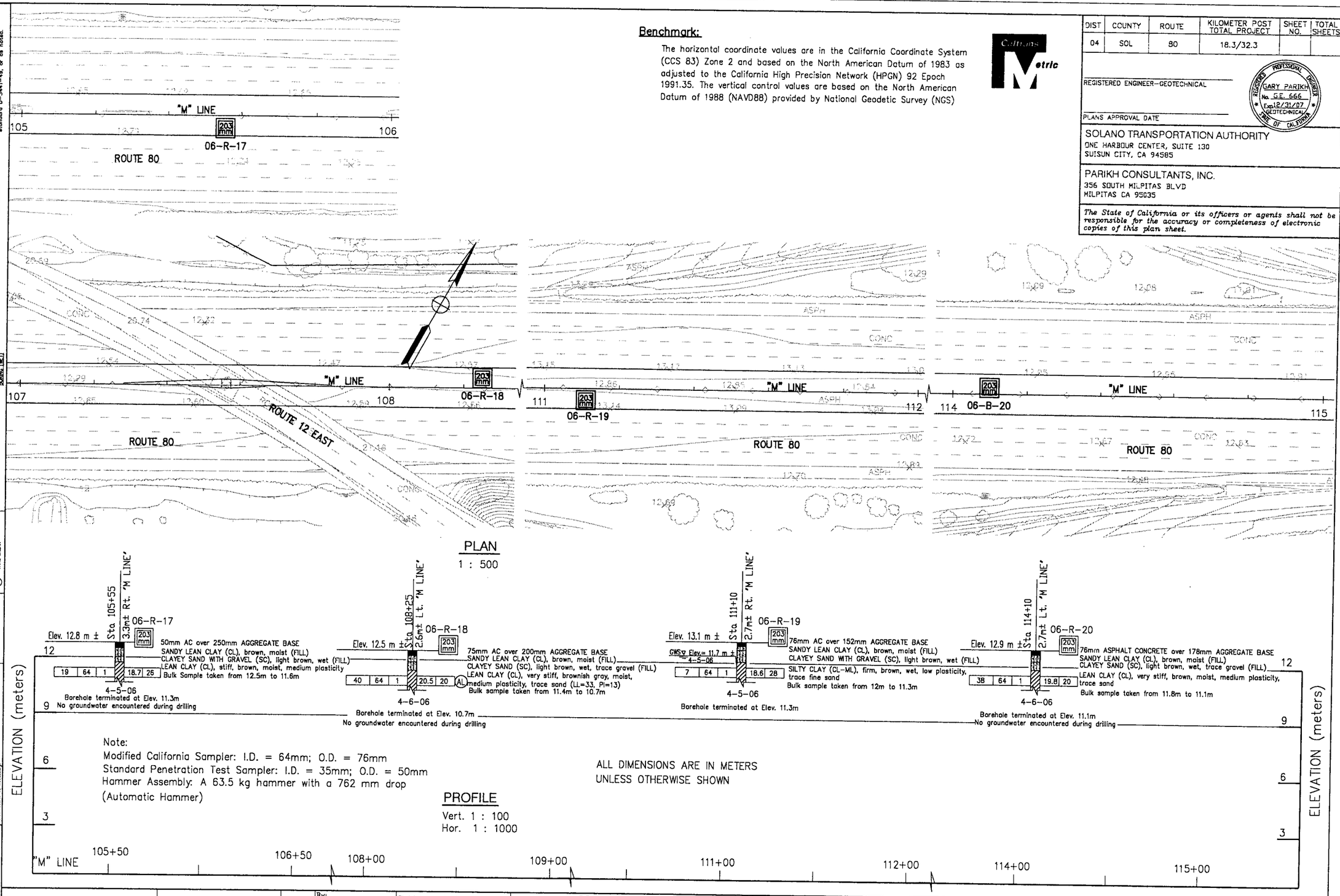

DESIGN OVERSIGHT		DESIGN By: S. PAMPATI	Field Investigation by: R. LIARD	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	STRUCTURE NO. –
SIGN OFF DATE		CHECKED By: A. LAM		A. LAM PROJECT ENGINEER	KILOMETER POST –

I-80 HOV PROJECT: RED TOP ROAD TO AIR BASE PARKWAY

LOG OF TEST BORINGS 10 OF 17

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 04264
EA 04-0A5311

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET | OF

LOTB1

PLATE A-10

DIST.	COUNTY	ROUTE	KILOMETER POSTS TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80, 680	20.4/25.5		

01-09-02

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
S.T. Kakihara
No. 42351
Exp. 3-31-04
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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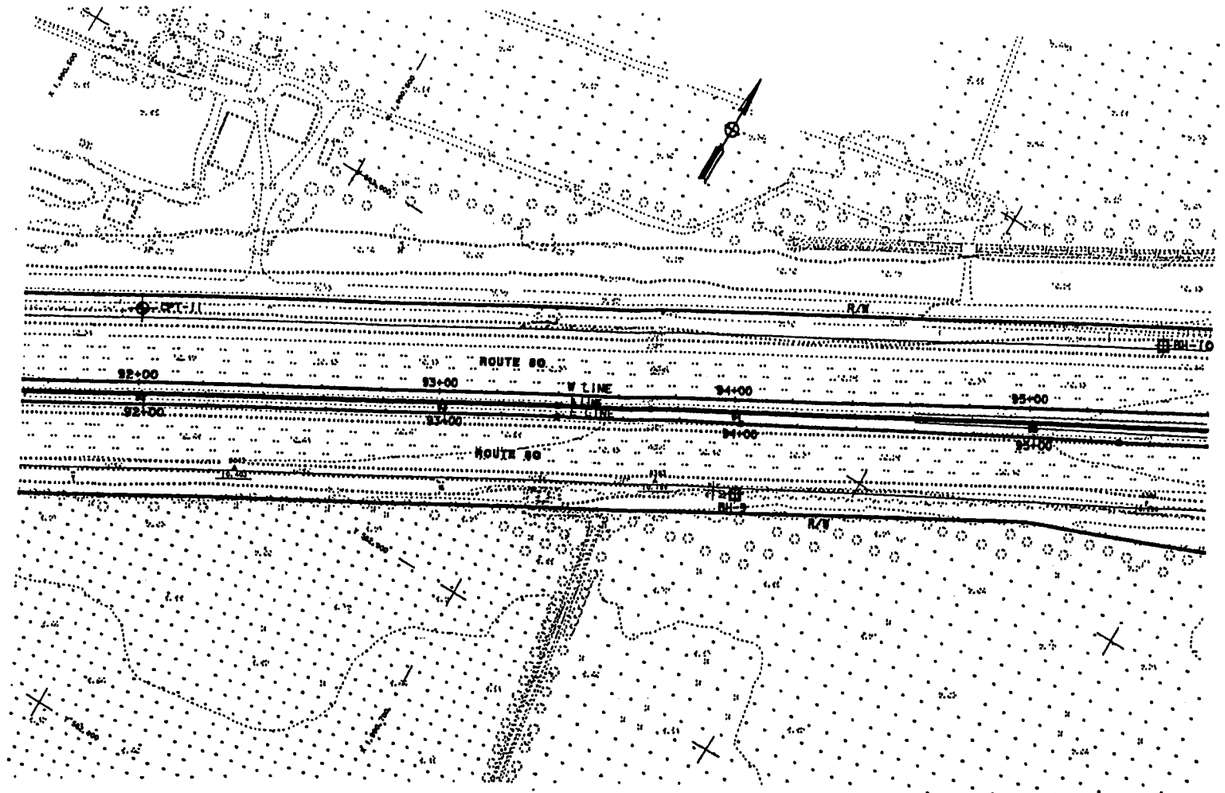
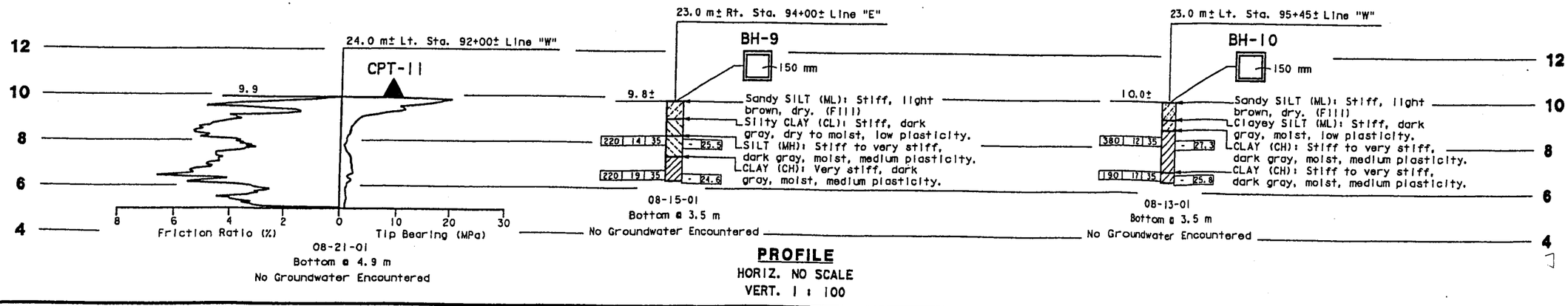
All Dimensions are in Meters unless otherwise shown

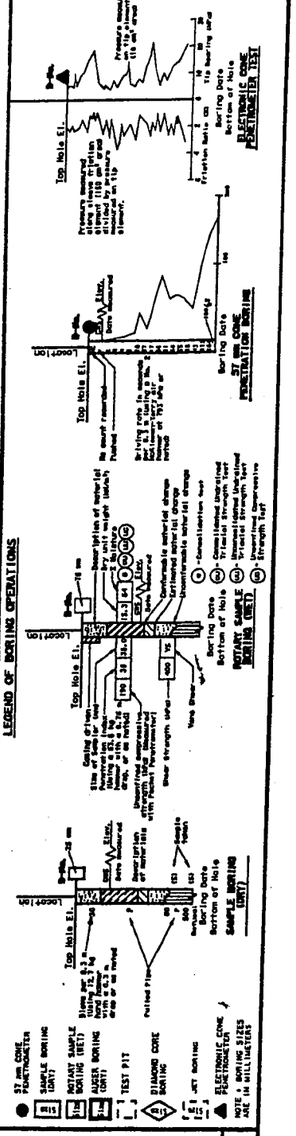


PLAN
SCALE 1 : 1000



PROFILE
HORIZ. NO SCALE
VERT. 1 : 100

LEGEND OF BORING OPERATIONS



LEGEND OF EARTH MATERIALS

GRAVEL · SAND · SILT · CLAY · CLAYEY SILT · PEAT and/or ORGANIC MATTER · FILL MATERIAL · IGNEOUS ROCK · SEDIMENTARY ROCK · METAMORPHIC · SANDY CLAY or CLAYEY SAND · SANDY SILT or SILTY SAND · SILTY CLAY

CONSISTENCY CLASSIFICATION FOR SOILS According to the Standard Penetration Test

	Cohesive		Granular	
SPT N-Value (Blows/0.3 m)	Cz		Granular	
0-1		Very Soft		
2-4		Soft	Very Loose	
5-8		Firm	Loose	
9-15		Stiff	Medium Dense	
16-30		Very Stiff	Dense	
>31		Hard	Very Dense	
0-4				
5-10				
11-30				
31-50				
>50				

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply material analysis.

DIVISION OF ENGINEERING SERVICES		FIELD INVESTIGATION BY:	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	GEOTECHNICAL SERVICES OFFICE OF GEOTECHNICAL DESIGN - WEST	BRIDGE NO. / KILOMETER POST
DRAWN BY	M. Reynolds; M. Mehta 01/02	T. Nguyen			
CHECKED BY	T. Nguyen				

GEOTECHNICAL INVESTIGATION
LOG OF TEST BORINGS

DATE PLOTTED => 9-Jan-2002
TIME PLOTTED => 14:04

DIST.	COUNTY	ROUTE	KILOMETER POSTS TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80, 680	20.4/25.5		

Metric

01-09-02

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER S.T. Kakihara No. 42351 Exp. 3-31-04 CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

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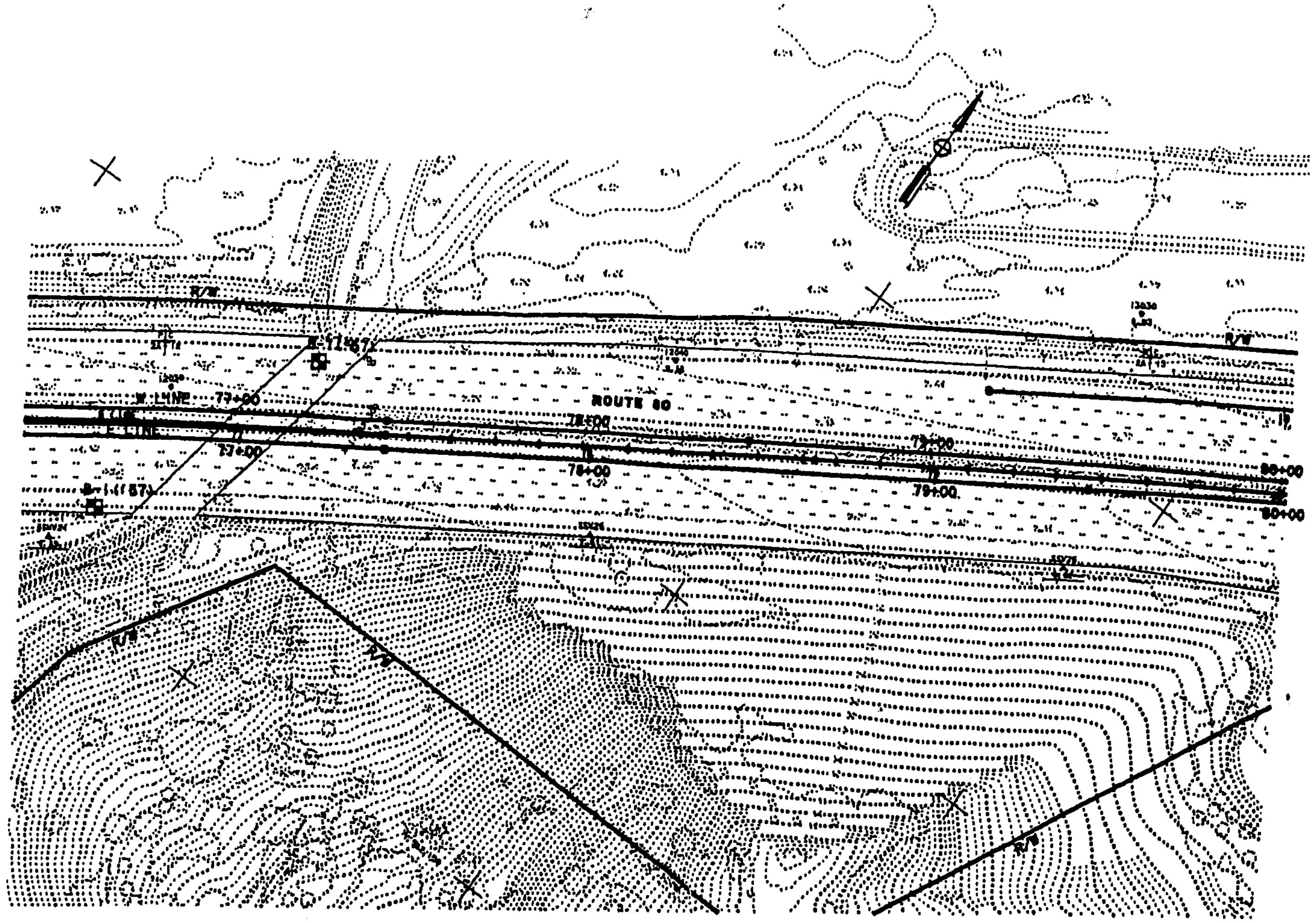
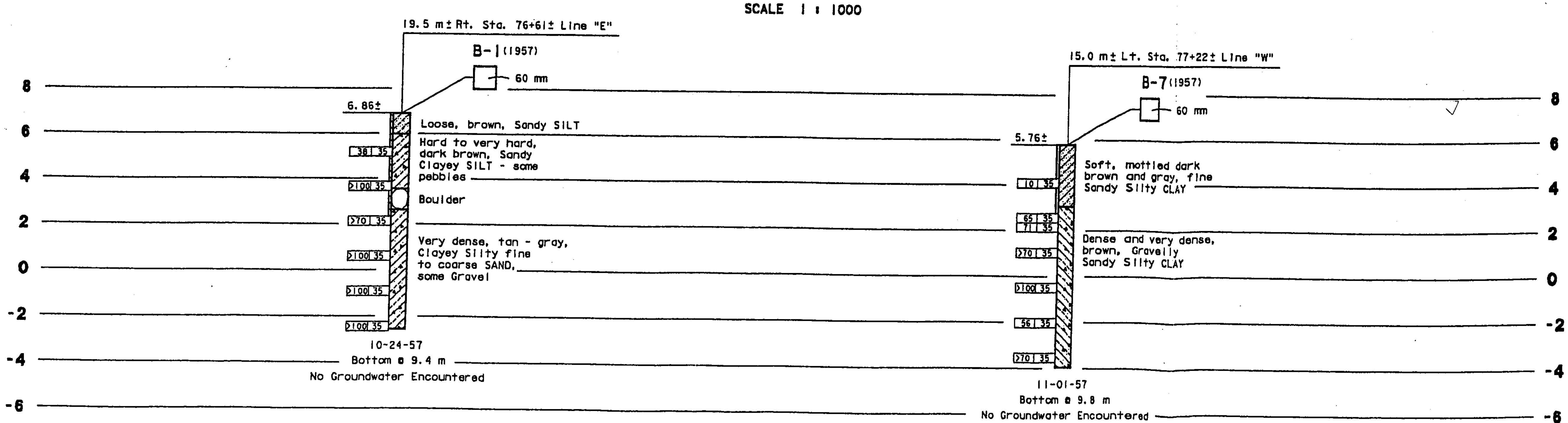


PLAN

SCALE 1 : 1000

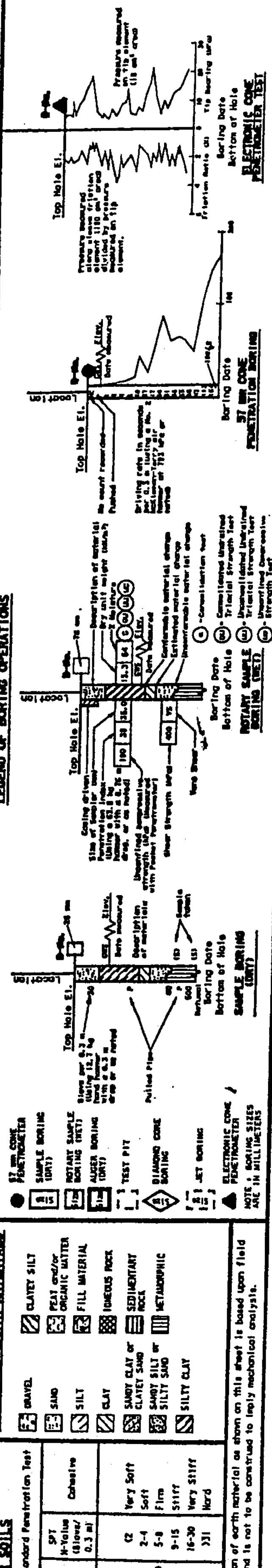


PROFILE

HORIZ. NO SCALE

VERT. 1 : 100

In order to create an electronic file, these Log of Test Borings were reconstructed based on a "Vintage Log of Test Borings" from earlier foundation investigation during November 1957 and are kept in the As Built Plans under Contract No. 60-10TC21.



NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

DIVISION OF ENGINEERING SERVICES		FIELD INVESTIGATION BY:	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	GEOTECHNICAL SERVICES OFFICE OF GEOTECHNICAL DESIGN - WEST	BRIDGE NO. / KILOMETER POST	GEOTECHNICAL INVESTIGATION LOG OF TEST BORINGS
DRAWN BY	M. Reynolds; M. Mehta 01/02					
CHECKED BY	T. Nguyen					

DATE PLOTTED => 9-Jan-2002
TIME PLOTTED => 10:58

DIST.	COUNTY	ROUTE	KILOMETER POSTS TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80,680	20.4/25.5		

01-09-02
REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
S.T. Kakihara
No. 42351
Exp. 3-31-04
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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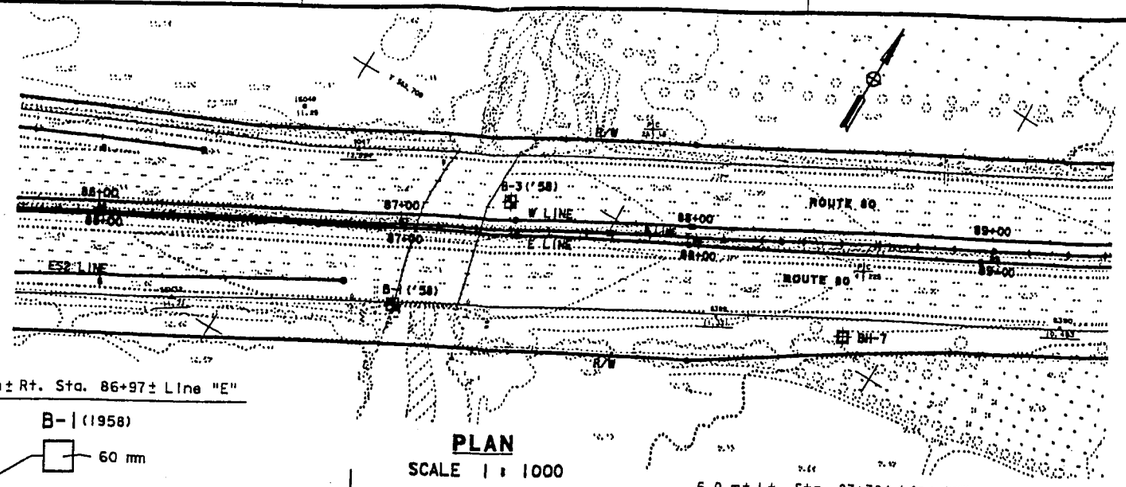
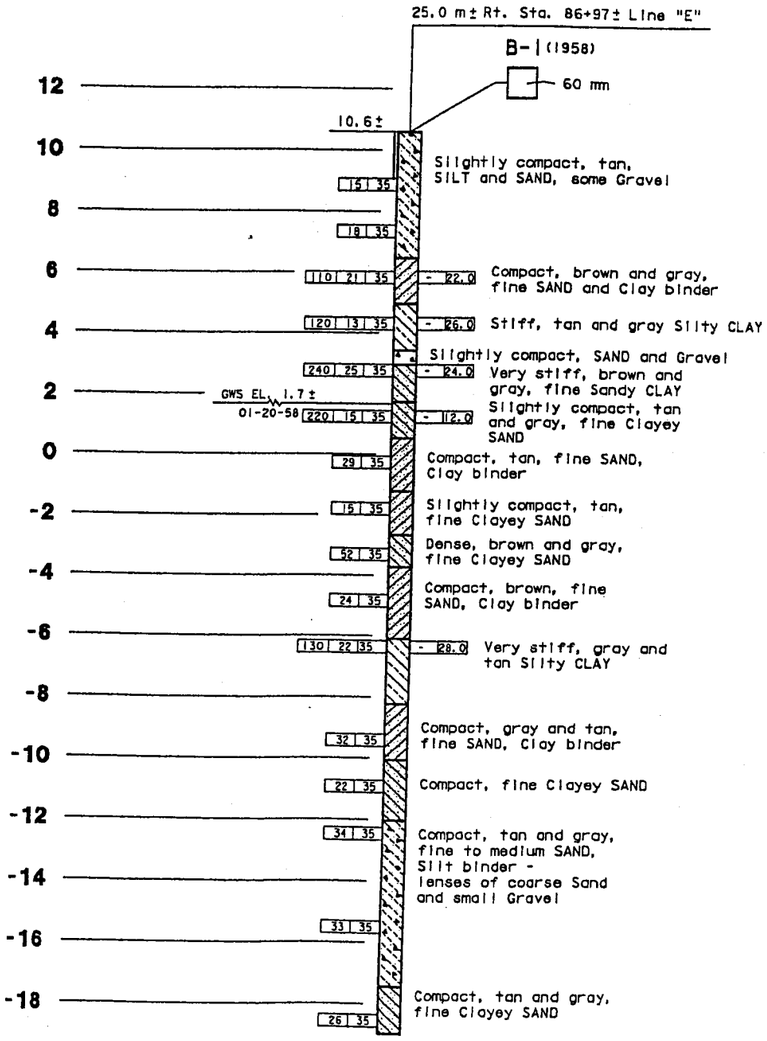
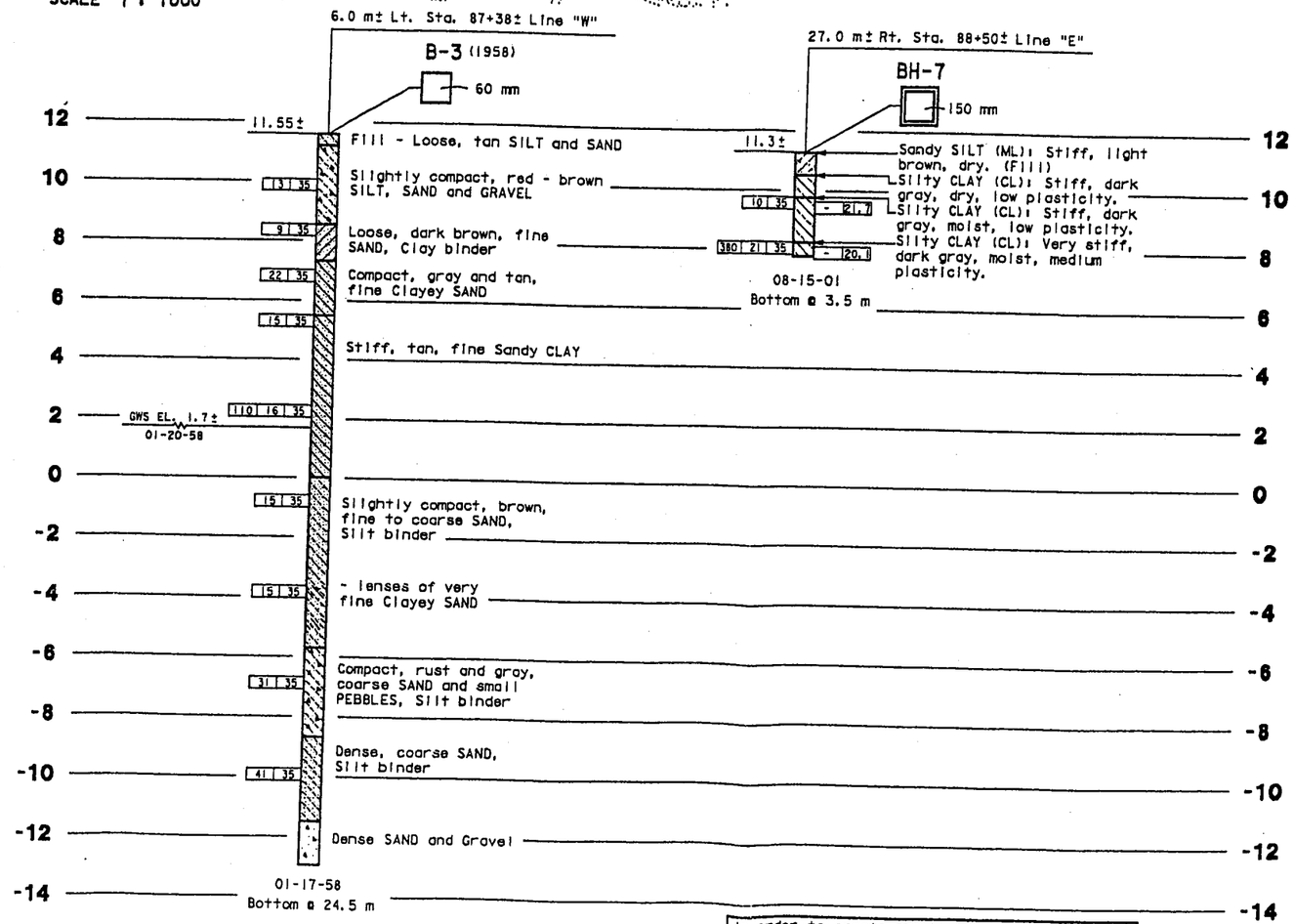
All Dimensions are in Meters unless otherwise shown



PLAN
SCALE 1 : 1000

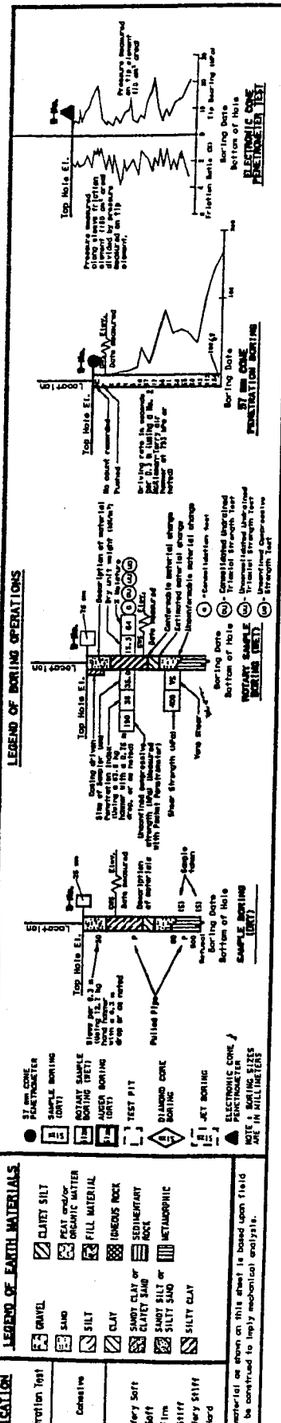


PROFILE
HORIZ. NO SCALE
VERT. 1 : 100



PROFILE
HORIZ. NO SCALE
VERT. 1 : 100

In order to create an electronic file, these Log of Test Borings were reconstructed based on a "Vintage Log of Test Borings" from earlier foundation investigation during January 1958 and are kept in the As Built Plans under Contract No. 60-110TC2I.



DIVISION OF ENGINEERING SERVICES		FIELD INVESTIGATION BY:	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	GEOTECHNICAL SERVICES OFFICE OF GEOTECHNICAL DESIGN - WEST	BRIDGE NO.
DRAWN BY	M. Reynolds; M. Mehta 01/02				KILOMETER POST
CHECKED BY	T. Nguyen				

GEOTECHNICAL INVESTIGATION
LOG OF TEST BORINGS

DATE PLOTTED => 9-Jan-2002
TIME PLOTTED => 11:00

DIST.	COUNTY	ROUTE	POST MILES — TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SOL	80,12	14.5/16.8 / 6.1/8.2	145	172

Robert G. Gonsalves #165
REGISTERED GEOLOGIST — CERTIFIED ENGINEERING GEOLOGIST NUMBER
DATE APPROVED October 7, 1985

LEGEND OF BORING OPERATIONS

LEGEND OF EARTH MATERIALS

CONSISTENCY CLASSIFICATION FOR SOILS
According to the Standard Penetration Test

NOTE: Classification of earth material as shown on log sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

USBPR SOIL CLASSIFICATION SYSTEM

BENCH MARK

B.M. RM 346. FD. T BAR WITH CAP S. SHLD. 70'± LT. ℄ RTE. 80 STA. 346+00 ELEV. 38.25'.

℄ RTE. 12 WESTBOUND CONNECTOR

℄ RTE. 80

TO VALLEJO

352+00 TO SACRAMENTO

PLAN
1" = 20'

AS BUILT
CORRECTIONS BY C. MALONEY
CONTRACT NO. 10-071624
DATE 3/16/88
NO AS BUILT CHANGES

APPROXIMATE ORIGINAL GROUND LINE ALONG ℄ RTE. 12, W.B.

B-1 — 5' Rt. STA. 348+45 ℄ RTE. 12 WB
- Very stiff, brown SILTY CLAY, slightly moist.
- Loose, brown SILT, moist to very moist.
- Soft, brown clay with SILT lenses, plastic, moist to very moist.
- Soft, brown SANDY CLAY with SAND lenses, moist to very moist.
- Stiff, brown CLAY with gray mottling and SAND lenses moist to very moist.
- Very stiff, brown SANDY SILTY CLAY, plastic, slightly moist.
- Hard, brown CLAY, slightly moist.
- Soft, brown CLAY, moist.
- Bedrock: SILTstone weak fewer, moist
- Slightly compact, brown, fine SILTY SAND, saturated.
- Compact, brown SILTY fine to medium SAND, moist.
- Very dense, cobbles, PEBBLES in CLAYEY, SANDY MATRIX, (stream) slightly moist.
- Stiff brown and gray SILTY CLAY, plastic, slightly moist.
- Very stiff, gray and brown SANDY SILTY CLAY with PEBBLE lenses, moist.
- Dense, brown, medium SAND with some fines and PEBBLES, saturated.

6-13-84

B-2 — 34' Lt. STA. 349+27 ℄ RTE. 12 WB
- Very stiff, brown SILTY CLAY, slightly moist.
- Loose, brown SILT, moist to very moist.
- Soft, brown SANDY CLAY with SAND lenses, moist to very moist.
- Stiff, brown CLAY with gray mottling and SAND lenses moist to very moist.
- Very stiff, brown, SANDY SILTY CLAY, plastic, slightly moist.
- Hard, brown CLAY, slightly moist.
- Soft, brown CLAY, moist.
- Bedrock: SILTstone weak fewer, moist
- Slightly compact, brown, fine SILTY SAND, saturated.
- Compact, brown SILTY fine to medium SAND, moist.
- Very dense, cobbles, PEBBLES in CLAYEY, SANDY MATRIX, (stream) slightly moist.
- Stiff brown and gray SILTY CLAY, plastic, slightly moist.
- Very stiff, gray and brown SANDY SILTY CLAY with PEBBLE lenses, moist.
- Dense, brown, medium SAND with some fines and PEBBLES, saturated.

6-13-84

B-4 — 46' Lt. STA. 349+61 ℄ RTE. 12 WB
Materials not logged.
- Very stiff, brown, SILTY CLAY, slightly moist, slightly plastic
- Stiff, brown, SILTY CLAY, moist
- Slightly compact, brown-gray CLAYEY SILT, very moist, slightly plastic.
- Very dense, brown, SANDY GRAVEL, very moist, saturated.
- Slightly compact, brown, CLAYEY SILTY SAND, moist.
- Very stiff, brown SILTY CLAY, slightly moist to dry.
- Very stiff, brown SILTY CLAY, slightly moist to dry.

7-1-84

B-6 — 5' Lt. STA. 351+25 ℄ RTE. 12 WB
Materials not logged.
- Top 12" blown to stiff 8" brown CLAYEY SILTY SAND, moist.
- Slightly compact, brown, CLAYEY silt, saturated.
- Hard, brown, SILTY CLAY, slightly moist, non-plastic.
- Very stiff, brown, SILTY, CLAY, slightly moist, slightly plastic.
- Very stiff, brown CLAY, very moist, plastic.
- Hard, brown CLAY, moist, slightly plastic.

6-16-84

B-3 — 10' Rt. STA. 353+70 ℄ RTE. 12 WB
- Stiff, dark-brown, SILTY CLAY, very dry.
- Soft, brown, SILTY CLAY, saturated.
- Soft, brown, slightly CLAYEY SILT, saturated.
- Very stiff, brown SILTY CLAY, moist.
- Very stiff, brown, SILTY CLAY with fine SAND, moist.
- Very stiff, brown, SILTY CLAY with gray root holes, CLAY slightly moist, freewater in some root holes.
- Stiff, CLAY, slightly plastic, slightly moist.
- Very stiff CLAY, slightly plastic, dense.
- Slightly compact, brown mottled gray (gray around root holes and roots) CLAYEY SILT, slightly moist.
- Slightly compact CLAYEY SILT, moist.
- Slightly compact, brown, CLAYEY, SILTY, fine SAND, moist.
- Very stiff, brown SILTY CLAY, moist.
- Compact, brown, mottled gray hard, friable, cemented SILT.
- Hard, brown, mottled gray SILTY CLAY, slightly moist, slightly plastic
- Very hard, stratified CLAY and dense SILT (6" layers for 4") SAND, slightly moist.

6-20-84

B-5 — 20' Lt. STA. 354+69 ℄ RTE. 12 WB

6-21-84

PROFILE
HOR. 1" = 20' VERT. 1" = 10'

GEOTECHNICAL BRANCH - TRANSPORTATION LABORATORY
DRAWN BY LEONY L. LOPEZ 10/84
CHECKED BY

State of CALIFORNIA
DEPARTMENT OF TRANSPORTATION

STRUCTURES - DESIGN
34942

CU 10200
WO 071621

BRIDGE NO. 23-199F
POST MILE 15.8

ROUTE 12/80 CONNECTOR
LOG OF TEST BORINGS

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

Diamond points bearing earlier revision dates

SHEET 18 OF 18

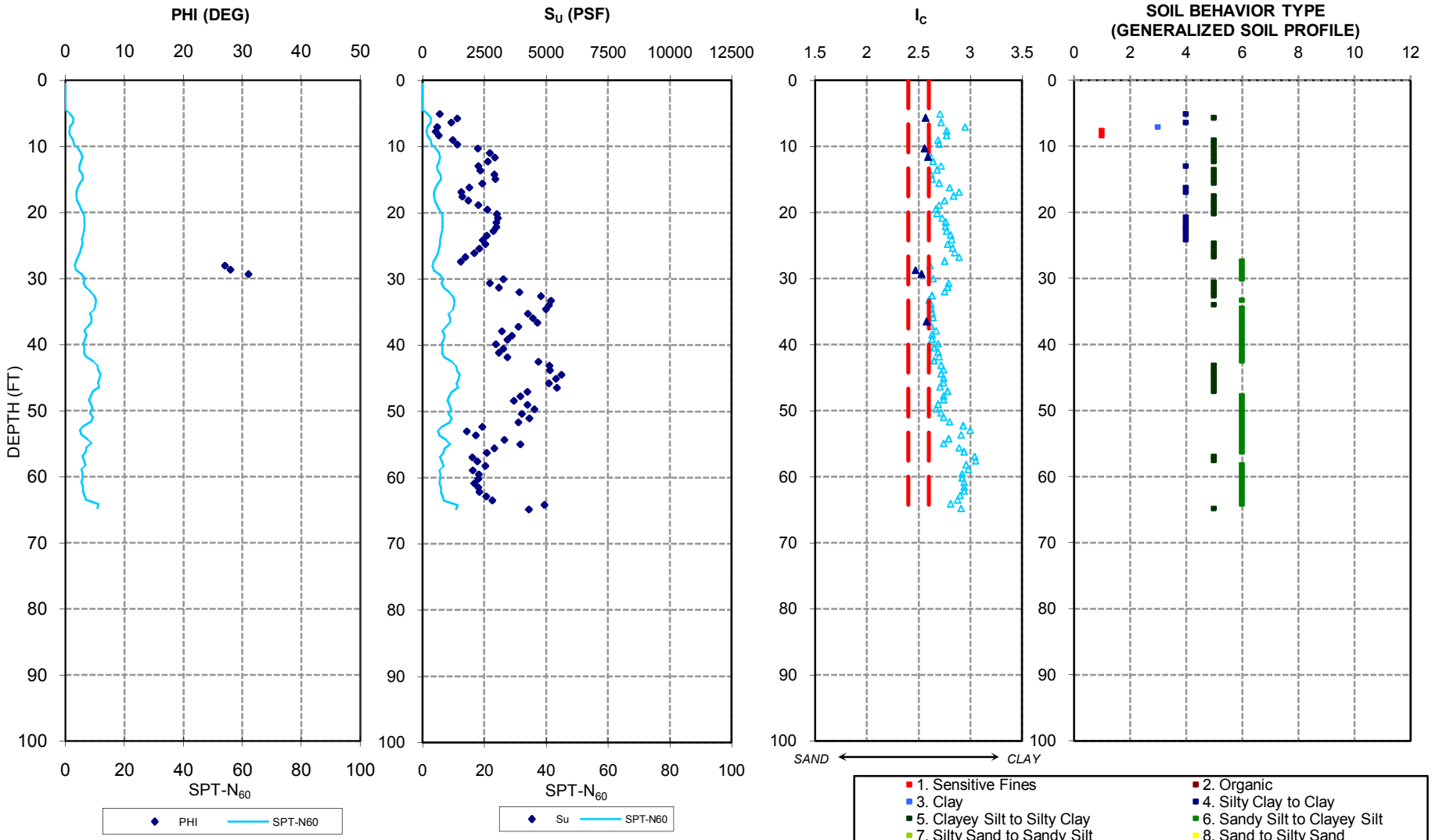
145

AS BUILT PLANS
Contract No. 10-071624
DATE 3/16/88

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF TRANSPORTATION.
DATE 9-23-88
SIGNATURE — SUPERVISOR OF MICROFILM SERVICES

CPT DATA CORRELATION

CPT-09-129



Reference: CPT data and correlation provided by Gregg Drilling and Testing, Inc.

PARIKH

Practicing in the Geosciences

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GDR	PLATE NO.:

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

PROJECT NAME ***CORDELIA TRUCK SCALES RELOCATION PROJECT***
PROJECT NO. ***208123.GDR***
CPT NO. ***CPT-09-129***

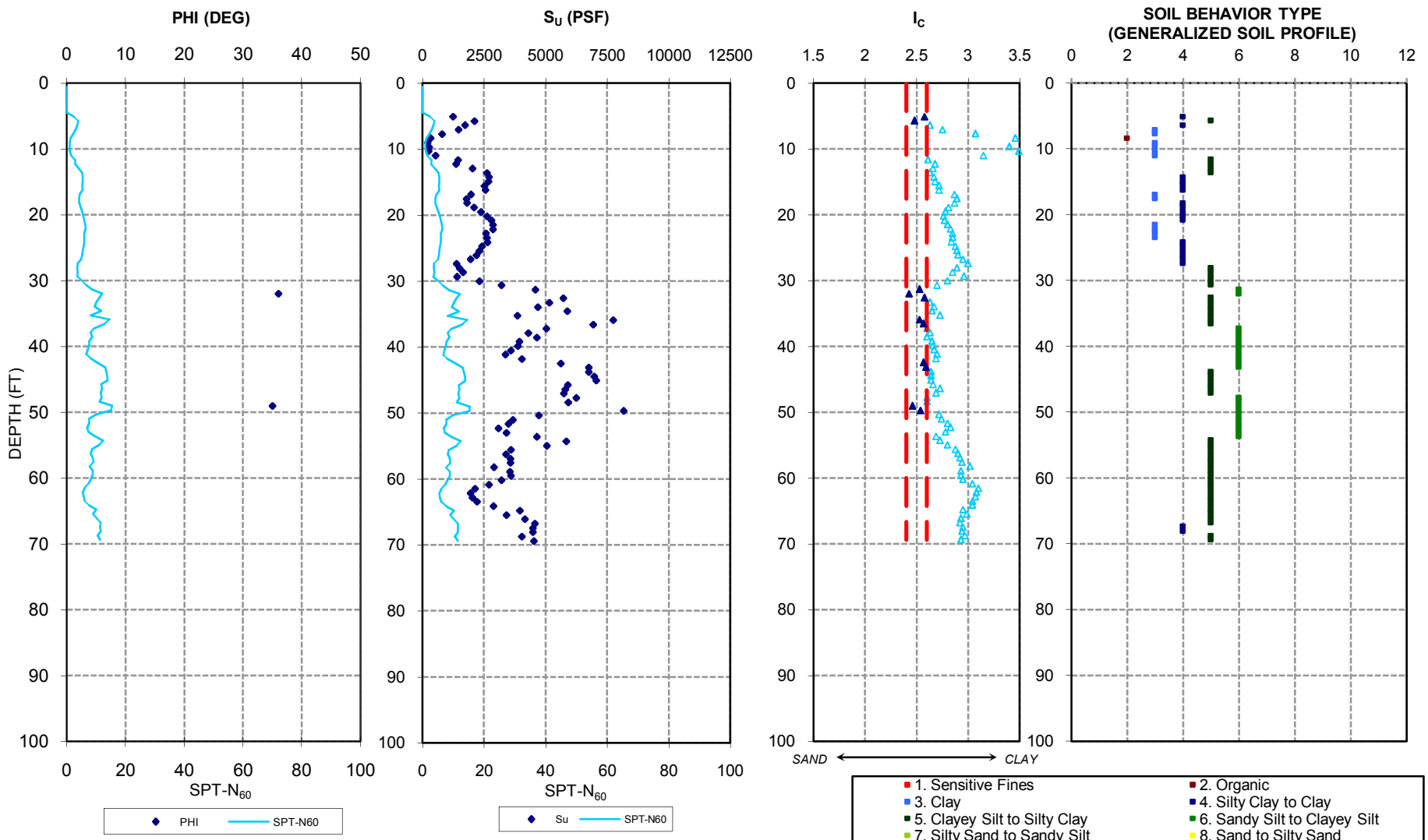
FAULT INFO
CORDELIA FAULT
a_{max} (g)= 0.6

FAULT M_w = 6.5
MSF = 1.44

		CPT RESULT INPUT							*CSR*		*$CRR_{7.5}$*						*$F.S.=(CRR_{7.5}/CSR)*MSF*K\sigma*K\alpha$*		
Depth (ft)		Soil Behavior Type	qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	γ_d	CSR	Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	Kσ	Kα	F.S.
5.085	4	Silty Clay to Clay	5.544	0.117	0.291		0.291	2.71	1.47552	0.99	0.386							1.00	1	
5.741	5	Clayey Silt to Silty Clay	10.782	0.287	0.329		0.329	2.57	1.43885	0.99	0.386							1.00	1	
6.398	4	Silty Clay to Clay	9.033	0.286	0.367		0.367	2.72	1.40396	0.99	0.385							1.00	1	
7.054	3	Clay	4.932	0.132	0.403		0.403	2.95	1.37243	0.99	0.384							1.00	1	
7.71	1	Sensitive Fines	4.502	0.038	0.44		0.44	2.77	1.34146	0.98	0.384							1.00	1	
8.366	1	Sensitive Fines	5.343	0.057	0.476		0.476	2.77	1.31265	0.98	0.383							1.00	1	
9.022	5	Clayey Silt to Silty Clay	9.53	0.183	0.514	0.001	0.513	2.69	1.2843	0.98	0.383							1.00	1	
9.678	5	Clayey Silt to Silty Clay	10.926	0.259	0.551	0.021	0.53	2.7	1.27168	0.98	0.397							1.00	1	
10.335	5	Clayey Silt to Silty Clay	17.101	0.424	0.589	0.042	0.547	2.56	1.2593	0.98	0.411							1.00	1	
10.991	5	Clayey Silt to Silty Clay	20.829	0.723	0.627	0.062	0.565	2.6	1.24646	0.98	0.423							1.00	1	
11.647	5	Clayey Silt to Silty Clay	22.377	0.783	0.664	0.083	0.582	2.59	1.23457	0.98	0.434							1.00	1	
12.303	5	Clayey Silt to Silty Clay	20.322	0.725	0.702	0.103	0.599	2.64	1.2229	0.97	0.445							1.00	1	
12.959	4	Silty Clay to Clay	17.454	0.654	0.739	0.123	0.616	2.72	1.21145	0.97	0.455							1.00	1	
13.615	5	Clayey Silt to Silty Clay	18.143	0.593	0.777	0.144	0.633	2.68	1.20022	0.97	0.465							1.00	1	
14.272	5	Clayey Silt to Silty Clay	22.31	0.736	0.815	0.164	0.65	2.62	1.18919	0.97	0.474							1.00	1	
14.928	5	Clayey Silt to Silty Clay	22.655	0.781	0.852	0.185	0.667	2.63	1.17836	0.97	0.483							1.00	1	
15.584	5	Clayey Silt to Silty Clay	18.745	0.622	0.89	0.205	0.684	2.7	1.16773	0.97	0.491							1.00	1	
16.24	4	Silty Clay to Clay	14.874	0.504	0.927	0.226	0.701	2.8	1.15729	0.97	0.498							1.00	1	
16.896	4	Silty Clay to Clay	12.379	0.445	0.965	0.246	0.719	2.89	1.14643	0.96	0.505							1.00	1	
17.552	5	Clayey Silt to Silty Clay	12.665	0.388	1.003	0.267	0.736	2.84	1.13636	0.96	0.512							1.00	1	
18.209	5	Clayey Silt to Silty Clay	14.424	0.36	1.04	0.287	0.753	2.75	1.12647	0.96	0.518							1.00	1	
18.865	5	Clayey Silt to Silty Clay	17.378	0.48	1.078	0.308	0.77	2.7	1.11675	0.96	0.524							1.00	1	
19.521	5	Clayey Silt to Silty Clay	20.074	0.564	1.115	0.328	0.787	2.67	1.1072	0.96	0.529							1.00	1	
20.177	5	Clayey Silt to Silty Clay	23.142	0.785	1.153	0.349	0.804	2.68	1.0978	0.96	0.535							1.00	1	
20.833	4	Silty Clay to Clay	23.639	0.916	1.19	0.369	0.821	2.73	1.08857	0.95	0.540							1.00	1	
21.49	4	Silty Clay to Clay	23.247	0.958	1.228	0.39	0.838	2.76	1.07949	0.95	0.545							1.00	1	
22.146	4	Silty Clay to Clay	23.161	0.937	1.266	0.41	0.856	2.76	1.07004	0.95	0.549							1.00	1	
22.802	4	Silty Clay to Clay	22.406	0.889	1.303	0.431	0.873	2.77	1.06126	0.95	0.552							1.00	1	
23.458	4	Silty Clay to Clay	20.551	0.811	1.341	0.451	0.89	2.81	1.05263	0.95	0.556							1.00	1	
24.114	4	Silty Clay to Clay	19.424	0.701	1.378	0.471	0.907	2.82	1.04414	0.94	0.560							1.00	1	
24.77	5	Clayey Silt to Silty Clay	20.207	0.66	1.416	0.492	0.924	2.78	1.03578	0.94	0.563							1.00	1	
25.427	5	Clayey Silt to Silty Clay	18.391	0.613	1.454	0.512	0.941	2.83	1.02756	0.94	0.567							1.00	1	
26.083	5	Clayey Silt to Silty Clay	16.977	0.519	1.491	0.533	0.958	2.85	1.01946	0.94	0.569							1.00	1	
26.739	5	Clayey Silt to Silty Clay	14.233	0.378	1.529	0.553	0.975	2.89	1.01149	0.94	0.572							1.00	1	
27.395	6	Sandy Silt to Clayey Silt	12.694	0.149	1.566	0.574	0.993	2.75	1.00319	0.93	0.574							1.00	1	
28.051	6	Sandy Silt to Clayey Silt	12.599	0.069	1.604	0.594	1.01	2.61	0.99548	0.93	0.576							1.00	1	
28.707	6	Sandy Silt to Clayey Silt	14.902	0.06	1.642	0.615	1.027	2.47	0.98788	0.93	0.578							0.99	1	
29.364	6	Sandy Silt to Clayey Silt	22.798	0.304	1.679	0.635	1.044	2.53	0.98039	0.92	0.579							0.99	1	
30.02	6	Sandy Silt to Clayey Silt	25.493	0.57	1.717	0.656	1.061	2.64	0.97302	0.92	0.581							0.99	1	
30.676	5	Clayey Silt to Silty Clay	21.727	0.648	1.754	0.676	1.078	2.79	0.96576	0.92	0.582							0.99	1	
31.332	5	Clayey Silt to Silty Clay	24.576	0.81	1.792	0.697	1.095	2.78	0.95861	0.91	0.583							0.98	1	
31.988	5	Clayey Silt to Silty Clay	30.942	1.205	1.83	0.717	1.112	2.75	0.95156	0.91	0.584							0.98	1	
32.644	5	Clayey Silt to Silty Clay	37.633	1.214	1.867	0.738	1.13	2.63	0.94421	0.91	0.584							0.98	1	
33.301	6	Sandy Silt to Clayey Silt	40.625	1.278	1.905	0.758	1.147	2.6	0.93737	0.90	0.584							0.97	1	
33.957	5	Clayey Silt to Silty Clay	39.516	1.286	1.942	0.779	1.164	2.62	0.93063	0.90	0.584							0.97	1	
34.613	6	Sandy Silt to Clayey Silt	38.168	1.185	1.98	0.799	1.181	2.62	0.92398	0.89	0.584							0.97	1	
35.269	6	Sandy Silt to Clayey Silt	32.328	0.885	2.018	0.82	1.198	2.63	0.91743	0.89	0.584							0.96	1	
35.925	6	Sandy Silt to Clayey Silt	33.867	0.967	2.055	0.84	1.215	2.64	0.91097	0.88	0.583							0.96	1	
36.581	6	Sandy Silt to Clayey Silt	34.765	0.834	2.093	0.86	1.232	2.58	0.90461	0.88	0.582							0.96	1	
37.238	6	Sandy Silt to Clayey Silt	29.298	0.633	2.13	0.881	1.249	2.62	0.89833	0.87	0.581							0.96	1	
37.894	6	Sandy Silt to Clayey Silt	24.356	0.488	2.168	0.901	1.267	2.67	0.89177	0.87	0.580							0.95	1	
38.55	6	Sandy Silt to Clayey Silt	27.501	0.541	2.206	0.922	1.284	2.63	0.88567	0.86	0.579							0.95	1	
39.206	6	Sandy Silt to Clayey Silt	25.933	0.457	2.243	0.942	1.301	2.63	0.87965	0.86	0.577							0.95	1	
39.862	6	Sandy Silt to Clayey Silt	22.588	0.413	2.281	0.963	1.318	2.69	0.87371	0.85	0.575							0.95	1	
40.518	6	Sandy Silt to Clayey Silt	24.834	0.428	2.318	0.983	1.335	2.65	0.86785	0.85	0.573							0.94	1	
41.175	6	Sandy Silt to Clayey Silt	23.62	0.434	2.356	1.004	1.352	2.69	0.86207	0.84	0.571							0.94	1	
41.831	6	Sandy Silt to Clayey Silt	25.99	0.569	2.393	1.024	1.369	2.7	0.85636	0.83	0.569							0.94	1	
42.487	6	Sandy Silt to Clayey Silt	35.348	0.954	2.431	1.045	1.386	2.65	0.85073	0.83	0.567							0.94	1	
43.143	5	Clayey Silt to Silty Clay	39.554	1.482	2.469	1.065	1.403	2.72	0.84518	0.82	0.564							0.93	1	
43.799	5	Clayey Silt to Silty Clay	40.204	1.61	2.506	1.086	1.421	2.74	0.83937	0.82	0.561							0.93	1	
44.455	5	Clayey Silt to Silty Clay	43.971	1.743	2.544	1.106	1.438	2.72	0.83397	0.81	0.558							0.93	1	
45.112	5	Clayey Silt to Silty Clay	42.365	1.695	2.581	1.127	1.455	2.74	0.82863	0.80	0.555							0.93	1	
45.768	5	Clayey Silt to Silty Clay	39.937	1.508	2.619	1.147	1.472	2.74	0.82335	0.80	0.552							0.93	1	
46.424	5	Clayey Silt to Silty Clay	42.231	1.498	2.657	1.168	1.489	2.71	0.81815	0.79	0.549							0.92	1	
47.08	5	Clayey Silt to Silty Clay	33.542	1.115	2.694	1.188	1.506	2.78	0.81301	0.78	0.546							0.92	1	
47.736	6	Sandy Silt to Clayey Silt	31.114	0.819	2.732	1.208	1.523	2.74	0.80793	0.78	0.543							0.92	1	
48.392	6	Sandy Silt to Clayey Silt	28.944	0.691	2.769	1.229	1.54	2.74	0.80292	0.77	0.539							0.92	1	
49.049	6	Sandy Silt to Clayey Silt	32.672	0.764	2.807	1.249	1.558	2.69	0.79768	0.76	0.536							0.92	1	
49.705	6	Sandy Silt to Clayey Silt	34.66	0.828	2.845	1.27	1.575	2.67	0.79279	0.76	0.532							0.91	1	
50.361	6	Sandy Silt to Clayey Silt	31.066	0.726	2.882	1.29	1.592	2.72	0.78797	0.75	0.529							0.91	1	
51.017	6	Sandy Silt to Clayey Silt	33.752	0.929	2.92	1.311	1.609	2.74	0.7832	0.74	0.525							0.91	1	
51.673	6	Sandy Silt to Clayey Silt	30.751	0.894	2.957	1.331	1.626	2.8	0.77849	0.74	0.522							0.91	1	
52.329	6	Sandy Silt to Clayey Silt	20.102	0.472	2.995	1.352	1.643	2.93	0.77383	0.73	0.518							0.91	1	
52.986	6	Sandy Silt to Clayey Silt	15.447	0.289	3.033	1.372	1.66	3	0.76923	0.72	0.515							0.90	1	
53.642	6	Sandy Silt to Clayey Silt	18.267	0.32	3.07	1.393	1.677	2.91	0.76469	0.72	0.511							0.90	1	
54.298	6	Sandy Silt to Clayey Silt	26.698	0.55	3.108	1.413	1.695	2.79	0.75993	0.71	0.508							0.90	1	
54.954	6	Sandy Silt to Clayey Silt	31.764	0.715	3.145	1.434	1.712	2.74	0.75549	0.70	0.504							0.90	1	
55.61	6	Sandy Silt to Clayey Silt	23.859	0.579	3.183	1.454	1.729	2.89	0.75111	0.70	0.501							0.90	1	
56.266	6	Sandy Silt to Clayey Silt	21.938	0.545	3.221	1.475	1.746	2.94	0.74678	0.69	0.498							0.89	1	
56.923	5	Clayey Silt to Silty Clay	17.445	0.42	3.258	1.495	1.763	3.04	0.74249	0.69	0.494							0.89	1	
57.579	5	Clayey Silt to Silty Clay	18.984	0.555	3.296	1.516	1.78	3.05	0.73826	0.68	0.491							0.89	1	
58.235	6	Sandy Silt to Clayey Silt	21.766	0.538	3.333	1.536	1.797	2.96	0.73407	0.67	0.488							0.89	1	
58.891	6	Sandy Silt to Clayey Silt	17.273	0.321	3.371	1.557	1.814	2.98	0.72993	0.67	0.484							0.89	1	
59.547	6	Sandy Silt to Clayey Silt	19.089	0.336	3.409	1.577	1.832	2.92	0.72559	0.66	0.481							0.89	1	
60.203	6	Sandy Silt to Clayey Silt	18.793	0.318	3.446	1.597	1.849	2.92	0.72155	0.66	0.478							0.88	1	
60.86	6	Sandy Silt to Clayey Silt	17.741	0.281	3.484	1.618	1.866	2.94	0.71755	0.65	0.475							0.88	1	
61.516	6	Sandy Silt to Clayey Silt	19.089	0.341	3.521	1.638	1.883	2.94	0.71359	0.65	0.472							0.88	1	
62.172	6	Sandy Silt to Clayey Silt	19.185	0.345	3.559	1.659	1.9	2.94	0.70968	0.64	0.469							0.88	1	
62.828	6	Sandy Silt to Clayey Silt	21.536	0.396	3.596	1.679	1.917	2.9	0.70581	0.64	0.466							0.88	1	
63.484	6	Sandy Silt to Clayey Silt	23.218	0.452	3.634	1.7	1.934	2.88	0.70198	0.63	0.464							0.88	1	
64.14	6	Sandy Silt to Clayey Silt	39.736	1.252	3.672	1.72	1.951	2.81	0.69819	0.63	0.461							0.87	1	
64.797	5	Clayey Silt to Silty Clay	35.712	1.333	3.709	1.741	1.968	2.91	0.69444	0.62	0.458							0.87	1	

CPT DATA CORRELATION

CPT-09-130



Reference: CPT data and correlation provided by Gregg Drilling and Testing, Inc.

PARIKH

Practicing in the Geosciences

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GDR	PLATE NO.:

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

PROJECT NAME ***CORDELIA TRUCK SCALES RELOCATION PROJECT***
PROJECT NO. ***208123.GDR***
CPT NO. ***CPT-09-130***

FAULT INFO
CORDELIA FAULT
a_{max} *(g)=* 0.6

FAULT M_w = 6.5
MSF = 1.44

		CPT RESULT INPUT							*CSR*		*$CRR_{7.5}$*						*$F.S.=(CRR_{7.5}/CSR)*MSF*K\sigma*K\alpha$*		
Depth (ft)		Soil Behavior Type	qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	γ_d	CSR	Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	Kσ	Kα	F.S.
5.085	4	Silty Clay to Clay	9.492	0.258	0.291		0.291	2.58	1.47552	0.99	0.386							1.00	1	
5.741	5	Clayey Silt to Silty Clay	16.154	0.495	0.329		0.329	2.48	1.43885	0.99	0.386							1.00	1	
6.398	4	Silty Clay to Clay	13.334	0.488	0.367		0.367	2.63	1.40396	0.99	0.385							1.00	1	
7.054	3	Clay	11.318	0.465	0.403		0.403	2.75	1.37243	0.99	0.384							1.00	1	
7.71	3	Clay	6.471	0.353	0.44		0.44	3.07	1.34146	0.98	0.384							1.00	1	
8.366	2	Organic	2.924	0.185	0.466		0.466	3.46	1.32053	0.98	0.383							1.00	1	
9.022	3	Clay	2	0.081	0.502	0.001	0.502	3.58	1.2926	0.98	0.383							1.00	1	
9.678	3	Clay	2.452	0.072	0.539	0.021	0.518	3.4	1.28056	0.98	0.398							1.00	1	
10.335	3	Clay	2.342	0.082	0.575	0.042	0.534	3.49	1.26874	0.98	0.411							1.00	1	
10.991	3	Clay	4.502	0.137	0.612	0.062	0.55	3.15	1.25714	0.98	0.424							1.00	1	
11.647	5	Clayey Silt to Silty Clay	11.423	0.173	0.65	0.083	0.567	2.61	1.24505	0.98	0.436							1.00	1	
12.303	5	Clayey Silt to Silty Clay	10.868	0.189	0.687	0.103	0.584	2.68	1.23318	0.97	0.447							1.00	1	
12.959	5	Clayey Silt to Silty Clay	15.581	0.425	0.725	0.123	0.601	2.66	1.22154	0.97	0.458							1.00	1	
13.615	5	Clayey Silt to Silty Clay	20.141	0.659	0.762	0.144	0.618	2.63	1.21012	0.97	0.467							1.00	1	
14.272	4	Silty Clay to Clay	20.676	0.77	0.8	0.164	0.636	2.67	1.19826	0.97	0.476							1.00	1	
14.928	4	Silty Clay to Clay	20.715	0.779	0.838	0.185	0.653	2.68	1.18726	0.97	0.485							1.00	1	
15.584	4	Silty Clay to Clay	19.471	0.749	0.875	0.205	0.67	2.72	1.17647	0.97	0.493							1.00	1	
16.24	4	Silty Clay to Clay	19.729	0.754	0.913	0.226	0.687	2.72	1.16587	0.97	0.501							1.00	1	
16.896	3	Clay	15.275	0.703	0.949	0.246	0.703	2.87	1.15607	0.96	0.508							1.00	1	
17.552	3	Clay	13.889	0.599	0.986	0.267	0.719	2.89	1.14643	0.96	0.515							1.00	1	
18.209	4	Silty Clay to Clay	14.052	0.56	1.023	0.287	0.736	2.87	1.13636	0.96	0.521							1.00	1	
18.865	4	Silty Clay to Clay	16.336	0.623	1.061	0.308	0.753	2.81	1.12647	0.96	0.527							1.00	1	
19.521	4	Silty Clay to Clay	18.334	0.71	1.099	0.328	0.77	2.78	1.11675	0.96	0.533							1.00	1	
20.177	4	Silty Clay to Clay	20.026	0.783	1.136	0.349	0.788	2.76	1.10664	0.96	0.538							1.00	1	
20.833	4	Silty Clay to Clay	21.632	0.906	1.174	0.369	0.805	2.77	1.09726	0.95	0.543							1.00	1	
21.49	3	Clay	22.196	1.028	1.21	0.39	0.821	2.8	1.08857	0.95	0.548							1.00	1	
22.146	3	Clay	22.291	1.136	1.247	0.41	0.837	2.83	1.08002	0.95	0.553							1.00	1	
22.802	3	Clay	20.303	0.968	1.283	0.431	0.853	2.85	1.0716	0.95	0.557							1.00	1	
23.458	3	Clay	20.542	0.942	1.32	0.451	0.869	2.85	1.06332	0.95	0.561							1.00	1	
24.114	4	Silty Clay to Clay	20.819	0.918	1.358	0.471	0.886	2.84	1.05465	0.94	0.565							1.00	1	
24.77	4	Silty Clay to Clay	19.242	0.856	1.395	0.492	0.903	2.88	1.04612	0.94	0.568							1.00	1	
25.427	4	Silty Clay to Clay	18.573	0.793	1.433	0.512	0.92	2.89	1.03774	0.94	0.571							1.00	1	
26.083	4	Silty Clay to Clay	17.54	0.718	1.47	0.533	0.937	2.9	1.02948	0.94	0.574							1.00	1	
26.739	4	Silty Clay to Clay	15.677	0.64	1.508	0.553	0.955	2.95	1.02088	0.94	0.576							1.00	1	
27.395	4	Silty Clay to Clay	11.452	0.352	1.546	0.574	0.972	3	1.01289	0.93	0.578							1.00	1	
28.051	5	Clayey Silt to Silty Clay	11.939	0.259	1.583	0.594	0.989	2.89	1.00503	0.93	0.580							1.00	1	
28.707	5	Clayey Silt to Silty Clay	12.952	0.264	1.621	0.615	1.006	2.85	0.99728	0.93	0.582							1.00	1	
29.364	5	Clayey Silt to Silty Clay	11.308	0.29	1.658	0.635	1.023	2.96	0.98965	0.92	0.584							1.00	1	
30.02	5	Clayey Silt to Silty Clay	18.038	0.499	1.696	0.656	1.04	2.8	0.98214	0.92	0.585							0.99	1	
30.676	5	Clayey Silt to Silty Clay	24.662	0.693	1.733	0.676	1.057	2.7	0.97475	0.92	0.586							0.99	1	
31.332	6	Sandy Silt to Clayey Silt	34.756	0.806	1.771	0.697	1.074	2.53	0.96746	0.91	0.587							0.99	1	
31.988	6	Sandy Silt to Clayey Silt	51.207	1.32	1.809	0.717	1.092	2.43	0.95986	0.91	0.588							0.98	1	
32.644	5	Clayey Silt to Silty Clay	43.216	1.518	1.846	0.738	1.109	2.58	0.95279	0.91	0.588							0.98	1	
33.301	5	Clayey Silt to Silty Clay	39.019	1.421	1.884	0.758	1.126	2.63	0.94583	0.90	0.589							0.98	1	
33.957	5	Clayey Silt to Silty Clay	35.645	1.322	1.921	0.779	1.143	2.67	0.93897	0.90	0.588							0.97	1	
34.613	5	Clayey Silt to Silty Clay	45.098	1.888	1.959	0.799	1.16	2.65	0.9322	0.89	0.588							0.97	1	
35.269	5	Clayey Silt to Silty Clay	30.081	1.039	1.997	0.82	1.177	2.73	0.92554	0.89	0.588							0.97	1	
35.925	5	Clayey Silt to Silty Clay	58.873	2.205	2.034	0.84	1.194	2.53	0.91896	0.88	0.587							0.97	1	
36.581	5	Clayey Silt to Silty Clay	51.178	1.937	2.072	0.86	1.211	2.57	0.91248	0.88	0.587							0.96	1	
37.238	6	Sandy Silt to Clayey Silt	36.304	1.078	2.109	0.881	1.228	2.6	0.9061	0.87	0.585							0.96	1	
37.894	6	Sandy Silt to Clayey Silt	31.477	0.857	2.147	0.901	1.246	2.63	0.89943	0.87	0.584							0.96	1	
38.55	6	Sandy Silt to Clayey Silt	34.106	0.891	2.185	0.922	1.263	2.6	0.89322	0.86	0.583							0.95	1	
39.206	6	Sandy Silt to Clayey Silt	29.193	0.727	2.222	0.942	1.28	2.65	0.8871	0.86	0.581							0.95	1	
39.862	6	Sandy Silt to Clayey Silt	28.791	0.719	2.26	0.963	1.297	2.66	0.88106	0.85	0.579							0.95	1	
40.518	6	Sandy Silt to Clayey Silt	26.746	0.606	2.297	0.983	1.314	2.67	0.8751	0.85	0.577							0.95	1	
41.175	6	Sandy Silt to Clayey Silt	25.063	0.57	2.335	1.004	1.331	2.7	0.86922	0.84	0.575							0.94	1	
41.831	6	Sandy Silt to Clayey Silt	30.225	0.84	2.373	1.024	1.348	2.69	0.86342	0.83	0.573							0.94	1	
42.487	6	Sandy Silt to Clayey Silt	42.011	1.11	2.41	1.045	1.365	2.57	0.8577	0.83	0.570							0.94	1	
43.143	6	Sandy Silt to Clayey Silt	51.407	1.754	2.448	1.065	1.383	2.59	0.85172	0.82	0.567							0.94	1	
43.799	5	Clayey Silt to Silty Clay	51.56	1.998	2.485	1.086	1.4	2.64	0.84615	0.82	0.565							0.93	1	
44.455	5	Clayey Silt to Silty Clay	52.937	2.175	2.523	1.106	1.417	2.64	0.84066	0.81	0.562							0.93	1	
45.112	5	Clayey Silt to Silty Clay	53.424	2.157	2.561	1.127	1.434	2.64	0.83523	0.80	0.559							0.93	1	
45.768	5	Clayey Silt to Silty Clay	44.487	1.592	2.598	1.147	1.451	2.66	0.82988	0.80	0.556							0.93	1	
46.424	5	Clayey Silt to Silty Clay	44.009	1.881	2.636	1.168	1.468	2.73	0.82459	0.79	0.553							0.93	1	
47.08	5	Clayey Silt to Silty Clay	43.177	1.603	2.673	1.188	1.485	2.69	0.81937	0.78	0.549							0.92	1	
47.736	6	Sandy Silt to Clayey Silt	46.656	1.374	2.711	1.208	1.502	2.6	0.81421	0.78	0.546							0.92	1	
48.392	6	Sandy Silt to Clayey Silt	43.875	1.196	2.749	1.229	1.52	2.6	0.80882	0.77	0.543							0.92	1	
49.049	6	Sandy Silt to Clayey Silt	64.293	1.697	2.786	1.249	1.537	2.46	0.8038	0.76	0.539							0.92	1	
49.705	6	Sandy Silt to Clayey Silt	61.272	1.906	2.824	1.27	1.554	2.54	0.79884	0.76	0.536							0.92	1	
50.361	6	Sandy Silt to Clayey Silt	35.836	1.092	2.861	1.29	1.571	2.72	0.79394	0.75	0.532							0.91	1	
51.017	6	Sandy Silt to Clayey Silt	28.036	0.658	2.899	1.311	1.588	2.74	0.7891	0.74	0.529							0.91	1	
51.673	6	Sandy Silt to Clayey Silt	26.956	0.714	2.937	1.331	1.605	2.8	0.78431	0.74	0.525							0.91	1	
52.329	6	Sandy Silt to Clayey Silt	24.012	0.578	2.974	1.352	1.622	2.83	0.77959	0.73	0.521							0.91	1	
52.986	6	Sandy Silt to Clayey Silt	26.029	0.598	3.012	1.372	1.639	2.78	0.77492	0.72	0.518							0.91	1	
53.642	6	Sandy Silt to Clayey Silt	35.348	0.879	3.049	1.393	1.657	2.69	0.77004	0.72	0.514							0.90	1	
54.298	5	Clayey Silt to Silty Clay	45.452	1.649	3.087	1.413	1.674	2.73	0.76548	0.71	0.511							0.90	1	
54.954	5	Clayey Silt to Silty Clay	39.612	1.514	3.124	1.434	1.691	2.8	0.76098	0.70	0.507							0.90	1	
55.61	5	Clayey Silt to Silty Clay	28.705	0.976	3.162	1.454	1.708	2.88	0.75653	0.70	0.504							0.90	1	
56.266	5	Clayey Silt to Silty Clay	27.281	0.903	3.2	1.475	1.725	2.9	0.75214	0.69	0.500							0.90	1	
56.923	5	Clayey Silt to Silty Clay	29.088	1.038	3.237	1.495	1.742	2.92	0.74779	0.69	0.497							0.89	1	
57.579	5	Clayey Silt to Silty Clay	29.345	1.137	3.275	1.516	1.759	2.94	0.74349	0.68	0.494							0.89	1	
58.235	5	Clayey Silt to Silty Clay	24.012	0.931	3.312	1.536	1.776	3.02	0.73925	0.67	0.490							0.89	1	
58.891	5	Clayey Silt to Silty Clay	28.906	1.043	3.35	1.557	1.794	2.93	0.7348	0.67	0.487							0.89	1	
59.547	5	Clayey Silt to Silty Clay	29.212	1.05	3.388	1.577	1.811	2.93	0.73065	0.66	0.484							0.89	1	
60.203	5	Clayey Silt to Silty Clay	26.239	0.873	3.425	1.597	1.828	2.95	0.72655	0.66	0.481							0.89	1	
60.86	5	Clayey Silt to Silty Clay	22.578	0.806	3.463	1.618	1.845	3.04	0.7225	0.65	0.478							0.88	1	
61.516	5	Clayey Silt to Silty Clay	18.018	0.577	3.5	1.638	1.862	3.1	0.71848	0.65	0.474							0.88	1	
62.172	5	Clayey Silt to Silty Clay	16.384	0.421	3.538	1.659	1.879	3.08	0.71452	0.64	0.472							0.88	1	
62.828	5	Clayey Silt to Silty Clay	17.225	0.447	3.576	1.679	1.896	3.07	0.71059	0.64	0.469							0.88	1	
63.484	5	Clayey Silt to Silty Clay	18.525	0.485	3.613	1.7	1.913	3.04	0.70671	0.63	0.466							0.88	1	
64.14	5	Clayey Silt to Silty Clay	23.63	0.888	3.651	1.72	1.93	3.04	0.70288	0.63	0.463							0.88	1	
64.797	5	Clayey Silt to Silty Clay	32.596	1.301	3.688	1.741	1.948	2.95	0.69886	0.62	0.460							0.88	1	
65.453	5	Clayey Silt to Silty Clay	28.256	1.08	3.726	1.761	1.965	2.99	0.6951	0.62	0.458							0.87	1	
66.109	5	Clayey Silt to Silty Clay	34.173	1.311	3.764	1.782	1.982	2.93	0.69139	0.61	0.455							0.87	1	

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

PROJECT NAME ***CORDELIA TRUCK SCALES RELOCATION PROJECT***
PROJECT NO. ***208123.GDR***
CPT NO. ***CPT-09-130***

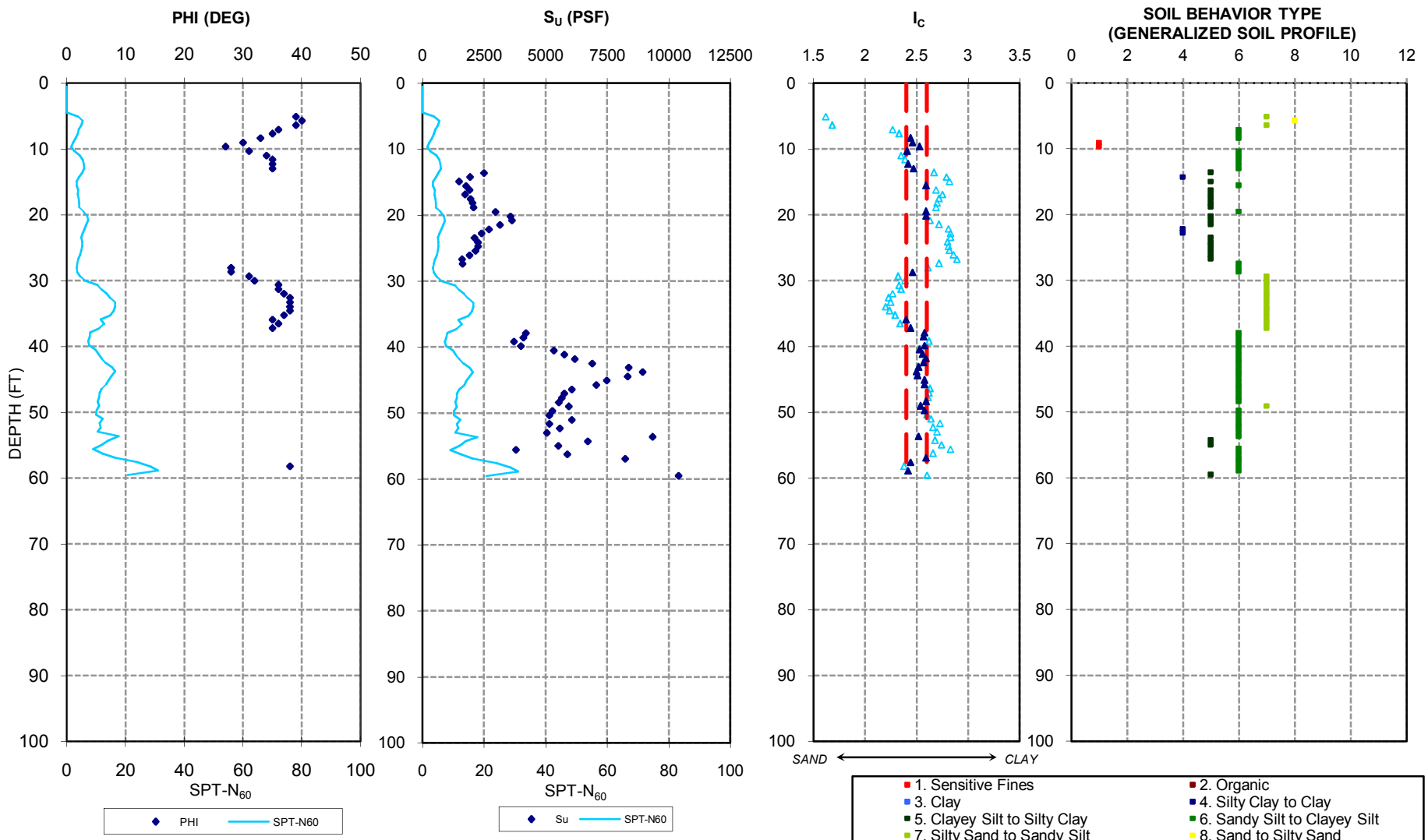
FAULT INFO
CORDELIA FAULT
a_{max} *(g)=* 0.6

FAULT M_w = 6.5
MSF = 1.44

			CPT RESULT INPUT							*CSR*		*CRR 7.5*						*F.S.=(CRR 7.5 /(CSR)*MSF*Kσ*Kα*		
Depth (ft)		Soil Behavior Type	qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	γ_d	CSR	Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	Kσ	Kα	F.S.
66.765	5	Clayey Silt to Silty Clay	37.586	1.58	3.801	1.802	1.999	2.92	0.68771	0.61	0.453							0.87	1	
67.421	4	Silty Clay to Clay	36.82	1.664	3.839	1.823	2.016	2.95	0.68408	0.61	0.451							0.87	1	
68.077	4	Silty Clay to Clay	37.079	1.6	3.876	1.843	2.033	2.94	0.68048	0.60	0.448							0.87	1	
68.734	5	Clayey Silt to Silty Clay	33.475	1.393	3.914	1.864	2.05	2.97	0.67692	0.60	0.446							0.87	1	
69.39	5	Clayey Silt to Silty Clay	37.155	1.494	3.952	1.884	2.067	2.93	0.6734	0.60	0.444							0.86	1	

CPT DATA CORRELATION

CPT-09-133



Reference: CPT data and correlation provided by Gregg Drilling and Testing, Inc.

PARIKH

Practicing in the Geosciences

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GDR	PLATE NO.:

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

PROJECT NAME ***CORDELIA TRUCK SCALES RELOCATION PROJECT***
PROJECT NO. ***208123.GDR***
CPT NO. ***CPT-09-133***

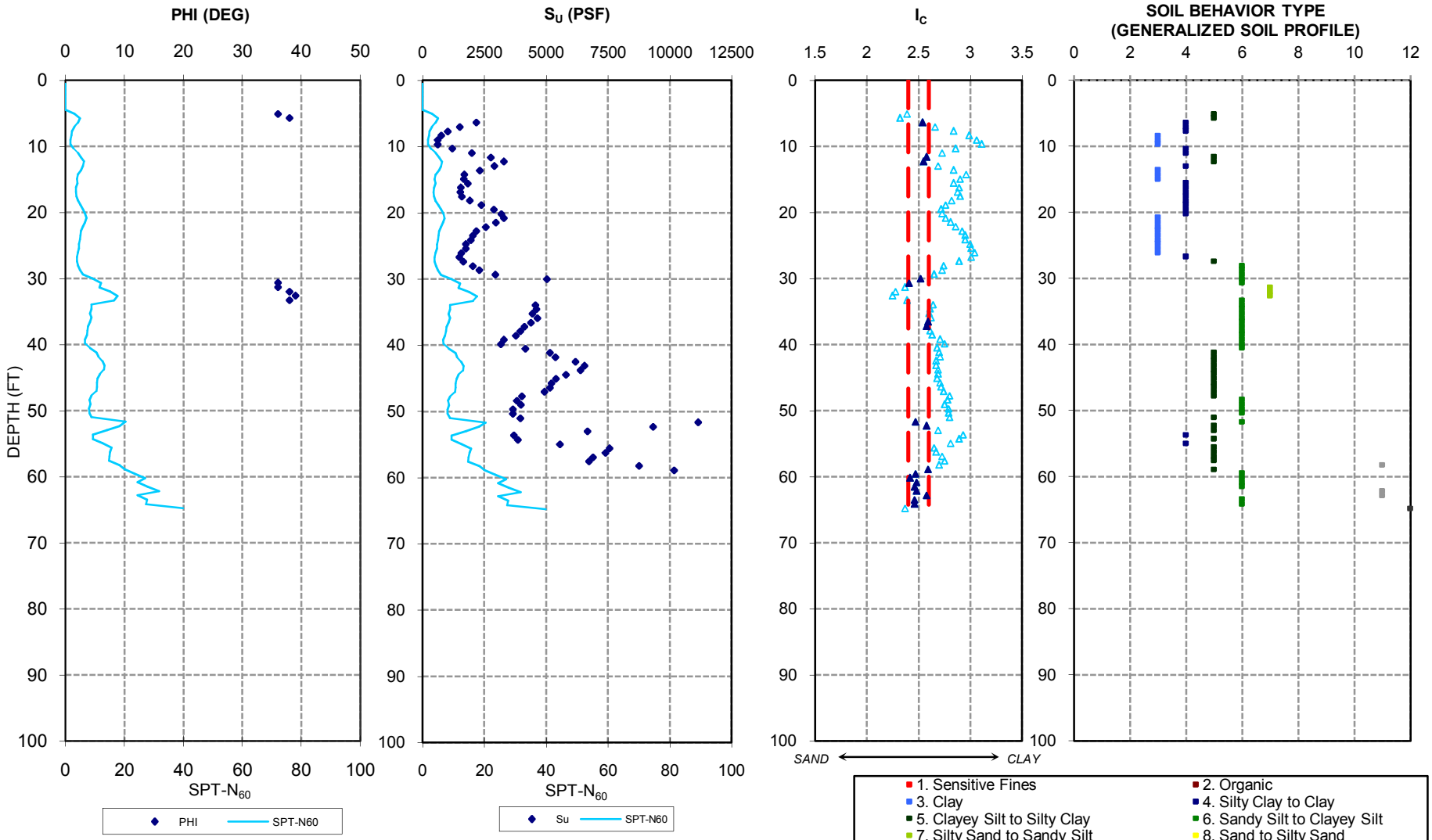
FAULT INFO
CORDELIA FAULT
a_{max} *(g)=* 0.6

FAULT M_w = 6.5
MSF = 1.44

			CPT RESULT INPUT							*CSR*		*CRR 7.5*						*F.S.=(CRR 7.5 /(CSR)*MSF*Kσ*Kα*		
Depth (ft)		Soil Behavior Type	qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	γ_d	CSR	Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	Kσ	Kα	F.S.
5.085	7	Silty Sand to Sandy Silt	21.718	0.012	0.299		0.299	1.62	1.46765	0.99	0.386							1.00	1	
5.741	8	Sand to Silty Sand	33.073	0.02	0.339		0.339	1.49	1.4295	0.99	0.386							1.00	1	
6.398	7	Silty Sand to Sandy Silt	28.055	0.052	0.378		0.378	1.68	1.39417	0.99	0.385							1.00	1	
7.054	6	Sandy Silt to Clayey Silt	18.831	0.248	0.415		0.415	2.27	1.36223	0.99	0.384							1.00	1	
7.71	6	Sandy Silt to Clayey Silt	16.221	0.199	0.453		0.453	2.33	1.33091	0.98	0.384							1.00	1	
8.366	6	Sandy Silt to Clayey Silt	13.114	0.156	0.491		0.491	2.44	1.30101	0.98	0.383							1.00	1	
9.022	1	Sensitive Fines	9.071	0.05	0.527	0.001	0.526	2.46	1.27462	0.98	0.383	2.460	1.27	11.56	2.574	29.764	0.07	1.00	1	0.28
9.678	1	Sensitive Fines	6.529	0.02	0.564	0.021	0.543	2.53	1.26219	0.98	0.397	2.530	1.26	8.24	2.925	24.103	0.07	1.00	1	0.25
10.335	6	Sandy Silt to Clayey Silt	10.926	0.065	0.601	0.042	0.56	2.41	1.25	0.98	0.410							1.00	1	
10.991	6	Sandy Silt to Clayey Silt	19.662	0.24	0.639	0.062	0.577	2.35	1.23804	0.98	0.422							1.00	1	
11.647	6	Sandy Silt to Clayey Silt	23.295	0.41	0.676	0.083	0.594	2.39	1.22631	0.98	0.433							1.00	1	
12.303	6	Sandy Silt to Clayey Silt	24.948	0.504	0.714	0.103	0.611	2.42	1.2148	0.97	0.444							1.00	1	
12.959	6	Sandy Silt to Clayey Silt	24.719	0.578	0.752	0.123	0.628	2.47	1.2035	0.97	0.454							1.00	1	
13.615	5	Clayey Silt to Silty Clay	19.576	0.658	0.789	0.144	0.645	2.67	1.19241	0.97	0.463							1.00	1	
14.272	4	Silty Clay to Clay	15.131	0.551	0.827	0.164	0.662	2.79	1.18153	0.97	0.473							1.00	1	
14.928	5	Clayey Silt to Silty Clay	11.776	0.33	0.864	0.185	0.68	2.82	1.17021	0.97	0.480							1.00	1	
15.584	6	Sandy Silt to Clayey Silt	13.535	0.185	0.902	0.205	0.697	2.59	1.15973	0.97	0.488							1.00	1	
16.24	5	Clayey Silt to Silty Clay	14.85	0.344	0.94	0.226	0.714	2.69	1.14943	0.97	0.496							1.00	1	
16.896	5	Clayey Silt to Silty Clay	13.578	0.327	0.977	0.246	0.731	2.75	1.13931	0.96	0.503							1.00	1	
17.552	5	Clayey Silt to Silty Clay	15.189	0.37	1.015	0.267	0.748	2.72	1.12936	0.96	0.510							1.00	1	
18.209	5	Clayey Silt to Silty Clay	15.973	0.379	1.052	0.287	0.765	2.7	1.11959	0.96	0.516							1.00	1	
18.865	5	Clayey Silt to Silty Clay	16.078	0.369	1.09	0.308	0.782	2.69	1.10999	0.96	0.522							1.00	1	
19.521	6	Sandy Silt to Clayey Silt	22.845	0.547	1.128	0.328	0.799	2.59	1.10055	0.96	0.528							1.00	1	
20.177	5	Clayey Silt to Silty Clay	27.51	0.801	1.165	0.349	0.816	2.59	1.09127	0.96	0.533							1.00	1	
20.833	5	Clayey Silt to Silty Clay	28.246	0.943	1.203	0.369	0.834	2.63	1.08161	0.95	0.537							1.00	1	
21.49	5	Clayey Silt to Silty Clay	24.614	0.932	1.24	0.39	0.851	2.72	1.07265	0.95	0.541							1.00	1	
22.146	4	Silty Clay to Clay	21.345	0.911	1.278	0.41	0.868	2.81	1.06383	0.95	0.546							1.00	1	
22.802	4	Silty Clay to Clay	19.06	0.73	1.316	0.431	0.885	2.83	1.05516	0.95	0.550							1.00	1	
23.458	5	Clayey Silt to Silty Clay	16.89	0.526	1.353	0.451	0.902	2.83	1.04662	0.95	0.554							1.00	1	
24.114	5	Clayey Silt to Silty Clay	18.143	0.55	1.391	0.471	0.919	2.8	1.03823	0.94	0.558							1.00	1	
24.77	5	Clayey Silt to Silty Clay	18.133	0.554	1.428	0.492	0.936	2.81	1.02996	0.94	0.561							1.00	1	
25.427	5	Clayey Silt to Silty Clay	17.444	0.504	1.466	0.512	0.953	2.82	1.02183	0.94	0.564							1.00	1	
26.083	5	Clayey Silt to Silty Clay	15.571	0.429	1.503	0.533	0.971	2.86	1.01336	0.94	0.566							1.00	1	
26.739	5	Clayey Silt to Silty Clay	13.258	0.311	1.541	0.553	0.988	2.89	1.00548	0.94	0.569							1.00	1	
27.395	6	Sandy Silt to Clayey Silt	13.181	0.152	1.579	0.574	1.005	2.72	0.99773	0.93	0.571							1.00	1	
28.051	6	Sandy Silt to Clayey Silt	13.277	0.086	1.616	0.594	1.022	2.61	0.9901	0.93	0.573							1.00	1	
28.707	6	Sandy Silt to Clayey Silt	14.894	0.054	1.654	0.615	1.039	2.46	0.98258	0.93	0.575							0.99	1	
29.364	7	Silty Sand to Sandy Silt	20.57	0.074	1.693	0.635	1.057	2.32	0.97475	0.92	0.577	2.320	0.97	20.05	2.015	40.393	0.08	0.99	1	0.21
30.02	7	Silty Sand to Sandy Silt	26.21	0.226	1.731	0.656	1.075	2.39	0.96703	0.92	0.578	2.390	0.97	25.35	2.272	57.586	0.10	0.99	1	0.24
30.676	7	Silty Sand to Sandy Silt	46.905	0.762	1.77	0.676	1.094	2.33	0.95902	0.92	0.579	2.330	0.96	44.98	2.049	92.159	0.15	0.98	1	0.38
31.332	7	Silty Sand to Sandy Silt	52.477	1.056	1.808	0.697	1.112	2.35	0.95156	0.91	0.579	2.350	0.95	49.93	2.120	105.844	0.19	0.98	1	0.47
31.988	7	Silty Sand to Sandy Silt	62.161	1.137	1.847	0.717	1.13	2.27	0.94421	0.91	0.580	2.270	0.94	58.69	1.856	108.939	0.20	0.98	1	0.50
32.644	7	Silty Sand to Sandy Silt	68.498	1.237	1.886	0.738	1.148	2.23	0.93697	0.91	0.580	2.230	0.94	64.18	1.743	111.896	0.21	0.97	1	0.52
33.301	7	Silty Sand to Sandy Silt	75.945	1.629	1.924	0.758	1.166	2.25	0.92984	0.90	0.580	2.250	0.93	70.62	1.798	126.987	0.27	0.97	1	0.67
33.957	7	Silty Sand to Sandy Silt	77.321	1.458	1.963	0.779	1.184	2.2	0.92282	0.90	0.580	2.200	0.92	71.35	1.667	118.930	0.24	0.96	1	0.59
34.613	7	Silty Sand to Sandy Silt	73.909	1.488	2.002	0.799	1.203	2.24	0.91552	0.89	0.580	2.240	0.92	67.67	1.770	119.800	0.24	0.96	1	0.60
35.269	7	Silty Sand to Sandy Silt	66.567	1.377	2.04	0.82	1.221	2.29	0.90872	0.89	0.579	2.290	0.91	60.49	1.917	115.963	0.23	0.96	1	0.56
35.925	7	Silty Sand to Sandy Silt	49.897	1.041	2.079	0.84	1.239	2.4	0.90201	0.88	0.579	2.400	0.90	45.01	2.312	104.074	0.18	0.96	1	0.46
36.581	7	Silty Sand to Sandy Silt	56.435	1.104	2.118	0.86	1.257	2.34	0.8954	0.88	0.578	2.340	0.90	50.53	2.084	105.297	0.19	0.96	1	0.47
37.238	7	Silty Sand to Sandy Silt	46.857	0.979	2.156	0.881	1.275	2.44	0.88889	0.87	0.576	2.440	0.89	41.65	2.483	103.424	0.18	0.95	1	0.46
37.894	6	Sandy Silt to Clayey Silt	31.706	0.628	2.194	0.901	1.292	2.58	0.88283	0.87	0.575							0.95	1	
38.55	6	Sandy Silt to Clayey Silt	30.798	0.558	2.231	0.922	1.309	2.57	0.87684	0.86	0.574							0.95	1	
39.206	6	Sandy Silt to Clayey Silt	28.255	0.532	2.269	0.942	1.327	2.62	0.8706	0.86	0.572							0.94	1	
39.862	6	Sandy Silt to Clayey Silt	29.957	0.528	2.307	0.963	1.344	2.58	0.86478	0.85	0.571							0.94	1	
40.518	6	Sandy Silt to Clayey Silt	39.593	0.858	2.344	0.983	1.361	2.53	0.85904	0.85	0.569							0.94	1	
41.175	6	Sandy Silt to Clayey Silt	43.187	1.124	2.382	1.004	1.378	2.56	0.85337	0.84	0.567							0.94	1	
41.831	6	Sandy Silt to Clayey Silt	46.933	1.403	2.419	1.024	1.395	2.59	0.84778	0.83	0.564							0.94	1	
42.487	6	Sandy Silt to Clayey Silt	52.353	1.635	2.457	1.045	1.412	2.57	0.84227	0.83	0.562							0.93	1	
43.143	6	Sandy Silt to Clayey Silt	62.677	2.042	2.495	1.065	1.429	2.52	0.83682	0.82	0.560							0.93	1	
43.799	6	Sandy Silt to Clayey Silt	67.065	2.187	2.532	1.086	1.446	2.5	0.83144	0.82	0.557							0.93	1	
44.455	6	Sandy Silt to Clayey Silt	62.467	1.952	2.57	1.106	1.464	2.51	0.82583	0.81	0.554							0.93	1	
45.112	6	Sandy Silt to Clayey Silt	56.148	1.949	2.607	1.127	1.481	2.58	0.82059	0.80	0.551							0.92	1	
45.768	6	Sandy Silt to Clayey Silt	53.223	1.669	2.645	1.147	1.498	2.58	0.81542	0.80	0.548							0.92	1	
46.424	6	Sandy Silt to Clayey Silt	45.815	1.414	2.682	1.168	1.515	2.63	0.81031	0.79	0.545							0.92	1	
47.08	6	Sandy Silt to Clayey Silt	43.473	1.218	2.72	1.188	1.532	2.62	0.80527	0.78	0.542							0.92	1	
47.736	6	Sandy Silt to Clayey Silt	42.957	1.126	2.758	1.208	1.549	2.61	0.80029	0.78	0.539							0.92	1	
48.392	6	Sandy Silt to Clayey Silt	41.686	0.977	2.795	1.229	1.566	2.59	0.79537	0.77	0.535							0.91	1	
49.049	7	Silty Sand to Sandy Silt	44.859	0.916	2.834	1.249	1.584	2.54	0.79023	0.76	0.532	2.540	0.79	35.45	2.979	105.601	0.19	0.91	1	0.51
49.705	6	Sandy Silt to Clayey Silt	40.376	0.801	2.871	1.27	1.602	2.58	0.78515	0.76	0.528							0.91	1	
50.361	6	Sandy Silt to Clayey Silt	39.42	0.818	2.909	1.29	1.619	2.6	0.78042	0.75	0.525							0.91	1	
51.017	6	Sandy Silt to Clayey Silt	46.656	1.365	2.947	1.311	1.636	2.64	0.77574	0.74	0.522							0.91	1	
51.673	6	Sandy Silt to Clayey Silt	40.72	1.305	2.984	1.331	1.653	2.73	0.77112	0.74	0.518							0.90	1	
52.329	6	Sandy Silt to Clayey Silt	43.903	1.166	3.022	1.352	1.67	2.66	0.76655	0.73	0.515							0.90	1	
52.986	6	Sandy Silt to Clayey Silt	39.506	1.074	3.059	1.372	1.687	2.7	0.76204	0.72	0.511							0.90	1	
53.642	6	Sandy Silt to Clayey Silt	72.044	2.106	3.097	1.393	1.704	2.52	0.75758	0.72	0.508							0.90	1	
54.298	5	Clayey Silt to Silty Clay	52.946	1.828	3.135	1.413	1.721	2.68	0.75317	0.71	0.504							0.90	1	
54.954	5	Clayey Silt to Silty Clay	44.009	1.482	3.172	1.434	1.739	2.74	0.74855	0.70	0.501							0.90	1	
55.61	6	Sandy Silt to Clayey Silt	30.952	0.887	3.21	1.454	1.756	2.83	0.74425	0.70	0.497							0.89	1	
56.266	6	Sandy Silt to Clayey Silt	46.437	1.22	3.247	1.475	1.773	2.66	0.73999	0.69	0.494							0.89	1	
56.923	6	Sandy Silt to Clayey Silt	63.996	1.972	3.285	1.495	1.79	2.59	0.73579	0.69	0.491							0.89	1	
57.579	6	Sandy Silt to Clayey Silt	101.294	3.104	3.323	1.516	1.807	2.44	0.73163	0.68	0.488							0.89	1	
58.235	6	Sandy Silt to Clayey Silt	124.303	3.854	3.36	1.536	1.824	2.38	0.72751	0.67	0.484							0.87	1	
58.891	6	Sandy Silt to Clayey Silt	132.514	4.889	3.398	1.557	1.841	2.42	0.72345	0.67	0.481							0.89	1	
59.547	5	Clayey Silt to Silty Clay	81.087	3.176	3.435	1.577	1.858	2.6	0.71942	0.66	0.478							0.88	1	

CPT DATA CORRELATION

CPT-09-134



Reference: CPT data and correlation provided by Gregg Drilling and Testing, Inc.

PARIKH

Practicing in the Geosciences

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GDR	PLATE NO.:

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

PROJECT NAME ***CORDELIA TRUCK SCALES RELOCATION PROJECT***
PROJECT NO. ***208123.GDR***
CPT NO. ***CPT-09-134***

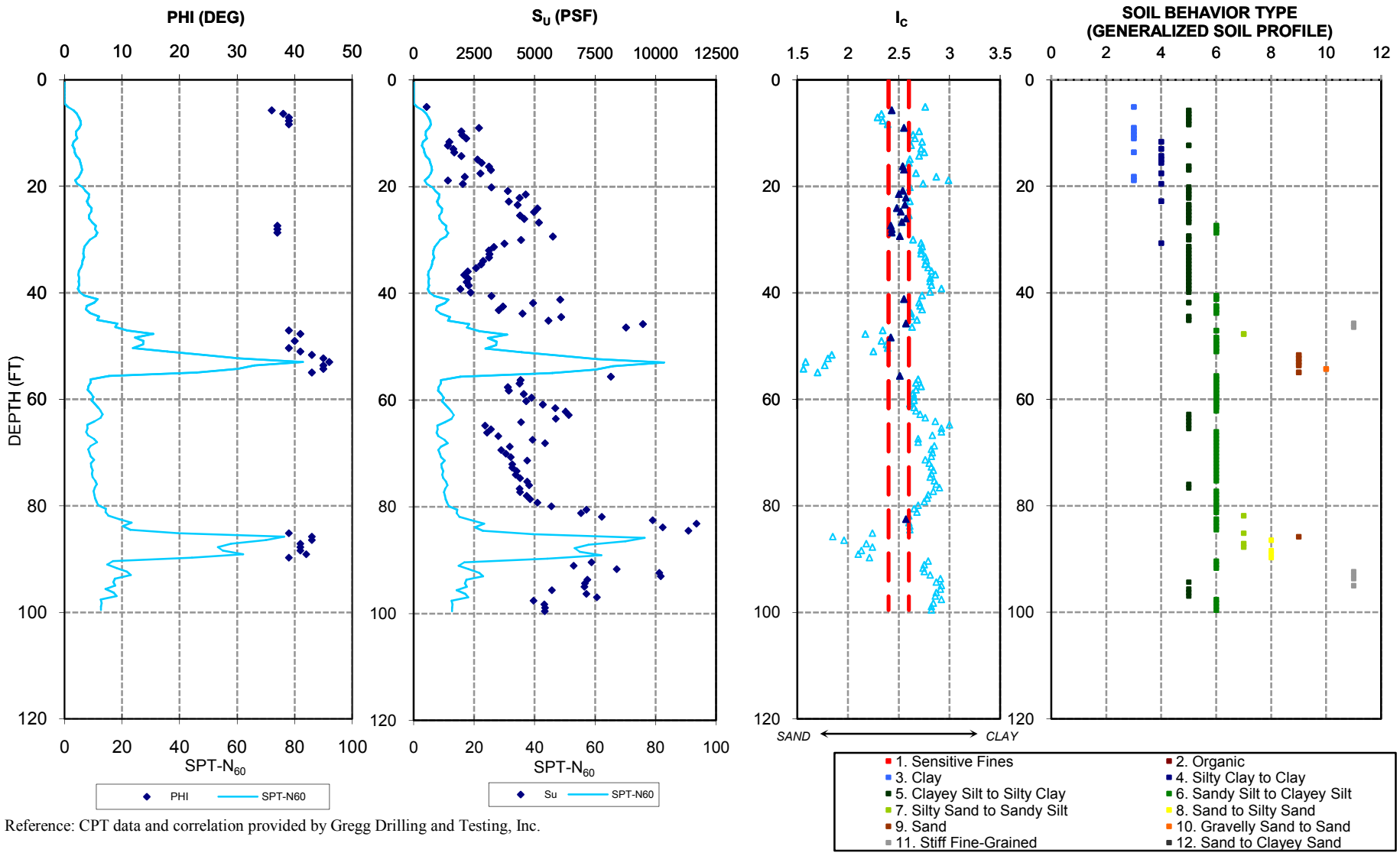
FAULT INFO
CORDELIA FAULT
a_{max} (g)= 0.6

FAULT M_w = 6.5
MSF = 1.44

			CPT RESULT INPUT							*CSR*		*CRR 7.5*						*F.S.=(CRR 7.5 /(CSR)*MSF*Kσ*Kα*		
Depth (ft)		Soil Behavior Type	qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	γ_d	CSR	Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	Kσ	Kα	F.S.
5.085	5	Clayey Silt to Silty Clay	13.411	0.284	0.291		0.291	2.39	1.47552	0.99	0.386							1.00	1	
5.741	5	Clayey Silt to Silty Clay	22.253	0.567	0.329		0.329	2.32	1.43885	0.99	0.386							1.00	1	
6.398	4	Silty Clay to Clay	16.766	0.589	0.367		0.367	2.54	1.40396	0.99	0.385							1.00	1	
7.054	4	Silty Clay to Clay	11.652	0.363	0.404		0.404	2.66	1.37157	0.99	0.384							1.00	1	
7.71	4	Silty Clay to Clay	8.068	0.259	0.442		0.442	2.84	1.33983	0.98	0.384							1.00	1	
8.366	3	Clay	6.137	0.214	0.478		0.478	2.99	1.31108	0.98	0.383							1.00	1	
9.022	3	Clay	5.095	0.156	0.515	0.001	0.514	3.06	1.28355	0.98	0.383							1.00	1	
9.678	3	Clay	5.047	0.18	0.551	0.021	0.53	3.11	1.27168	0.98	0.397							1.00	1	
10.335	4	Silty Clay to Clay	9.311	0.314	0.589	0.042	0.547	2.86	1.2593	0.98	0.411							1.00	1	
10.991	4	Silty Clay to Clay	15.16	0.574	0.627	0.062	0.565	2.73	1.24646	0.98	0.423							1.00	1	
11.647	5	Clayey Silt to Silty Clay	21.068	0.664	0.664	0.083	0.582	2.58	1.23457	0.98	0.434							1.00	1	
12.303	5	Clayey Silt to Silty Clay	25.169	0.824	0.702	0.103	0.599	2.55	1.2229	0.97	0.445							1.00	1	
12.959	4	Silty Clay to Clay	22.406	0.998	0.739	0.123	0.616	2.69	1.21145	0.97	0.455							1.00	1	
13.615	3	Clay	18.095	1.026	0.776	0.144	0.632	2.84	1.20087	0.97	0.465							1.00	1	
14.272	3	Clay	13.383	0.765	0.812	0.164	0.648	2.96	1.19048	0.97	0.474							1.00	1	
14.928	3	Clay	13.019	0.576	0.849	0.185	0.664	2.9	1.18026	0.97	0.483							1.00	1	
15.584	4	Silty Clay to Clay	14.157	0.557	0.887	0.205	0.681	2.84	1.16959	0.97	0.491							1.00	1	
16.24	4	Silty Clay to Clay	11.958	0.444	0.924	0.226	0.698	2.89	1.15911	0.97	0.499							1.00	1	
16.896	4	Silty Clay to Clay	11.853	0.416	0.962	0.246	0.715	2.88	1.14883	0.96	0.506							1.00	1	
17.552	4	Silty Clay to Clay	12.369	0.474	0.999	0.267	0.733	2.9	1.13813	0.96	0.512							1.00	1	
18.209	4	Silty Clay to Clay	14.654	0.52	1.037	0.287	0.75	2.82	1.12821	0.96	0.518							1.00	1	
18.865	4	Silty Clay to Clay	18.267	0.67	1.075	0.308	0.767	2.76	1.11845	0.96	0.525							1.00	1	
19.521	4	Silty Clay to Clay	22.071	0.858	1.112	0.328	0.784	2.72	1.10887	0.96	0.530							1.00	1	
20.177	4	Silty Clay to Clay	24.538	1.045	1.15	0.349	0.801	2.73	1.09945	0.96	0.536							1.00	1	
20.833	3	Clay	25.426	1.207	1.186	0.369	0.817	2.76	1.09073	0.95	0.540							1.00	1	
21.49	3	Clay	23.113	1.144	1.223	0.39	0.833	2.81	1.08214	0.95	0.546							1.00	1	
22.146	3	Clay	20.169	0.968	1.259	0.41	0.849	2.86	1.07369	0.95	0.550							1.00	1	
22.802	3	Clay	17.454	0.843	1.296	0.431	0.865	2.92	1.06538	0.95	0.555							1.00	1	
23.458	3	Clay	16.346	0.784	1.332	0.451	0.881	2.95	1.05718	0.95	0.558							1.00	1	
24.114	3	Clay	15.657	0.698	1.369	0.471	0.898	2.95	1.04862	0.94	0.562							1.00	1	
24.77	3	Clay	14.262	0.645	1.406	0.492	0.914	3	1.04068	0.94	0.566							1.00	1	
25.427	3	Clay	14.252	0.638	1.442	0.512	0.93	3.01	1.03286	0.94	0.569							1.00	1	
26.083	3	Clay	12.78	0.545	1.479	0.533	0.946	3.04	1.02516	0.94	0.572							1.00	1	
26.739	4	Silty Clay to Clay	12.14	0.439	1.516	0.553	0.963	3.01	1.01711	0.94	0.574							1.00	1	
27.395	5	Clayey Silt to Silty Clay	13.029	0.333	1.554	0.574	0.98	2.89	1.00917	0.93	0.577							1.00	1	
28.051	6	Sandy Silt to Clayey Silt	15.839	0.296	1.591	0.594	0.997	2.74	1.00137	0.93	0.579							1.00	1	
28.707	6	Sandy Silt to Clayey Silt	17.77	0.382	1.629	0.615	1.014	2.73	0.99368	0.93	0.581							1.00	1	
29.364	6	Sandy Silt to Clayey Silt	22.301	0.487	1.667	0.635	1.031	2.65	0.9861	0.92	0.582							0.99	1	
30.02	6	Sandy Silt to Clayey Silt	37.519	1.007	1.704	0.656	1.049	2.52	0.97821	0.92	0.583							0.99	1	
30.676	6	Sandy Silt to Clayey Silt	51.847	1.341	1.742	0.676	1.066	2.41	0.97087	0.92	0.584							0.99	1	
31.332	7	Silty Sand to Sandy Silt	50.346	1.108	1.78	0.697	1.084	2.37	0.96322	0.91	0.585	2.370	0.96	48.49	2.194	106.399	0.19	0.98	1	0.47
31.988	7	Silty Sand to Sandy Silt	68.518	1.57	1.819	0.717	1.102	2.28	0.95569	0.91	0.586	2.280	0.96	65.48	1.886	123.510	0.26	0.98	1	0.63
32.644	7	Silty Sand to Sandy Silt	80.83	1.922	1.858	0.738	1.12	2.25	0.94828	0.91	0.586	2.250	0.95	76.65	1.798	137.835	0.32	0.97	1	0.80
33.301	6	Sandy Silt to Clayey Silt	70.716	2.153	1.895	0.758	1.137	2.39	0.94138	0.90	0.586							0.97	1	
33.957	6	Sandy Silt to Clayey Silt	33.647	1.083	1.933	0.779	1.154	2.64	0.93458	0.90	0.586							0.97	1	
34.613	6	Sandy Silt to Clayey Silt	34.173	1.007	1.971	0.799	1.171	2.61	0.92788	0.89	0.586							0.97	1	
35.269	6	Sandy Silt to Clayey Silt	32.797	0.865	2.008	0.82	1.189	2.6	0.92089	0.89	0.585							0.97	1	
35.925	6	Sandy Silt to Clayey Silt	34.651	1.001	2.046	0.84	1.206	2.62	0.91438	0.88	0.585							0.96	1	
36.581	6	Sandy Silt to Clayey Silt	32.424	0.793	2.083	0.86	1.223	2.59	0.90797	0.88	0.584							0.96	1	
37.238	6	Sandy Silt to Clayey Silt	30.254	0.647	2.121	0.881	1.24	2.58	0.90164	0.87	0.583							0.96	1	
37.894	6	Sandy Silt to Clayey Silt	29.212	0.638	2.159	0.901	1.257	2.61	0.8954	0.87	0.582							0.96	1	
38.55	6	Sandy Silt to Clayey Silt	27.912	0.616	2.196	0.922	1.274	2.63	0.88925	0.86	0.580							0.95	1	
39.206	6	Sandy Silt to Clayey Silt	24.566	0.582	2.234	0.942	1.291	2.71	0.88318	0.86	0.579							0.95	1	
39.862	6	Sandy Silt to Clayey Silt	24.05	0.622	2.271	0.963	1.308	2.75	0.87719	0.85	0.577							0.95	1	
40.518	6	Sandy Silt to Clayey Silt	31.42	0.865	2.309	0.983	1.326	2.68	0.87094	0.85	0.575							0.95	1	
41.175	5	Clayey Silt to Silty Clay	39.497	1.472	2.346	1.004	1.343	2.7	0.86512	0.84	0.573							0.94	1	
41.831	5	Clayey Silt to Silty Clay	41.524	1.64	2.384	1.024	1.36	2.71	0.85938	0.83	0.570							0.94	1	
42.487	5	Clayey Silt to Silty Clay	47.307	1.901	2.422	1.045	1.377	2.67	0.85371	0.83	0.568							0.94	1	
43.143	5	Clayey Silt to Silty Clay	49.534	2.136	2.459	1.065	1.394	2.67	0.84811	0.82	0.565							0.94	1	
43.799	5	Clayey Silt to Silty Clay	48.435	2.133	2.497	1.086	1.411	2.69	0.84259	0.82	0.563							0.93	1	
44.455	5	Clayey Silt to Silty Clay	43.942	1.681	2.534	1.106	1.428	2.69	0.83714	0.81	0.560							0.93	1	
45.112	5	Clayey Silt to Silty Clay	40.807	1.416	2.572	1.127	1.445	2.68	0.83176	0.80	0.557							0.93	1	
45.768	5	Clayey Silt to Silty Clay	39.593	1.41	2.61	1.147	1.463	2.71	0.82614	0.80	0.554							0.93	1	
46.424	5	Clayey Silt to Silty Clay	39.172	1.428	2.647	1.168	1.48	2.72	0.8209	0.79	0.551							0.92	1	
47.08	5	Clayey Silt to Silty Clay	37.977	1.377	2.685	1.188	1.497	2.74	0.81572	0.78	0.547							0.92	1	
47.736	5	Clayey Silt to Silty Clay	31.162	1.08	2.722	1.208	1.514	2.8	0.81061	0.78	0.544							0.92	1	
48.392	6	Sandy Silt to Clayey Silt	29.298	0.859	2.76	1.229	1.531	2.78	0.80557	0.77	0.541							0.92	1	
49.049	6	Sandy Silt to Clayey Silt	30.56	0.853	2.798	1.249	1.548	2.75	0.80058	0.76	0.537							0.92	1	
49.705	6	Sandy Silt to Clayey Silt	28.514	0.786	2.835	1.27	1.565	2.79	0.79566	0.76	0.534							0.91	1	
50.361	6	Sandy Silt to Clayey Silt	28.734	0.781	2.873	1.29	1.582	2.79	0.7908	0.75	0.531							0.91	1	
51.017	5	Clayey Silt to Silty Clay	31.172	0.981	2.91	1.311	1.6	2.8	0.78571	0.74	0.527							0.91	1	
51.673	6	Sandy Silt to Clayey Silt	84.921	2.782	2.948	1.331	1.617	2.47	0.78097	0.74	0.523							0.91	1	
52.329	5	Clayey Silt to Silty Clay	72.236	2.753	2.986	1.352	1.634	2.58	0.77629	0.73	0.520							0.91	1	
52.986	5	Clayey Silt to Silty Clay	52.516	1.982	3.023	1.372	1.651	2.69	0.77166	0.72	0.516							0.90	1	
53.642	4	Silty Clay to Clay	30.292	1.271	3.061	1.393	1.668	2.93	0.76709	0.72	0.513							0.90	1	
54.298	5	Clayey Silt to Silty Clay	31.171	1.187	3.098	1.413	1.685	2.89	0.76256	0.71	0.509							0.90	1	
54.954	4	Silty Clay to Clay	44.057	1.951	3.136	1.434	1.702	2.81	0.7581	0.70	0.506							0.90	1	
55.61	5	Clayey Silt to Silty Clay	59.351	2.112	3.174	1.454	1.719	2.65	0.75368	0.70	0.502							0.90	1	
56.266	5	Clayey Silt to Silty Clay	57.573	2.119	3.211	1.475	1.737	2.67	0.74906	0.69	0.499							0.90	1	
56.923	5	Clayey Silt to Silty Clay	54.409	2.228	3.249	1.495	1.754	2.73	0.74475	0.69	0.495							0.89	1	
57.579	5	Clayey Silt to Silty Clay	53.042	2.263	3.286	1.516	1.771	2.75	0.74049	0.68	0.492							0.89	1	
58.235	11	Sitff Fine-Grained	68.632	3.198	3.329	1.536	1.793	2.7	0.73505	0.67	0.488							0.89	1	
58.891	5	Clayey Silt to Silty Clay	78.41	3.019	3.367	1.557	1.81	2.59	0.7309	0.67	0.485							0.89	1	
59.547	6	Sandy Silt to Clayey Silt	97.519	3.262	3.404	1.577	1.827	2.47	0.72679	0.66	0.482							0.89	1	
60.203	6	Sandy Silt to Clayey Silt	114.983	3.836	3.442	1.597	1.844	2.42	0.72273	0.66	0.479							0.88	1	
60.86	6	Sandy Silt to Clayey Silt	101.591	3.606	3.48	1.618	1.862	2.48	0.71848	0.65	0.475							0.88	1	
61.516	6	Sandy Silt to Clayey Silt	116.083	4.3	3.517	1.638	1.879	2.46	0.71452	0.65	0.472							0.88	1	
62.172	11	Sitff Fine-Grained	131.271	5.573	3.56	1.659	1.901	2.48	0.70945	0.64	0.469							0.88	1	
62.828	11	Sitff Fine-Grained	96.908	4.16	3.603	1.679	1.923	2.58	0.70445	0.64	0.466							0.88	1	
63.484	6	Sandy Silt to Clayey Silt	115.968	4.18	3.64	1.7	1.941	2.46	0.70041	0.63	0.463							0.88	1	
64.14	6	Sandy Silt to Clayey Silt	114.563	4.063	3.678	1.72	1.958	2.46	0.69664	0.63	0.460							0.87	1	
64.797	12	Sand to Clayey Sand	174.171	6.737	3.718	1.741	1.977	2.37	0.69248	0.62	0.457							0.87	1	

CPT DATA CORRELATION

CPT-09-TS-001



Reference: CPT data and correlation provided by Gregg Drilling and Testing, Inc.

PARIKH

Practicing in the Geosciences

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GDR	PLATE NO.:

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

PROJECT NAME ***CORDELIA TRUCK SCALES RELOCATION PROJECT***
PROJECT NO. ***208123.GDR***
CPT NO. ***CPT-09-TS-001***

FAULT INFO
CONCORD-GREEN VALLEY FAULT
a_{max} *(g)=* 0.6

FAULT M_w = 6.9
MSF = 1.24

			CPT RESULT INPUT							*CSR*		*$CRR_{7.5}$*						*$F.S.=(CRR_{7.5}/CSR)*MSF*K\sigma*K\alpha$*		
Depth (ft)		Soil Behavior Type	qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	γ_d	CSR	Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	Kσ	Kα	F.S.
5.085	3	Clay	4.196	0.091	0.283	0.034	0.249	2.76	1.51829	0.99	0.439							1.00	1	
5.741	5	Clayey Silt to Silty Clay	13	0.339	0.321	0.054	0.267	2.43	1.49966	0.99	0.463							1.00	1	
6.398	5	Clayey Silt to Silty Clay	18.976	0.497	0.358	0.075	0.284	2.33	1.48248	0.99	0.485							1.00	1	
7.054	5	Clayey Silt to Silty Clay	22.626	0.599	0.396	0.095	0.301	2.29	1.46569	0.99	0.506							1.00	1	
7.71	5	Clayey Silt to Silty Clay	24.338	0.754	0.434	0.116	0.318	2.34	1.44928	0.98	0.524							1.00	1	
8.366	5	Clayey Silt to Silty Clay	24.8	0.872	0.471	0.136	0.335	2.39	1.43322	0.98	0.539							1.00	1	
9.022	3	Clay	20.621	0.945	0.508	0.157	0.351	2.55	1.41844	0.98	0.554							1.00	1	
9.678	3	Clay	15.304	0.805	0.544	0.177	0.367	2.7	1.40396	0.98	0.566							1.00	1	
10.335	3	Clay	15.377	0.662	0.581	0.198	0.383	2.64	1.38977	0.98	0.579							1.00	1	
10.991	3	Clay	16.74	0.782	0.617	0.218	0.399	2.66	1.37586	0.98	0.589							1.00	1	
11.647	4	Silty Clay to Clay	11.479	0.432	0.655	0.239	0.416	2.73	1.36139	0.98	0.599							1.00	1	
12.303	5	Clayey Silt to Silty Clay	10.815	0.259	0.693	0.259	0.434	2.62	1.34639	0.97	0.607							1.00	1	
12.959	4	Silty Clay to Clay	12.471	0.471	0.73	0.279	0.451	2.72	1.33253	0.97	0.614							1.00	1	
13.615	3	Clay	12.977	0.533	0.767	0.3	0.467	2.75	1.31974	0.97	0.622							1.00	1	
14.272	4	Silty Clay to Clay	15.118	0.598	0.804	0.32	0.484	2.7	1.30641	0.97	0.628							1.00	1	
14.928	4	Silty Clay to Clay	20.058	0.786	0.842	0.341	0.501	2.61	1.29336	0.97	0.635							1.00	1	
15.584	4	Silty Clay to Clay	21.472	0.847	0.88	0.361	0.518	2.6	1.28056	0.97	0.641							1.00	1	
16.24	5	Clayey Silt to Silty Clay	23.73	0.826	0.917	0.382	0.535	2.54	1.26801	0.97	0.646							1.00	1	
16.896	5	Clayey Silt to Silty Clay	24.609	0.849	0.955	0.402	0.552	2.55	1.25571	0.96	0.651							1.00	1	
17.552	4	Silty Clay to Clay	21.466	0.923	0.992	0.423	0.57	2.67	1.24294	0.96	0.654							1.00	1	
18.209	3	Clay	16.785	0.999	1.029	0.443	0.586	2.87	1.2318	0.96	0.658							1.00	1	
18.865	3	Clay	11.581	0.652	1.065	0.464	0.602	2.99	1.22087	0.96	0.662							1.00	1	
19.521	4	Silty Clay to Clay	15.918	0.562	1.103	0.484	0.619	2.74	1.20946	0.96	0.666							1.00	1	
20.177	5	Clayey Silt to Silty Clay	24.31	0.921	1.141	0.505	0.636	2.61	1.19826	0.96	0.669							1.00	1	
20.833	5	Clayey Silt to Silty Clay	29.081	1.043	1.178	0.525	0.653	2.54	1.18726	0.95	0.672							1.00	1	
21.49	5	Clayey Silt to Silty Clay	34.905	1.267	1.216	0.546	0.67	2.5	1.17647	0.95	0.674							1.00	1	
22.146	5	Clayey Silt to Silty Clay	33.536	1.363	1.253	0.566	0.687	2.57	1.16587	0.95	0.676							1.00	1	
22.802	4	Silty Clay to Clay	30.269	1.253	1.291	0.587	0.704	2.61	1.15546	0.95	0.679							1.00	1	
23.458	5	Clayey Silt to Silty Clay	33.221	1.226	1.329	0.607	0.722	2.56	1.14464	0.95	0.680							1.00	1	
24.114	5	Clayey Silt to Silty Clay	39.085	1.306	1.366	0.628	0.739	2.48	1.13461	0.94	0.681							1.00	1	
24.77	5	Clayey Silt to Silty Clay	37.637	1.4	1.404	0.648	0.756	2.52	1.12474	0.94	0.683							1.00	1	
25.427	5	Clayey Silt to Silty Clay	33.148	1.359	1.441	0.668	0.773	2.6	1.11505	0.94	0.684							1.00	1	
26.083	5	Clayey Silt to Silty Clay	34.218	1.314	1.479	0.689	0.79	2.57	1.10553	0.94	0.685							1.00	1	
26.739	5	Clayey Silt to Silty Clay	38.504	1.423	1.517	0.709	0.807	2.53	1.09616	0.94	0.686							1.00	1	
27.395	6	Sandy Silt to Clayey Silt	46.334	1.417	1.554	0.73	0.824	2.42	1.08696	0.93	0.686							1.00	1	
28.051	6	Sandy Silt to Clayey Silt	45.185	1.316	1.592	0.75	0.841	2.43	1.0779	0.93	0.686							1.00	1	
28.707	6	Sandy Silt to Clayey Silt	48.119	1.47	1.629	0.771	0.858	2.43	1.069	0.93	0.686							1.00	1	
29.364	5	Clayey Silt to Silty Clay	43.974	1.547	1.667	0.791	0.876	2.51	1.05973	0.92	0.686							1.00	1	
30.02	5	Clayey Silt to Silty Clay	33.948	1.355	1.705	0.812	0.893	2.64	1.05112	0.92	0.685							1.00	1	
30.676	4	Silty Clay to Clay	29.059	1.234	1.742	0.832	0.91	2.72	1.04265	0.92	0.685							1.00	1	
31.332	5	Clayey Silt to Silty Clay	25.747	0.966	1.78	0.853	0.927	2.73	1.03432	0.91	0.684							1.00	1	
31.988	5	Clayey Silt to Silty Clay	24.068	0.808	1.817	0.873	0.944	2.72	1.02612	0.91	0.683							1.00	1	
32.644	5	Clayey Silt to Silty Clay	24.107	0.795	1.855	0.894	0.961	2.72	1.01805	0.91	0.682							1.00	1	
33.301	5	Clayey Silt to Silty Clay	24.327	0.898	1.892	0.914	0.978	2.76	1.0101	0.90	0.680							1.00	1	
33.957	5	Clayey Silt to Silty Clay	22.446	0.752	1.93	0.935	0.995	2.77	1.00228	0.90	0.679							1.00	1	
34.613	5	Clayey Silt to Silty Clay	22.007	0.689	1.968	0.955	1.013	2.76	0.99413	0.89	0.677							1.00	1	
35.269	5	Clayey Silt to Silty Clay	20.26	0.615	2.005	0.976	1.03	2.79	0.98655	0.89	0.675							0.99	1	
35.925	5	Clayey Silt to Silty Clay	17.442	0.48	2.043	0.996	1.047	2.82	0.97908	0.88	0.673							0.99	1	
36.581	5	Clayey Silt to Silty Clay	16.492	0.47	2.08	1.017	1.064	2.86	0.97173	0.88	0.670							0.99	1	
37.238	5	Clayey Silt to Silty Clay	17.844	0.464	2.118	1.037	1.081	2.81	0.96449	0.87	0.668							0.98	1	
37.894	5	Clayey Silt to Silty Clay	17.219	0.422	2.156	1.057	1.098	2.81	0.95735	0.87	0.665							0.98	1	
38.55	5	Clayey Silt to Silty Clay	17.675	0.459	2.193	1.078	1.115	2.82	0.95032	0.86	0.662							0.98	1	
39.206	5	Clayey Silt to Silty Clay	15.478	0.457	2.231	1.098	1.132	2.92	0.9434	0.86	0.659							0.98	1	
39.862	5	Clayey Silt to Silty Clay	18.48	0.471	2.268	1.119	1.15	2.81	0.93617	0.85	0.656							0.97	1	
40.518	6	Sandy Silt to Clayey Silt	24.693	0.696	2.306	1.139	1.167	2.73	0.92945	0.85	0.652							0.97	1	
41.175	6	Sandy Silt to Clayey Silt	45.877	1.431	2.344	1.16	1.184	2.55	0.92282	0.84	0.649							0.97	1	
41.831	5	Clayey Silt to Silty Clay	38.51	1.53	2.381	1.18	1.201	2.7	0.91628	0.83	0.645							0.96	1	
42.487	6	Sandy Silt to Clayey Silt	28.535	0.836	2.419	1.201	1.218	2.71	0.90984	0.83	0.641							0.96	1	
43.143	6	Sandy Silt to Clayey Silt	27.397	0.787	2.456	1.221	1.235	2.73	0.90349	0.82	0.637							0.96	1	
43.799	6	Sandy Silt to Clayey Silt	34.381	0.9	2.494	1.242	1.252	2.62	0.89723	0.82	0.634							0.96	1	
44.455	5	Clayey Silt to Silty Clay	46.643	1.697	2.532	1.262	1.269	2.62	0.89105	0.81	0.630							0.95	1	
45.112	5	Clayey Silt to Silty Clay	42.717	1.717	2.569	1.283	1.287	2.68	0.8846	0.80	0.625							0.95	1	
45.768	11	Sitff Fine-Grained	73.009	3.378	2.612	1.303	1.309	2.57	0.87684	0.80	0.619							0.95	1	
46.424	11	Sitff Fine-Grained	68.126	3.51	2.655	1.324	1.331	2.63	0.86922	0.79	0.614							0.94	1	
47.08	6	Sandy Silt to Clayey Silt	96.418	2.737	2.692	1.344	1.348	2.34	0.86342	0.78	0.610							0.93	1	
47.736	7	Silty Sand to Sandy Silt	146.379	3.623	2.731	1.365	1.367	2.17	0.85703	0.78	0.605							0.91	1	
48.392	6	Sandy Silt to Clayey Silt	104.952	3.966	2.769	1.385	1.384	2.42	0.85139	0.77	0.600							0.94	1	
49.049	6	Sandy Silt to Clayey Silt	122.063	4.078	2.806	1.405	1.401	2.33	0.84583	0.76	0.596							0.92	1	
49.705	6	Sandy Silt to Clayey Silt	118.627	4.367	2.844	1.426	1.418	2.38	0.84034	0.76	0.591							0.93	1	
50.361	6	Sandy Silt to Clayey Silt	103.081	3.421	2.881	1.446	1.435	2.39	0.83491	0.75	0.586							0.92	1	
51.017	6	Sandy Silt to Clayey Silt	164.42	5.32	2.919	1.467	1.452	2.25	0.82956	0.74	0.582							0.90	1	
51.673	9	Sand	260.872	3.682	2.96	1.487	1.472	1.84	0.82335	0.74	0.577							0.86	1	
52.329	9	Sand	331.431	5.071	3	1.508	1.493	1.8	0.81693	0.73	0.571							0.85	1	
52.986	9	Sand	488.473	5.259	3.041	1.528	1.513	1.58	0.81091	0.72	0.567							0.85	1	
53.642	9	Sand	364.686	5.387	3.082	1.549	1.533	1.77	0.80498	0.72	0.562							0.84	1	
54.298	10	Gravelly Sand to Sand	358.344	2.641	3.124	1.569	1.554	1.56	0.79884	0.71	0.557							0.84	1	
54.954	9	Sand	259.943	2.195	3.164	1.59	1.575	1.7	0.79279	0.70	0.551							0.84	1	
55.61	6	Sandy Silt to Clayey Silt	63.119	1.691	3.202	1.61	1.592	2.51	0.78797	0.70	0.547							0.91	1	
56.266	6	Sandy Silt to Clayey Silt	34.06	0.794	3.24	1.631	1.609	2.69	0.7832	0.69	0.543							0.91	1	
56.923	6	Sandy Silt to Clayey Silt	33.863	0.729	3.277	1.651	1.626	2.67	0.77849	0.69	0.539							0.91	1	
57.579	6	Sandy Silt to Clayey Silt	30.427	0.658	3.315	1.672	1.643	2.72	0.77383	0.68	0.535							0.91	1	
58.235	6	Sandy Silt to Clayey Silt	30.562	0.553	3.352	1.692	1.66	2.67	0.76923	0.67	0.531							0.90	1	
58.891	6	Sandy Silt to Clayey Silt	35.316	0.69	3.39	1.713	1.677	2.64	0.76469	0.67	0.527							0.90	1	
59.547	6	Sandy Silt to Clayey Silt	38.082	0.806	3.428	1.733	1.695	2.65	0.75993	0.66	0.523							0.90	1	
60.203	6	Sandy Silt to Clayey Silt	35.829	0.732	3.465	1.754	1.712	2.65	0.75549	0.66	0.519							0.90	1	
60.86	6	Sandy Silt to Clayey Silt	40.701	0.842	3.503	1.774	1.729	2.61	0.75111	0.65	0.515							0.90	1	
61.516	6	Sandy Silt to Clayey Silt	44.374	1.193	3.54	1.794	1.746	2.65	0.74678	0.65	0.512							0.89	1	
62.172	6	Sandy Silt to Clayey Silt	47.646	1.489	3.578	1.815	1.763	2.67	0.74249	0.64	0.508							0.89	1	
62.828	5	Clayey Silt to Silty Clay	49.167	1.789	3.616	1.835	1.78	2.71	0.73826	0.64	0.505							0.89	1	
63.484	5	Clayey Silt to Silty Clay	45.292	1.719	3.653	1.856	1.797	2.76	0.73407	0.63	0.502							0.89	1	
64.14	5	Clayey Silt to Silty Clay	35.373	1.316	3.691	1.876	1.814	2.86	0.72993	0.63	0.498							0.89	1	
64.797	5	Clayey Silt to Silty Clay	24.885	0.869	3.728	1.897	1.832	3	0.72559	0.62	0.495							0.89	1	
65.453	5	Clayey Silt to Silty Clay	26.344	0.76	3.766	1.917	1.849	2.92	0.72155	0.62	0.492							0.88	1	
66.109	6	Sandy Silt to Clayey Silt	25.071	0.679	3.804	1.938	1.866	2.92	0.71755	0.61	0.489							0.88	1	

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

PROJECT NAME ***CORDELIA TRUCK SCALES RELOCATION PROJECT***
PROJECT NO. ***208123.GDR***
CPT NO. ***CPT-09-TS-001***

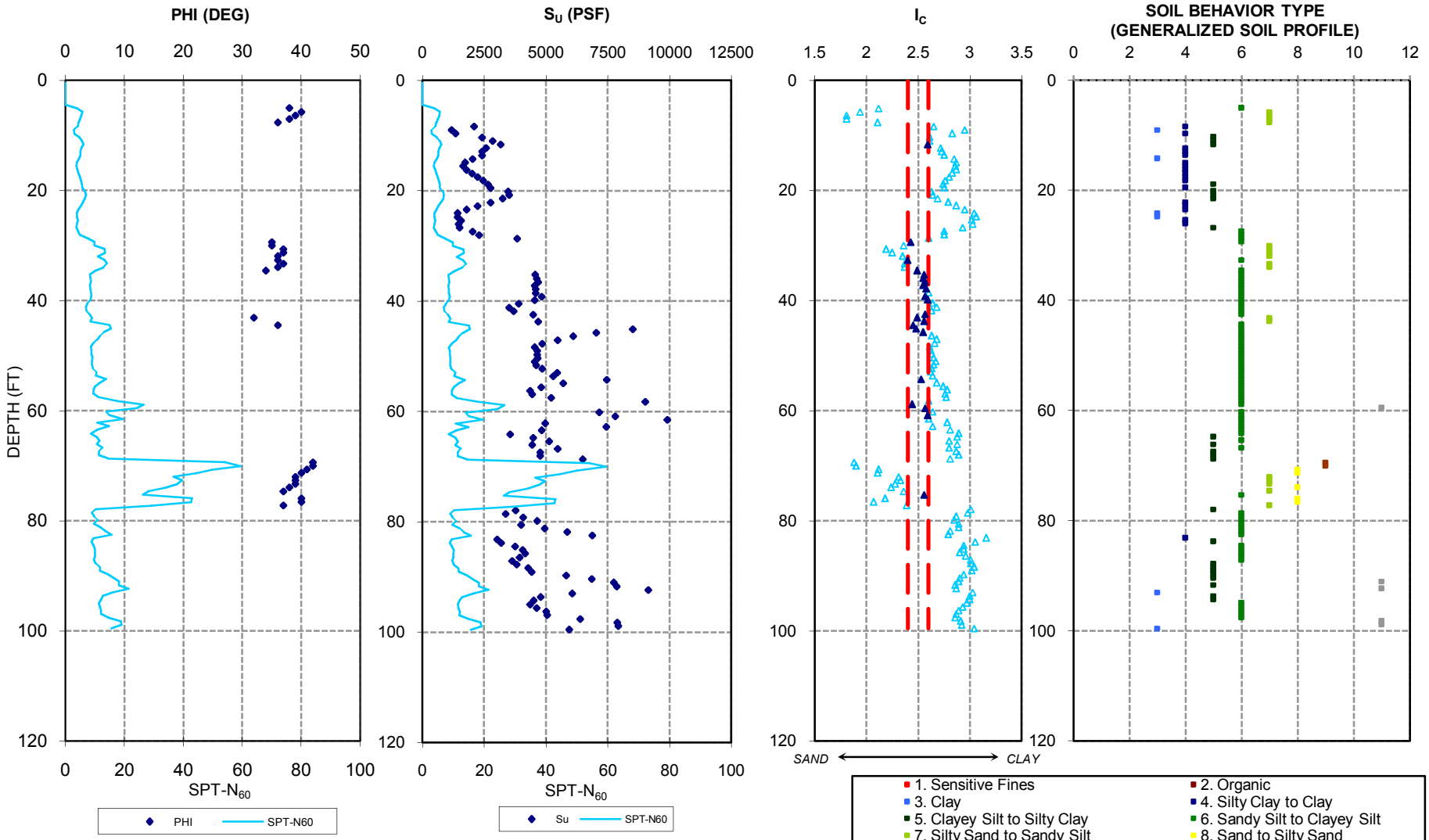
FAULT INFO
CONCORD-GREEN VALLEY FAULT
a_{max} *(g)=* 0.6

FAULT M_w = 6.9
MSF = 1.24

		CPT RESULT INPUT							*CSR*		*$CRR_{7.5}$*						*F.S.=($CRR_{7.5}$/CSR)*MSF*K_σ*K_α*		
Depth (ft)		Soil Behavior Type	qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	γ_d	CSR	Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	Kσ	Kα	F.S.
66.765	6	Sandy Silt to Clayey Silt	28.281	0.648	3.841	1.958	1.883	2.83	0.71359	0.61	0.486							0.88	1	
67.421	6	Sandy Silt to Clayey Silt	38.183	0.828	3.879	1.979	1.9	2.69	0.70968	0.61	0.483							0.88	1	
68.077	6	Sandy Silt to Clayey Silt	42.334	1.052	3.916	1.999	1.917	2.69	0.70581	0.60	0.480							0.88	1	
68.734	6	Sandy Silt to Clayey Silt	31.154	0.908	3.954	2.02	1.934	2.85	0.70198	0.60	0.478							0.88	1	
69.39	6	Sandy Silt to Clayey Silt	28.377	0.652	3.991	2.04	1.951	2.82	0.69819	0.60	0.475							0.87	1	
70.046	6	Sandy Silt to Clayey Silt	30.078	0.742	4.029	2.061	1.968	2.83	0.69444	0.59	0.472							0.87	1	
70.702	6	Sandy Silt to Clayey Silt	31.644	0.809	4.067	2.081	1.986	2.82	0.69052	0.59	0.470							0.87	1	
71.358	6	Sandy Silt to Clayey Silt	36.871	0.927	4.104	2.102	2.003	2.76	0.68686	0.58	0.467							0.87	1	
72.014	6	Sandy Silt to Clayey Silt	32.404	0.768	4.142	2.122	2.02	2.8	0.68323	0.58	0.465							0.87	1	
72.671	6	Sandy Silt to Clayey Silt	32.213	0.804	4.179	2.142	2.037	2.82	0.67964	0.58	0.463							0.87	1	
73.327	6	Sandy Silt to Clayey Silt	33.553	0.971	4.217	2.163	2.054	2.84	0.67609	0.58	0.461							0.87	1	
73.983	6	Sandy Silt to Clayey Silt	33.12	0.86	4.255	2.183	2.071	2.82	0.67258	0.57	0.458							0.86	1	
74.639	6	Sandy Silt to Clayey Silt	34.303	0.907	4.292	2.204	2.088	2.81	0.6691	0.57	0.456							0.86	1	
75.295	6	Sandy Silt to Clayey Silt	36.73	1.195	4.33	2.224	2.105	2.85	0.66566	0.57	0.454							0.86	1	
75.951	5	Clayey Silt to Silty Clay	37.862	1.344	4.367	2.245	2.123	2.87	0.66205	0.56	0.452							0.86	1	
76.608	5	Clayey Silt to Silty Clay	34.899	1.227	4.405	2.265	2.14	2.9	0.65868	0.56	0.450							0.86	1	
77.264	6	Sandy Silt to Clayey Silt	34.697	0.971	4.443	2.286	2.157	2.84	0.65535	0.56	0.449							0.86	1	
77.92	6	Sandy Silt to Clayey Silt	36.764	0.928	4.48	2.306	2.174	2.79	0.65205	0.56	0.447							0.86	1	
78.576	6	Sandy Silt to Clayey Silt	37.603	0.921	4.518	2.327	2.191	2.78	0.64878	0.55	0.445							0.85	1	
79.232	6	Sandy Silt to Clayey Silt	39.997	0.936	4.555	2.347	2.208	2.75	0.64554	0.55	0.443							0.85	1	
79.888	6	Sandy Silt to Clayey Silt	44.047	0.969	4.593	2.368	2.225	2.69	0.64234	0.55	0.442							0.85	1	
80.545	6	Sandy Silt to Clayey Silt	54.918	1.356	4.631	2.388	2.242	2.65	0.63916	0.55	0.440							0.85	1	
81.201	6	Sandy Silt to Clayey Silt	53.696	1.415	4.668	2.409	2.26	2.68	0.63584	0.54	0.438							0.85	1	
81.857	7	Silty Sand to Sandy Silt	59.429	1.33	4.707	2.429	2.278	2.6	0.63255	0.54	0.437							0.85	1	
82.513	6	Sandy Silt to Clayey Silt	75.657	2.04	4.744	2.45	2.295	2.57	0.62947	0.54	0.435							0.85	1	
83.169	6	Sandy Silt to Clayey Silt	91.011	3.25	4.782	2.47	2.312	2.6	0.62642	0.54	0.434							0.85	1	
83.825	6	Sandy Silt to Clayey Silt	79.216	2.493	4.82	2.491	2.329	2.61	0.62341	0.54	0.432							0.84	1	
84.482	6	Sandy Silt to Clayey Silt	88.966	3.122	4.857	2.511	2.346	2.61	0.62042	0.53	0.431							0.84	1	
85.138	7	Silty Sand to Sandy Silt	182	4.146	4.896	2.531	2.364	2.24	0.61728	0.53	0.430							0.80	1	
85.794	9	Sand	409.94	5.84	4.937	2.552	2.385	1.85	0.61367	0.53	0.428							0.71	1	
86.45	8	Sand to Silty Sand	361.205	6.35	4.976	2.572	2.404	1.96	0.61043	0.53	0.426							0.71	1	
87.106	7	Silty Sand to Sandy Silt	273.5	7.346	5.015	2.593	2.422	2.18	0.6074	0.53	0.425							0.75	1	
87.762	7	Silty Sand to Sandy Silt	246.165	7.021	5.054	2.613	2.44	2.24	0.6044	0.52	0.424							0.76	1	
88.419	8	Sand to Silty Sand	265.491	5.749	5.093	2.634	2.459	2.13	0.60126	0.52	0.423							0.75	1	
89.075	8	Sand to Silty Sand	304.153	6.7	5.133	2.654	2.479	2.1	0.59799	0.52	0.421							0.73	1	
89.731	8	Sand to Silty Sand	206.895	4.497	5.173	2.675	2.498	2.21	0.59492	0.52	0.420							0.78	1	
90.387	6	Sandy Silt to Clayey Silt	59.446	2.107	5.21	2.695	2.515	2.79	0.59219	0.52	0.419							0.83	1	
91.043	6	Sandy Silt to Clayey Silt	53.949	1.432	5.248	2.716	2.532	2.75	0.5895	0.52	0.418							0.83	1	
91.699	6	Sandy Silt to Clayey Silt	66.273	2.316	5.285	2.736	2.549	2.74	0.58682	0.52	0.417							0.83	1	
92.356	11	Sitff Fine-Grained	78.563	3.566	5.328	2.757	2.571	2.75	0.5834	0.51	0.415							0.83	1	
93.012	11	Sitff Fine-Grained	80.264	4.402	5.371	2.777	2.594	2.81	0.57986	0.51	0.414							0.83	1	
93.668	11	Sitff Fine-Grained	57.869	2.891	5.414	2.798	2.616	2.91	0.57652	0.51	0.412							0.83	1	
94.324	5	Clayey Silt to Silty Clay	57.452	2.444	5.451	2.818	2.633	2.87	0.57396	0.51	0.411							0.82	1	
94.98	11	Sitff Fine-Grained	57.953	2.844	5.494	2.839	2.656	2.92	0.57054	0.51	0.410							0.82	1	
95.636	5	Clayey Silt to Silty Clay	47.308	1.74	5.532	2.859	2.673	2.91	0.56804	0.51	0.409							0.82	1	
96.293	5	Clayey Silt to Silty Clay	57.875	2.397	5.569	2.879	2.69	2.87	0.56555	0.51	0.408							0.82	1	
96.949	5	Clayey Silt to Silty Clay	61.266	2.698	5.607	2.9	2.707	2.86	0.56309	0.50	0.407							0.82	1	
97.605	6	Sandy Silt to Clayey Silt	41.321	1.264	5.645	2.92	2.724	2.92	0.56065	0.50	0.407							0.82	1	
98.261	6	Sandy Silt to Clayey Silt	44.419	1.112	5.682	2.941	2.741	2.84	0.55823	0.50	0.406							0.82	1	
98.917	6	Sandy Silt to Clayey Silt	44.3	1.054	5.72	2.961	2.758	2.82	0.55584	0.50	0.405							0.82	1	
99.573	6	Sandy Silt to Clayey Silt	44.261	1.041	5.757	2.982	2.775	2.82	0.55346	0.50	0.404							0.82	1	

CPT DATA CORRELATION

CPT-09-SC-001



Reference: CPT data and correlation provided by Gregg Drilling and Testing, Inc.

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CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GDR	PLATE NO.:

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

PROJECT NAME ***CORDELIA TRUCK SCALES RELOCATION PROJECT***
PROJECT NO. ***208123.GDR***
CPT NO. ***CPT-09-SC-001***

FAULT INFO
CONCORD-GREEN VALLEY FAULT
a_{max} *(g)=* 0.6

FAULT M_w = 6.9
MSF = 1.24

			CPT RESULT INPUT							*CSR*		*CRR 7.5*						*F.S.=(CRR 7.5/(CSR)*MSF*Kσ*Kα*		
Depth (ft)		Soil Behavior Type	qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	γ_d	CSR	Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	Kσ	Kα	F.S.
5.085	6	Sandy Silt to Clayey Silt	18.987	0.232	0.291		0.291	2.12	1.47552	0.99	0.386							1.00	1	
5.741	7	Silty Sand to Sandy Silt	29.943	0.284	0.33		0.33	1.94	1.43791	0.99	0.386							1.00	1	
6.398	7	Silty Sand to Sandy Silt	29.323	0.139	0.369		0.369	1.81	1.40217	0.99	0.385							1.00	1	
7.054	7	Silty Sand to Sandy Silt	27.487	0.092	0.407		0.407	1.81	1.36901	0.99	0.384							1.00	1	
7.71	7	Silty Sand to Sandy Silt	21.956	0.17	0.446		0.446	2.11	1.33657	0.98	0.384							1.00	1	
8.366	4	Silty Clay to Clay	16.143	0.571	0.483		0.483	2.65	1.30719	0.98	0.383							1.00	1	
9.022	3	Clay	9.339	0.444	0.52		0.52	2.95	1.27907	0.98	0.383							1.00	1	
9.678	4	Silty Clay to Clay	10.359	0.357	0.558		0.558	2.83	1.25142	0.98	0.382							1.00	1	
10.335	5	Clayey Silt to Silty Clay	18.407	0.543	0.595	0.01	0.585	2.61	1.23249	0.98	0.388							1.00	1	
10.991	5	Clayey Silt to Silty Clay	21.646	0.742	0.633	0.031	0.602	2.61	1.22087	0.98	0.401							1.00	1	
11.647	5	Clayey Silt to Silty Clay	24.102	0.867	0.67	0.051	0.619	2.59	1.20946	0.98	0.412							1.00	1	
12.303	4	Silty Clay to Clay	19.759	0.833	0.708	0.072	0.636	2.72	1.19826	0.97	0.423							1.00	1	
12.959	4	Silty Clay to Clay	18.565	0.747	0.746	0.092	0.653	2.73	1.18726	0.97	0.433							1.00	1	
13.615	4	Silty Clay to Clay	18.604	0.771	0.783	0.113	0.67	2.75	1.17647	0.97	0.443							1.00	1	
14.272	3	Clay	15.636	0.708	0.82	0.133	0.687	2.85	1.16587	0.97	0.452							1.00	1	
14.928	4	Silty Clay to Clay	13.36	0.523	0.857	0.154	0.704	2.87	1.15546	0.97	0.460							1.00	1	
15.584	4	Silty Clay to Clay	12.707	0.453	0.895	0.174	0.721	2.86	1.14524	0.97	0.468							1.00	1	
16.24	4	Silty Clay to Clay	13.811	0.536	0.933	0.195	0.738	2.87	1.13519	0.97	0.476							1.00	1	
16.896	4	Silty Clay to Clay	15.495	0.585	0.97	0.215	0.755	2.83	1.12532	0.96	0.483							1.00	1	
17.552	4	Silty Clay to Clay	17.36	0.651	1.008	0.236	0.772	2.8	1.11562	0.96	0.490							1.00	1	
18.209	4	Silty Clay to Clay	18.891	0.697	1.045	0.256	0.789	2.76	1.10608	0.96	0.497							1.00	1	
18.865	5	Clayey Silt to Silty Clay	20.356	0.75	1.083	0.277	0.806	2.74	1.09671	0.96	0.503							1.00	1	
19.521	4	Silty Clay to Clay	20.768	0.798	1.121	0.297	0.824	2.75	1.08696	0.96	0.508							1.00	1	
20.177	5	Clayey Silt to Silty Clay	25.848	0.839	1.158	0.317	0.841	2.63	1.0779	0.96	0.514							1.00	1	
20.833	5	Clayey Silt to Silty Clay	26.552	0.86	1.196	0.338	0.858	2.64	1.069	0.95	0.519							1.00	1	
21.49	5	Clayey Silt to Silty Clay	24.823	0.873	1.233	0.358	0.875	2.69	1.06024	0.95	0.524							1.00	1	
22.146	4	Silty Clay to Clay	21.26	0.852	1.271	0.379	0.892	2.79	1.05163	0.95	0.528							1.00	1	
22.802	4	Silty Clay to Clay	17.557	0.705	1.308	0.399	0.909	2.87	1.04315	0.95	0.533							1.00	1	
23.458	4	Silty Clay to Clay	14.38	0.559	1.346	0.42	0.926	2.95	1.03481	0.95	0.537							1.00	1	
24.114	3	Clay	11.817	0.462	1.383	0.44	0.942	3.04	1.02708	0.94	0.541							1.00	1	
24.77	3	Clay	11.744	0.466	1.419	0.461	0.958	3.06	1.01946	0.94	0.545							1.00	1	
25.427	4	Silty Clay to Clay	12.843	0.498	1.457	0.481	0.976	3.02	1.01103	0.94	0.547							1.00	1	
26.083	4	Silty Clay to Clay	12.099	0.429	1.494	0.502	0.993	3.03	1.00319	0.94	0.550							1.00	1	
26.739	5	Clayey Silt to Silty Clay	12.223	0.305	1.532	0.522	1.01	2.93	0.99548	0.94	0.553							1.00	1	
27.395	6	Sandy Silt to Clayey Silt	15.51	0.294	1.57	0.543	1.027	2.75	0.98788	0.93	0.556							0.99	1	
28.051	6	Sandy Silt to Clayey Silt	17.805	0.389	1.607	0.563	1.044	2.75	0.98039	0.93	0.558							0.99	1	
28.707	6	Sandy Silt to Clayey Silt	29.678	0.707	1.645	0.584	1.061	2.6	0.97302	0.93	0.560							0.99	1	
29.364	6	Sandy Silt to Clayey Silt	42.103	0.888	1.682	0.604	1.078	2.43	0.96576	0.92	0.562							0.99	1	
30.02	7	Silty Sand to Sandy Silt	43.163	0.78	1.721	0.625	1.096	2.36	0.95819	0.92	0.564	2.360	0.96	41.36	2.156	89.185	0.15	0.98	1	0.26
30.676	7	Silty Sand to Sandy Silt	62.324	0.981	1.76	0.645	1.115	2.19	0.95032	0.92	0.565	2.190	0.95	59.23	1.643	97.289	0.17	0.98	1	0.29
31.332	7	Silty Sand to Sandy Silt	61.891	1.142	1.798	0.665	1.133	2.25	0.94299	0.91	0.565	2.250	0.94	58.36	1.798	104.951	0.19	0.97	1	0.33
31.988	7	Silty Sand to Sandy Silt	48.727	0.952	1.837	0.686	1.151	2.35	0.93577	0.91	0.566	2.350	0.94	45.60	2.120	96.650	0.16	0.97	1	0.29
32.644	6	Sandy Silt to Clayey Silt	57.244	1.51	1.874	0.706	1.168	2.4	0.92905	0.91	0.567							0.97	1	
33.301	7	Silty Sand to Sandy Silt	61.547	1.543	1.913	0.727	1.186	2.37	0.92205	0.90	0.567	2.370	0.92	56.75	2.194	124.510	0.26	0.97	1	0.46
33.957	7	Silty Sand to Sandy Silt	56.168	1.296	1.952	0.747	1.204	2.37	0.91514	0.90	0.568	2.370	0.92	51.40	2.194	112.778	0.21	0.96	1	0.38
34.613	6	Sandy Silt to Clayey Silt	41.901	0.992	1.989	0.768	1.222	2.49	0.90834	0.89	0.567							0.96	1	
35.269	6	Sandy Silt to Clayey Silt	33.587	0.749	2.027	0.788	1.239	2.56	0.90201	0.89	0.567							0.96	1	
35.925	6	Sandy Silt to Clayey Silt	33.993	0.724	2.065	0.809	1.256	2.55	0.89577	0.88	0.567							0.96	1	
36.581	6	Sandy Silt to Clayey Silt	34.522	0.783	2.102	0.829	1.273	2.57	0.88961	0.88	0.566							0.95	1	
37.238	6	Sandy Silt to Clayey Silt	33.261	0.676	2.14	0.85	1.29	2.55	0.88353	0.87	0.565							0.95	1	
37.894	6	Sandy Silt to Clayey Silt	33.644	0.771	2.177	0.87	1.307	2.58	0.87754	0.87	0.564							0.95	1	
38.55	6	Sandy Silt to Clayey Silt	33.823	0.807	2.215	0.891	1.324	2.6	0.87163	0.86	0.563							0.95	1	
39.206	6	Sandy Silt to Clayey Silt	35.508	0.791	2.253	0.911	1.341	2.57	0.8658	0.86	0.562							0.94	1	
39.862	6	Sandy Silt to Clayey Silt	33.407	0.741	2.29	0.932	1.358	2.59	0.86005	0.85	0.560							0.94	1	
40.518	6	Sandy Silt to Clayey Silt	28.935	0.611	2.328	0.952	1.376	2.64	0.85404	0.85	0.558							0.94	1	
41.175	6	Sandy Silt to Clayey Silt	26.242	0.542	2.365	0.973	1.393	2.68	0.84844	0.84	0.557							0.94	1	
41.831	6	Sandy Silt to Clayey Silt	27.374	0.508	2.403	0.993	1.41	2.63	0.84291	0.83	0.555							0.93	1	
42.487	6	Sandy Silt to Clayey Silt	32.494	0.608	2.44	1.014	1.427	2.57	0.83746	0.83	0.552							0.93	1	
43.143	7	Silty Sand to Sandy Silt	37.237	0.612	2.479	1.034	1.445	2.49	0.83176	0.82	0.550	2.490	0.83	30.97	2.718	84.194	0.14	0.93	1	0.25
43.799	7	Silty Sand to Sandy Silt	33.914	0.639	2.518	1.054	1.463	2.56	0.82614	0.82	0.547	2.560	0.83	28.02	3.091	86.590	0.14	0.93	1	0.26
44.455	6	Sandy Silt to Clayey Silt	63.305	1.631	2.555	1.075	1.48	2.45	0.8209	0.81	0.545							0.92	1	
45.112	6	Sandy Silt to Clayey Silt	63.812	1.779	2.593	1.095	1.498	2.48	0.81542	0.80	0.542							0.92	1	
45.768	6	Sandy Silt to Clayey Silt	52.293	1.509	2.631	1.116	1.515	2.55	0.81031	0.80	0.539							0.92	1	
46.424	6	Sandy Silt to Clayey Silt	45.325	1.426	2.668	1.136	1.532	2.63	0.80527	0.79	0.536							0.92	1	
47.08	6	Sandy Silt to Clayey Silt	41.056	1.314	2.706	1.157	1.549	2.68	0.80029	0.78	0.533							0.92	1	
47.736	6	Sandy Silt to Clayey Silt	36.054	0.938	2.743	1.177	1.566	2.66	0.79537	0.78	0.530							0.91	1	
48.392	6	Sandy Silt to Clayey Silt	33.565	0.639	2.781	1.198	1.583	2.61	0.79051	0.77	0.527							0.91	1	
49.049	6	Sandy Silt to Clayey Silt	34.145	0.695	2.818	1.218	1.6	2.62	0.78571	0.76	0.524							0.91	1	
49.705	6	Sandy Silt to Clayey Silt	34.038	0.716	2.856	1.239	1.617	2.63	0.78097	0.76	0.521							0.91	1	
50.361	6	Sandy Silt to Clayey Silt	34.5	0.779	2.894	1.259	1.635	2.65	0.77601	0.75	0.517							0.91	1	
51.017	6	Sandy Silt to Clayey Silt	33.88	0.759	2.931	1.28	1.652	2.67	0.77139	0.74	0.514							0.90	1	
51.673	6	Sandy Silt to Clayey Silt	34.302	0.724	2.969	1.3	1.669	2.65	0.76682	0.74	0.510							0.90	1	
52.329	6	Sandy Silt to Clayey Silt	35.896	0.753	3.006	1.321	1.686	2.63	0.7623	0.73	0.507							0.90	1	
52.986	6	Sandy Silt to Clayey Silt	40.904	0.946	3.044	1.341	1.703	2.62	0.75784	0.72	0.504							0.90	1	
53.642	6	Sandy Silt to Clayey Silt	39.462	0.926	3.082	1.362	1.72	2.64	0.75342	0.72	0.501							0.90	1	
54.298	6	Sandy Silt to Clayey Silt	55.774	1.342	3.119	1.382	1.737	2.53	0.74906	0.71	0.497							0.90	1	
54.954	6	Sandy Silt to Clayey Silt	43.337	1.263	3.157	1.402	1.754	2.68	0.74475	0.70	0.494							0.89	1	
55.61	6	Sandy Silt to Clayey Silt	36.82	1.03	3.194	1.423	1.771	2.74	0.74049	0.70	0.491							0.89	1	
56.266	6	Sandy Silt to Clayey Silt	33.638	0.976	3.232	1.443	1.789	2.78	0.73603	0.69	0.487							0.89	1	
56.923	6	Sandy Silt to Clayey Silt	34.128	0.904	3.27	1.464	1.806	2.76	0.73187	0.69	0.484							0.89	1	
57.579	6	Sandy Silt to Clayey Silt	40.002	1.354	3.307	1.484	1.823	2.77	0.72775	0.68	0.481							0.89	1	
58.235	6	Sandy Silt to Clayey Silt	68.852	2.366	3.345	1.505	1.84	2.6	0.72368	0.67	0.478							0.89	1	
58.891	6	Sandy Silt to Clayey Silt	111.745	3.839	3.382	1.525	1.857	2.44	0.71966	0.67	0.475							0.88	1	
59.547	11	Sitff Fine-Grained	96.824	4.154	3.425	1.546	1.879	2.57	0.71452	0.66	0.471							0.88	1	
60.203	6	Sandy Silt to Clayey Silt	53.695	1.634	3.463	1.566	1.897	2.64	0.71036	0.66	0.468							0.88	1	
60.86	6	Sandy Silt to Clayey Silt	58.686	1.64	3.5	1.587	1.914	2.59	0.70649	0.65	0.465							0.88	1	
61.516	6	Sandy Silt to Clayey Silt	76.879	2.751	3.538	1.607	1.931	2.6	0.70265	0.65	0.462							0.88	1	
62.172	6	Sandy Silt to Clayey Silt	38.572	1.164	3.576	1.628	1.948	2.78	0.69886	0.64	0.460							0.88	1	
62.828	6	Sandy Silt to Clayey Silt	56.765	1.713	3.613	1.648	1.965	2.64	0.6951	0.64	0.457							0.87	1	
63.484	6	Sandy Silt to Clayey Silt	37.688	1.181	3.651	1.669	1.982	2.81	0.69139	0.63	0.454							0.87	1	
64.14	6	Sandy Silt to Clayey Silt	28.608	0.78	3.688	1.689	1.999	2.89	0.68771	0.63	0.452							0.87	1	
64.797	5	Clayey Silt to Silty Clay	35.953	1.26	3.726	1.71	2.016	2.88	0.68408	0.62	0.449							0.87	1	
65.453	6	Sandy Silt to Clayey Silt	40.577	1.268	3.764	1.73	2.034	2.8	0.68027	0.62	0.447							0.87	1	
66.109	5	Clayey Silt to Silty Clay	35.919	1.25	3.801	1.751	2.051	2.88	0.67671	0.61	0.444							0.87	1	

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

PROJECT NAME ***CORDELIA TRUCK SCALES RELOCATION PROJECT***
PROJECT NO. ***208123.GDR***
CPT NO. ***CPT-09-SC-001***

FAULT INFO
CONCORD-GREEN VALLEY FAULT
a_{max} *(g)=* 0.6

FAULT M_w = 6.9
MSF = 1.24

			CPT RESULT INPUT							*CSR*		*$CRR_{7.5}$*						*$F.S.=(CRR_{7.5}/CSR)*MSF*K\sigma*K\alpha$*		
Depth (ft)		Soil Behavior Type	qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	γ_d	CSR	Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	Kσ	Kα	F.S.
66.765	6	Sandy Silt to Clayey Silt	43.776	1.463	3.839	1.771	2.068	2.8	0.67319	0.61	0.442							0.86	1	
67.421	5	Clayey Silt to Silty Clay	38.459	1.365	3.876	1.791	2.085	2.87	0.66971	0.61	0.440							0.86	1	
68.077	5	Clayey Silt to Silty Clay	38.054	1.43	3.914	1.812	2.102	2.89	0.66626	0.60	0.438							0.86	1	
68.734	5	Clayey Silt to Silty Clay	51.527	2.071	3.952	1.832	2.119	2.81	0.66285	0.60	0.436							0.86	1	
69.39	9	Sand	287.841	3.495	3.992	1.853	2.139	1.88	0.65888	0.60	0.433							0.76	1	
70.046	9	Sand	312.99	4.444	4.033	1.873	2.16	1.9	0.65476	0.59	0.431							0.75	1	
70.702	8	Sand to Silty Sand	241.952	5.278	4.073	1.894	2.179	2.12	0.65108	0.59	0.429							0.78	1	
71.358	8	Sand to Silty Sand	217.248	4.012	4.112	1.914	2.198	2.11	0.64744	0.58	0.427							0.79	1	
72.014	7	Silty Sand to Sandy Silt	163.418	4.387	4.151	1.935	2.216	2.31	0.64403	0.58	0.425							0.82	1	
72.671	7	Silty Sand to Sandy Silt	176.023	5.283	4.19	1.955	2.234	2.33	0.64065	0.58	0.423							0.81	1	
73.327	7	Silty Sand to Sandy Silt	171.962	4.289	4.228	1.976	2.253	2.28	0.63713	0.58	0.421							0.81	1	
73.983	8	Sand to Silty Sand	156.985	3.058	4.268	1.996	2.272	2.24	0.63364	0.57	0.419							0.81	1	
74.639	7	Silty Sand to Sandy Silt	123.798	2.718	4.307	2.017	2.29	2.36	0.63037	0.57	0.418							0.84	1	
75.295	6	Sandy Silt to Clayey Silt	105.729	3.742	4.344	2.037	2.307	2.56	0.62732	0.57	0.416							0.85	1	
75.951	8	Sand to Silty Sand	203.572	4.228	4.384	2.058	2.326	2.18	0.62394	0.56	0.414							0.79	1	
76.608	8	Sand to Silty Sand	211.413	3.096	4.424	2.078	2.345	2.07	0.62059	0.56	0.413							0.78	1	
77.264	7	Silty Sand to Sandy Silt	125.967	3.044	4.462	2.099	2.364	2.39	0.61728	0.56	0.411							0.83	1	
77.92	5	Clayey Silt to Silty Clay	32.202	1.15	4.5	2.119	2.381	3.01	0.61435	0.56	0.410							0.84	1	
78.576	6	Sandy Silt to Clayey Silt	28.309	0.771	4.537	2.139	2.398	2.98	0.61145	0.55	0.408							0.84	1	
79.232	6	Sandy Silt to Clayey Silt	33.198	0.777	4.575	2.16	2.415	2.87	0.60858	0.55	0.407							0.84	1	
79.888	6	Sandy Silt to Clayey Silt	37.53	0.973	4.613	2.18	2.432	2.85	0.60573	0.55	0.406							0.84	1	
80.545	6	Sandy Silt to Clayey Silt	32.461	0.775	4.65	2.201	2.449	2.89	0.6029	0.55	0.405							0.84	1	
81.201	6	Sandy Silt to Clayey Silt	39.822	1.268	4.688	2.221	2.466	2.89	0.60011	0.54	0.403							0.83	1	
81.857	6	Sandy Silt to Clayey Silt	46.683	1.397	4.725	2.242	2.483	2.81	0.59734	0.54	0.402							0.83	1	
82.513	6	Sandy Silt to Clayey Silt	55.791	1.823	4.763	2.262	2.501	2.79	0.59443	0.54	0.401							0.83	1	
83.169	4	Silty Clay to Clay	26.653	1.121	4.801	2.283	2.518	3.16	0.59172	0.54	0.400							0.83	1	
83.825	5	Clayey Silt to Silty Clay	26.873	0.821	4.838	2.303	2.535	3.05	0.58902	0.54	0.399							0.83	1	
84.482	6	Sandy Silt to Clayey Silt	30.72	0.791	4.876	2.324	2.552	2.94	0.58635	0.53	0.398							0.83	1	
85.138	6	Sandy Silt to Clayey Silt	32.815	0.931	4.913	2.344	2.569	2.94	0.58371	0.53	0.397							0.83	1	
85.794	6	Sandy Silt to Clayey Silt	33.165	0.818	4.951	2.365	2.586	2.9	0.58109	0.53	0.396							0.83	1	
86.45	6	Sandy Silt to Clayey Silt	32.072	0.916	4.989	2.385	2.603	2.96	0.57849	0.53	0.395							0.83	1	
87.106	6	Sandy Silt to Clayey Silt	30.191	0.931	5.026	2.406	2.62	3.01	0.57592	0.53	0.394							0.82	1	
87.762	5	Clayey Silt to Silty Clay	31.694	1.02	5.064	2.426	2.638	3.01	0.57322	0.52	0.393							0.82	1	
88.419	5	Clayey Silt to Silty Clay	35.716	1.49	5.101	2.447	2.655	3.04	0.57069	0.52	0.392							0.82	1	
89.075	5	Clayey Silt to Silty Clay	36.341	1.465	5.139	2.467	2.672	3.02	0.56818	0.52	0.391							0.82	1	
89.731	5	Clayey Silt to Silty Clay	46.677	2.017	5.176	2.488	2.689	2.94	0.5657	0.52	0.390							0.82	1	
90.387	5	Clayey Silt to Silty Clay	54.045	2.508	5.214	2.508	2.706	2.9	0.56324	0.52	0.390							0.82	1	
91.043	11	Sitff Fine-Grained	61.063	3.029	5.257	2.528	2.728	2.89	0.56008	0.52	0.388							0.82	1	
91.699	5	Clayey Silt to Silty Clay	61.919	2.808	5.294	2.549	2.746	2.86	0.55753	0.52	0.387							0.82	1	
92.356	11	Sitff Fine-Grained	72.503	3.959	5.337	2.569	2.768	2.87	0.55444	0.51	0.386							0.82	1	
93.012	3	Clay	49.775	2.83	5.374	2.59	2.784	3.03	0.55221	0.51	0.386							0.81	1	
93.668	5	Clayey Silt to Silty Clay	39.718	1.505	5.411	2.61	2.801	3	0.54986	0.51	0.385							0.81	1	
94.324	5	Clayey Silt to Silty Clay	37.609	1.287	5.449	2.631	2.818	3	0.54754	0.51	0.384							0.81	1	
94.98	6	Sandy Silt to Clayey Silt	36.33	1.094	5.487	2.651	2.835	2.97	0.54523	0.51	0.384							0.81	1	
95.636	6	Sandy Silt to Clayey Silt	37.935	1.073	5.524	2.672	2.852	2.93	0.54294	0.51	0.383							0.81	1	
96.293	6	Sandy Silt to Clayey Silt	40.431	1.089	5.562	2.692	2.87	2.89	0.54054	0.51	0.382							0.81	1	
96.949	6	Sandy Silt to Clayey Silt	40.633	1.004	5.599	2.713	2.887	2.87	0.53829	0.50	0.381							0.81	1	
97.605	6	Sandy Silt to Clayey Silt	50.423	1.657	5.637	2.733	2.904	2.86	0.53606	0.50	0.381							0.81	1	
98.261	11	Sitff Fine-Grained	62.29	3.117	5.68	2.754	2.926	2.91	0.5332	0.50	0.380							0.81	1	
98.917	11	Sitff Fine-Grained	62.42	3.296	5.723	2.774	2.948	2.92	0.53038	0.50	0.379							0.81	1	
99.573	3	Clay	48.074	2.645	5.759	2.795	2.965	3.04	0.52821	0.50	0.378							0.80	1	

APPENDIX B

APPENDIX B

LABORATORY TESTS

Classification Tests

The field classification of the samples was visually verified in the laboratory according to the Unified Soil Classification System. The results are presented on "Log of Test Borings", Appendix A.

Moisture-Density

The natural moisture contents and dry unit weights were determined for selected undisturbed samples of the soils in general accordance with ASTM Test Method D 2216-98. This information was used to classify and correlate the soils. The results are presented at the appropriate depths on the "Log of Test Borings", Appendix A.

Atterberg Limits

The Atterberg Limits were determined for selected samples of the fine-grained materials. These results were used to classify the soils, as well as to obtain an indication of the expansion potential with variations in moisture content. The Atterberg Limits were determined in general accordance with ASTM Test Method D 4318-00. The results of these tests are presented on Plates B-2A and B-2B, "Plasticity Chart".

Grain Size Classification

Grain size classification tests (ASTM Test Method D 420) were performed on selected samples of granular soil to aid in the classification. The results are presented on Plates B-3A through B-3E, "Grain Size Distribution Curves".

Hydrometer

Hydrometer tests (ASTM Test Method D 422) were performed on selected samples to aid in the classification. The results are presented on Plates B-4A through B-4C, "Grain Size Distributions".

Unconfined Compression Tests

Strength tests were performed on selected undisturbed sample using unconfined compression machine. Unconfined compression tests were performed in general accordance with ASTM Test Method D 2166-00. The results are presented on "Log of Test Borings", Appendix A.

LABORATORY TESTS
(Continued)

Corrosion Tests

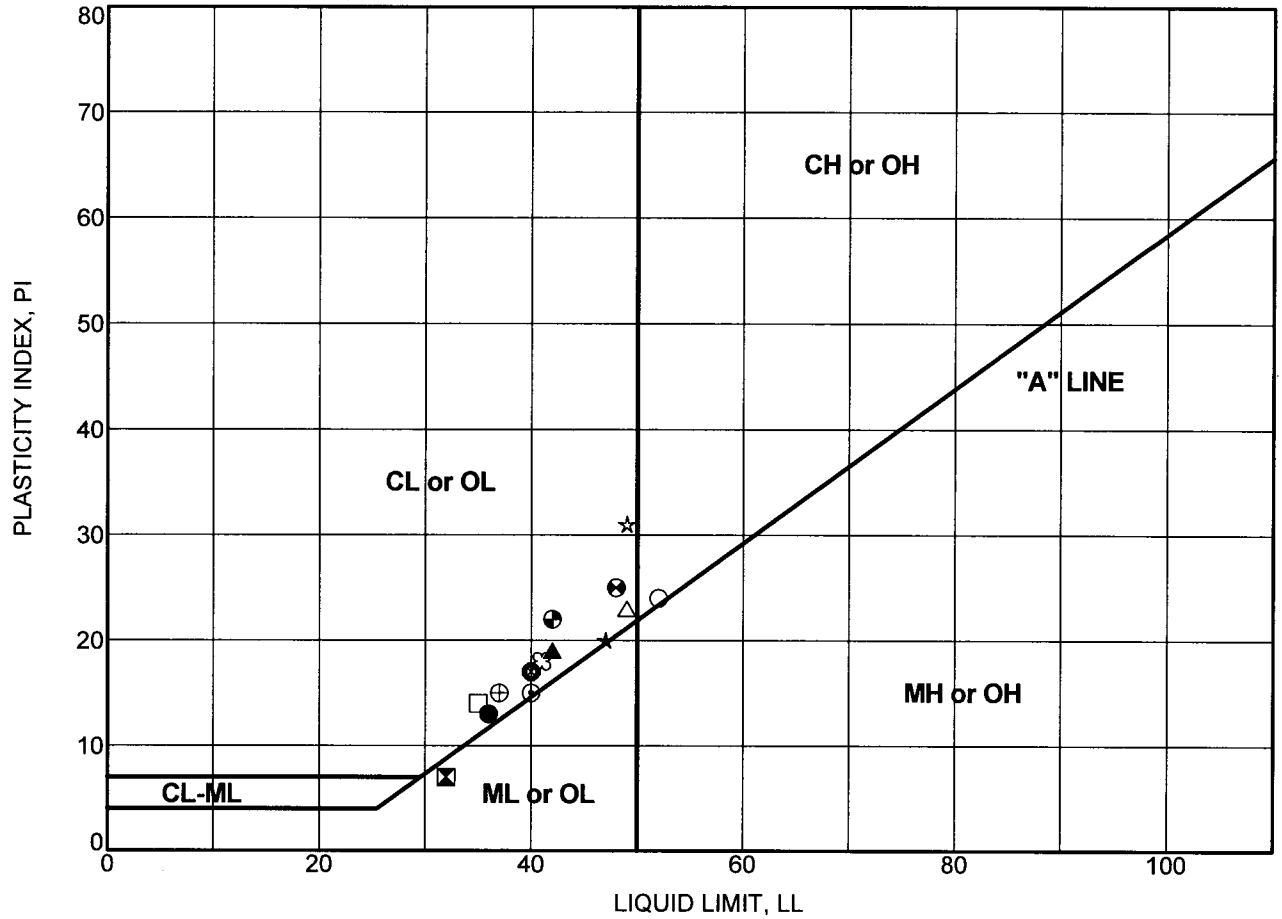
Corrosion tests were performed on selected samples to determine the corrosion potential of the soils. The pH and minimum resistivity tests were performed according to California Test Method 643. Sulfate and chloride tests were performed by Sunland Analytical. The test results are presented on Plates B-5A through B-5G.

Consolidation Tests

Consolidation tests (California Test Method T219) were performed on selected relatively undisturbed samples. The test results are presented on Plates B-6A through B-6L.

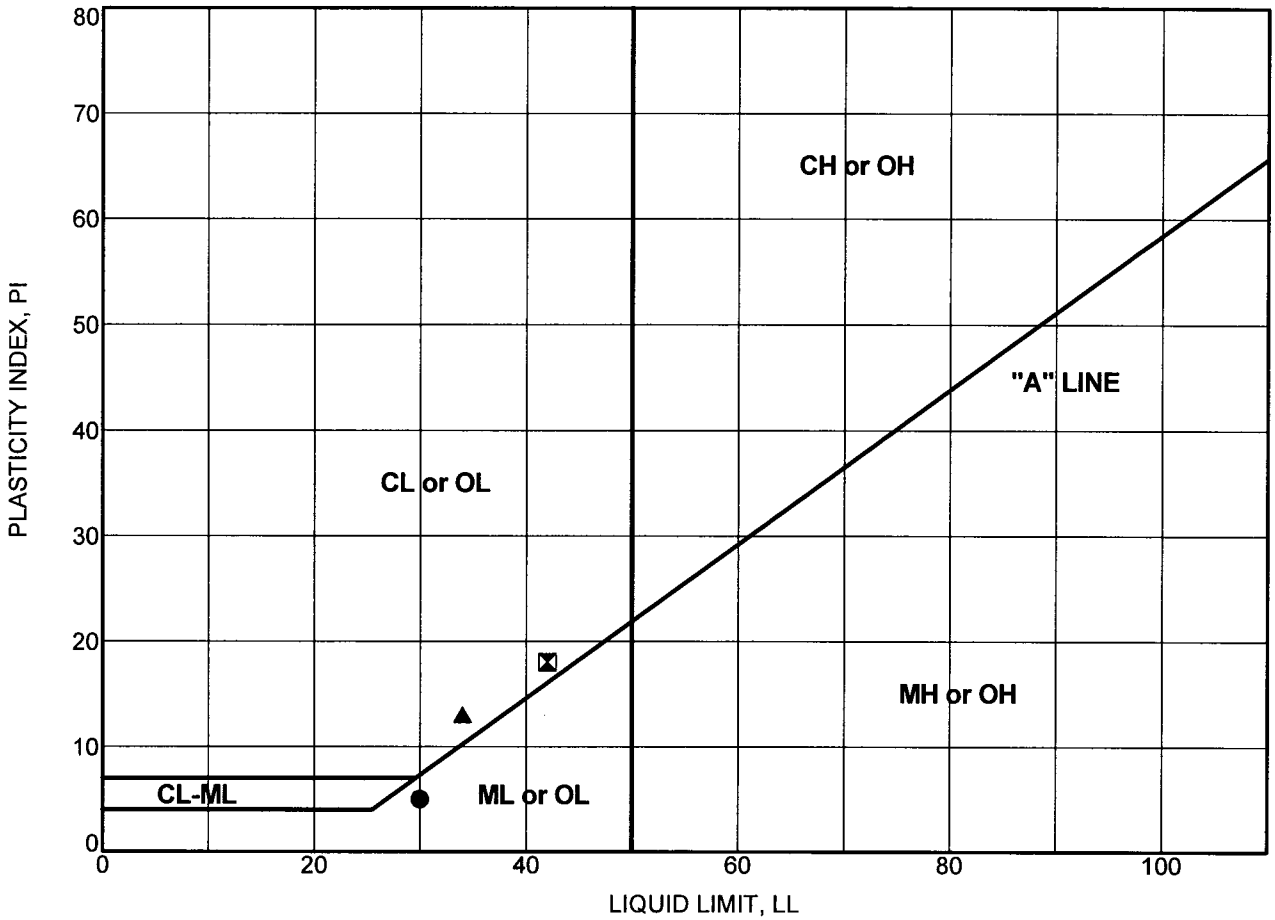
R-value Tests

R-value tests were performed on bulk samples for pavement design. The tests were performed according to California Test Method 301. The test results are presented on Plates B-7A through B-7G.



PLASTICITY CHART

Boring Number	Sample Number	Depth (feet)	Test Symbol	Moisture Content (%)	LL	PL	PI	Description
A-09-101	MC-1	6.0	●	30	36	23	13	LEAN CLAY (CL)
A-09-103	MC-2	4.5	⊠	24	32	25	7	SILT (ML)
A-09-104	MC-6	24.5	▲	26	42	23	19	LEAN CLAY (CL)
A-09-105	MC-1	3.0	★	24	47	27	20	LEAN CLAY (CL)
A-09-108	MC-1	3.0	⊙	22	40	25	15	LEAN CLAY (CL)
A-09-112	MC-4	14.5	✿	28	40	23	17	LEAN CLAY WITH SAND (CL)
A-09-115	MC-1	3.0	○	24	52	28	24	FAT CLAY (CH)
A-09-116	MC-7	29.5	△	35	49	26	23	LEAN CLAY (CL)
A-09-121	MC-1	3.0	⊗	23	40	23	17	LEAN CLAY (CL)
A-09-124	MC-1	3.0	⊕	14	37	22	15	LEAN CLAY (CL)
A-09-125	MC-1	3.0	□	21	35	21	14	LEAN CLAY (CL)
A-09-130	MC-4	19.5	⊛	27	48	23	25	LEAN CLAY (CL)
A-09-131	MC-6	24.5	◔	27	42	20	22	LEAN CLAY (CL)
A-09-137	MC-3	5.5	☆	24	49	18	31	LEAN CLAY (CL)
A-09-TS-002	MC-2	4.5	⊠	31	41	23	18	LEAN CLAY WITH SAND (CL)



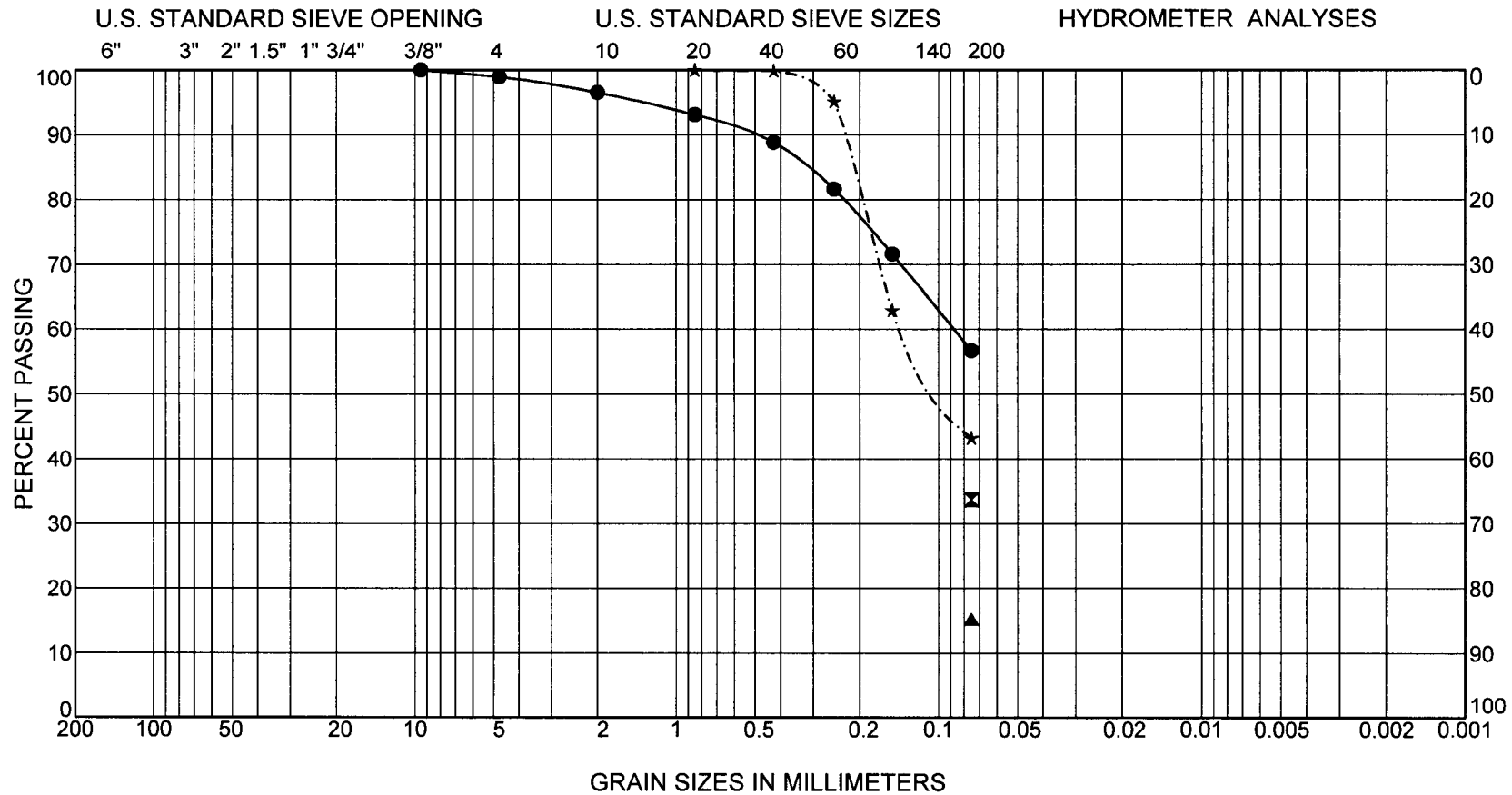
PLASTICITY CHART

Boring Number	Sample Number	Depth (feet)	Test Symbol	Moisture Content (%)	LL	PL	PI	Description
R-09-CN-001	MC-8	36.0	●	27	30	25	5	SILT (ML)
R-09-CN-002	MC-8	41.0	⊠	32	42	24	18	LEAN CLAY (CL)
R-09-SC-001	MC-13	61.0	▲	32	34	21	13	LEAN CLAY (CL)

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

GRAIN SIZE DISTRIBUTION CURVES

COBBLES	GRAVEL		SAND			SILT AND CLAY
	coarse	fine	coarse	medium	fine	



Boring Number	Sample Number	Depth (feet)	Symbol	LL	PI	Description
A-09-130	MC-6	29.5	●			SANDY LEAN CLAY (CL)
A-09-130	MC-7	34.5	⊠			SANDY LEAN CLAY WITH GRAVEL (CL)
A-09-131	MC-4	14.5	▲			CLAYEY SAND (SC)
A-09-131	MC-5	19.5	★			SILTY SAND (SM)

JOB NO: 208123.GDR

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

PLATE NO: B - 3A

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

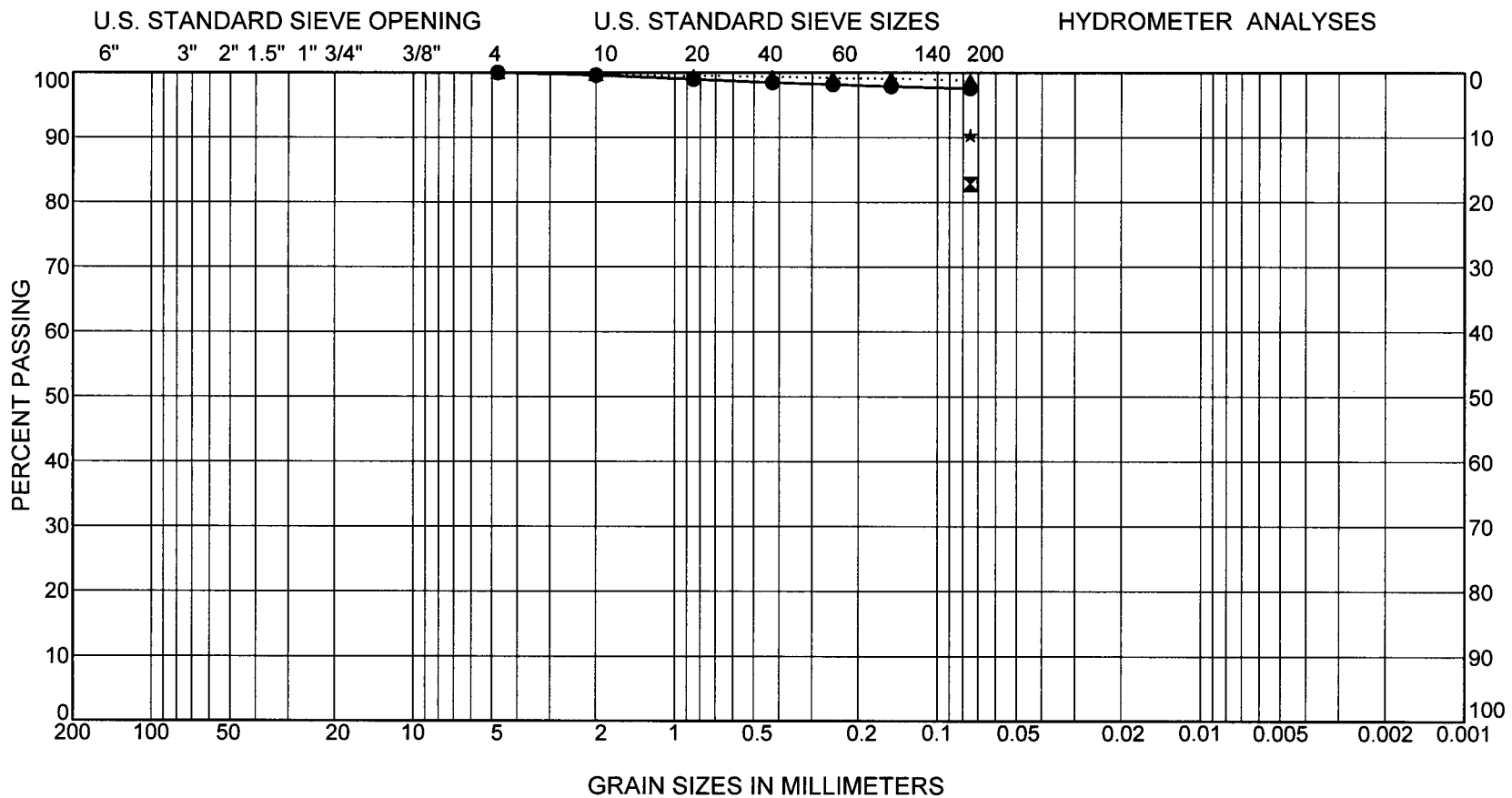
JOB NO: 208123.GDR

PLATE NO: B - 3B

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

GRAIN SIZE DISTRIBUTION CURVES

COBBLES	GRAVEL		SAND			SILT AND CLAY
	coarse	fine	coarse	medium	fine	



Boring Number	Sample Number	Depth (feet)	Symbol	LL	PI	Description
A-09-135	MC-2	2.0	●			LEAN CLAY (CL)
A-09-135	MC-5	9.5	⊠			LEAN CLAY (CL)
A-09-136	MC-1	2.5	▲			LEAN CLAY (CL)
A-09-136	MC-4	7.0	★			LEAN CLAY (CL)

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

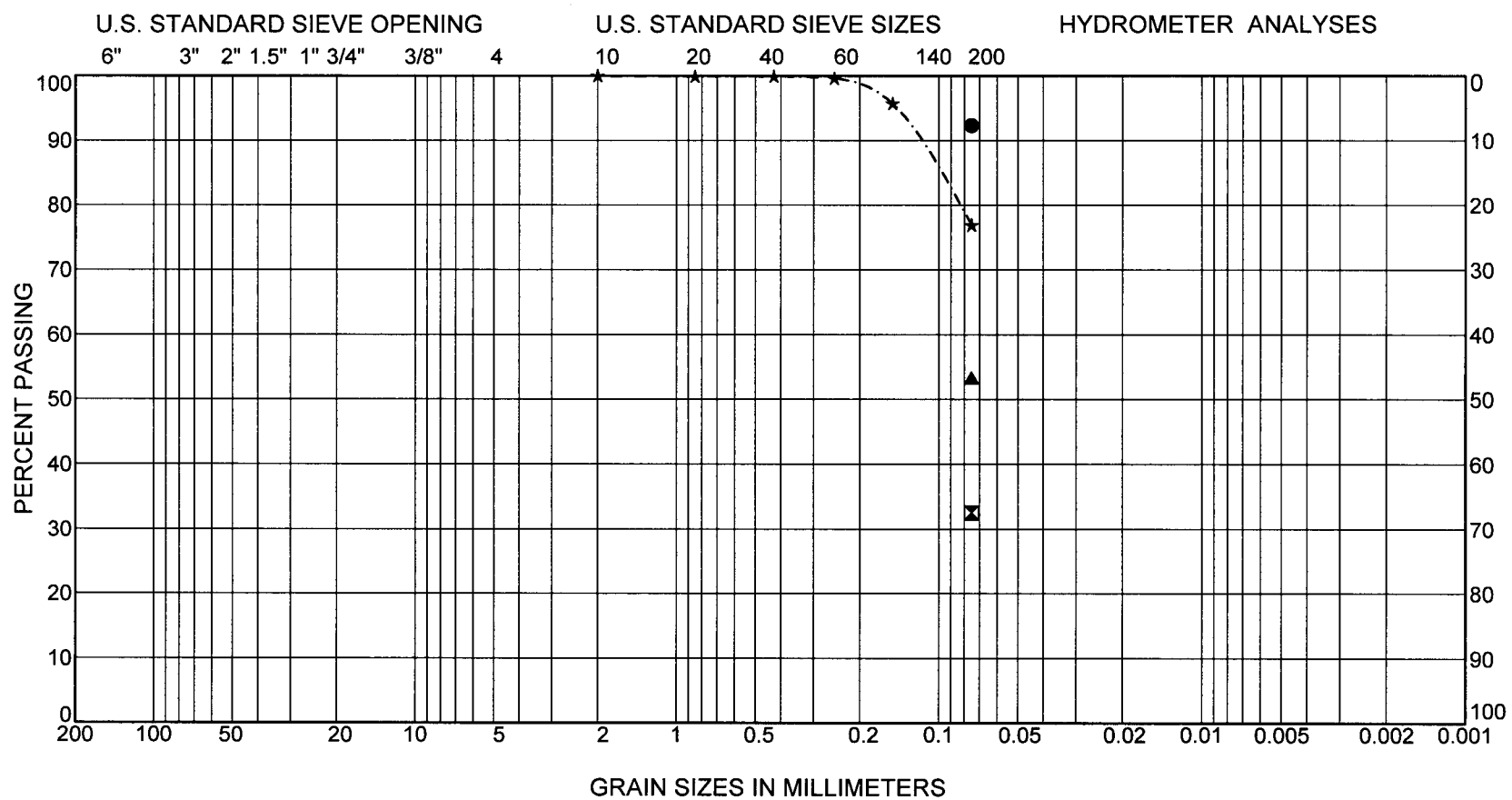
JOB NO: 208123.GDR

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

PLATE NO: B - 3C

GRAIN SIZE DISTRIBUTION CURVES

COBBLES	GRAVEL		SAND			SILT AND CLAY
	coarse	fine	coarse	medium	fine	



Boring Number	Sample Number	Depth (feet)	Symbol	LL	PI	Description
A-09-137	MC-4	7.0	●			LEAN CLAY (CL)
A-09-TS-001	MC-9	39.5	⊠			CLAYEY SAND (SC)
A-09-TS-001	SPT-12	54.5	▲			SANDY LEAN CLAY (CL)
R-09-CN-002	MC-7	36.0	★			LEAN CLAY WITH SAND (CL)

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

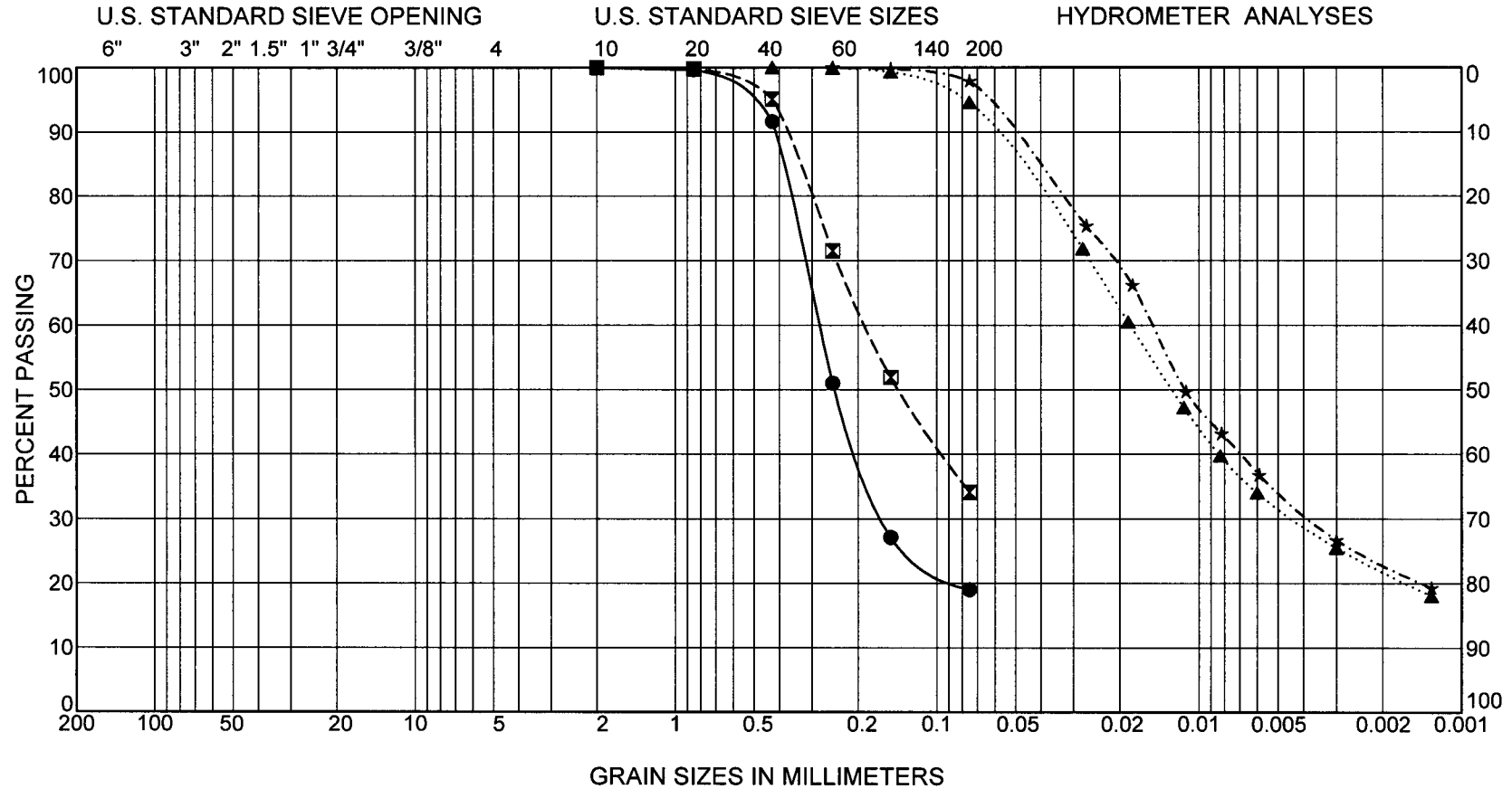
JOB NO: 208123.GDR

PLATE NO: B - 3D

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

GRAIN SIZE DISTRIBUTION CURVES

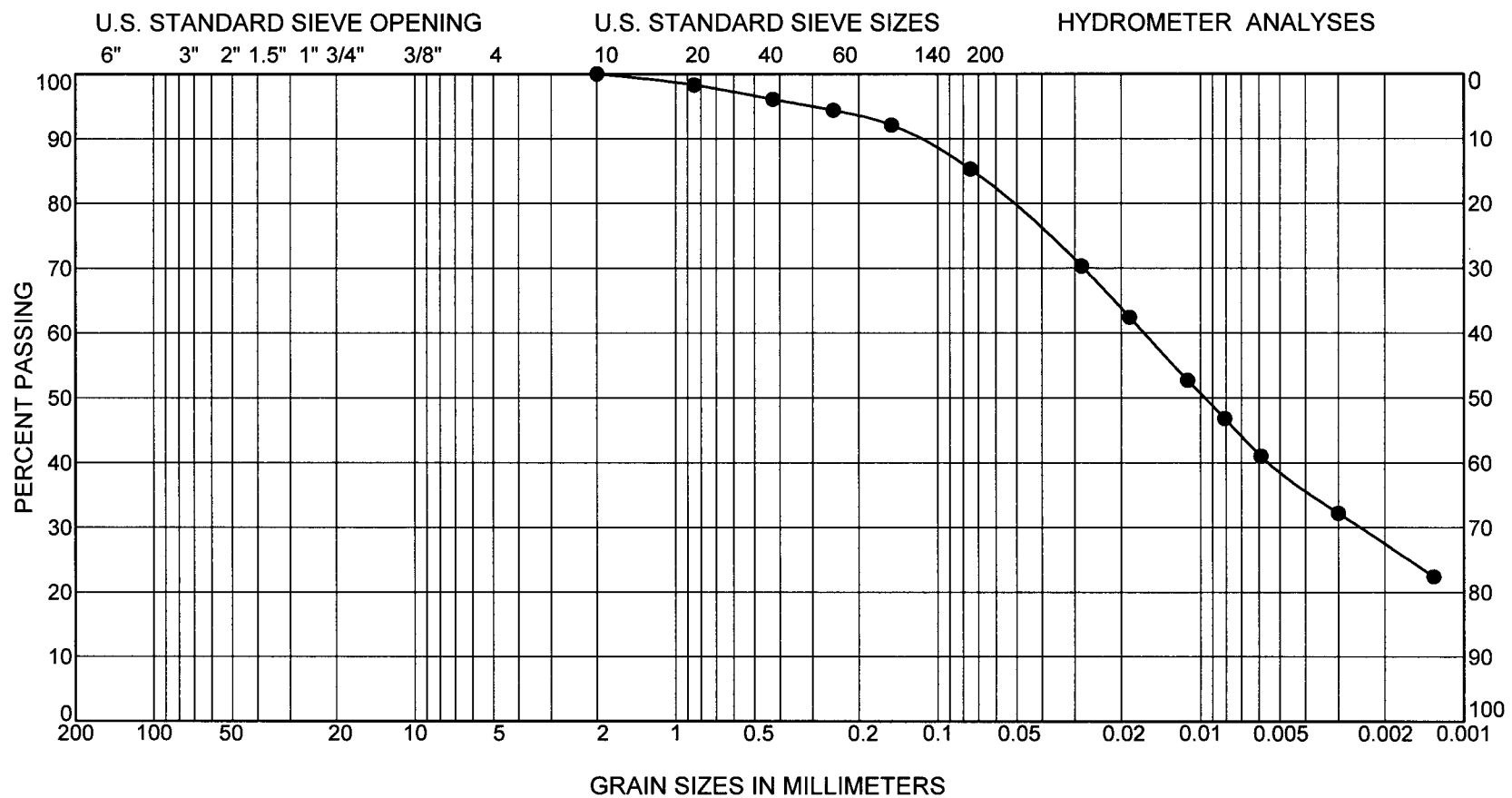
COBBLES	GRAVEL		SAND			SILT AND CLAY
	coarse	fine	coarse	medium	fine	



Boring Number	Sample Number	Depth (feet)	Symbol	LL	PI	Description
R-09-CN-004	MC-9	46.0	●			SILTY SAND (SM)
R-09-CN-004	MC-10	51.0	⊠			SILTY SAND (SM)
R-09-SC-001	MC-1	3.0	▲			SILT (ML)
R-09-SC-001	MC-2	6.0	★			SILT (ML)

GRAIN SIZE DISTRIBUTION CURVES

COBBLES	GRAVEL		SAND			SILT AND CLAY
	coarse	fine	coarse	medium	fine	



Boring Number	Sample Number	Depth (feet)	Symbol	LL	PI	Description
R-09-SC-001	MC-3	11.0	●			LEAN CLAY (CL)

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

CORDELIA TRUCK SCALES RELOCATION PROJECT
SOLANO COUNTY, CALIFORNIA

JOB NO: 208123.GDR

PLATE NO: B - 3E

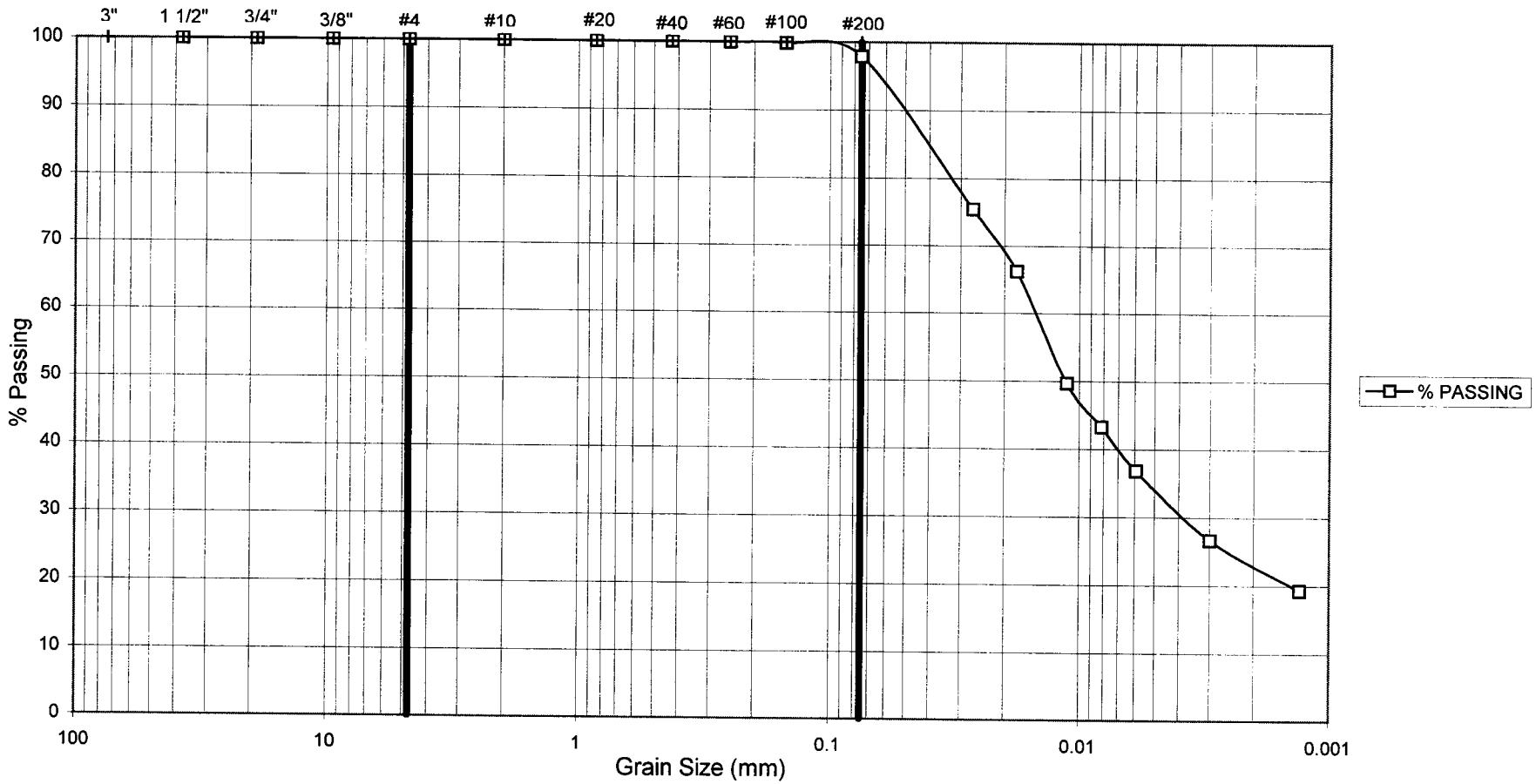
PARIKH CONSULTANTS, INC.

GRAIN SIZE DISTRIBUTION

(408) 452-9000

Project:	EB I-80 Truck Scale Relocation	Date:	2/12/2009
Client:	HDR Engineering. Inc.	Project #:	208123.GDR
Source/Location:	Native	Sample: 001 #2 @ 6 feet (R-09-SC-001)	Lab # : G646
Material Description:	SILT (ML), Yellowish brown	Date Tested:	2/11/2009

GRAVEL	SAND	SILT-TO-CLAY



Reported By:	Prav Dayah

PLATE NO.: B-4A

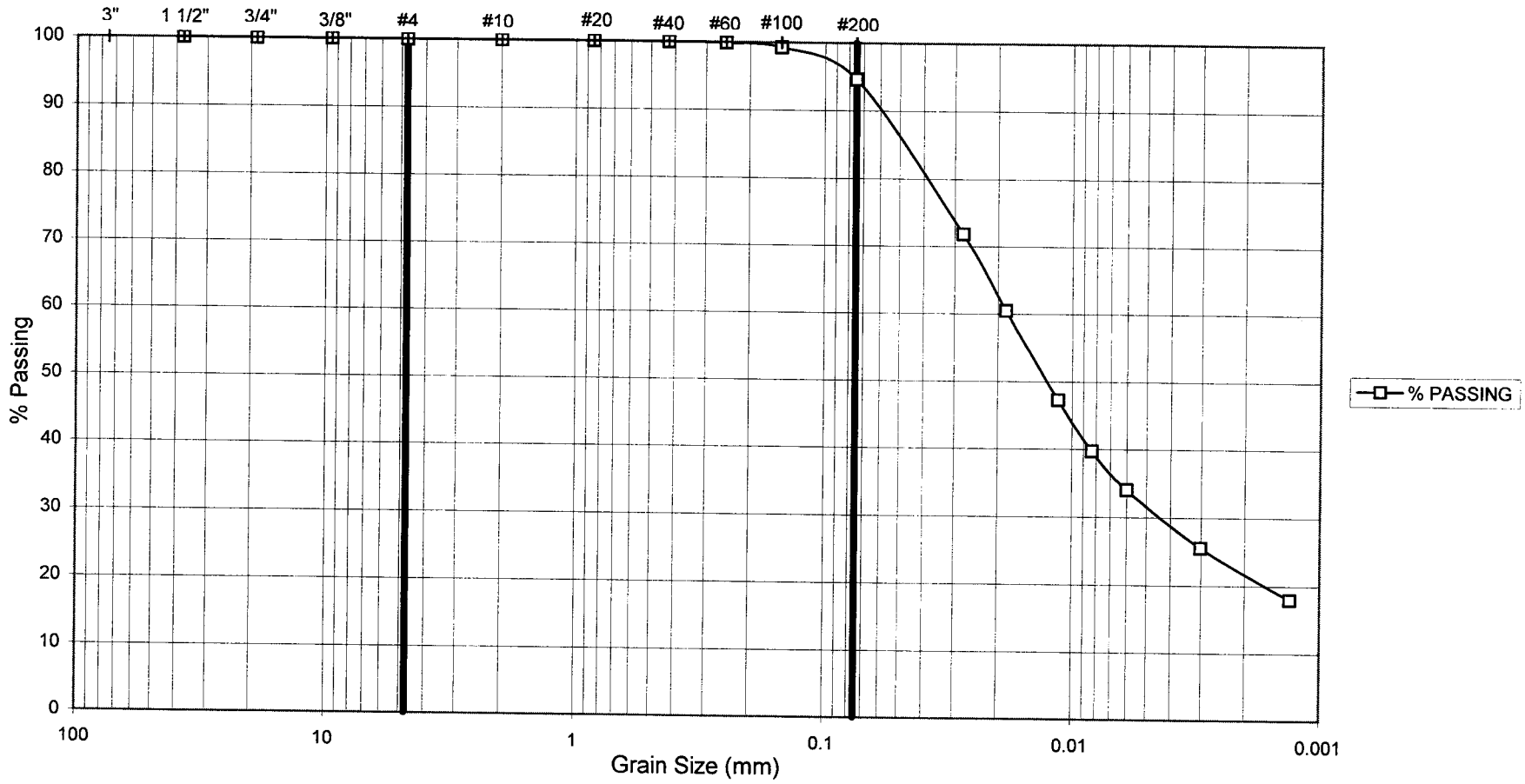
PARIKH CONSULTANTS, INC.

GRAIN SIZE DISTRIBUTION

(408) 452-9000

Project:	EB I-80 Truck Scale Relocation	Date:	2/12/2009
Client:	HDR Engineering. Inc.	Project #:	208123.GDR
Source/Location:	Native	Sample: 001 #1 @ 3 feet (R-09-SC-001).	Lab # : G646
Material Description:	SILT (ML), Yellowish brown	Date Tested:	2/11/2009

GRAVEL	SAND	SILT-TO-CLAY



Reported By:	Prav Dayah

PLATE NO.: B-4B

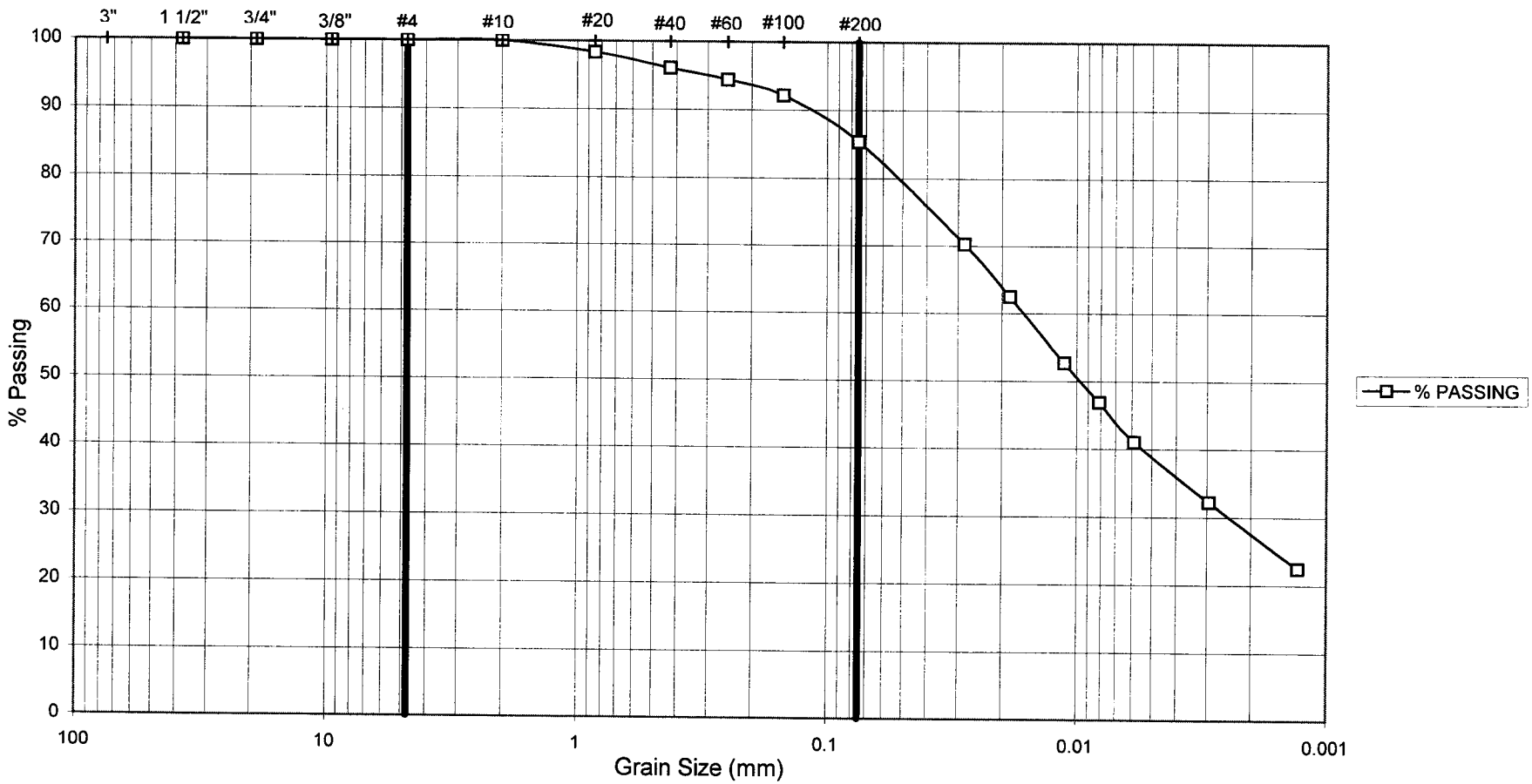
PARIKH CONSULTANTS, INC.

GRAIN SIZE DISTRIBUTION

(408) 452-9000

Project:	EB I-80 Truck Scale Relocation	Date:	2/12/2009
Client:	HDR Engineering. Inc.	Project #:	208123.GDR
Source/Location:	Native	Sample: 001 #3 @ 11 feet (R-09-SC-001)	Lab # : G646
Material Description:	LEAN CLAY (CL), Brown	Date Tested:	2/11/2009

GRAVEL	SAND	SILT-TO-CLAY



Reported By:	Prav Dayah

PLATE NO.: B-4C

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

RECEIVED
FEB 20 2009
By

Date Reported 02/18/2009
Date Submitted 02/11/2009

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 208123.GDR I-80 Site ID : 001 #5 @21'. (R-09-SC-001)#5@21'
Thank you for your business.

* For future reference to this analysis please use SUN # 55127-110783.

EVALUATION FOR SOIL CORROSION

Soil pH	7.71	
Minimum Resistivity	1.26 ohm-cm (x1000)	
Chloride	13.4 ppm	00.00134 %
Sulfate	21.2 ppm	00.00212 %

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

PLATE NO.: B-5A

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 03/18/2009
Date Submitted 03/13/2009

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 208123.GDR EB I-80 Site ID : 008#3@16' (R-09-CN-002)#3 @16'
Thank you for your business.

* For future reference to this analysis please use SUN # 55240-110995.

EVALUATION FOR SOIL CORROSION

Soil pH	7.72		
Minimum Resistivity	1.74 ohm-cm (x1000)		
Chloride	20.9 ppm	00.00209	%
Sulfate	37.9 ppm	00.00379	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

PLATE NO.: B-5B

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 03/18/2009
Date Submitted 03/13/2009

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 208123.GDR EB I-80 Site ID : 09#5@26'. (R-09-CN-003) #5@26'
Thank you for your business.

* For future reference to this analysis please use SUN # 55240-110993.

EVALUATION FOR SOIL CORROSION

Soil pH	7.74	
Minimum Resistivity	1.88 ohm-cm (x1000)	
Chloride	25.8 ppm	00.00258 %
Sulfate	31.7 ppm	00.00317 %

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

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MAR 20 2009
By

PLATE NO.: B-5C

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 03/18/2009
Date Submitted 03/13/2009

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 208123.GDR EB I-80 Site ID : 106#3@9.5'.
Thank you for your business.

* For future reference to this analysis please use SUN # 55240-110994.

EVALUATION FOR SOIL CORROSION

Soil pH	7.74		
Minimum Resistivity	1.80 ohm-cm (x1000)		
Chloride	33.8 ppm	00.00338	%
Sulfate	14.9 ppm	00.00149	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

PLATE NO.: B-5D

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 09/02/2009
Date Submitted 08/28/2009

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 208123.GDR EB I80 Site ID : A09-006#4@14.5'.(A-09-TS-003)#4@14.5'
Thank you for your business.

* For future reference to this analysis please use SUN # 56632-114400.

EVALUATION FOR SOIL CORROSION

Soil pH	7.01		
Minimum Resistivity	1.07 ohm-cm (x1000)		
Chloride	37.9 ppm	00.00379	%
Sulfate	26.2 ppm	00.00262	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

PLATE NO.: B-5E

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 04/15/2009
Date Submitted 04/08/2009

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 208123.GDR EB I-80 Site ID : 118 #6@24.5'.
Thank you for your business.

* For future reference to this analysis please use SUN # 55449-111570.

EVALUATION FOR SOIL CORROSION

Soil pH	7.37	
Minimum Resistivity	1.15 ohm-cm (x1000)	
Chloride	37.8 ppm	00.00378 %
Sulfate	129.2 ppm	00.01292 %

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

PLATE NO.: B-5F

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 09/02/2009
Date Submitted 08/28/2009

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 208123.GDR EB I80 Site ID : A09-121#4@14.5'.
Thank you for your business.

* For future reference to this analysis please use SUN # 56632-114401.

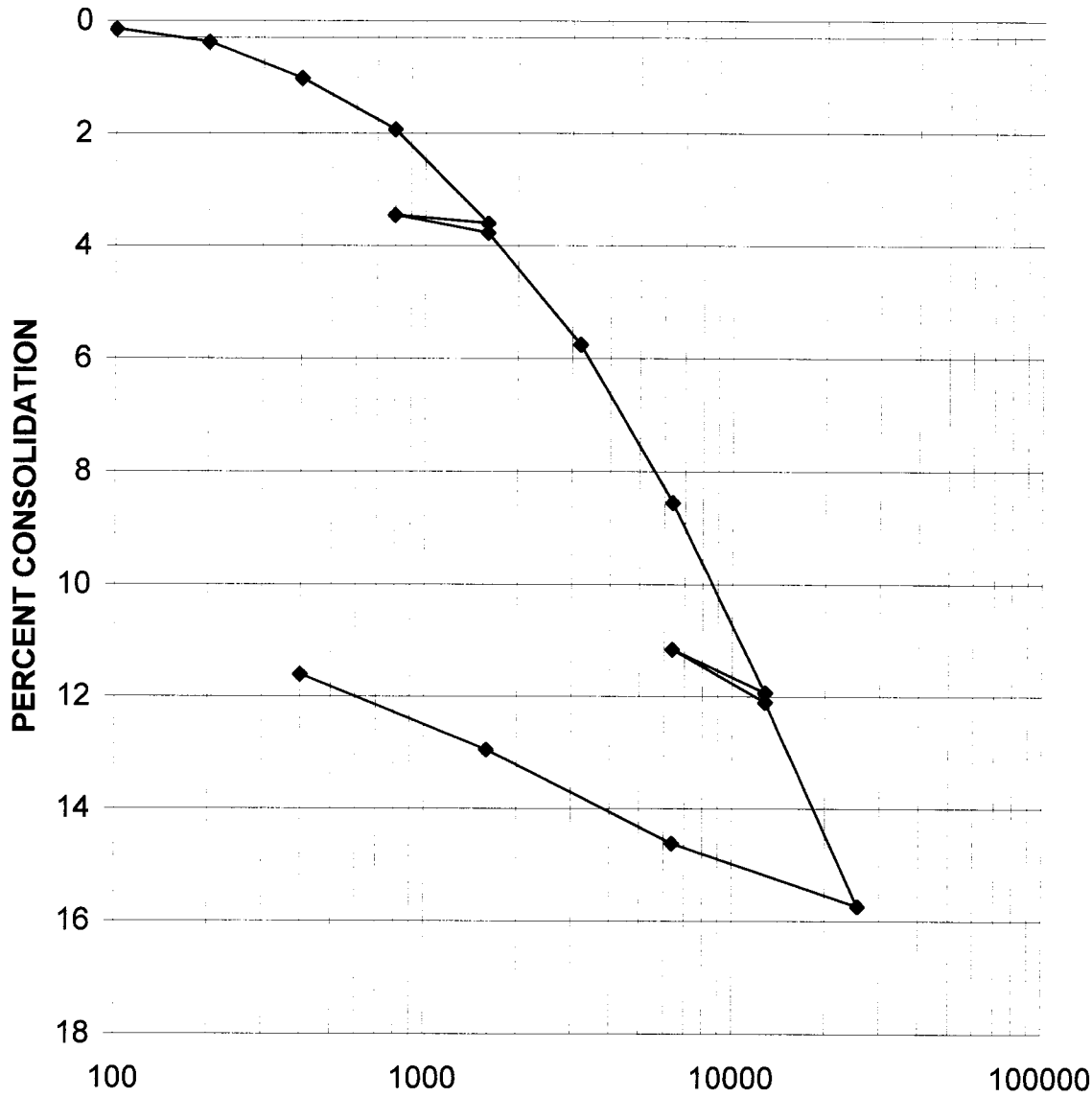
EVALUATION FOR SOIL CORROSION

Soil pH	6.65		
Minimum Resistivity	1.15 ohm-cm (x1000)		
Chloride	90.1 ppm	00.00901	%
Sulfate	42.9 ppm	00.00429	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

PLATE NO.: B-5G

CONSOLIDATION TEST RESULTS



	MOISTURE CONTENT %	DRY DENSITY PCF	HEIGHT (INCHES)	DIAMETER (INCHES)
INITIAL	29.4	96.3	1.0000	2.416
FINAL	22.9	108.9	0.8839	2.416

BORING NO.	007(R-09-CN-001)	SAMPLE NO.	6	ELEV. OR DEPTH	26'
DESCRIPTION	Lean Clay, reddish brown				

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

EB I-80 Truck Scale Relocation
HDR Engineering, Inc.

DATE	JOB NO:
3/10/2009	208123.GDR

Reported by: Prav Dayah

PLATE NO.: B-6A

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

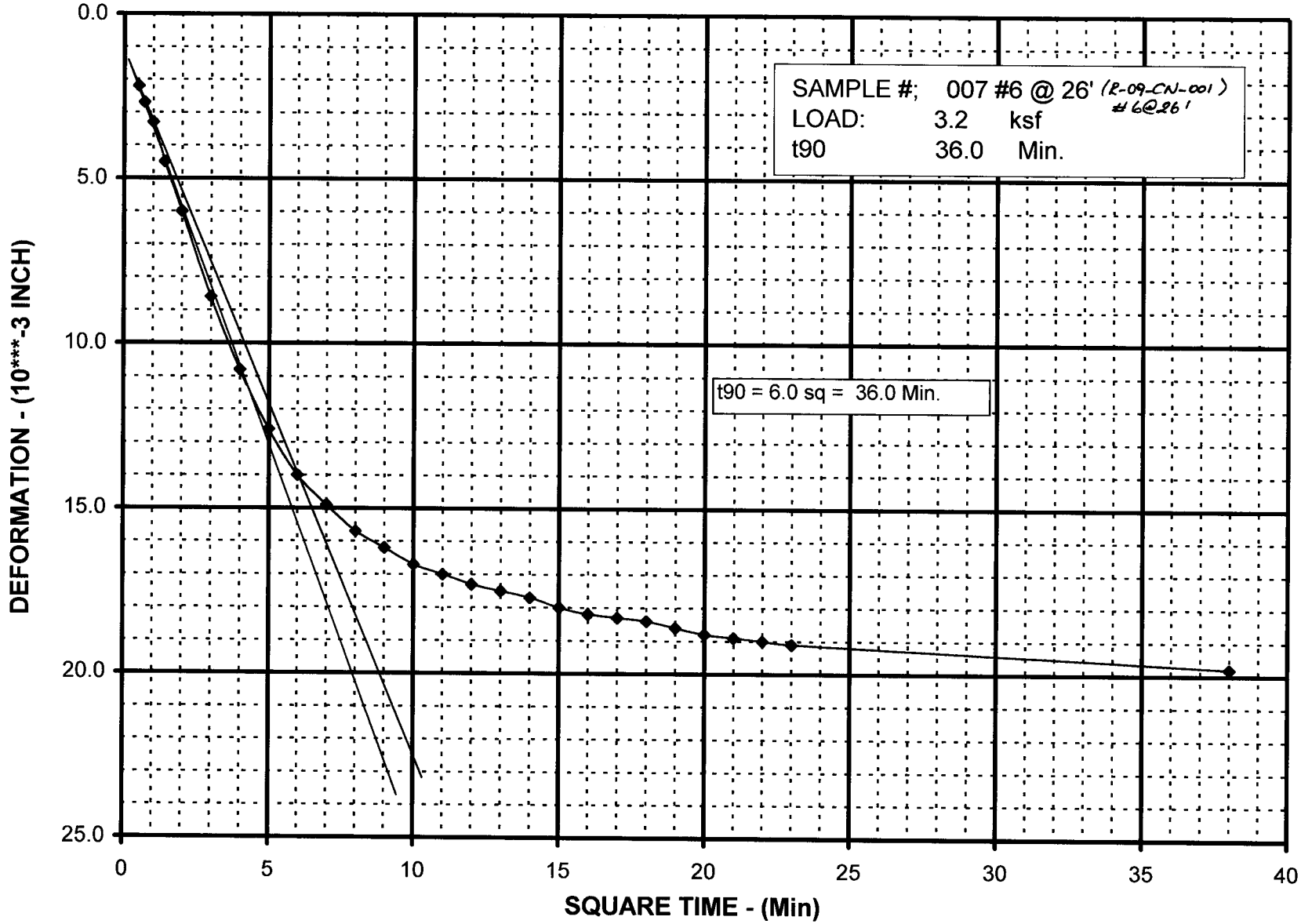


PLATE NO.: B-6B

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

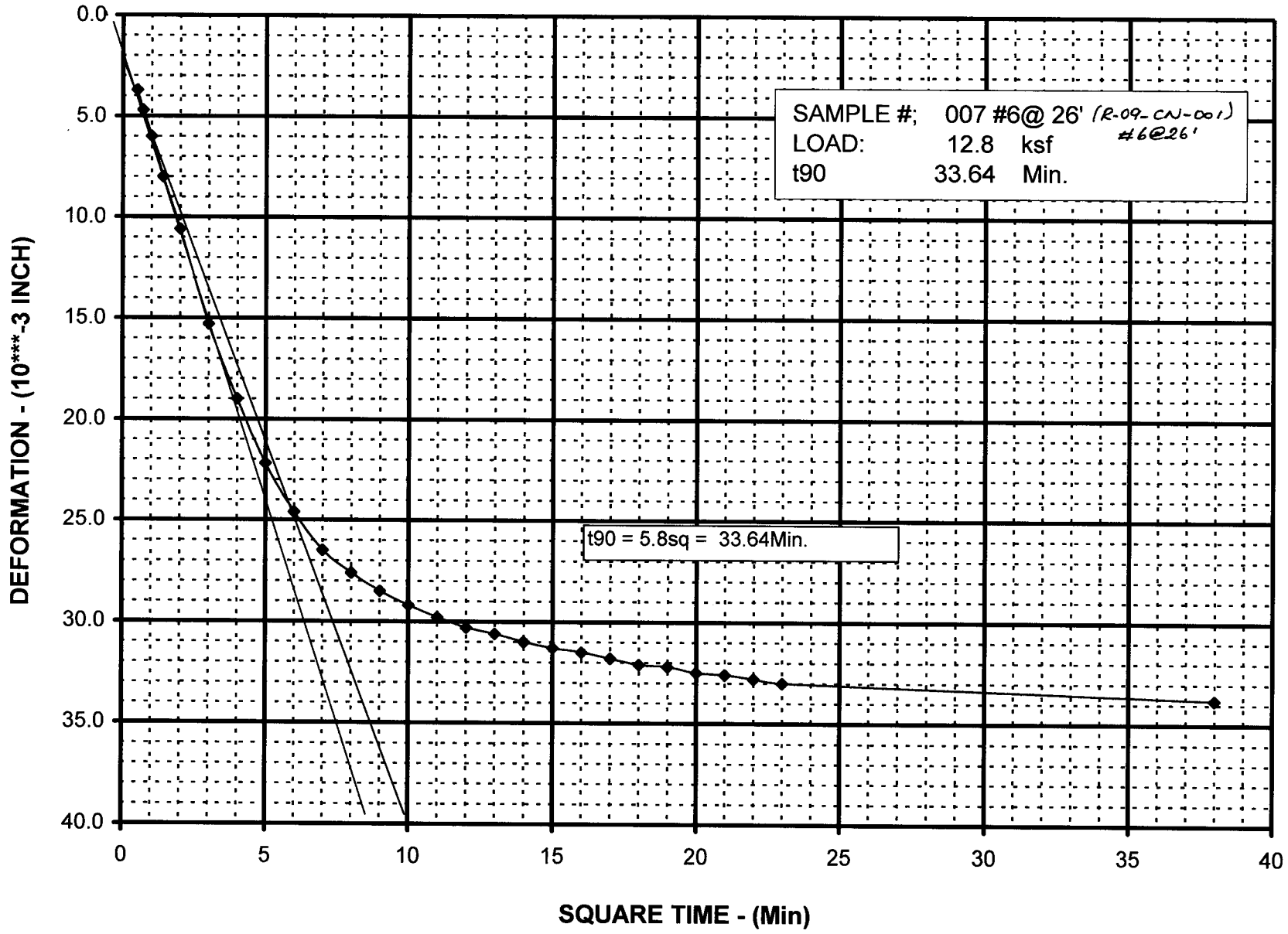
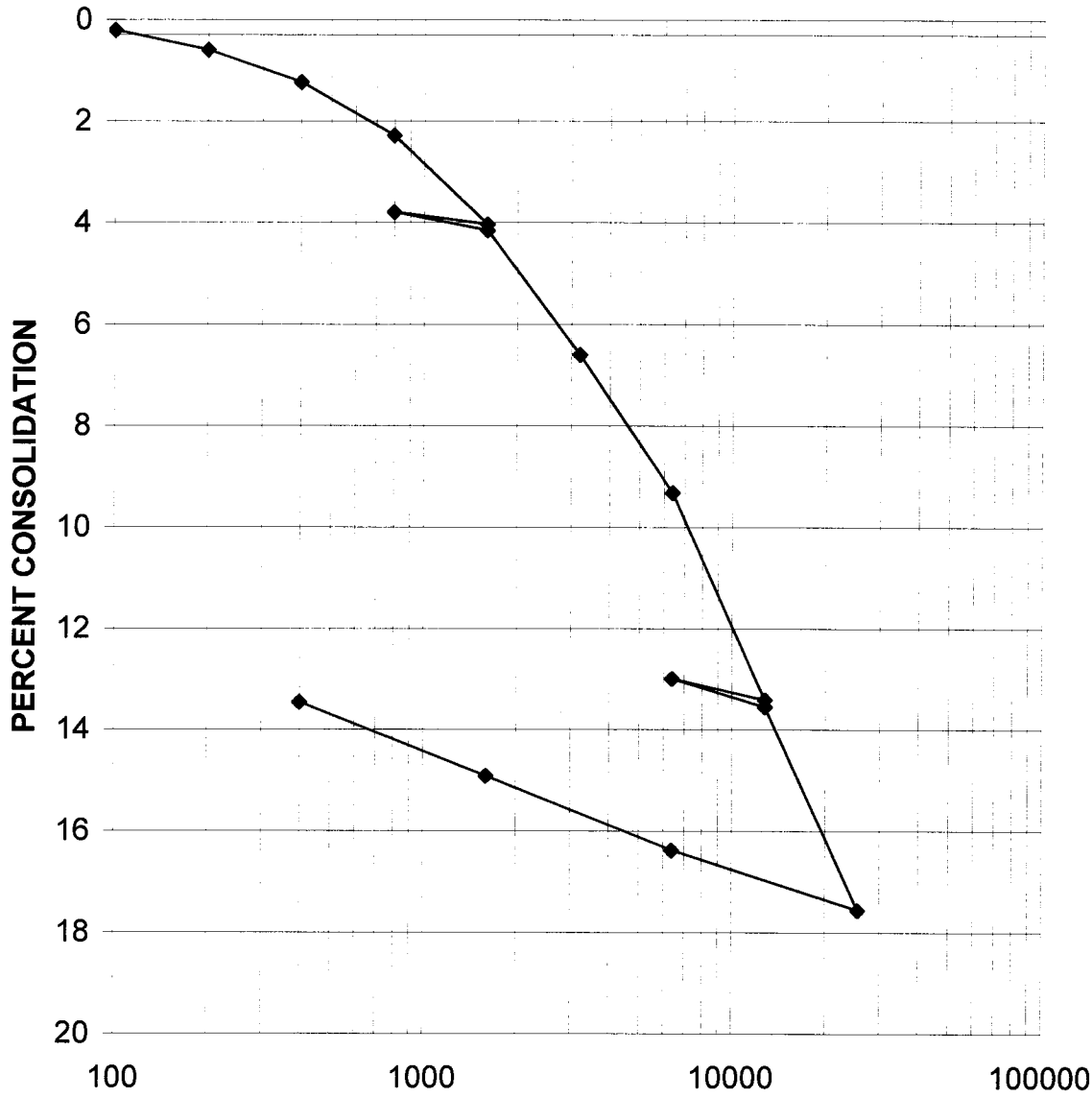


PLATE NO.: B-6C

CONSOLIDATION TEST RESULTS



	MOISTURE CONTENT %	DRY DENSITY PCF	HEIGHT (INCHES)	DIAMETER (INCHES)
INITIAL	30.3	94.6	1.0000	2.416
FINAL	23.0	109.4	0.8654	2.416

BORING NO.	011 (R-09-CN-004)	SAMPLE NO.	3	ELEV. OR DEPTH	16'
DESCRIPTION	Lean Clay, reddish brown				

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

EB I-80 Truck Scale Relocation
HDR Engineering, Inc.

DATE	JOB NO:
3/10/2009	208123.GDR

Reported by: Prav Dayah

PLATE NO.: B-6D

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

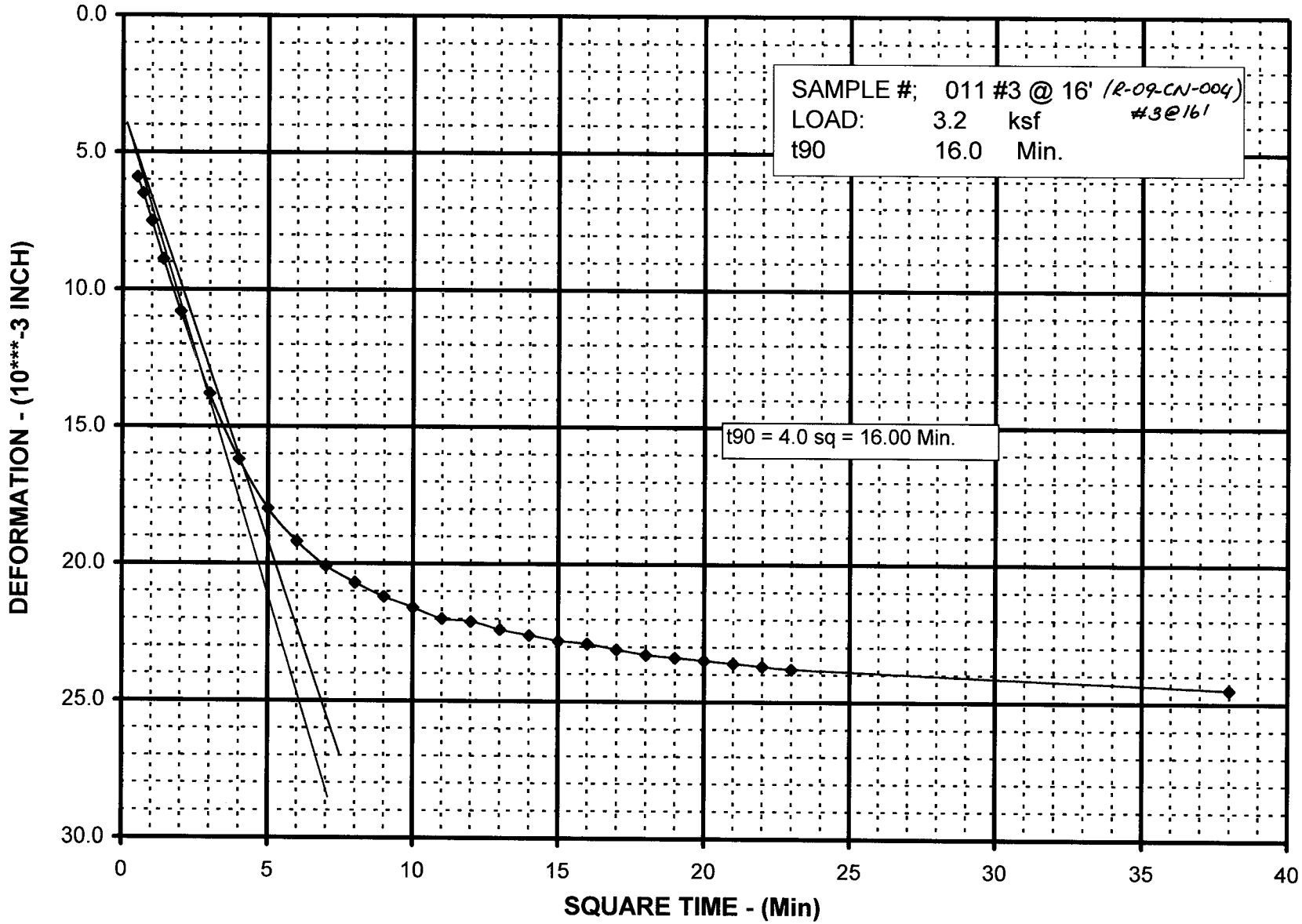


PLATE NO.: B-6E

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

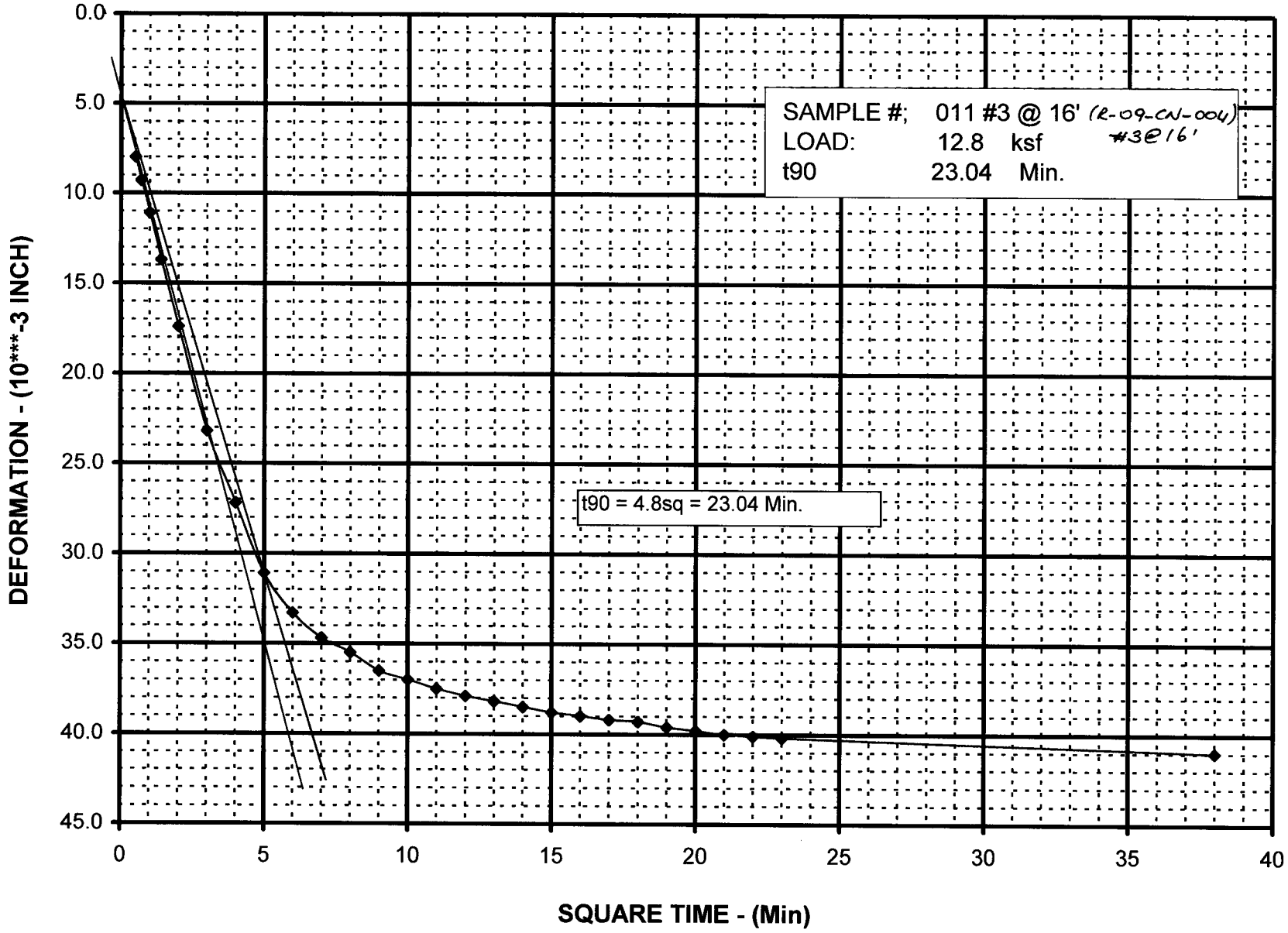
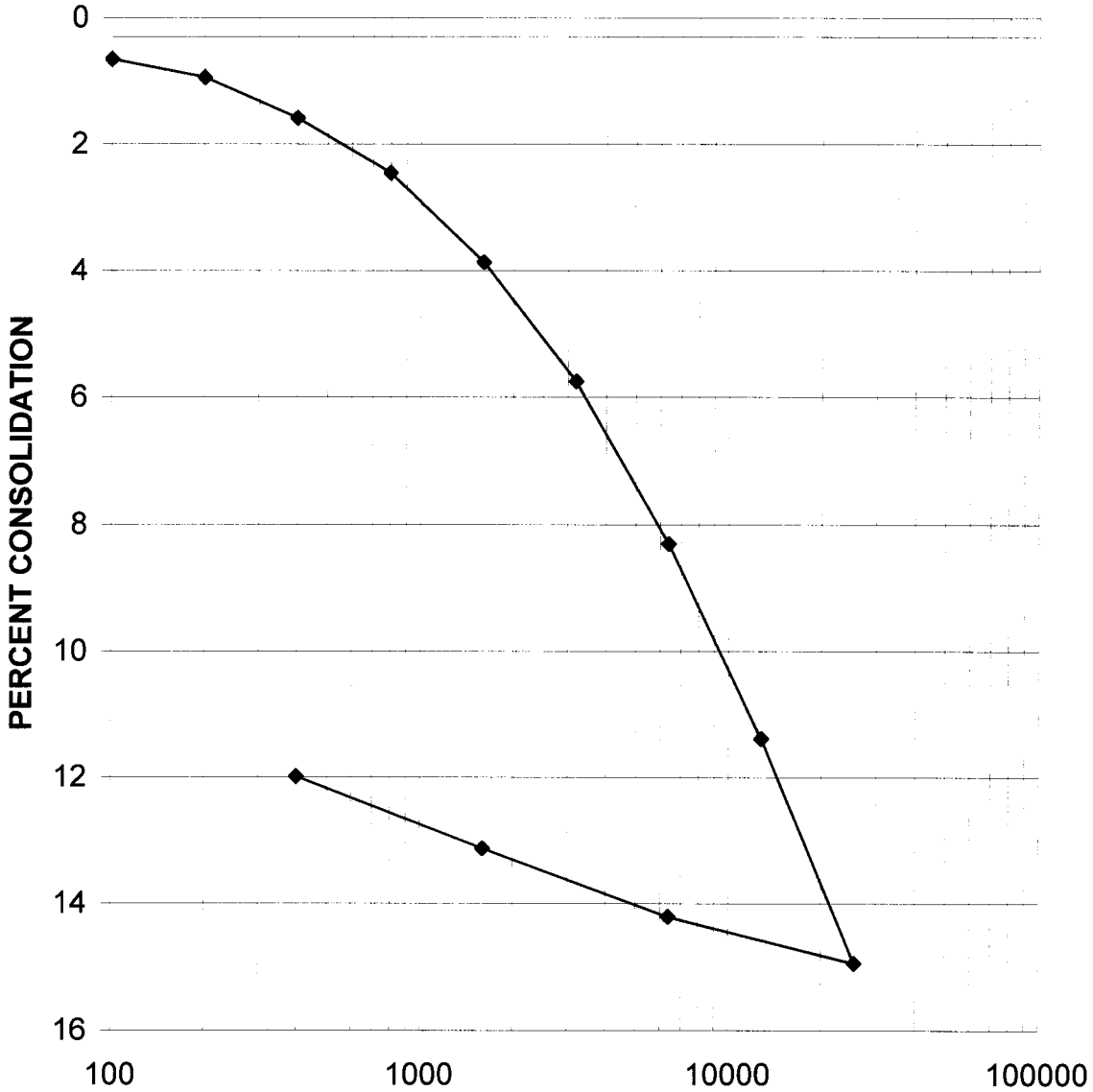


PLATE NO.: B-6F

CONSOLIDATION TEST RESULTS



	MOISTURE CONTENT %	DRY DENSITY PCF	HEIGHT (INCHES)	DIAMETER (INCHES)
INITIAL	28.4	96.8	1.0000	2.416
FINAL	21.2	110.0	0.8801	2.416

BORING NO.	103	SAMPLE NO.	4	ELEV. OR DEPTH	14.5'
DESCRIPTION	Lean Clay, brown				

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

EB I-80 Truck Scale Relocation
HDR Engineering, Inc.

DATE	JOB NO:
4/14/2009	208123.GDR

Reported by: Prav Dayah

PLATE NO.: B-6G

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

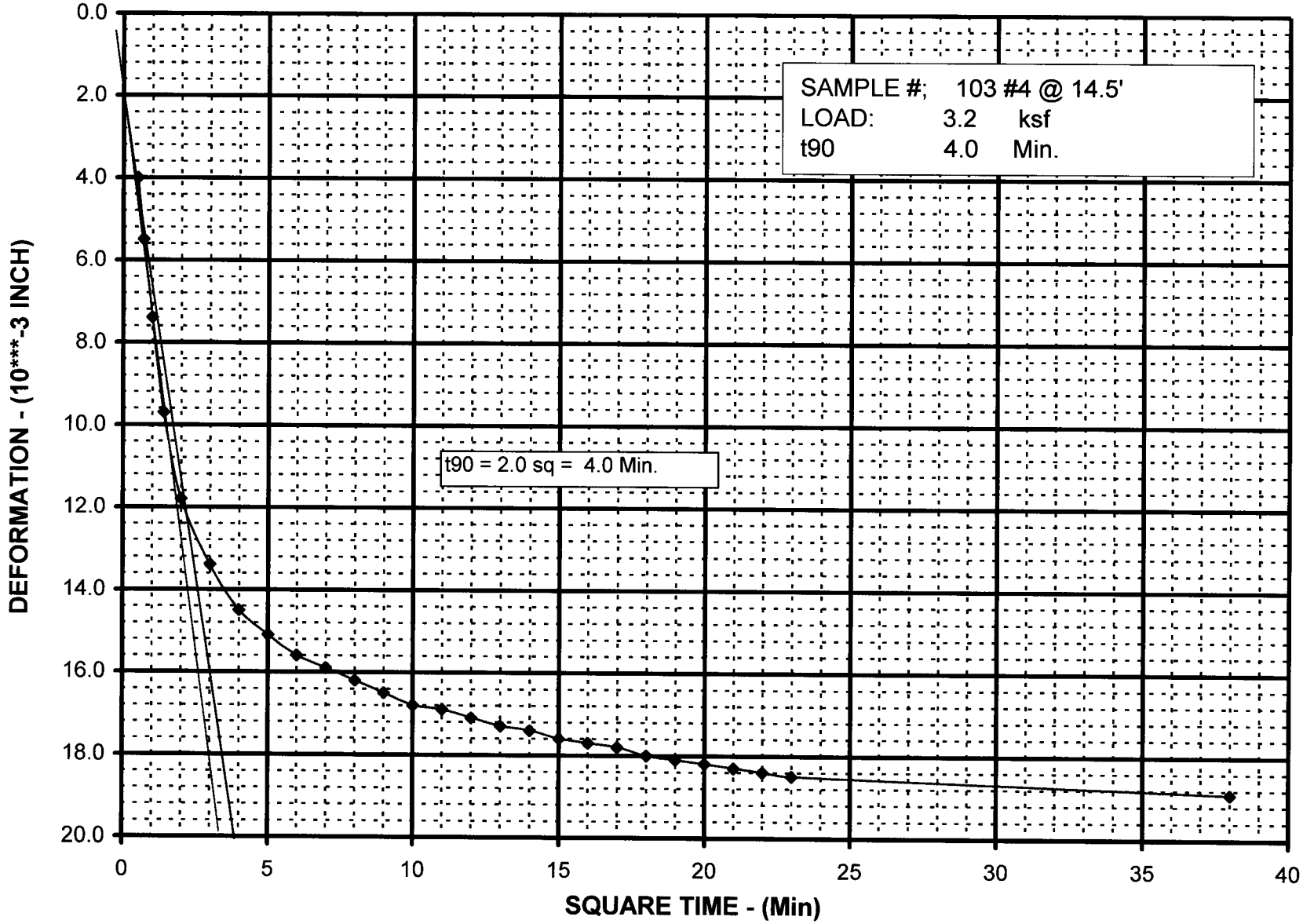


PLATE NO.: B-6H

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

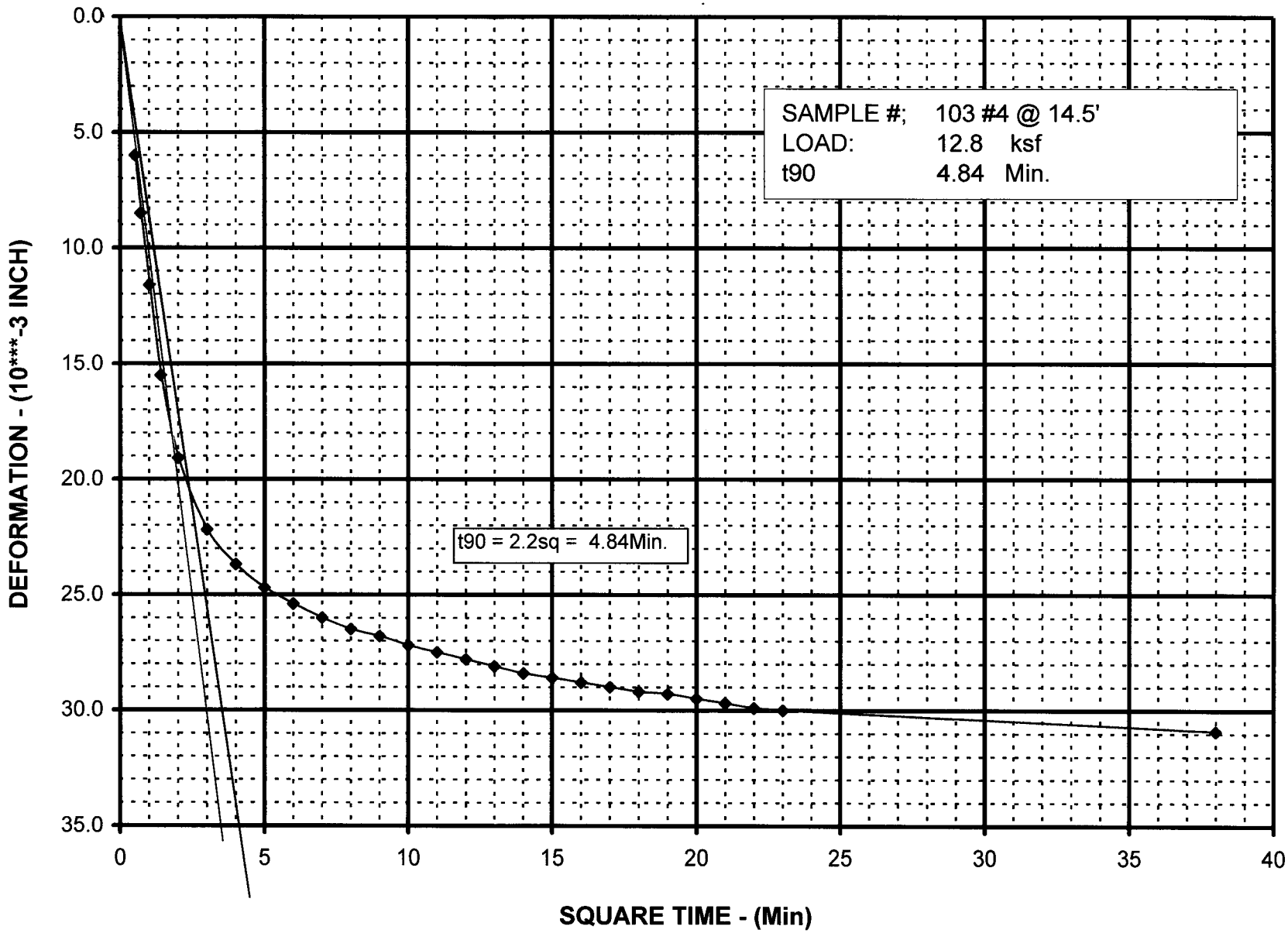
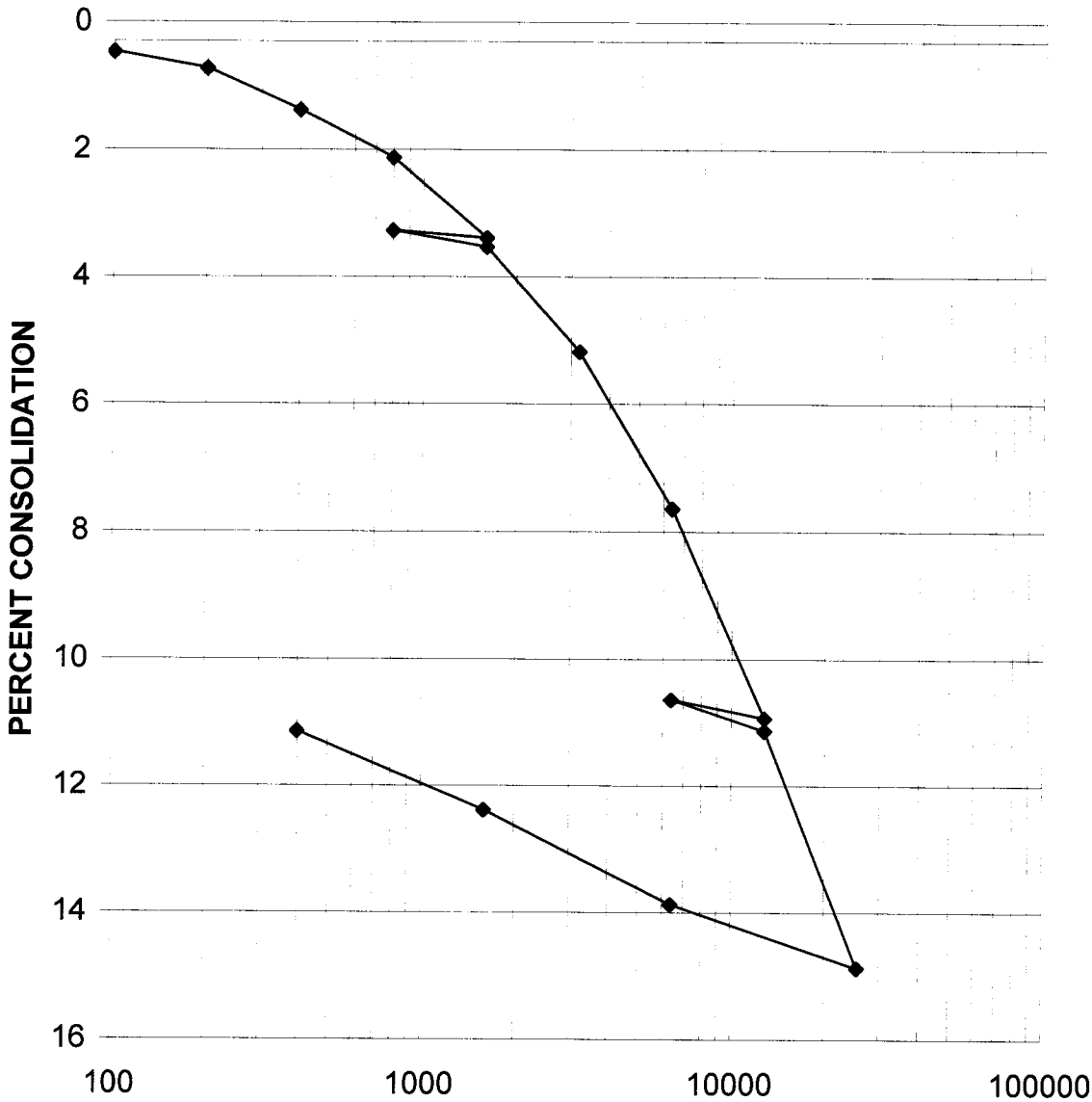


PLATE NO.: B-6l

CONSOLIDATION TEST RESULTS



	MOISTURE CONTENT %	DRY DENSITY PCF	HEIGHT (INCHES)	DIAMETER (INCHES)
INITIAL	32.6	90.7	1.0000	2.416
FINAL	26.1	102.0	0.8886	2.416

BORING NO.	120	SAMPLE NO.	4	ELEV. OR DEPTH	14.5'
DESCRIPTION	Lean Clay, reddish brown				

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

EB I-80 Truck Scale Relocation
HDR Engineering, Inc.

DATE	JOB NO:
3/10/2009	208123.GDR

Reported by: Prav Dayah

PLATE NO.: B-6J

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

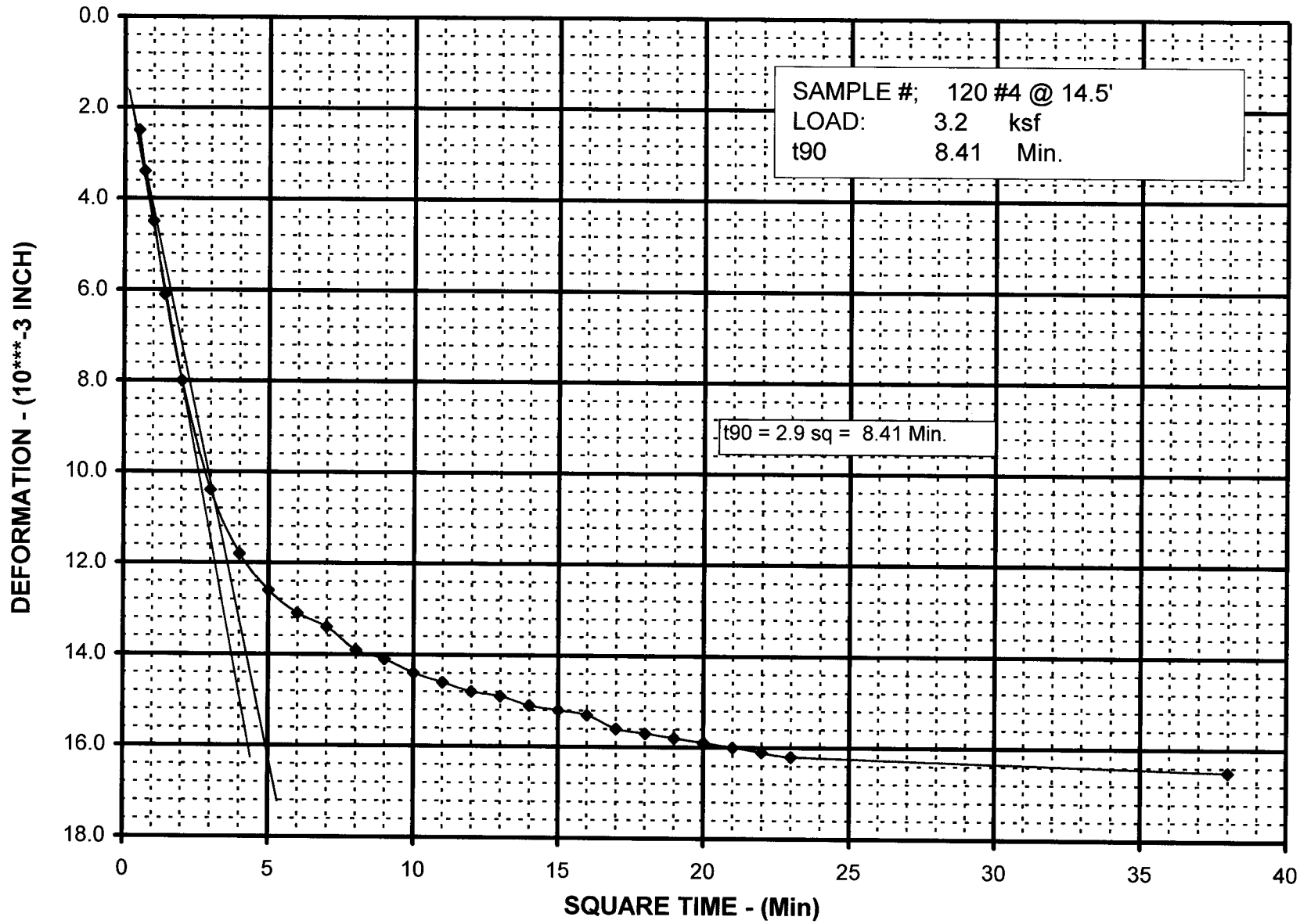


PLATE NO.: B-6K

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

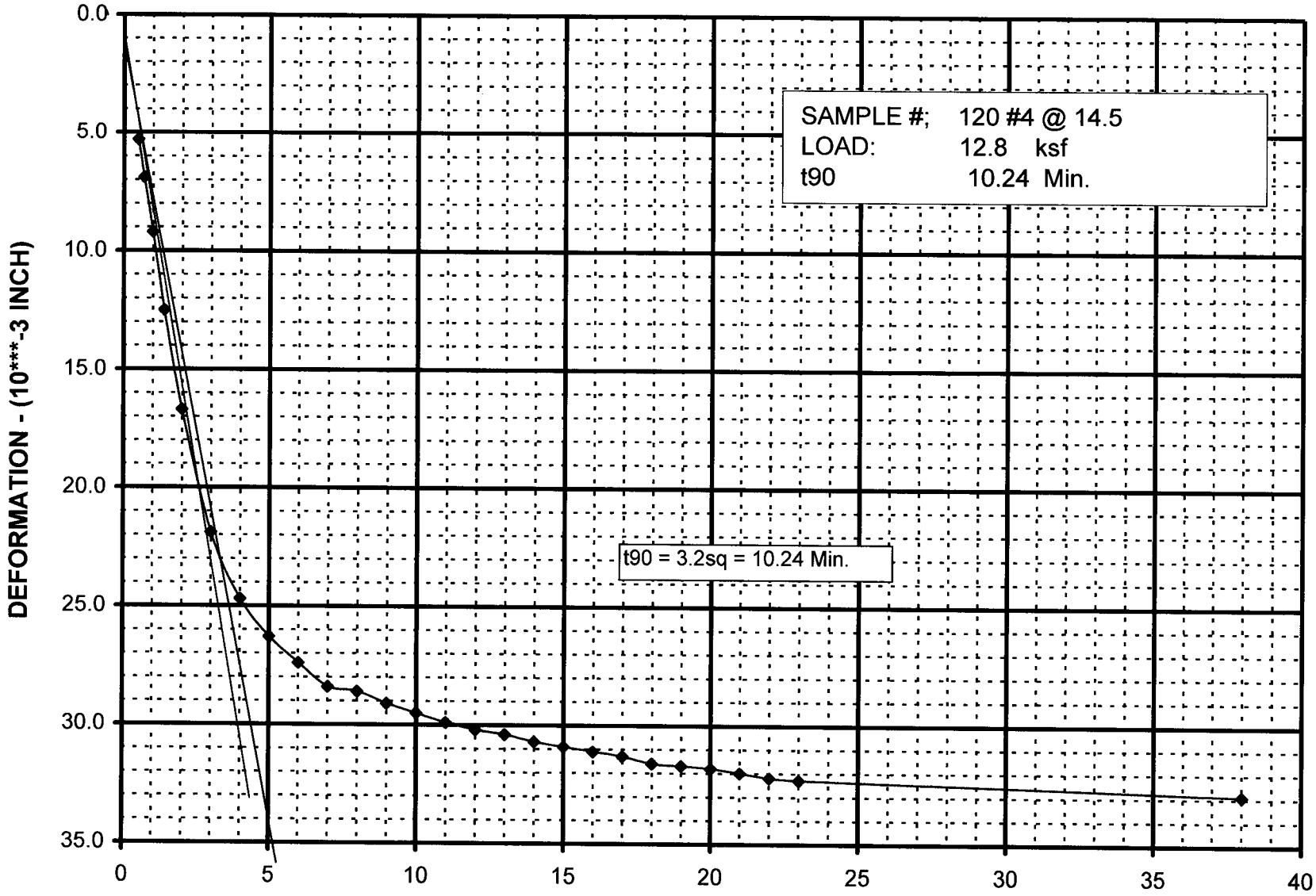
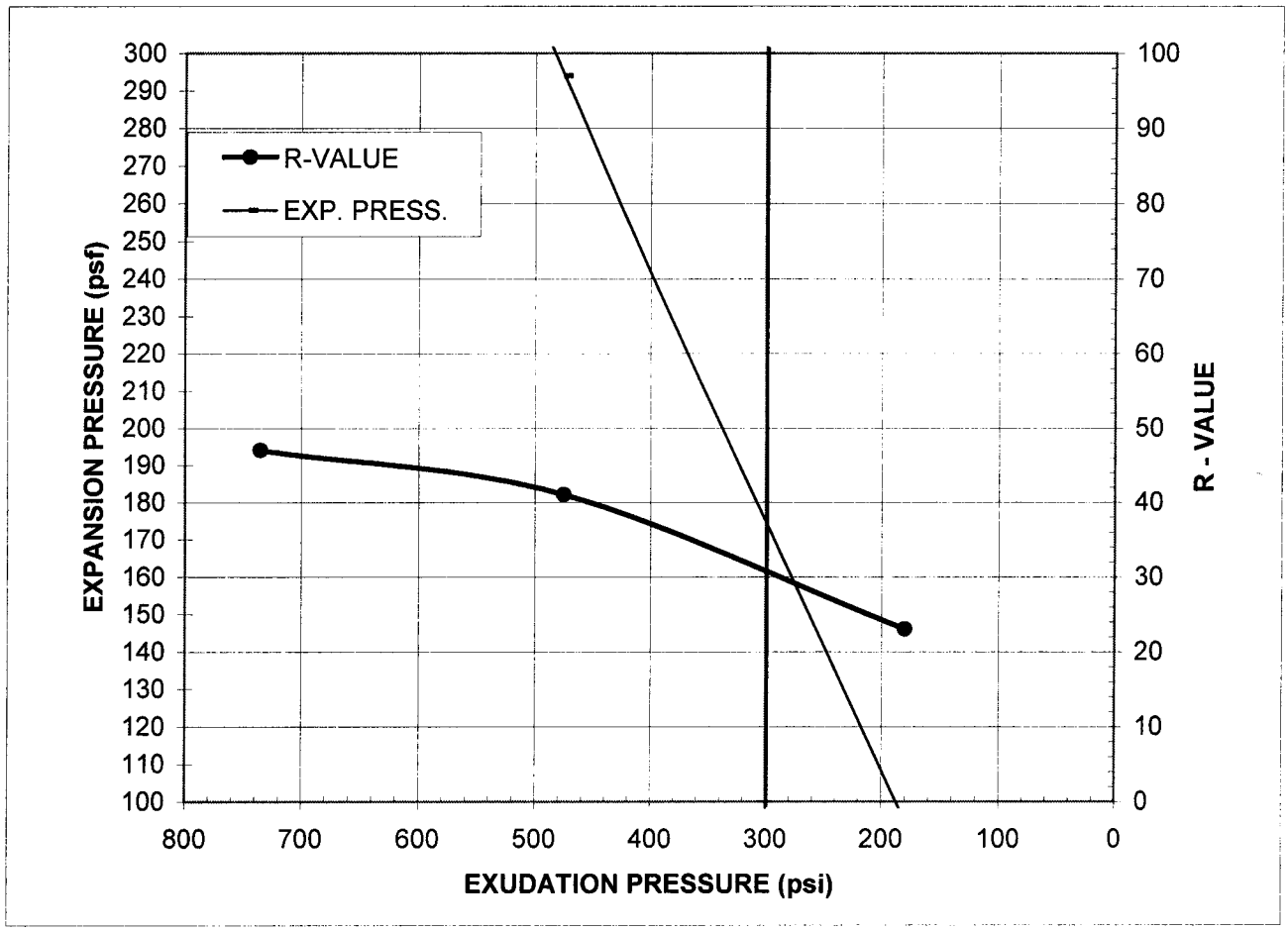


PLATE NO.: B-6L

R-VALUE REPORT

Parikh Consultants, Inc. **ASTM D2844 or CTM 301** (408) 452-9000

Project Name:	EB I-80 Truck Scale Relocation			Date:	4/6/09
Client:	HDR Engineering, Inc.			Project #:	208123.GDR
Sample #:	A-09-103	Depth:	0' - 5'	Lab #:	M744
Location / Source:		Onsite / Fairfield		Sample Date:	
Material :	Silty clay, brown			Sampled By:	



Specimen No.	A	B	C
Exudation Pressure, psi	180	475	735
Expansion Pressure, psf	95	294	493
R-Value	23	41	47
Moisture Content at Test, %	18.4	17.4	16.4
Dry Density at Test, pcf	108.2	111.6	113.1

R-Value @ 300 psi Exudation Pressure = 31

Expansion Pressure @300 psi Exudation, psf = **175**

Minimum R-Value Requirement:

Comments:

Report By: Prav Dayah

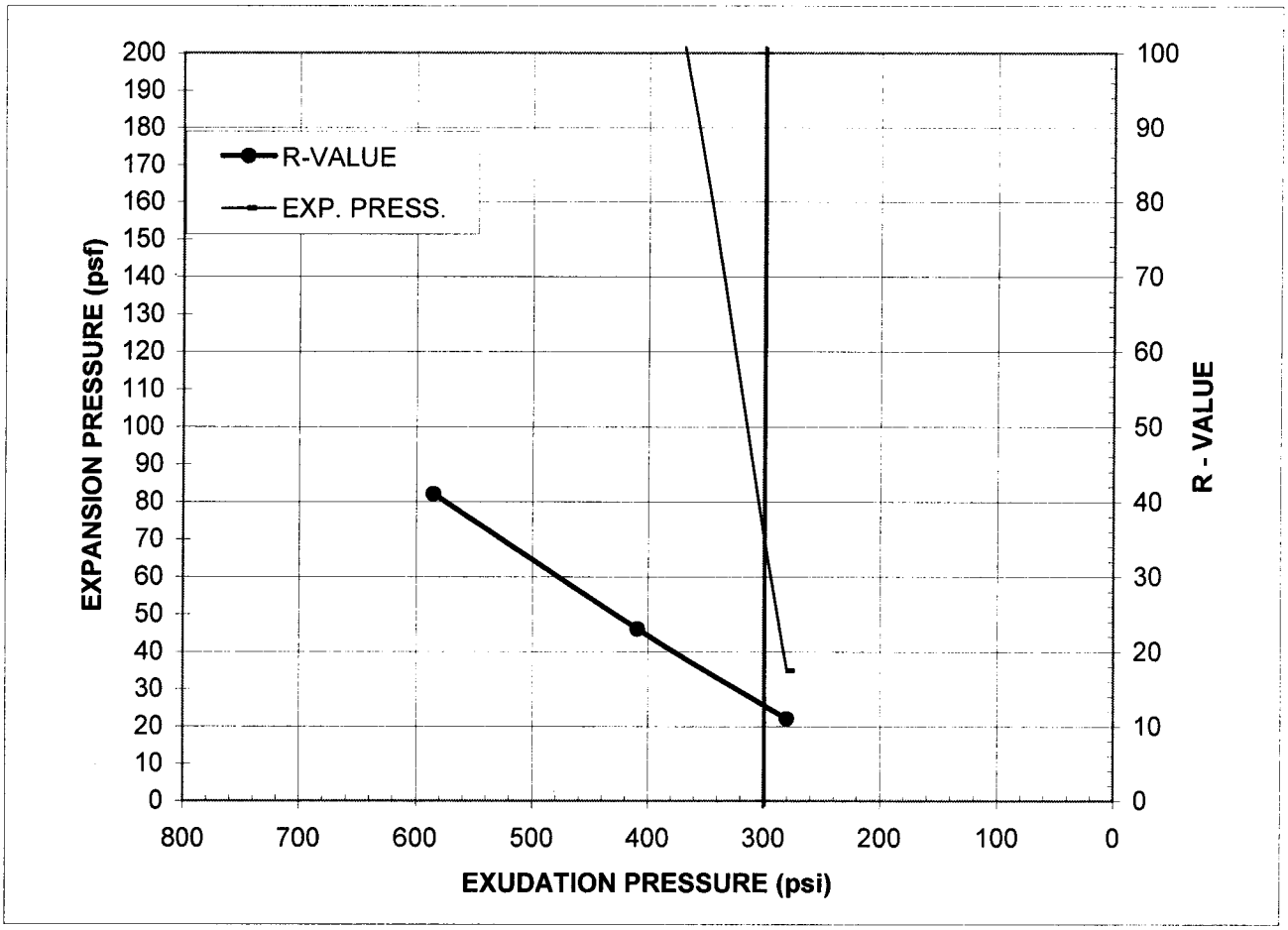
RVALUE with calcs pdp

PLATE NO.: B-7A

R-VALUE REPORT

Parikh Consultants, Inc. **ASTM D2844 or CTM 301** (408) 452-9000

Project Name:	EB I-80 Truck Scale Relocation			Date:	4/6/09
Client:	HDR Engineering, Inc.			Project #:	208123.GDR
Sample #:	A-09-105	Depth:	0' - 5'	Lab #:	M744
Location / Source:		Onsite / Fairfield		Sample Date:	
Material :	Lean clay, dark brown			Sampled By:	



Specimen No.	A	B	C
Exudation Pressure, psi	280	409	585
Expansion Pressure, psf	35	255	359
R-Value	11	23	41
Moisture Content at Test, %	21.6	20.9	20.2
Dry Density at Test, pcf	99.9	106.5	108.0

R-Value @ 300 psi Exudation Pressure = **12**

Expansion Pressure @300 psi Exudation, psf = **70**

Minimum R-Value Requirement:

Comments:

Report By: Prav Dayah

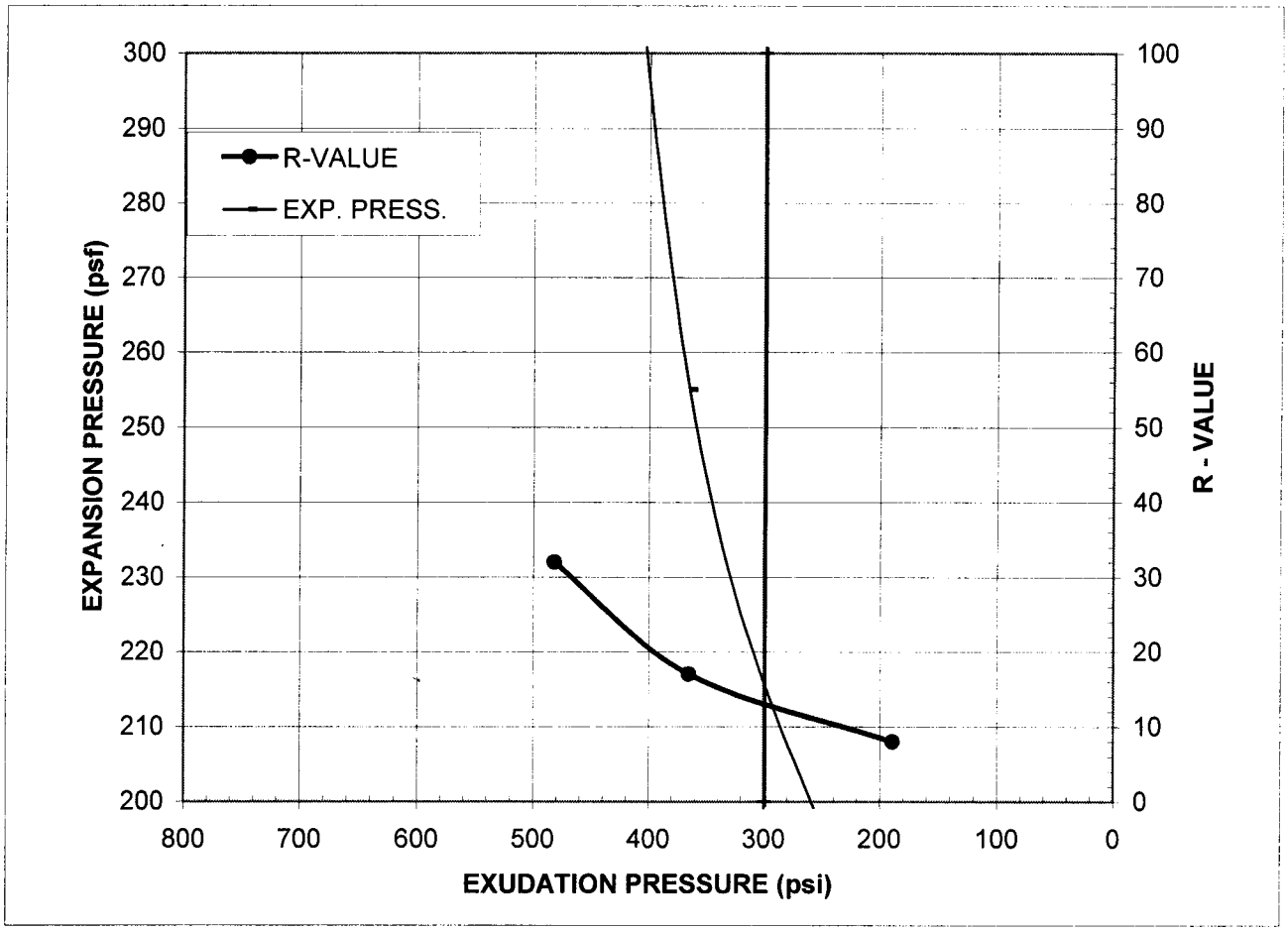
RVALUE with calcs pdp

PLATE NO.: B-7B

R-VALUE REPORT

Parikh Consultants, Inc. **ASTM D2844 or CTM 301** (408) 452-9000

Project Name:	EB I-80 Truck Scale Relocation			Date:	4/6/09
Client:	HDR Engineering, Inc.			Project #:	208123.GDR
Sample #:	A-09-115	Depth:	0' - 5'	Lab #:	M744
Location / Source:		Onsite / Fairfield		Sample Date:	
Material :	Lean clay, dark brown			Sampled By:	



Specimen No.	A	B	C
Exudation Pressure, psi	189	365	482
Expansion Pressure, psf	173	255	436
R-Value	8	17	32
Moisture Content at Test, %	27.3	25.7	24.7
Dry Density at Test, pcf	93.8	97.4	100.3

R-Value @ 300 psi Exudation Pressure = 13

Expansion Pressure @300 psi Exudation, psf = **215**

Minimum R-Value Requirement:

Comments:

Report By: Prav Dayah

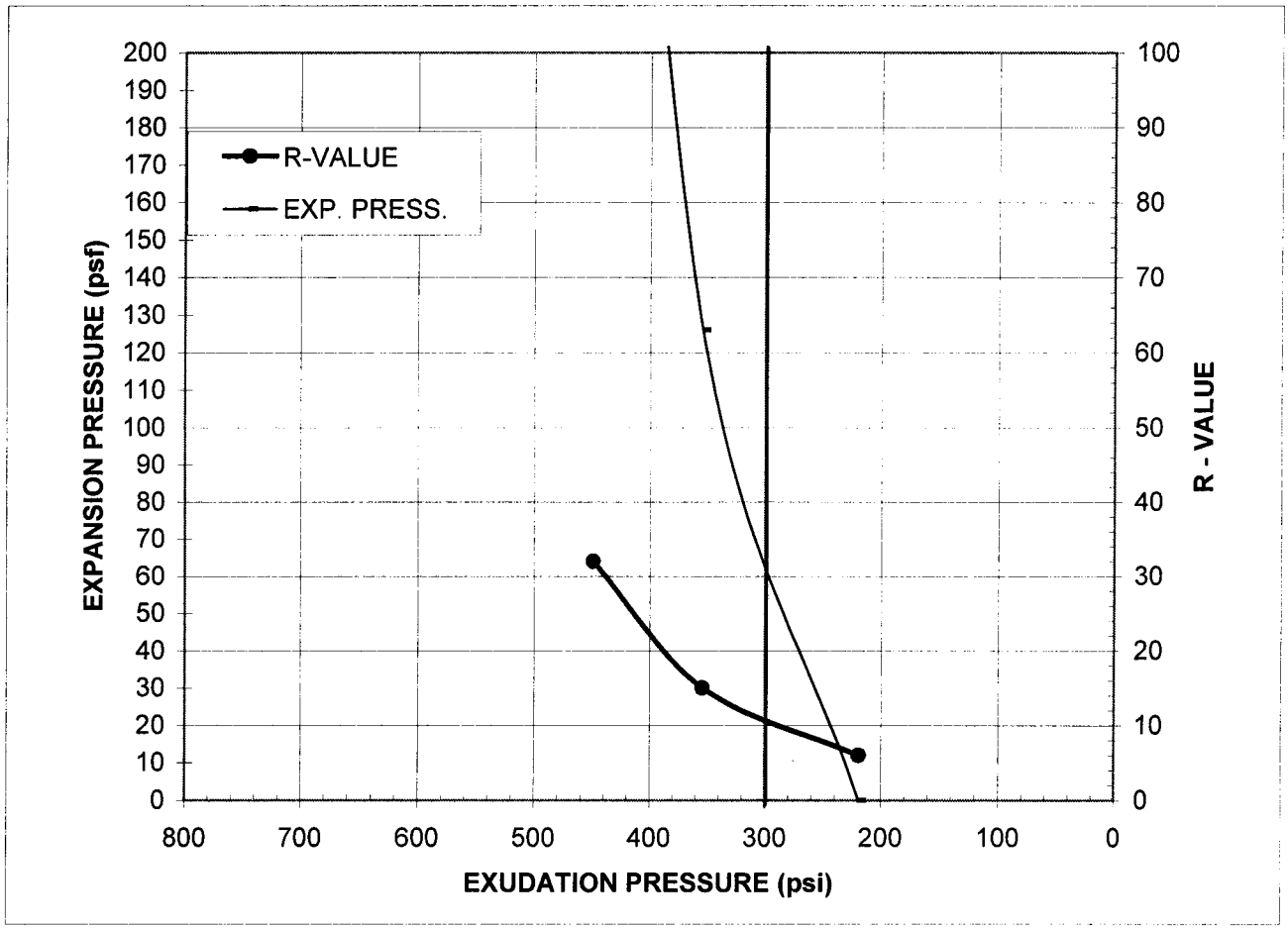
RVALUE with calcs pdp

PLATE NO.: B-7C

R-VALUE REPORT

Parikh Consultants, Inc. **ASTM D2844 or CTM 301** (408) 452-9000

Project Name:	EB I-80 Truck Scale Relocation			Date:	4/6/09
Client:	HDR Engineering, Inc.			Project #:	208123.GDR
Sample #:	A-09-121	Depth:	0' - 5'	Lab #:	M744
Location / Source:		Onsite / Fairfield		Sample Date:	
Material :	Lean clay, dark brown			Sampled By:	



Specimen No.	A	B	C
Exudation Pressure, psi	219	354	449
Expansion Pressure, psf	0	126	416
R-Value	6	15	32
Moisture Content at Test, %	25.3	22.7	21.7
Dry Density at Test, pcf	93.1	102.0	104.1

R-Value @ 300 psi Exudation Pressure =	**11**	Expansion Pressure @300 psi Exudation, psf =	**60**
Minimum R-Value Requirement:			

Comments:

Report By: Prav Dayah

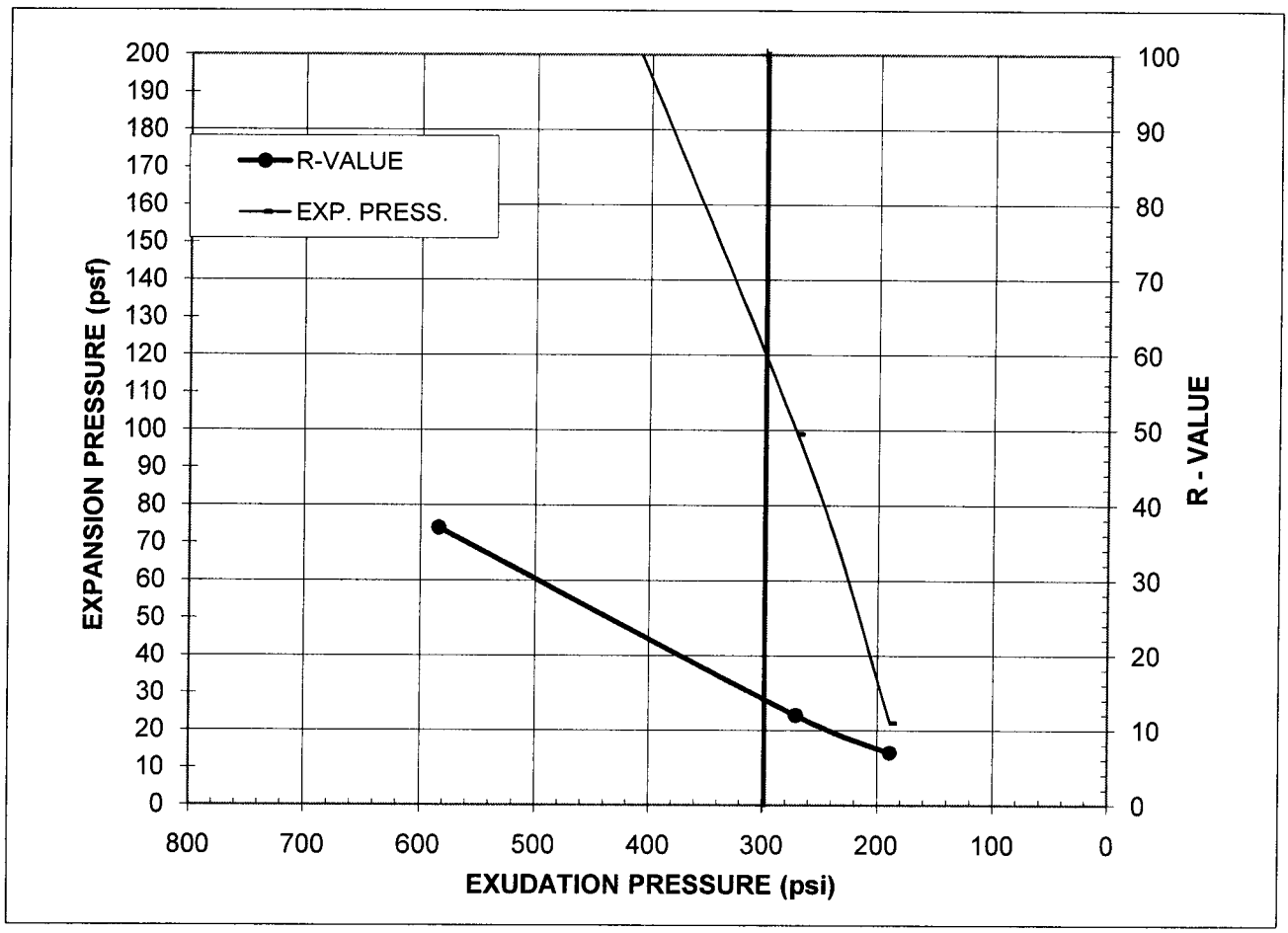
RVALUE with calcs pdp

PLATE NO.: B-7D

R-VALUE REPORT

Parikh Consultants, Inc. | ASTM D2844 or CTM 301 | (408) 452-9000

Project Name:	EB I-80 Truck Scale Relocation			Date:	6/1/09
Client:	HDR Engineering, Inc.			Project #:	208123.GDR
Sample #:	A-09-122	Depth:	0' - 5'	Lab #:	M744
Location / Source:		Onsite / Fairfield		Sample Date:	
Material :	Lean Clay, dark brown			Sampled By:	



Specimen No.	A	B	C
Exudation Pressure, psi	189	271	584
Expansion Pressure, psf	22	99	325
R-Value	7	12	37
Moisture Content at Test, %	25.6	23.5	21.4
Dry Density at Test, pcf	97.0	96.8	101.4

R-Value @ 300 psi Exudation Pressure = 14

Expansion Pressure @300 psi Exudation, psf = **120**

Minimum R-Value Requirement:

Comments:

Report By: Prav Dayah

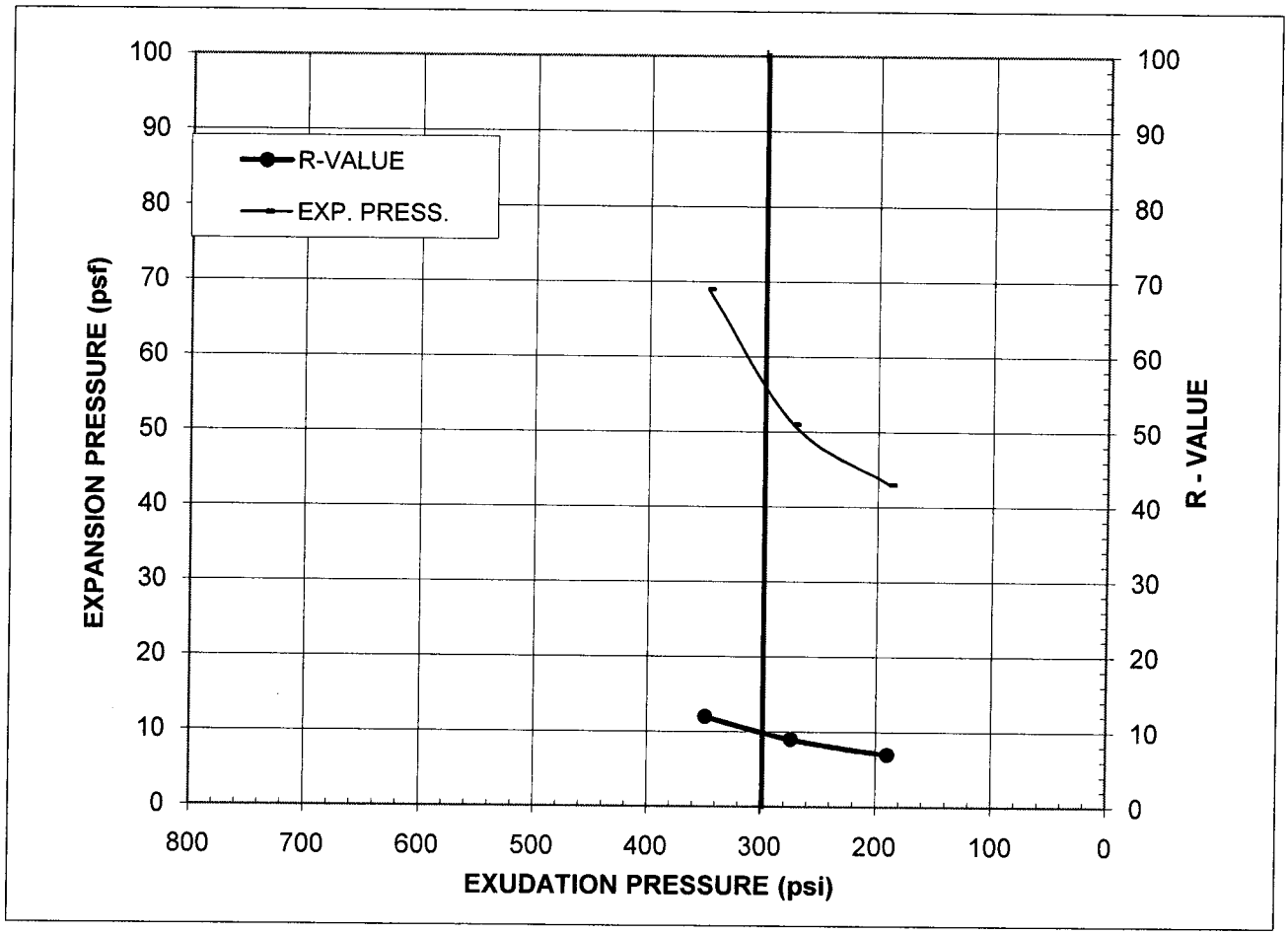
RVALUE with calcs pdp

PLATE NO.: B-7E

R-VALUE REPORT

Parikh Consultants, Inc. | ASTM D2844 or CTM 301 | (408) 452-9000

Project Name:	EB I-80 Truck Scale Relocation			Date:	6/1/09
Client:	HDR Engineering, Inc.			Project #:	208123.GDR
Sample #:	A-09-124	Depth:	0' - 5'	Lab #:	M744
Location / Source:	Onsite / Fairfield			Sample Date:	
Material :	Sandy Clay, dark brown			Sampled By:	



Specimen No.	A	B	C
Exudation Pressure, psi	190	274	349
Expansion Pressure, psf	43	51	69
R-Value	7	9	12
Moisture Content at Test, %	22.6	21.6	20.6
Dry Density at Test, pcf	100.0	102.0	103.4

R-Value @ 300 psi Exudation Pressure = 10

Expansion Pressure @300 psi Exudation, psf = **55**

Minimum R-Value Requirement:

Comments:

Report By: Prav Dayah

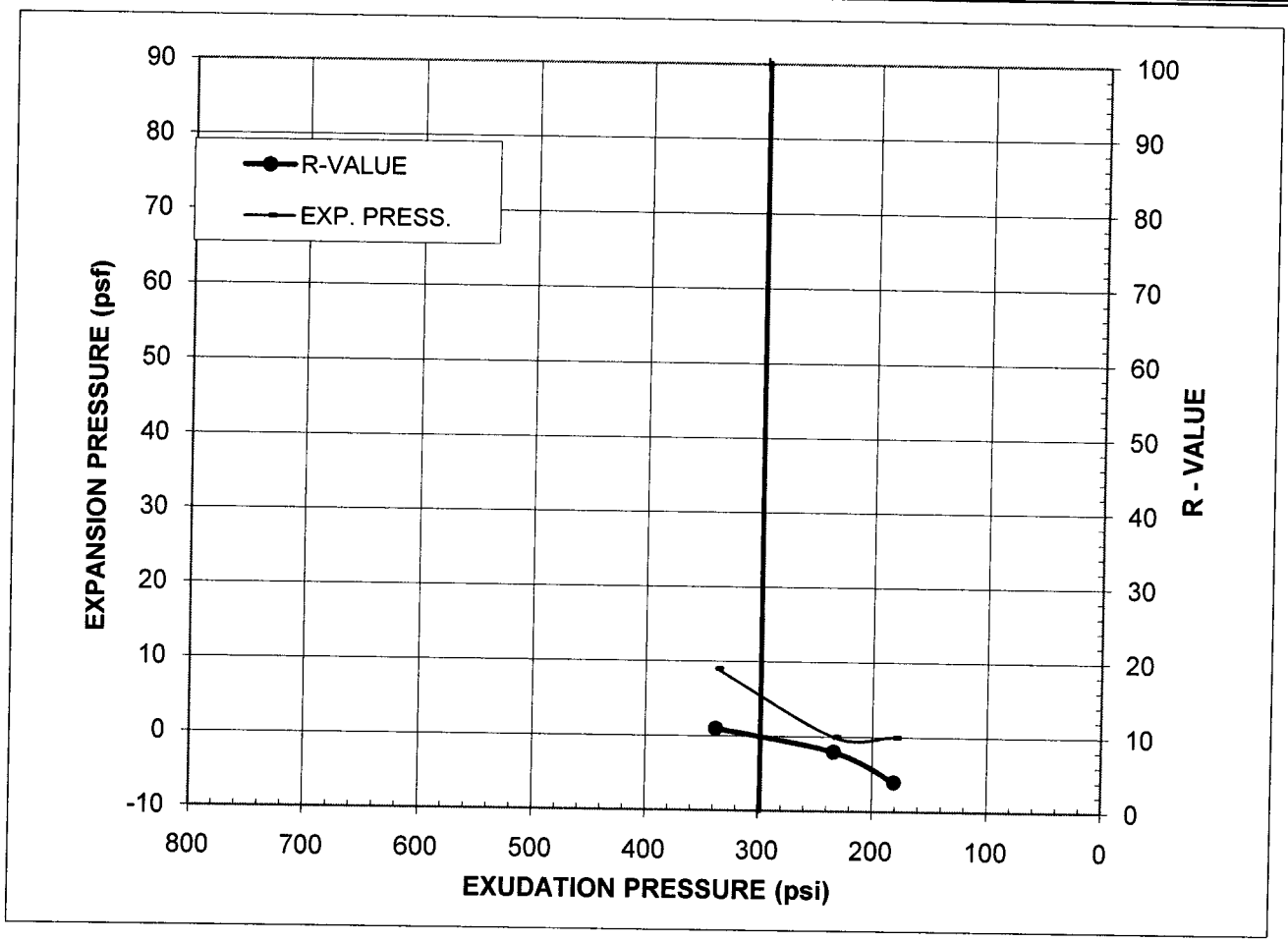
RVALUE with calcs pdp

PLATE NO.: B-7F

R-VALUE REPORT

Parikh Consultants, Inc. | ASTM D2844 or CTM 301 | (408) 452-9000

Project Name:	EB I-80 Truck Scale Relocation			Date:	6/1/09
Client:	HDR Engineering, Inc.			Project #:	208123.GDR
Sample #:	A-09-125	Depth:	0' - 5'	Lab #:	M744
Location / Source:	Onsite / Fairfield			Sample Date:	
Material :	Lean Clay, dark brown			Sampled By:	



Specimen No.	A	B	C
Exudation Pressure, psi	181	234	338
Expansion Pressure, psf	0	0	9
R-Value	4	8	11
Moisture Content at Test, %	21.3	19.8	18.4
Dry Density at Test, pcf	103.3	106.0	108.7

R-Value @ 300 psi Exudation Pressure = 10

Expansion Pressure @300 psi Exudation, psf = **5**

Minimum R-Value Requirement:

Comments:

Report By: Prav Dayah

RVALUE with calcs pdp

PLATE NO.: B-7G

APPENDIX C

EVALUATION OF LIQUEFACTION POTENTIAL

LIQUEFACTION POTENTIAL ANALYSIS

PROJECT NAME ***I-80 EB CORDELIA TRUCK SCALES RELOCATION PROJEC***
PROJECT NO. ***208123.GDR***
BORING NO. ***A-09-103***

BOREHOLE DIA (in)= 8
GW DEPTH (ft)= 8

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS

HAMMER TYPE (1/2) = 2
(1. ROPE AND PULLEY; 2. AUTOMATIC)

FAULT INFO
CORDELIA FAULT
a_{max} *(g)=* 0.6
FAULT M_w = 6.5

MSF = 1.44
(Min. FS = 1.1 based on SPT)
F.S.=($CRR_{6.5}$*/CSR)*MSF*K*σ**K*α

					CYCLIC STRESS RATIO (CSR)				*LIQUEFACTION RESISTANCE (*$CRR_{6.5}$*)*												
Sample No	Depth (ft)	Soil Type	Blow Count	Sampler Type	σ_v (psf)	σ_v' (psf)	γ_d	CSR	SPT-N_{60}	C_N	C_E	C_R	C_S	C_B	$(N_1)_{60}$	F.C.	$(N_1)_{60,CS}$	$CRR_{6.5}$	Kσ	Kα	F.S.
1	8.0	2	14	SPT	918.9	918.9	0.96		16	1.48	1	0.75	1.2	1.15	24.67	55%			1.00	1	
2	8.5	2	14	SPT	982.6	951.3	0.96		16	1.45	1	0.80	1.2	1.15	25.86	55%			1.00	1	
3	17.5	1	10	SPT	2107.6	1558.8	0.92	0.49	12	1.13	1	0.80	1.2	1.15	14.43	15%	17.62	0.19	1.00	1	0.56 <- LIQ!!
4	28.0	2	26	SPT	3472.6	2267.6	0.86		30	0.94	1	0.80	1.2	1.15	31.10	55%			0.96	1	
5	33.0	1	50	SPT	4122.6	2605.1	0.82	0.50	58	0.88	1	0.80	1.2	1.15	55.81	15%	60.99		0.92	1	
6	50.0	2	50	SPT	6332.6	3752.6	0.65		58	0.73	1	0.80	1.2	1.15	46.50	55%			0.83	1	

Evaluation of Post-Liquefaction Settlement

Boring A-09-103

Based on the result of the liquefaction potential analysis

Sample No 3 $(N_1)_{60cs} = 17.6$ $CSR = 0.49$

Volumetric strain = 1.8%

Post liquefaction settlement = $0.018 \times 9 \times 12$

= 1.9 inches

LIQUEFACTION POTENTIAL ANALYSIS

PROJECT NAME ***I-80 EB CORDELIA TRUCK SCALES RELOCATION PROJEC***
PROJECT NO. ***208123.GDR***
BORING NO. ***A-09-128***

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS

FAULT INFO
CORDELIA FAULT
a_{max} (g)= 0.6
FAULT M_w = 6.5

BOREHOLE DIA (in)= 8
GW DEPTH (ft)= 3.5

HAMMER TYPE (1/2) = 2
(1. ROPE AND PULLEY; 2. AUTOMATIC)

MSF = 1.44
(Min. FS = 1.1 based on SPT)
*F.S.=($CRR_{6.5}$/CSR)*MSF*Kσ*Kα*

					CYCLIC STRESS RATIO (CSR)				*LIQUEFACTION RESISTANCE ($CRR_{6.5}$)*												
Sample No	Depth (ft)	Soil Type	Blow Count	Sampler Type	σ_v (psf)	σ_v' (psf)	γ_d	CSR	SPT-N_{60}	C_N	C_E	C_R	C_S	C_B	$(N_1)_{60}$	F.C.	$(N_1)_{60,CS}$	$CRR_{6.5}$	Kσ	Kα	F.S.
1	3.0	2	4	SPT	315.0	315.0	0.99		5	2.00	1	0.75	1.2	1.15	9.55	55%			1.00	1	
2	3.5	1	3	SPT	370.0	370.0	0.98	0.38	3	2.00	1	0.80	1.2	1.15	7.64	15%	10.51	0.12	1.00	1	0.44 <- LIQ!!
3	6.5	1	3	SPT	731.2	543.1	0.97	0.51	3	1.92	1	0.80	1.2	1.15	7.33	15%	10.18	0.11	1.00	1	0.32 <- LIQ!!
4	30.0	2	12	SPT	3668.7	2011.8	0.84		14	1.00	1	0.80	1.2	1.15	15.24	55%			1.00	1	

Evaluation of Post-Liquefaction Settlement

Boring A-09-12 B

Based on the result of the liquefaction potential analysis

Sample No. 2 $(N_1)_{60cs} = 10.5$ CSR = 0.38

Volumetric strain = 2.7%

Sample No. 3 $(N_1)_{60cs} = 10.2$ CSR = 0.51

Volumetric strain = 2.7%

Post-liquefaction settlement = $0.027 \times 12 \times 3.5$

= 1.1 inches

LIQUEFACTION POTENTIAL ANALYSIS

PROJECT NAME ***I-80 EB CORDELIA TRUCK SCALES RELOCATION PROJEC***
PROJECT NO. ***208123.GDR***
BORING NO. ***A-09-132***

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS

FAULT INFO
CORDELIA FAULT
a_{max} (g)= 0.6
FAULT M_w = 6.5

BOREHOLE DIA (in)= 8
GW DEPTH (ft)= 15

HAMMER TYPE (1/2) = 2
(1. ROPE AND PULLEY; 2. AUTOMATIC)

MSF = 1.44
(Min. FS = 1.1 based on SPT)
*F.S.=($CRR_{6.5}$/CSR)*MSF*Kσ*Kα*

					CYCLIC STRESS RATIO (CSR)				*LIQUEFACTION RESISTANCE ($CRR_{6.5}$)*												
Sample No	Depth (ft)	Soil Type	Blow Count	Sampler Type	σ_v (psf)	σ_v' (psf)	γ_d	CSR	SPT-N_{60}	C_N	C_E	C_R	C_S	C_B	$(N_1)_{60}$	F.C.	$(N_1)_{60,CS}$	$CRR_{6.5}$	Kσ	Kα	F.S.
1	5.5	1	6	SPT	605.0	605.0	0.98	0.38	7	1.82	1	0.75	1.2	1.00	11.33	15%	14.37	0.15	1.00	1	0.58 <- LIQ!!
2	8.0	2	8	SPT	880.0	880.0	0.96		9	1.51	1	0.75	1.2	1.00	12.52	55%			1.00	1	
3	13.0	1	6	SPT	1430.0	1430.0	0.94	0.37	7	1.18	1	0.85	1.2	1.15	9.60	15%	12.56	0.14	1.00	1	0.53 <- LIQ!!
4	15.0	2	14	SPT	1650.0	1650.0	0.93		16	1.10	1	0.80	1.2	1.15	19.63	55%			1.00	1	
5	35.0	2	14	SPT	4151.3	2900.6	0.80		16	0.83	1	0.80	1.2	1.15	14.81	55%			0.89	1	

Evaluation of Post-Liquefaction Settlement

Boring A-09-132

Based on the result of the liquefaction potential analysis

Sample No 3 $(N_1)_{60cs} = 12.7$ CSR = 0.37

Volumetric strain = 2.3 %

Post-liquefaction settlement = 0.023 x 12 x 5

= 1.4 inches

Sample No-1 is unlikely to liquefy since it is above groundwater

LIQUEFACTION POTENTIAL ANALYSIS

PROJECT NAME ***Retaining Walls at E80-E12/E80 On-Ramp Separation***
PROJECT NO. ***208123.RET***
BORING NO. ***R-09-CN-004***

BOREHOLE DIA (in)= 8
GW DEPTH (ft)= 9.5

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS

HAMMER TYPE (1/2) = 2
(1. ROPE AND PULLEY; 2. AUTOMATIC)

FAULT INFO
CORDELIA FAULT
a_{max} (g)= 0.6
FAULT M_w = 6.5

MSF = 1.44
(Min. FS = 1.1 based on SPT)
*F.S.=($CRR_{6.5}$/CSR)*MSF*Kσ*Kα*

					CYCLIC STRESS RATIO (CSR)				*LIQUEFACTION RESISTANCE ($CRR_{6.5}$)*												
Sample No	Depth (ft)	Soil Type	Blow Count	Sampler Type	σ_v (psf)	σ_v' (psf)	γ_d	CSR	SPT-N_{60}	C_N	C_E	C_R	C_S	C_B	$(N_1)_{60}$	F.C.	$(N_1)_{60,cs}$	$CRR_{6.5}$	Kσ	Kα	F.S.
1	5.0	2	15	SPT	625.0	625.0	0.98		17	1.79	1	0.75	1.2	1.00	27.86	55%			1.00	1	
2	9.5	2	15	SPT	1187.5	1187.5	0.96		17	1.30	1	0.75	1.2	1.00	20.22	55%			1.00	1	
3	19.5	2	6	SPT	2388.7	1763.1	0.91		7	1.07	1	0.85	1.2	1.15	8.65	55%			1.00	1	
4	24.5	2	23	SPT	3013.7	2075.6	0.88		27	0.98	1	0.80	1.2	1.15	28.76	55%			0.99	1	
5	29.5	2	8	SPT	3613.7	2363.1	0.84		9	0.92	1	0.80	1.2	1.15	9.38	55%			0.95	1	
6	40.0	2	32	SPT	4978.7	3071.8	0.75		37	0.81	1	0.80	1.2	1.15	32.89	55%			0.88	1	
7	44.0	2	8	SPT	5458.7	3301.8	0.71		9	0.78	1	0.80	1.2	1.15	7.93	55%			0.86	1	
8	57.0	1	13	SPT	7083.7	4114.3	0.60	0.40	15	0.70	1	0.80	1.2	1.15	11.55	15%	14.60	0.16	0.81	1	0.45 <- LIQ!!
9	97.0	2	24	SPT	12083.7	6614.3	0.47		28	0.55	1	0.80	1.2	1.15	16.81	55%			0.70	1	
10	101.5	1	56	SPT	12668.7	6918.1	0.47	0.33	65	0.54	1	0.80	1.2	1.15	38.36	15%	42.70		0.69	1	

Evaluation of Post-Liquefaction Settlement at Retaining Walls at EB0-E12/EB0 On-Ramp Separation

Boring R-09-CN-004

Based on the result of the liquefaction potential analyses

Sample No. B (N1)60cs = 14.8 CSR = 0.40

Volumetric strain = 0.0%

Post-liquefaction settlement = 0.02 x 13 x 12

= 3.12 inches say 3.1 inches

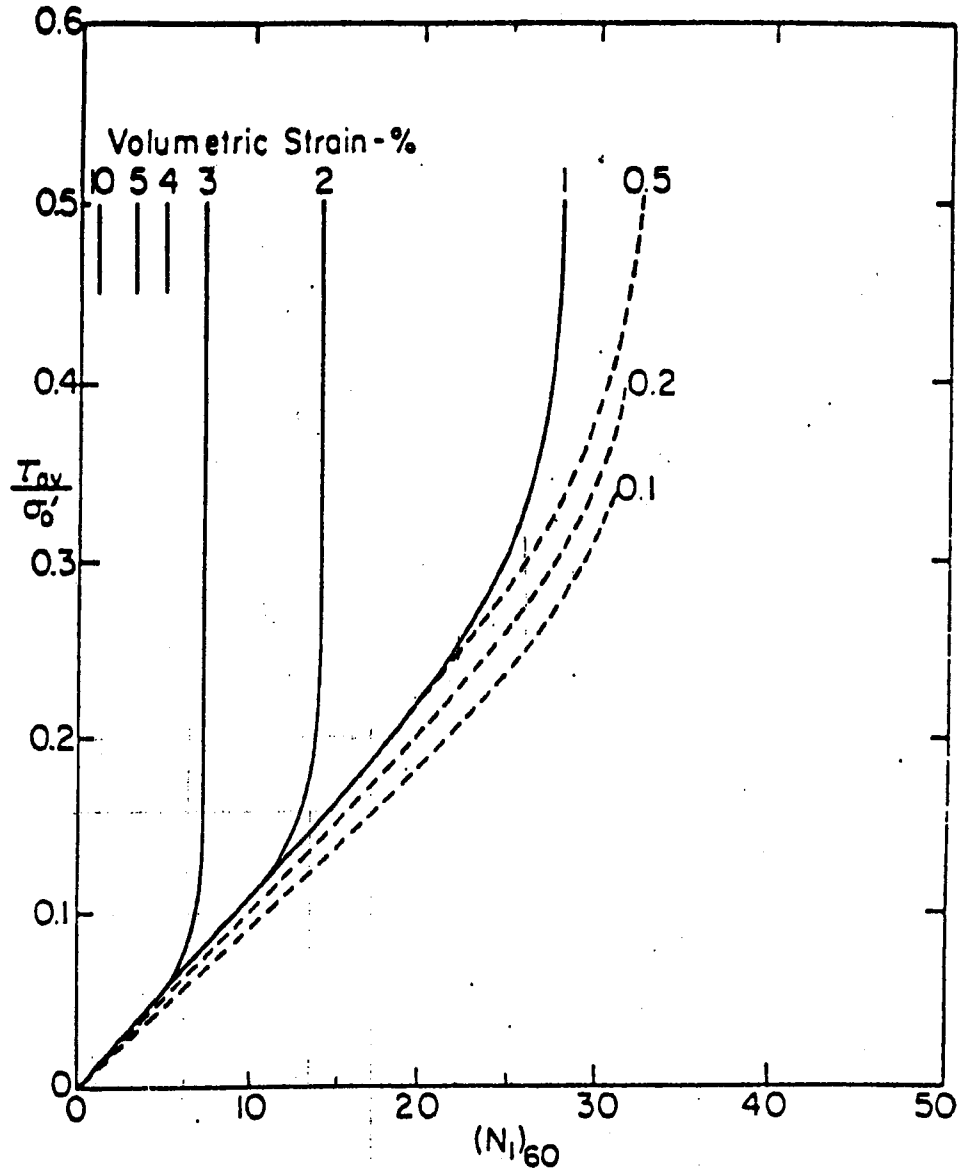


Figure A-2: Proposed Relationship Between Cyclic Stress Ratio $(N_1)_{60}$ and Volumetric Strain (ϵ_v) for Saturated Clean Sands for M = 7.5 Earthquakes. (Tokimatsu and Seed, 1984)

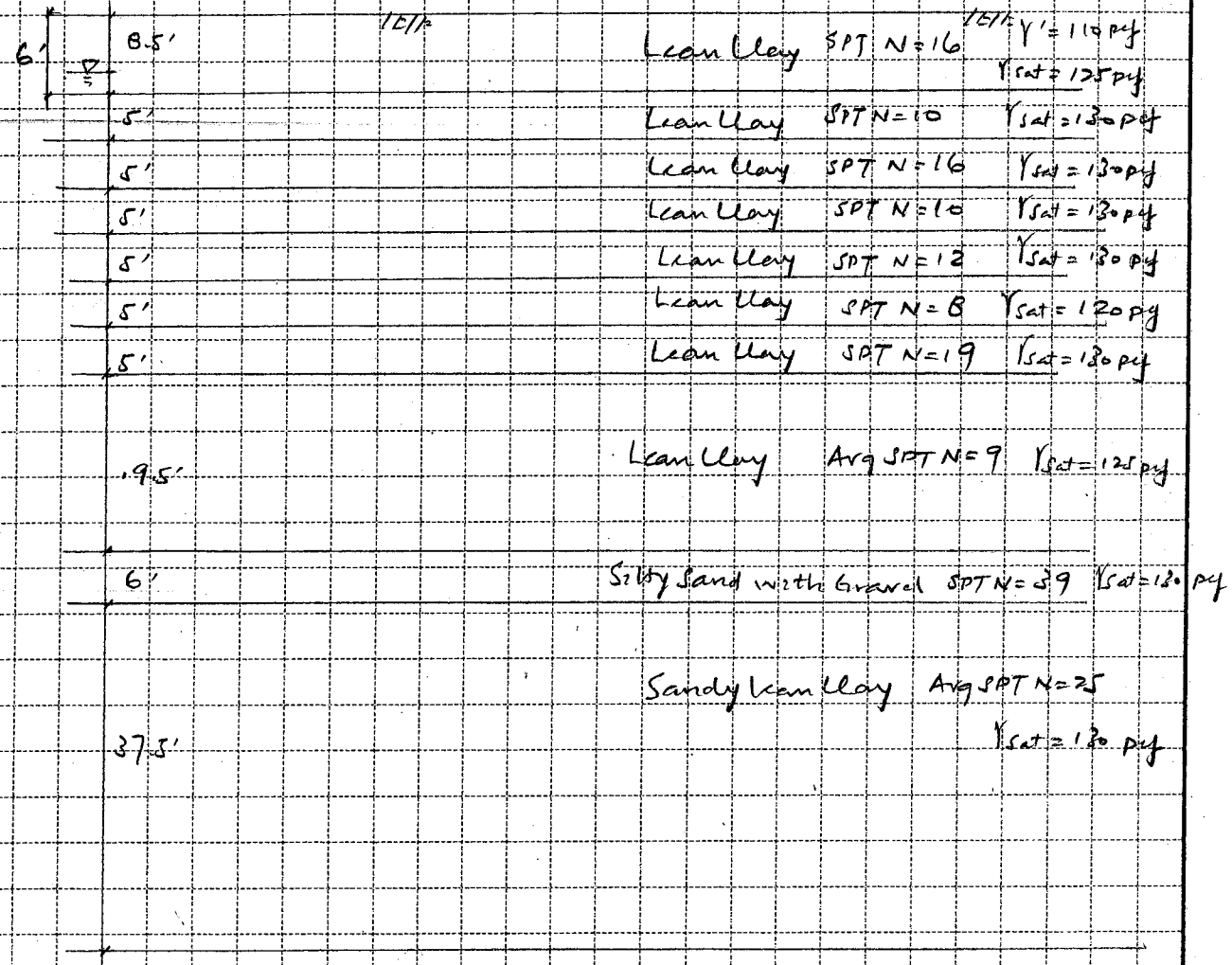
$$MSF = \frac{10^{2.24}}{M_w^{2.56}}$$

SETTLEMENT ANALYSES

PARIKH
Practicing in the Geosciences

JOB Cordelia Truck Scales Relocation Project 208123GDE
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 9/09
CHECKED BY ____ DATE ____
SCALE ____

Settlement Analysis - SB21 Profile (Boring R-09-CN-002)



SETTLEMENT ANALYSIS ***EB 80 to EB 12 Connector *** 09/28/09

LOCATION: Fairfield

Retaining Wall No. 1 - Based on reference Boring R-09-CN-002 (A-09-008)

Height of fill = 24.5 ft
Width of fill = 45 ft
Fill Density = 125 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf)	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
			0											
0	6	110	660	330	2839	16	2000	8000.00	28	0.1376	0.0138	0.97	0.00	0.97
6	8.5	63	158	738.75	2563	16	2000	8000.00	28	0.1376	0.0138	0.27	0.00	0.27
8.5	13.5	63	315	975	2353	10	1250	5000.00	28	0.1376	0.0138	0.44	0.00	0.44
13.5	18.5	63	315	1290	2112	16	2000	8000.00	23	0.1041	0.0104	0.26	0.00	0.26
18.5	23.5	63	315	1605	1908	10	1250	5000.00	27	0.1309	0.0131	0.27	0.00	0.27
23.5	28.5	63	315	1920	1733	12	1500	6000.00	29	0.1443	0.0144	0.24	0.00	0.24
28.5	33.5	58	290	2222.5	1581	8	1000	4000.00	34	0.1778	0.0178	0.25	0.00	0.25
33.5	38.5	63	315	2525	1450	19	2375	9500.00	22	0.0975	0.0098	0.12	0.00	0.12
38.5	58	58	1131	3248	1190	9	1063	4250.00	29	0.1443	0.0144	0.39	0.63	1.03
58	64	63	378	4002.5	988	39				SAND				
64	101.5	63	2363	5372.75	747	25	3125	12500.00	22	0.0975	0.0098	0.25	0.00	0.25

TOTAL SETTLEMENT (IN.) =	3.46	0.63	4.09

O.C. RANGE SETTLEMENT = 3.46 INCHES
N.C. RANGE SETTLEMENT = 0.63 INCHES

Total settlement is approximately 4.1 inches with 3.5 inches in the OC range and 0.6 inches in the NC range per available boring information.

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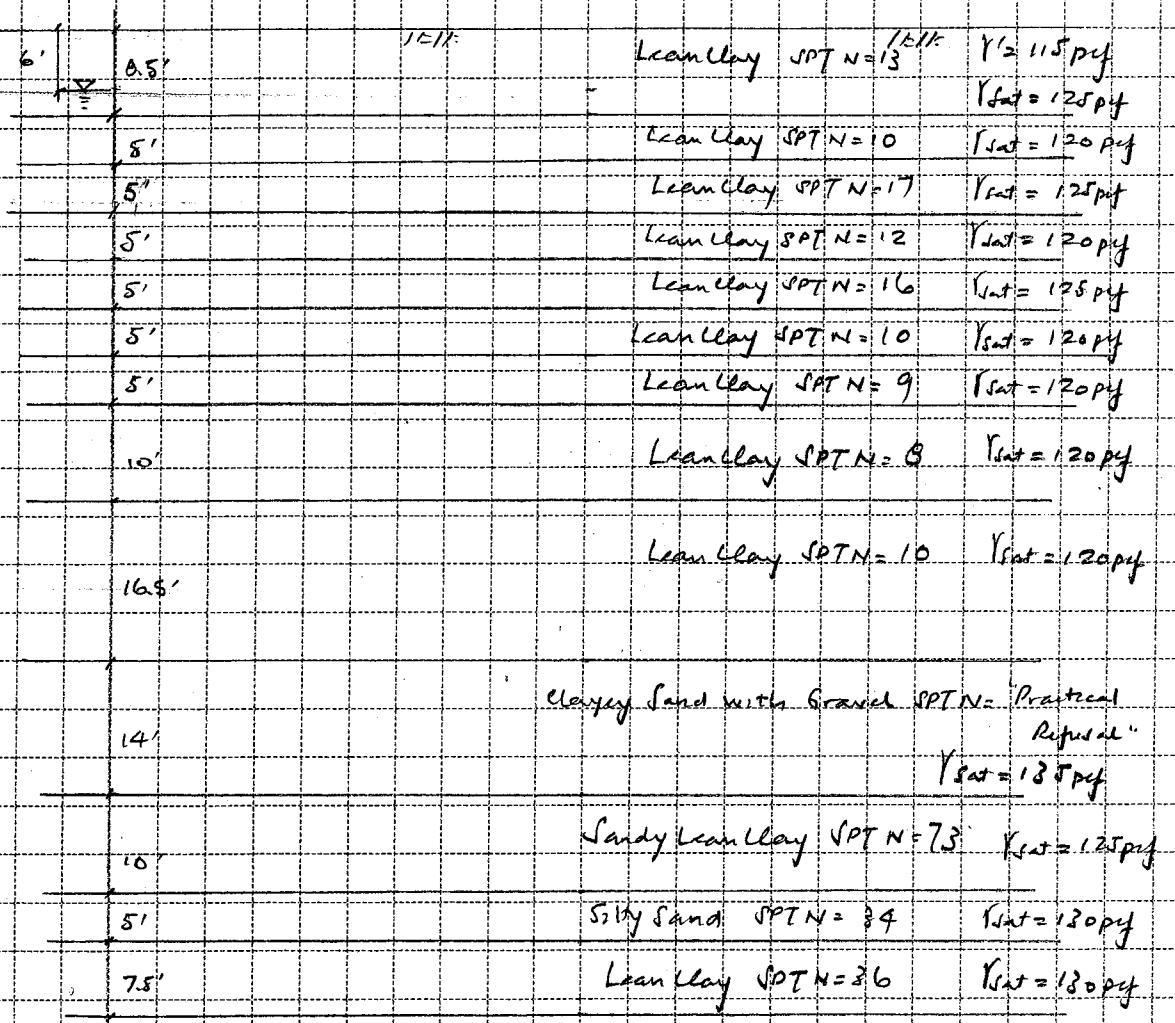
JOB Cordelia Truck Scale Relocation Project 20812.GDR
SHEET NO 1 OF
CALCULATED BY A Lam DATE 9/09
CHECKED BY DATE
SCALE

Settlement Analysis - Soil Profile (Boring R-99-CN-003)



SETTLEMENT ANALYSIS ***EB 80 to EB 12 Connector*** 09/28/09

LOCATION: Fairfield

Retaining Wall No. 4 - Based on reference Boring R-09-CN-003 (R-09-009)

Height of fill = 28.5 ft
Width of fill = 44 ft
Fill Density = 125 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf)	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
			0											
0	6	115	690	345.00	3335	13	1625	6500.00	27	0.1309	0.0131	0.97	0.00	0.97
6	8.5	63	158	768.75	3059	13	1625	6500.00	27	0.1309	0.0131	0.27	0.00	0.27
8.5	13.5	58	290	992.50	2850	10	1250	5000.00	31	0.1578	0.0158	0.56	0.00	0.56
13.5	18.5	63	315	1295.00	2613	17	2125	8500.00	24	0.1107	0.0111	0.32	0.00	0.32
18.5	23.5	58	290	1597.50	2412	12	1500	6000.00	29	0.1443	0.0144	0.35	0.00	0.35
23.5	28.5	63	315	1900.00	2239	16	2000	8000.00	29	0.1443	0.0144	0.29	0.00	0.29
28.5	33.5	58	290	2202.50	2090	10	1250	5000.00	29	0.1443	0.0144	0.25	0.00	0.25
33.5	38.5	58	290	2492.50	1306	9	1125	4500.00	31	0.1578	0.0158	0.17	0.00	0.17
38.5	48.5	58	580	2927.50	1194	8	1000	4000.00	31	0.1578	0.0158	0.26	0.25	0.50
48.5	65	58	957	3116.00	1037	10	1250	5000.00	31	0.1578	0.0158	0.39	0.00	0.39
65	79	73	1022	4685.50	1351	50				SAND				
79	89	63	630	5511.50	1225	73	9125	36500.00	10	0.0427	0.0043	0.04	0.00	0.04
89	94	68	340	5996.50	1157	34				SAND				
94	101.5	68	510	6421.50	1106	36	4500	18000.00	24	0.1107	0.0111	0.07	0.00	0.07

TOTAL SETTLEMENT (IN.) =	3.94	0.25	4.19

O.C. RANGE SETTLEMENT = 3.94 INCHES
N.C. RANGE SETTLEMENT = 0.25 INCHES

Total settlement is approximately 4.2 inches with 3.9 inch in the OC range and 0.3 inch in the NC range per available boring information.

PARIKH
Practicing in the Geosciences

JOB Cordelia Truck Scales Relocation Project 208123.GDR
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 9/09
CHECKED BY ____ DATE ____
SCALE ____

Settlement Analysis - Soil Profile (Boring P-09-CN-004)

Depth	Material	Description
9.5'	Lean Clay	SPT N = 15 (Est.) γ_{sat} = 125 pcf
10'	Lean Clay	Avg SPT N = 6 γ_{sat} = 120 pcf
5'	Lean Clay	SPT N = 23 γ_{sat} = 125 pcf
5'	Lean Clay	SPT N = 8 γ_{sat} = 120 pcf
10.5'	Lean Clay	Avg SPT N = 32 γ_{sat} = 130 pcf
4'	Lean Clay	SPT N = 8 γ_{sat} = 120 pcf
13'	Silty Sand	Avg SPT N = 13 γ_{sat} = 125 pcf
20'	Lean Clay	Avg SPT N = 24 γ_{sat} = 125 pcf
4.5'	Clayey Sand with Gravel	SPT N = 56 γ_{sat} = 130 pcf

SETTLEMENT ANALYSIS ***EB 80 to EB 12 Connector *** 09/29/09

LOCATION: Fairfield Retaining Wall No. 4 - Based on reference Boring R-09-CN-004 (A-09-011)

Height of fill = 18 ft
Width of fill = 45 ft
Fill Density = 125 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf)	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
			0											
0	9.5	125	1188	593.75	1998	15	1875	7500.00	16	0.0613	0.0061	0.45	0.00	0.45
9.5	19.5	58	580	1477.5	1602	6	750	3000.00	32	0.1645	0.0165	0.61	0.22	0.83
19.5	24.5	63	315	1925	1375	23	2875	11500.00	22	0.0975	0.0098	0.14	0.00	0.14
24.5	29.5	58	290	2227.5	1250	8	1000	4000.00	23	0.1041	0.0104	0.12	0.00	0.12
29.5	40	68	714	2729.5	1088	32	4000	16000.00	20	0.0847	0.0085	0.16	0.00	0.16
40	44	58	232	3202.5	964	8	1000	4000.00	35	0.1844	0.0184	0.09	0.16	0.24
44	57	63	819	3728	845	13				SAND				
57	77	63	1260	4767.5	669	24	3000	12000.00	22	0.0975	0.0098	0.13	0.00	0.13
77	81.5	68	306	5550.5	573	56				SAND				

TOTAL SETTLEMENT (IN.) =	1.69	0.38	2.07

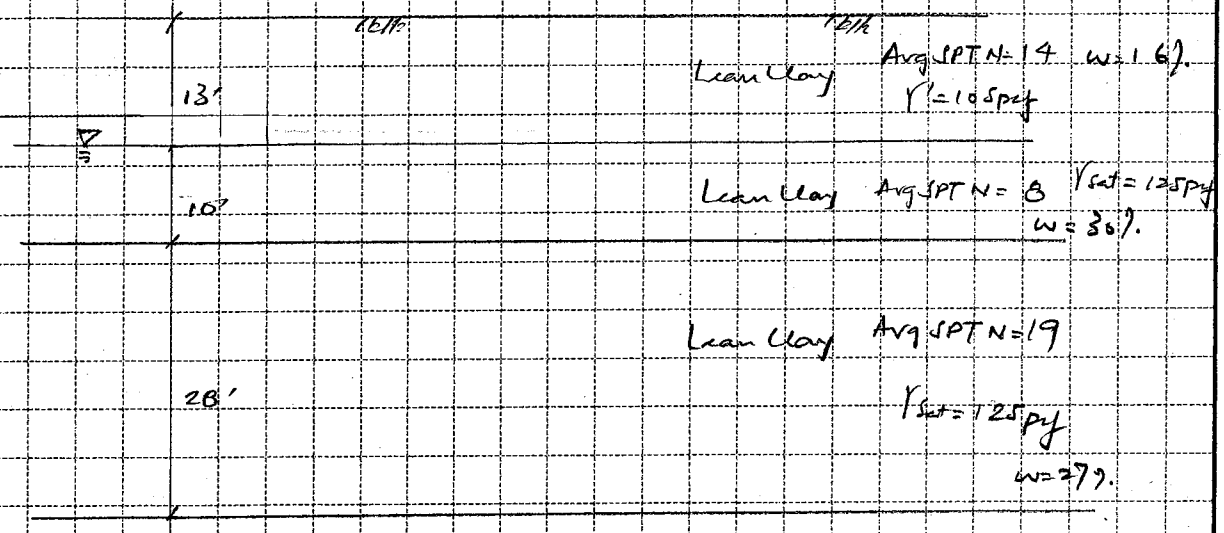
O.C. RANGE SETTLEMENT = 1.69 INCHES
N.C. RANGE SETTLEMENT = 0.38 INCHES

Total settlement is approximately 2.1 inches with 1.7 inches in the OC range and 0.4 inches in the NC range per available boring information.

PARIKH
Practicing in the Geosciences

JOB Cordelia Truck Scales Relocation Project 208123.601
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 9/09
CHECKED BY ____ DATE ____
SCALE ____

Settlement Analysis - Soil Profile (Boring A-09-117)



SETTLEMENT ANALYSIS ***Truck On-ramp SR 12 ***

10/01/09

LOCATION: Fairfield

Embankment Fill - Based on reference Boring A-09-117

Height of fill = 9 ft
Width of fill = 45 ft
Fill Density = 125 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf)	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
			0											
0	13	110	1430	715	958	14	1750	7000.00	16	0.0613	0.0061	0.35	0.00	0.35
13	23	63	630	1745	745	8	1000	4000.00	30	0.1511	0.0151	0.28	0.00	0.28
23	51	63	1764	2942	524	19	2375	9500.00	27	0.1309	0.0131	0.31	0.00	0.31

TOTAL SETTLEMENT (IN.) = 0.95 0.00 0.95

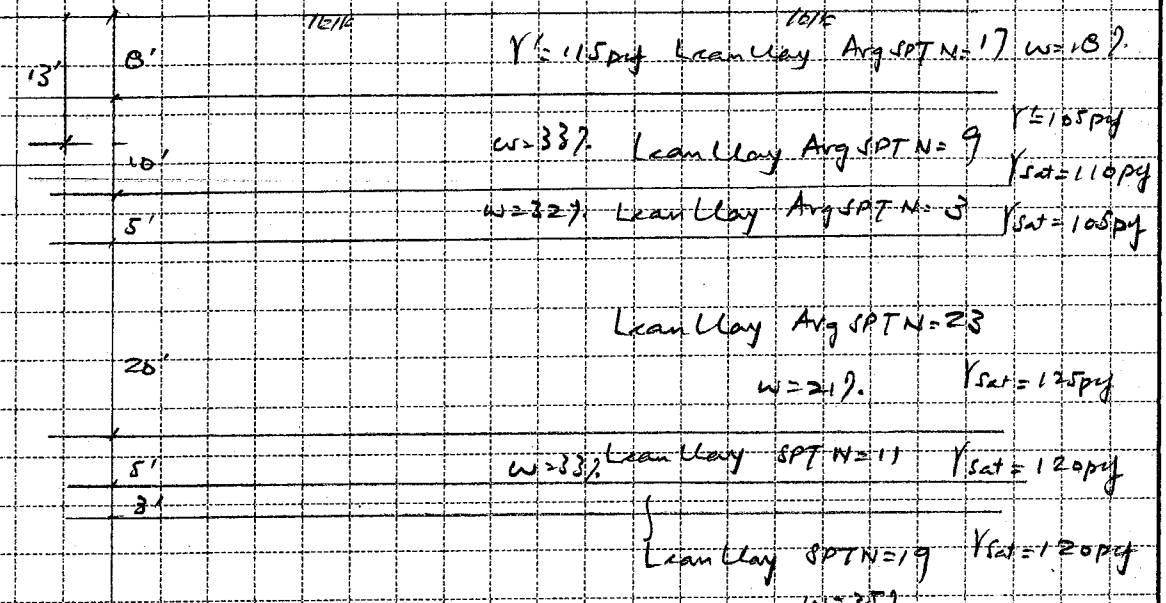
O.C. RANGE SETTLEMENT = 0.95 INCHES
N.C. RANGE SETTLEMENT = 0.00 INCHES

Total settlement is approximately 1.0 inches and in the OC range per available boring information.

PARIKH
Practicing in the Geosciences

JOB Cordelia Truck Scales Relocation Project 20B125.60P
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 9/09
CHECKED BY ____ DATE ____
SCALE ____

Settlement Analyses - Soil Profile (Boring A-09-11B)



SETTLEMENT ANALYSIS ***Truck On-ramp SR 12 *** 10/01/09

LOCATION: Fairfield

Embankment Fill - Based on reference Boring A-09-118

Height of fill = 5 ft
Width of fill = 45 ft
Fill Density = 125 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf)	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
			0											
0	8	115	920	460	565	17	2125	8500.00	18	0.0725	0.0072	0.24	0.00	0.24
8	13	105	525	1182.5	486	9	1125	4500.00	33	0.1712	0.0171	0.15	0.00	0.15
13	18	48	240	1565	436	9	1125	4500.00	32	0.1645	0.0165	0.11	0.00	0.11
18	23	43	215	1792.5	393	4	500	2000.00	32	0.1645	0.0165	0.05	0.38	0.43
23	43	63	1260	2530	312	23	2875	11500.00	21	0.0910	0.0091	0.11	0.00	0.11
43	38	58	-290	3015	274	11	1375	5500.00	33	0.1712	0.0171	-0.04	0.00	-0.04
48	51	58	174	2957	238	19	2375	9500.00	35	0.1844	0.0184	0.02	0.00	0.02

TOTAL SETTLEMENT (IN.) =	0.64	0.38	1.02

O.C. RANGE SETTLEMENT = 0.64 INCHES
N.C. RANGE SETTLEMENT = 0.38 INCHES

Total settlement is approximately 1.0 inches with 0.6 inches in the OC range and 0.4 inches in the NC range per available boring information.

Settlement - Time of Consolidation - Height of Fill = 28.5 feet

Based on the Atterberg Limit Test LL = 42

With reference to Figure 41 Cv = 1.5 ft²/day

Few layers which contributed most of the settlement were checked for percentage of consolidation completed

Referring to the settlement Calculation

1st Layer (0'-6') (90% Consolidation)

$$t = \frac{0.848 (6)^2}{1.5}$$

$$= 20.5 \text{ day}$$

Remaining Settlement = 0.97 × 0.1

= 0.097 Say 0.10 inch

3rd to 5th Layer (8.5'-23.5') (50% consolidation)

$$t = \frac{0.197 (15)^2}{1.5}$$

= 30 days

Remaining settlement = 0.50 × (0.56 + 0.32 + 0.35)

= 0.62 inches

10th Layer (48.5'-65') (40% consolidation)

$$t = \frac{0.126 (16.5)^2}{1.5}$$

= 23 days

Settlement

Remaining settlement = 0.60 x 0.39

= 0.23 inches

6th Layer (23.5' - 28.5') (95% consolidation)

$$t = \frac{1.163 \times 25}{1.5}$$

= 2.0 days

Remaining settlement = 0.05 x 0.29

= 0.01 inch

Total remaining settlement = 0.16 + 0.27 + 0.62 + 0.01 + 0.25 + 0.17 + 0.26 + 0.23 + 0.04 + 0.07

= 2.0 inches (acceptable for MSE walls OC Ranges)

= 0.25 inches (NC Ranges)

SETTLEMENT ANALYSIS ***EB 80 to EB 12 Connector***

LOCATION: Fairfield

09/28/09

Retaining Wall No. 4 - Based on reference Boring R-09-CN-003 (R-09-009)

Height of fill = 28.5 ft
Width of fill = 44 ft
Fill Density = 125 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf)	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
			0											
0	6	115	690	345.00	3335	13	1625	6500.00	27	0.1309	0.0131	0.97	0.00	0.97
6	8.5	63	158	768.75	3059	13	1625	6500.00	27	0.1309	0.0131	0.27	0.00	0.27
8.5	13.5	58	290	992.50	2850	10	1250	5000.00	31	0.1578	0.0158	0.56	0.00	0.56
13.5	18.5	63	315	1295.00	2613	17	2125	8500.00	24	0.1107	0.0111	0.32	0.00	0.32
18.5	23.5	58	290	1597.50	2412	12	1500	6000.00	29	0.1443	0.0144	0.35	0.00	0.35
23.5	28.5	63	315	1900.00	2239	16	2000	8000.00	29	0.1443	0.0144	0.29	0.00	0.29
28.5	33.5	58	290	2202.50	2090	10	1250	5000.00	29	0.1443	0.0144	0.25	0.00	0.25
33.5	38.5	58	290	2492.50	1306	9	1125	4500.00	31	0.1578	0.0158	0.17	0.00	0.17
38.5	48.5	58	580	2927.50	1194	8	1000	4000.00	31	0.1578	0.0158	0.26	0.25	0.50
48.5	65	58	957	3116.00	1037	10	1250	5000.00	31	0.1578	0.0158	0.39	0.00	0.39
65	79	73	1022	4685.50	1351	50				SAND				
79	89	63	630	5511.50	1225	73	9125	36500.00	10	0.0427	0.0043	0.04	0.00	0.04
89	94	68	340	5996.50	1157	34				SAND				
94	101.5	68	510	6421.50	1106	36	4500	18000.00	24	0.1107	0.0111	0.07	0.00	0.07

1st layer

3rd to 5th layer

6th layer

10th layer

TOTAL SETTLEMENT (IN.) =	3.94	0.25	4.19

O.C. RANGE SETTLEMENT = 3.94 INCHES
N.C. RANGE SETTLEMENT = 0.25 INCHES

Total settlement is approximately 4.2 inches with 3.9 inch in the OC range and 0.3 inch in the NC range per available boring information.

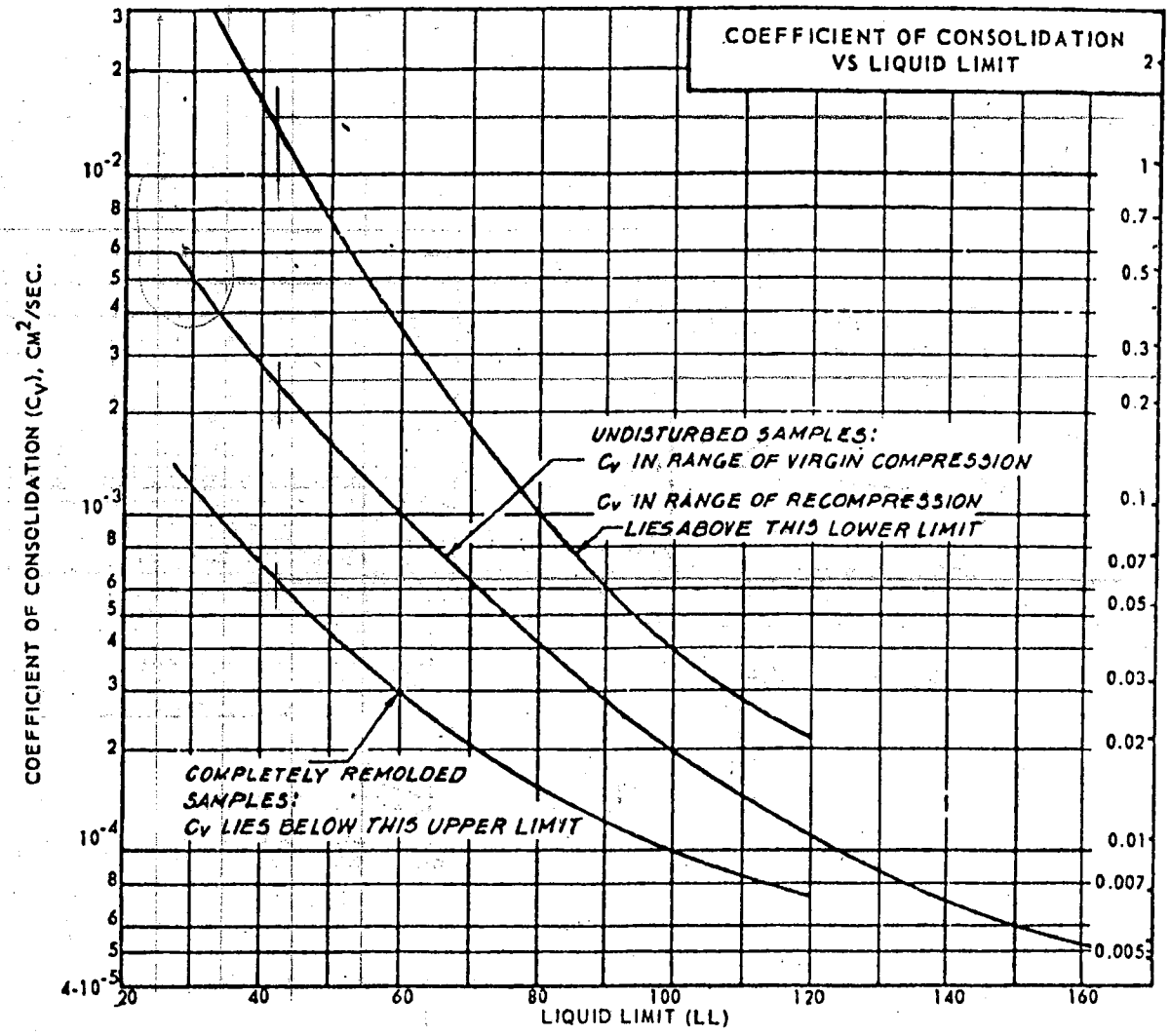
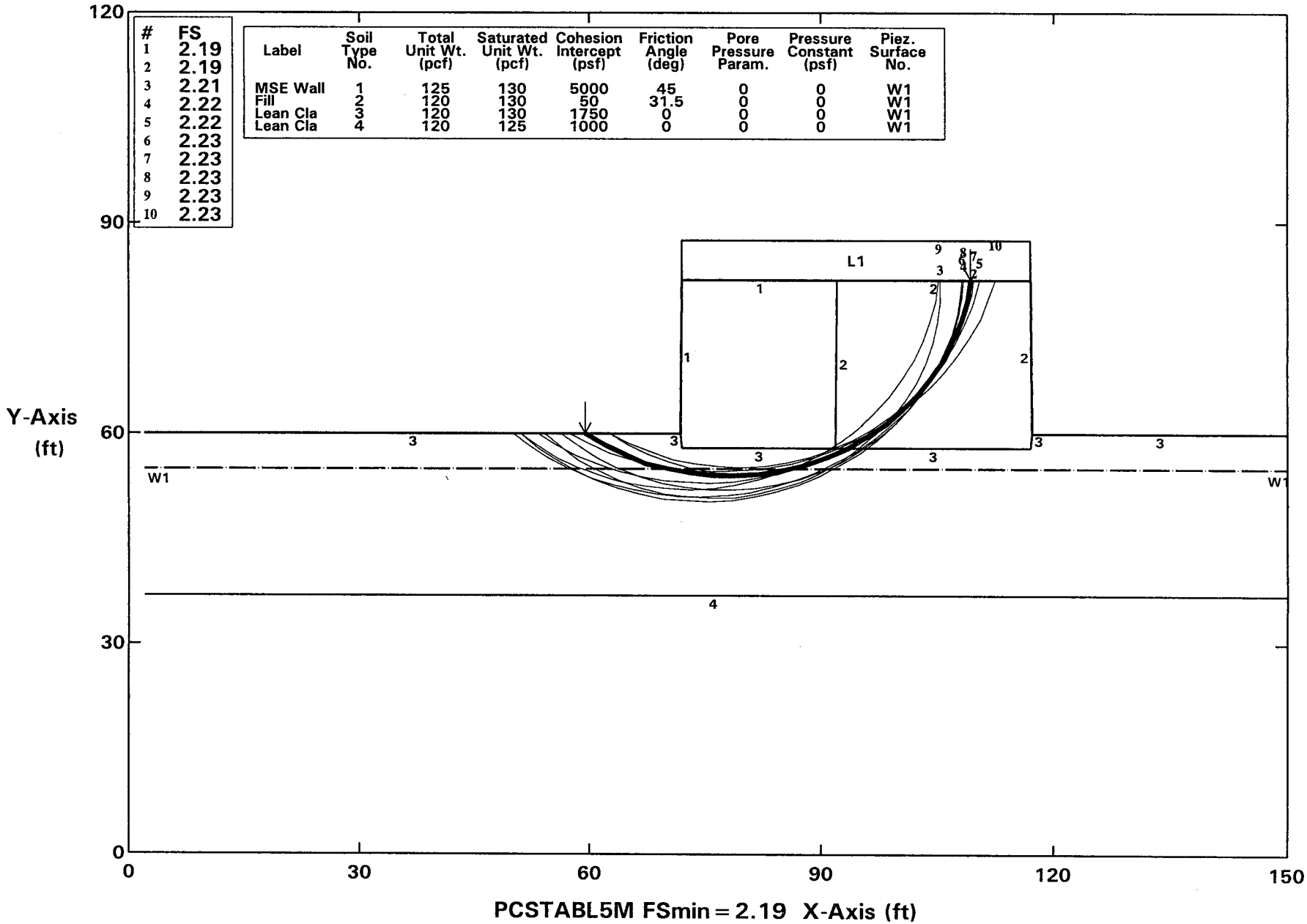


Fig. 41 Correlations Between Coefficient of Consolidation and Liquid Limit (After DM-7).

MSE WALL STABILITY ANALYSES

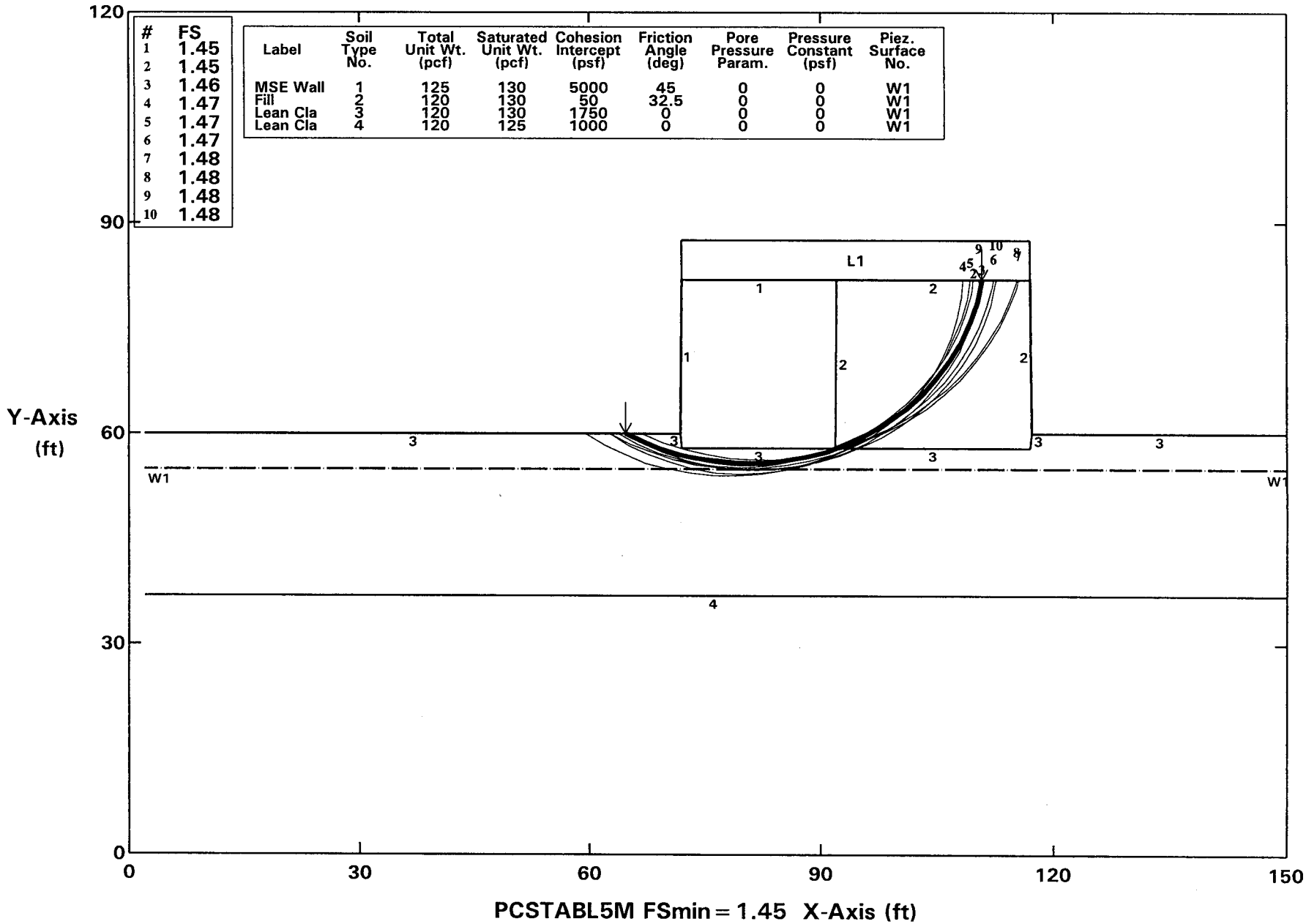
Cordelia Truck Scales Relocation RW NO.1 (09-CN-001) -Static

Ten Most Critical. C:CTSRW1ST.PLT By: AL 07-17-09 8:21am



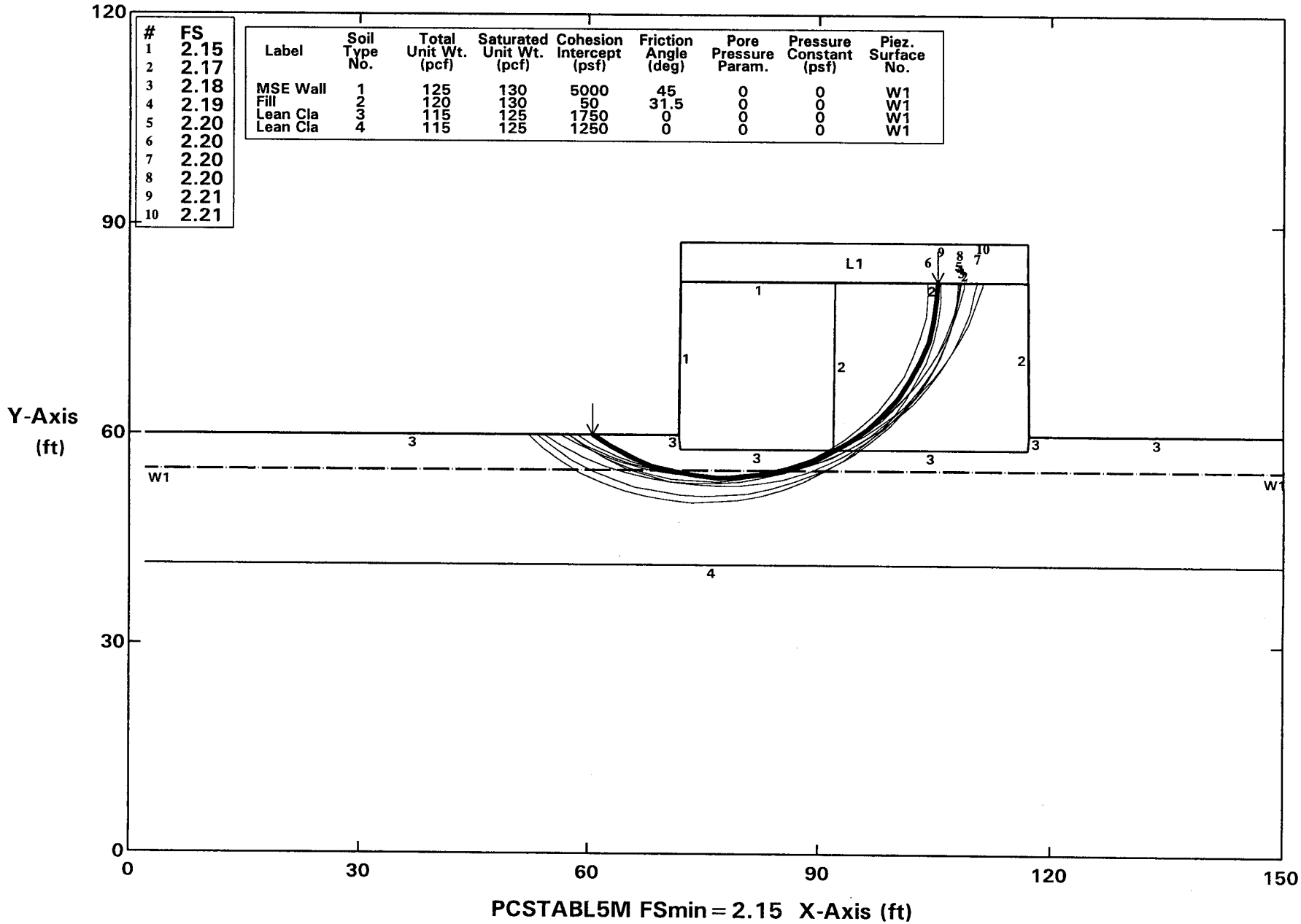
Cordelia Truck Scales Relocation RW NO.1 (09-CN-001) -Seismic

Ten Most Critical. C:CTSRW1SE.PLT By: AL 07-17-09 8:24am



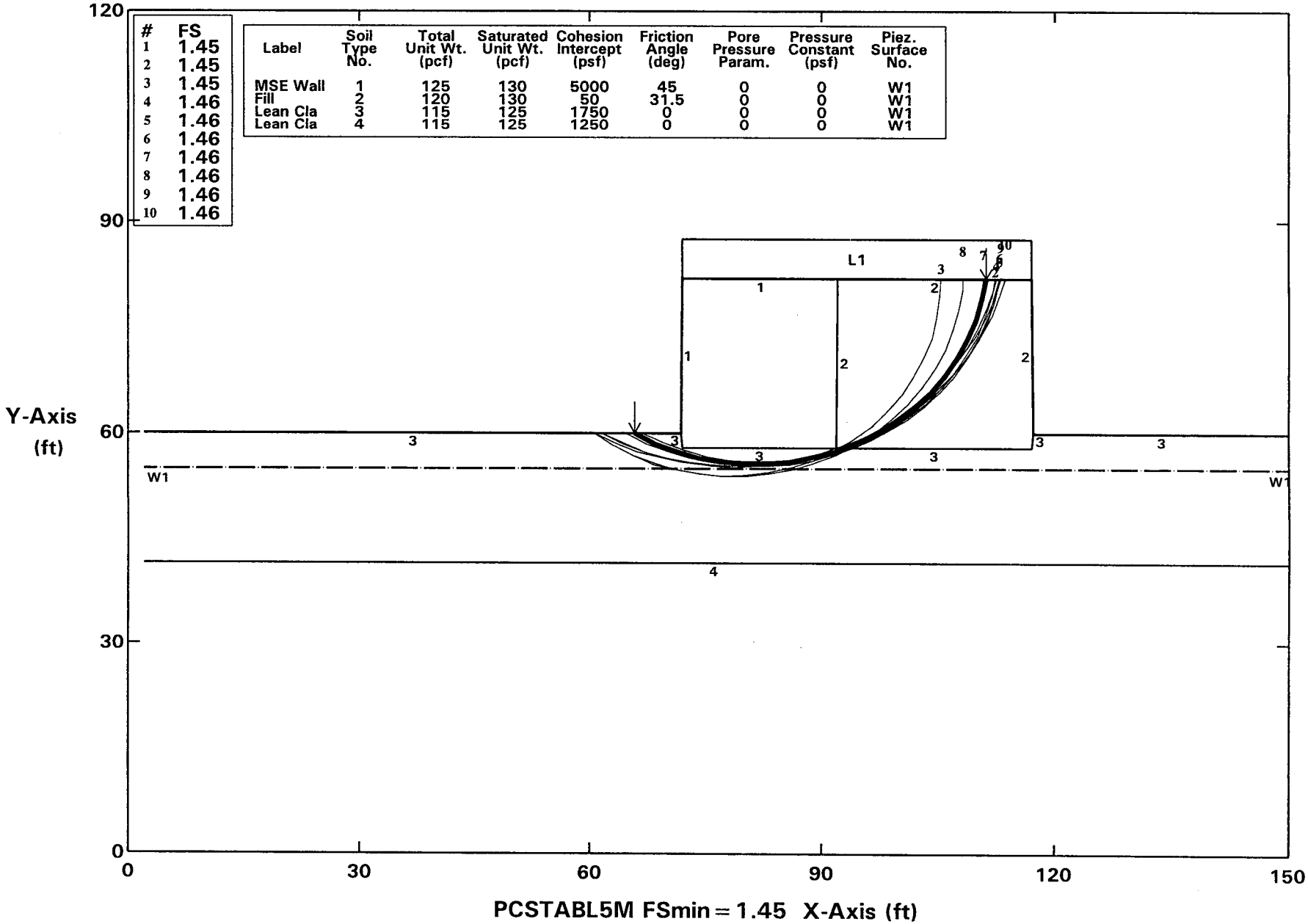
Cordelia Truck Scales Relocation RW NO.1 (09-CN-002) -Static

Ten Most Critical. C:CTRW12ST.PLT By: AL 07-17-09 9:24am



Cordelia Truck Scales Relocation RW NO.1 (09-CN-002) -Seismic

Ten Most Critical. C:CTRW12SE.PLT By: AL 07-17-09 9:26am

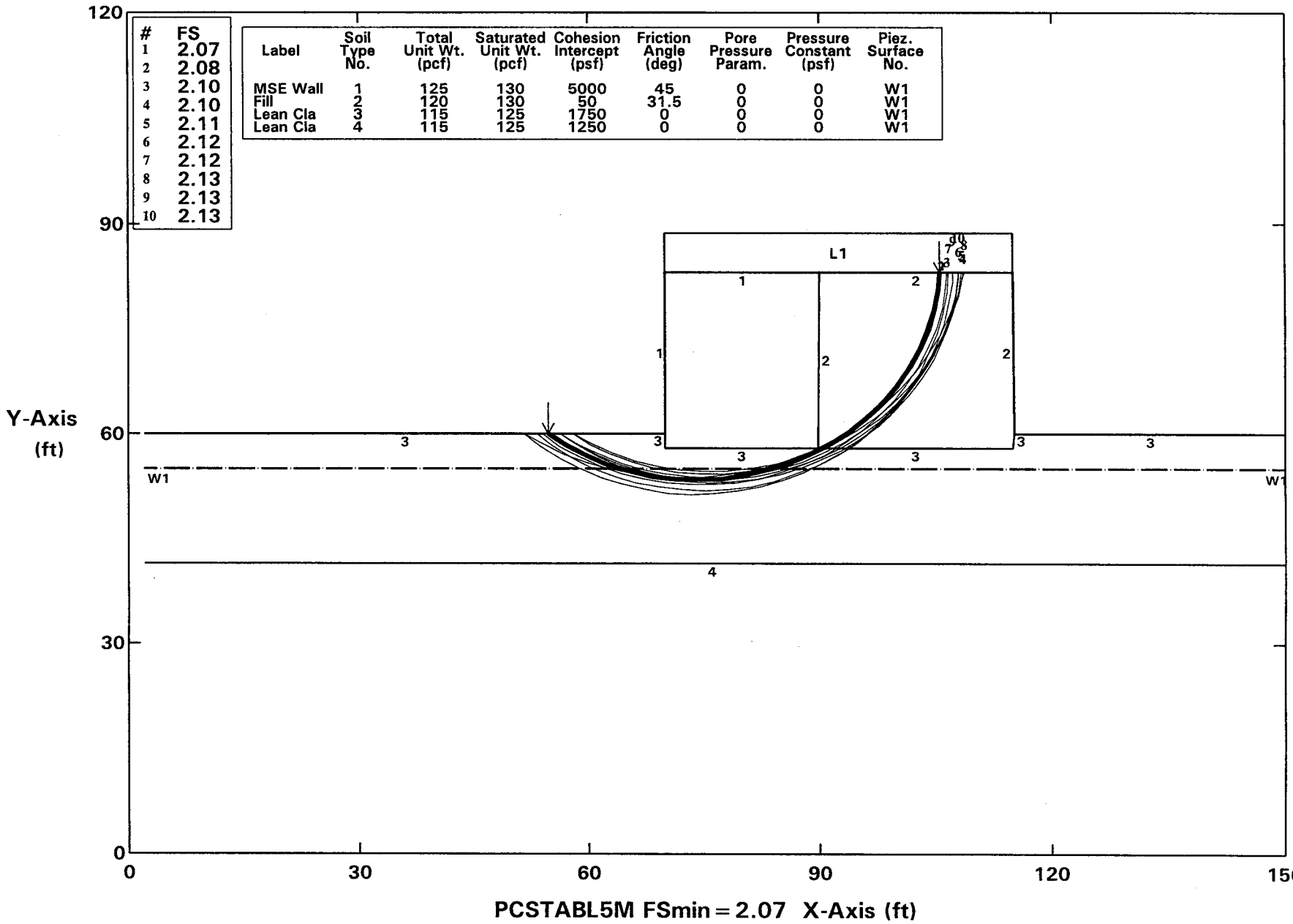


#	FS
1	1.45
2	1.45
3	1.45
4	1.46
5	1.46
6	1.46
7	1.46
8	1.46
9	1.46
10	1.46

Label	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
MSE Wall	1	125	130	5000	45	0	0	W1
Fill	2	120	130	50	31.5	0	0	W1
Lean Cla	3	115	125	1750	0	0	0	W1
Lean Cla	4	115	125	1250	0	0	0	W1

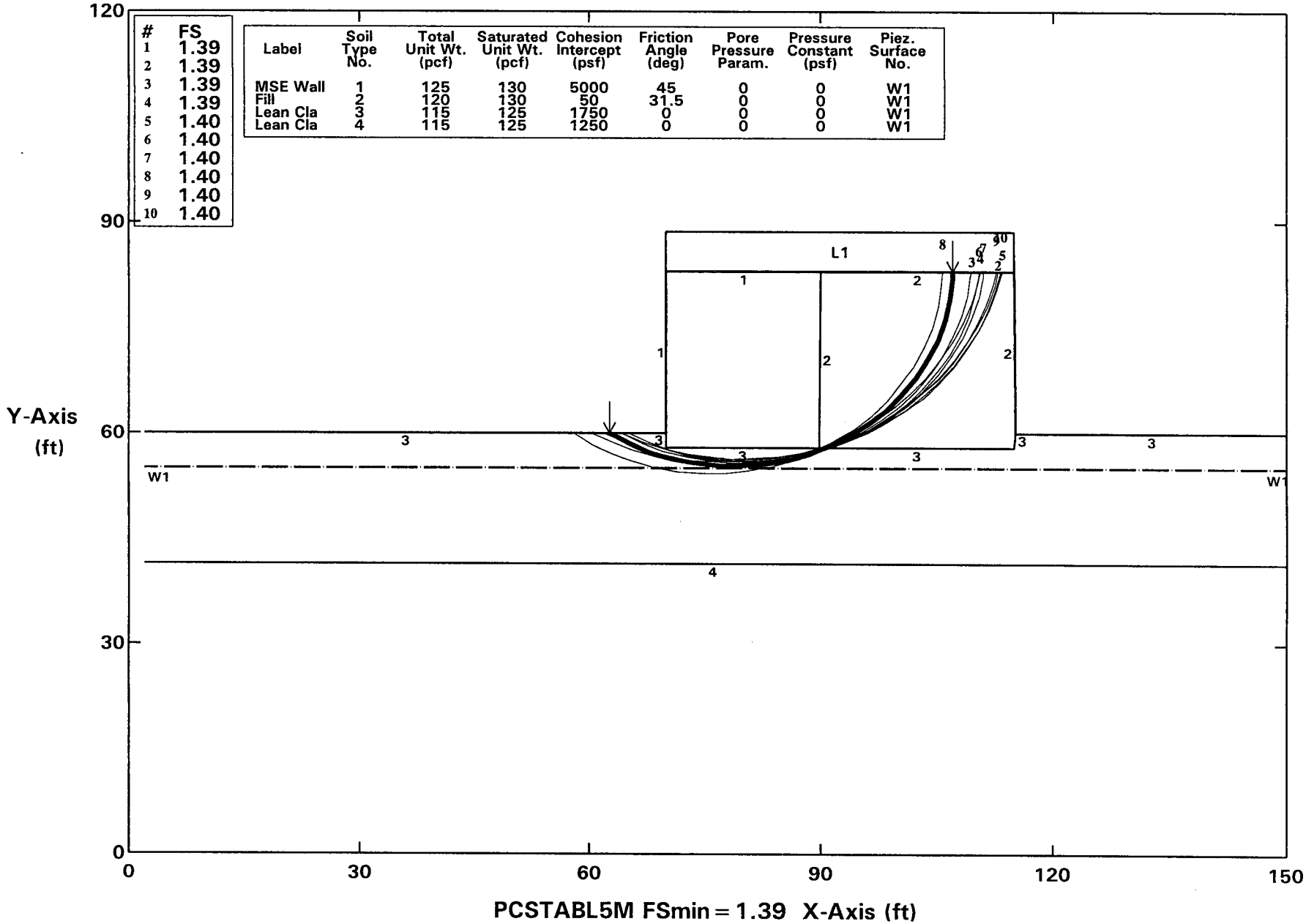
Cordelia Truck Scales Relocation RW NO.2 (09-CN-002) -Static

Ten Most Critical. C:CTRW22ST.PLT By: AL 07-17-09 9:45am



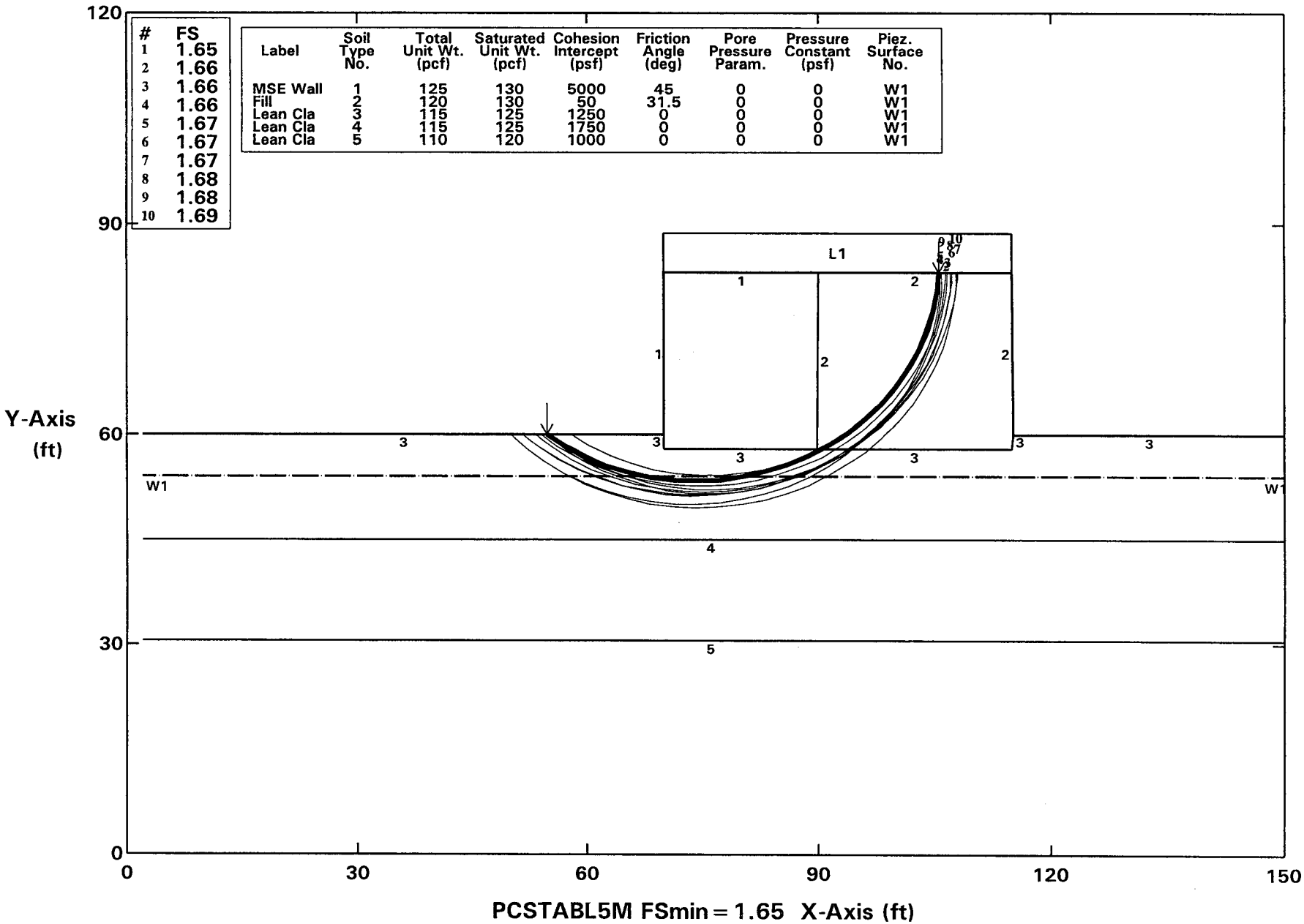
Cordelia Truck Scales Relocation RW NO.2 (09-CN-002) -Seismic

Ten Most Critical. C:CTRW22SE.PLT By: AL 07-17-09 9:46am



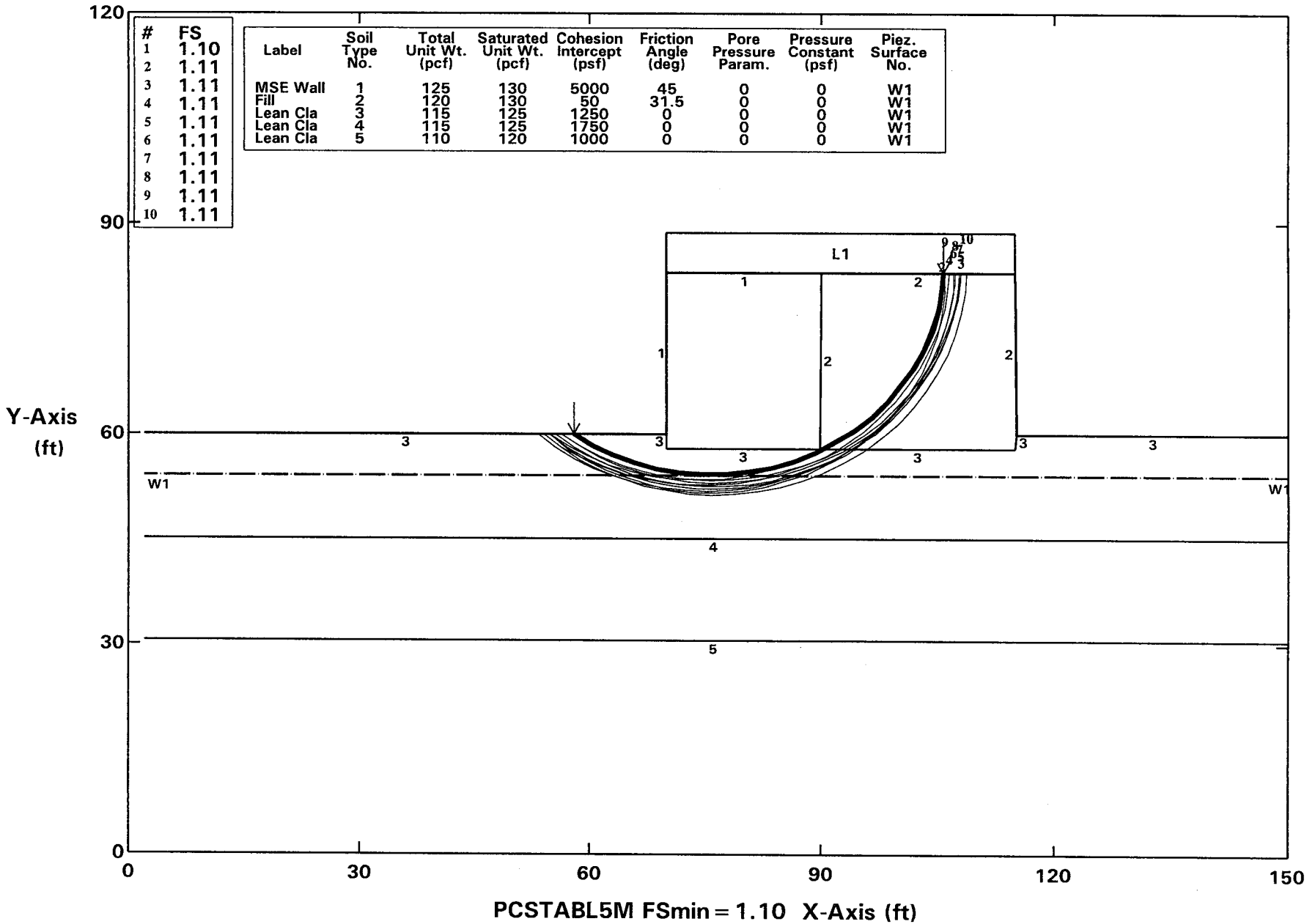
Cordelia Truck Scales Relocation RW NO.2 (09-CN-003) -Static

Ten Most Critical. C:CTRW23ST.PLT By: AL 07-17-09 10:06am



Cordelia Truck Scales Relocation RW NO.2 (09-CN-003) -Seismic

Ten Most Critical. C:CTRW23SE.PLT By: AL 07-17-09 10:08am

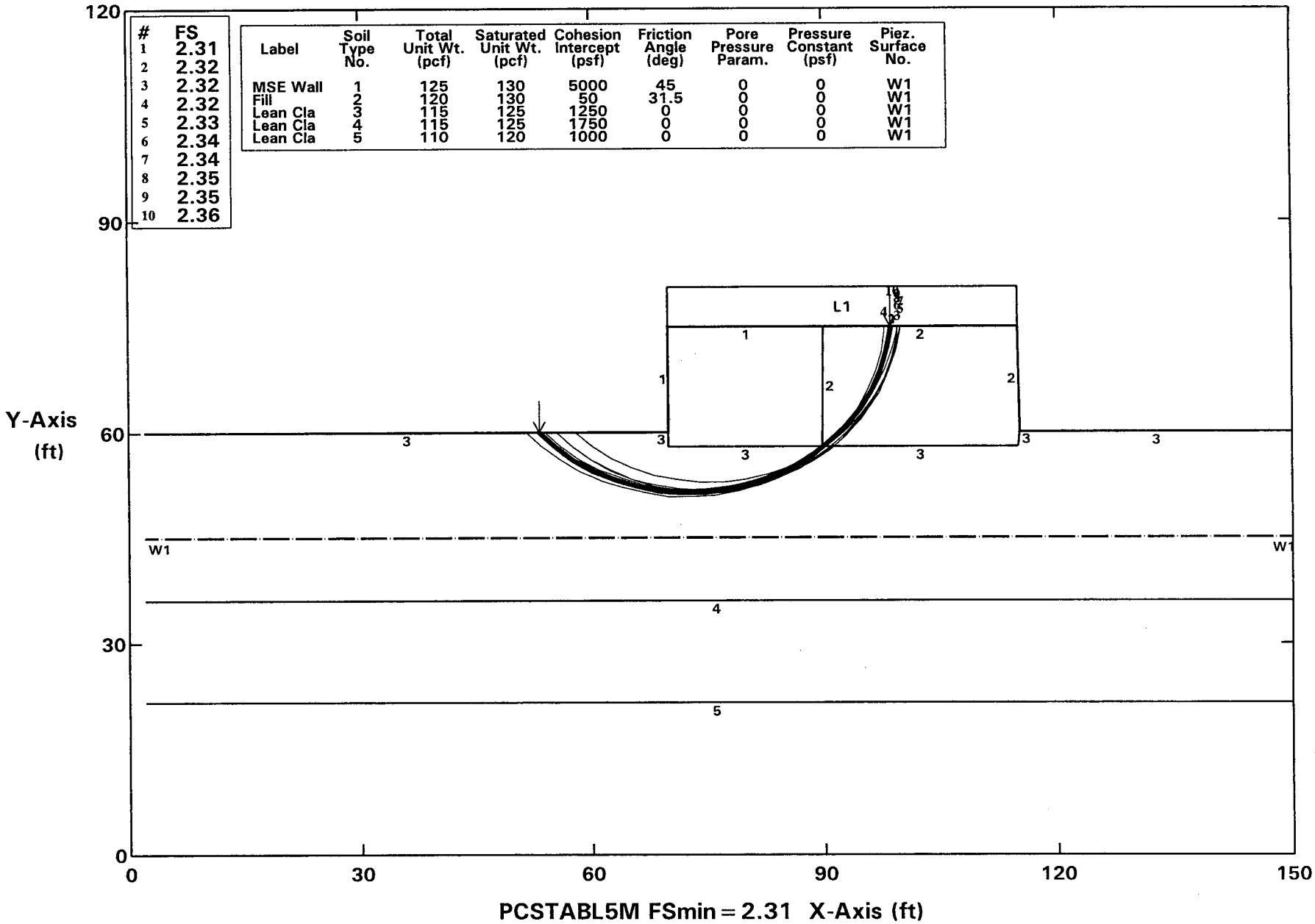


Cordelia Truck Scales Relocation RW NO.3 (09-CN-003) -Static

Ten Most Critical. C:CTRW33ST.PLT By: AL 07-17-09 10:49am

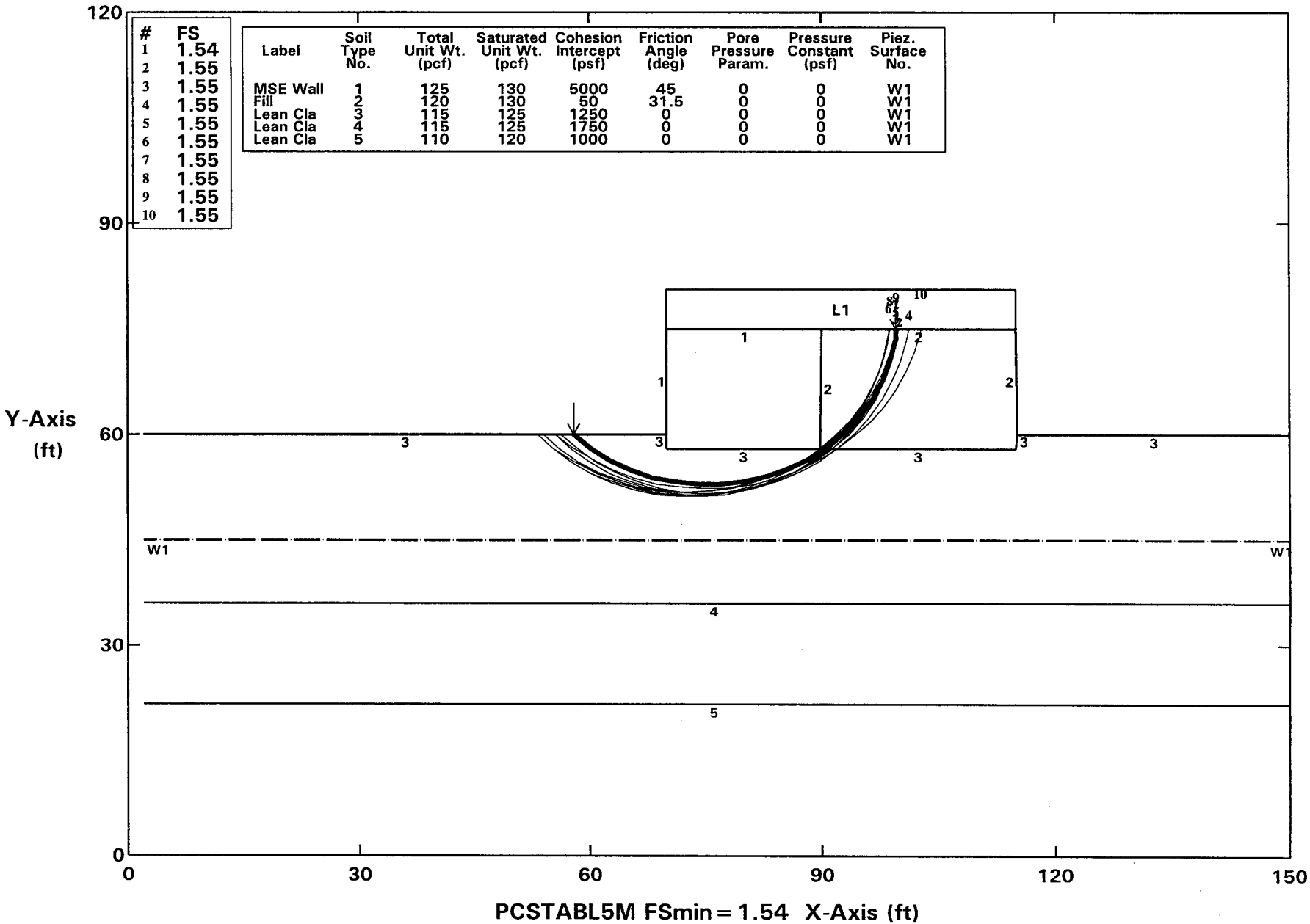
#	FS
1	2.31
2	2.32
3	2.32
4	2.32
5	2.33
6	2.34
7	2.34
8	2.35
9	2.35
10	2.36

Label	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
MSE Wall	1	125	130	5000	45	0	0	W1
Fill	2	120	130	50	31.5	0	0	W1
Lean Cla	3	115	125	1250	0	0	0	W1
Lean Cla	4	115	125	1750	0	0	0	W1
Lean Cla	5	110	120	1000	0	0	0	W1



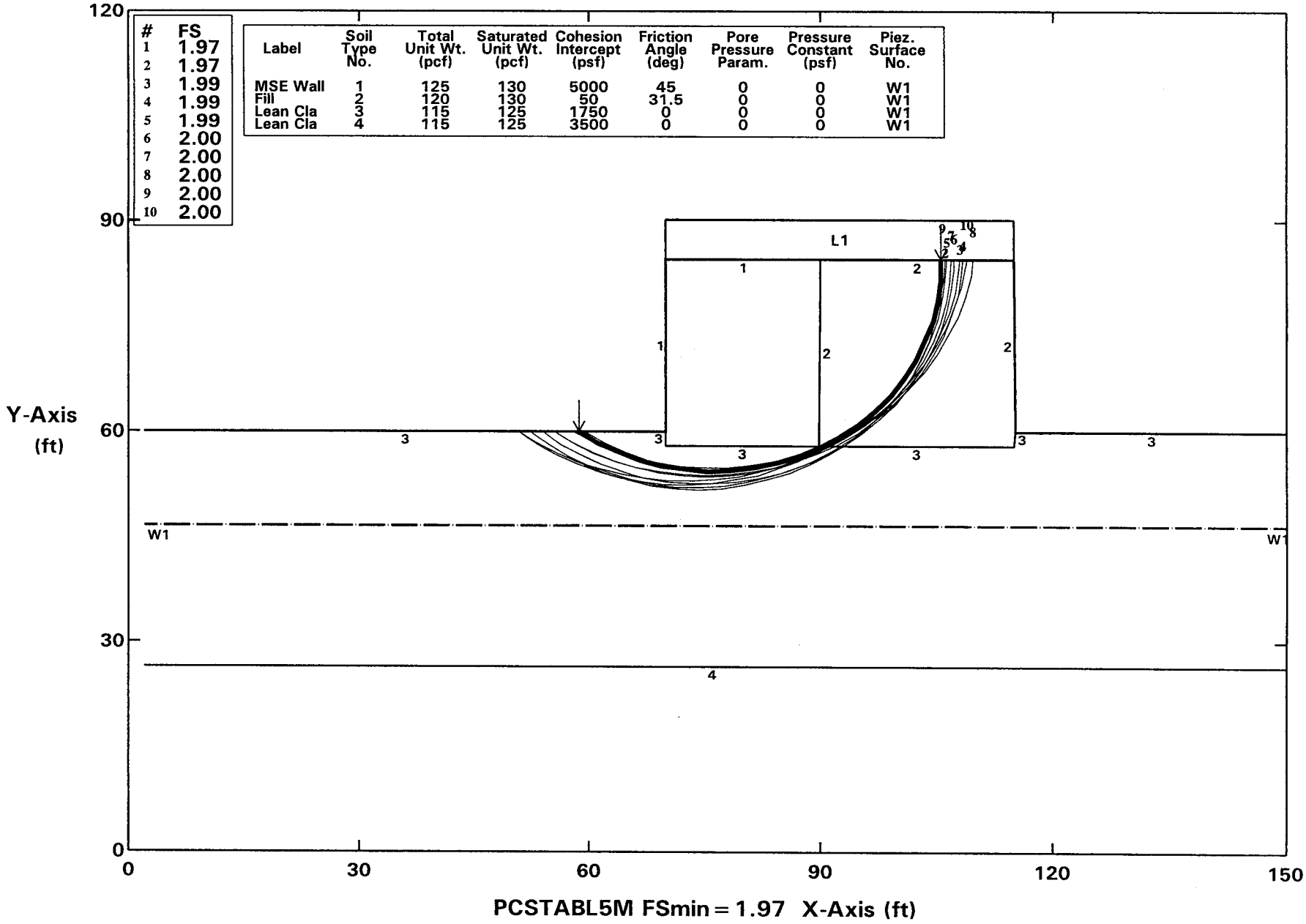
Cordelia Truck Scales Relocation RW NO.3 (09-CN-003) -Seismic

Ten Most Critical. C:CTRW33SE.PLT By: AL 07-17-09 10:52am



Cordelia Truck Scales Relocation RW NO.4 (CPT-09-CN-001) -Static

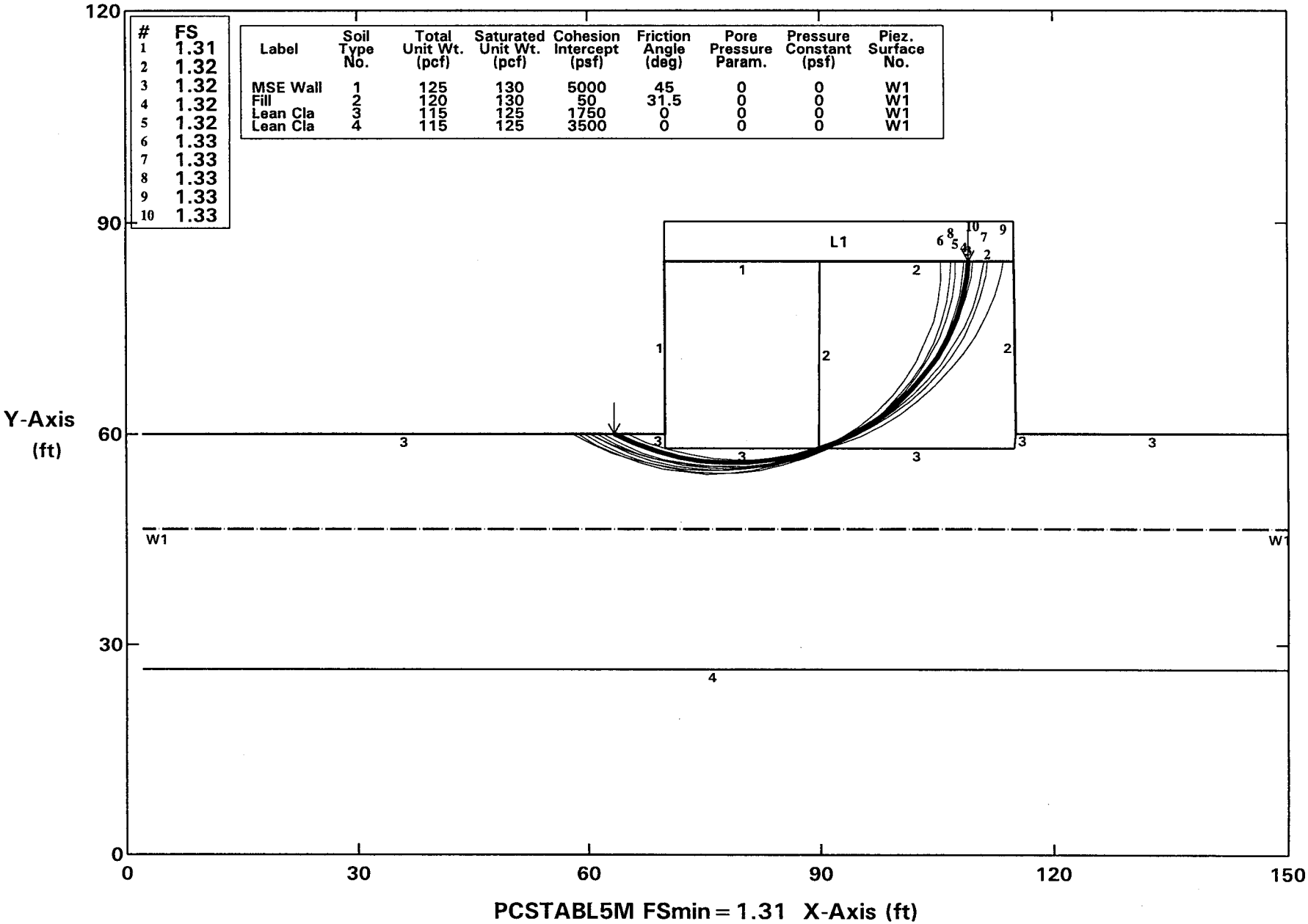
Ten Most Critical. C:CTRW41ST.PLT By: AL 07-17-09 11:10am



PCSTABL5M FSmin = 1.97 X-Axis (ft)

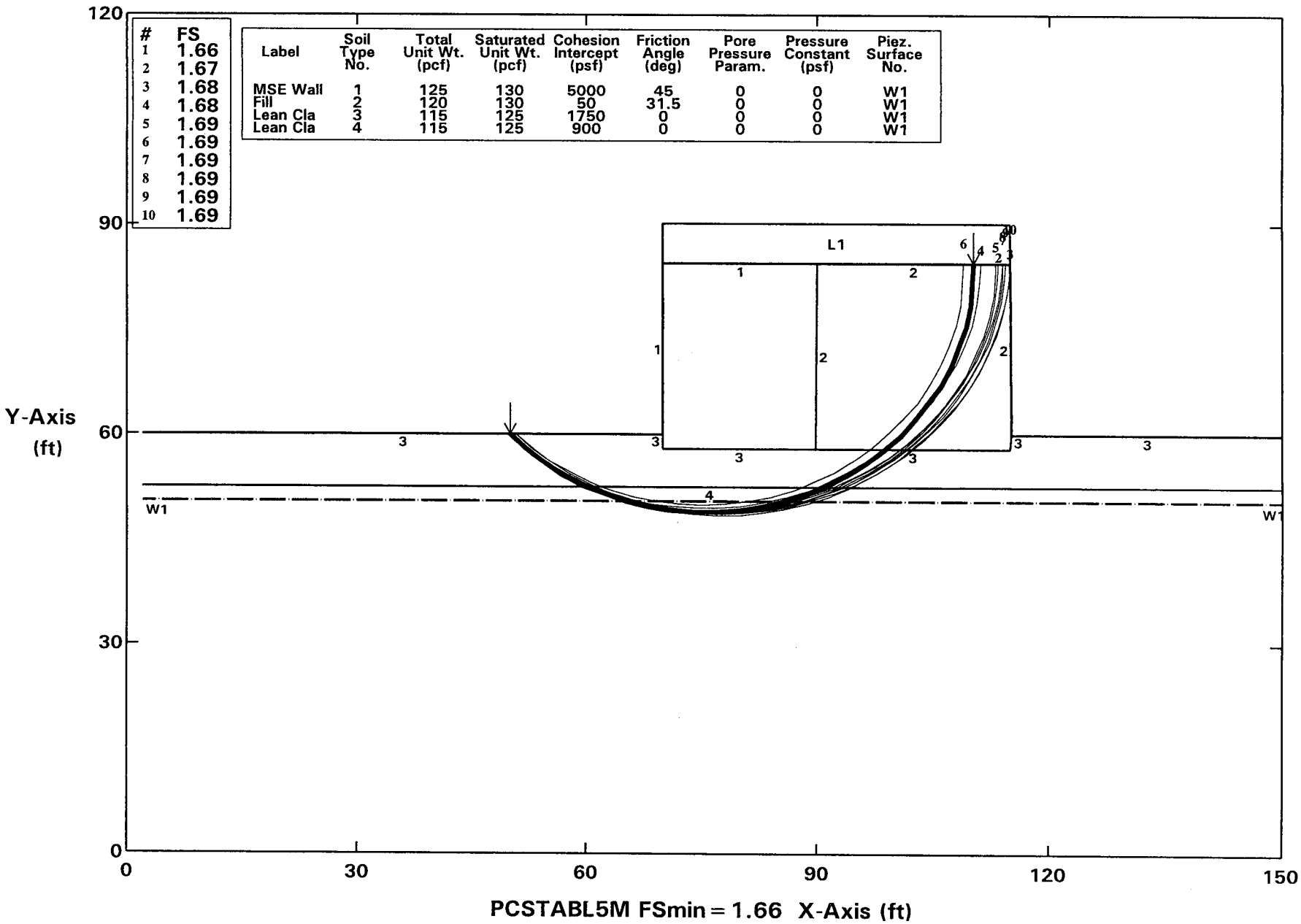
Cordelia Truck Scales Relocation RW NO.4 (CPT-09-CN-001) -Seismic

Ten Most Critical. C:CTRW41SE.PLT By: AL 07-17-09 11:11am



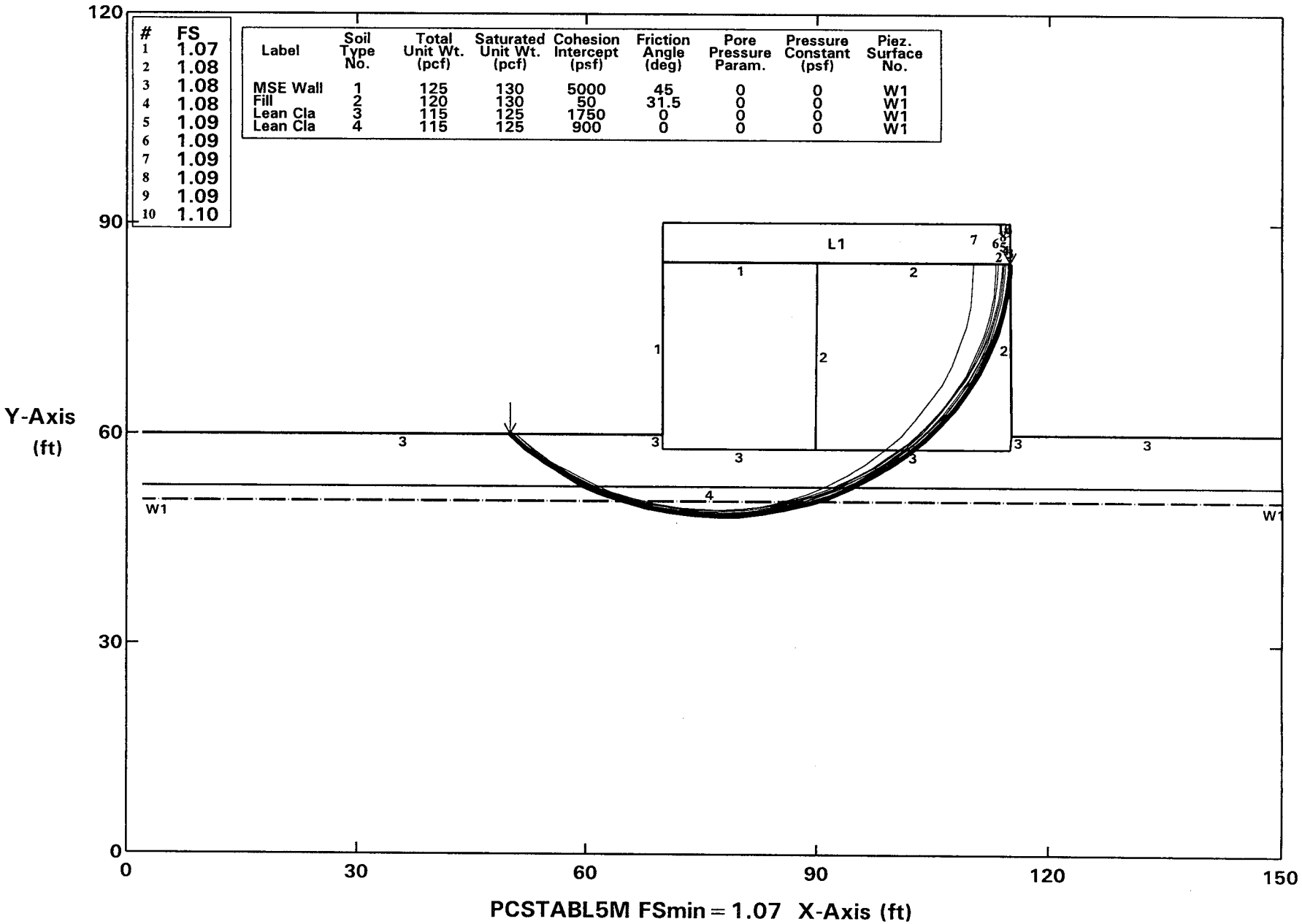
Cordelia Truck Scales Relocation RW NO.4 (09-CN-004) -Static

Ten Most Critical. C:CTRW44ST.PLT By: AL 07-17-09 11:16am



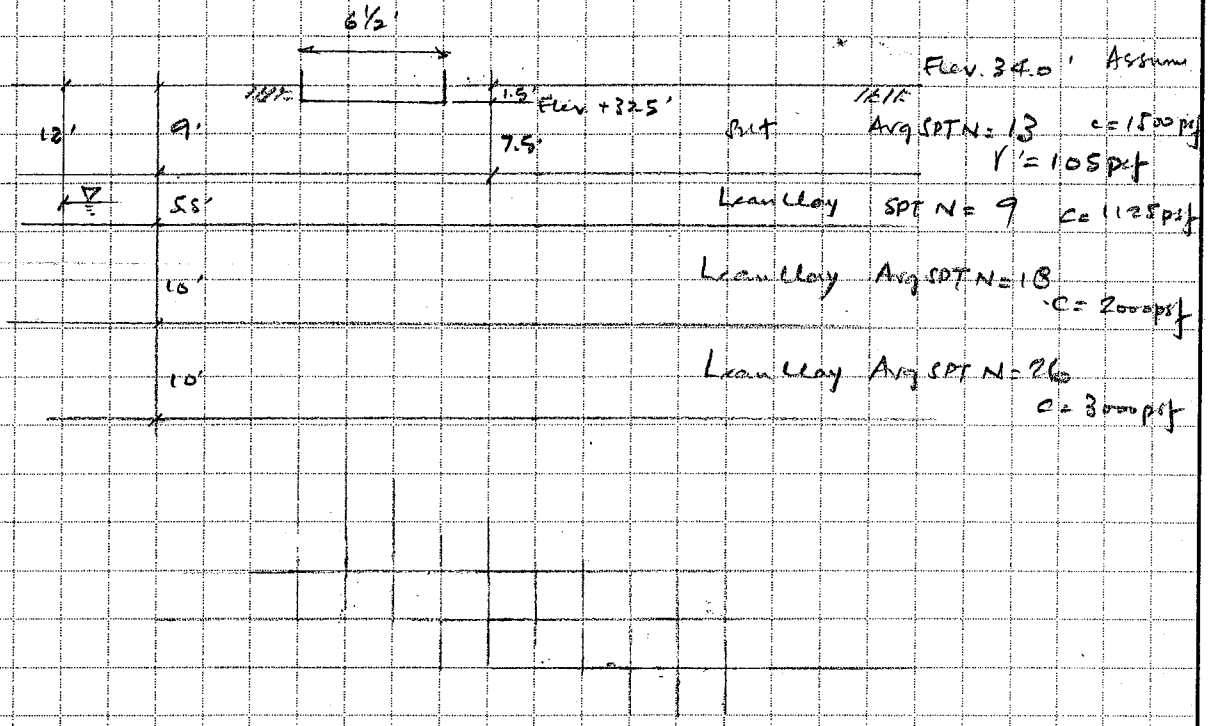
Cordelia Truck Scales Relocation RW NO.4 (09-CN-004) -Seismic

Ten Most Critical. C:CTRW44SE.PLT By: AL 07-17-09 11:18am



BEARING CAPACITY ANALYSES

Bearing Capacity Analysis - Retaining Wall No. 5 (Boring B-09-SC-001)



Assume D = 2', T = 7.5', B = 6.5'

$$c_2/c_1 = \frac{1125}{1500} = 0.75$$

$$T/B = 7.5/6.5 = 1.2$$

$$N_c = 5.53$$

$$D/B = 1.5/6.5 = 0.23$$

$$N_{cD}/N_c = 1.075 \qquad N_{cD} = 5.53 \times 1.075 = 5.9$$

$$Q_{ult} = 1500 \times 5.9 + 0.075 \times 6.5$$

$$= 9007.5 \text{ psf}$$

Bearing Capacity Analysis - Retaining Wall No. (Boring R-09-SC-001

Allowable Bearing Capacity = $\frac{9007.5}{3}$

= 3002.5 psf Say 3.0 ksf

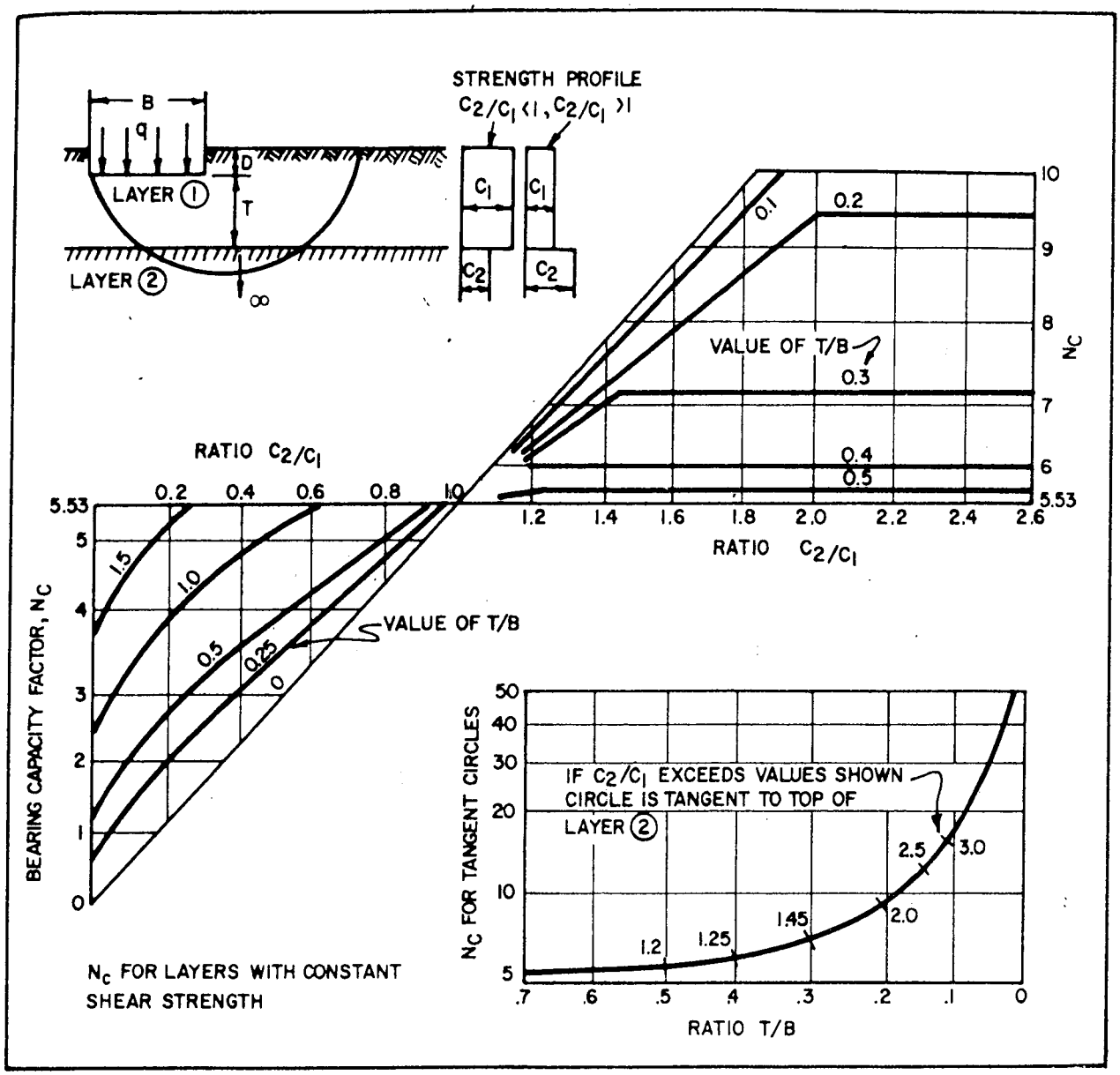


FIGURE 5
Ultimate Bearing Capacity of Two Layer Cohesive Soil (Ø=0)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

Duncomes J. Hon
REGISTERED CIVIL ENGINEER

May 1, 2006
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER — Duncomes J. Hon — No. C45803 — exp. 12-31-06 — CIVIL — STATE OF CALIFORNIA

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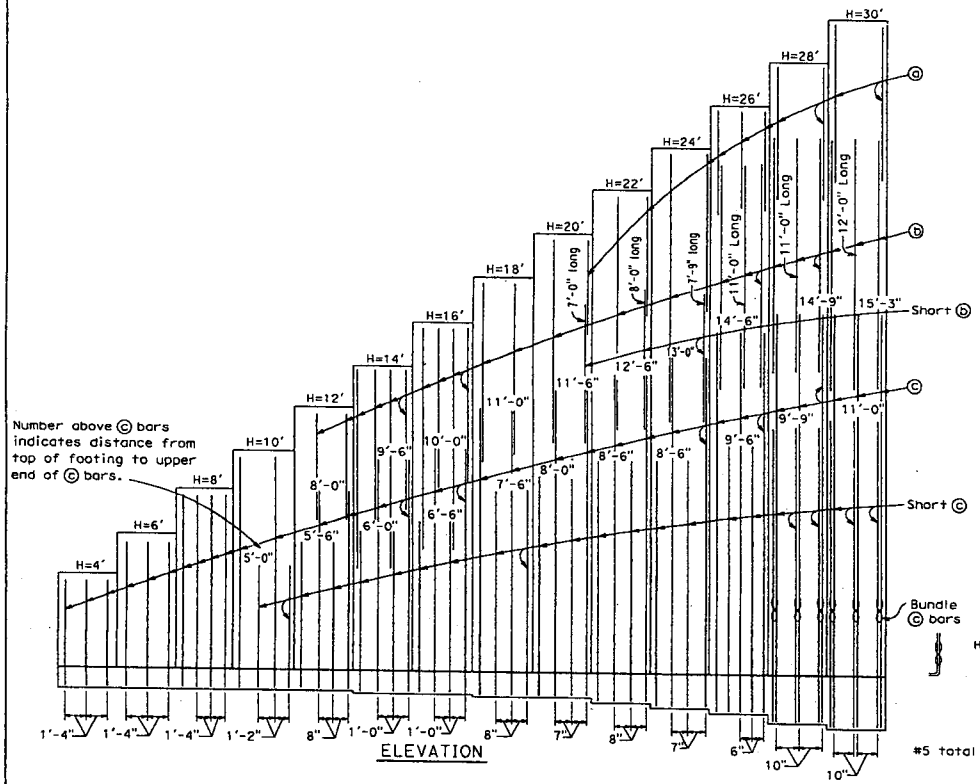
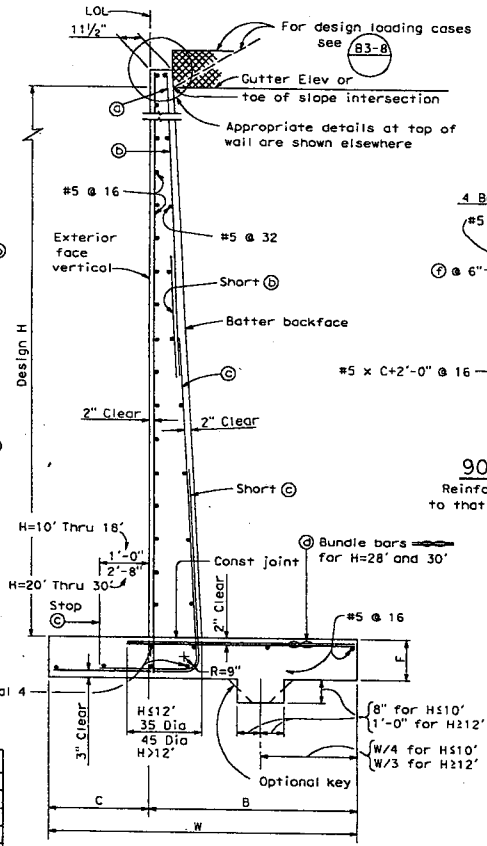
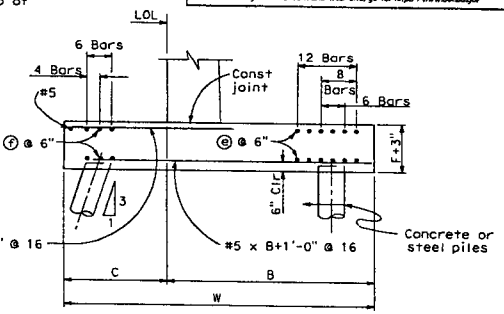






90 KIP PILE FOOTING SECTION

Reinforcement detailed is to be placed in addition to that shown for spread footing. All piles not shown, see pile layout on other sheets.

TABLE OF REINFORCING STEEL DIMENSIONS AND DATA

Design H		4'	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'
W		3'-3"	4'-3"	5'-3"	6'-3"	7'-3"	8'-0"	9'-0"	10'-0"	11'-0"	12'-1"	13'-3"	14'-3"	15'-3"	16'-9"
C		1'-0"	1'-4"	1'-8"	2'-0"	2'-4"	2'-7"	2'-11"	3'-3"	3'-7"	3'-11"	4'-5"	4'-9"	5'-1"	5'-5"
B		2'-3"	2'-11"	3'-7"	4'-3"	4'-11"	5'-5"	6'-1"	6'-9"	7'-5"	8'-2"	8'-10"	9'-6"	10'-2"	11'-4"
F		1'-4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-6"	1'-6"	1'-6"	1'-6"	1'-8"	1'-10"	2'-2"	2'-6"	2'-9"
Batter		½:12	½:12	½:12	½:12	½:12	½:12	½:12	½:12	½:12	½:12	⅝:12	¾:12	¾:12	⅞:12
	ⓐ bars	—	—	—	—	—	—	—	—	#5 @ 28	#5 @ 32	#5 @ 28	#5 @ 12	#5 @ 20	#8 @ 20
	ⓑ bars	—	—	—	—	#5 @ 16	#5 @ 12	#5 @ 12	#6 @ 16	#8 @ 14	#8 @ 16	#8 @ 14	#8 @ 12	#8 @ 10	#9 @ 10
	ⓒ bars	#5 @ 16	#5 @ 16	#5 @ 16	#6 @ 14	#6 @ 8	#8 @ 12	#9 @ 12	#9 @ 8	#9 @ 7	#11 @ 8	#11 @ 7	#11 @ 6	#11 @ 10	#11 @ 10
	ⓓ bars	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 14	#5 @ 8	#8 @ 12	#9 @ 12	#9 @ 8	#9 @ 7	#11 @ 8	#11 @ 7	#11 @ 6	#11 @ 10	#11 @ 10
Total	ⓔ bars	6-#6	6-#6	6-#6	12-#6	12-#6	12-#6	12-#6	8-#6	8-#6	8-#6	6-#6	6-#6	6-#6	6-#6
Total	ⓕ bars	—	—	—	6-#6	6-#6	6-#6	6-#6	6-#6	6-#6	6-#6	4-#5	4-#5	4-#5	4-#5
Loading Case I	Toe Pressure ksf	1.7	1.9	2.2	2.5	2.8	3.3	3.5	4.0	4.3	4.6	4.9	5.3	5.7	6.3
Loading Case II	Toe Pressure ksf	1.1	1.5	2.0	2.3	2.7	3.3	3.7	4.2	4.7	5.5	6.0	6.5	7.1	7.5
Loading Case III	Toe Pressure ksf	1.4	1.7	2.1	2.5	2.9	3.4	3.8	4.3	4.8	5.4	5.8	6.5	7.2	7.5

ɣ Denotes a bundle of 2 bars

NOTES:

1. For details not shown and drainage notes see B3-8
2. For wall stem joint details see 80-3 3-3 and 80-3 3-4
3. For pile footing for design H=4' use same footing dimensions as for design H=6'.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

RETAINING WALL TYPE 1 H=4' THROUGH 30'

NO SCALE

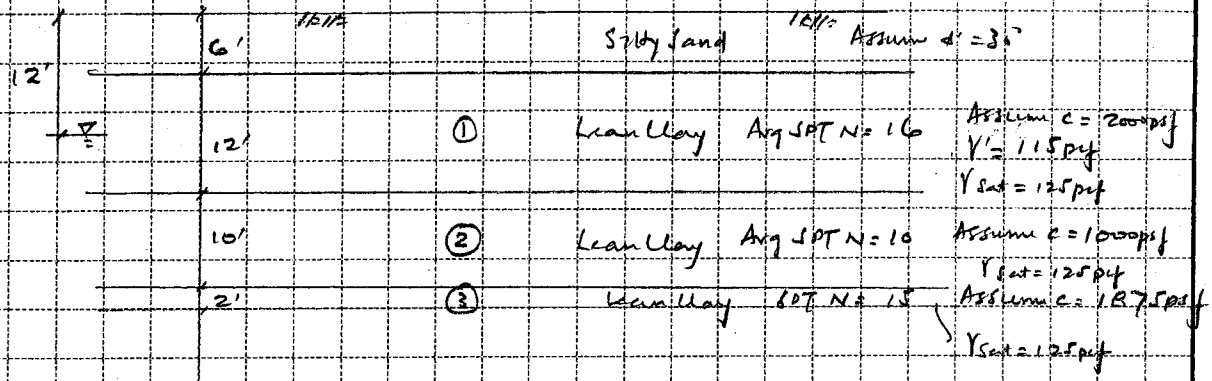
B3-1

8-1-05

Return to Table of Contents

OVERHEAD SIGN STRUCTURES

Overhead Sign Post B (Boring A-09-126) (Pile Length = 33 feet) Post Type V



For the clay $\phi' = 0$ $k_p = 1$

Passive force = $2c \times H + \frac{1}{2}\gamma H^2$

Passive force in ① = $2 \times 2000 \times 12 + \frac{1}{2}\left[6 \times 115 + \frac{6 \times 63}{12}\right] \times 144$

= 54408 lbs

Passive force in ② = $2 \times 1000 \times 10 + \frac{1}{2} \times 63 \times 100$

= 23150 lbs

Passive force in ③ = $2 \times 1875 \times 5 + \frac{1}{2} \times 63 \times 25$

= 19537.5 lbs

Total passive force = 97095.5 lbs

Overhead Sign Post B

For $\phi' = 30°$ $k_p = 3$

Passive force for sand with $k_p = 3$

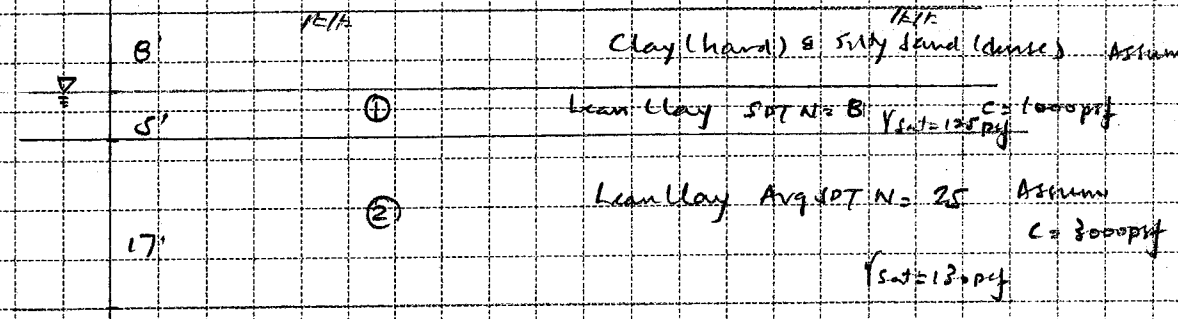
Passive force $= \frac{1}{2} \times 63 \times (115 \times 6^2 + 63 \times 21^2)$

$= 1.5 \times 31973$

$= 47885$ lbs $<<$ 97095.516s (clay)

∴ Equivalent ϕ' of clays is >730°

Overhead Sign Post D (Boring A-09-(02)) (Pile Length = 33 feet) Post Type V



Passive force in clay $= 2cxH + \frac{1}{2}\gamma H^2$

Passive force in ① $= 2 \times 1000 \times 5 + \frac{1}{2}(63)5^2$

$= 10787.5$ lbs

Passive force in ② $= 2 \times 3000 \times 20 + \frac{1}{2}(68) \times 20^2$

$= 133600$ lbs

Total passive force $= 10787.5 + 133600$

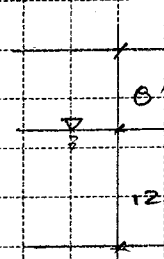
$= 144387.5$ lbs

Passive force (due to 30° sand) $= \frac{1}{2}(3) \times (63) \times 25 + \frac{1}{2}(3) \times (68) 25^2$

$= 66112.5$ lbs $<<$ 144387.5 lbs

∴ Equivalent ∠ of clays is $>> 30°$

Overhead Sign Post F (Boring A-09-1071) Pile Length 33 feet, Post Type V



① Lean Clay Avg SPT N = 5 Assume c = 625 psf, γ' = 100 pcf

② Lean Clay Avg SPT N = 16 c = 1750 psf, γ_sat = 125 pcf

Passive force in Clay: $2cH + \frac{1}{2}\gamma H^2$

Passive force in ① $= 2 \times 625 \times 8 + \frac{1}{2} \times 100 \times 64$

$= 13200$ lbs

Passive force in ② $= 2 \times 1750 \times 25 + \frac{1}{2} \times 63 \times (25)^2$

$= 107187.5$ lbs

① + ② $= 120387.5$ lbs

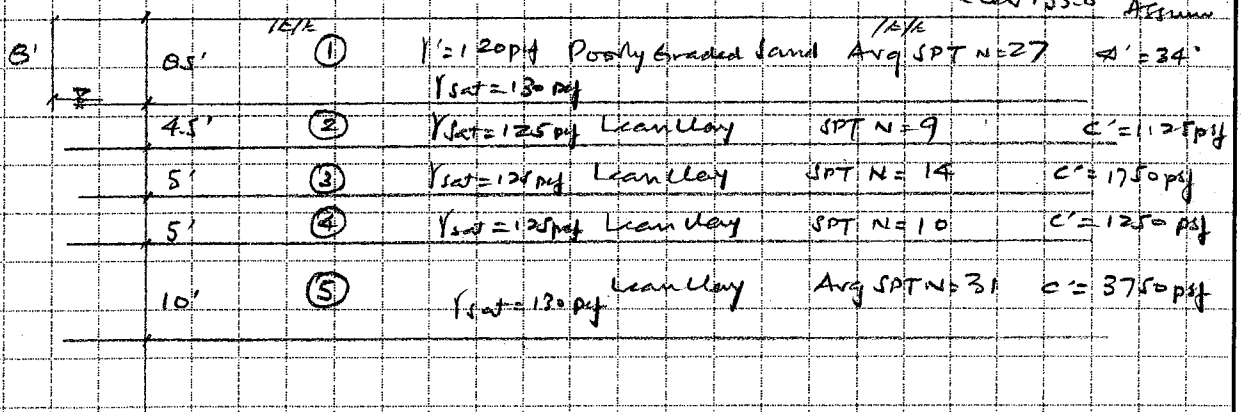
Passive force in Sand ($\phi' = 30°$)

$= \frac{1}{2} \times 8 \times \left(\frac{8 \times 100 + 25 \times 63}{33}\right) 33^2$

$= 117562.5$ lbs $<$ 120387.5 lbs

∴ Equivalent ϕ' of Clays is $> 30°$

Overhead Sign Post G (Boring A-09-TS-003) Pile Length = 33 feet; Post Type V



Passive force in ② = $2 \times 1125 \times 4.5 + \frac{1}{2} \times 62.6 \times 4.5^2$
= 10758.8 lbs

Passive force in ③ = $2 \times 1750 \times 5 + \frac{1}{2} \times 62.6 \times 5^2$
= 18282.5 lbs

Passive force in ④ = $2 \times 1250 \times 5 + \frac{1}{2} \times 62.6 \times 5^2$
= 13282.5 lbs

Passive force in ⑤ = $2 \times 3750 \times 10 + \frac{1}{2} \times 67.6 \times 100$
= 78384 lbs

Total passive force ② + ③ + ④ + ⑤ = 120703.8 lbs

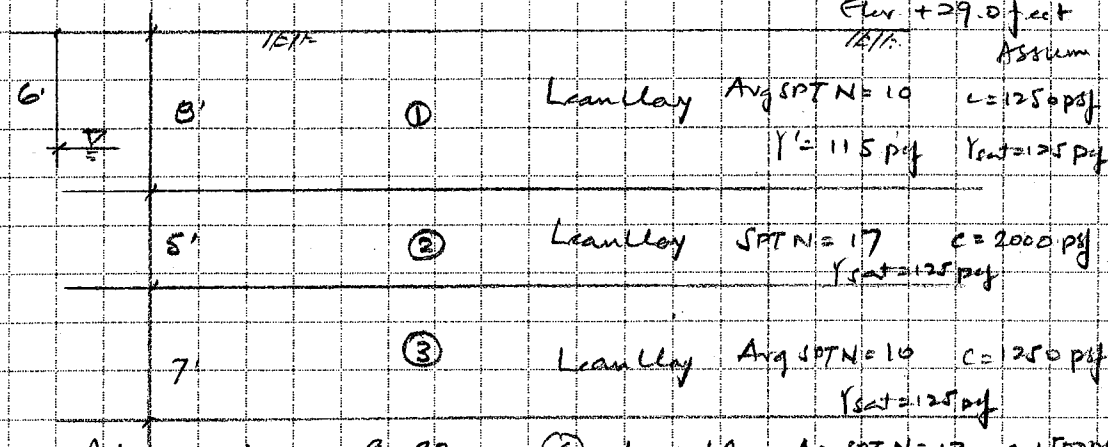
Passive force for sand with $\phi' = 30°$

$= \frac{1}{2} \times 3 \times (130 - 62.4) \times 24.5^2$

= 60865.4 lbs < 120703.8 lbs

∴ Equivalent ϕ' of clays is > 30°

Overhead Sign Post H (Boring A-09-110) Pile Length 33 feet Post Type V



Passive force in ① = $2 \times 1250 \times 8 + \frac{1}{2} \times (115 \times 6^2 + 62.6 \times 2^2)$

= 22195.2 lbs

Passive force in ② = $2 \times 2000 \times 5 + \frac{1}{2} \times 62.6 \times 25$

= 20782.5 lbs

Passive force in ③ = $2 \times 1250 \times 7 + \frac{1}{2} \times 62.6 \times 49$

= 19033.7 lbs

Passive force in ④ = $2 \times 1500 \times 13 + \frac{1}{2} \times 62.6 \times 13^2$

= 44289.7 lbs

Passive force ① + ② + ③ + ④ = 107021.1 lbs

Passive force in sand ($\phi' = 30°$)

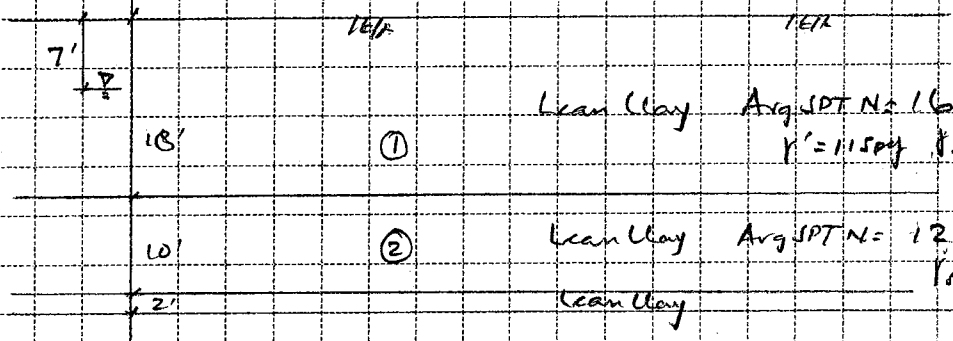
$$= \frac{1}{2} \times 3 \times \left[6 \times 115 + 27 \times (125 - 62.4)\right] \times \frac{33^2}{33}$$

Overhead Sign Post H

= 11781.9 lbs > 10702.1 lbs

∴ Equivalent cantilever is < 30'

Overhead Sign Post I (Boring A-09-114) (Pile Length = 25 feet) Post Type II



Assume

Lean Clay Avg SPT N = 16 $c = 1750$ psf
$\gamma' = 115$ pcf $\gamma_{sat} = 125$ pcf

Lean Clay Avg SPT N = 12 $c = 1250$ psf
$\gamma_{sat} = 125$ pcf

Passive force in ① $= 2 \times 1750 \times 18 + \frac{1}{2}(7 \times 115 + 11 \times 63)$

$= 63749$ lbs

Passive force in ② $= 2 \times 1250 \times 7 + \frac{1}{2}(7 \times 63)$

$= 17720.5$ lbs

Total passive force $= 63749 + 17720.5$

$= 81469.5$ lbs

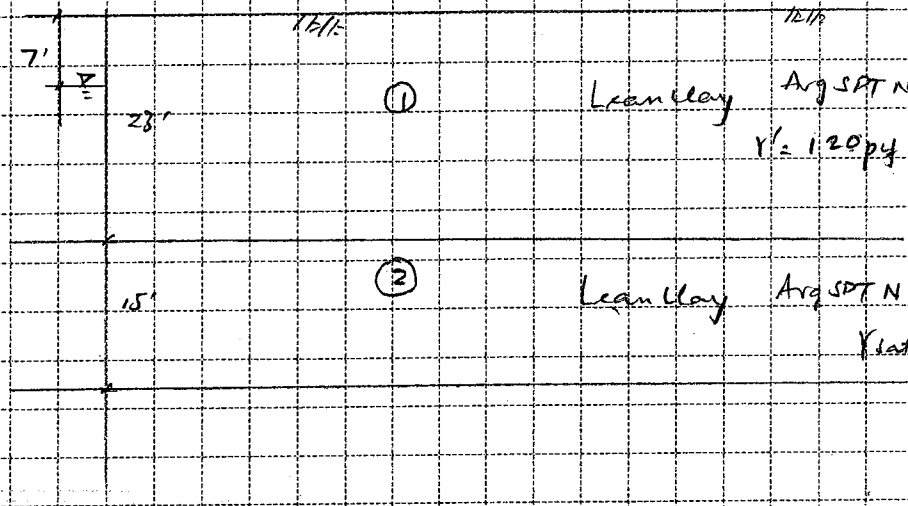
Passive force for sand with $\phi' = 30°$

$= \frac{1}{2}(3) \times \left(\frac{7 \times 115 + 18 \times 63}{25}\right) \times 25^2$

$= 72712.5$ lbs $<$ 81469.5 lbs

$\therefore$ Equivalent ϕ' of clays $> 30°$

Overhead Sign Post K (Boring A-09-116) (Pile length = 25 feet) Post Type II



① Lean clay Avg SPT N = 19.5 c = 225 psf
$\gamma' = 120$ pcf $\gamma_{sat} = 130$ pcf

② Lean clay Avg SPT N = 12 c = 1250 psf
$\gamma_{sat} = 125$ pcf

Passive force in ① $= 2 \times 225 \times 23 + \frac{1}{2}(7^2 \times 120 + 16^2 \times 68)$

$= 113104$ lbs

Passive force in ② $= 1250 \times 2 + \frac{1}{2} \times 68 \times 4$

$= 2636$ lbs

① + ② $= 115740$ lbs

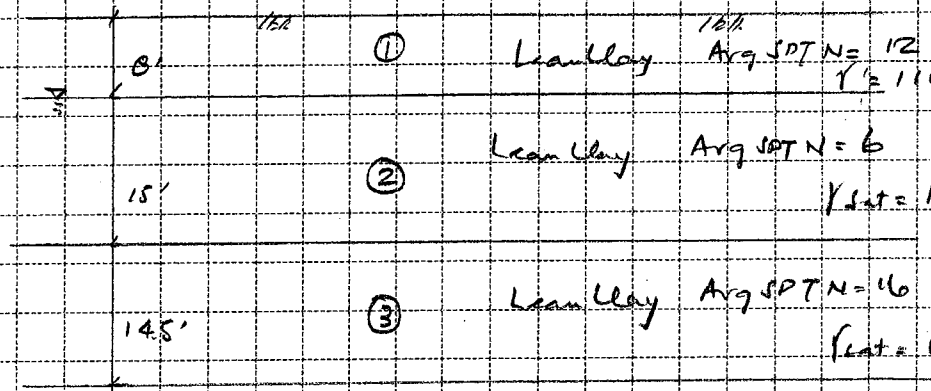
Passive force for sand with $\phi' = 30°$

$= \frac{1}{2}(3) \times \left(\frac{7 \times 120 + 16 \times 68 + 2 \times 63}{25}\right) \times 25^2$

$= 77025$ lbs $<<$ 115740 lbs

∴ Equivalent ϕ' of clays is $> 30°$

Overhead Sign Post M (Boring A-09-119) (Post Length = 33 feet, Post Type V1



Passive force in ① = $2 \times 1500 \times 8 + \frac{1}{2} \times 110 \times 64$

= 27520 lbs

Passive force in ② = $2 \times 750 \times 15 + \frac{1}{2} \times 58 \times 15^2$

= 29025 lbs

Passive force in ③ = $2 \times 2000 \times 10 + \frac{1}{2} \times 63 \times 100$

= 43150 lbs

① + ② + ③ = 99695 lbs

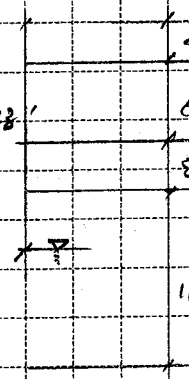
Passive force for sand with $\phi' = 30°$

$= \frac{1}{2}(3) \times \left(\frac{8 \times 110 + 15 \times 58 + 10 \times 63}{33}\right) \times 33^2$

= 117810 lbs > 99695 lbs

∴ Equivalent ϕ' of clay is < 30°

Overhead Sign Post 0 (Boring A-09-127) (Pole Length = 38 feet) Post Type V1



① Lean Clay SPT N = 6 — Assume c = 750 psf, γ = 105 pcf
② Lean Clay Avg SPT N = 16 — c = 1750 psf, γ = 115 pcf
③ Lean Clay SPT N = 24 — c = 2750 psf, γ = 120 pcf
④ Lean Clay Avg SPT N = 10 — c = 1250 psf, γ = 120 pcf
γ sat = 125 pcf

Passive force in ① = $2 \times 750 \times 4 + \frac{1}{2} \times 105 \times 16$
= 5840 lbs

Passive force in ② = $2 \times 1750 \times 8 + \frac{1}{2} \times 115 \times 64$
= 31680 lbs

Passive force in ③ = $2 \times 2750 \times 5 + \frac{1}{2} \times 120 \times 25$
= 29000 lbs

Passive force in ④ = $2 \times 1250 \times 16 + \frac{1}{2} \times (120 \times 6^2 + 63 \times 16^2)$
= 45310 lbs

① + ② + ③ + ④ = 111330 lbs

Passive force for sand with $\phi' = 30°$

$= \frac{1}{2} \times 3 \times \left(\frac{4 \times 105 + 8 \times 115 + 11 \times 120 + 10 \times 63}{33} \right) \times 38^2$

= 162855 lbs > 111330 lbs
∴ Equivalent ϕ of clay is < 30°

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

May 1, 2006
PLANS APPROVAL DATE

Jeffrey B. Woody
No. C41260
Exp. 3-31-07
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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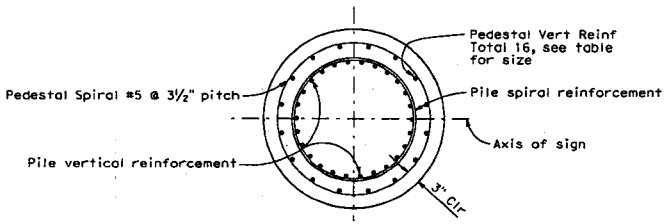
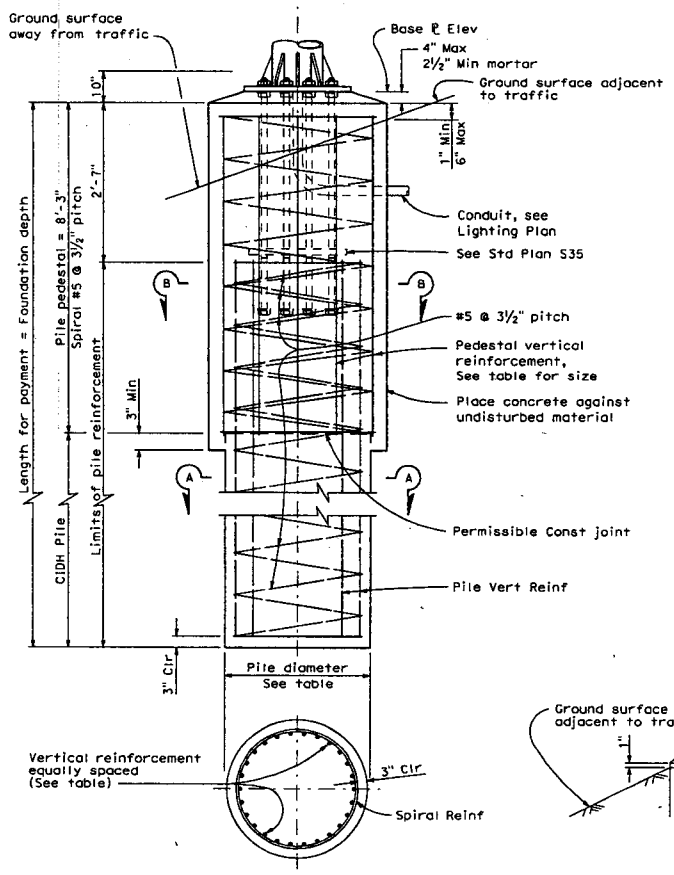
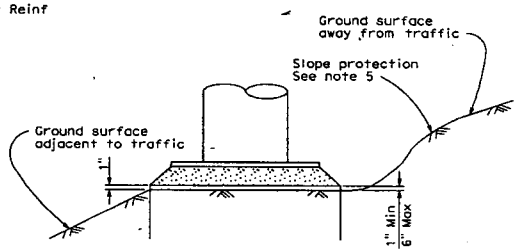


SECTION B-B



SECTION A-A



DETAIL C

Post Type No.	Anchor Bolts: Bolt Circle Dia	Anchor Bolts: Bolt Total and Dia	Anchor Bolts: Total Length	Round Pile Pedestal: Dia	Round Pile Pedestal: Vertical Reinforcing: Total	Round Pile Pedestal: Vertical Reinforcing: Bar Size	Round Pile Pedestal: Spiral: Bar Size	Round Pile Pedestal: Spiral: Pitch	CIDH Pile: Pile Dia	CIDH Pile: Vertical Reinforcing: Total	CIDH Pile: Vertical Reinforcing: Bar Size	CIDH Pile: Spiral: Bar Size	CIDH Pile: Spiral: Pitch	Foundation Depth * *
I	2'-6"	14-2"	4'-2"	5'-6"	16	#11	#5	3½"	5'-0"	28	#11	#5	3½"	25'-0"
II	2'-10"	14-2½"	5'-0"											25'-0"
III	2'-10"	14-2½"												25'-0"
IV	3'-4"	16-2½"												33'-0"
V	3'-4"	16-2½"												33'-0"
VI	3'-4"	16-2½"												33'-0"

* * Use Foundation Depth shown in table unless otherwise shown on the Project Plans.

NOTES:

1. For anchor bolt layout, see Standard Plan S35.
2. For "Base ℄ elevation", see Project Plans.
3. Prior to erection of the post, backfill which is equivalent to the surrounding material, shall be in place.
4. Pedestal shall be formed 6" minimum below ground surface Remainder to be placed against undisturbed material.
5. Slope protection required when indicated on the Project Plans.
6. Foundation design is based on 2001 ASSHTO article 13.6 Broms' approximate procedure assuming a cohesionless material. The angle of internal friction Dia used 30 degree and unit weight of soil used is 120 lb/ft^3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGNS-TUBULAR SINGLE POST AND TWO POST TYPE ROUND PEDESTAL PILE FOUNDATION

NO SCALE

S37

1-4-06

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VERTICAL PILE CAPACITY ANALYSES FOR OVERHEAD SIGN STRUCTURES

CAST-IN-DRILLED-HOLE PILE CAPACITY

Design per O'Neil and Reese (1999)

I-80 EB Cordelia Truck Scales Relocation Project

208123.GDR

Overhead Sign Post B (Based on Boring A-09-126)

ALLOWABLE PILE CAPACTY 2/4/10

PILE DIA, B (ft) = 5.00

SIDE MOBILIZATION
FACTOR (CLAY) = 0.95
FACTOR (SAND) = 0.95

INCREAMENTS (FT)= 5

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS
3. IGM (COHESIONLESS MATERIAL)

SOIL TYPES
GRAVEL, SAND, NSILT, CLAY, PSILT

F.S. FOR COMPRESSION = 1

F.S. FOR UPLIFT = 1

PERIMETER OF THE PILE (ft) = 15.71 SQ. FT.
AREA OF THE PILE TIP 19.63 SQ. FT.

DEPTH FROM	DEPTH TO	SOIL GROUP	SOIL TYPE	γ' (pcf)	$\Delta\sigma'$ (psf)	σ' (psf)	S.P.T - N	CONSISTENCY	SHEAR STRENGTH PARAMETERS α	c(psf)	ϕ (°)	β	ULTIMATE COMPRESSION (PER SECTION) (Ton)	ULTIMATE COMPRESSION CAPACITY (Ton)	ULTIMATE UPLIFT (PER SECTION) (Ton)	ULTIMATE UPLIFT CAPACITY (Ton)
0	5	1	SAND	115	575	287.5	6	MED DENSE			34	0.51	0.00	0.00	0.00	0.00
5	6	1	SAND	115	115	632.5	6	MED DENSE			33	0.47	2.23	2.23	1.12	1.12
6	12	2	CLAY	115	690	1035.0	16	STIFF	0.55	2000			49.25	51.49	34.48	35.59
12	18	2	CLAY	63	378	1569.0	16	STIFF	0.55	2000			49.25	100.74	34.48	70.07
18	23	2	CLAY	63	315	1915.5	10	STIFF	0.55	1250			25.65	126.39	17.96	88.02
23	28	2	CLAY	63	315	2230.5	10	STIFF	0.55	1250			25.65	152.04	17.96	105.98
28	30	2	CLAY	63	126	2451.0	15	STIFF	0.55	1875			15.39	167.43	10.77	116.75
30	33	2	CLAY	63	189	2608.5	15	STIFF	0.55	1875			23.09	190.52	16.16	132.91

Overhead Sign Post B Pile Length at 33 feet. Available ultiamte pile capacity = 190.5 tons, which is greater than vertical load of 27.1 kips (13.5 tons)

CAST-IN-DRILLED-HOLE PILE CAPACITY

Design per O'Neil and Reese (1999)

I-80 EB Cordelia Truck Scales Relocation Project

208123.GDR

Overhead Sign Post D (Based on Boring A-09-102)

ALLOWABLE PILE CAPACTY 5/6/10

PILE DIA, B (ft) = 5.00

SIDE MOBILIZATION
FACTOR (CLAY) = 0.95
FACTOR (SAND) = 0.95

INCREAMENTS (FT)= 5

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS
3. IGM (COHESIONLESS MATERIAL)

SOIL TYPES
GRAVEL, SAND, NSILT, CLAY, PSILT

F.S. FOR COMPRESSION = 1

F.S. FOR UPLIFT = 1

PERIMETER OF THE PILE (ft) = 15.71 SQ. FT.
AREA OF THE PILE TIP 19.63 SQ. FT.

DEPTH FROM	DEPTH TO	SOIL GROUP	SOIL TYPE	γ' (pcf)	$\Delta\sigma'$ (psf)	σ' (psf)	S.P.T - N	CONSISTENCY	SHEAR STRENGTH PARAMETERS α	c(psf)	ϕ (°)	β	ULTIMATE COMPRESSION (PER SECTION) (Ton)	ULTIMATE COMPRESSION CAPACITY (Ton)	ULTIMATE UPLIFT (PER SECTION) (Ton)	ULTIMATE UPLIFT CAPACITY (Ton)
0	5	2	CLAY	115	575	287.5	40	STIFF	0.45	5000			0.00	0.00	0.00	0.00
5	8	2	CLAY	115	345	747.5	40	STIFF	0.45	5000			50.37	50.37	35.26	35.26
8	13	2	CLAY	67	335	1087.5	6	MEDIUM	0.55	750			15.39	65.76	10.77	46.03
13	33	2	CLAY	67	1340	1925.0	25	V.STIFF	0.54	3125			253.60	319.36	177.52	223.55

Overhead Sign Post D Pile Length at 33 feet. Available ultiamte pile capacity = 319.4 tons, which is greater than vertical load of 27.1 kips (13.5 tons)

CAST-IN-DRILLED-HOLE PILE CAPACITY

Design per O'Neil and Reese (1999)

I-80 EB Cordelia Truck Scales Relocation Project

208123.GDR

Overhead Sign Post F (Based on Boring A-09-107)

ALLOWABLE PILE CAPACTY 5/6/10

PILE DIA, B (ft) = 5.00

SIDE MOBILIZATION
FACTOR (CLAY) = 0.95
FACTOR (SAND) = 0.95

INCREAMENTS (FT)= 5

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS
3. IGM (COHESIONLESS MATERIAL)

SOIL TYPES
GRAVEL, SAND, NSILT, CLAY, PSILT

F.S. FOR COMPRESSION = 1

F.S. FOR UPLIFT = 1

PERIMETER OF THE PILE (ft) = 15.71 SQ. FT.
AREA OF THE PILE TIP 19.63 SQ. FT.

DEPTH FROM	DEPTH TO	SOIL GROUP	SOIL TYPE	γ' (pcf)	$\Delta\sigma'$ (psf)	σ' (psf)	S.P.T - N	CONSISTENCY	SHEAR STRENGTH PARAMETERS α	c(psf)	ϕ (°)	β	ULTIMATE COMPRESSION (PER SECTION) (Ton)	ULTIMATE COMPRESSION CAPACITY (Ton)	ULTIMATE UPLIFT (PER SECTION) (Ton)	ULTIMATE UPLIFT CAPACITY (Ton)
0	5	2	CLAY	100	500	250.0	5	MEDIUM	0.55	625			0.00	0.00	0.00	0.00
5	8	2	CLAY	100	300	650.0	5	MEDIUM	0.55	625			7.70	7.70	5.39	5.39
8	20	2	CLAY	67	804	1202.0	16	STIFF	0.55	2000			98.50	106.20	68.95	74.34
20	33	2	CLAY	67	871	2039.5	16	STIFF	0.55	2000			106.71	212.91	74.70	149.04

Overhead Sign Post F Pile Length at 33 feet. Available ultiamte pile capacity = 212.9 tons, which is greater than vertical load of 27.1 kips (13.5 tons)

CAST-IN-DRILLED-HOLE PILE CAPACITY

Design per O'Neil and Reese (1999)

I-80 EB Cordelia Truck Scales Relocation Project

208123.GDR

Overhead Sign Post G (Based on Boring A-09-TS-003)

ALLOWABLE PILE CAPACTY 5/6/10

PILE DIA, B (ft) = 5.00

SIDE MOBILIZATION
FACTOR (CLAY) = 0.95
FACTOR (SAND) = 0.95

INCREAMENTS (FT)= 5

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS
3. IGM (COHESIONLESS MATERIAL)

SOIL TYPES
GRAVEL, SAND, NSILT, CLAY, PSILT

F.S. FOR COMPRESSION = 1

F.S. FOR UPLIFT = 1

PERIMETER OF THE PILE (ft) = 15.71 SQ. FT.
AREA OF THE PILE TIP 19.63 SQ. FT.

DEPTH FROM	DEPTH TO	SOIL GROUP	SOIL TYPE	γ' (pcf)	$\Delta\sigma'$ (psf)	σ' (psf)	S.P.T - N	CONSISTENCY	SHEAR STRENGTH PARAMETERS α	c(psf)	ϕ (°)	β	ULTIMATE COMPRESSION (PER SECTION) (Ton)	ULTIMATE COMPRESSION CAPACITY (Ton)	ULTIMATE UPLIFT (PER SECTION) (Ton)	ULTIMATE UPLIFT CAPACITY (Ton)
0	5	1	SAND	120	600	300.0	27	V. DENSE			40	1.20	0.00	0.00	0.00	0.00
5	8	1	SAND	120	360	780.0	27	V. DENSE			39	1.16	20.18	20.18	10.09	10.09
8	8.5	1	SAND	67	33.5	976.8	27	V. DENSE			39	1.11	4.05	24.24	2.03	12.12
8.5	13	2	CLAY	63	283.5	1135.3	9	STIFF	0.55	1125			20.78	45.01	14.54	26.66
13	18	2	CLAY	63	315	1434.5	14	STIFF	0.55	1750			35.91	80.93	25.14	51.80
18	23	2	CLAY	63	315	1749.5	10	STIFF	0.55	1250			25.65	106.58	17.96	69.76
23	33	2	CLAY	67	670	2242.0	31	V.STIFF	0.51	3875			146.39	252.97	102.47	172.23

Overhead Sign Post G Pile Length at 33 feet. Available ultiamte pile capacity = 253.0 tons, which is greater than vertical load of 27.1 kips (13.5 tons)

CAST-IN-DRILLED-HOLE PILE CAPACITY

Design per O'Neil and Reese (1999)

I-80 EB Cordelia Truck Scales Relocation Project

208123.GDR

Overhead Sign Post H (Based on Boring A-09-110)

ALLOWABLE PILE CAPACTY 5/6/10

PILE DIA, B (ft) = 5.00

SIDE MOBILIZATION
FACTOR (CLAY) = 0.95
FACTOR (SAND) = 0.95

INCREAMENTS (FT)= 5

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS
3. IGM (COHESIONLESS MATERIAL)

SOIL TYPES
GRAVEL, SAND, NSILT, CLAY, PSILT

F.S. FOR COMPRESSION = 1

F.S. FOR UPLIFT = 1

PERIMETER OF THE PILE (ft) = 15.71 SQ. FT.
AREA OF THE PILE TIP 19.63 SQ. FT.

DEPTH FROM	DEPTH TO	SOIL GROUP	SOIL TYPE	γ' (pcf)	$\Delta\sigma'$ (psf)	σ' (psf)	S.P.T - N	CONSISTENCY	SHEAR STRENGTH PARAMETERS α	c(psf)	ϕ (°)	β	ULTIMATE COMPRESSION (PER SECTION) (Ton)	ULTIMATE COMPRESSION CAPACITY (Ton)	ULTIMATE UPLIFT (PER SECTION) (Ton)	ULTIMATE UPLIFT CAPACITY (Ton)
0	5	2	CLAY	115	575	287.5	10	STIFF	0.55	1250			0.00	0.00	0.00	0.00
5	6	2	CLAY	115	115	632.5	10	STIFF	0.55	1250			5.13	5.13	3.59	3.59
6	8	2	CLAY	63	126	753.0	10	STIFF	0.55	1250			10.26	15.39	7.18	10.77
8	13	2	CLAY	63	315	973.5	17	V.STIFF	0.55	2125			43.61	59.00	30.53	41.30
13	20	2	CLAY	63	441	1351.5	10	STIFF	0.55	1250			35.91	94.91	25.14	66.44
20	33	2	CLAY	63	819	1981.5	12	STIFF	0.55	1500			80.03	174.94	56.02	122.46

Overhead Sign Post H Pile Length at 33 feet. Available ultiamte pile capacity = 174.9 tons, which is greater than vertical load of 27.1 kips (13.5 tons)

CAST-IN-DRILLED-HOLE PILE CAPACITY

Design per O'Neil and Reese (1999)

I-80 EB Cordelia Truck Scales Relocation Project

208123.GDR

Overhead Sign Post I (Based on Boring A-09-114)

ALLOWABLE PILE CAPACTY 5/6/10

PILE DIA, B (ft) = 5.00

SIDE MOBILIZATION
FACTOR (CLAY) = 0.95
FACTOR (SAND) = 0.95

INCREAMENTS (FT)= 5

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS
3. IGM (COHESIONLESS MATERIAL)

SOIL TYPES
GRAVEL, SAND, NSILT, CLAY, PSILT

F.S. FOR COMPRESSION = 1

F.S. FOR UPLIFT = 1

PERIMETER OF THE PILE (ft) = 15.71 SQ. FT.
AREA OF THE PILE TIP 19.63 SQ. FT.

DEPTH FROM	DEPTH TO	SOIL GROUP	SOIL TYPE	γ' (pcf)	$\Delta\sigma'$ (psf)	σ' (psf)	S.P.T - N	CONSISTENCY	SHEAR STRENGTH PARAMETERS α	c(psf)	ϕ (°)	β	ULTIMATE COMPRESSION (PER SECTION) (Ton)	ULTIMATE COMPRESSION CAPACITY (Ton)	ULTIMATE UPLIFT (PER SECTION) (Ton)	ULTIMATE UPLIFT CAPACITY (Ton)
0	5	2	CLAY	115	575	287.5	16	STIFF	0.55	2000			0.00	0.00	0.00	0.00
5	7	2	CLAY	115	230	690.0	16	STIFF	0.55	2000			16.42	16.42	11.49	11.49
7	18	2	CLAY	63	693	1151.5	16	STIFF	0.55	2000			90.29	106.71	63.21	74.70
18	25	2	CLAY	63	441	1718.5	12	STIFF	0.55	1500			43.09	149.80	30.17	104.86
25	28	2	CLAY	63	189	2033.5	12	STIFF	0.55	1500			18.47	168.27	12.93	117.79
28	30	2	CLAY	63	126	2191.0	12	STIFF	0.55	1500			12.31	180.59	8.62	126.41

Overhead Sign Post I Pile Length at 25 feet. Available ultiamte pile capacity = 180.6 tons, which is greater than vertical load of 27.1 kips (13.5 tons)

CAST-IN-DRILLED-HOLE PILE CAPACITY

Design per O'Neil and Reese (1999)

I-80 EB Cordelia Truck Scales Relocation Project

208123.GDR

Overhead Sign Post K(Based on Boring A-09-116)

ALLOWABLE PILE CAPACTY 5/6/10

PILE DIA, B (ft) = 5.00

SOIL GROUPS

1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS
3. IGM (COHESIONLESS MATERIAL)

F.S. FOR COMPRESSION = 1

F.S. FOR UPLIFT = 1

SIDE MOBILIZATION

FACTOR (CLAY) = 0.95

FACTOR (SAND) = 0.95

PERIMETER OF THE PILE (ft) = 15.71 SQ. FT.

AREA OF THE PILE TIP 19.63 SQ. FT.

INCREAMENTS (FT)= 5

SOIL TYPES

GRAVEL, SAND, NSILT, CLAY, PSILT

DEPTH FROM	DEPTH TO	SOIL GROUP	SOIL TYPE	γ' (pcf)	$\Delta\sigma'$ (psf)	σ' (psf)	S.P.T - N	CONSISTENCY	SHEAR STRENGTH PARAMETERS α	c(psf)	ϕ (°)	β	ULTIMATE COMPRESSION (PER SECTION) (Ton)	ULTIMATE COMPRESSION CAPACITY (Ton)	ULTIMATE UPLIFT (PER SECTION) (Ton)	ULTIMATE UPLIFT CAPACITY (Ton)
0	5	2	CLAY	120	600	300.0	19	V.STIFF	0.55	2375			0.00	0.00	0.00	0.00
5	7	2	CLAY	120	240	720.0	19	V.STIFF	0.55	2375			19.50	19.50	13.65	13.65
7	15	2	CLAY	67	536	1108.0	19	V.STIFF	0.55	2375			77.98	97.48	54.59	68.23
15	23	2	CLAY	67	536	1644.0	19	V.STIFF	0.55	2375			77.98	175.46	54.59	122.82
23	25	2	CLAY	63	126	1975.0	12	STIFF	0.55	1500			12.31	187.77	8.62	131.44
25	38	2	CLAY	63	819	2447.5	12	STIFF	0.55	1500			80.03	267.80	56.02	187.46

Overhead Sign Post K Pile Length at 25 feet. Available ultiamte pile capacity = 187.8 tons, which is greater than vertical load of 27.1 kips (13.5 tons)

CAST-IN-DRILLED-HOLE PILE CAPACITY

Design per O'Neil and Reese (1999)

I-80 EB Cordelia Truck Scales Relocation Project

208123.GDR

Overhead Sign Post M (Based on Boring A-09-119)

ALLOWABLE PILE CAPACTY 5/6/10

PILE DIA, B (ft) = 5.00

SIDE MOBILIZATION
FACTOR (CLAY) = 0.95
FACTOR (SAND) = 0.95

INCREAMENTS (FT)= 5

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS
3. IGM (COHESIONLESS MATERIAL)

SOIL TYPES
GRAVEL, SAND, NSILT, CLAY, PSILT

F.S. FOR COMPRESSION = 1

F.S. FOR UPLIFT = 1

PERIMETER OF THE PILE (ft) = 15.71 SQ. FT.
AREA OF THE PILE TIP 19.63 SQ. FT.

DEPTH FROM	DEPTH TO	SOIL GROUP	SOIL TYPE	γ' (pcf)	$\Delta\sigma'$ (psf)	σ' (psf)	S.P.T - N	CONSISTENCY	SHEAR STRENGTH PARAMETERS α	c(psf)	ϕ (°)	β	ULTIMATE COMPRESSION (PER SECTION) (Ton)	ULTIMATE COMPRESSION CAPACITY (Ton)	ULTIMATE UPLIFT (PER SECTION) (Ton)	ULTIMATE UPLIFT CAPACITY (Ton)
0	5	2	CLAY	110	550	275.0	12	STIFF	0.55	1500			0.00	0.00	0.00	0.00
5	8	2	CLAY	110	330	715.0	12	STIFF	0.55	1500			18.47	18.47	12.93	12.93
8	23	2	CLAY	57	855	1307.5	6	MEDIUM	0.55	750			46.17	64.64	32.32	45.25
23	33	2	CLAY	63	630	2050.0	16	STIFF	0.55	2000			82.08	146.73	57.46	102.71
33	37.5	2	CLAY	63	283.5	2506.8	16	STIFF	0.55	2000			36.94	183.66	25.86	128.57

Overhead Sign Post M Pile Length at 33 feet. Available ultiamte pile capacity = 146.7 tons, which is greater than vertical load of 27.1 kips (13.5 tons)

CAST-IN-DRILLED-HOLE PILE CAPACITY

Design per O'Neil and Reese (1999)

I-80 EB Cordelia Truck Scales Relocation Project

208123.GDR

Overhead Sign Post O (Based on Boring A-09-127)

ALLOWABLE PILE CAPACTY 5/6/10

PILE DIA, B (ft) = 5.00

SIDE MOBILIZATION
FACTOR (CLAY) = 0.95
FACTOR (SAND) = 0.95

INCREAMENTS (FT)= 5

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS
3. IGM (COHESIONLESS MATERIAL)

SOIL TYPES
GRAVEL, SAND, NSILT, CLAY, PSILT

F.S. FOR COMPRESSION = 1

F.S. FOR UPLIFT = 1

PERIMETER OF THE PILE (ft) = 15.71 SQ. FT.
AREA OF THE PILE TIP 19.63 SQ. FT.

DEPTH FROM	DEPTH TO	SOIL GROUP	SOIL TYPE	γ' (pcf)	$\Delta\sigma'$ (psf)	σ' (psf)	S.P.T - N	CONSISTENCY	SHEAR STRENGTH PARAMETERS α	c(psf)	ϕ (°)	β	ULTIMATE COMPRESSION (PER SECTION) (Ton)	ULTIMATE COMPRESSION CAPACITY (Ton)	ULTIMATE UPLIFT (PER SECTION) (Ton)	ULTIMATE UPLIFT CAPACITY (Ton)
0	4	2	CLAY	105	420	210.0	6	MEDIUM	0.55	750			0.00	0.00	0.00	0.00
4	5	2	CLAY	115	115	477.5	16	STIFF	0.55	2000			0.00	0.00	0.00	0.00
5	12	2	CLAY	115	805	937.5	16	STIFF	0.55	2000			57.46	57.46	40.22	40.22
12	17	2	CLAY	120	600	1640.0	24	V.STIFF	0.55	3000			61.56	119.02	43.09	83.32
17	23	2	CLAY	115	690	2285.0	10	STIFF	0.55	1250			30.78	149.80	21.55	104.86
23	33	2	CLAY	63	630	2945.0	10	STIFF	0.55	1250			51.30	201.11	35.91	140.78
33	35	2	CLAY	63	126	3323.0	10	STIFF	0.55	1250			10.26	211.37	7.18	147.96

Overhead Sign Post O Pile Length at 33 feet. Available ultiamte pile capacity = 201.1 tons, which is greater than vertical load of 27.1 kips (13.5 tons)

TORSIONAL PILE CAPACITIES/LATERAL PILE CAPACITY ANALYSES

Sign Structure H loads

SUMMARY

Axial Load	17	kips	for each footing
Overturning Moment	121	ft-kip	for each footing
Shear	5.1	kips	for each footing
Torsional moment:	100	ft-kip	for each footing

Calcs & assumptions:

Axial Loads

Dead load of tubular post type V. 30" diameter, 5/8" wall

lb/ft	196.01	
Span	109	ft
height	24	ft
Radius at corrner.	12'	

Length	146.68	ft
weight	28750.7468	lb

Base Plates
3'-11" dia by 2.5" thick

Unit weight	490	pcf
491	lb each	

CMS Panels. 5 each @ 600 lbs per panel
3000 lb

Use	34,000	total axial load	
	17,000	lb	each footing

Wind Loads

From Dwg S30:
40.3 psf on sign faces
50 sf per sign approx, including signal head
5 sign locations, equally and regularly spaced
250 SF total for wind area
10,075 lb wind force

Shear
Shear is half the total wind load for each footing 5,038 lb

Overturning Moment
Center of panel is 24' above footing

Overturning Moment	241,800	ft-lb	total

120,900 ft-lb for each footing

Torsional Moment

Signs are evenly spaced, so assume a continuous wind load across the structure

250 sf	divided by	109 ft	length	equals	2.29	sf/ft	
40.3 psf	times	2.29 sf/ft	equals	92.43	lb/ft		continuous load

Use moment formula: (W*(L**2))/12 for fixed-fixed beam

W 92.43

L 109

Torsional moment: 91,514.58 ft-lb

USE: 100 Ft-kip

SUMMARY

Axial Load	17 kips	
Overturning Moment	121 ft-kip	for each footing
Shear	5.1 kips	
Torsional moment:	100 ft-kip	for each footing

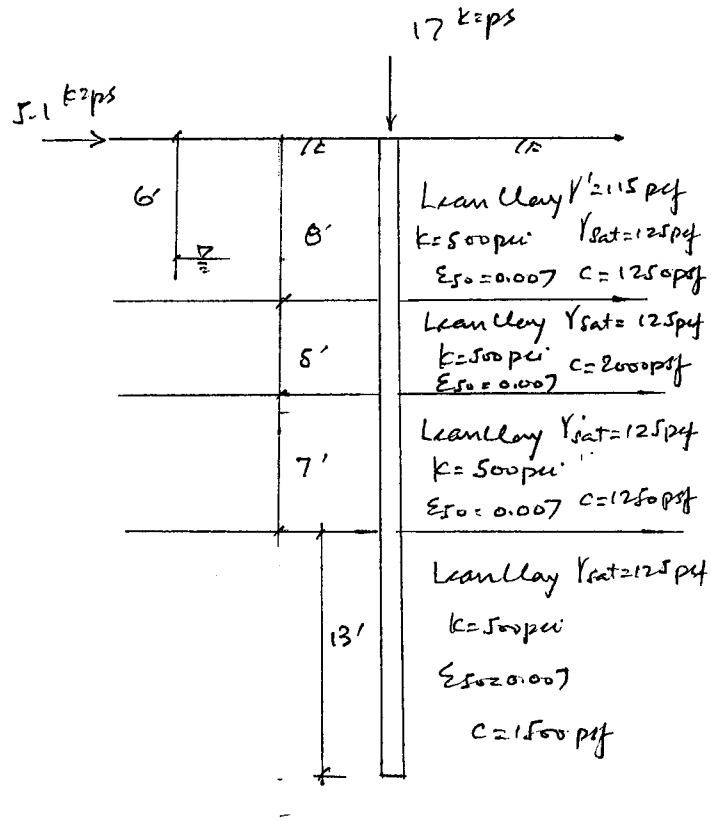
Overhead Sign "H"

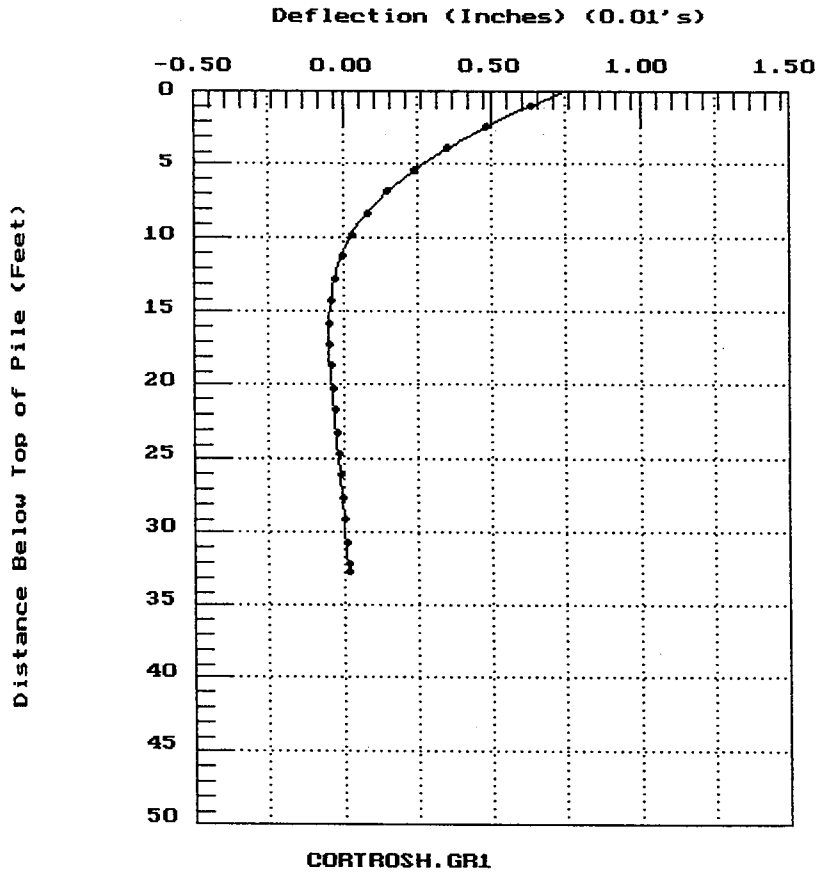
Pile Torsional Capacity (5'ϕ and 38' long CIDH pile)

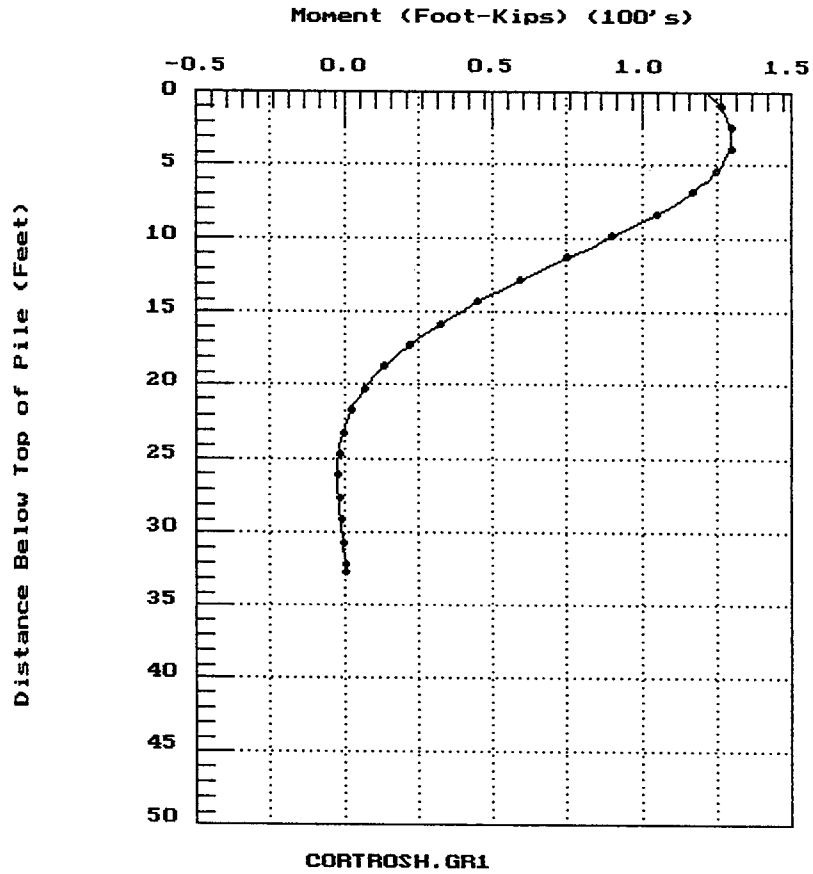
$$\text{Tall } ① + ② + ③ + ④ = \frac{0.5 \times 5 \times 5 \times \pi \times (8 \times 1250 + 2000 \times 5 + 1250 \times 7 + (500 \times 13) \times 2.5}{2 \times 1000}$$

$$= \underline{521.1} \text{ kip-ft} > 105 \text{ kip-ft}$$

```
Cordelia Truck Scales OS "H" (60-inch Dia. CIDH Pile) (Free Head)
    1      1      0      0      0
   66      2    0.0      396.0      0.0
    0.0     60.0        636200.00          2827          3600000
  396.0     60.0        636200.00          2827          3600000
    4      4        8     0      2
    3      0.0     96.0        500.0   500.0
    3     96.0    156.0        500.0   500.0
    3    156.0    240.0        500.0   500.0
    3    240.0    420.0        500.0   500.0
    0.0      0.067
   72.0      0.067
   72.0      0.036
  420.0      0.036
    0.0      8.68       0.0    0.007      0
   96.0      8.68       0.0    0.007      0
   96.0     13.89       0.0    0.007      0
  156.0     13.89       0.0    0.007      0
  156.0      8.68       0.0    0.007      0
  240.0      8.68       0.0    0.007      0
  240.0     10.42       0.0    0.007      0
  420.0     10.42       0.0    0.007      0
    0.0     0.6   1
  420.0     0.6   1
    0       1     1
    1
    1    5.10D+03   1.45D+06   1.70D+04
    0
    1      1      0
  200    1.00D-5    100.0
```

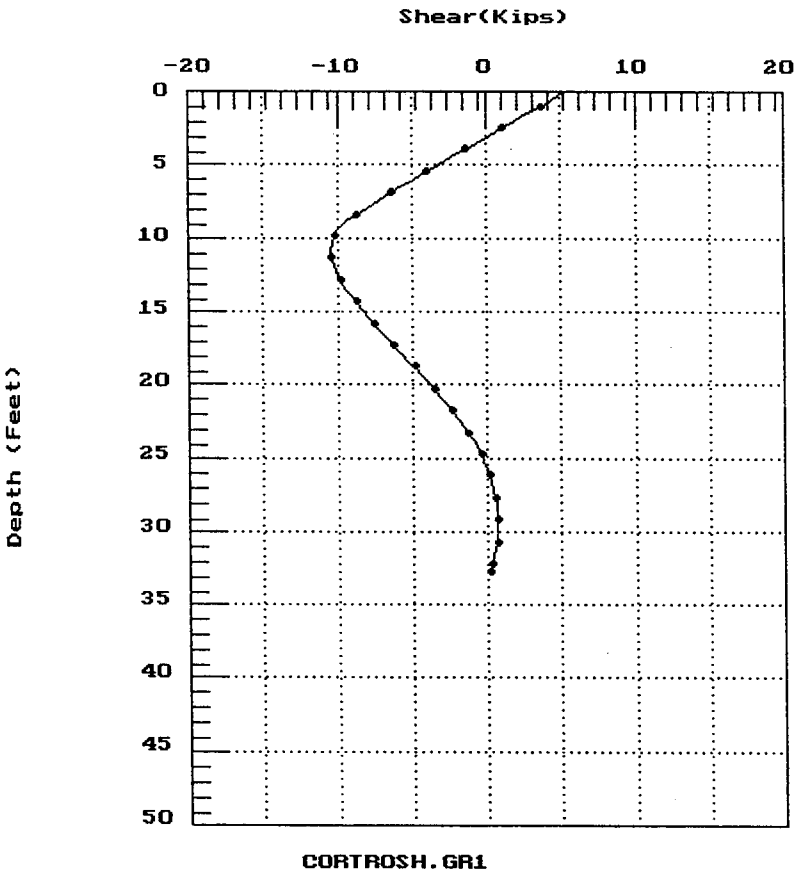


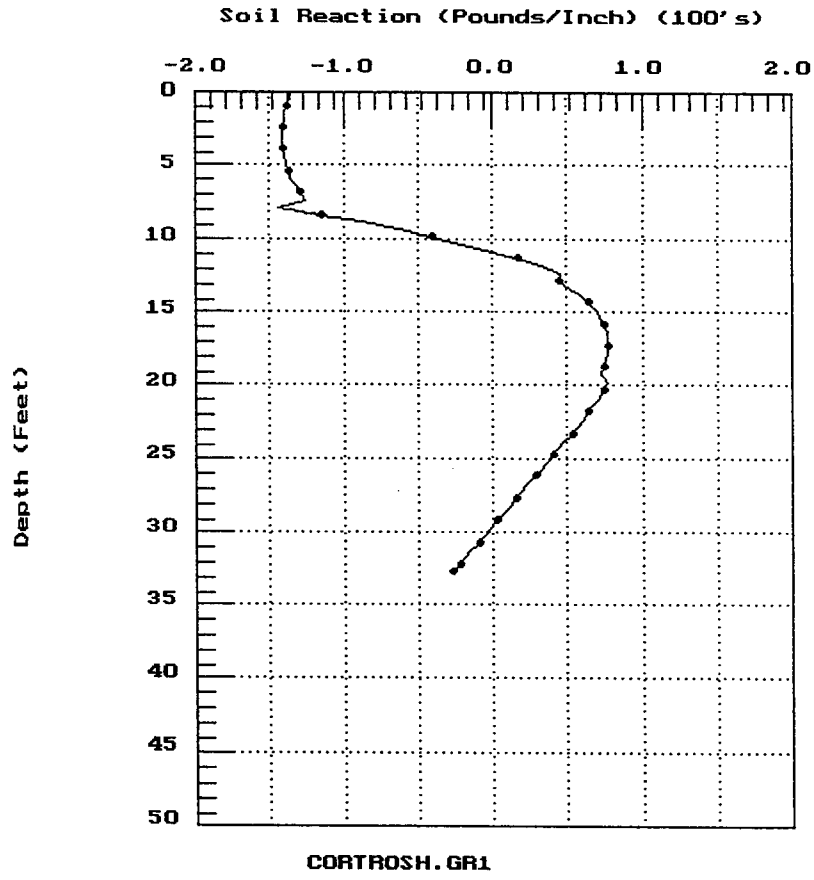




FREE HEAD ⟶ 51 kips

CORDELIA TRUCK SCALES RELOCATION PROJECT OVERHEAD SIGN H


Shear(Kips)
-20
-10
0
10
20
0
5
10
15
20
25
30
35
40
45
50
Depth (Feet)
CORTROSH.GR1


Soil Reaction (Pounds/Inch) (100's)
-2.0
-1.0
0.0
1.0
2.0
0
5
10
15
20
25
30
35
40
45
50
Depth (Feet)
CORTROSH.GR1

Loads below are UNFACTORED and are for combined Dead & Wind Loads
Loads for both OH Structures M & O are the same

P (Axial) k	M (Overturning) ft-k	V (Shear) k	T (Torsional Moment) ft-k
27.1	514.7	15.6	283.7

Overhead Sign post "M"

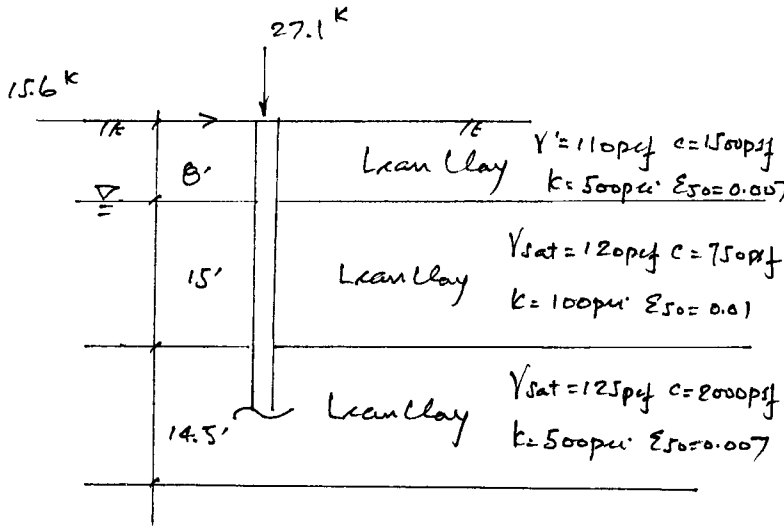
Pile Torsional Capacity (5'ϕ and 33' long CIDH pile)

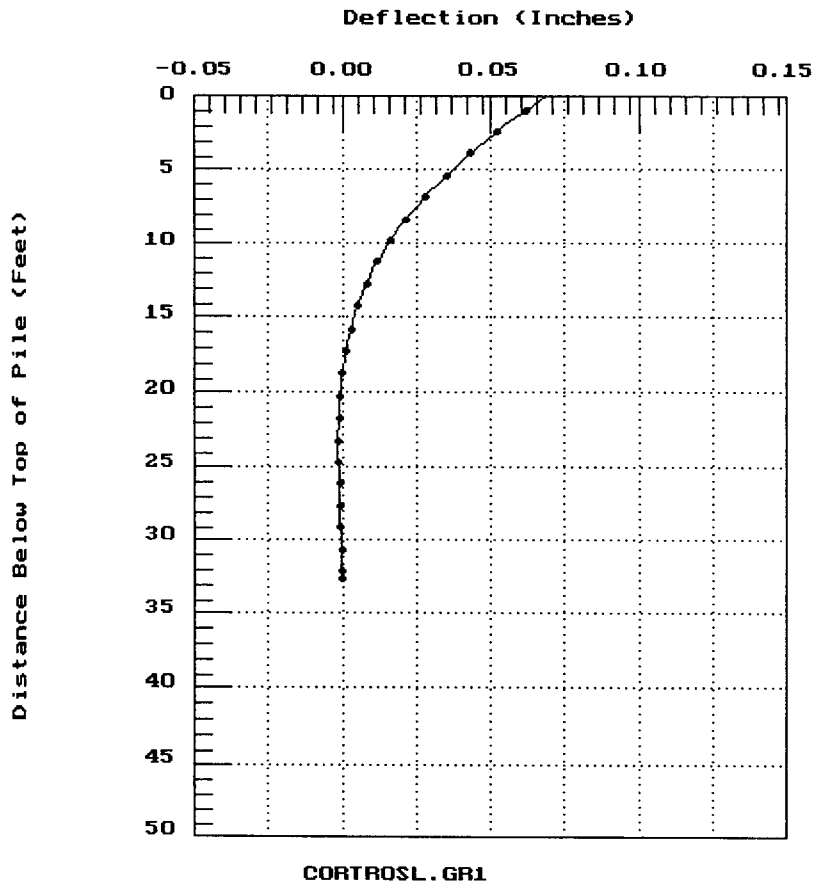
$$\text{Term } ① + ② + ③ = \frac{0.55 \times 5 \times \pi \times (1500 \times 8 + 750 \times 15 + 2000 \times 10) \times 2.5}{2 \times 1000}$$

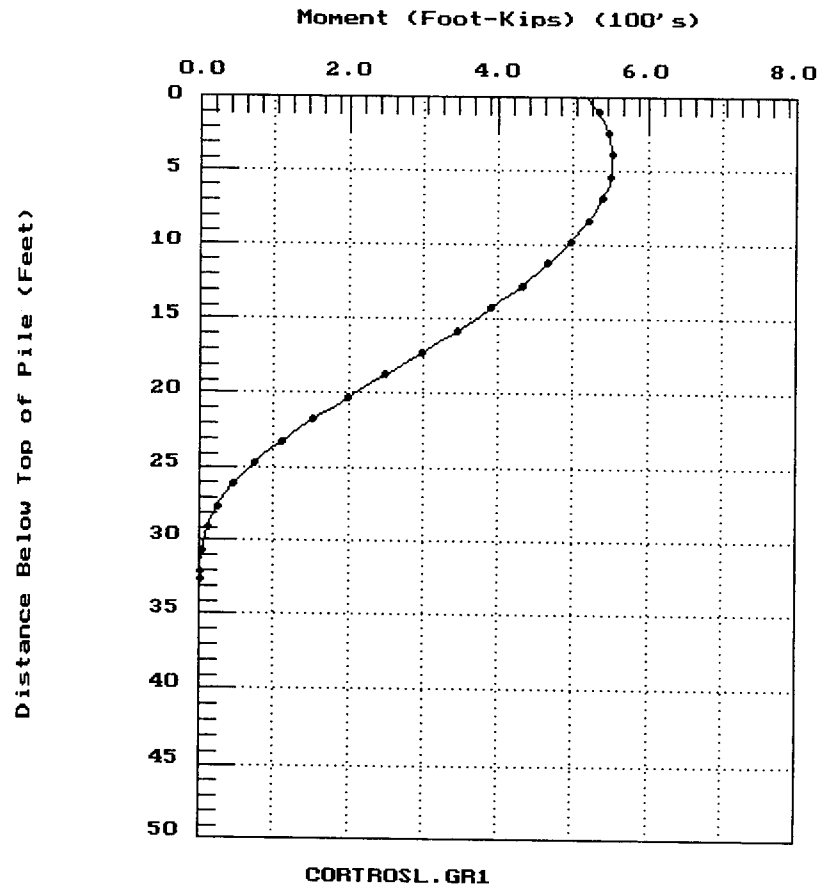
$$= 467.1 \text{ kip-ft.} \quad > 283.7 \text{ kip-ft}$$

Cordelia Truck Scales OS "M" (60-inch Dia. CIDH Pile) (Free Head)

```
    1      1      0      0      0
   66      2    0.0      396.0      0.0
  0.0     60.0        636200.00          2827          3600000
396.0     60.0        636200.00          2827          3600000
    3      6         6     0      2
    3      0.0     96.0        500.0   500.0
    3     96.0    276.0        100.0   100.0
    3    276.0    450.0        500.0   500.0
  0.0      0.064
 96.0      0.064
 96.0      0.033
276.0      0.033
276.0      0.036
450.0      0.036
  0.0     10.42       0.0    0.007      0
 96.0     10.42       0.0    0.007      0
 96.0      5.21       0.0    0.01       0
276.0      5.21       0.0    0.01       0
276.0     13.89       0.0    0.007      0
450.0     13.89       0.0    0.007      0
  0.0     0.6   1
450.0     0.6   1
    0      1     1
    1
    1    1.56D+04   6.18D+06   2.71D+04
    0
    1      1      0
  200    1.00D-5    100.0
```

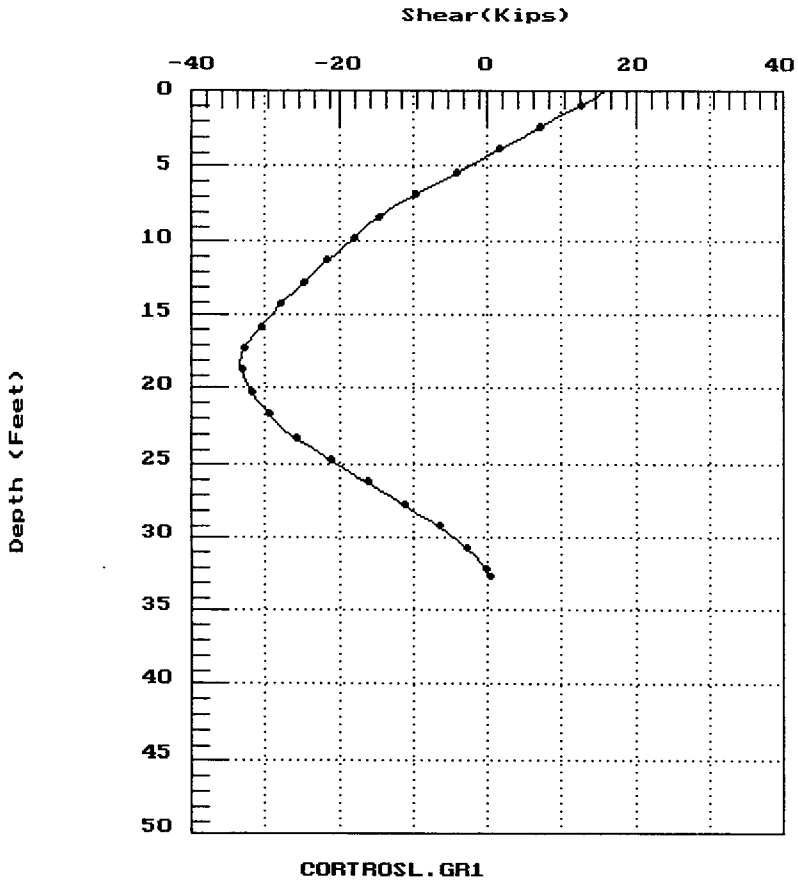


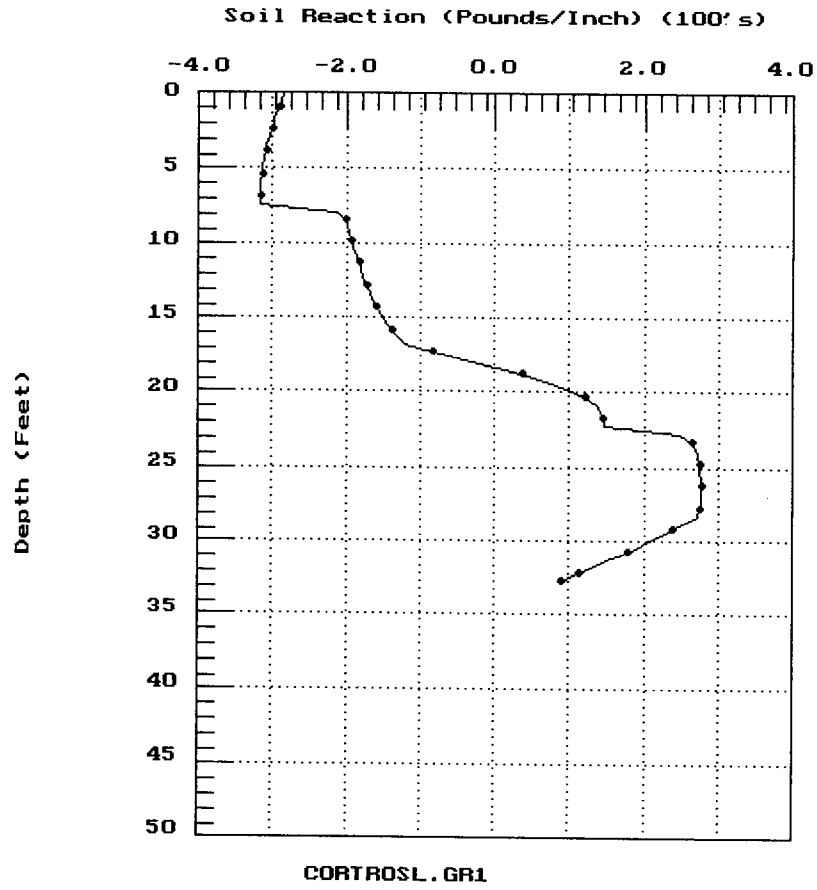




FREE HEAD ⟶ 15.6^{K}

CORDELIA TRUCK SCALES RELOCATION PROJECT. OVERHEAD SIGN M


Shear(Kips)
-40
-20
0
20
40
0
5
10
15
20
25
30
35
40
45
50
Depth (Feet)
CORTROSL.GR1


Soil Reaction (Pounds/Inch) (100's)
-4.0
-2.0
0.0
2.0
4.0
0
5
10
15
20
25
30
35
40
45
50
Depth (Feet)
CORTROSL.GR1

PARIKH
Practicing in the Geosciences

JOB Cordelia Truck Scales Relocation Project 2.0125.004
SHEET NO _____ OF _____
CALCULATED BY Alam DATE 4/2010
CHECKED BY _____ DATE _____
SCALE _____

Overhead Sign Post "O"

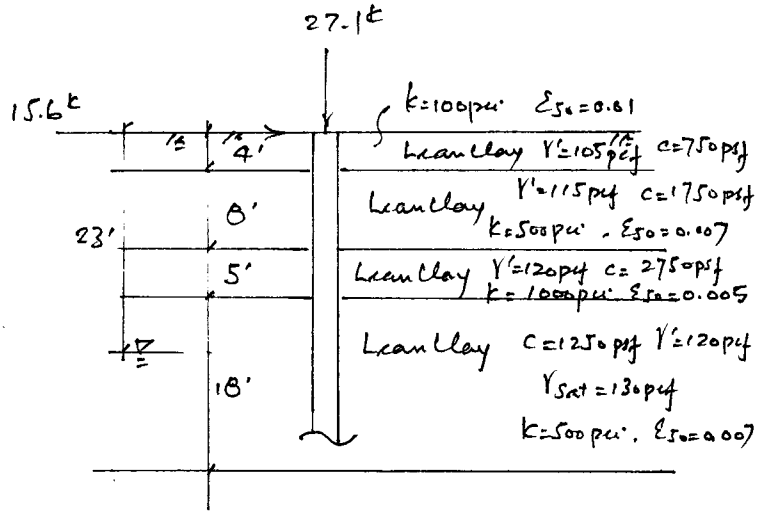
Pole Torsional Capacity (5' ϕ and 38' long CIDH pile)

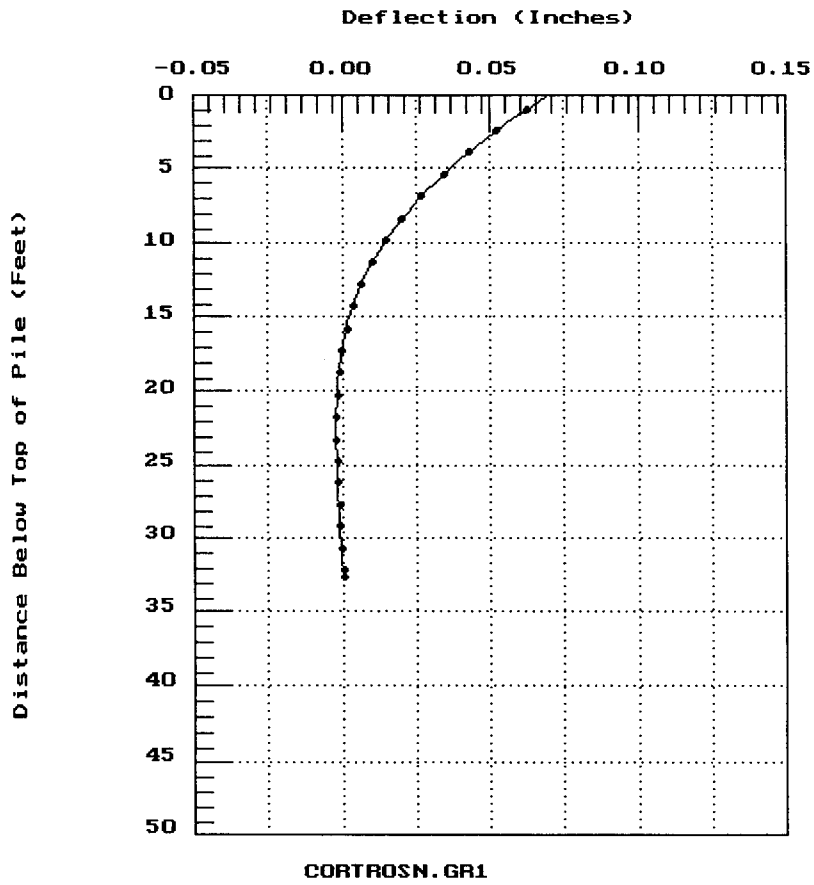
$$T_{all} ① + ② + ③ + ④ = \frac{0.55 \times .5 \times \pi \times (750 \times 4 + 750 \times 8 + 750 \times 5 + 1.6 \times 1250) \times 2.5}{2 \times 1000}$$

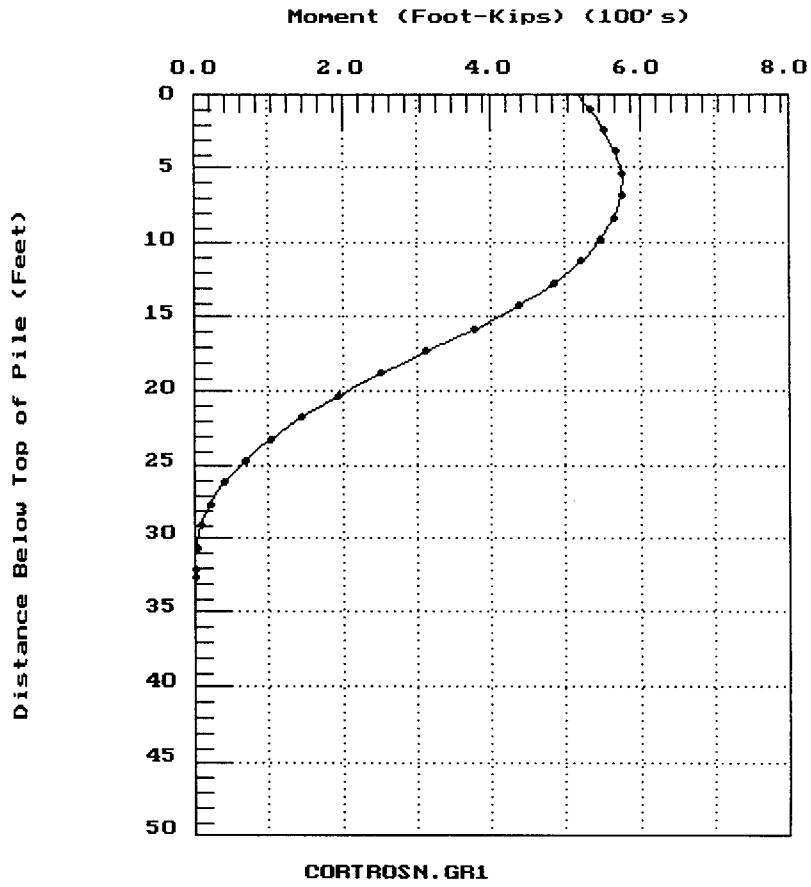
$$= \underline{548.1 \text{ kip-ft}} > 283.7 \text{ kip-ft}$$

Cordelia Truck Scales OS "O" (60-inch Dia. CIDH Pile) (Free Head)

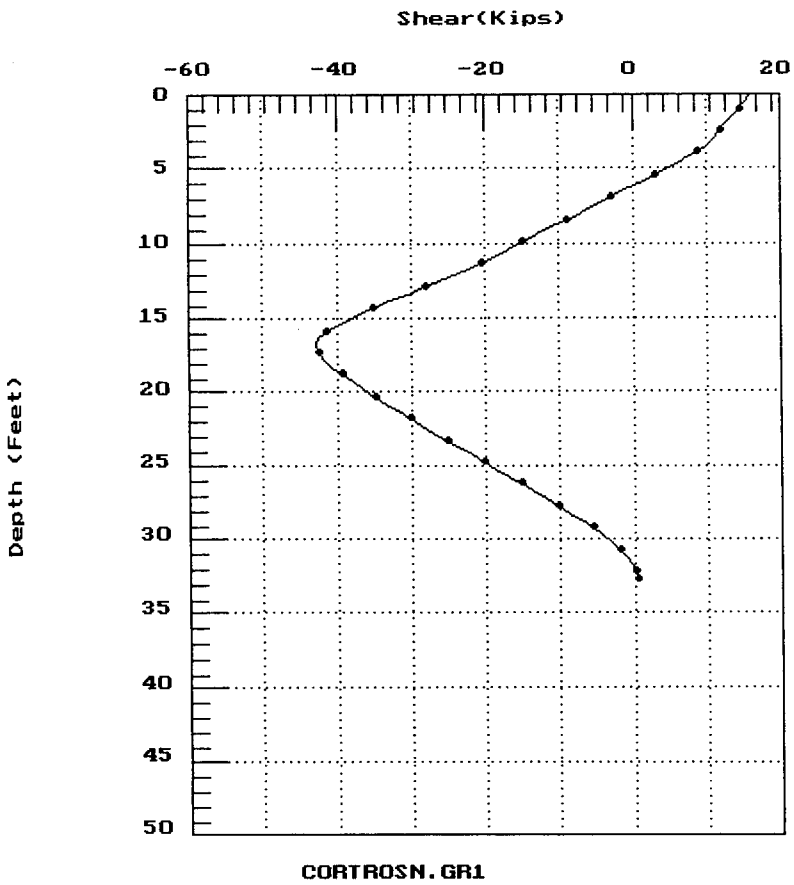
```
    1      1      0      0      0
   66      2    0.0      396.0      0.0
  0.0     60.0        636200.00          2827          3600000
396.0     60.0        636200.00          2827          3600000
    4      8         8     0      2
    3      0.0     48.0        100.0   100.0
    3     48.0    144.0        500.0   500.0
    3    144.0    204.0       1000.0  1000.0
    3    204.0    420.0        500.0   500.0
  0.0      0.061
 48.0      0.061
 48.0      0.067
144.0      0.067
144.0      0.069
276.0      0.069
276.0      0.036
420.0      0.036
  0.0      5.21       0.0    0.01       0
 48.0      5.21       0.0    0.01       0
 48.0     12.15       0.0    0.007      0
144.0     12.15       0.0    0.007      0
144.0     19.10       0.0    0.005      0
204.0     19.10       0.0    0.005      0
204.0      8.68       0.0    0.007      0
420.0      8.68       0.0    0.007      0
  0.0     0.6   1
420.0     0.6   1
    0       1     1
    1
    1    1.56D+04   6.18D+06   2.71D+04
    0
    1       1      0
  200    1.00D-5    100.0
```

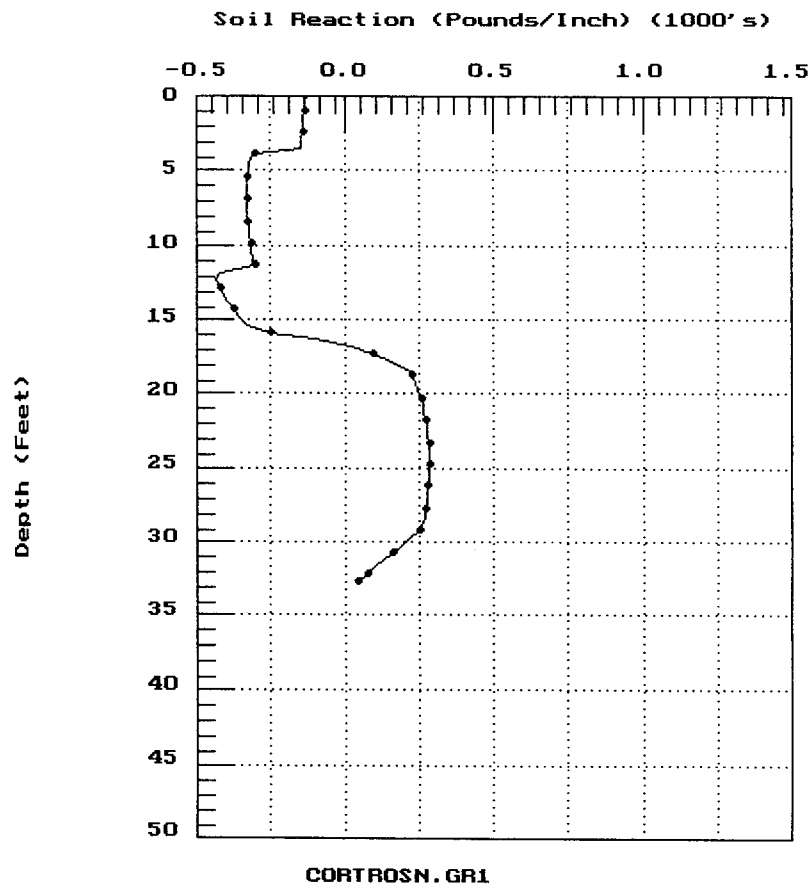






FREE HEAD ⟶ 15.6^{k}


Shear(Kips)
-60
-40
-20
0
20
0
5
10
15
20
25
30
35
40
45
50
Depth (Feet)
CORTROSN.GR1


Soil Reaction (Pounds/Inch) (1000's)
-0.5
0.0
0.5
1.0
1.5
0
5
10
15
20
25
30
35
40
45
50
Depth (Feet)
CORTROSN.GR1

CALTRANS "ALTPIPE" PROGRAM INPUT/OUTPUT RECOMMENDED MINIMUM THICKNESS AND PROTECTIVE MEASURES FOR CULVERTS

AltPipe

Project EA: **0A5351**
Project Engineer: **A. LAM**
Location: **SOLANO COUNTY**
Description: **I-80 EB CORDELIA TRUCK SCALES RELOCATION PROJECT**

Steel Pipes

DSN/U		1c	2a	3f	4c	5T d	5b	6c	7b	8c	9b
Pipe Diameter (in)		30	24	24	30	30	18	24	18	30	18
Pipe Type	Coat	Minimum Thickness (in)									
Corrugated Steel Pipe - Helical Corrugations - 2⅔" X ½" Corrugations	GAL	0.109			0.109	0.109				0.079	
	AL2									0.079	
	BC	0.079			0.109	0.109				0.079	
	BCI	0.064	0.079	0.079	0.079	0.079	0.064	0.079	0.064	0.064	0.064
	PA	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052
	PS	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052
Corrugated Steel Pipe - Annular Corrugations - 2⅔" X ½" Corrugations	GAL									0.079	
	AL2									0.079	
	BC	0.079								0.079	
	BCI	0.064	0.079	0.079	0.079	0.079	0.064	0.079	0.064	0.064	0.064
	PA	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
	PS	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
Steel Spiral Rib Pipe - ¾" X 1" Ribs At 11½" Pitch	GAL	0.109	0.109	0.109	0.109	0.109		0.109		0.079	
	AL2									0.079	
	BC	0.079	0.109	0.109	0.109	0.109		0.109		0.079	
	BCI	0.064	0.079	0.079	0.079	0.079		0.079		0.064	
	PA	0.064	0.064	0.064	0.064	0.064		0.064		0.064	
	PS	0.064	0.064	0.064	0.064	0.064		0.064		0.064	
Steel Spiral Rib Pipe - ¾" X 1" Ribs At 8½" Pitch	GAL	0.109	0.109	0.109	0.109	0.109		0.109		0.079	
	AL2									0.079	
	BC	0.079	0.109	0.109	0.109	0.109		0.109		0.079	
	BCI	0.064	0.079	0.079	0.079	0.079		0.079		0.064	
	PA	0.064	0.064	0.064	0.064	0.064		0.064		0.064	
	PS	0.064	0.064	0.064	0.064	0.064		0.064		0.064	
Steel Spiral Rib Pipe - ¾" X ¾" Ribs At 7½" Pitch	GAL	0.109	0.109	0.109	0.109	0.109		0.109		0.079	
	AL2									0.079	
	BC	0.079	0.109	0.109	0.109	0.109		0.109		0.079	
	BCI	0.064	0.079	0.079	0.079	0.079		0.079		0.064	
	PA	0.064	0.064	0.064	0.064	0.064		0.064		0.064	
	PS	0.064	0.064	0.064	0.064	0.064		0.064		0.064	
	CSS	0.064			0.064	0.064				0.064	

Aluminum Pipes

DSN/U	1c	2a	3f	4c	5T d	5b	6c	7b	8c	9b
Pipe Diameter (in)	**30**	**24**	**24**	**30**	**30**	**18**	**24**	**18**	**30**	**18**
Pipe Type	**Minimum Thickness (in)**									
Corrugated Aluminum Pipe - Annular Corrugations - 2⅔" X ½" Corrugations								0.060	0.075	0.060
Corrugated Aluminum Pipe - Annular Corrugations - 3" X 1" Corrugations									0.060	
Corrugated Aluminum Pipe - Helical Corrugations - 2⅔" X ½" Corrugations								0.060	0.075	0.060
Corrugated Aluminum Pipe - Helical Corrugations - 3" X 1" Corrugations									0.060	
Aluminum Spiral Rib Pipe - ¾" X 1" Ribs At 11½" Pitch									0.060	
Aluminum Spiral Rib Pipe - ¾" X ¾" Ribs At 7½" Pitch									0.060	

Plastic Pipes

DSN/U	1c	2a	3f	4c	5T d	5b	6c	7b	8c	9b
Pipe Diameter (in)	**30**	**24**	**24**	**30**	**30**	**18**	**24**	**18**	**30**	**18**
Pipe Type	**Availability**									
PVC Corrugated	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable
PVC Ribbed	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable

DSN/U	1c	2a	3f	4c	5T d	5b	6c	7b	8c	9b
Pipe Diameter (in)	**30**	**24**	**24**	**30**	**30**	**18**	**24**	**18**	**30**	**18**
Pipe Type	**Availability**									
HDPE Corrugated - Type S	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable
HDPE Ribbed		Allowable	Allowable			Allowable	Allowable	Allowable		Allowable
HDPE Corrugated - Type C		Allowable	Allowable			Allowable	Allowable	Allowable		Allowable

Reinforced Concrete Pipes

DSN/U	1c	2a	3f	4c	5T d	5b	6c	7b	8c	9b
Pipe Diameter (in)	**30**	**24**	**24**	**30**	**30**	**18**	**24**	**18**	**30**	**18**
Steel Cover (in)	1	1	1	1	1	0.75	1	0.75	1	0.75
Sacks of Cement	5	5	5	5	5	5	5	5	5	5
Percentage Water	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Other Information

DSN/U	1c	2a	3f	4c	5T d	5b	6c	7b	8c	9b
Soil pH	7.71	7.71	7.71	7.71	7.71	7.71	7.71	7.74	7.74	7.74
Minimum Soil Resistivity (ohm-cm)	1260	1260	1260	1260	1260	1260	1260	1800	1800	1800
Sulfate Concentration (ppm)	21.2	21.2	21.2	21.2	21.2	21.2	21.2	14.9	14.9	14.9
Chloride Concentration (ppm)	13.4	13.4	13.4	13.4	13.4	13.4	13.4	33.8	33.8	33.8
Abrasion Level	1	2	2	2	2	1	2	2	2	2
2–5 Year Flow Velocity (ft/sec)	2.66	3.38	3.88	3.74	3.93	1.75	4.14	3.5	3.69	4.44
Design Service Life (years)	50	50	50	50	50	50	50	50	50	50
Height of Cover (ft)	2	2	3.5	4.11	4.51	2	5.22	2.7	3.68	2

AltPipe Version 6.08 © State of California

AltPipe

Project EA: **0A5351**
Project Engineer: **A. LAM**
Location: **SOLANO COUNTY**
Description: **I-80 EB CORDELIA TRUCK SCALES RELOCATION PROJECT**

Steel Pipes

DSN/U		10b	10d	10f	10h	10j	10l	10n	11c	11f	11j
Pipe Diameter (in)		24	30	30	36	36	48	48	18	18	18
Pipe Type	Coat	Minimum Thickness (in)									
Corrugated Steel Pipe - Helical Corrugations - 2⅔" X ½" Corrugations	GAL	0.079	0.079	0.079	0.079	0.079	0.079	0.079			
	AL2	0.052	0.052	0.052	0.052	0.052	0.064	0.064	0.052	0.052	0.052
	BC	0.079	0.079	0.079	0.079	0.079	0.079	0.079			
	BCI	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
	PA	0.052	0.052	0.052	0.052	0.052	0.064	0.064	0.052	0.052	0.052
	PS	0.052	0.052	0.052	0.052	0.052	0.064	0.064	0.052	0.052	0.052
Corrugated Steel Pipe - Helical Corrugations - 3" X 1" Corrugations	GAL						0.079	0.079			
	AL2						0.064	0.064			
	BC						0.079	0.079			
	BCI						0.064	0.064			
	PA						0.064	0.064			
	PS						0.064	0.064			
Corrugated Steel Pipe - Helical Corrugations - 5" X 1" Corrugations	GAL						0.079	0.079			
	AL2						0.064	0.064			
	BC						0.079	0.079			
	BCI						0.064	0.064			
	PA						0.064	0.064			
	PS						0.064	0.064			
Corrugated Steel Pipe - Annular Corrugations - 2⅔" X ½" Corrugations	GAL	0.079	0.079	0.079	0.079	0.079	0.079	0.079			
	AL2	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
	BC	0.079	0.079	0.079	0.079	0.079	0.079	0.079			
	BCI	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
	PA	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
	PS	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
Steel Spiral Rib Pipe - ¾" X 1" Ribs At 11½" Pitch	GAL	0.079	0.079	0.079	0.079	0.079	0.079	0.079			
	AL2	0.064	0.064	0.064	0.064	0.064	0.064	0.064			
	BC	0.079	0.079	0.079	0.079	0.079	0.079	0.079			
	BCI	0.064	0.064	0.064	0.064	0.064	0.064	0.064			
	PA	0.064	0.064	0.064	0.064	0.064	0.064	0.064			
	PS	0.064	0.064	0.064	0.064	0.064	0.064	0.064			
	GAL	0.079	0.079	0.079	0.079	0.079	0.079	0.079			

DSN/U		10b	10d	10f	10h	10j	10l	10n	11c	11f	11j
Pipe Diameter (in)		24	30	30	36	36	48	48	18	18	18
Pipe Type	Coat	Minimum Thickness (in)									
	AL2	0.064	0.064	0.064	0.064	0.064	0.064	0.064			
	BC	0.079	0.079	0.079	0.079	0.079	0.079	0.079			
	BCI	0.064	0.064	0.064	0.064	0.064	0.064	0.064			
	PA	0.064	0.064	0.064	0.064	0.064	0.064	0.064			
	PS	0.064	0.064	0.064	0.064	0.064	0.064	0.064			
Steel Spiral Rib Pipe - ¾" X ¾" Ribs At 7½" Pitch	GAL	0.079	0.079	0.079	0.079	0.079	0.079	0.079			
	AL2	0.064	0.064	0.064	0.064	0.064	0.064	0.064			
	BC	0.079	0.079	0.079	0.079	0.079	0.079	0.079			
	BCI	0.064	0.064	0.064	0.064	0.064	0.064	0.064			
	PA	0.064	0.064	0.064	0.064	0.064	0.064	0.064			
	PS	0.064	0.064	0.064	0.064	0.064	0.064	0.064			
	CSS		0.064	0.064	0.064	0.064	0.064	0.064			

Aluminum Pipes

DSN/U	10b	10d	10f	10h	10j	10l	10n	11c	11f	11j
Pipe Diameter (in)	24	30	30	36	36	48	48	18	18	18
Pipe Type	Minimum Thickness (in)									
Corrugated Aluminum Pipe - Annular Corrugations - 2⅔" X ½" Corrugations	0.060	0.075	0.075	0.075	0.075	0.105	0.105	0.060	0.060	0.060
Corrugated Aluminum Pipe - Annular Corrugations - 3" X 1" Corrugations		0.060	0.060	0.060	0.060	0.060	0.060			
Corrugated Aluminum Pipe - Helical Corrugations - 2⅔" X ½" Corrugations	0.060	0.075	0.075	0.075	0.075	0.105	0.105	0.060	0.060	0.060
Corrugated Aluminum Pipe - Helical Corrugations - 3" X 1" Corrugations		0.060	0.060	0.060	0.060	0.060	0.060			
Aluminum Spiral Rib Pipe - ¾" X	0.060	0.060	0.060	0.060	0.060	0.105	0.105			

DSN/U	10b	10d	10f	10h	10j	10l	10n	11c	11f	11j
Pipe Diameter (in)	**24**	**30**	**30**	**36**	**36**	**48**	**48**	**18**	**18**	**18**
Pipe Type	**Minimum Thickness (in)**									
1" Ribs At 11½" Pitch										
Aluminum Spiral Rib Pipe - ¾" X ¾" Ribs At 7½" Pitch	0.060	0.060	0.060	0.060	0.060	0.105	0.105			

Plastic Pipes

DSN/U	10b	10d	10f	10h	10j	10l	10n	11c	11f	11j
Pipe Diameter (in)	**24**	**30**	**30**	**36**	**36**	**48**	**48**	**18**	**18**	**18**
Pipe Type	**Availability**									
PVC Corrugated	Allowable	Allowable	Allowable	Allowable	Allowable			Allowable	Allowable	Allowable
PVC Ribbed	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable
HDPE Corrugated - Type S	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable
HDPE Ribbed	Allowable							Allowable	Allowable	Allowable
HDPE Corrugated - Type C	Allowable							Allowable	Allowable	Allowable

Reinforced Concrete Pipes

DSN/U	10b	10d	10f	10h	10j	10l	10n	11c	11f	11j
Pipe Diameter (in)	**24**	**30**	**30**	**36**	**36**	**48**	**48**	**18**	**18**	**18**
Steel Cover (in)	1	1	1	1	1	1	1	0.75	0.75	0.75
Sacks of Cement	5	5	5	5	5	5	5	5	5	5
Percentage Water	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Other Information

DSN/U	10b	10d	10f	10h	10j	10l	10n	11c	11f	11j
Soil pH	7.74	7.74	7.74	7.74	7.74	7.74	7.74	7.74	7.74	7.74
Minimum Soil Resistivity (ohm-cm)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800

DSN/U	10b	10d	10f	10h	10j	10l	10n	11c	11f	11j
Sulfate Concentration (ppm)	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
Chloride Concentration (ppm)	33.8	33.8	33.8	33.8	33.8	33.8	33.8	33.8	33.8	33.8
Abrasion Level	1	1	1	1	1	1	1	1	1	1
2–5 Year Flow Velocity (ft/sec)	1.07	1.55	1.79	1.49	1.81	1.41	1.49	0.16	1.63	1.89
Design Service Life (years)	50	50	50	50	50	50	50	50	50	50
Height of Cover (ft)	2.85	2.88	3.32	2.82	2.8	2.65	2.66	4.1	5.05	3.24

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Project EA: **0A5351**
Project Engineer: **A. LAM**
Location: **SOLANO COUNTY**
Description: **I-80 EB CORDELIA TRUCK SCALES RELOCATION PROJECT**

Steel Pipes

DSN/U		12b	12d	12i	12m	12q	12u	13c	13i	13m	13q	13u
Pipe Diameter (in)		18	18	18	18	18	18	18	18	18	18	18
Pipe Type	**Coat**	**Minimum Thickness (in)**										
Corrugated Steel Pipe - Helical Corrugations - 2⅔" X ½" Corrugations	AL2	0.052	0.052	0.052	0.052	0.052	0.052					
	BCI	0.064	0.064	0.064	0.064	0.064	0.064					
	PA	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052
	PS	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052
Corrugated Steel Pipe - Annular Corrugations - 2⅔" X ½" Corrugations	AL2	0.064	0.064	0.064	0.064	0.064	0.064					
	BCI	0.064	0.064	0.064	0.064	0.064	0.064					
	PA	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
	PS	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064

Aluminum Pipes

DSN/U	12b	12d	12i	12m	12q	12u	13c	13i	13m	13q	13u
Pipe Diameter (in)	18	18	18	18	18	18	18	18	18	18	18
Pipe Type	**Minimum Thickness (in)**										
Corrugated Aluminum Pipe - Annular Corrugations - 2⅔" X ½" Corrugations	0.060	0.060	0.060	0.060	0.060	0.060					
Corrugated Aluminum Pipe - Helical Corrugations - 2⅔" X ½" Corrugations	0.060	0.060	0.060	0.060	0.060	0.060					

Plastic Pipes

DSN/U	12b	12d	12i	12m	12q	12u	13c	13i	13m	13q	13u
Pipe Diameter (in)	18	18	18	18	18	18	18	18	18	18	18
Pipe Type	**Availability**										
PVC Corrugated	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable
PVC Ribbed	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable

DSN/U	12b	12d	12i	12m	12q	12u	13c	13i	13m	13q	13u
Pipe Diameter (in)	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**
Pipe Type	**Availability**										
HDPE Corrugated - Type S	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable
HDPE Ribbed	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable
HDPE Corrugated - Type C	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable

Reinforced Concrete Pipes

DSN/U	12b	12d	12i	12m	12q	12u	13c	13i	13m	13q	13u
Pipe Diameter (in)	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**
Steel Cover (in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Sacks of Cement	5	5	5	5	5	5	5	5	5	5	5
Percentage Water	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Other Information

DSN/U	12b	12d	12i	12m	12q	12u	13c	13i	13m	13q	13u
Soil pH	7.74	7.74	7.74	7.74	7.74	7.74	7.01	7.01	7.01	7.01	7.01
Minimum Soil Resistivity (ohm-cm)	1800	1800	1800	1800	1800	1800	1070	1070	1070	1070	1070
Sulfate Concentration (ppm)	14.9	14.9	14.9	14.9	14.9	14.9	26.2	26.2	26.2	26.2	26.2
Chloride Concentration (ppm)	33.8	33.8	33.8	33.8	33.8	33.8	37.9	37.9	37.9	37.9	37.9
Abrasion Level	1	1	1	1	1	1	1	1	1	1	1
2–5 Year Flow Velocity (ft/sec)	0.28	0.76	0.89	1.00	1.15	1.23	0.03	0.15	0.22	0.28	0.33
Design Service Life (years)	50	50	50	50	50	50	50	50	50	50	50
Height of Cover (ft)	5	4.02	4.17	5.17	5.71	3.62	3.62	4.69	5.25	5.81	4.09

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Project EA: **0A5351**
Project Engineer: **A. LAM**
Location: **SOLANO COUNTY**
Description: **I-80 EB CORDELIA TRUCK SCALES RELOCATION PROJECT**

Steel Pipes

DSN/U		14b	14e	14k	14o	14s	14w	15b	15d	15f	15h	15k	15q	15u	15y	15ab
Pipe Diameter (in)		18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Pipe Type	**Coat**	**Minimum Thickness (in)**														
Corrugated Steel Pipe - Helical Corrugations - 2⅔" X ½" Corrugations	PA	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052
	PS	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052
Corrugated Steel Pipe - Annular Corrugations - 2⅔" X ½" Corrugations	PA	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
	PS	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064

Plastic Pipes

DSN/U	14b	14e	14k	14o	14s	14w	15b	15d	15f	15h	15k	15q	15u	15y	15ab
Pipe Diameter (in)	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Pipe Type	**Availability**														
PVC Corrugated	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable
PVC Ribbed	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable
HDPE Corrugated - Type S	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable
HDPE Ribbed	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable
HDPE Corrugated - Type C	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable

Reinforced Concrete Pipes

DSN/U	14b	14e	14k	14o	14s	14w	15b	15d	15f	15h	15k	15q	15u	15y	15ab
Pipe Diameter (in)	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Steel Cover (in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Sacks of Cement	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Percentage Water	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Other Information

DSN/U	14b	14e	14k	14o	14s	14w	15b	15d	15f	15h	15k	15q	15u	15y	15ab
Soil pH	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01
Minimum Soil Resistivity (ohm-cm)	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070
Sulfate Concentration (ppm)	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2
Chloride Concentration (ppm)	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9
Abrasion Level	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2–5 Year Flow Velocity (ft/sec)	0.66	0.71	0.85	0.96	1.03	1.09	1.4	1.56	1.7	1.75	1.75	1.99	2.13	2.25	2.31

DSN/U	14b	14e	14k	14o	14s	14w	15b	15d	15f	15h	15k	15q	15u	15y	15ab
Design Service Life (years)	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Height of Cover (ft)	3.87	3.73	4.83	5.42	6.01	4.47	2.07	2.73	3.84	3.97	4.65	5.15	5.68	6.21	6.41

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AltPipe

Project EA: **0A5351**
Project Engineer: **A. LAM**
Location: **SOLANO COUNTY**
Description: **I-80 EB CORDELIA TRUCK SCALES RELOCATION PROJRCT**

Steel Pipes

DSN/U		17b	18b	19b	20b/c	20e/f	20h/i	20j	20k	20p/s	20y	21c
Pipe Diameter (in)		18	18	18	42	42	48	66	12	36	48	30
Pipe Type	Coat	Minimum Thickness (in)										
Corrugated Steel Pipe - Helical Corrugations - 2⅔" X ½" Corrugations	GAL				0.109	0.109	0.109	0.138		0.109	0.109	0.109
	AL2				0.109	0.052	0.064	0.138		0.052	0.109	0.109
	BC				0.079	0.079	0.079	0.138		0.079	0.079	0.079
	BCI				0.064	0.064	0.064	0.138		0.064	0.079	0.064
	PA	0.052			0.052	0.052	0.064	0.138	0.064	0.052	0.064	0.052
	PS	0.052			0.052	0.052	0.064	0.138	0.064	0.052	0.064	0.052
Corrugated Steel Pipe - Helical Corrugations - 3" X 1" Corrugations	GAL						0.109	0.109			0.109	
	AL2						0.064	0.109			0.109	
	BC						0.079	0.079			0.079	
	BCI						0.064	0.079			0.079	
	PA						0.064	0.064			0.064	
	PS						0.064	0.064			0.064	
Corrugated Steel Pipe - Helical Corrugations - 5" X 1" Corrugations	GAL						0.109	0.109			0.109	
	AL2						0.064	0.109			0.109	
	BC						0.079	0.079			0.079	
	BCI						0.064	0.079			0.079	
	PA						0.064	0.064			0.064	
	PS						0.064	0.064			0.064	
	GAL				0.109	0.109	0.109	0.138		0.109	0.109	
	AL2				0.109	0.064	0.064	0.138		0.064	0.109	

DSN/U		17b	18b	19b	20b/c	20e/f	20h/i	20j	20k	20p/s	20y	21c
Pipe Diameter (in)		18	18	18	42	42	48	66	12	36	48	30
Pipe Type	Coat	Minimum Thickness (in)										
	BC				0.079	0.079	0.079	0.138		0.079	0.079	0.079
	BCI				0.064	0.064	0.064	0.138		0.064	0.079	0.064
	PA	0.064			0.064	0.064	0.064	0.138		0.064	0.064	0.064
	PS	0.064			0.064	0.064	0.064	0.138		0.064	0.064	0.064
Steel Spiral Rib Pipe - ¾" X 1" Ribs At 11½" Pitch	GAL				0.109	0.109	0.109	0.109		0.109	0.109	0.109
	AL2				0.109	0.064	0.064	0.109		0.064	0.109	0.109
	BC				0.079	0.079	0.079	0.079		0.079	0.079	0.079
	BCI				0.064	0.064	0.064	0.079		0.064	0.079	0.064
	PA				0.064	0.064	0.064	0.079		0.064	0.064	0.064
	PS				0.064	0.064	0.064	0.079		0.064	0.064	0.064
Steel Spiral Rib Pipe - ¾" X 1" Ribs At 8½" Pitch	GAL				0.109	0.109	0.109	0.109		0.109	0.109	0.109
	AL2				0.109	0.064	0.064	0.109		0.064	0.109	0.109
	BC				0.079	0.079	0.079	0.079		0.079	0.079	0.079
	BCI				0.064	0.064	0.064	0.079		0.064	0.079	0.064
	PA				0.064	0.064	0.064	0.064		0.064	0.064	0.064
	PS				0.064	0.064	0.064	0.064		0.064	0.064	0.064
Steel Spiral Rib Pipe - ¾" X ¾" Ribs At 7½" Pitch	GAL				0.109	0.109	0.109	0.109		0.109	0.109	0.109
	AL2				0.109	0.064	0.064	0.109		0.064	0.109	0.109
	BC				0.079	0.079	0.079	0.079		0.079	0.079	0.079
	BCI				0.064	0.064	0.064	0.079		0.064	0.079	0.064
	PA				0.064	0.064	0.064	0.079		0.064	0.064	0.064
	PS				0.064	0.064	0.064	0.079		0.064	0.064	0.064
	CSS				0.064	0.064	0.064	0.079		0.064	0.064	0.064
Structural Steel Plate Pipe - 6" X 2" Corrugations	GAL							0.109				
	AL2							0.109				
	BC							0.109				
	BCI							0.109				
	PA							0.109				
	PS							0.109				

Thickness

DSN/U		17b	18b	19b	20b/c	20e/f	20h/i	20j	20k	20p/s	20y	21c
Pipe Diameter (in)		18	18	18	42	42	48	66	12	36	48	30
Pipe Type	Coat	Minimum Thickness (in)										
	Diameter							66				

Aluminum Pipes

DSN/U		17b	18b	19b	20b/c	20e/f	20h/i	20j	20k	20p/s	20y	21c
Pipe Diameter (in)		18	18	18	42	42	48	66	12	36	48	30
Pipe Type		Minimum Thickness (in)										
Corrugated Aluminum Pipe - Annular Corrugations - 2⅔" X ½" Corrugations					0.105	0.105	0.105	0.164	0.060	0.075	0.105	0.075
Corrugated Aluminum Pipe - Annular Corrugations - 3" X 1" Corrugations					0.060	0.060	0.060	0.060		0.060	0.060	0.060
Corrugated Aluminum Pipe - Helical Corrugations - 2⅔" X ½" Corrugations					0.105	0.105	0.105	0.164	0.060	0.075	0.105	0.075
Corrugated Aluminum Pipe - Helical Corrugations - 3" X 1" Corrugations					0.060	0.060	0.060	0.060		0.060	0.060	0.060
Aluminum Spiral Rib Pipe - ¾" X 1" Ribs At 11½" Pitch					0.075	0.075	0.105			0.060	0.105	0.060
Aluminum Spiral Rib Pipe - ¾" X ¾" Ribs At 7½" Pitch					0.075	0.075	0.105			0.060	0.105	0.060
Structural Aluminum Plate Pipe - 9" X 2½" Corrugations	Thickness							0.100				
	Diameter							66				

Plastic Pipes

DSN/U	17b	18b	19b	20b/c	20e/f	20h/i	20j	20k	20p/s	20y	21c
Pipe Diameter (in)	**18**	**18**	**18**	**42**	**42**	**48**	**66**	**12**	**36**	**48**	**30**
Pipe Type	**Availability**										
PVC Corrugated	Allowable	Allowable	Allowable					Allowable	Allowable		Allowable
PVC Ribbed	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable			Allowable	Allowable	Allowable
HDPE Corrugated - Type S	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable			Allowable	Allowable	Allowable
HDPE Ribbed	Allowable	Allowable	Allowable								
HDPE Corrugated - Type C	Allowable	Allowable	Allowable								

Reinforced Concrete Pipes

DSN/U	17b	18b	19b	20b/c	20e/f	20h/i	20j	20k	20p/s	20y	21c
Pipe Diameter (in)	**18**	**18**	**18**	**42**	**42**	**48**	**66**	**12**	**36**	**48**	**30**
Steel Cover (in)	0.75	0.75	0.75	1	1	1	1	0.75	1	1	1
Sacks of Cement	5	5	5	5	5	5	5	5	5	5	5
Percentage Water	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Other Information

DSN/U	17b	18b	19b	20b/c	20e/f	20h/i	20j	20k	20p/s	20y	21c
Soil pH	7.01	7.01	7.01	7.72	7.72	7.72	7.72	7.72	7.72	7.72	7.72
Minimum Soil Resistivity (ohm-cm)	1070	1070	1070	1740	1740	1740	1740	1740	1740	1740	1740

DSN/U	17b	18b	19b	20b/c	20e/f	20h/i	20j	20k	20p/s	20y	21c
Sulfate Concentration (ppm)	26.2	26.2	26.2	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9
Chloride Concentration (ppm)	37.9	37.9	37.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9
Abrasion Level	1	2	2	2	1	1	3	3	1	3	2
2–5 Year Flow Velocity (ft/sec)	1.61	3.64	4.56	3.1	2.6	1.95	6.38	6.37	0.95	5.97	3.4
Design Service Life (years)	50	50	50	50	50	50	50	50	50	50	50
Height of Cover (ft)	3	3.02	2.63	2.55	3.73	3.39	3.24	6.3	4	2.64	3.13

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AltPipe

Project EA: **0A5351**
Project Engineer: **A. LAM**
Location: **SOLANO COUNTY**
Description: **I-80 EB CORDELIA TRUCK SCALES RELOCATION PROJRCT**

Steel Pipes

DSN/U		21e	21g	21i	21k	21m	21p	23c	24b	24d	24f	24h
Pipe Diameter (in)		30	30	30	18	18	30	24	18	18	18	12
Pipe Type	Coat	Minimum Thickness (in)										
Corrugated Steel Pipe - Helical Corrugations - 2⅔" X ½" Corrugations	GAL	0.109	0.109	0.109			0.109	0.079				
	AL2	0.109	0.109	0.109	0.052	0.052	0.109	0.079			0.052	
	BC	0.079	0.079	0.079			0.079	0.079				
	BCI	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
	PA	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052
	PS	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052
Corrugated Steel Pipe - Annular Corrugations - 2⅔" X ½" Corrugations	GAL							0.079				
	AL2				0.064	0.064		0.079			0.064	
	BC	0.079	0.079	0.079			0.079	0.079				
	BCI	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	
	PA	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	
	PS	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	
Steel Spiral Rib Pipe - ¾" X 1" Ribs At 11½" Pitch	GAL	0.109	0.109	0.109			0.109	0.079				
	AL2	0.109	0.109	0.109			0.109	0.079				
	BC	0.079	0.079	0.079			0.079	0.079				
	BCI	0.064	0.064	0.064			0.064	0.064				
	PA	0.064	0.064	0.064			0.064	0.064				
	PS	0.064	0.064	0.064			0.064	0.064				
Steel Spiral Rib Pipe -	GAL	0.109	0.109	0.109			0.109	0.079				
	AL2	0.109	0.109	0.109			0.109	0.079				

DSN/U		21e	21g	21i	21k	21m	21p	23c	24b	24d	24f	24h
Pipe Diameter (in)		30	30	30	18	18	30	24	18	18	18	12
Pipe Type	Coat	Minimum Thickness (in)										
	BC	0.079	0.079	0.079			0.079	0.079				
	BCI	0.064	0.064	0.064			0.064	0.064				
	PA	0.064	0.064	0.064			0.064	0.064				
	PS	0.064	0.064	0.064			0.064	0.064				
Steel Spiral Rib Pipe - ¾" X ¾" Ribs At 7½" Pitch	GAL	0.109	0.109	0.109			0.109	0.079				
	AL2	0.109	0.109	0.109			0.109	0.079				
	BC	0.079	0.079	0.079			0.079	0.079				
	BCI	0.064	0.064	0.064			0.064	0.064				
	PA	0.064	0.064	0.064			0.064	0.064				
	PS	0.064	0.064	0.064			0.064	0.064				
	CSS	0.064	0.064	0.064			0.064					

Aluminum Pipes

DSN/U	21e	21g	21i	21k	21m	21p	23c	24b	24d	24f	24h
Pipe Diameter (in)	30	30	30	18	18	30	24	18	18	18	12
Pipe Type	Minimum Thickness (in)										
Corrugated Aluminum Pipe - Annular Corrugations - 2⅔" X ½" Corrugations	0.075	0.075	0.075	0.060	0.060	0.075	0.060	0.060	0.060	0.060	0.060
Corrugated Aluminum Pipe - Annular Corrugations - 3" X 1" Corrugations	0.060	0.060	0.060			0.060					
Corrugated Aluminum Pipe -	0.075	0.075	0.075	0.060	0.060	0.075	0.060	0.060	0.060	0.060	0.060

DSN/U	21e	21g	21i	21k	21m	21p	23c	24b	24d	24f	24h
Pipe Diameter (in)	**30**	**30**	**30**	**18**	**18**	**30**	**24**	**18**	**18**	**18**	**12**
Pipe Type	**Minimum Thickness (in)**										
Helical Corrugations - 2⅔" X ½" Corrugations											
Corrugated Aluminum Pipe - Helical Corrugations - 3" X 1" Corrugations	0.060	0.060	0.060			0.060					
Aluminum Spiral Rib Pipe - ¾" X 1" Ribs At 11½" Pitch	0.060	0.060	0.060			0.060	0.060				
Aluminum Spiral Rib Pipe - ¾" X ¾" Ribs At 7½" Pitch	0.060	0.060	0.060			0.060	0.060				

Plastic Pipes

DSN/U	21e	21g	21i	21k	21m	21p	23c	24b	24d	24f	24h
Pipe Diameter (in)	**30**	**30**	**30**	**18**	**18**	**30**	**24**	**18**	**18**	**18**	**12**
Pipe Type	**Availability**										
PVC Corrugated	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable
PVC Ribbed	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	
HDPE Corrugated - Type S	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	

DSN/U	21e	21g	21i	21k	21m	21p	23c	24b	24d	24f	24h
Pipe Diameter (in)	**30**	**30**	**30**	**18**	**18**	**30**	**24**	**18**	**18**	**18**	**12**
Pipe Type	**Availability**										
HDPE Ribbed				Allowable	Allowable		Allowable	Allowable	Allowable	Allowable	
HDPE Corrugated - Type C				Allowable	Allowable		Allowable	Allowable	Allowable	Allowable	

Reinforced Concrete Pipes

DSN/U	21e	21g	21i	21k	21m	21p	23c	24b	24d	24f	24h
Pipe Diameter (in)	**30**	**30**	**30**	**18**	**18**	**30**	**24**	**18**	**18**	**18**	**12**
Steel Cover (in)	1	1	1	0.75	0.75	1	1	0.75	0.75	0.75	0.75
Sacks of Cement	5	5	5	5	5	5	5	5	5	5	5
Percentage Water	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Other Information

DSN/U	21e	21g	21i	21k	21m	21p	23c	24b	24d	24f	24h
Soil pH	7.72	7.72	7.72	7.72	7.72	7.72	7.74	7.74	7.74	7.74	7.74
Minimum Soil Resistivity (ohm-cm)	1740	1740	1740	1740	1740	1740	1880	1880	1880	1880	1880
Sulfate Concentration (ppm)	37.9	37.9	37.9	37.9	37.9	37.9	31.7	31.7	31.7	31.7	31.7
Chloride Concentration (ppm)	20.9	20.9	20.9	20.9	20.9	20.9	25.8	25.8	25.8	25.8	25.8
Abrasion Level	2	2	2	1	1	2	2	2	2	1	2

DSN/U	21e	21g	21i	21k	21m	21p	23c	24b	24d	24f	24h
2–5 Year Flow Velocity (ft/sec)	3.6	3.58	3.58	0.67	0.72	4.9	3.45	3.67	3.11	2.52	4.22
Design Service Life (years)	50	50	50	50	50	50	50	50	50	50	50
Height of Cover (ft)	2.6	2.61	2.36	2.14	3.35	5.19	3.9	2	2.18	2.17	2.45

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Project EA: **0A5351**
Project Engineer: **A. LAM**
Location: **SOLANO COUNTY**
Description: **I-80 EB CORDELIA TRUCK SCALES RELOCATION PROJRCT**

Steel Pipes

DSN/U		24i	25a	26c	27b	28b	28d	28f	29b	29d	30b	30c
Pipe Diameter (in)		12	12	24	18	18	18	18	12	42	12	12
Pipe Type	Coat	Minimum Thickness (in)										
Corrugated Steel Pipe - Helical Corrugations - 2⅔" X ½" Corrugations	GAL			0.079								
	AL2		0.052	0.079	0.052							
	BC			0.079								
	BCI	0.064	0.064	0.064	0.064							
	PA	0.052	0.052	0.052	0.052	0.052	0.052	0.052		0.138		
	PS	0.052	0.052	0.052	0.052	0.052	0.052	0.052		0.138		
Corrugated Steel Pipe - Annular Corrugations - 2⅔" X ½" Corrugations	GAL			0.079								
	AL2			0.079	0.064							
	BC			0.079								
	BCI			0.064	0.064							
	PA			0.064	0.064	0.064	0.064	0.064		0.138		
	PS			0.064	0.064	0.064	0.064	0.064		0.138		
Steel Spiral Rib Pipe - ¾" X 1" Ribs At 11½" Pitch	GAL			0.079								
	AL2			0.079								
	BC			0.079								
	BCI			0.064								
	PA			0.064								
	PS			0.064								
Steel Spiral Rib Pipe -	GAL			0.079								
	AL2			0.079								

DSN/U		24i	25a	26c	27b	28b	28d	28f	29b	29d	30b	30c
Pipe Diameter (in)		12	12	24	18	18	18	18	12	42	12	12
Pipe Type	Coat	Minimum Thickness (in)										
	BC			0.079								
	BCI			0.064								
	PA			0.064								
	PS			0.064								
Steel Spiral Rib Pipe - ¾" X ¾" Ribs At 7½" Pitch	GAL			0.079								
	AL2			0.079								
	BC			0.079								
	BCI			0.064								
	PA			0.064								
	PS			0.064								
	CSS									0.064		

Aluminum Pipes

DSN/U	24i	25a	26c	27b	28b	28d	28f	29b	29d	30b	30c
Pipe Diameter (in)	12	12	24	18	18	18	18	12	42	12	12
Pipe Type	Minimum Thickness (in)										
Corrugated Aluminum Pipe - Annular Corrugations - 2⅔" X ½" Corrugations	0.060	0.060	0.060	0.060							
Corrugated Aluminum Pipe - Helical Corrugations - 2⅔" X ½" Corrugations	0.060	0.060	0.060	0.060							
Aluminum Spiral Rib Pipe - ¾" X			0.060								

DSN/U	24i	25a	26c	27b	28b	28d	28f	29b	29d	30b	30c
Pipe Diameter (in)	**12**	**12**	**24**	**18**	**18**	**18**	**18**	**12**	**42**	**12**	**12**
Pipe Type	**Minimum Thickness (in)**										
1" Ribs At 11½" Pitch											
Aluminum Spiral Rib Pipe - ¾" X ¾" Ribs At 7½" Pitch			0.060								

Plastic Pipes

DSN/U	24i	25a	26c	27b	28b	28d	28f	29b	29d	30b	30c
Pipe Diameter (in)	**12**	**12**	**24**	**18**	**18**	**18**	**18**	**12**	**42**	**12**	**12**
Pipe Type	**Availability**										
PVC Corrugated	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable	Allowable		Allowable	Allowable
PVC Ribbed			Allowable	Allowable	Allowable	Allowable	Allowable		Allowable		
HDPE Corrugated - Type S			Allowable	Allowable	Allowable	Allowable	Allowable		Allowable		
HDPE Ribbed			Allowable	Allowable	Allowable	Allowable	Allowable				
HDPE Corrugated - Type C			Allowable	Allowable	Allowable	Allowable	Allowable				

Reinforced Concrete Pipes

DSN/U	24i	25a	26c	27b	28b	28d	28f	29b	29d	30b	30c
Pipe Diameter (in)	**12**	**12**	**24**	**18**	**18**	**18**	**18**	**12**	**42**	**12**	**12**
Steel Cover (in)	0.75	0.75	1	0.75	0.75	0.75	0.75	0.75	1	0.75	0.75

DSN/U	24i	25a	26c	27b	28b	28d	28f	29b	29d	30b	30c
Pipe Diameter (in)	**12**	**12**	**24**	**18**	**18**	**18**	**18**	**12**	**42**	**12**	**12**
Sacks of Cement	5	5	5	5	5	5	5	5	5	5	5
Percentage Water	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Other Information

DSN/U	24i	25a	26c	27b	28b	28d	28f	29b	29d	30b	30c
Soil pH	7.74	7.74	7.74	7.74	7.37	7.37	7.37	6.65	6.65	6.65	6.65
Minimum Soil Resistivity (ohm-cm)	1880	1880	1880	1880	1150	1150	1150	1150	1150	1150	1150
Sulfate Concentration (ppm)	31.7	31.7	31.7	31.7	129.2	129.2	129.2	42.9	42.9	42.9	42.9
Chloride Concentration (ppm)	25.8	25.8	25.8	25.8	37.8	37.8	37.8	90.1	90.1	90.1	90.1
Abrasion Level	2	1	2	1	1	1	2	2	3	2	2
2–5 Year Flow Velocity (ft/sec)	4.62	0.96	3.73	2.84	1.87	1.39	3.57	3.41	5.42	3.12	3.59
Design Service Life (years)	50	50	50	50	50	50	50	50	50	50	50
Height of Cover (ft)	2	5.77	7.11	2	2.28	2.28	2.29	5.98	4.37	2.72	2.00

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STRUCTURAL PAVEMENT DESIGN

PAVEMENT DESIGN (ENGLISH)

PROJECT: Cordelia Truck Scales Relocation Project JOB NO.: 208123.GDR
LOCATION : I-80 truck scales off-ramp & I-80 mainline/I-80 truck scales on-ramp to I-80 DATE : 5/3/2010

Traffic Index (TI) (20-Year)	=	15.5
R-value of Basement Soil (R_{SUB})	=	10
R-value of Aggregate Subbase (Class 4)(R_{AS})	=	50

STRUCTURAL SECTION CONSISTS OF HMA/LCB/AS (CLASS 4)

a) Total required GE = 0.0032 (TI)(100-R_{SUB})	=	4.46	
b) Required GE of HMA and LCB = 0.0032 (TI)(100-R_{AS})	=	2.48	
c) 0.4 (step b)+0.2 as SF	=	1.19	
d) Actual thickness of HMA (t_{HMA})	=	0.75	(from Table 633.1)
e) GE of actual thicknss of HMA	=	1.23	(from Table 633.1)
f) Add 0.2 to step b	=	2.68	
g) Required GE of LCB (step f - step e)	=	1.45	
h) Actual thickness of LCB (t_{LCB})	=	0.75	(from Table 633.1)
I) GE of actual thickness of LCB	=	1.43	(from Table 633.1)
j) Required GE of Aggregate Subbase AS (step a - step e - step i)	=	1.80	
k) Thickness of AS (Class 4) (rounded)	=	1.80	

The structural section:

0.75 Feet HMA (Type A)

0.75 Feet LCB
1.80 Feet AS (Class 4)

3.30 Feet

PAVEMENT DESIGN (ENGLISH)

PROJECT: Cordelia Truck Scales Relocation Project
LOCATION : I-80 truck scales off-ramp & I-80 mainline/I-80 truck scales on-ramp to I-80

JOB NO.: 208123.GDR
DATE : 5/3/2010

Traffic Index (TI) (20-Year)	=	15.5
R-value of Basement Soil (R_{SUB})	=	10

STRUCTURAL SECTION CONSISTS OF FULL HMA (Type A)

a) Total required GE = 0.0032 (TI)(100-R_{SUB})	=	4.46
b) Add 0.1 feet as safety factor to determine total GE for HMA	=	4.56
c) Actual thickness of HMA (t_{HMA})	=	2.00 (from Table 633.1)
d) GE of actual thicknss of HMA	=	4.55 (from Table 633.1)

The structural section:

2.00 Feet HMA (Type A)

PAVEMENT DESIGN (ENGLISH)

PROJECT: Cordelia Truck Scales Relocation Project JOB NO.: 208123.GDR
LOCATION : I-80 truck scales off-ramp & I-80 mainline/I-80 truck scales on-ramp to I-80 DATE : 5/3/2010

Traffic Index (TI) (20-Year)	=	15.5	
R-value of Basement Soil (R_{SUB})	=	10	
R-value of Aggregate Subbase (Class 4)(R_{AS})	=	50	

STRUCTURAL SECTION CONSISTS OF HMA/ATPB/LCB/AS (CLASS 4)

a) Total required GE = 0.0032 (TI)(100-R_{SUB})	=	4.46	
b) Required GE of HMA, ATPB and LCB = 0.0032 (TI)(100-R_{AS})	=	2.48	
c) 0.4 (step b)+0.2 as SF	=	1.19	
d) Actual thickness of HMA (t_{HMA})	=	1.00	(from Table 633.1)
e) GE of actual thicknss of HMA	=	1.81	(from Table 633.1)
f) Add 0.2 to step b	=	2.68	
g) Required GE of ATPB and LCB (step f - step e)	=	0.87	
h) Actual thickness of ATPB (t_{ATPB})	=	0.25	
i) GE of actual thickness of ATPB	=	0.35	
j) Required GE of LCB (step g - step i)	=	0.52	
k) Actual thickness of LCB (t_{LCB})	=	0.75	(from Table 633.1)
l) GE of actual thickness of LCB	=	1.43	(from Table 633.1)
m) Required GE of Aggregate Subbase AS (step a -step e -step I -step l)	=	0.87	
n) Thickness of AS (Class 4) (rounded)	=	0.90	

The structural section:

1.00 Feet HMA (Type A)
0.25 Feet ATPB
0.75 Feet LCB
1.00 Feet AS (Class 4)

3.00 Feet

PAVEMENT DESIGN (ENGLISH)

PROJECT: Cordelia Truck Scales Relocation Project JOB NO.: 208123.GDR
LOCATION : I-80 truck scales on-ramp to SR 12E ("D2" Line) DATE : 5/3/2010

Traffic Index (TI) (20-Year)	=	12.5
R-value of Basement Soil (R_{SUB})	=	10
R-value of Aggregate Subbase (Class 4)(R_{AS})	=	50

STRUCTURAL SECTION CONSISTS OF HMA/LCB/AS (CLASS 4)

a) Total required GE = 0.0032 (TI)(100-R_{SUB})	=	3.60	
b) Required GE of HMA and LCB = 0.0032 (TI)(100-R_{AS})	=	2.00	
c) 0.4 (step b)+0.2 as SF	=	1.00	
d) Actual thickness of HMA (t_{HMA})	=	0.65	(from Table 633.1)
e) GE of actual thicknss of HMA	=	1.09	(from Table 633.1)
f) Add 0.2 to step b	=	2.20	
g) Required GE of LCB (step f - step e)	=	1.11	
h) Actual thickness of LCB (t_{LCB})	=	0.60	(from Table 633.1)
I) GE of actual thickness of LCB	=	1.14	(from Table 633.1)
j) Required GE of Aggregate Subbase AS (step a - step e - step i)	=	1.37	
k) Thickness of AS (Class 4) (rounded)	=	1.40	

The structural section:

0.65 Feet HMA (Type A)

0.60 Feet LCB
1.40 Feet AS (Class 4)

2.65 Feet

PAVEMENT DESIGN (ENGLISH)

PROJECT: East Bound I-80 Truck Scales Relocation
LOCATION : I-80 truck scales on-ramp to SR 12E ("D2" Line)

JOB NO.: 208123.GDR
DATE : 5/3/2010

Traffic Index (TI) (20-Year)	=	12.5	
R-value of Basement Soil (R_{SUB})	=	10	

STRUCTURAL SECTION CONSISTS OF FULL HMA (Type A)

a) Total required GE = 0.0032 (TI)(100-R_{SUB})	=	3.60	
b) Add 0.1 feet as safety factor to determine total GE for HMA	=	3.70	
c) Actual thickness of HMA (t_{HMA})	=	1.65	(from Table 633.1)
d) GE of actual thicknss of HMA	=	3.79	(from Table 633.1)

The structural section:

1.65 Feet HMA (Type A)

PAVEMENT DESIGN (ENGLISH)

PROJECT: Cordelia Truck Scales Relocation Project JOB NO.: 208123.GDR
LOCATION : I-80 truck scales on-ramp to SR 12E/I-80 to SR 12 East connector ramp ("D2" Line and "12CON" Line) DATE : 5/3/2010

Traffic Index (TI) (20-Year)	=	14.5	
R-value of Basement Soil (R_{SUB})	=	10	
R-value of Aggregate Subbase (Class 4)(R_{AS})	=	50	

STRUCTURAL SECTION CONSISTS OF HMA/LCB/AS (CLASS 4)

a) Total required GE = 0.0032 (TI)(100-R_{SUB})	=	4.18	
b) Required GE of HMA and LCB = 0.0032 (TI)(100-R_{AS})	=	2.32	
c) 0.4 (step b)+0.2 as SF	=	1.13	
d) Actual thickness of HMA (t_{HMA})	=	0.75	(from Table 633.1)
e) GE of actual thicknss of HMA	=	1.23	(from Table 633.1)
f) Add 0.2 to step b	=	2.52	
g) Required GE of LCB (step f - step e)	=	1.29	
h) Actual thickness of LCB (t_{LCB})	=	0.70	(from Table 633.1)
I) GE of actual thickness of LCB	=	1.33	(from Table 633.1)
j) Required GE of Aggregate Subbase AS (step a - step e - step i)	=	1.62	
k) Thickness of AS (Class 4) (rounded)	=	1.65	

The structural section:

0.75 Feet HMA (Type A)

0.70 Feet LCB
1.65 Feet AS (Class 4)

3.10 Feet

PAVEMENT DESIGN (ENGLISH)

PROJECT: East Bound I-80 Truck Scales Relocation JOB NO.: 208123.GDR
LOCATION : I-80 truck scales on-ramp to SR 12E/I-80 truck scales to SR 12 East connector ramp ("D2" Line and "12CON" Line) DATE : 5/3/2010

Traffic Index (TI) (20-Year)	=	14.5	
R-value of Basement Soil (R_{SUB})	=	10	

STRUCTURAL SECTION CONSISTS OF FULL HMA (Type A)

a) Total required GE = 0.0032 (TI)(100-R_{SUB})	=	4.18	
b) Add 0.1 feet as safety factor to determine total GE for HMA	=	4.28	
c) Actual thickness of HMA (t_{HMA})	=	1.95	(from Table 633.1)
d) GE of actual thicknss of HMA	=	4.40	(from Table 633.1)

The structural section:

1.95 Feet HMA (Type A)

PROJECT: Cordelia Truck Scales Relocation Project JOB NO.: 208123.GDR
LOCATION : I-80 to SR 12 East connector ramp/Commercial Vehicle Enforcement Facility ("12 CON" Line and "S" Line) DATE : 5/3/2010

Traffic Index (TI) (20-Year)	=	13
R-value of Basement Soil (R_{SUB})	=	10
R-value of Aggregate Subbase (Class 4)(R_{AS})	=	50

STRUCTURAL SECTION CONSISTS OF HMA/LCB/AS (CLASS 4)

a) Total required GE = 0.0032 (TI)(100-R_{SUB})	=	3.74
b) Required GE of HMA and LCB = 0.0032 (TI)(100-R_{AS})	=	2.08
c) 0.4 (step b)+0.2 as SF	=	1.03
d) Actual thickness of HMA (t_{HMA})	=	0.65 (from Table 633.1)
e) GE of actual thicknss of HMA	=	1.09 (from Table 633.1)
f) Add 0.2 to step b	=	2.28
g) Required GE of LCB (step f - step e)	=	1.19
h) Actual thickness of LCB (t_{LCB})	=	0.65 (from Table 633.1)
I) GE of actual thickness of LCB	=	1.24 (from Table 633.1)
j) Required GE of Aggregate Subbase AS (step a - step e - step i)	=	1.41
k) Thickness of AS (Class 4) (rounded)	=	1.45

The structural section:

0.65 Feet HMA (Type A)

0.65 Feet LCB
1.45 Feet AS (Class 4)

2.75 Feet

PAVEMENT DESIGN (ENGLISH)

PROJECT: East Bound I-80 Truck Scales Relocation
LOCATION : I-80 truck scales to SR 12 East connector ramp/ Commercial Vehicle Enforcement Facility ("12 CON" Line & "S" Line)

JOB NO.: 208123.GDR
DATE : 5/3/2010

Traffic Index (TI) (20-Year)	=	13
R-value of Basement Soil (R_{SUB})	=	10

STRUCTURAL SECTION CONSISTS OF FULL HMA (Type A)

a) Total required GE = 0.0032 (TI)(100-R_{SUB})	=	3.74
b) Add 0.1 feet as safety factor to determine total GE for HMA	=	3.84
c) Actual thickness of HMA (t_{HMA})	=	1.70 (from Table 633.1)
d) GE of actual thicknss of HMA	=	3.94 (from Table 633.1)

The structural section:

1.70 Feet HMA (Type A)

PAVEMENT DESIGN (ENGLISH) Sheet 10

PROJECT: Cordelia Truck Scales Relocation Project JOB NO.: 208123.GDR
LOCATION : I-80 truck scales off-ramp & I-80 mainline/I-80 truck scales on-ramp to I-80 ("12 CON" Line) DATE : 5/3/2010

Traffic Index (TI) (20-Year)	=	13
R-value of Basement Soil (R_{SUB})	=	10
R-value of Aggregate Subbase (Class 4)(R_{AS})	=	50

STRUCTURAL SECTION CONSISTS OF HMA/ATPB/LCB/AS (CLASS 4)

a) Total required GE = 0.0032 (TI)(100-R_{SUB})	=	3.74	
b) Required GE of HMA, ATPB and LCB = 0.0032 (TI)(100-R_{AS})	=	2.08	
c) 0.4 (step b)+0.2 as SF	=	1.03	
d) Actual thickness of HMA (t_{HMA})	=	0.55	(from Table 633.1)
e) GE of actual thicknss of HMA	=	0.87	(from Table 633.1)
f) Add 0.2 to step b	=	2.28	
g) Required GE of ATPB and LCB (step f - step e)	=	1.41	
h) Actual thickness of ATPB (t_{ATPB})	=	0.20	
i) GE of actual thickness of ATPB	=	0.28	
j) Required GE of LCB (step g - step i)	=	1.13	
k) Actual thickness of LCB (t_{LCB})	=	0.65	(from Table 633.1)
l) GE of actual thickness of LCB	=	1.24	(from Table 633.1)
m) Required GE of Aggregate Subbase AS (step a -step e -step i -step l)	=	1.35	
n) Thickness of AS (Class 4) (rounded)	=	1.35	

The structural section:

0.55 Feet HMA (Type A)
0.25 Feet ATPB
0.65 Feet LCB
1.00 Feet AS (Class 4)

2.45 Feet

PAVEMENT DESIGN (ENGLISH)

PROJECT: Cordelia Truck Scales Relocation Project JOB NO.: 208123.GDR
LOCATION : Commercial Vehicle Enforcement Facility ("S" Line) DATE : 5/3/2010

Traffic Index (TI) (20-Year)	=	15
R-value of Basement Soil (R_{SUB})	=	10
R-value of Aggregate Subbase (Class 4)(R_{AS})	=	50

STRUCTURAL SECTION CONSISTS OF HMA/LCB/AS (CLASS 4)

a) Total required GE = 0.0032 (TI)(100-R_{SUB})	=	4.32	
b) Required GE of HMA and LCB = 0.0032 (TI)(100-R_{AS})	=	2.40	
c) 0.4 (step b)+0.2 as SF	=	1.16	
d) Actual thickness of HMA (t_{HMA})	=	0.75	(from Table 633.1)
e) GE of actual thicknss of HMA	=	1.23	(from Table 633.1)
f) Add 0.2 to step b	=	2.60	
g) Required GE of LCB (step f - step e)	=	1.37	
h) Actual thickness of LCB (t_{LCB})	=	0.75	(from Table 633.1)
I) GE of actual thickness of LCB	=	1.43	(from Table 633.1)
j) Required GE of Aggregate Subbase AS (step a - step e - step i)	=	1.66	
k) Thickness of AS (Class 4) (rounded)	=	1.70	

The structural section:

0.75 Feet HMA (Type A)

0.75 Feet LCB
1.70 Feet AS (Class 4)

3.20 Feet

PAVEMENT DESIGN (ENGLISH) Sheet 12

PROJECT: Cordelia Truck Scales Relocation Project JOB NO.: 208123.GDR
LOCATION : Commercial Vehicle Enforcement Facility ("S" Line) DATE : 5/3/2010

Traffic Index (TI) (20-Year)	=	15
R-value of Basement Soil (R_{SUB})	=	10

STRUCTURAL SECTION CONSISTS OF FULL HMA (Type A)

a) Total required GE = 0.0032 (TI)(100-R_{SUB})	=	4.32
b) Add 0.1 feet as safety factor to determine total GE for HMA	=	4.42
c) Actual thickness of HMA (t_{HMA})	=	2.00 (from Table 633.1)
d) GE of actual thicknss of HMA	=	4.55 (from Table 633.1)

The structural section:

2.00 Feet HMA (Type A)

Table 633.1
Gravel Equivalents of Structural Layers (ft)

	HMA[1],[2]											Base and Subbase					
	Traffic Index (TI)																
	5.0 & below	5.5 6.0	6.5 7.0	7.5 8.0	8.5 9.0	9.5 10.0	10.5 11.0	11.5 12.0	12.5 13.0	13.5 14.0	14.5 15.0	HMAB; LCB	CTPB; CTB (Cl. A)	ATPB	CTB (Cl. B)	AB	AS
Actual HMA Thickness	G_f (varies with TI and HMA thickness greater than 0.5 ft)											G_f (constant)					
(ft)	2.54	2.32	2.14	2.01	1.89	1.79	1.71	1.64	1.57	1.52	1.46	1.9	1.7	1.4	1.2	1.1	1.0
0.10	0.25	0.23	0.21	0.20	0.19	0.18	0.17	0.16	0.16	0.15	0.15	--	--	--	--	--	--
0.15	0.38	0.35	0.32	0.30	0.28	0.27	0.26	0.25	0.24	0.23	0.22	--	--	--	--	--	--
0.20	0.5.	0.46	0.43	0.40	0.38	0.36	0.34	0.33	0.31	0.30	0.29		-	--		--	--
0.25	0.63	0.58	0.54	0.50	0.47	0.45	0.43	0.41	0.39	0.38	0.37	--	--	0.35	--	--	--
0.30	0.76	0.69	0.64	0.60	0.57	0.54	0.51	0.49	0.47	0.45	0.44	--	--	0.42	--	--	--
0.35	0.89	0.81	0.75	0.70	0.66	0.63	0.60	0.57	0.55	0.53	0.51	0.67	0.60	0.49	0.42	0.39	0.35
0.40	1.01	0.93	0.86	0.80	0.76	0.72	0.68	0.65	0.63	0.61	0.59	0.76	0.68	0.56	0.48	0.44	0.40
0.45	1.14	1.04	0.96	0.90	0.85	0.81	0.77	0.74	0.71	0.68	0.66	0.86	0.77	0.63	0.54	0.50	0.45
0.50	1.27	1.16	1.07	1.00	0.94	0.90	0.85	0.82	0.79	0.76	0.73	0.95	0.85	0.70	0.60	0.55	0.50
0.55	1.41	1.29	1.19	1.12	1.05	1.00	0.95	0.91	0.87	0.84	0.81	1.05	0.94	0.77	0.66	0.61	0.55
0.60	1.58	1.45	1.34	1.25	1.18	1.12	1.07	1.02	0.98	0.95	0.91	1.14	1.02	0.84	0.72	0.66	0.60
0.65	1.76	1.61	1.49	1.39	1.31	1.25	1.19	1.14	1.09	1.05	1.02	1.24	1.11	0.91	0.78	0.72	0.65
0.70	--	1.78	1.64	1.54	1.45	1.38	1.31	1.26	1.21	1.16	1.12	1.33	1.19	--	0.84	0.77	0.70
0.75	--	1.95	1.80	1.69	1.59	1.51	1.44	1.38	1.32	1.27	1.23	1.43	1.28	--	0.90	0.83	0.75
0.80	--	2.12	1.96	1.84	1.73	1.64	1.57	1.50	1.44	1.39	1.34	1.52	1.36	--	0.96	0.88	0.80
0.85	--	--	2.13	1.99	1.88	1.78	1.70	1.63	1.56	1.51	1.46	1.62	1.45	--	1.02	0.94	0.85
0.90	--	--	2.30	2.15	2.03	1.92	1.83	1.76	1.69	1.63	1.57	1.71	1.53	--	1.08	0.99	0.90
0.95	--	--	--	2.31	2.18	2.07	1.97	1.89	1.81	1.75	1.69	1.81	1.62	--	1.14	1.05	0.95
1.00	--	--	--	2.47	2.33	2.21	2.11	2.02	1.94	1.87	1.81	1.90	1.70	--	1.20	1.10	1.00
1.05	--	--	--	2.64	2.49	2.36	2.25	2.16	2.07	2.00	1.93	2.00	1.79	--	1.26	1.16	1.05
1.10	--	--	--	--	2.65	2.51	2.40	2.29	2.20	2.12	2.05	--	--	--	--	--	--
1.15	--	--	--	--	2.81	2.67	2.54	2.43	2.34	2.25	2.18	--	--	--	--	--	--
1.20	--	--	--	--	2.98	2.82	2.69	2.58	2.48	2.39	2.30	--	--	--	--	--	--
1.25	--	--	--	--	--	2.98	2.84	2.72	2.61	2.52	2.43	--	--	--	--	--	--
1.30	-	-	-	-	--	3.14	2.99	2.87	2.75	2.65	2.56	-	-		--	-	
1.35	--	--	--	--	--	3.30	3.15	3.01	2.90	2.79	2.70	--	--	--	--	--	--
1.40	--	--	--	--	--	--	3.31	3.16	3.04	2.93	2.83	--	--	--	--	--	--
1.45	--	--	--	--	--	--	3.46	3.32	3.19	3.07	2.97	--	--	--	--	--	--
1.50	--	--	--	--	--	--	3.62	3.47	3.33	3.21	3.10	--	--	--	--	--	--
1.55	--	--	--	--	--	--	--	3.62	3.48	3.36	3.24	--	--	--	--	--	--
1.60	--	--	--	--	--	--	--	3.78	3.63	3.50	3.38	--	--	--	--	--	--
1.65	--	--	--	--	--	--	--	3.94	3.79	3.65	3.52	--	--	--	--	--	--
1.70	--	--	--	--	--	--	--	--	3.94	3.80	3.67	--	--	--	--	--	--
1.75	--	--	--	--	--	--	--	--	4.09	3.95	3.81	--	--	--	--	--	--
1.80	--	--	--	--	--	--	--	--	4.25	4.10	3.96	--	--	--	--	--	--
1.85	--	--	--	--	-	--	--	--	--	4.25	4.10	--		--	--		--
1.90	--	--	--	--	--	--	--	--	--	4.40	4.25	--	--	--	--	--	--
1.95	--	--	--	--	--	--	--	--	--	4.56	4.40	--	--	--	--	--	--
2.00	--	--	--	--	--	--	--	--	--	--	4.55	--	--	--	--	--	--

Notes:

(1) Open Graded Friction Course (conventional and rubberized) is a non-structural wearing course and provides no structural value.

(2) Top portion of HMA surface layer (maximum 0.20 ft.) may be replaced with equivalent RAC-G thickness. See Topic 631.3 for additional details.

Table 623.1G
Rigid Pavement Catalog (Inland Valley, Type II Subgrade Soil) (1), (2), (3), (4)

TI	Lateral Support (ft)				No Lateral Support (ft)			
< 9	0.70 JPCP	0.70 JPCP	0.75 JPCP	0.70 JPCP	0.75 JPCP	0.75 JPCP	0.80 JPCP	0.75 JPCP
	0.35 LCB	0.35 HMA-A	1.00 AB	0.35 ATPB	0.35 LCB	0.35 HMA-A	1.00 AB	0.35 ATPB
	0.50 AS	0.50 AS		0.80 AS	0.50 AS	0.50 AS		0.80 AS
9.5 to 10	0.70 JPCP	0.70 JPCP	0.80 JPCP	0.75 JPCP	0.80 JPCP	0.85 JPCP	0.90 JPCP	0.85 JPCP
	0.35 LCB	0.35 HMA-A	1.00 AB	0.35 ATPB	0.35 LCB	0.35 HMA-A	1.00 AB	0.35 ATPB
	0.50 AS	0.50 AS		0.80 AS	0.50 AS	0.50 AS		0.80 AS
10.5 to 11	0.75 JPCP	0.75 JPCP	0.85 JPCP		0.85 JPCP	0.90 JPCP	0.95 JPCP	
	0.40 LCB	0.40 HMA-A	1.30 AB		0.40 LCB	0.40 HMA-A	1.30 AB	
	0.60 AS	0.60 AS			0.60 AS	0.60 AS		
11.5 to 12	0.85 JPCP	0.85 JPCP	0.80 CRCP		0.95 JPCP	0.95 JPCP	0.85 CRCP	
	0.40 LCB	0.40 HMA-A	0.40 HMA-A		0.40 LCB	0.40 HMA-A	0.40 HMA-A	
	0.60 AS	0.60 AS	0.60 AS		0.60 AS	0.60 AS	0.60 AS	
12.5 to 13	0.85 JPCP	0.90 JPCP	0.80 CRCP		1.00 JPCP	1.00 JPCP	0.90 CRCP	
	0.50 LCB	0.50 HMA-A	0.50 HMA-A		0.50 LCB	0.50 HMA-A	0.50 HMA-A	
	0.70 AS	0.70 AS	0.70 AS		0.70 AS	0.70 AS	0.70 AS	
13.5 to 14	0.95 JPCP	0.95 JPCP	0.85 CRCP		1.05 JPCP	1.05 JPCP	0.95 CRCP	
	0.50 LCB	0.50 HMA-A	0.50 HMA-A		0.50 LCB	0.50 HMA-A	0.50 HMA-A	
	0.70 AS	0.70 AS	0.70 AS		0.70 AS	0.70 AS	0.70 AS	
14.5 to 15	1.00 JPCP	1.00 JPCP	0.90 CRCP		1.15 JPCP	1.15 JPCP	1.00 CRCP	
	0.50 LCB	0.50 HMA-A	0.50 HMA-A		0.50 LCB	0.50 HMA-A	0.50 HMA-A	
	0.70 AS	0.70 AS	0.70 AS		0.70 AS	0.70 AS	0.70 AS	
15.5 to 16	1.05 JPCP	1.05 JPCP	0.95 CRCP		1.20 JPCP	1.20 JPCP	1.05 CRCP	
	0.50 LCB	0.50 HMA-A	0.50 HMA-A		0.50 LCB	0.50 HMA-A	0.50 HMA-A	
	0.70 AS	0.70 AS	0.70 AS		0.70 AS	0.70 AS	0.70 AS	
16.5 to 17	1.10 JPCP	1.10 JPCP	0.95 CRCP		1.25 JPCP	1.25 JPCP	1.10 CRCP	
	0.50 LCB	0.50 HMA-A	0.50 HMA-A		0.50 LCB	0.50 HMA-A	0.50 HMA-A	
	0.70 AS	0.70 AS	0.70 AS		0.70 AS	0.70 AS	0.70 AS	
> 17	1.15 JPCP	1.15 JPCP	1.00 CRCP		1.30 JPCP	1.30 JPCP	1.10 CRCP	
	0.50 LCB	0.50 HMA-A	0.50 HMA-A		0.50 LCB	0.50 HMA-A	0.50 HMA-A	
	0.70 AS	0.70 AS	0.70 AS		0.70 AS	0.70 AS	0.70 AS	

Notes:

(1) Thicknesses shown for JPCP are for doweled pavement only. The thickness shown in these tables are not valid for nondoweled JPCP.

(2) Includes 0.03 ft sacrificial wearing course for future grinding of JPCP/CRCP.

(3) Portland cement concrete may be substituted for LCB when justified for constructibility or traffic handling. If Portland cement concrete is used in lieu of LCP, it must be placed in a separate lift than JPCP and must not be bonded to the JPCP.

(4) If ATPB is needed for TIs > 10.0 to perpetuate an existing treated permeable layer, place the ATPB between the surface layer (JPCP or CRCP) and the base layer. No deduction is made to the thickness of the base and subbase layers on account of the ATPB.

Legend:

JPCP = Jointed Plain Concrete Pavement
CRCP = Continuously Reinforced Concrete Pavement
LCB = Lean Concrete Base
HMA-A = Hot Mix Asphalt (Type A)
ATPB = Asphalt Treated Permeable Base
AB = Class 2 Aggregate Base
AS = Class 4 Aggregate Subbase
TI = Traffic Index

APPENDIX D

HDR Engineering, Inc.
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I-80 EB CORDELIA CVEF RELOCATION PROJECT

Designer's Response to 65% PS&E Review Comments

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I-80 EB Cordelia CVEF Relocation 65% Comments

Global Comment No.	Reviewer	Reviewer Comment No.	Sheet Reference	Subject	Comment	Response [2] Code	Type [1]	Response
DES Geotechnical Design-West								
119	V. Khata-O-Khotan	1	Foundation Plans	GEOTECH	In the foundation plan, pile data tables are missing for the Suisun Creek Bridge and the retaining walls 2 and 3. Please provide the table along with calculations.	A	M	Pile Data Tables have been added to the foundation plans. See Appendix C of the Foundation Report for pile capacity calculations.
120	V. Khata-O-Khotan	2	Foundation Plans	GEOTECH	Bench marks are missing from the foundation plans.	A	M	Bench marks data have been added to the foundation plans.
121	V. Khata-O-Khotan	3	GDMR: Section 8.3.1	GEOTECH	Geotechnical Design and Materials Report: How did you come up with the 30 day settlement period for the 28ft high embankment? Provide calculations for the time estimate.	A	D	Comment will be incorporated. Calculations for the time estimate will be provided.
122	V. Khata-O-Khotan	4	GDMR: Section 8.7.2.2	GEOTECH	Geotechnical Design and Materials Report: Provide calculations for the axial pile capacity estimate.	A	M	Based on the vertical load and the length of the 5-foot diameter CIDH concrete pile, the pile vertical capacities developed from the frictional resistance along the pile length of the overhead sign post should be acceptable as discussed in the Geotechnical Design and Materials Report (GDMR). Calculations for axial pile capacity for some of the overhead sign posts will be provided.
123	A. Sojourner	5	GDMR: Introduction	GEOTECH	Geotechnical Design and Materials Report: The first paragraph of the introduction contains cut and paste text that has not been modified to this report.	A	M	Comment not clear. It was found that there is a typo of the plate no. for the "65% Submittal - Title and Location Map". It should be Plate 1A instead of Plate 1B
124	A. Sojourner	6	GDMR: Section 5.1	GEOTECH	Geotechnical Design and Materials Report Drilling and Sampling: Why are there two table with the same data?	A	D	Comment will be incorporated.
125	A. Sojourner	7	GDMR: Section 7.2	GEOTECH	Geotechnical Design and Materials Report Subsurface Soil Conditions: Give the depths a which lean clay and loose sand were found. Where is the water table in relation to these layers? Summarize all relevant information	A	M	Comment will be incorporated. The information of the depth for the soft clays, loose sands and depth of groundwater will be summarized in the table.
126	V. Khata-O-Khotan	8	Foundation Report Section 9.3	GEOTECH	Section 9.3 of the report states that a reinforced concrete box culvert of 40 by 16.5 ft is recommended per Caltrans Standard Plans, D80. The maximum size of the culvert per D80 is 14 by 14ft. Thus a special design is required for boxes greater than proposed (see note 3 in D80).	A	M	Comment will be incorporated. The sentence of using Caltrans Standard Plans will be deleted and rewritten to use the special design.
127	A. Sojourner	9	Foundation Report	GEOTECH	The report should be revised to match to the Caltrans Foundation Report guidelines (October 2009). The following sections of the Caltrans Foundation Report guidelines are missing from the report or incomplete: Section 3.1 (Statement of supercession is missing) Section 3.2 (datum is not included), Section 3.7, No scour elevation is provided. If scour is not an issue say so. Section 3.13 Construction considerations are not enumerated or discussed.	A	M	Comment will be incorporated to address Sections 3.2, 3.7, 3.13 of Caltrans Foundation Report guidelines. Section 3.1 "Statement of supersession is missing" needs to be clarified. The comment is not clear.
128	A. Sojourner	10	Foundation Report Section 2	GEOTECH	Section 2 Purpose and Scope: the last paragraph does not pertain to purpose and scope.	A	M	Comment will be incorporated.
129	A. Sojourner	11	Foundation Report Section 6	GEOTECH	Section 6 The Foundation Report is included in the contract documents and may be used by the contractor as a basis for construction claims. The interpretation of the site geology (Section 7) and borings (Section 6) are inadequate contract documents. The interpretation of the boring logs is superficial and inconsistent with the boring logs themselves.	A	M	Comment will be incorporated. Section 6 for the subsurface soil conditions and Section 7 for the site geology will be elaborated.
130	A. Sojourner	12	Foundation Report Section 7	GEOTECH	This section does not describe the site geology beyond a cursory summary of the geologi map, nor does it conform to Caltrans Foundation Report guidelines for Section 3.6. A sketch map of the area with surficial geology, topography, and artificial fill areas would be ideal and could be used as a reference for construction observers. Include discussions of all points in the Foundation Report Guidelines Section 3.6.	A	M	Comment will be incorporated.
131	A. Sojourner	13	Foundation Report Section 8.1	GEOTECH	The report was written in November 2009 but does not use the Caltrans seismic design standards that went into effect August 2009. The entire section needs to be rewritten. Cone penetrometer borings should be used to develop V_{s30} and ARS curves.	A	M	Comment will be incorporated. The section will be rewritten based on the new 2007 Caltrans Fault Data Set and the 2009 Caltrans Seismic Design Criteria (SDC).
132	A. Sojourner	14	Foundation Report Section 8.2	GEOTECH	The liquefaction potential section is superficial. It does not contain any more information than a typical Preliminary Foundation Report. Summarize the CPT logs and discuss in detail the reasons you consider liquefaction potential low. The summary of subsurface soils is superficial.	A	M	Comment will be incorporated. More discussion of the "liquefaction potential" at the project site will be provided in this section.
133	A. Sojourner	15	Foundation Report	GEOTECH	We would like to review the report before it is finalized. Please include a copy of these comments and your response in the Appendix of the revised report.	A	M	Comment will be incorporated. A report will be delivered to Caltrans to review before it is finalized.

Note 1: Comment Type - (M) Mandatory, (O)Opinion, (D) Discussion
Note 2: Response Code - (A) Incorporated, (B) No change, (C) Data/Coordination required, will be addressed in next submittal

HDR Engineering Inc.
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Walnut Creek, CA 94596

I-80 EB Cordelia CVEF Relocation 65% Comments

Global Comment No.	Reviewer	Reviewer Comment No.	Sheet Reference	Subject	Comment	Response (2) Code	Type (1)	Response
231	K. Heung	1		MATR	Please further investigate and provide more information if the anticipated seasonal groundwater fluctuation will adversely affect the construction of the pavements. [Pawan Gupta: The GD&MR states that seasonal groundwater fluctuation is anticipated. Please note that this is a complex geotechnical issue. As I recommended to you previously, pleas seek review/comment from Geotechnical Design West, Caltrans if "the project limits have problems with groundwater as stated in Question 11 of the Pavement Strategy Checklist"	A	M	Comment will be incorporated. Mitigation measure for seasonal groundwater fluctuation will be recommended in the GDMR.
232	K. Heung	2	GD&MR	MATR	Please perform corrosion investigation by using the AltPipe Program and provide the results of the investigation and recommendations for Alternative Pipe Culverts for use in the project.	A	M	AltPipe Program will be performed. The results and recommendations based on the results will be included in the GDMR
233	K. Heung	3	GD&MR Typical Pavement Structural Sections shown on Tables 6A through 6E	MATR	Based on the laboratory test results (Plate Nos. B-2A and B-2B in Appendix B), 16 out of 18 of the results indicate that the Plasticity Index (PI) is greater than 12. According to Index 314.4 of the Highway Design Manual (HDM), "with an expansive subgrade (PI greater than 12), special engineering or construction considerations will be required". [Pawan Gupta: as I recommended to you previously, please seek review/comment from Geotechnical Desig West, Caltrans if there are "highly expansive basement soils" present as stated in Question 9 of the Pavement Strategy Checklist.]	A	M	Comment will be incorporated. Mitigation measure for "expansive subgrade" will be recommended in the GDMR.
234	K. Heung	4	GD&MR Typical Pavement Structural Sections shown on Tables 6A through 6E	MATR	Since the R-value test results shown on Table 5 (page 32) are less than 20, please consider the requirement of placing Subgrade Enhancement Geotextile (SEG) as stated i Index 614.5 of the HDM.	C	M	Based our previous experience with Caltrans projects, we were advised by the Caltrans reviewers that Subgrade Enhancement Geotextile is needed only when compaction is a problem during construction due to saturated soft/loose soils for the pavement subgrade.
235	K. Heung	5	GD&MR Typical Pavement Structural Sections shown on Tables 6A through 6E	MATR	The final pavement structural section used for the project should be in accordance with the approved LCCA Report by Design North Counties, Caltrans. [Pawan Gupta: Please refer to our memo to you dated Oct. 22, 2009 regarding our comments on the LCCA Report].	A	M	Agreed.
236	K. Heung	6	GD&MR Typical Pavement Structural Sections shown on Tables 6A through 6E	MATR	For rigid pavement structural sections, the thickness of LCB and HMA (A) should be changed in accordance with the Pavement Policy Bulletin PPB 09-01 for Rigid Pavement Base Design dated August 27, 2009.	A	M	Will revise.
237	K. Heung	7	GD&MR	MATR	Referring to the "Quality Requirements" Table on Page 41, what is the reason for specifying the "Operation Range" for "Resistance (R-value)"?	A	D	Comment will be incorporated.
238	K. Heung	8	GD&MR Appendix C-Structural Pavement Design	MATR	It appears that the Structural Pavement Design on pages 19 through 24 is for Commercia Vehicle Enforcement Facility (Table 6E). Please make the appropriate change.	A	M	Comment will be incorporated.
239	K. Heung	9	GD&MR Appendix C-Structural Pavement Design	MATR	Please change the AS(4) thickness in accordance with the design results on page 27.	A	M	Comment will be incorporated.
240	K. Heung	10		MATR	Please investigate if the construction of the new pavement structural sections will obstruc the construction of the soil reinforcements of the MSE walls.	A	D	The MSE wall reinforcement is designed to not interfere with pavement structura section
241	K. Heung	11	X-1	MATR	The Pavement Structural Sections (PSSs) used for the project should be in accordance with the recommendations of the GD&MR and LCCA Report accepted by Design North Counties, Caltrans.	a	M	Agreed.
242	K. Heung	12	X-1	MATR	Please change the LCB thickness of the new rigid PSS Types 1, 2, 3, and 4 from "0.5"" to "0.35"" in accordance with the Pavement Policy Bulletin PPB 09-01 for Rigid Pavement Base Design dated August 27, 2009.	A	M	Will revise.
243	K. Heung	13	X-1	MATR	Please change "HMA (RHMA-G)" to "RHMA-G" of PSS Types 6, 7, and 8.	A	M	Will revise.
244	K. Heung	14	X-1	MATR	Open Graded Friction Course (OGFC) is a non-structural wearing course and provides no structural value. The 0.10' OGAC in PSS Types 7 and 8 cannot replace the same thickness of RHMA-G or HMA(A). Please make the appropriate change.	B	M	The RHMA-O is proposed to match adjacent OGAC. It does not contribute to th strength of the pavement structural section and was added to the full section.
245	K. Heung	15	X-1	MATR	It appears that PSS Types 4 and 5 have not been recommended either by the GD&MR or by LCCA. Please clarify	A	D	These pavements are internal to the CVEF inspection site. Section 5 is also proposed for MVP areas. Discussion added to the GDMR
246	K. Heung	16	X-3	MATR	"L" Sta. 198+88.36 to Sta. 210+ 14.55 Please justify if PSS Type 8 is appropriate for the widening as shown.	B	D	The existing pavement section contains an ATPB layer. The proposed pavement (8) also contains an ATPB layer at relatively the same depth so as not to impede the flow of the existing structural section drainage .
247	K. Heung	17	X-3	MATR	"L" Sta. 198+88.36 to Sta. 210+ 14.55 Please show the location of the existing edge drain system and indicate if it is to be removed.	A	D	Will incorporate
248	K. Heung	18	X-3	MATR	Please change "Sub grade Drain Detail" to "Structural Section Drainage System Details" and change the length of the "Filter Fabric" in accordance with Standard Plan D99A.	A	M	Will revise
249	K. Heung	19	X-4 and X-8	MATR	Please justify if PSS Type 4 is appropriate for the widening as shown. (referring to CVEF site.)	B	D	See approved LCCA

Note 1: Comment Type - (M) Mandatory, (O)Opinion, (D) Discussion
Note 2: Response Code - (A) Incorporated, (B) No change, (C) Data/Coordination required, will be addressed in next submittal

FOUNDATION REPORT

SUISUN CREEK BRIDGE
(BRIDGE NO. 23-0240S)
SOLANO COUNTY, CALIFORNIA
04-Sol-80 PM 13.3/15.7 EA 04-0A5351

For

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December 15, 2010

Job No. 208123.SCB

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FOUNDATION REPORT
SUISUN CREEK BRIDGE
(BRIDGE NO. 23-0240S)
SOLANO COUNTY, CALIFORNIA
04-Sol-80 PM 13.3/15.7 EA 04-0A5351

1. INTRODUCTION

This report presents the results of our geotechnical engineering investigation for the "Suisun Creek Bridge" at Route 80, hereinafter referred to as "PROJECT", in Solano County, California. The work was performed in general accordance with the scope of work outlined in our proposal to HDR Engineering Inc. (hereinafter referred to as Designer). The general location of the project site is shown on the Project Location Map, Plate 1.

The geotechnical recommendations presented in this report are intended for design input and are not intended to be used as specifications. In addition, the data provided in this report including these geotechnical recommendations should not be used for bidding purposes or directly for construction cost estimates. If the report is provided as a reference document, any interpretation of the data and recommendations should be sole responsibility of the user and PARIKH Consultants, Inc. (PARIKH) shall not be liable for any consequences.

2. PURPOSE AND SCOPE

The purpose of this investigation was to evaluate the general subsurface conditions at the project site, to evaluate their engineering properties, and to provide geotechnical recommendations for the foundation design of the proposed project.

The scope of work performed for this investigation included a review of the readily available soils and geologic literature pertaining to the site including available as-built Log of Test Borings (LOTB) for the Suisun Creek (Bridge No. 23-07), Suisun Creek Bridge Widening (Br. No. 23-07 R/L) and Suisun Creek Bridge Widen (Br. No. 23-0007R); site reconnaissance; obtaining representative soil samples and logging soil materials encountered in one Cone Penetration Test (CPT) and one exploratory boring; laboratory testing of the collected soil samples, performing engineering analyses based on the field and laboratory data, and preparation of this foundation report for the bridge structure (Br. No. 23-0240S).

3. EXISTING BRIDGE STRUCTURES AND PROPOSED CONSTRUCTION

Existing Bridge Structures

The "Suisun Creek Bridge" is located between the existing "Cordelia Truck Inspection Station" to the west and the proposed relocated "Commercial Vehicle Enforcement Facility" to the east. The existing Suisun Creek Bridge (Bridge No. 23-0007 R/L) is a 72 feet long, 3-span structure that was constructed in 1950. The bridge was widened in the median (which connects the eastbound and westbound structures) and along the outside lane of eastbound Interstate 80 (I-80) to the total width of approximately 173 feet in 1960.

The Suisun Creek Bridge (Widen) (Bridge No. 23-0007) is the widening of the existing bridge structure along the eastbound I-80. This structure is under a separate construction contract. Both the Suisun Creek Bridge and Suisun Creek Bridge (Widen) are supported on spread footings with seal courses at the abutments and piers.

Proposed Construction

The proposed Suisun Creek Bridge will be constructed on the east side of the existing bridge for the eastbound I-80 off-ramp to the relocated Commercial Vehicle Enforcement Facility. The proposed Suisun Creek Bridge will be a single-span bridge structure with a width of 38 feet 10 inches and a length of 80 feet along the "Control Line".

The datum used to reference the elevations in the report is based on the California Coordinate System of 1983, Zone 2, 1991, 35 CA-HPGN.

4. SITE CONDITIONS

The existing Suisun Creek Bridge is located along I-80 between Dan Wilson Creek to the west and existing eastbound truck scales inspection station to the east. The cross section of Suisun Creek is roughly trapezoidal. There are man-made levees on both sides of the creek. The banks of Suisun Creek adjacent to the Suisun Creek Bridge along I-80 are heavily vegetated. The roadway surface in the vicinity of Suisun Creek Bridge is considered relatively level. The general existing elevations at the proposed location of the bridge structure are Elev. + 34.5 feet to Elev. +38.7 feet.

5. FIELD EXPLORATION AND LABORATORY TESTING

As-Built Data Review

Based on the as-built LOTB (1958), Borings B-1 and B-3 were drilled and three cone penetration tests were performed at B-2, B-4 and B-5 in January 1959. The depths of the Cone Penetration Tests (CPT) were between 40 feet and 50 feet. The depths of the soil borings were generally between 80 feet and 100 feet. The minimum bottom elevation of the as-built soil borings is approximately -62 feet.

Boring 06-B-13 (2006) was drilled in March 2006 for the field investigation of the Suisun Creek Bridge (Widen). The boring was drilled to the depth of approximately 91.5 feet and terminated at Elev. -52 feet.

Field Exploration in January 2009

Boring R-09-SC-001 was drilled on the south side and a cone penetration test CPT-09-SC-001 was performed on the north side of Suisun Creek for the field exploration of the proposed bridge structure in January 2009. Both the boring and the CPT were drilled and penetrated to the depth of approximately 100 feet.

The approximate locations of the borings are shown on the Site Plan, Plate 2. The details of the field exploration are included in Appendix A. The descriptions of the materials encountered in the field exploration are shown on the LOTB in Appendix A. The relevant as-built boring information available in the vicinity of the project is included in Appendix A.

Laboratory tests were performed on selected soil samples collected during field exploration to evaluate the physical and engineering properties of the subsurface soils. The laboratory test methods and test results are presented on plates included in Appendix B. Laboratory test results for moisture content, dry unit weight, unconfined compressive strength, Plasticity Index and grain size classification of the soil samples are presented on the LOTB in Appendix A.

It should be noted that the descriptions of the soils encountered and relevant boring information presented on the LOTB depict subsurface conditions only at the locations indicated on the plan and on the particular date noted on the LOTB. Because of the variability from place to place within soil/rock in general, subsurface conditions at other locations may differ from conditions occurring at the boring locations explored. The abrupt stratum changes shown on the logs may be

gradational and relatively minor changes in soil types within a stratum may not be noted on the logs due to field limitations. Also, the passage of time may result in a change in the soil conditions at these locations due to environmental changes.

6. SUBSURFACE CONDITIONS

Based on the as-built borings, the subsurface soil conditions at the project site generally consist of loose to medium dense sand (in as-built Borings B-1 and B-3) and soft to very stiff clay (in as-built Boring 06-B-13), underlain by stiff to very stiff silty clay/medium dense to dense sand and gravel. Consistent relatively thin (approximately 5 feet) layers of medium dense sand were recorded between Elev. +17 feet and +24 feet (in as-built Borings B-1 and B-3) and Elev. +3 feet and –9 feet (in as-built Borings B-1, B-3 and 06-B-13).

Based on Boring R-09-SC-001 and CPT-09-SC-001, the subsurface soil conditions at the boring locations generally consist of stiff to very stiff lean clays, underlain by alternate layers of very stiff and hard lean clay layers. A layer of silt (approximately 15 feet thick) of low plasticity was encountered between approximate depths of 32 feet and 47 feet. Detail subsurface information is depicted in the LOTB sheets. Subsurface soil conditions at the soil boring and CPT locations are described below.

Boring R-09-SC-001

- Approximately 33 feet of stiff to very stiff lean clay, underlain by approximately 15 feet of very stiff to hard low plasticity silt, underlain by very stiff to hard lean clays.

CPT-09-SC-001

- Approximately 35 feet of interbedded layers of stiff lean clay and medium dense to dense sands, underlain by approximately 15 feet of very stiff to hard low plasticity silt, underlain by medium dense to dense sands and very stiff lean clay.

Groundwater was recorded at approximate Elevation +5.5 feet (approximately ±35 feet deep below ground surface) in the soil borings in 1959 and at approximate Elevation +29.5 feet in Boring 06-B-13 (2006). The CPT (B-2) encountered groundwater level at Elev. +28 feet. Groundwater was measured at Elevation +20.0 feet (the depth of 13 feet below existing ground surface) during drilling for R-09-SC-001. The groundwater level is anticipated to vary with the

passage of time due to seasonal groundwater fluctuations, water elevations in the nearby creeks, surface and subsurface flows, ground surface run-off, and other factors that may not be present at the time of the investigation.

Due to limitations inherent in geotechnical investigations, it is neither uncommon to encounter unforeseen variations in the subsurface soil conditions during construction nor is it practical to determine all such variations during an acceptable program of drilling and sampling for a project of this scope. Such variations, when encountered, generally require additional engineering services to attain properly constructed project. We, therefore, recommend that a contingency fund be provided to accommodate any additional charges resulting from technical services that may be required during construction. Our recommendations in this report are based on the above information. Any major deviation should be reported to this office for consideration.

7. GEOLOGY

General geologic features pertaining to the site were evaluated by referring to the published "Geologic Map of the Fairfield South 7.5' Quadrangle, Solano County, California" by S.P. Bezore, D.L. Wagner, and J.M. Sowers; 1998 (California Division of Mines and Geology).

Based upon the published geologic map (see Plate No. 3A), the project site is located on a broad, nearly level alluvial plain underlain by an unknown thickness of Holocene-age alluvial fan deposits (map symbol "Qhf") that is crossed by Holocene-age levee deposits ("Qhl") along both sides of streams which flow from north to south and contain young stream channel deposits (Qhc"). The fan deposits consist of sand, gravel, silt, and clay that are moderately to poorly - sorted. The levee deposits consist of silt, sand, and clay. The western edge of the levee deposits that is situated along the western side of Suisun Creek is located approximately 200 feet west of the western end of the proposed bridge. The eastern edge of the levee deposits that is situated along the eastern side of Suisun Creek is located approximately 500 feet east of the eastern end of the proposed bridge. The western and eastern edges of stream channel deposits depicted on the published geologic map appear to be shifted approximately 60 to 100 feet to the east of the channel's actual location. (It is not unusual for such "mis-locations" to be present in maps based upon USGS topographic contours which have an accuracy of plus or minus 40 feet.) We have added blue lines to Plate No. 3A to indicate the inferred stream channel based upon the site

topographic contours.

Based upon the site topographic contours, we infer that artificial fill forms an approximately 5-foot thick embankment beneath Highway 80 that rests upon the alluvial fan deposits. The southern edge of the fill is approximately 50 feet north of the northern edge of the proposed bridge. (See Plate No. 3B.)

Previously drilled borings and January 2009 field explorations (borings and Cone Penetrometer Test) revealed that the young, poorly consolidated sediments that form the alluvial plain are potentially subject to settlement under additional load, long-term subsidence, and liquefaction in the event of a strong earthquake. Discussion of the effects of these potential hazards could have on the proposed bridge structure and recommended mitigation measures are included in other sections of this report.

8. EARTHQUAKE CONSIDERATIONS

8.1 Seismic Sources

The project site is located in a seismically active part of northern California. Seismic activity may result in geological and seismic hazards including seismically induced fault displacement and rupture, ground shaking, liquefaction, lateral spreading, landslides, avalanches, and structural hazards.

Faults in the vicinity of the project site with a moderate to high potential for surface rupture include the Cordelia Fault and Green Valley Fault. These faults are capable of producing earthquakes, and may cause strong ground shaking at the site. The attached Fault Map (Plate 4) presents the locations of the fault systems relative to the project site.

The Fault Map has been prepared from the Caltrans Seismic Hazard Map (Mualchin, 1996) and presents the maximum credible earthquake magnitudes for the fault systems and the anticipated peak bedrock accelerations at various locations due to seismic activity in the area.

Maximum Credible Earthquake magnitudes for some of the major faults in the area determined by Mualchin (California Seismic Hazard Map 1996) are summarized in Table 1

below. These Maximum Credible Earthquake magnitudes represent the largest earthquakes that could occur on the given fault based on the current understanding of the regional tectonic structure.

TABLE 1: EARTHQUAKE DATA

Fault	Estimated Distance from Project Site (Mile)	Maximum Credible Earthquake (MCE)	Peak Bedrock Acceleration (PBA) (g)	Peak Ground Acceleration (PGA) (g)
Cordelia Fault CDA (strike-slip)	1.3	6.5	0.6	0.60
Green Valley Fault GVY (strike-slip)	2.9	6.75	0.5	0.55
Vaca Fault Zone VME (unpublished)	6.1	6.75	0.4	0.44

8.2 Seismic Parameters

Caltrans has updated the 1996 Seismic Hazard map with the new 2007 Caltrans Deterministic PGA Map and the Caltrans ARS Online (Ver. 1.0.4) for the development of response spectra for design. Based on Caltrans Memorandum subjected "Implementation of Caltrans 2009 Seismic Design Procedure", it is stated that *"Effective September 30, 2009, all projects without previous Type Selection approval shall be designed in accordance with the 2007 Caltrans Fault Data Set and the 2009 Caltrans Seismic Design Criteria (SDC)"*. Since the Type Selection for this bridge structure was approved on July 2, 2009, therefore Caltrans 1996 map was used to develop the ARS design curve in this foundation report.

According to Caltrans Guidelines for Structures Foundation Report (March 2006), the value of PBA (for a specific project site) from the seismic hazard map should be verified with that calculated using the attenuation relation by Sadigh et al (1997). Based on attenuation relation by Sadigh, the maximum PBA anticipated at the project site is 0.6 g.

Based on the available boring information in the vicinity of the project site, the subsurface soil conditions at the project site generally match the criteria for Soil Type D, as per Caltrans Seismic Design Criteria (Version 1.4, June 2006). Based on Caltrans Seismic Design Criteria and the above information, the seismic design criteria are as follows:

1. Closest Distance to Fault = 1.3 miles
2. Peak Bedrock Acceleration = 0.6 g

3. ARS Design Curve = Caltrans Seismic Design Criteria June 2006 Version 1.4 Figure B.7 (Soil Profile Type D) with the following modifications: (1) 20% increase of spectral accelerations (Sa) for structural periods ≥ 1 sec. (2) No change for structural periods ≤ 0.5 sec. And (3) Linear interpolation for structural periods between 0.5 sec. and 1 sec.

A copy of the "ARS Design Curve" (Plate No. 5) is included. The calculation for attenuation relationship based on Sadigh is included in Appendix C.

8.3 Seismic Hazards/Liquefaction Potential

Potential seismic hazards may arise from three sources: surface fault rupture; ground shaking; and liquefaction. Since no active fault passes through the project site, the potential for fault rupture is relatively low. Based on available geological and seismic data, the possibility that the site will experience strong ground shaking may be considered low to moderate.

Liquefaction Potential

Liquefaction is a phenomenon in which saturated cohesionless soils are subject to a temporary but essentially total loss of shear strength under the reversing, cyclic shear stresses associated with earthquake shaking. Submerged cohesionless sands and silts of low relative density are the type of soils, which usually are susceptible to liquefaction. Clays are generally not susceptible to liquefaction.

Based on Boring R-09-SC-001 and CPT-09-SC-001, the subsurface soil conditions at the project site generally consist of stiff to hard lean clays with intermittent layers of medium dense to dense sands. Liquefaction potential of the sand deposit in the Borings R-09-SC-001 was analyzed. The analysis was performed using the procedure developed by Seed and Idriss (1982) for a magnitude 6.5 Earthquake, on the nearby Cordelia Fault, resulting in a peak ground acceleration of about 0.6 g. This method compares the estimates of the earthquake-induced shear stress to the susceptibility of soil liquefaction. Based on the evaluation, the liquefaction potential is considered low.

Based on the CPT liquefaction analysis data for CPT-09-SC-001 included in this report, it appears that there is a silt layer (approximately 15 feet thick) at the depths between approximately 32 feet to approximately 47 feet that may be subject to triggering liquefaction. Plasticity Index of 11 and Wc/LL = 0.94 were obtained for the soil sample at the depth of 31 feet of the as-built Boring 06-B-13. Per Bray's et al (2004), the low plasticity of silt may dilate during shear once liquefaction is triggered and may undergo a transient loss of strength (cyclic softening). The pile friction capacity within the stratum of the silt layer between the approximate depths of 32 feet and 47 feet was ignored in the vertical pile capacity analyses. Therefore, there is no special recommendation due to liquefaction.

9. FINDINGS AND RECOMMENDATIONS

9.1 General

This report was prepared specifically for the proposed project according to the plans provided to us. Normal construction procedures were assumed throughout our analyses and represent one of the bases of recommendations presented herein. Our design criteria have been based upon the subsurface soil materials encountered in the soil borings at the project site. Therefore, we should be notified in the event that these conditions are changed, so as to modify or amend our recommendations.

9.2 Grading

All grading operations should be performed in accordance with the project specifications and Caltrans Standard Specifications for Earthwork (Section 19). A representative from PARIKH or regulating agency should observe all excavated areas during grading and perform moisture and density tests on prepared subgrade and compacted fill materials.

9.3 Bridge Foundation

Based on the available boring information, Caltrans Standard Precast Concrete piles (Alternate "X") are recommended to be the foundation system for the abutments of the proposed bridge. These piles may be designed for service load of 45 tons at the abutments

to the recommended pile tip elevations. Pertinent foundation design information provided by Biggs Cardosa Associates (Structural designer), including Foundation Design Data and Foundation Loads, are presented in the following tables.

TABLE 2: FOUNDATION DESIGN DATA

Support No	Design Method	Pile Type	Finish Grade Elev. (ft)	Pile Cut-off Elev. (ft)	Pile Cap Size(ft)		Permissible Settlement (in)	No. of Piles per Support
					B	L		
Abut 1	WSD	Class 90 Alt "X"	32.30	30.67	7.0	42.0	1.00	17
Abut 2	WSD	Class 90 Alt "X"	31.80	30.67	7.0	42.0	1.00	17

TABLE 3: FOUNDATION DESIGN LOADS

Support No.	Service-I Limit State (kips)			Strength Limit State (Controlling Group, kips)				Extreme Limit State (Controlling Group, kips)			
	Total Load		Permanent Loads	Compression		Tension		Compression		Tension	
	Per Support	Per Pile	Per Support	Per Support	Max. Per Pile.	Per Support	Max. Per Pile.	Per Support	Max. Per Pile.	Per Support	Max. Per Pile.
Abut 1	1090	82	840	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Abut 2	1090	82	840	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Consistent with Caltrans requirements, Working Stress Design (WSD) is used for the abutment foundations. The abutment foundations are evaluated for the foundation design data and loading condition using Caltrans November 2003 Bridge Design Specifications for foundations, using Working Stress Design (WSD) methods with "LRFD Service-I Loads", based upon WSD is presented in Table 4 below.

Based on the load demand and the subsurface soil information, the recommended specified pile tip elevations are shown in the Pile Data Table below.

TABLE 4: PILE DATA TABLE (ABUTMENT)

Location	Pile Type	Nominal Resistance (kips)		Design Tip Elev. (ft)	Specified Tip Elev. (ft)	Nominal Driving Resistance (kips)
		Compression	Tension			
Abut 1	Class 90 Alt "X"	180	0	-20.5 (a), 6.0 (b)	-20.5	285.7
Abut 2	Class 90 Alt "X"	180	0	-21.5 (a), 2.0 (b)	-21.5	303.4

Notes
(i) Design tip elevations are controlled by (a) Compression (Strength Limit), (b) Lateral Load.

(ii) The specified tip elevation shall not be raised above the design tip elevations due to the lateral load.
(iii) The nominal driving resistance required is equal to the nominal resistance needed to support the factored load plus driving resistance from the penetrated soil layers, if any, which do not contribute to the design resistance.

The estimation of the driven pile capacity in clay is based on the adhesion factor per FHWA manual (Tomlinson 1980). The pile capacity should be derived primarily from frictional resistance along the pile shafts. A factor of safety of 2 was used to estimate the allowable pile capacity. Based on the Pile Data Table 2, the pile tip elevation is controlled by the demand in compression on the pile. The pile capacity calculations are provided in Appendix C.

The design tip elevations and specified tip elevations are based on the "pile cut-off" elevation provided by the designer. In the event that the "pile cut-off" elevations are changed, the design pile tip elevations may have to be revised accordingly.

The minimum horizontal distance between the "near face" of the footing of the pile cap (measured at the top of the footing) and the face of the finished slope should be in accordance with Caltrans "Bridge Design Specifications" November 2003. The piles should not be spaced closer than 3 times the pile diameter measured center-to-center. For piles spaced at center-to-center distance greater than or equal to 3 times the pile diameter, there is no group effect for pile vertical capacity.

Available boring information indicates dense to very dense sands and very stiff to hard lean clay may be encountered at depth during pile installation. Relatively hard driving conditions might be anticipated near the proposed pile tip elevations. However, we recommend that the piles be driven to the specified tip elevations. It is anticipated that the pile capacity should develop after driving as a result of soil "freeze" and dissipation of excess pore water pressures. The gain of pile capacity after initial driving may be evaluated based on "re-driving" after 24-hour (min.) set up.

In the event that unanticipated pile driving conditions are encountered, it is recommended that a Pile Driving Analyzer (PDA) be used to evaluate the pile capacity and integrity of the precast prestressed concrete piles. Typical applications of the PDA include capacity evaluation (for both during driving and re-driving) and integrity testing for piles that have

experienced hard driving. The geotechnical engineer should be consulted for any unanticipated pile driving conditions

It is prudent to make the contractor aware of these conditions so that appropriate steps can be taken to comply with the standards and maintain the integrity of the piles.

Due to the hard driving conditions that may be encountered during pile driving, pile driving should be allowed to terminate short of the specified tip elevation provided the following conditions are satisfied:

- Other requirements including tension and lateral demands are met;
- Any pile refusal within 5 feet above the specified tip elevation, which has met the driving criteria may be considered good and cut off at the option of the contractor.

9.3.1 Scour

Based on the "Draft Bridge Design Hydraulic Study Report" prepared by WRECO, there would be no contraction scour at the project location. The banks of the Suisun Creek adjacent to the Suisun Creek Bridge along I-80 are heavily vegetated and the potential scour at the proposed bridge would be minimized because of the vegetation. Scour is not an issue for this project since the proposed bridge abutments have been located so as to prevent failure due to scour.

9.4 Lateral Design for Piles

Lateral pile capacity analyses were performed for the Class 90 Alt "X" concrete piles using the L-PILE program. According to the designer, the pile and pile cap connection was assumed to be "Free" and in the analyses. According to Caltrans, group effect for lateral pile resistance analyses was accounted for by adopting a p-y reduction factor of 40% (60% effective) for a pile spacing of 3D.

Generally, abutment piles are designed for service loads only, and batter piles are used for resisting static lateral earth pressures. In common engineering practice, a maximum pile head deflection of ¼ inch is recommended for service condition for vertical piles.

The results of lateral pile analyses, with the plots of the pile deflection, moment, shear and soil reaction along the pile length and the input files are included in the Appendix C.

9.5 Lateral Earth Pressures

Abutment retaining walls and wing walls should be designed to resist the following applied lateral earth pressures and live loads. These values assume no hydrostatic pore pressure build-up behind the wall and are based on well-drained backfill behind the walls.

Applied Lateral Earth Pressures

Active Condition	36 pcf Equivalent Fluid Pressure (EFP) for engineered fill.
At-Rest Condition	55 pcf Equivalent Fluid Pressure (EFP) for engineered fill.
Passive Resistance	5.0 ksf (ultimate) for seismic design of the abutment wall (5.5 feet or greater); for activated height less than 5.5 feet, modify proportionally i.e. 5.0 x (H/5.5) ksf per Caltrans SDC v.1.4. A minimum lateral wall movement of 2% of wall height to mobilize the full ultimate passive resistance is required.
Traffic Load Surcharge	The effect of any surcharge (dead or live load) should be added to the preceding lateral earth pressures. An additional height with equivalent earth pressure of not less than 2 feet of uniform soil weight at 125 pcf is added to the ground profile to account for the additional earth pressure resulting from the surcharge. Surcharge load due to the traffic has to be included in the design if the traffic is within a horizontal distance of one half of the wall height. A coefficient of 0.4 may be used to determine the additional lateral earth pressures resulting from the surcharge.

Cantilever walls which are free to rotate at least 0.005 radii may be assumed flexible for the active condition. Walls that are not capable of this movement should be assumed rigid and designed for the at-rest condition. The effect of any surcharge (dead or live load) should be added to the preceding lateral earth pressures. A coefficient of 0.3 and 0.5 may be used to determine the additional earth pressure resulting from the surcharge for cantilever walls and rigid walls, respectively.

9.6 Settlement Evaluation

The maximum fill thickness to be placed behind the abutments is anticipated to be 7 feet according to the designer. The available boring data indicates that the subsurface soil conditions at the abutments generally consist of stiff to very stiff clays. Consolidation settlement due to the placement of the abutment fill is anticipated to be on the order of 0.8 inches in the over-consolidated range and appears to be not a concern. Caltrans standard 30-day waiting period is recommended prior to the foundation construction of the abutments.

9.7 Corrosion

Chemical tests were performed on soil sample from Boring A-09-SC-001 to evaluate the corrosion potential of the subsoil. The test results are as follows:

TABLE5: SUMMARY OF CORROSION TEST RESULTS

Boring No.	Depth (ft)	Resistivity (ohm-cm)	pH	Sulfate (ppm)	Chloride (ppm)
A-09-SC-001	21	1260	7.7	21	13

Based on the corrosion test results, the native subsurface soils in Boring A-09-SC-001 are considered non-corrosive per Caltrans corrosion design guidelines. Standard Type II modified or Type I-P (MS) modified cement may be used for the concrete substructure. The minimum cement factor and cover thickness should be per Section 5.12 of California Amendments to AASHTO LRFD Bridge Design Specifications – Fourth Edition (December 2008).

10. CONSTRUCTION CONSIDERATIONS

Prospective contractors for the project must evaluate construction-related issues on the basis of their own knowledge and experience in the local area, on the basis of similar projects in other localities, or on the basis of field investigation on the site performed by them (if necessary), taking into account their own proposed construction methods and procedures.

According to the designer, majority of the works require construction above existing ground and no

major excavation will be required. Minor excavation may be required at some locations.

It is possible that unknown old buried utilities or abandoned structures, concrete rubble etc. might be encountered during excavations. This might require special equipment and additional efforts to remove these buried objects or obstructions.

The materials to be excavated are anticipated to be mostly soft to stiff clays and some loose to medium dense sands. Excavations should not be expected to stand vertically without any support. According to OSHA Safety Standards, temporary excavations with personnel working within the excavations should be sloped or shored if the excavations are deeper than 5 feet.

The slope height, inclination, and excavation depths of any temporary slopes should not exceed those specified in local, state, or federal safety regulations. The design of the temporary slopes by the contractor or his specialty subcontractor should conform to the OSHA's "Guidelines for Excavations and Temporary Sloping". The contractor/subcontractor should develop or modify their design based on the subsurface conditions exposed at the time of construction.

For excavations up to 20 feet deep in homogenous soils, OSHA guidelines state that the maximum allowable slope should be 3/4H: 1V, 1H:1V and 1-1/2H:1V for Types A, B and C soil, respectively (In general, Type A soils are stronger; Type B soils are intermediate, and Type C soils are weaker). Based on our evaluation of the materials encountered in our borings and the borings previously performed by others, the native soil on site should be considered as OSHA Type C. It should be noted that the slope ratios recommended by OSHA are for temporary, un-surcharged slopes. Traffic and surcharge loads should be set back at least 15 feet from the top of the excavations unless they are accounted for in the design. The temporary cut slopes discussed above assume that the groundwater is maintained below the bottom of the excavation at all times during construction. Slopes may need to be flattened based on materials exposed during construction.

Appropriate mitigation measures should be implemented to protect the slopes from sloughing and/or erosion if construction through the winter season is unavoidable. Adequate surface protection, such as temporary fiber-roll, should be provided to protect the slope surface from excessive drying and/or saturation during construction and the exposed slopes should be kept moist (but not saturated) by occasional light spraying of water during construction.

"Storm Water Pollution Prevention Plan" and "Erosion Control Plan" should be submitted by the

contractor to the engineer for approval prior to the construction.

11. PLAN REVIEW

We recommend that final foundation plans for the proposed project be reviewed by PARIKH prior to construction so that the intent of our recommendations is included in the project plans and specifications and to further see that no misunderstandings or misinterpretations have occurred.

12. CONSTRUCTION OBSERVATIONS

To a degree, the performance of any structure is dependent upon construction procedures and quality. Hence, geotechnical observation of foundation excavation, and pile installations should be carried out by regulating agencies. If the subsurface conditions different from those forming the basis of our recommendations are encountered, this office should be informed in order to assess the need for design changes. Therefore, the recommendations presented in this report are contingent upon good quality control and these geotechnical observations during construction.

13. INVESTIGATION LIMITATIONS

Our services consist of professional opinions and recommendations made in accordance with generally accepted geotechnical engineering principles and practices and are based on our site reconnaissance and the assumption that the subsurface conditions do not deviate from observed conditions. No warranty, expressed or implied, of merchantability or fitness, is made or intended in connection with our work or by the furnishing of oral or written reports or findings. The scope of our services did not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in structures, soil, surface water, groundwater or air, below or around this site. Unanticipated soil conditions are commonly encountered and cannot be fully determined by taking soil samples and excavating test borings; different soil conditions may require that additional expenditures be made during construction to attain a properly constructed project.

This report has been prepared for the proposed project as described earlier, to assist the engineer

in the design of this project. In the event any changes in the design or location of the facilities are planned, or if any variations or undesirable conditions are encountered during construction, our conclusions and recommendations shall not be considered valid unless the changes or variations are reviewed and our recommendations modified or approved by us in writing.

This report is issued with the understanding that it is the designer's responsibility to ensure that the information and recommendations contained herein are incorporated into the project plans and specifications.

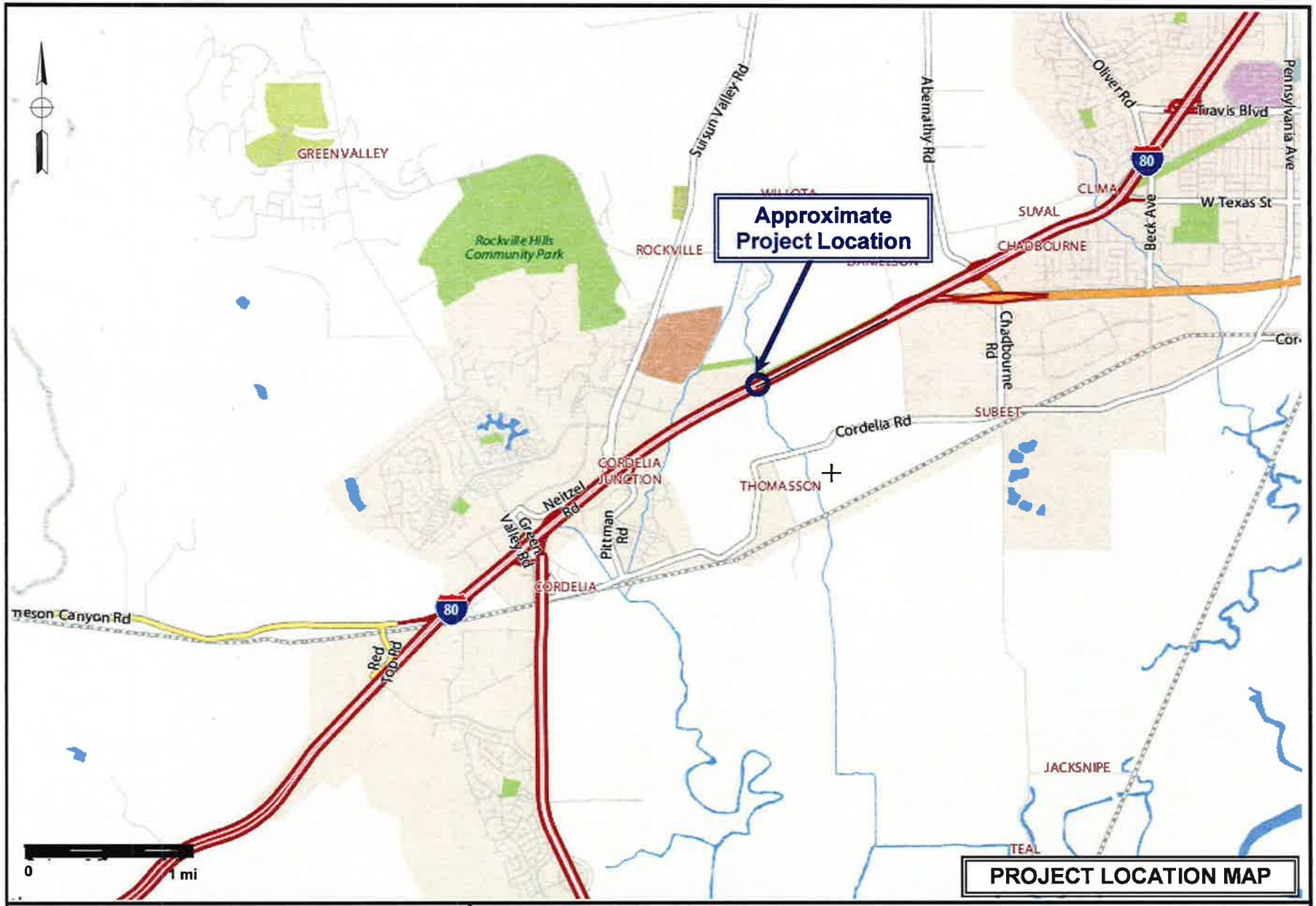
The findings in this report are valid as of the present date. However, changes in the subsurface conditions can occur with the passage of time, whether they are due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur, whether they result from legislation or from the broadening of knowledge. Accordingly, the findings in this report might be invalidated, wholly or partially, by changes outside of our control.

Respectfully submitted,
PARIKH CONSULTANTS, INC.

Alston Lam, P.E., G.E. 2605
Project Engineer

Gary Parikh, P.E., G.E. 666
Project Manager

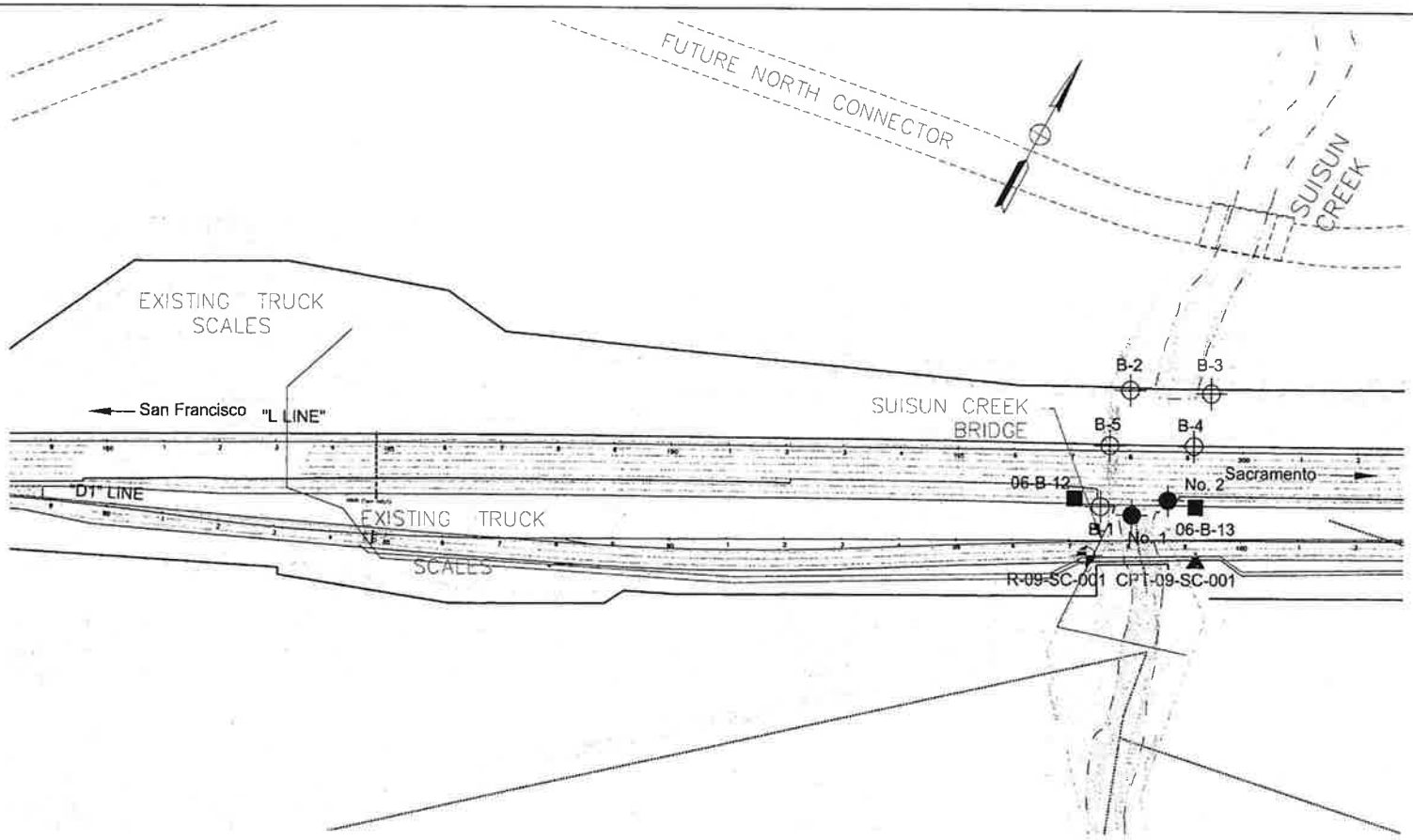
S:\Ongoing Projects\2008\208123\Suisun Creek Bridge (12-2010)..rpt



PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

SUISUN CREEK BRIDGE
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.SCB	PLATE NO.: 1



LEGEND

R-09-SC-001
Approximate rotary wash boring location drilled in 2009

CPT-09-SC-001
Approximate CPT location performed in 2009

No. 1
Approximate location of boring drilled in 1957 (Suisun Creek)

B-1
Approximate location of boring drilled in 1958 (Suisun Creek Bridge (Widen))

06-B-12
Approximate location of boring drilled in 2006 (Suisun Creek Bridge Widening)

SCALE 1 inch = 200 feet

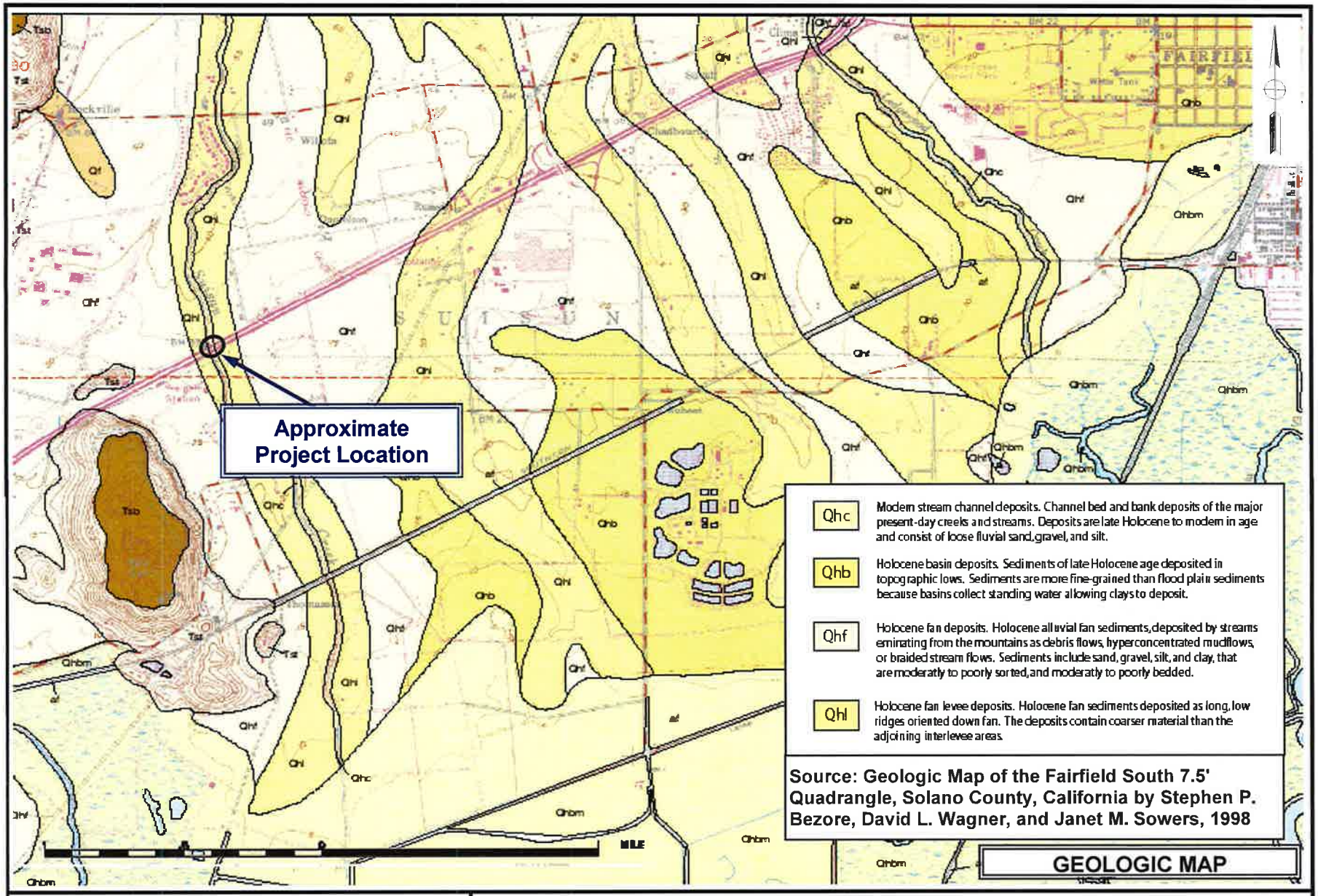
Note: All units are in feet unless otherwise specified
Reference Map was provided by HDR Engineering, Inc.

SITE PLAN

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

SUISUN CREEK BRIDGE
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123. SCB | PLATE NO: 2

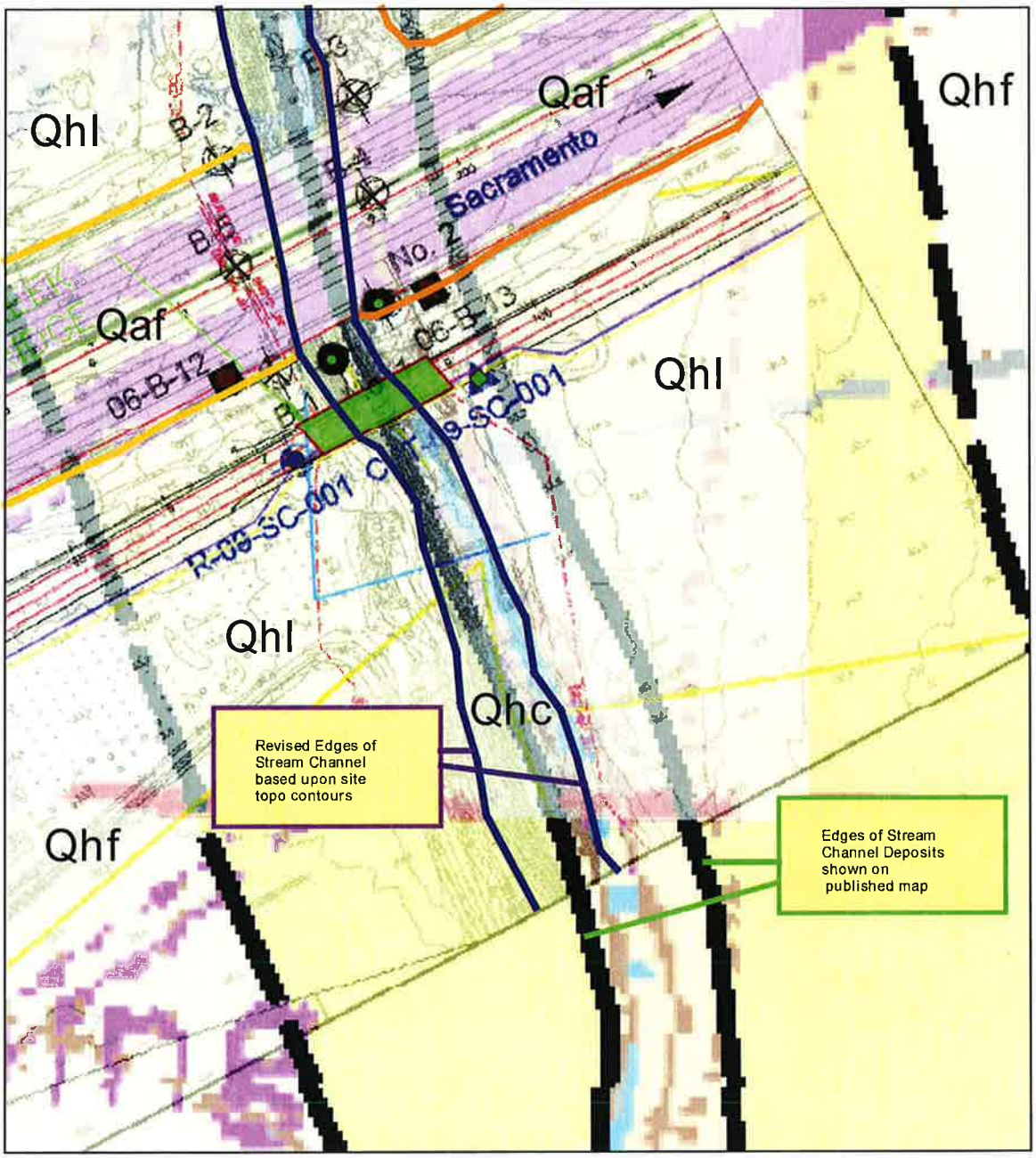


PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

SUISUN CREEK BRIDGE
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.SCB

PLATE NO.: 3A



This map is an enlarged portion of the digital image of the published geologic map by Bezore, et al; 1998 with the site topographic map overlaid.

The edges of the Stream Channel Deposits (Qhc) shown on the published geologic map are approximtely 50 to 80 feet east of their actual locations indicated by the blue lines inferred from the site topographic contours.

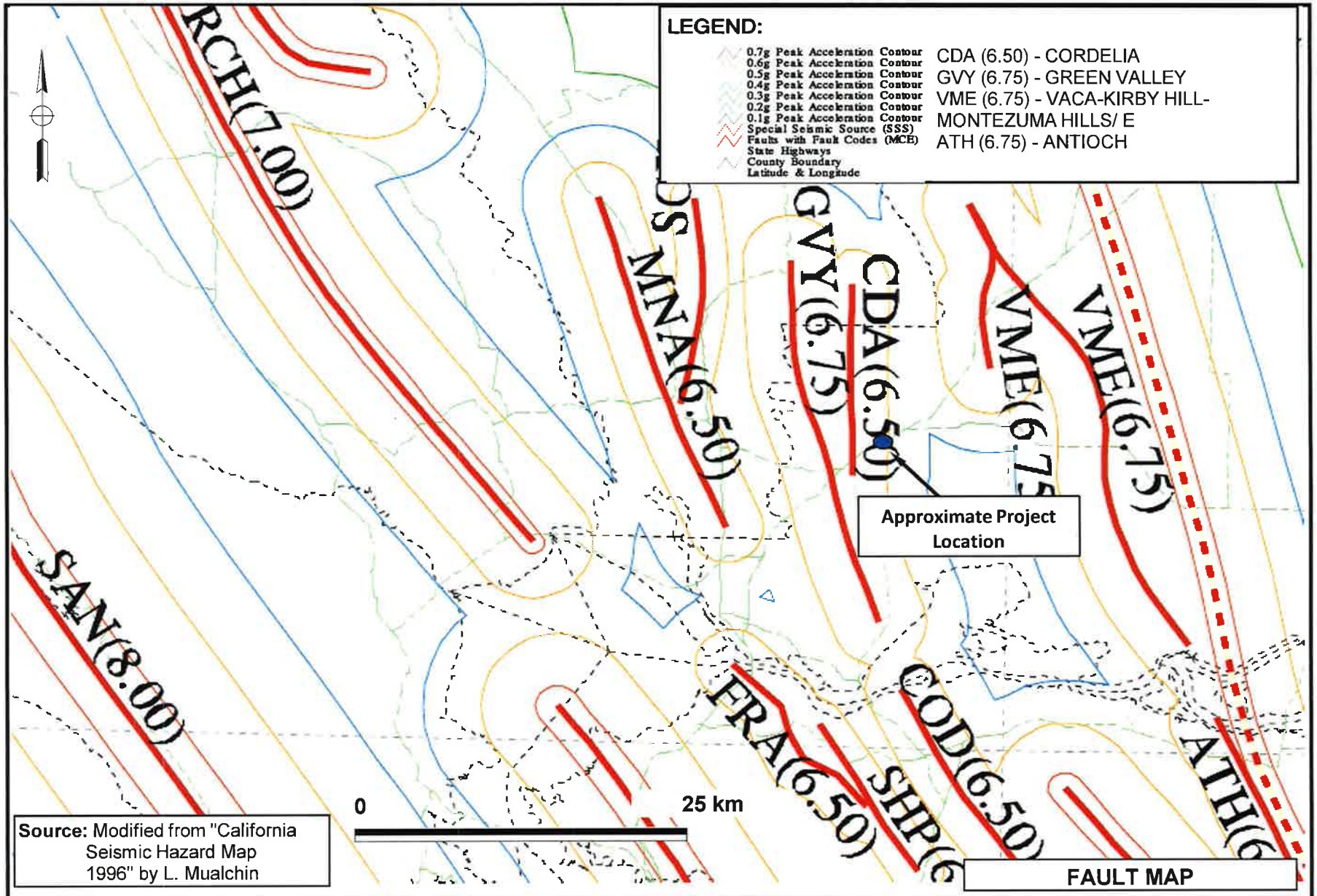
The approximate extent of Artificial Fill (Qaf) inferred from the site topographic contours is indicated by the orange lines.

Refer to PLATE No. 3A for an explanation of geologic units

0 50 100 150 200 250 300
Feet

SITE GEOLOGIC MAP

PARIKH CONSULTANTS, INC.	SUISUN CREEK BRIDGE SOLANO COUNTY, CALIFORNIA	
	JOB NO.: 208123.SCB	PLATE NO.: 3B

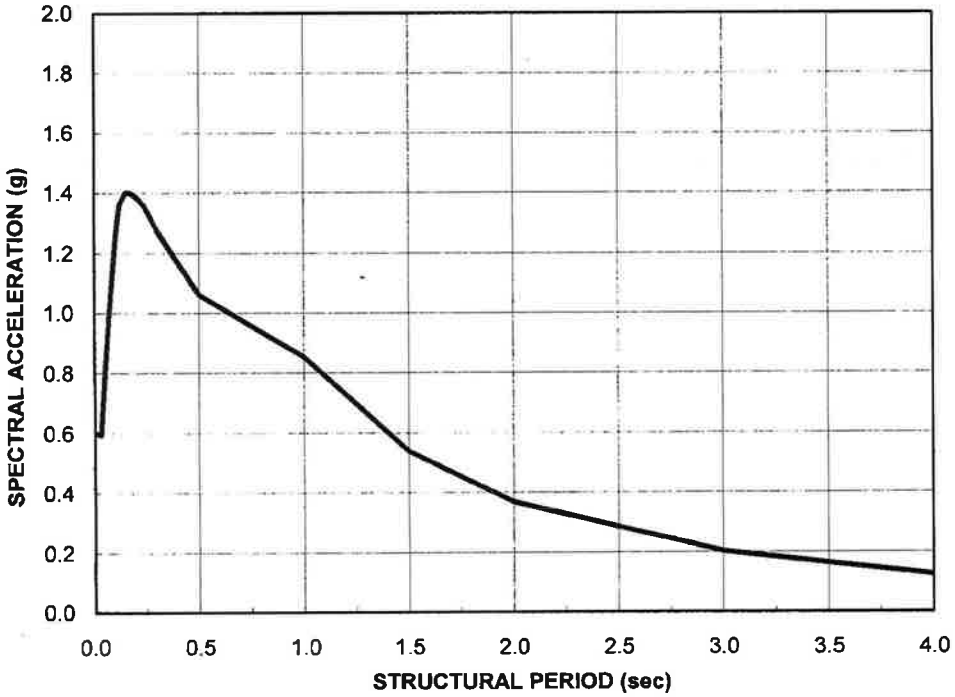


PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

SUISUN CREEK BRIDGE
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.SCB	PLATE NO.: 4

ARS DESIGN CURVE
SUISUN CREEK BRIDGE
SOLANO COUNTY, CALIFORNIA



Spectral Data

Period (sec)	212 (6.7) Spectral Accel. (g)
0.010	0.600
0.020	0.598
0.030	0.596
0.050	0.817
0.075	1.053
0.100	1.260
0.120	1.362
0.150	1.403
0.170	1.400
0.200	1.386
0.240	1.355
0.300	1.273
0.400	1.166
0.500	1.060
0.750	0.957
1.000	0.853
1.500	0.539
2.000	0.369
3.000	0.203
4.000	0.125

1. Caltrans SDC (v 1.4, June 2006), Figure B.7,
   Governing Fault: Cordelia Fault (212)
   (Mw = 6.7, Soil Profile Type D, PBA = 0.6g)
   with the following modification:

   (1) No change of Sa for structural periods < 0.5 sec
   (2) 20% increase of Sa for structural periods ≥ 1 sec
   (3) Linear interpolation for structural periods between 0.5 and 1 sec

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

SUISUN CREEK BRIDGE
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.SCB

PLATE NO.:5

APPENDIX A

APPENDIX A
FIELD EXPLORATION

The test borings were advanced with truck-mounted drill rig with 5-inch diameter rotary wash drilling method. The soil samples were obtained from the borings during drilling at various depths by driving a 2.5-inch Inside Diameter (I. D.) Modified California Sampler or a 1.375-inch I.D. Standard Penetration Sampler (ASTM Test Method No. 1586). The sampler was driven into the subsurface soils under the impact of a 140-pound hammer having a free fall of 30 inches. The blow counts required to drive the sampler for the last 12 inches are presented on the Logs of Test Borings (LOTB), Appendix A. When correlating standard penetration data in similar soils, the blow counts for the Modified California sampler can be taken as roughly twice that for the Standard Penetration Test sampler in similar soils. Pocket penetration tests were also performed on clay samples to evaluate their consistency. Upon completion of drilling, the drillhole was backfilled with cement grout.

The borings were drilled under the technical supervision of our engineer, who visually classified in the field (according to the Unified Soil Classification System) and continuously logged the soils encountered during drilling. The engineer supervised the collection of soil samples at various depths for visual examination and laboratory testing. The soil samples were then transported to our laboratory for further evaluation and testing.

The descriptions of the soils encountered and relevant boring information are presented on the boring logs in the LOTB in Appendix A. The laboratory test methods and results are presented in Appendix B. The logs presented in Appendix A were prepared from the field logs which were edited after visual re-examination of the soil samples in the laboratory and results of classification tests on selected soil samples as indicated on the logs.

The descriptions and related information presented on these LOTB depict subsurface conditions only at the locations indicated on the plan and on the particular date noted on the logs. Because of the variability from place to place within soil/rock in general, subsurface conditions at other locations may differ from conditions occurring at the locations explored. The abrupt stratum changes shown on the logs may be gradational and relatively minor changes in soil types within a stratum may not be noted on the logs due to field limitations. Also, the passage of time may result in a change in the soil conditions at these locations due to environmental changes.

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GM	SILTY GRAVEL SILTY GRAVEL with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL
SP	Poorly graded SAND Poorly graded SAND with GRAVEL
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SM	SILTY SAND SILTY SAND with GRAVEL
SC	CLAYEY SAND CLAYEY SAND with GRAVEL
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL
PT	PEAT
	COBBLES COBBLES and BOULDERS BOULDERS

Graphic/Symbol	Group Names
CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90)
  Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (PP) Pocket Penetrometer
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (TV) Pocket Torvane
- (UC) Unconfined Compression-Soil (ASTM D 2166)
  Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)
- (VS) Vane Shear (AASHTO T 223)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	80, 12	L1.8/L2.0 13.3/15.7		

GEOTECHNICAL PROFESSIONAL DATE

GARY PARIKH
No. G.E. 666
Exp. 12/31/11
GEOTECHNICAL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE

Description		Size
Boulder		> 12"
Cobble		3" to 12"
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. COUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER
SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JULY 2009		

BRIDGE NO. 23-0240S
POST MILES 14.5

SUISUN CREEK BRIDGE
SOIL LEGEND SHEET 1 OF 2

DOE CIVIL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 04-0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 09/11/09 08/19/10

SHEET 16 OF 21

...\23-0240s-z-ltb01.dgn 11/11/2010 9:57:20 AM

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SOL	80, 12	L1.8/L2.0 13.3/15.7		

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 — GEOTECHNICAL — STATE OF CALIFORNIA

PARIKH CONSULTANTS, INC.
2360 OLME DRIVE, SUITE A
SAN JOSE, CA 95131

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS

Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

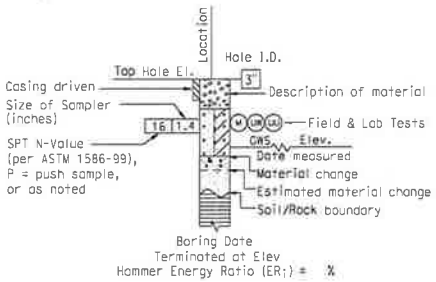
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring
Size	R P	Rotary drilled boring Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778-95)
[ ]	O	Other

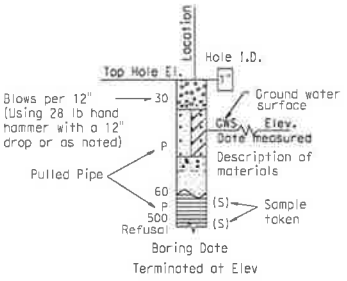
Note: Size in inches.

PLASTICITY OF FINE-GRAINED SOILS

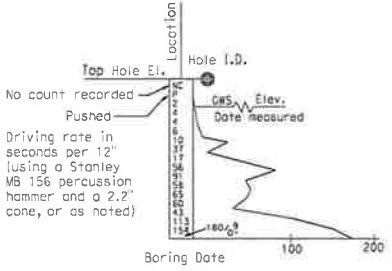
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



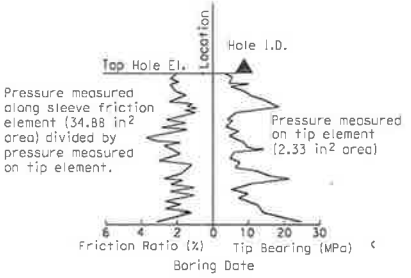
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. COUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. 23-0240S	SUISUN CREEK BRIDGE
SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JULY 2009			POST MILES 14.5	SOIL LEGEND SHEET 2 OF 2
DOS CIVIL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3		CU 04264 EA 04-0A5351		DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES — SHEET 17 OF 21

...\23-0240s-z-ltb02.dgn 11/11/2010 9:58:26 AM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	80, 12	11.8/12.6 13.3/15.7		

GEOTECHNICAL PROFESSIONAL DATE

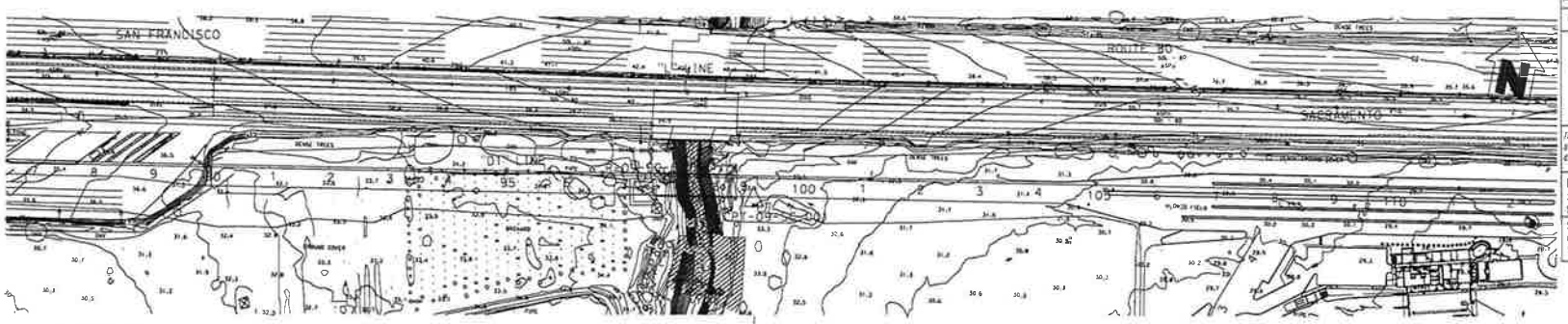
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — EXP. 12/31/11 GEOTECHNICAL — STATE OF CALIFORNIA

PARIKH CONSULTANTS, INC.
2360 OLME DRIVE, SUITE A
SAN JOSE, CA 95131

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

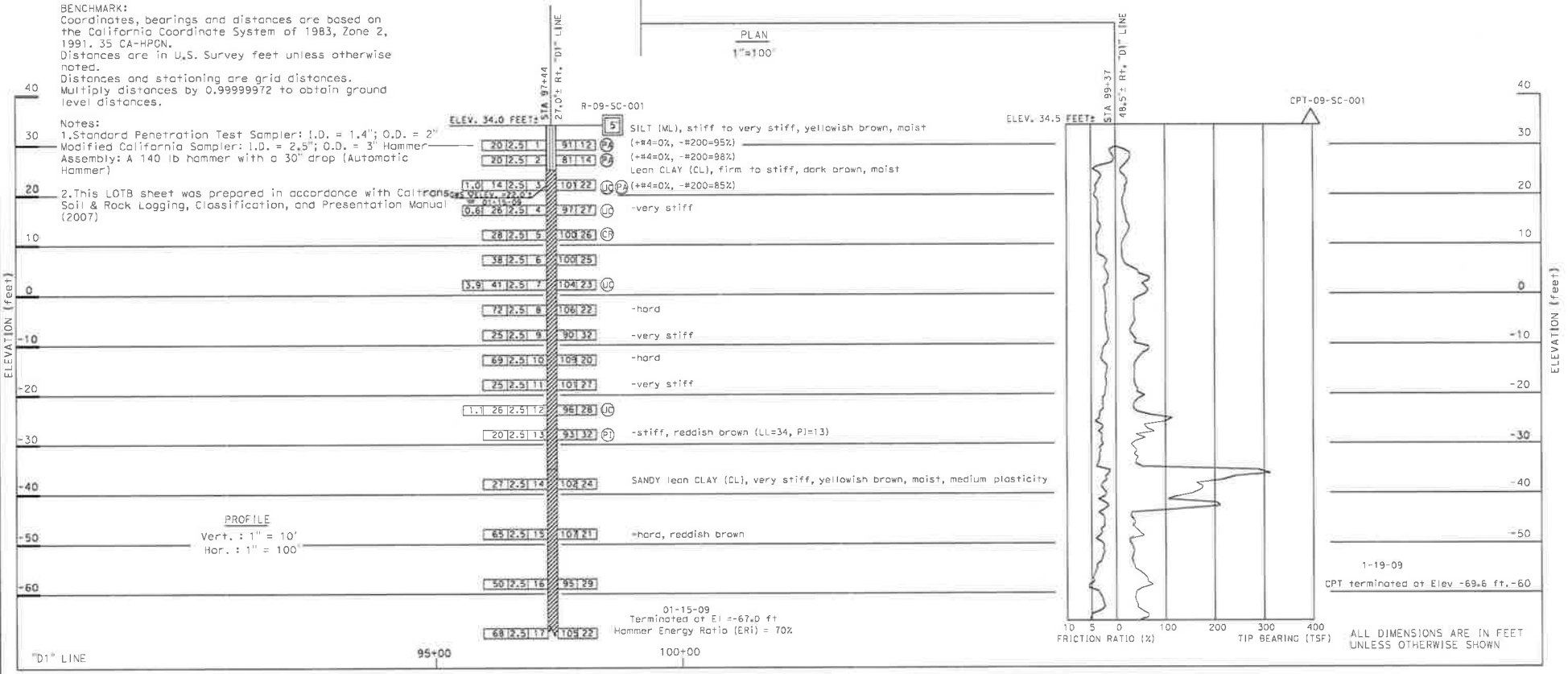


BENCHMARK:
Coordinates, bearings and distances are based on the California Coordinate System of 1983, Zone 2, 1991.35 CA-HPGN.
Distances are in U.S. Survey feet unless otherwise noted.
Distances and stationing are grid distances.
Multiply distances by 0.99999972 to obtain ground level distances.

Notes:
1. Standard Penetration Test Sampler: I.D. = 1.4"; O.D. = 2"
Modified California Sampler: I.D. = 2.5"; O.D. = 3" Hammer Assembly: A 140 lb hammer with a 30" drop (Automatic Hammer)
2. This LOTB sheet was prepared in accordance with Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2007)

PLAN
1"=100'

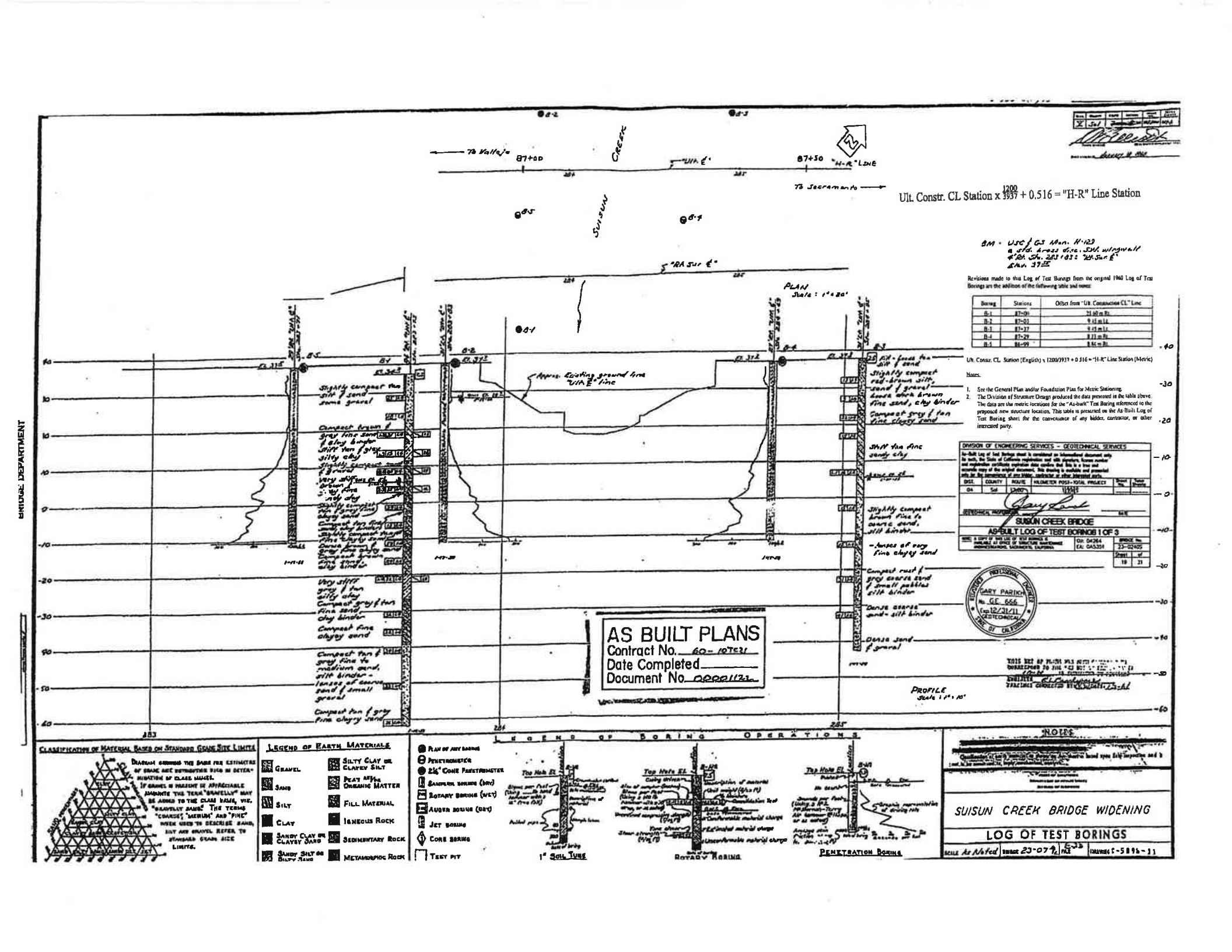
PROFILE
Vert. : 1" = 10'
Hor. : 1" = 100'

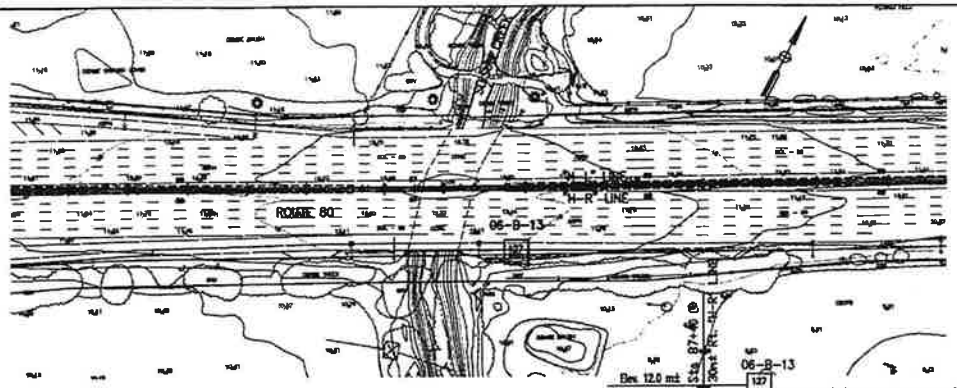


ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

G PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. 23-0240S	**SUISUN CREEK BRIDGE** **LOG OF TEST BORINGS**
SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009-JULY 2009			POST MILES 14.5	
DOS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 04264 EA 04-0A5351	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 10/11/09 08/16/10 — SHEET 18 OF 21

...\23-0240s-z-ltb03.dgn 11/11/2010 9:59:47 AM


Ult. Constr. CL Station x 1200/1937 + 0.516 = "H-R" Line Station
BM - USC & GS Mon. H 123
PLAN
Scale: 1"=80'
PROFILE
Scale 1"=10'
AS BUILT PLANS
Contract No. 60-107231
Date Completed
Document No. 0500011231
SUISUN CREEK BRIDGE
AS-BUILT LOG OF TEST BORINGS 1 OF 3
GARY PARISH
No. GE 666
Exp 12/31/11
GEOTECHNICAL
STATE OF CALIFORNIA
SUISUN CREEK BRIDGE WIDENING
LOG OF TEST BORINGS
Scale As Noted
Bridge 23-0074
Drawing C-5896-11
CLASSIFICATION OF MATERIAL BASED ON STANDARD GRAIN SIZE LIMITS
LEGEND OF EARTH MATERIAL
Gravel
Sand
Silt
Clay
Sandy Clay or Clayey Sand
Sandy Silt or Silty Sand
Silty Clay or Clayey Silt
Peat and/or Organic Matter
Fill Material
Igneous Rock
Sedimentary Rock
Metamorphic Rock
LEGEND OF BORING OPERATIONS
Plan of any boring
Penetrometer
2½" Cone Penetrometer
Sampler boring (dry)
Rotary boring (wet)
Auger boring (dry)
Jet boring
Core boring
Test pit
1" Soil Tube
Rotary Boring
Penetration Boring
NOTES



PLAN
1 : 1000

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	18.3/32.3		

PARIKH CONSULTANTS, INC.
356 SOUTH MILPITAS BLVD
MILPITAS CA 95035

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

Benchmark:

The horizontal coordinate values are in the California Coordinate System (CCS 83) Zone 2 and based on the North American Datum of 1983 as adjusted to the California High Precision Network (HPGN) 92 Epoch 1991.35. The vertical control values are based on the North American Datum of 1988 (NAVD88) provided by National Geodetic Survey (NGS)

DIVISION OF ENGINEERING SERVICES – GEOTECHNICAL SERVICES

DIST.	COUNTY	ROUTE	KILOMETER POST– TOTAL PROJECT	Sheet No.	Total Sheets
04	Sol	12/80	18/32.3		

GEOTECHNICAL PROJECT ENGINEER — DATE

SUISUN CREEK BRIDGE
AS-BUILT LOG OF TEST BORINGS 2 OF 3

NOTE: A COPY OF THE LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE, ENGINEERING SERVICES, SACRAMENTO, CALIFORNIA

CU: 04264	BRIDGE No.
EA: 04A351	23-02405
	Sheet / of
	20 / 21

RECORDED PROFESSIONAL ENGINEER — GARY PARIKH — No. GE 666 — Exp. 12/31/11 — GEOTECHNICAL — STATE OF CALIFORNIA

Bkn. 12.0 m± Sta. 87+46 m 30m Rt. "H-R" LINE 06-B-13

Blows/0.3m	Moisture (%)	Dry Density (kN/m³)	Sample No.	Sample Type	Recovery (%)	Fines (%)	Symbol	Description
–	–	1	–	9				SILTY SAND (SM), yellowish brown, moist (FILL)
23	84	2	30.5	33				LEAN CLAY WITH SAND (CL), stiff, blackish gray, moist
28.7	5	84	3	18.3	31	UC, AS		soft, brown, wet (LL=35, PI=13)
28	84	4	20.6	20	SA			stiff
17	84	5	20.2	28	SA			stiff, brown, wet
283.3	28	84	6	19.8	25	UC		very stiff
43.1	8	84	7	18.7	27	UC, AS		fill (LL=28, PI=11)
18	84	8	20.2	25	SA			SANDY SILT (ML), stiff, brown, wet (+#4=0%, –#200=73%)
35	84	9	21.5	17	SA			SILTY SAND WITH GRAVEL (SM), medium dense, brown, wet, fine gravel (+#4=16%, –#200=30%) LEAN CLAY WITH SAND (CL), very stiff to hard, brown, wet
54	84	10	20.4	21				
61	84	11	20.2	23				very stiff
								SILTY SAND (SM), medium dense, yellowish brown, wet, fine-grained
38	84	12	20.8	21	SA			medium dense, fine to coarse-grained +#4=0%, –#200=22%
44	84	13	19.8	28	SA			medium dense, coarse-grained (+#4=0%, –#200=13%)
								SILTY GRAVEL WITH SAND (GM), medium dense, grey, gravel up to 64mm, trace lean clay lens
40	84	14	20.8	19				LEAN CLAY WITH SAND (CL), very stiff, yellowish brown, wet
32	84	15	20.1	23				

03-17-06 Borehole terminated at Elev. –15.8m

ELEVATION (meters)

11 8 5 2 –1 –4 –7 –10 –13 –16

"H-R" LINE 86+00 87+00 88+00 89+00

Note:
Modified California Sampler: I.D. = 64mm; O.D. = 76mm
Standard Penetration Test Sampler: I.D. = 35mm; O.D. = 50mm
Hammer Assembly: A 63.5 kg hammer with a 762 mm drop
(Automatic Hammer)

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

PROFILE
Vert. 1 : 100
Hor. 1 : 1000

LEGEND OF BORING OPERATIONS

LOGS OF BORINGS

LOGS OF EARTH MATERIALS (LACKS) BASED ON ASTM D2488

CORRECTIONS / CLASSIFICATION FOR SOILS (Accepted by Test Procedure No. CT 216 or CT 301)

DESIGN OVERSIGHT — SIGN OFF DATE

DESIGN by: S. PAPPATI
CHECKED by: A. LAM

Field investigation by: L. S. SHANGGO

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

A. LAM
PROJECT ENGINEER

CU 04264
EA 04-04A351

STRUCTURE NO. 230007R
KILOMETER POST –

SUISUN CREEK BRIDGE (WIDEN)
LOG OF TEST BORINGS 1 OF 1

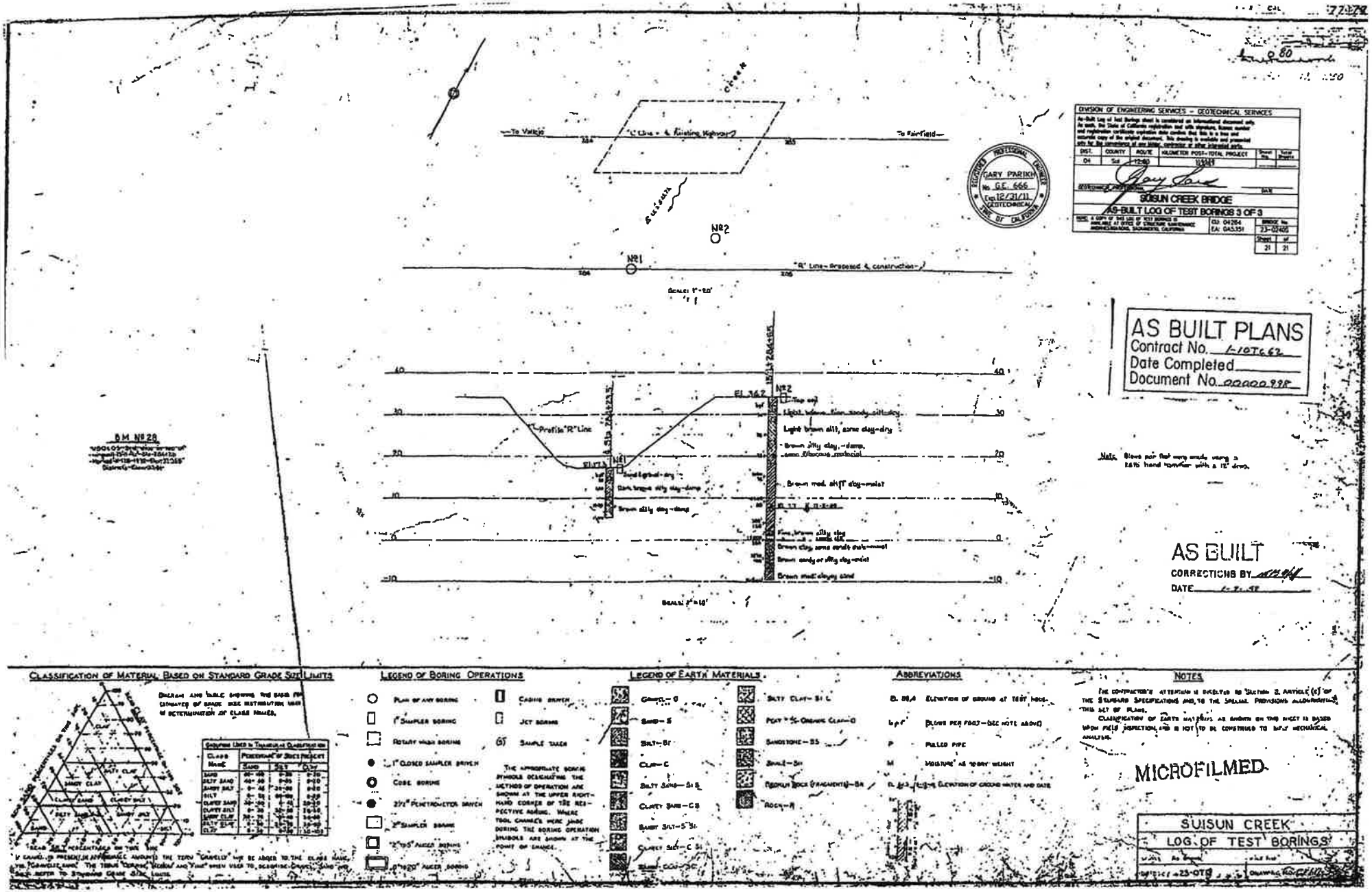
ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET | OF

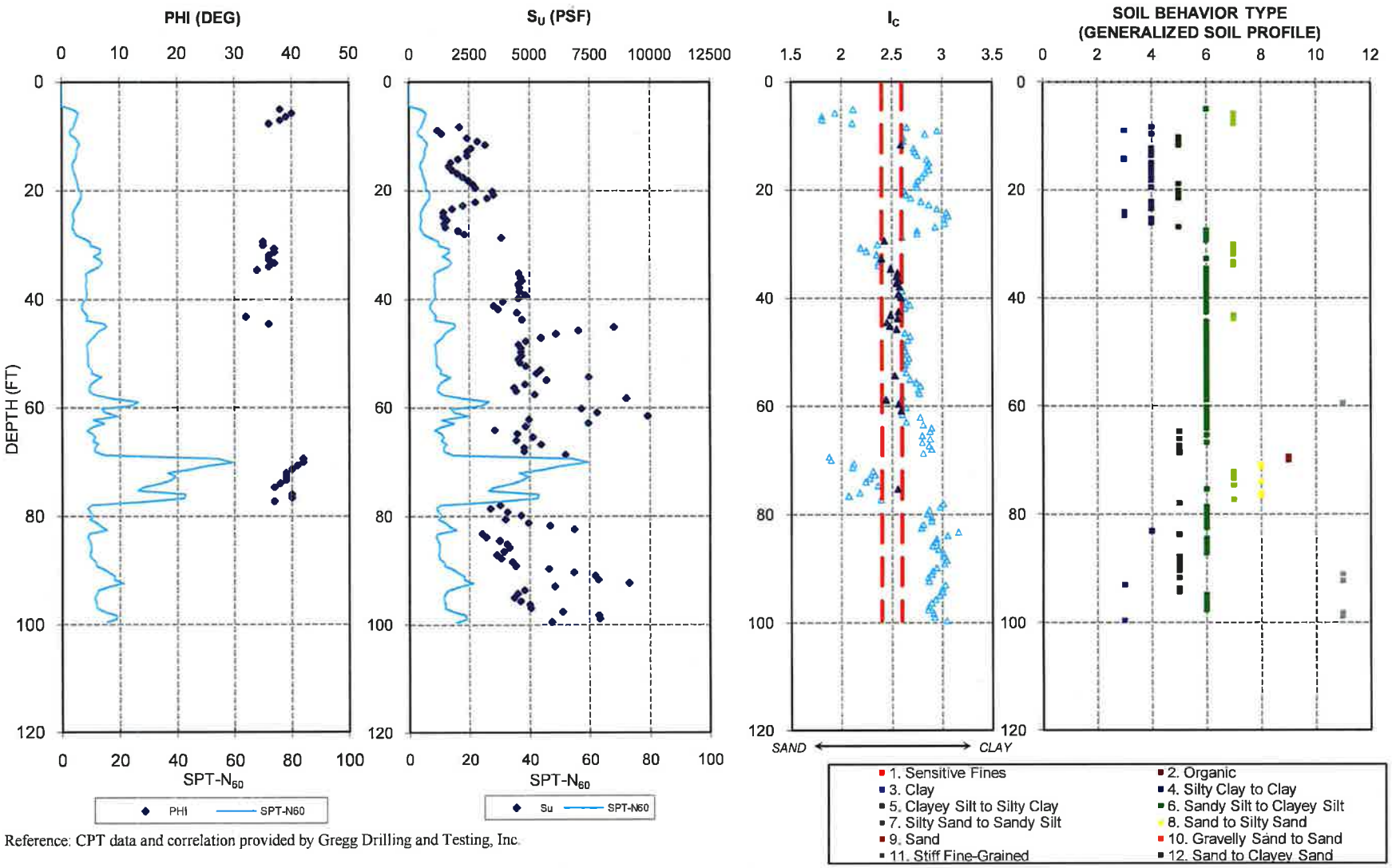
LDTB1

PLATE A-1


DIVISION OF ENGINEERING SERVICES – GEOTECHNICAL SERVICES
SUISUN CREEK BRIDGE
AS-BUILT LOG OF TEST BORINGS 3 OF 3
GARY PARIKH
No. G.E. 666
Exp. 12/31/11
GEOTECHNICAL
STATE OF CALIFORNIA
AS BUILT PLANS
Contract No. 4-10T662
Date Completed
Document No. 00000998
AS BUILT
CORRECTIONS BY
DATE
"L" Line – & Existing Highway
"R" Line – Proposed & construction
To Vallejo
To Fairfield
Suisun Creek
BM No 28
Scale 1"=20'
Scale 1"=10'
Profile "R" Line
EL 36.2
Light brown silt, some clay-dry
Brown silty clay, -damp,
Brown mod. stiff clay-moist
Brown silty clay-damp
Dark brown silty clay-damp
Brown sandy or silty clay-moist
Brown mod. clayey sand
Note: Blows per foot were made using a 140 lb hand hammer with a 12" drop.
MICROFILMED
SUISUN CREEK
LOG OF TEST BORINGS
Classification of Material Based on Standard Grade Size Limits
Legend of Boring Operations
Legend of Earth Materials
Abbreviations
Notes

CPT DATA CORRELATION

CPT-09-SC-001



Reference: CPT data and correlation provided by Gregg Drilling and Testing, Inc.

PARIKH

Practicing in the Geosciences

SUISUN CREEK BRIDGE
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.SCB	PLATE NO.:

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

PROJECT NAME **SUISUN CREEK BRIDGE**
PROJECT NO. **208123.SCB**
CPT NO. **CPT-09-SC-001**

FAULT INFO
CONCORD-GREEN VALLEY FAULT
a_{max} (g)= 0.6

FAULT M_w = 6.9
MSF = 1.24

		CPT RESULT INPUT							*CSR*		*CRR 7.5*						*F.S.=(CRR 7.5/CSR)*MSF*K σ*K α*		
Depth (ft)		Soil Behavior Type	qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	γ_d	CSR	Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	Kσ	Kα	F.S.
5.085	6	Sandy Silt to Clayey Silt	18.987	0.232	0.291		0.291	2.12	1.47552	0.99	0.386							1.00	1	
5.741	7	Silty Sand to Sandy Silt	29.943	0.284	0.33		0.33	1.94	1.43791	0.99	0.386							1.00	1	
6.398	7	Silty Sand to Sandy Silt	29.323	0.139	0.369		0.369	1.81	1.40217	0.99	0.385							1.00	1	
7.054	7	Silty Sand to Sandy Silt	27.487	0.092	0.407		0.407	1.81	1.36901	0.99	0.384							1.00	1	
7.71	7	Silty Sand to Sandy Silt	21.956	0.17	0.446		0.446	2.11	1.33657	0.98	0.384							1.00	1	
8.366	4	Silty Clay to Clay	16.143	0.571	0.483		0.483	2.65	1.30719	0.98	0.383							1.00	1	
9.022	3	Clay	9.339	0.444	0.52		0.52	2.95	1.27907	0.98	0.383							1.00	1	
9.678	4	Silty Clay to Clay	10.359	0.357	0.558		0.558	2.83	1.25142	0.98	0.382							1.00	1	
10.335	5	Clayey Silt to Silty Clay	18.407	0.543	0.595	0.01	0.585	2.61	1.23249	0.98	0.388							1.00	1	
10.991	5	Clayey Silt to Silty Clay	21.646	0.742	0.633	0.031	0.602	2.61	1.22087	0.98	0.401							1.00	1	
11.647	5	Clayey Silt to Silty Clay	24.102	0.867	0.67	0.051	0.619	2.59	1.20946	0.98	0.412							1.00	1	
12.303	4	Silty Clay to Clay	19.759	0.833	0.708	0.072	0.636	2.72	1.19826	0.97	0.423							1.00	1	
12.959	4	Silty Clay to Clay	18.565	0.747	0.746	0.092	0.653	2.73	1.18726	0.97	0.433							1.00	1	
13.615	4	Silty Clay to Clay	18.604	0.771	0.783	0.113	0.67	2.75	1.17647	0.97	0.443							1.00	1	
14.272	3	Clay	15.636	0.708	0.82	0.133	0.687	2.85	1.16587	0.97	0.452							1.00	1	
14.928	4	Silty Clay to Clay	13.36	0.523	0.857	0.154	0.704	2.87	1.15546	0.97	0.460							1.00	1	
15.584	4	Silty Clay to Clay	12.707	0.453	0.895	0.174	0.721	2.86	1.14524	0.97	0.468							1.00	1	
16.24	4	Silty Clay to Clay	13.811	0.536	0.933	0.195	0.738	2.87	1.13519	0.97	0.476							1.00	1	
16.896	4	Silty Clay to Clay	15.495	0.585	0.97	0.215	0.755	2.83	1.12532	0.96	0.483							1.00	1	
17.552	4	Silty Clay to Clay	17.36	0.651	1.008	0.236	0.772	2.8	1.11562	0.96	0.490							1.00	1	
18.209	4	Silty Clay to Clay	18.891	0.697	1.045	0.256	0.789	2.76	1.10608	0.96	0.497							1.00	1	
18.865	5	Clayey Silt to Silty Clay	20.356	0.75	1.083	0.277	0.806	2.74	1.09671	0.96	0.503							1.00	1	
19.521	4	Silty Clay to Clay	20.768	0.798	1.121	0.297	0.824	2.75	1.08696	0.96	0.508							1.00	1	
20.177	5	Clayey Silt to Silty Clay	25.848	0.839	1.158	0.317	0.841	2.63	1.0779	0.96	0.514							1.00	1	
20.833	5	Clayey Silt to Silty Clay	26.552	0.86	1.196	0.338	0.858	2.64	1.069	0.95	0.519							1.00	1	
21.49	5	Clayey Silt to Silty Clay	24.823	0.873	1.233	0.358	0.875	2.69	1.06024	0.95	0.524							1.00	1	
22.146	4	Silty Clay to Clay	21.26	0.852	1.271	0.379	0.892	2.79	1.05163	0.95	0.528							1.00	1	
22.802	4	Silty Clay to Clay	17.557	0.705	1.308	0.399	0.909	2.87	1.04315	0.95	0.533							1.00	1	
23.458	4	Silty Clay to Clay	14.38	0.559	1.346	0.42	0.926	2.95	1.03481	0.95	0.537							1.00	1	
24.114	3	Clay	11.817	0.462	1.383	0.44	0.942	3.04	1.02706	0.94	0.541							1.00	1	
24.77	3	Clay	11.744	0.466	1.419	0.461	0.958	3.06	1.01946	0.94	0.545							1.00	1	
25.427	4	Silty Clay to Clay	12.843	0.498	1.457	0.481	0.976	3.02	1.01103	0.94	0.547							1.00	1	
26.083	4	Silty Clay to Clay	12.099	0.429	1.494	0.502	0.993	3.03	1.00319	0.94	0.550							1.00	1	
26.739	5	Clayey Silt to Silty Clay	12.223	0.305	1.532	0.522	1.01	2.93	0.99548	0.94	0.553							1.00	1	
27.395	6	Sandy Silt to Clayey Silt	15.51	0.294	1.57	0.543	1.027	2.75	0.98788	0.93	0.556							0.99	1	
28.051	6	Sandy Silt to Clayey Silt	17.805	0.369	1.607	0.563	1.044	2.75	0.98039	0.93	0.558							0.99	1	
28.707	6	Sandy Silt to Clayey Silt	29.678	0.707	1.645	0.584	1.061	2.6	0.97302	0.93	0.560							0.99	1	
29.364	6	Sandy Silt to Clayey Silt	42.103	0.888	1.682	0.604	1.078	2.43	0.96576	0.92	0.562							0.99	1	
30.02	7	Silty Sand to Sandy Silt	43.163	0.78	1.721	0.625	1.096	2.36	0.95819	0.92	0.564	2.360	0.96	41.36	2.158	89.185	0.15	0.98	1	0.26
30.676	7	Silty Sand to Sandy Silt	62.324	0.981	1.76	0.645	1.115	2.19	0.95032	0.92	0.565	2.190	0.95	59.23	1.643	97.289	0.17	0.98	1	0.29
31.332	7	Silty Sand to Sandy Silt	61.891	1.142	1.798	0.665	1.133	2.25	0.94299	0.91	0.565	2.250	0.94	58.36	1.798	104.951	0.19	0.97	1	0.33
31.988	7	Silty Sand to Sandy Silt	48.727	0.952	1.837	0.686	1.151	2.35	0.93577	0.91	0.566	2.350	0.94	45.60	2.120	96.650	0.16	0.97	1	0.29
32.644	6	Sandy Silt to Clayey Silt	57.244	1.51	1.874	0.706	1.168	2.4	0.92905	0.91	0.567							0.97	1	
33.301	7	Silty Sand to Sandy Silt	61.547	1.543	1.913	0.727	1.186	2.37	0.92205	0.90	0.567	2.370	0.92	56.75	2.194	124.510	0.26	0.97	1	0.46
33.957	7	Silty Sand to Sandy Silt	56.168	1.296	1.952	0.747	1.204	2.37	0.91514	0.90	0.568	2.370	0.92	51.40	2.194	112.778	0.21	0.96	1	0.38
34.613	6	Sandy Silt to Clayey Silt	41.901	0.992	1.989	0.768	1.222	2.49	0.90834	0.89	0.567							0.96	1	
35.269	6	Sandy Silt to Clayey Silt	33.587	0.749	2.027	0.788	1.239	2.56	0.90201	0.89	0.567							0.96	1	
35.925	6	Sandy Silt to Clayey Silt	33.993	0.724	2.065	0.809	1.256	2.55	0.89577	0.88	0.567							0.96	1	
36.581	6	Sandy Silt to Clayey Silt	34.522	0.783	2.102	0.829	1.273	2.57	0.88961	0.88	0.566							0.95	1	
37.238	6	Sandy Silt to Clayey Silt	33.261	0.676	2.14	0.85	1.29	2.55	0.88353	0.87	0.565							0.95	1	
37.894	6	Sandy Silt to Clayey Silt	33.644	0.771	2.177	0.87	1.307	2.58	0.87754	0.87	0.564							0.95	1	
38.55	6	Sandy Silt to Clayey Silt	33.823	0.807	2.215	0.891	1.324	2.6	0.87163	0.86	0.563							0.95	1	
39.206	6	Sandy Silt to Clayey Silt	35.508	0.791	2.253	0.911	1.341	2.57	0.8658	0.86	0.562							0.94	1	
39.862	6	Sandy Silt to Clayey Silt	33.407	0.741	2.29	0.932	1.358	2.59	0.86005	0.85	0.560							0.94	1	
40.518	6	Sandy Silt to Clayey Silt	28.935	0.611	2.328	0.952	1.376	2.64	0.85404	0.85	0.558							0.94	1	
41.175	6	Sandy Silt to Clayey Silt	26.242	0.542	2.365	0.973	1.393	2.68	0.84844	0.84	0.557							0.94	1	
41.831	6	Sandy Silt to Clayey Silt	27.374	0.508	2.403	0.993	1.41	2.63	0.84291	0.83	0.555							0.93	1	
42.487	6	Sandy Silt to Clayey Silt	32.494	0.608	2.44	1.014	1.427	2.57	0.83746	0.83	0.552							0.93	1	
43.143	7	Silty Sand to Sandy Silt	37.237	0.612	2.479	1.034	1.445	2.49	0.83176	0.82	0.550	2.490	0.83	30.97	2.718	84.194	0.14	0.93	1	0.25
43.799	7	Silty Sand to Sandy Silt	33.914	0.639	2.518	1.054	1.463	2.56	0.82614	0.82	0.547	2.560	0.83	28.02	3.091	86.590	0.14	0.93	1	0.26
44.455	6	Sandy Silt to Clayey Silt	63.305	1.631	2.555	1.075	1.48	2.45	0.8209	0.81	0.545							0.92	1	
45.112	6	Sandy Silt to Clayey Silt	63.812	1.779	2.593	1.095	1.498	2.48	0.81542	0.80	0.542							0.92	1	
45.768	6	Sandy Silt to Clayey Silt	52.293	1.509	2.631	1.116	1.515	2.55	0.81031	0.80	0.539							0.92	1	
46.424	6	Sandy Silt to Clayey Silt	45.325	1.426	2.668	1.136	1.532	2.63	0.80527	0.79	0.536							0.92	1	
47.08	6	Sandy Silt to Clayey Silt	41.056	1.314	2.706	1.157	1.549	2.68	0.80029	0.78	0.533							0.92	1	
47.736	6	Sandy Silt to Clayey Silt	36.054	0.938	2.743	1.177	1.566	2.66	0.79537	0.78	0.530							0.91	1	
48.392	6	Sandy Silt to Clayey Silt	33.565	0.639	2.781	1.198	1.583	2.61	0.79051	0.77	0.527							0.91	1	
49.049	6	Sandy Silt to Clayey Silt	34.145	0.695	2.818	1.218	1.6	2.62	0.78571	0.76	0.524							0.91	1	
49.705	6	Sandy Silt to Clayey Silt	34.038	0.716	2.856	1.239	1.617	2.63	0.78097	0.76	0.521							0.91	1	
50.361	6	Sandy Silt to Clayey Silt	34.5	0.779	2.894	1.259	1.635	2.65	0.77601	0.75	0.517							0.91	1	
51.017	6	Sandy Silt to Clayey Silt	33.88	0.759	2.931	1.28	1.652	2.67	0.77139	0.74	0.514							0.90	1	
51.673	6	Sandy Silt to Clayey Silt	34.302	0.724	2.969	1.3	1.669	2.65	0.76682	0.74	0.510							0.90	1	
52.329	6	Sandy Silt to Clayey Silt	35.896	0.753	3.006	1.321	1.686	2.63	0.7623	0.73	0.507							0.90	1	
52.986	6	Sandy Silt to Clayey Silt	40.904	0.946	3.044	1.341	1.703	2.62	0.75784	0.72	0.504							0.90	1	
53.642	6	Sandy Silt to Clayey Silt	39.462	0.926	3.082	1.362	1.72	2.64	0.75342	0.72	0.501							0.90	1	
54.298	6	Sandy Silt to Clayey Silt	55.774	1.342	3.119	1.382	1.737	2.53	0.74906	0.71	0.497							0.90	1	
54.954	6	Sandy Silt to Clayey Silt	43.337	1.263	3.157	1.402	1.754	2.68	0.74475	0.70	0.494							0.89	1	
55.61	6	Sandy Silt to Clayey Silt	36.82	1.03	3.194	1.423	1.771	2.74	0.74049	0.70	0.491							0.89	1	
56.266	6	Sandy Silt to Clayey Silt	33.638	0.976	3.232	1.443	1.789	2.78	0.73603	0.69	0.487							0.89	1	
56.923	6	Sandy Silt to Clayey Silt	34.128	0.904	3.27	1.464	1.806	2.76	0.73187	0.69	0.484							0.89	1	
57.579	6	Sandy Silt to Clayey Silt	40.002	1.354	3.307	1.484	1.823	2.77	0.72775	0.68	0.481							0.89	1	
58.235	6	Sandy Silt to Clayey Silt	68.852	2.366	3.345	1.505	1.84	2.6	0.72368	0.67	0.478							0.89	1	
58.891	6	Sandy Silt to Clayey Silt	111.745	3.839	3.382	1.525	1.857	2.44	0.71966	0.67	0.475							0.88	1	
59.547	11	Silty Fine-Grained	96.824	4.154	3.425	1.546	1.879	2.57	0.71452	0.66	0.471							0.88	1	
60.203	6	Sandy Silt to Clayey Silt	53.695	1.634	3.463	1.566	1.897	2.64	0.71036	0.66	0.468							0.88	1	
60.86	6	Sandy Silt to Clayey Silt	58.686	1.64	3.5	1.587	1.914	2.59	0.70649	0.65	0.465							0.88	1	
61.516	6	Sandy Silt to Clayey Silt	76.879	2.751	3.538	1.607	1.931	2.6	0.70265	0.65	0.462							0.88	1	
62.172	6	Sandy Silt to Clayey Silt	38.572	1.164	3.576	1.628	1.948	2.78	0.69886	0.64	0.460							0.88	1	
62.828	6	Sandy Silt to Clayey Silt	56.765	1.713	3.613	1.648	1.965	2.64	0.6951	0.64	0.457							0.87	1	
63.484	6	Sandy Silt to Clayey Silt	37.688	1.181	3.651	1.669	1.982	2.81	0.69139	0.63	0.454							0.87	1	
64.14	6	Sandy Silt to Clayey Silt	28.608	0.78	3.688	1.689	1.999	2.89	0.68771	0.63	0.452							0.87	1	
64.797	5	Clayey Silt to Silty Clay	35.953	1.26	3.726	1.71	2.016	2.88	0.68408	0.62	0.449							0.87	1	
65.453	6	Sandy Silt to Clayey Silt	40.577	1.268	3.764	1.73	2.034	2.8	0.68027	0.62	0.447							0.87	1	
66.109	5	Clayey Silt to Silty Clay	35.919	1.25	3.801	1.751	2.051	2.88	0.67671	0.61	0.444							0.87	1	

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

PROJECT NAME ***SUISUN CREEK BRIDGE***
PROJECT NO. ***208123.SCB***
CPT NO. ***CPT-09-SC-001***

FAULT INFO
CONCORD-GREEN VALLEY FAULT
a_{max} (g)= 0.6

FAULT M_w = 6.9
MSF = 1.24

Depth (ft)		Soil Behavior Type	CPT RESULT INPUT qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	CSR γ_d	CSR	$CRR_{7.5}$ Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	F.S.=(CRR 7.5/(CSR)*MSF*Kσ*Kα Kσ	Kα	F.S.
66.765	6	Sandy Silt to Clayey Silt	43.776	1.463	3.839	1.771	2.068	2.8	0.67319	0.61	0.442							0.86	1	
67.421	5	Clayey Silt to Silty Clay	38.459	1.365	3.876	1.791	2.085	2.87	0.66971	0.61	0.440							0.86	1	
68.077	5	Clayey Silt to Silty Clay	38.054	1.43	3.914	1.812	2.102	2.89	0.66626	0.60	0.438							0.86	1	
68.734	5	Clayey Silt to Silty Clay	51.527	2.071	3.952	1.832	2.119	2.81	0.66285	0.60	0.436							0.86	1	
69.39	9	Sand	287.841	3.495	3.992	1.853	2.139	1.88	0.65888	0.60	0.433							0.76	1	
70.046	9	Sand	312.99	4.444	4.033	1.873	2.16	1.9	0.65476	0.59	0.431							0.75	1	
70.702	8	Sand to Silty Sand	241.952	5.278	4.073	1.894	2.179	2.12	0.65108	0.59	0.429							0.78	1	
71.358	8	Sand to Silty Sand	217.248	4.012	4.112	1.914	2.198	2.11	0.64744	0.58	0.427							0.79	1	
72.014	7	Silty Sand to Sandy Silt	163.418	4.387	4.151	1.935	2.216	2.31	0.64403	0.58	0.425							0.82	1	
72.671	7	Silty Sand to Sandy Silt	176.023	5.283	4.19	1.955	2.234	2.33	0.64065	0.58	0.423							0.81	1	
73.327	7	Silty Sand to Sandy Silt	171.962	4.289	4.228	1.976	2.253	2.28	0.63713	0.58	0.421							0.81	1	
73.983	8	Sand to Silty Sand	156.985	3.058	4.268	1.996	2.272	2.24	0.63364	0.57	0.419							0.81	1	
74.639	7	Silty Sand to Sandy Silt	123.798	2.718	4.307	2.017	2.29	2.36	0.63037	0.57	0.418							0.84	1	
75.295	6	Sandy Silt to Clayey Silt	105.729	3.742	4.344	2.037	2.307	2.56	0.62732	0.57	0.416							0.85	1	
75.951	8	Sand to Silty Sand	203.572	4.226	4.384	2.058	2.326	2.18	0.62394	0.56	0.414							0.79	1	
76.608	8	Sand to Silty Sand	211.413	3.096	4.424	2.078	2.345	2.07	0.62059	0.56	0.413							0.78	1	
77.264	7	Silty Sand to Sandy Silt	125.967	3.044	4.462	2.099	2.364	2.39	0.61728	0.56	0.411							0.83	1	
77.92	5	Clayey Silt to Silty Clay	32.202	1.15	4.5	2.119	2.381	3.01	0.61435	0.56	0.410							0.84	1	
78.576	6	Sandy Silt to Clayey Silt	28.309	0.771	4.537	2.139	2.398	2.98	0.61145	0.55	0.408							0.84	1	
79.232	6	Sandy Silt to Clayey Silt	33.198	0.777	4.575	2.16	2.415	2.87	0.60858	0.55	0.407							0.84	1	
79.888	6	Sandy Silt to Clayey Silt	37.53	0.973	4.613	2.18	2.432	2.85	0.60573	0.55	0.406							0.84	1	
80.545	6	Sandy Silt to Clayey Silt	32.461	0.775	4.65	2.201	2.449	2.89	0.6029	0.55	0.405							0.84	1	
81.201	6	Sandy Silt to Clayey Silt	39.822	1.268	4.688	2.221	2.466	2.89	0.60011	0.54	0.403							0.83	1	
81.857	6	Sandy Silt to Clayey Silt	46.683	1.397	4.725	2.242	2.483	2.81	0.59734	0.54	0.402							0.83	1	
82.513	6	Sandy Silt to Clayey Silt	55.791	1.823	4.763	2.262	2.501	2.79	0.59443	0.54	0.401							0.83	1	
83.169	4	Silty Clay to Clay	28.653	1.121	4.801	2.283	2.518	3.16	0.59172	0.54	0.400							0.83	1	
83.825	5	Clayey Silt to Silty Clay	26.873	0.821	4.838	2.303	2.535	3.05	0.58902	0.54	0.399							0.83	1	
84.482	6	Sandy Silt to Clayey Silt	30.72	0.791	4.876	2.324	2.552	2.94	0.58635	0.53	0.398							0.83	1	
85.138	6	Sandy Silt to Clayey Silt	32.615	0.931	4.913	2.344	2.569	2.94	0.58371	0.53	0.397							0.83	1	
85.794	6	Sandy Silt to Clayey Silt	33.165	0.816	4.951	2.365	2.586	2.9	0.58109	0.53	0.396							0.83	1	
86.45	6	Sandy Silt to Clayey Silt	32.072	0.916	4.989	2.385	2.603	2.96	0.57849	0.53	0.395							0.83	1	
87.106	6	Sandy Silt to Clayey Silt	30.191	0.931	5.026	2.406	2.62	3.01	0.57592	0.53	0.394							0.82	1	
87.762	5	Clayey Silt to Silty Clay	31.694	1.02	5.064	2.426	2.638	3.01	0.57322	0.52	0.393							0.82	1	
88.419	5	Clayey Silt to Silty Clay	35.716	1.49	5.101	2.447	2.655	3.04	0.57069	0.52	0.392							0.82	1	
89.075	5	Clayey Silt to Silty Clay	36.341	1.465	5.139	2.467	2.672	3.02	0.56818	0.52	0.391							0.82	1	
89.731	5	Clayey Silt to Silty Clay	46.677	2.017	5.176	2.488	2.689	2.94	0.5657	0.52	0.390							0.82	1	
90.387	5	Clayey Silt to Silty Clay	54.045	2.508	5.214	2.508	2.706	2.9	0.56324	0.52	0.390							0.82	1	
91.043	11	Stiff Fine-Grained	61.063	3.029	5.257	2.528	2.728	2.89	0.56008	0.52	0.388							0.82	1	
91.699	5	Clayey Silt to Silty Clay	61.919	2.808	5.294	2.549	2.746	2.86	0.55753	0.52	0.387							0.82	1	
92.356	11	Stiff Fine-Grained	72.503	3.959	5.337	2.569	2.768	2.87	0.55444	0.51	0.386							0.82	1	
93.012	3	Clay	49.775	2.63	5.374	2.59	2.784	3.03	0.55221	0.51	0.386							0.81	1	
93.668	5	Clayey Silt to Silty Clay	39.718	1.505	5.411	2.61	2.801	3	0.54986	0.51	0.385							0.81	1	
94.324	5	Clayey Silt to Silty Clay	37.609	1.287	5.449	2.631	2.818	3	0.54754	0.51	0.384							0.81	1	
94.98	6	Sandy Silt to Clayey Silt	36.33	1.094	5.487	2.651	2.835	2.97	0.54523	0.51	0.384							0.81	1	
95.636	6	Sandy Silt to Clayey Silt	37.935	1.073	5.524	2.672	2.852	2.93	0.54294	0.51	0.383							0.81	1	
96.293	6	Sandy Silt to Clayey Silt	40.431	1.089	5.562	2.692	2.87	2.89	0.54054	0.51	0.382							0.81	1	
96.949	6	Sandy Silt to Clayey Silt	40.633	1.004	5.599	2.713	2.887	2.87	0.53829	0.50	0.381							0.81	1	
97.605	6	Sandy Silt to Clayey Silt	50.423	1.657	5.637	2.733	2.904	2.86	0.53606	0.50	0.381							0.81	1	
98.261	11	Stiff Fine-Grained	62.29	3.117	5.68	2.754	2.926	2.91	0.5332	0.50	0.380							0.81	1	
98.917	11	Stiff Fine-Grained	62.42	3.296	5.723	2.774	2.948	2.92	0.53038	0.50	0.379							0.81	1	
99.573	3	Clay	48.074	2.645	5.759	2.795	2.965	3.04	0.52821	0.50	0.378							0.80	1	

APPENDIX B

APPENDIX B

LABORATORY TESTS

Classification Tests

The field classification of the samples was visually verified in the laboratory according to the Unified Soil Classification System. The results are presented on "Log of Test Borings", Appendix A.

Moisture-Density

The natural moisture contents and dry unit weights were determined for selected undisturbed samples of the soils in general accordance with ASTM Test Method D 2216-92. This information was used to classify and correlate the soils. The results are presented at the appropriate depths on the "Log of Test Borings", Appendix A.

Atterberg Limits

The Atterberg Limit was determined for selected sample of the fine-grained materials. These result was used to classify the soils, as well as to obtain an indication of the effective strength characteristics and expansion potential with variations in moisture content. The Atterberg Limit was determined in general accordance with ASTM Test Method D 4318-93. The result of this test is presented on Plate B-2, "Plasticity Chart".

Grain Size Classification

Grain size classification tests (ASTM Test Method D422-63) were performed on selected samples of granular soil to aid in the classification. The results are presented on Plate B-3, "Grain Size Distribution Curves".

Hydrometer

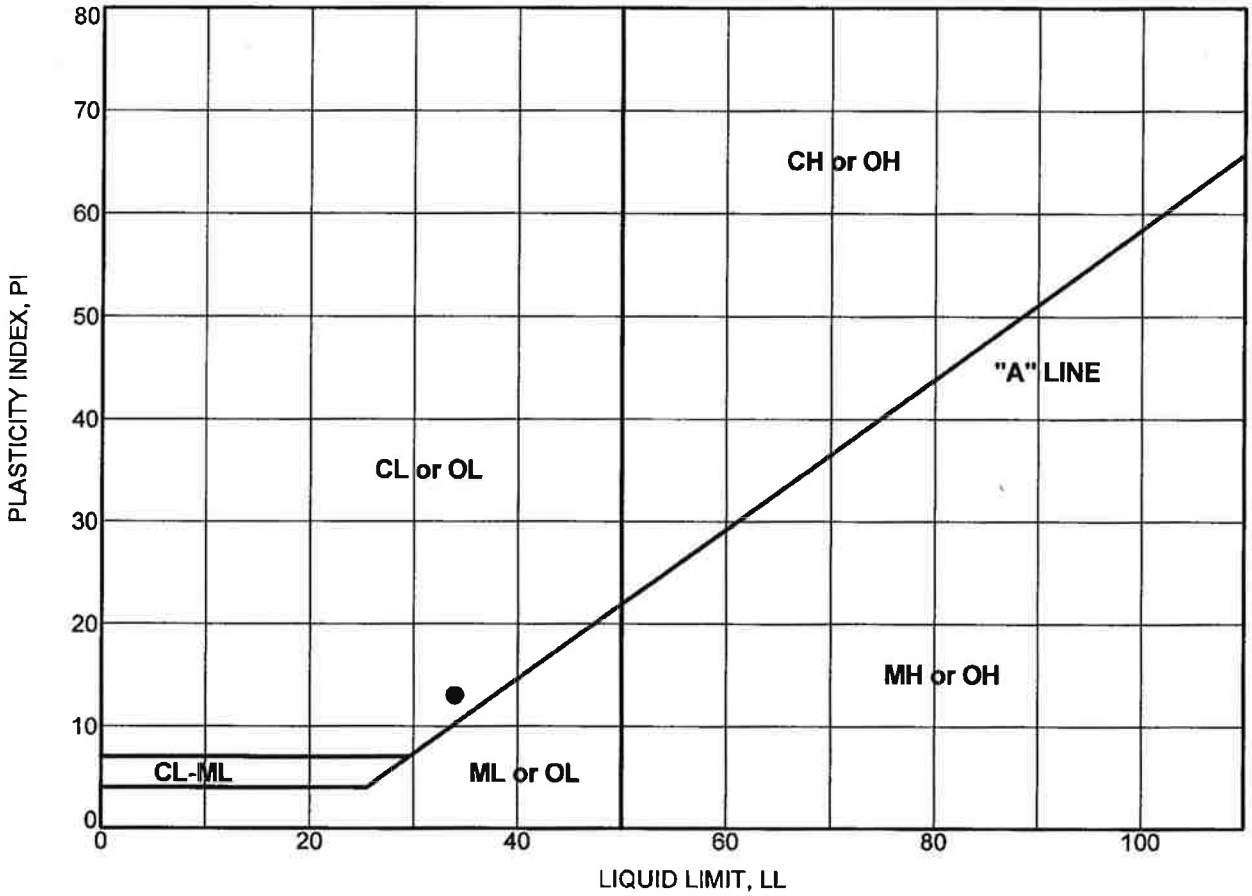
Hydrometer tests (ASTM Test Method D 422) were performed on selected samples to aid in the classification. The result is presented on Plate B-4, " Grain Size Distribution Curves"

Unconfined Compression Tests

Strength tests were performed on selected undisturbed samples using unconfined compression machine. Unconfined compression tests were performed in general accordance with ASTM Test Method D 2166-91. The results are presented on "Log of Test Borings"

Corrosion Test

Corrosion test was performed on selected sample to determine the corrosion potential of the soils. The pH and minimum resistively test was performed according to California Test Method 643. The test was performed by Sunland Analytical. The test result is presented on Plate B-5.



PLASTICITY CHART

Boring Number	Sample Number	Depth (feet)	Test Symbol	Moisture Content (%)	LL	PL	PI	Description
R-09-SC-001	MC-13	61.0	●	32	34	21	13	LEAN CLAY (CL)

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

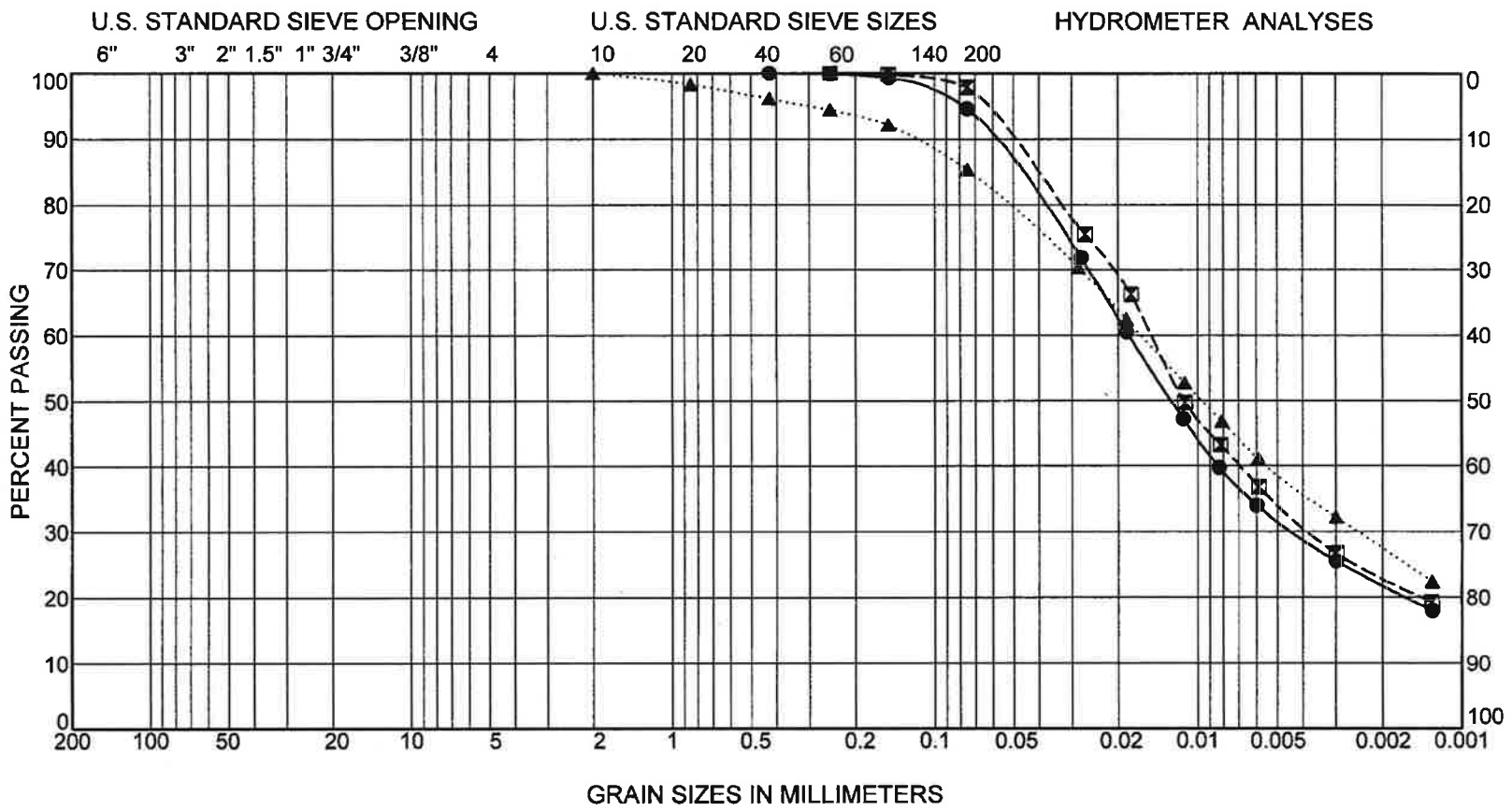
SUISUN CREEK BRIDGE
SOLANO COUNTY, CALIFORNIA

JOB NO: 208123.SCB

PLATE NO: B - 2

GRAIN SIZE DISTRIBUTION CURVES

COBBLES	GRAVEL		SAND			SILT AND CLAY
	coarse	fine	coarse	medium	fine	



Boring Number	Sample Number	Depth (feet)	Symbol	LL	PI	Description
R-09-SC-001	MC-1	3.0	●			SILT (ML)
R-09-SC-001	MC-2	6.0	⊠			SILT (ML)
R-09-SC-001	MC-3	11.0	▲			LEAN CLAY (CL)

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

SUISUN CREEK BRIDGE
SOLANO COUNTY, CALIFORNIA

JOB NO: 208123.SCB

PLATE NO: B - 3

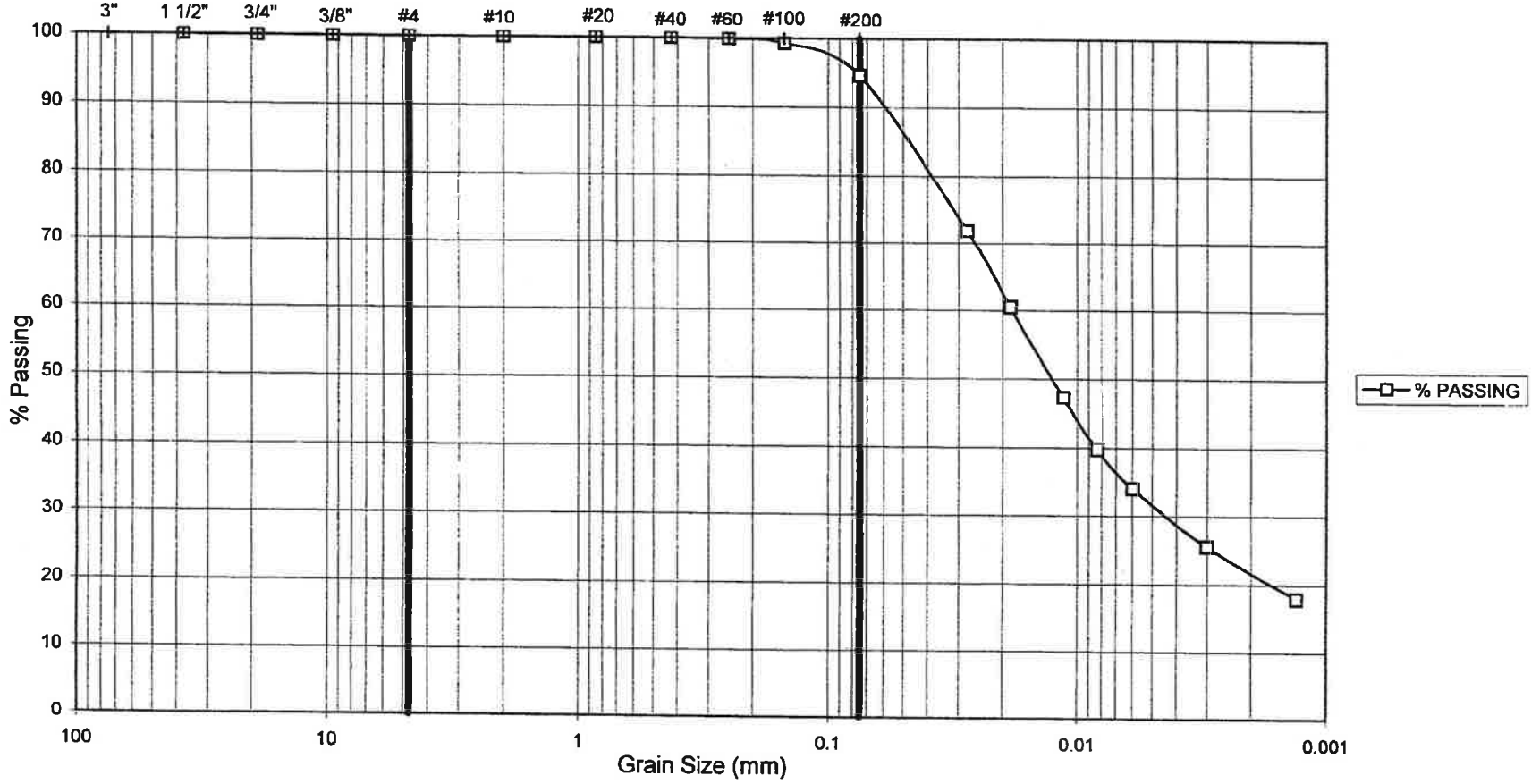
PARIKH CONSULTANTS, INC.

GRAIN SIZE DISTRIBUTION

(408) 452-9000

Project:	EB I-80 Truck Scale Relocation	Date:	2/12/2009
Client:	HDR Engineering. Inc.	Project #:	208123.GDR
Source/Location:	Native Sample: 001 #1 @ 3 feet (R-09-SC-001)	Lab # :	G646
Material Description:	SILT (ML), Yellowish brown	Date Tested:	2/11/2009

GRAVEL	SAND	SILT-TO-CLAY



Reported By:	Prav Dayah

PLATE NO.: B-4A

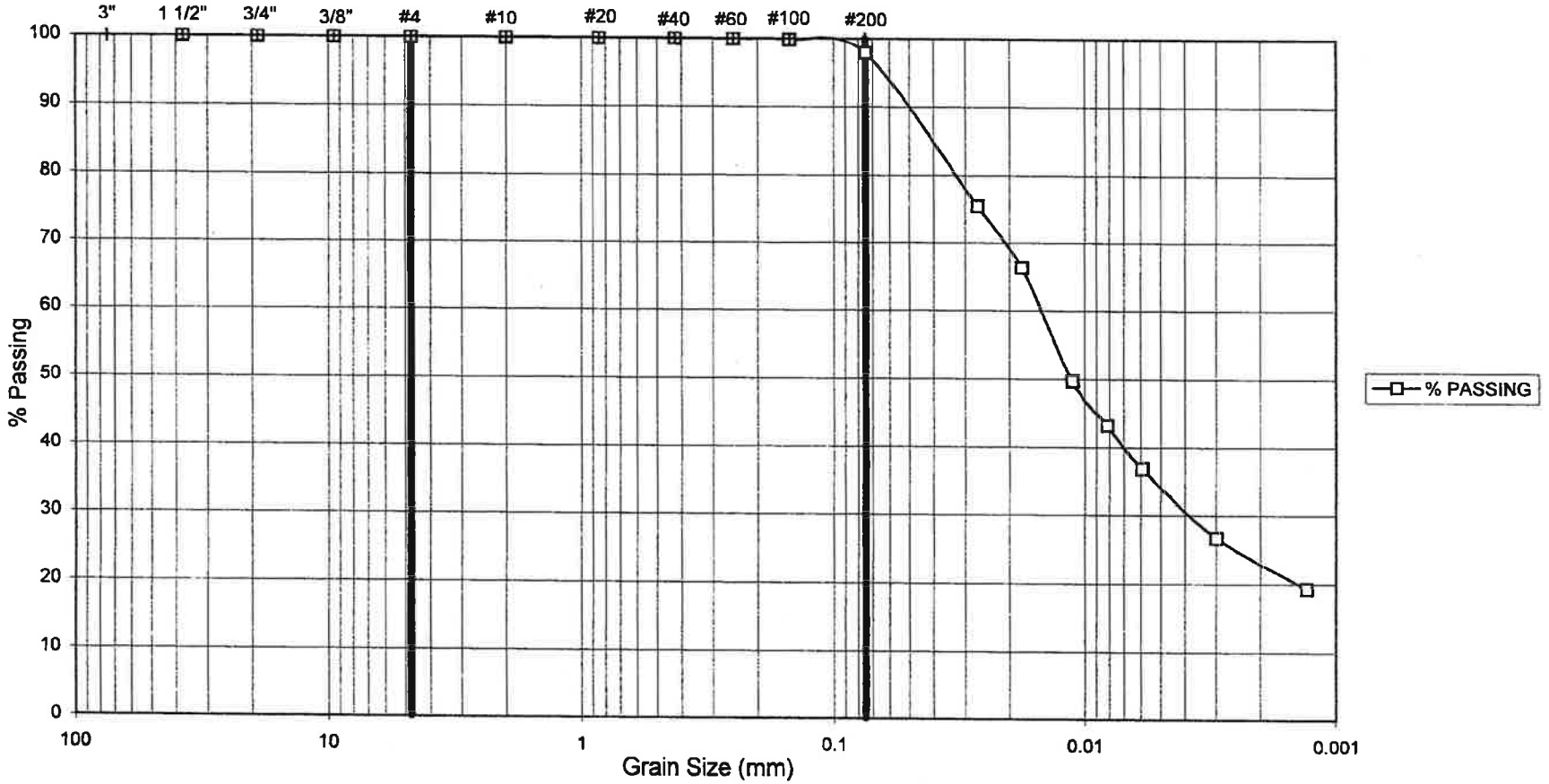
PARIKH CONSULTANTS, INC.

GRAIN SIZE DISTRIBUTION

(408) 452-9000

Project:	EB I-80 Truck Scale Relocation	Date:	2/12/2009
Client:	HDR Engineering. Inc.	Project #:	208123.GDR
Source/Location:	Native	Sample: 001 #2 @ 6 feet (R-09-SC-001)	Lab # : G646
Material Description:	SILT (ML), Yellowish brown	Date Tested:	2/11/2009

GRAVEL	SAND	SILT-TO-CLAY



Reported By:	Prav Dayah

PLATE NO.: B-4B

PARIKH CONSULTANTS, INC.

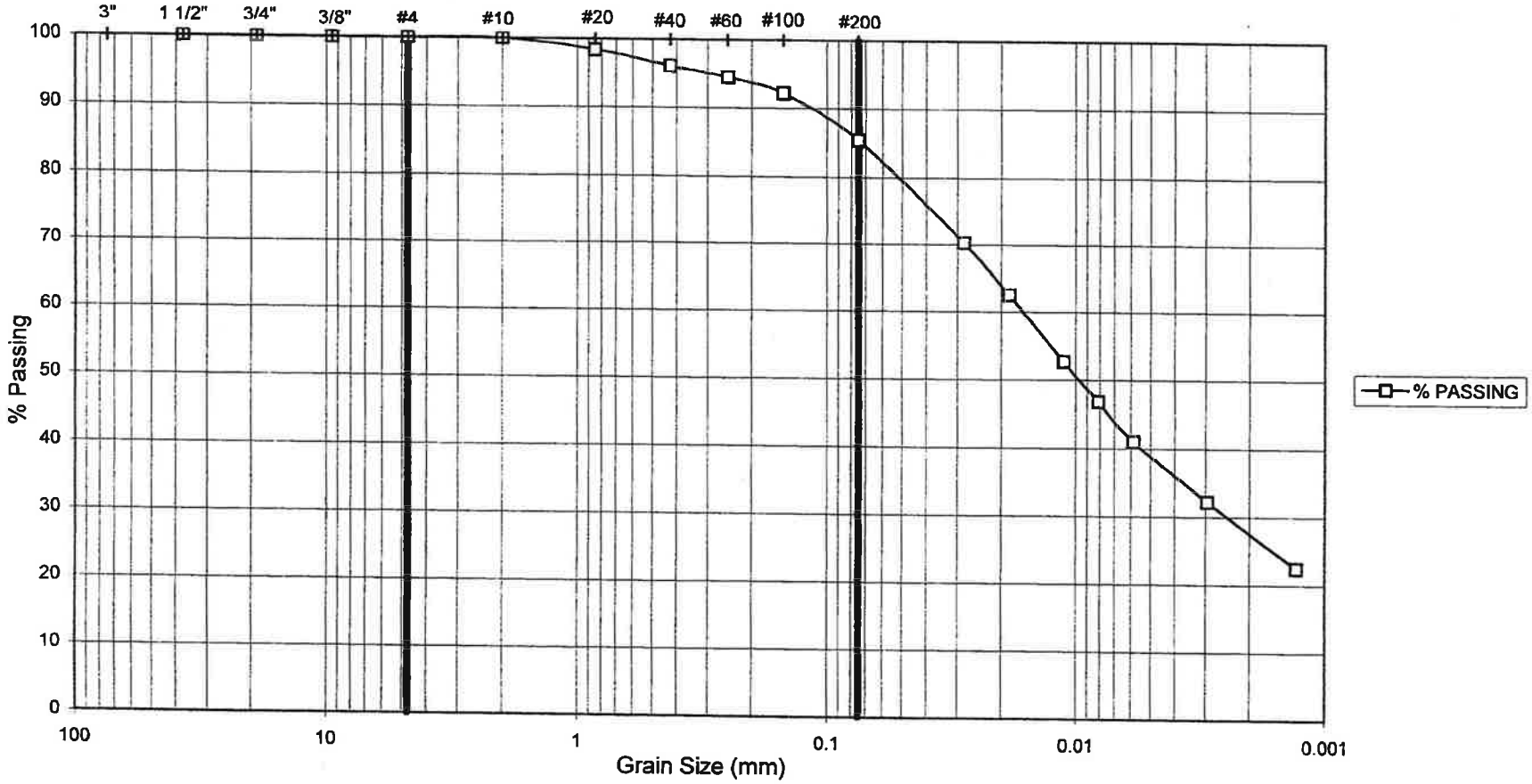
GRAIN SIZE DISTRIBUTION

(408) 452-9000

Project:	EB I-80 Truck Scale Relocation	Date:	2/12/2009
Client:	HDR Engineering. Inc.	Project #:	208123.GDR
Source/Location:	Native	Lab # :	G646
Material Description:	LEAN CLAY (CL), Brown	Date Tested:	2/11/2009

Sample: 001 #3 @ 11 feet (R-09-SC-001)

GRAVEL	SAND	SILT-TO-CLAY



Reported By:	Prav Dayah

PLATE NO.: B-4C

Sunland Analytical
11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

RECEIVED
FEB 20 2009
By

Date Reported 02/18/2009
Date Submitted 02/11/2009

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 208123.GDR I-80 Site ID : 001 #5 @21'. (R-09-SC-001-#5@21')
Thank you for your business.

* For future reference to this analysis please use SUN # 55127-110783.

EVALUATION FOR SOIL CORROSION

Soil pH	7.71		
Minimum Resistivity	1.26 ohm-cm (x1000)		
Chloride	13.4 ppm	00.00134	%
Sulfate	21.2 ppm	00.00212	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

PLATE NO.: B-5

APPENDIX C

Evaluation of Liquefaction Potential

LIQUEFACTION POTENTIAL ANALYSIS

PROJECT NAME ***SUISUN CREEK BRIDGE***
PROJECT NO. ***208123.SCB***
BORING NO. ***R-09-SC-001***

BOREHOLE DIA (in)= 8
GW DEPTH (ft)= 13

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS

HAMMER TYPE (1/2) = 2
(1. ROPE AND PULLEY; 2. AUTOMATIC)

FAULT INFO
CORDELIA FAULT
a_{max} (g)= 0.6
FAULT M_w = 6.5

MSF = 1.44
(Min. FS = 1.1 based on SPT)
*F.S.=($CRR_{6.5}$/CSR)*MSF*Kσ*Kα*

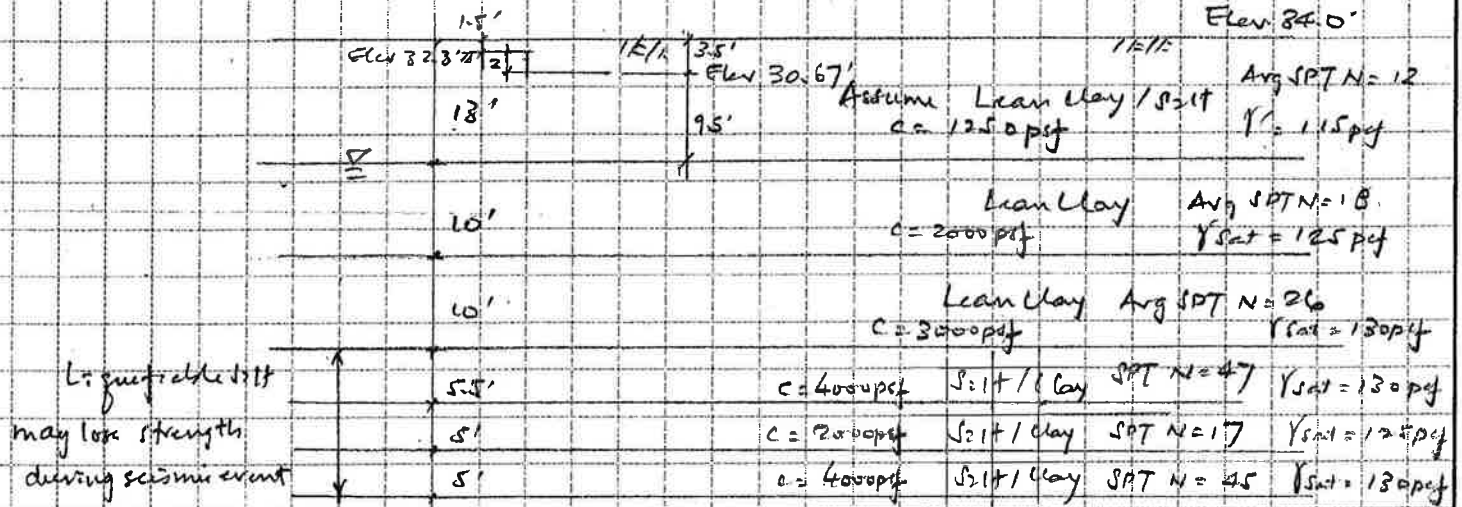
					CYCLIC STRESS RATIO (CSR)				*LIQUEFACTION RESISTANCE ($CRR_{6.5}$)*												
Sample No	Depth (ft)	Soil Type	Blow Count	Sampler Type	σ_v (psf)	σ_v' (psf)	γ_d	CSR	SPT-N_{60}	C_N	C_E	C_R	C_S	C_B	$(N_1)_{60}$	F.C.	$(N_1)_{60,CS}$	$CRR_{6.5}$	Kσ	Kα	F.S.
1	7.0	2	12	SPT	805.0	805.0	0.97		14	1.58	1	0.75	1.2	1.00	19.64	55%			1.00	1	
2	13.0	2	12	SPT	1495.0	1495.0	0.94		14	1.16	1	0.80	1.2	1.00	15.37	55%			1.00	1	
3	23.0	2	18	SPT	2746.3	2120.6	0.89		21	0.97	1	0.95	1.2	1.15	26.44	55%			0.98	1	
4	33.0	2	26	SPT	4046.3	2795.6	0.82		30	0.85	1	0.80	1.2	1.15	28.01	55%			0.90	1	
5	38.5	2	47	SPT	4761.3	3166.9	0.76		54	0.79	1	0.80	1.2	1.15	47.58	55%			0.87	1	
6	43.5	2	17	SPT	5386.3	3479.4	0.72		20	0.76	1	0.80	1.2	1.15	16.42	55%			0.85	1	
7	48.5	2	45	SPT	6036.3	3816.9	0.67		52	0.72	1	0.80	1.2	1.15	41.49	55%			0.82	1	
8	76.0	2	17	SPT	9473.8	5535.6	0.51		20	0.60	1	0.80	1.2	1.15	13.02	55%			0.74	1	
9	101.5	2	40	SPT	12788.8	7256.9	0.47		46	0.52	1	0.80	1.2	1.15	26.75	55%			0.68	1	

Pile Capacity Calculations/Lateral Pile Capacity Analyses

PARIKH
Practicing in the Geosciences

JOB Swan Creek Bridge 208173.GDR
SHEET NO 1 OF
CALCULATED BY A Lam DATE 10/2009
CHECKED BY DATE
SCALE

Pile Capacity Analyses - Abutment 1 (Boring R-09-SC-001) 45 tons pile 14" □ precast concrete pile



(TEMPLATE)

DRIVEN PILE CAPACITY - ***Cordelia Truck Scales Relocation - Suisun Creek Bridge*** ***Abut 1 - 45 tons service load (90 tons nom*** **ALLOWABLE FRICTIONAL PILE CAPACTY** 10/26/09

Design per FHWA Manual — GROUPS — INCREAMENTS — 208123.SCB

PILE DIA, B (ft) = 1.17 — 1- GRAVELS, SANDS AND NONPLASTIC SILTS (FT)= 5 — F.S. FOR COMPRESSION = 1

PILE SHAPE = 2 (1=CIRCLE, 2=SQ., 3=OCT.) — 2- CLAYS AND PLASTIC SILTS — F.S. FOR UPLIFT = 1

PILE MATERIAL = 1 (1=CONCRETE ,2=STEEL) — SOIL TYPES — PERIMETER OF THE PILE (ft) = 4.50 SQ. FT.

DRIVEN/DRILLED = 1 (1=DRIVEN ,2=DRILLED) — GRAVEL, SAND, NSILT Ref Boring : R-09-SC-001 (PARIKH 2009) — AREA OF THE PILE TIP = 1.35 SQ. FT.

CLAY, PSILT

Class 90 Alt. "X" - 14" square precast prestressed cx

DEPTH FROM	TO		SOIL GROUP	EFFECTIVE UNIT WEIGHT(pcf)	WEIGHT OF LAYER (psf)	EFFECTIVE OVERBURDEN PRESSURE (psf)	SOIL TYPE	CONSISTENCY	SHEAR STRENGTH PARAMETERS c(psf)	SHEAR STRENGTH PARAMETERS ϕ (°)	FHWA Manual (Tomlinson, 1980) α	PER SECTION COMP. (Ton)	ULTIMATE COMPRESSION CAPACITY (Ton)	PER SECTION UPLIFT (Ton)	ULTIMATE UPLIFT CAPACITY (Ton)
0.0	2.0	BT2 FTG	2	115	230	115	CLAY		0	0	0.00	0.00	0.00	0.00	0.00
2.0	7.0		2	115	575	518	CLAY	STIFF	1250	0	0.90	12.66	12.66	12.66	12.66
7.0	11.5		2	115	517.5	1064	CLAY	STIFF	1250	0	0.90	11.39	24.05	11.39	24.05
11.5	16.5		2	63	315	1480	CLAY	STIFF	2000	0	0.65	14.63	38.67	14.63	38.67
16.5	21.5		2	63	315	1795	CLAY	STIFF	2000	0	0.65	14.63	53.30	14.63	53.30
21.5	26.5		2	68	340	2123	CLAY	V.STIFF	3000	0	0.35	11.81	65.11	11.81	65.11
26.5	31.5		2	68	340	2123	CLAY	V.STIFF	3000	0	0.35	11.81	76.92	11.81	76.92
31.5	37.0		2	68	374	2820	CLAY	V.STIFF	4000	0	0.30	0.00	76.92	14.85	91.77
37.0	42.0		2	63	315	3164	CLAY	STIFF	2000	0	0.75	0.00	76.92	16.88	108.65
42.0	47.0		2	68	340	3492	CLAY	V.STIFF	4000	0	0.25	0.00	76.92	19.13	127.77
47.0	53.0		2	63	378	3511	CLAY	STIFF	2000	0	0.85	22.95	99.87	22.95	150.72
53.0	58.0		2	63	315	4197	CLAY	STIFF	2000	0	0.85	19.13	119.00	19.13	169.85
58.0	63.5		2	63	346.5	4528	CLAY	STIFF	2000	0	0.85	21.04	140.03	15.16	185.01
63.5	69.0		2	63	346.5	4874	CLAY	STIFF	2000	0	0.85	21.04	161.07	15.16	200.17
69.0	74.5		2	63	346.5	5221	CLAY	STIFF	2000	0	0.85	21.04	182.11	15.16	215.33
74.5	79.5		2	68	340	5564	CLAY	V.STIFF	3500	0	0.35	13.78	195.89	0.00	215.33
79.5	84.5		2	68	340	4525	CLAY	V.STIFF	3500	0	0.35	13.78	209.67	13.78	229.11
84.5	89.5		2	68	340	4871	CLAY	V.STIFF	3500	0	0.35	13.78	223.45	13.78	242.89
89.5	94.5		2	68	340	6244	CLAY	V.STIFF	3500	0	0.35	13.78	237.23	13.78	256.67
94.5	100.0		2	68	374	6601	CLAY	V.STIFF	3500	0	0.35	15.16	252.39	15.16	271.83

Abutment 1 --> Pile cut-off elevation is +30.67 feet. Assumed finished grade elevation is +32.30 feet

Frictional capacity is ignored from the depth of 31.5 feet to 47 feet due to the strength softening of the silt during the seismic events

Pile Length @ Abutment 1 = 53.0' - 2.0' = 51.0 '

Pile tip at approxiamtely 51.0' below pile cut-off (pile tip @ Elev. -20.5', pile cut-off @ Elev. +30.67'), available Ult. Pile Capacity =99.9 tons (Friction) > Nominal Resistance (180 k/90 tons), OK

Suisun Creek Bridge Abut 1 Class 90 Alt X

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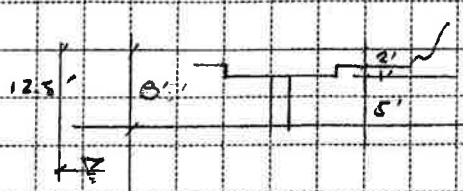
JOB Fremont Creek Bridge 20B127.GDR
SHEET NO 3 OF
CALCULATED BY A. Lam DATE 10/09
CHECKED BY DATE
SCALE

Pile Capacity Analysis - Abutment 2 (CPT-09-SC-0011) 45 tons pile 14" □ precast concrete pile



Elev. +34.5'

Sand $\phi' = 36°$
$\gamma' = 125$ pcf

Clay $c = 1250$ psf
$\gamma_{sat} = 125$ pcf
$\gamma' = 115$ pcf

20'

$\gamma_{sat} = 130$ pcf Sand $\phi' =$

65'

Liquefiable Silt may lose the strength

5.5'

$\gamma_{sat} = 130$ pcf Silt/Clay $c = 4000$ psf

10'

$\gamma_{sat} = 130$ pcf Silt/Clay $c = 3500$ psf

18'

Clay $c = 3500$ psf
$\gamma_{sat} = 130$ pcf

9'

$\gamma_{sat} = 135$ pcf Sand $\phi = 37.5°$

23'

Clay $c = 3250$ psf
$\gamma_{sat} = 130$ pcf
SPT N = 26

(TEMPLATE)

DRIVEN PILE CAPACITY - ***Cordelia Truck Scales Relocation - Suisun Creek Bridge*** ***Abut 2 - 45 tons service load (90 tons nom*** **ALLOWABLE FRICTIONAL PILE CAPACTY** 10/26/09

Design per FHWA Manual — GROUPS — INCREAMENTS — 208123.SCB

PILE DIA, B (ft) = 1.17 — 1- GRAVELS, SANDS (FT)= 5 — F.S. FOR COMPRESSION = 1

PILE SHAPE = 2 — AND NONPLASTIC SILTS

(1=CIRCLE, 2=SQ., 3=OCT.) — 2- CLAYS AND PLASTIC SILTS — F.S. FOR UPLIFT = 1

PILE MATERIAL = 1 — SOIL TYPES

(1=CONCRETE ,2=STEEL) — GRAVEL, SAND, NSILT Ref Boring : CPT-09-SC-001 (PARIKH 2009) — PERIMETER OF THE PILE (ft) : 4.50 SQ. FT.

DRIVEN/DRILLED = 1 — CLAY, PSILT — AREA OF THE PILE TIP 1.35 SQ. FT.

(1=DRIVEN ,2=DRILLED)

Class 90 Alt. "X" - 14" square precast prestressed c

DEPTH FROM	TO		SOIL GROUP	EFFECTIVE UNIT WEIGHT(pcf)	WEIGHT OF LAYER (psf)	EFFECTIVE OVERBURDEN PRESSURE (psf)	SOIL TYPE	CONSISTENCY	SHEAR STRENGTH PARAMETERS c(psf)	SHEAR STRENGTH PARAMETERS ϕ (°)	FHWA Manual (Tomlinson, 1980) α	PER SECTION COMP. (Ton)	ULTIMATE COMPRESSION CAPACITY (Ton)	PER SECTION UPLIFT (Ton)	ULTIMATE UPLIFT CAPACITY (Ton)
0.0	1.0	BT2 FTG	1	125	125	63	SAND		0		0.00	0.00	0.00	0.00	0.00
1.0	6.0		1	125	625	438	SAND	MED DEN	0	35	0.00	6.54	6.54	2.19	2.19
6.0	10.5		2	115	517.5	1009	CLAY	STIFF	1250	0	0.90	11.39	17.93	11.39	13.58
10.5	15.5		2	63	315	1425	CLAY	STIFF	1250	0	0.90	12.66	30.59	12.66	26.24
15.5	20.5		2	63	315	1740	CLAY	STIFF	1250	0	0.90	12.66	43.24	12.66	38.89
20.5	26.0		2	63	346.5	2071	CLAY	STIFF	1250	0	0.90	13.92	57.16	0.00	38.89
26.0	29.5		1	68	238	2017	SAND	MED DEN	0	35	0.00	14.82	71.99	4.97	43.86
29.5	32.5		1	68	204	2584	SAND	MED DEN	0	35	0.00	12.64	84.63	4.23	48.09
32.5	38.0		2	68	374	2873	CLAY	V.STIFF	4000	0	0.40	0.00	84.63	19.80	67.89
38.0	42.0		2	68	272	3196	CLAY	V.STIFF	3500	0	0.40	0.00	84.63	12.60	80.49
42.0	48.0		2	68	408	3264	CLAY	V.STIFF	3500	0	0.40	0.00	84.63	18.90	99.39
48.0	53.0		2	68	340	3910	CLAY	V.STIFF	3500	0	0.40	15.75	100.38	15.75	115.14
53.0	58.0		2	68	340	4250	CLAY	V.STIFF	3500	0	0.40	15.75	116.13	0.00	115.14
58.0	63.0		2	68	340	4590	CLAY	V.STIFF	3500	0	0.40	15.75	131.88	14.63	129.77
63.0	66.0		2	68	204	4862	CLAY	V.STIFF	3500	0	0.40	9.45	141.33	8.78	138.54
66.0	70.5		1	73	328.5	5128	SAND	DENSE	0	36.5	0.00	19.93	161.25	0.00	138.54
70.5	75.0		1	73	328.5	4244	SAND	DENSE	0	36.5	0.00	19.93	181.18	6.68	145.22
75.0	80.5		2	68	374	4607	CLAY	V.STIFF	3250	0	0.00	0.00	181.18	16.09	161.31
80.5	86.0		2	68	374	5808	CLAY	V.STIFF	3250	0	0.40	16.09	197.27	16.09	177.39
86.0	91.5		2	68	374	6182	CLAY	V.STIFF	3250	0	0.40	16.09	213.36	16.09	193.48
91.5	98.0		2	68	442	6590	CLAY	V.STIFF	3250	0	0.40	19.01	232.37		

Abutment 2 --> Pile cut-off elevation is +30.67 feet. Assumed finished grade elevation is +31.80 feet

Frictional capacity is ignored from the depth of 32.5 feet to 48 feet due to the strength softening of the silt during the seismic events

Pile Length @ Abutment 2 = 53.0' - 1.0' = 52.0 '

Pile tip at approxiamtely 52.0' below pile cut-off (pile tip @ Elev. -21.5', pile cut-off @ Elev. +30.67'), available Ult. Pile Capacity =100.4 tons (Friction) > Nominal Resistance (180 k/90 tons), OK

Suisun Creek Bridge Abut 2 Class 90 Alt X

Sheet 4 of 5

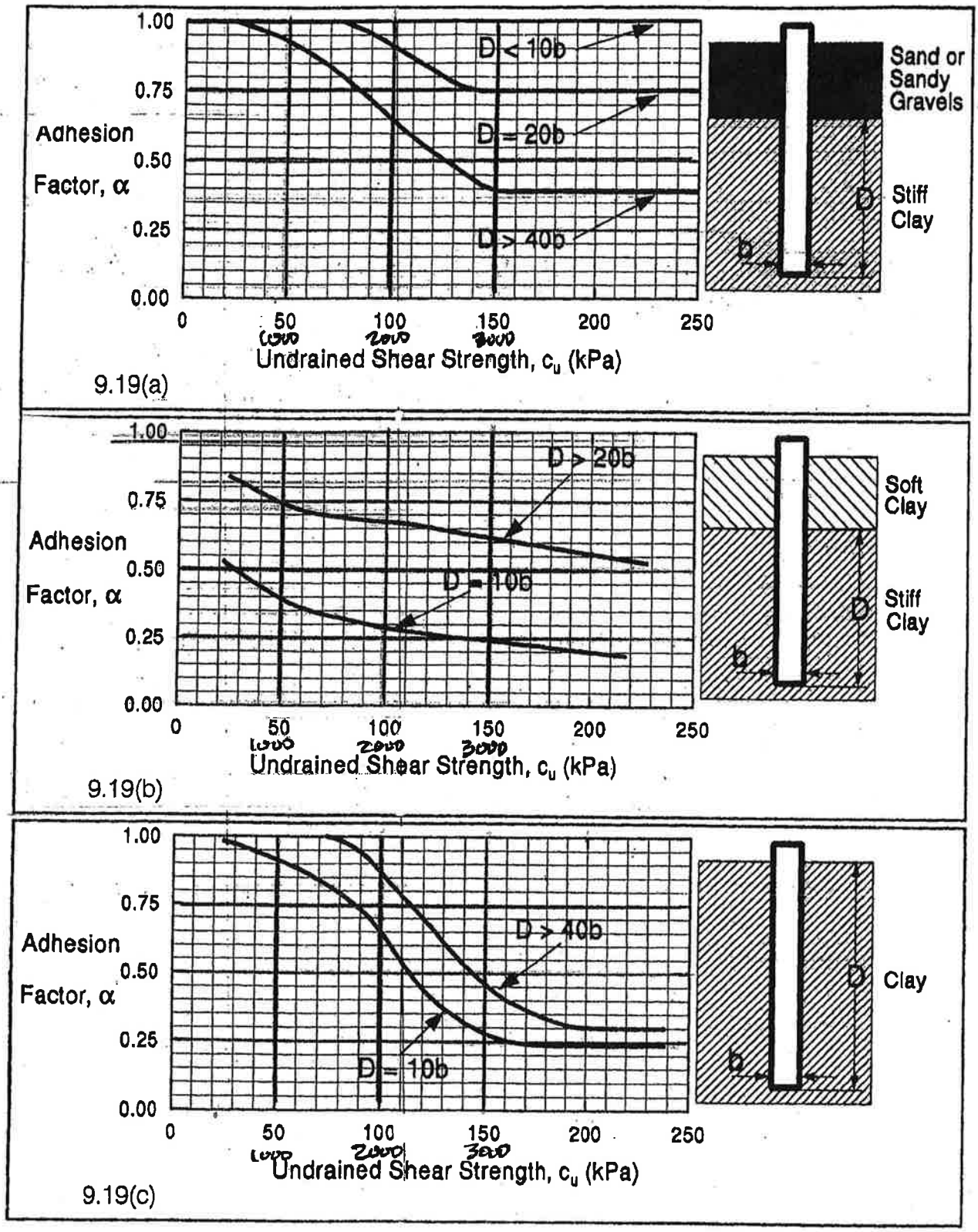


Figure 9.19 Adhesion Factors for Driven Piles in Clay (after Tomlinson, 1980)

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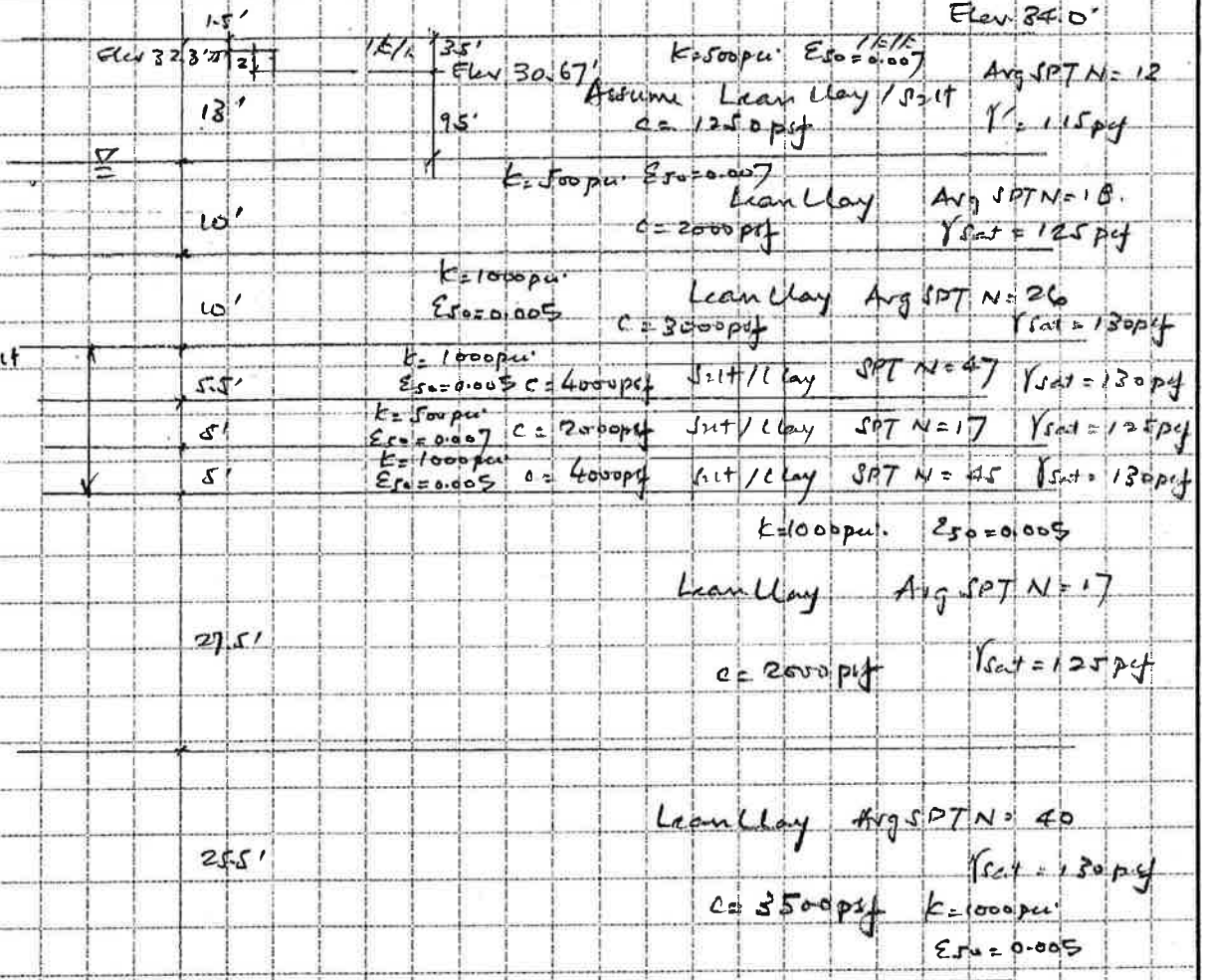
JOB Truxtun Creek Bridge 20873.GDR
SHEET NO 1 OF
CALCULATED BY A Lam DATE 10/2009
CHECKED BY DATE
SCALE

Lateral Pile Capacity Analyses - Abutments (Boring R-09-SC-001) 45 tons pile 14" □ precast concrete pile



```
Corelia Suisun Creek Br. Abut 1 (A-09-SC-001) (14-inch Precast Concrete Pile)
    1      1      0      0      0
   90      2    -24.0    540.0     0.0
    0.0     14.0          3112.00          194.00          3600000
  540.0     14.0          3112.00          194.00          3600000
    8     14       16       0      6
    3    -24.0    114.0      500.0  500.0
    3    114.0    234.0      500.0  500.0
    3    234.0    354.0     1000.0 1000.0
    3    354.0    420.0     1000.0 1000.0
    3    420.0    480.0      500.0  500.0
    3    480.0    540.0     1000.0 1000.0
    3    540.0    870.0      500.0  500.0
    3    870.0   1176.0     1000.0 1000.0
  -24.0     0.067
  114.0     0.067
  114.0     0.036
  234.0     0.036
  234.0     0.039
  420.0     0.039
  420.0     0.036
  480.0     0.036
  480.0     0.039
  540.0     0.039
  540.0     0.036
  870.0     0.036
  870.0     0.039
 1176.0     0.039
  -24.0      8.68      0.0    0.007
  114.0      8.68      0.0    0.007
  114.0     13.89      0.0    0.007
  234.0     13.89      0.0    0.007
  234.0     20.83      0.0    0.005
  354.0     20.83      0.0    0.005
  354.0     27.78      0.0    0.005
  420.0     27.78      0.0    0.005
  420.0     13.89      0.0    0.007
  480.0     13.89      0.0    0.007
  480.0     27.78      0.0    0.005
  540.0     27.78      0.0    0.005
  540.0     13.89      0.0    0.007
  876.0     13.89      0.0    0.007
  876.0     24.31      0.0    0.005
 1176.0     24.31      0.0    0.005
  -24.0    0.6   1
  354.0    0.6   1
  354.0    0.1   2
  540.0    0.1   2
  540.0    0.6   3
 1176.0    0.6   3
    0      1     1
    4
    1   1.30D+04  0.0D+05  9.00D+04
    1   2.00D+04  0.0D+05  9.00D+04
    1   3.00D+04  0.0D+05  9.00D+04
    1   4.00D+04  0.0D+05  9.00D+04
    0
    1      1      0
  500   1.00D-5   2500.0
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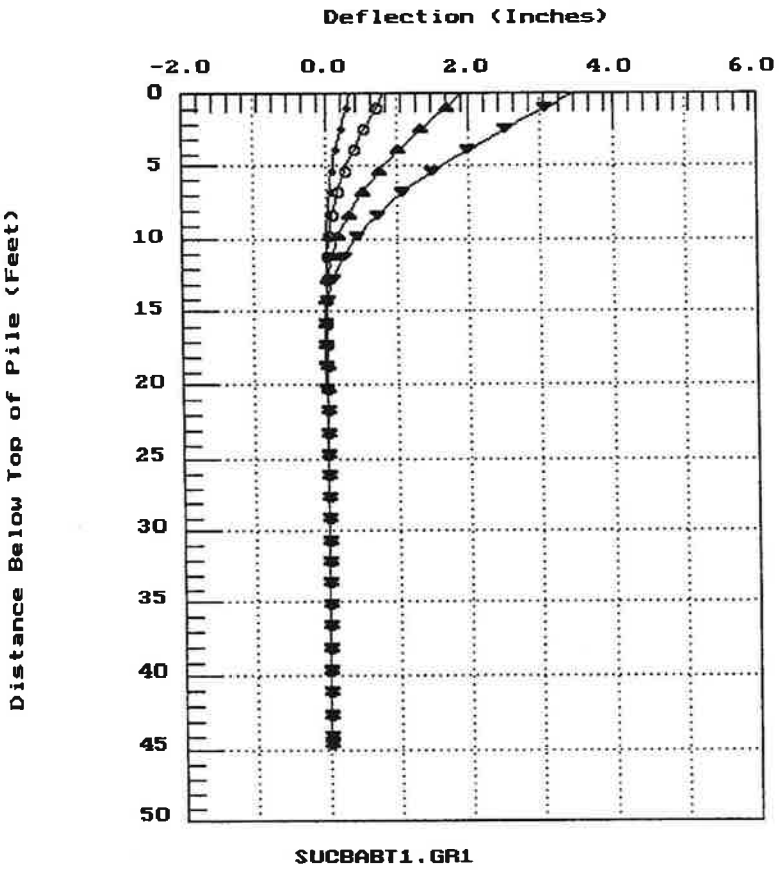
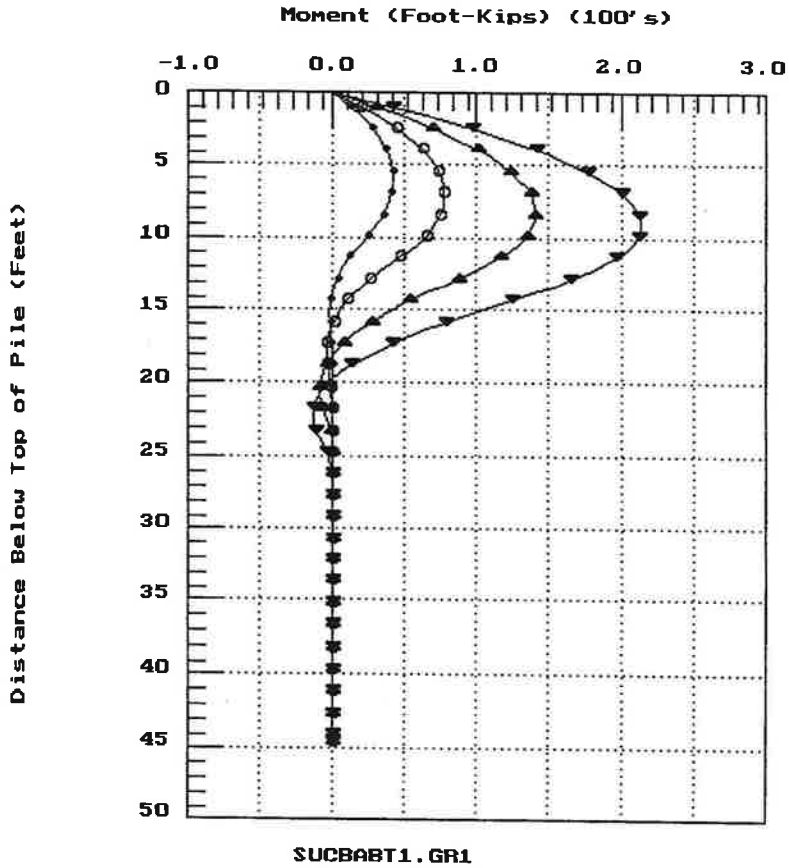
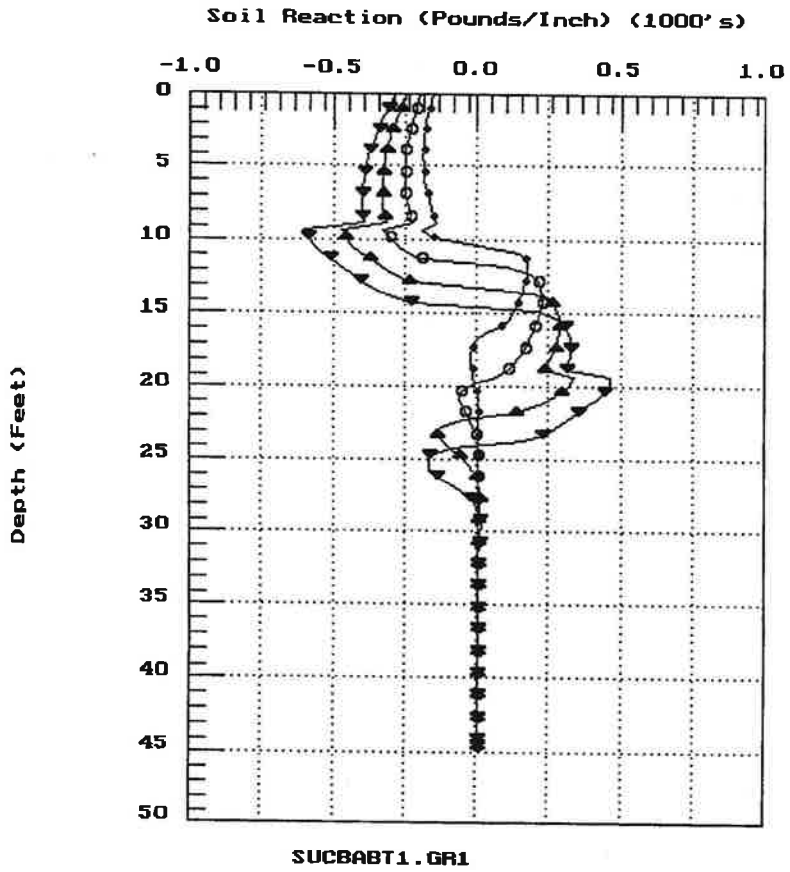
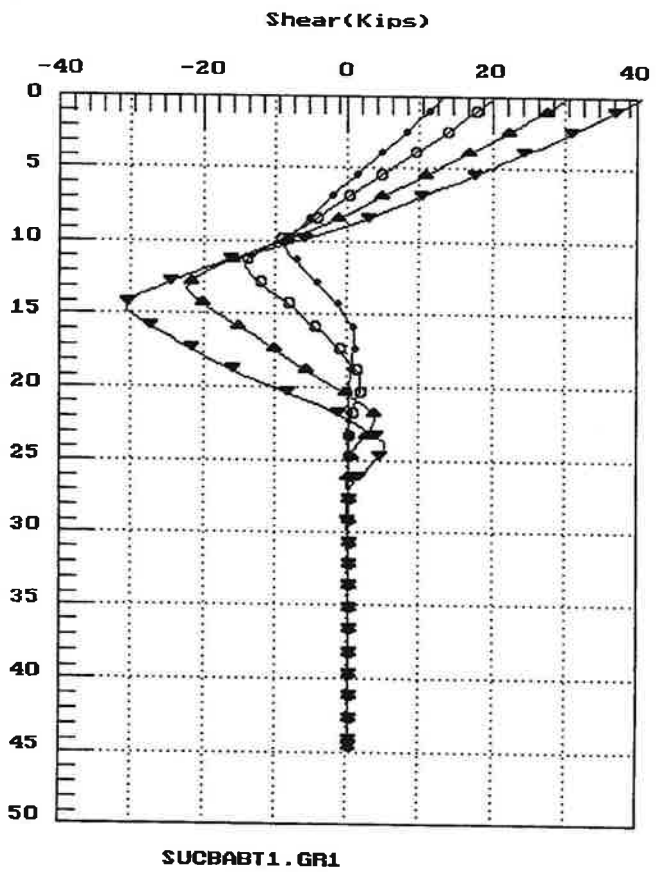




ABUTMENT 1 FREE HEAD → • 13^k ○ 20^k ▲ 30^k ▼ 40^k

SUISUN CREEK BRIDGE 20B123.SCB


Soil Reaction (Pounds/Inch) (1000's)
-1.0
-0.5
0.0
0.5
1.0
0
5
10
15
20
25
30
35
40
45
50
Depth (Feet)
SUCBABT1.GR1

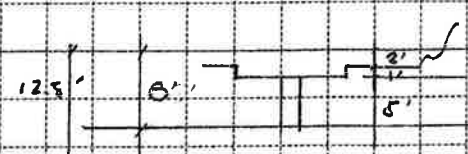

Shear(Kips)
-40
-20
0
20
40
0
5
10
15
20
25
30
35
40
45
50
SUCBABT1.GR1

```
Corelia Suisun Creek Br. Abut 2 (CPT-09-SC-001) (14-inch Precast Concrete Pile)
    1      1      0      0      0
   82      2    -12.0     492.0      0.0
    0.0     14.0          3112.00           194.00          3600000
  492.0     14.0          3112.00           194.00          3600000
    8     12       14       0      6
    4    -12.0     60.0      225.0  225.0
    3     60.0    114.0      500.0  500.0
    3    114.0    300.0      500.0  500.0
    4    300.0    378.0       60.0   60.0
    3    378.0    444.0     1000.0 1000.0
    3    444.0    780.0     1000.0 1000.0
    4    780.0    888.0      125.0  125.0
    3    888.0   1164.0     1000.0 1000.0
  -12.0     0.072
   60.0     0.072
   60.0     0.067
  114.0     0.067
  114.0     0.036
  300.0     0.036
  300.0     0.039
  780.0     0.039
  780.0     0.042
  888.0     0.042
  888.0     0.039
 1164.0     0.039
  -12.0      0.0      36.0    0.0
   60.0      0.0      36.0    0.0
   60.0      8.68      0.0    0.007
  300.0      8.68      0.0    0.007
  300.0      0.0      34.5    0.0
  378.0      0.0      34.5    0.0
  378.0     27.78      0.0    0.005
  444.0     27.78      0.0    0.005
  444.0     24.31      0.0    0.005
  780.0     24.31      0.0    0.005
  780.0      0.00     36.5    0.00
  888.0      0.00     36.5    0.00
  888.0     22.57      0.0    0.005
 1164.0     22.57      0.0    0.005
  -12.0    0.6   1
  378.0    0.6   1
  378.0    0.1   2
  564.0    0.1   2
  564.0    0.6   3
 1164.0    0.6   3
    0      1     1
    4
    1    1.30D+04   0.0D+05   9.00D+04
    1    2.00D+04   0.0D+05   9.00D+04
    1    3.00D+04   0.0D+05   9.00D+04
    1    4.00D+04   0.0D+05   9.00D+04
    0
    1      1      0
  500    1.00D-5    2500.0
```

PARIKH
Practicing in the Geosciences

JOB Truckee Creek Bridge 20B123..GDR
SHEET NO ____ OF ____
CALCULATED BY A. Lam DATE 10/09
CHECKED BY ____ DATE ____
SCALE ____

Lateral Pile Capacity Analysis- Abutment 2 (CPT-09-SC-0011) 48 tons pile 14" □ precast concrete pile



Elev.+34.5'

12.5' 8' Sand $\phi' = 36°$ $\gamma' = 125$ pcf $k = 225$ pci

20.5' Clay $c = 1250$ psf $\varepsilon_{50} = 0.007$ $k = 500$ pci
$\gamma_{sat} = 125$ pcf
$\gamma' = 115$ pcf

6.5' $\gamma_{sat} = 130$ pcf Sand $\phi' = 34.5°$ $k = 60$ pci

Liquefiable silt transient loss of strength

5.5' $k = 1000$ pci $\gamma_{sat} = 130$ pcf Silt/Clay $c = 4000$ psf

$\gamma_{sat} = 130$ pcf Silt/Clay $c = 3500$ psf $\varepsilon_{50} = 0.005$

10' Clay $c = 3500$ psf

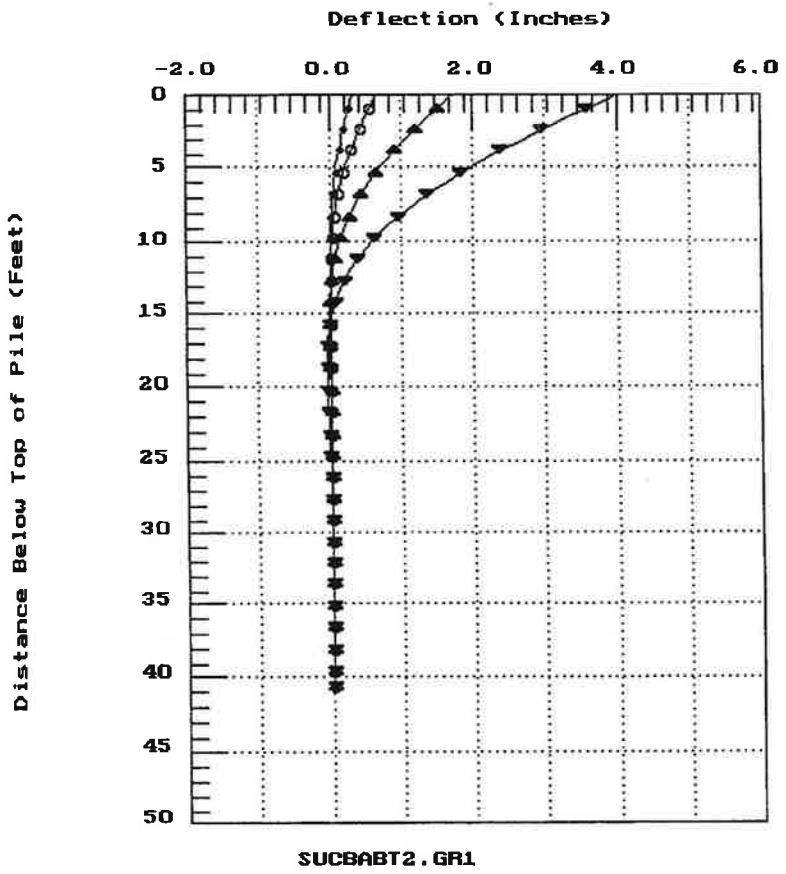
16' $\gamma_{sat} = 130$ pcf $k = 1000$ pci
$\varepsilon_{50} = 0.005$

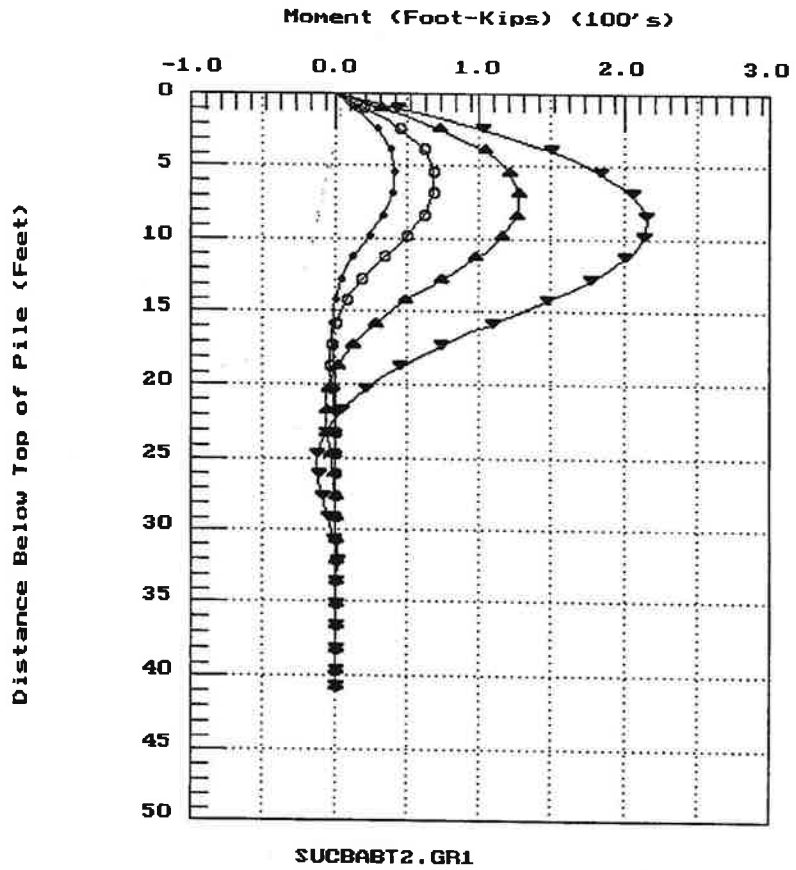
9' $\gamma_{sat} = 135$ pcf Sand $\phi' = 37.5°$ $k = 125$ pci

$k = 1000$ pci

23' Clay $c = 3250$ psf

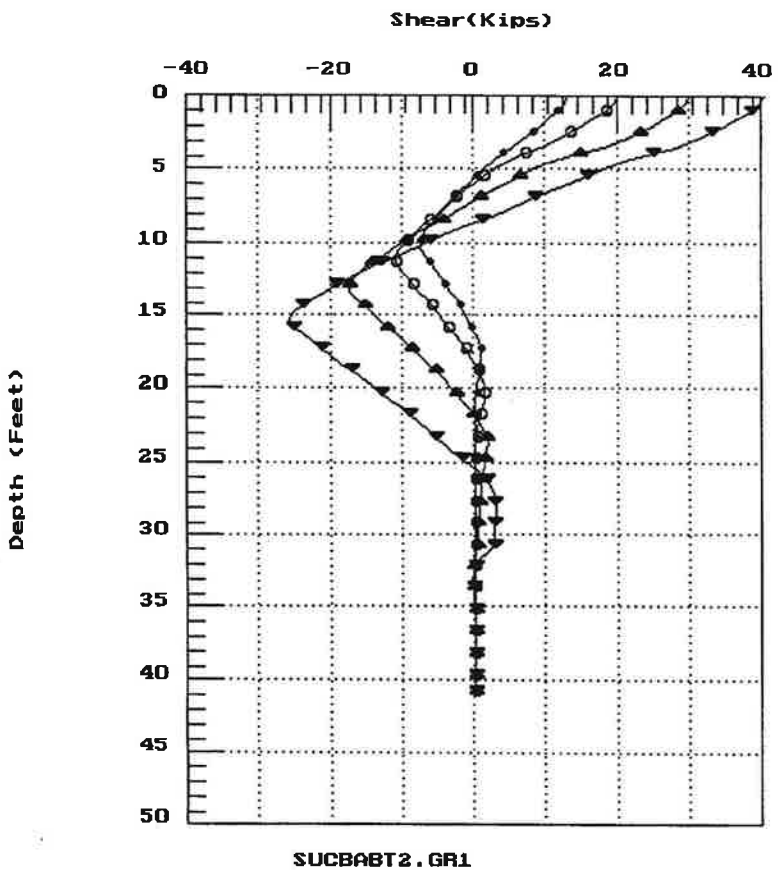
$\gamma_{sat} = 130$ pcf SPT N = 26
$\varepsilon_{50} = 0.005$

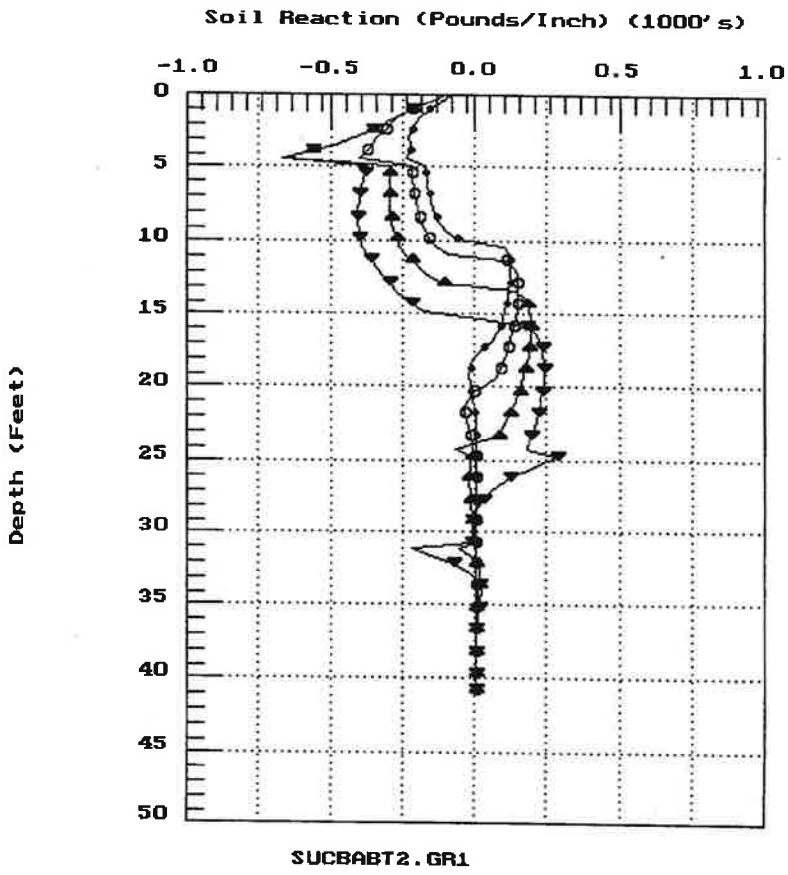




ABUTMENT 2 FREE HEAD ⟶ • 13^k ∘ 20^k ▲ 30^k ▼ 40^k

SUISUN CREEK BRIDGE 20B123.SCB


Shear(Kips)
-40
-20
0
20
40
0
5
10
15
20
25
30
35
40
45
50
Depth (Feet)
SUCBABT2.GR1


Soil Reaction (Pounds/Inch) (1000's)
-1.0
-0.5
0.0
0.5
1.0
0
5
10
15
20
25
30
35
40
45
50
Depth (Feet)
SUCBABT2.GR1

Settlement Analyses

SETTLEMENT ANALYSIS ***Suisun Creek Bridge Abutment 1*** 10/28/09

LOCATION: Fairfield

Abutment Fill - Based on reference Boring R-09-SC-001

Height of fill = 7 ft
Width of fill = 45 ft
Fill Density = 125 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural molsture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf)	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
			0											
0	13	115	1495	747.5	745	12	1500	6000.00	13	0.0480	0.0048	0.22	0.00	0.22
13	23	63	630	1810	579	18	2250	9000.00	25	0.1174	0.0117	0.17	0.00	0.17
23	33	68	680	2465	477	26	3250	13000.00	24	0.1107	0.0111	0.10	0.00	0.10
33	38.5	68	374	2992	416	47	5875	23500.00	22	0.0975	0.0098	0.04	0.00	0.04
38.5	43.5	63	315	3336.5	381	17	2125	8500.00	32	0.1645	0.0165	0.05	0.00	0.05
43.5	48.5	68	340	3664	352	45	5625	22500.00	20	0.0847	0.0085	0.02	0.00	0.02
48.5	76	63	1733	4700.25	278	17	2125	8500.00	28	0.1376	0.0138	0.11	0.00	0.11
76	101.5	68	1734	6433.5	199	40	5000	20000.00	24	0.1107	0.0111	0.04	0.00	0.04

	OC	NC	SUM
TOTAL SETTLEMENT (IN.) =	0.76	0.00	0.76

O.C. RANGE SETTLEMENT = 0.76 INCHES
N.C. RANGE SETTLEMENT = 0.00 INCHES

Total settlement is approximately 0.8 inches and in the OC range per available boring information.

APPENDIX D

OSFP Review Comment & Response Form

General Project Information	Review Phase	Reviewer Information
Dist: 04 **EA:** 0A5351 **Project Name:** Suisun Creek Bridge **OSFP Liaison:** Tracy L. Bertram **Phone:** 916-227-8397 **e-mail:** _____	☐ PSR/PDS (Review No. _) ☐ APS/PSR (Review No. _) ☐ APS/PR (Review No. _) ☐ Type Selection ☐ 65% PS&E Unchecked Details ☐ PS&E (Review No. 2) ☐ Construction Support ☒ Other: FR (2nd PS&E Submittal) **Structure Information** (Use when necessary to document comments by individual structure) **Structure Name:** Suisun Creek Bridge **Br No:** 23-0240S	**Reviewer Name:** Suja Ahmed **Functional Unit:** GS **Phone Number:** 510-286-4752 **e-mail:** suja_ahmed@dot.ca.gov **Date of Review:** 10/07/10

Consultant Information (to be filled in by Consultant)

Consultant Structure Lead (First and Last Name)	Structure Consultant Firm	Phone Number	e-mail	Response Date
Greg Kenning	Biggs Cardosa Associates, Inc.	(408) 296 5515	gkenning@biggscardosa.com	11/11/10

#	Doc. (See Note 1)	Page, Section, or SSP	Review Comments	Consultant Responses	
1	FR	N/A	Foundation Report (FR)-Suisun Creek Bridge, prepared by Parikh Consultant, Inc. in May 18, 2010		
2	FR	**Seismic Review** Reviewed by Hossain Salimi on 09-27-10	1. According to a cover memo send by Tracy Bertram, both bridges were type selected in July 2009, before the new Caltrans Seismic Design Criteria (SDC) was implemented. Parikh, however has used the new criteria to develop the Acceleration Response Spectrum for the E80-E12/E80 On-Ramp Separation, but stayed with the old SDC for the Suisun Creek Bridge. I'd like to know why this Parikh did this. I would be better to be consistent and use the same criteria for both structures. 2. Plate No. 5 for the E80-E12/E80 On-Ramp Separation structure shows a	1. Old Seismic Design Criteria (SDC) will be used for both "Suisun Creek Bridge" and "E80-E12/E80 On-Ramp Separation" since both structures were type selected in July 2009 before the new Caltrans SDC was implemented. 2. ARS curve based on old SDC will be used for the E80-E12/E80 On-Ramp Separation.	

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved (for Reviewer's use)

			comparison of the 2008 USGS De-Agg, the Caltrans ARS on-line, and 2008 USGS De-Agg Hazard, and notes that the ARS curve is governed by the USGS 2008 De-Aggregation (Beta) method. Was this spectrum increased by 20% for periods of 1 second or more? That is not specified. If not, the spectrum needs to be adjusted since the USGS Beta has not taken that into account. 3. I suggest a separate graph titled "Recommended Acceleration Response Spectrum" be generated and added. 4. The Bridge No. needs to be added to the E80-E12/E80 On-Ramp Separation report.	3. A separate graph should not be required since the new SDC will not be used and an ARS curve based on the Old SDC will be prepared in the Foundation Report. 4 Bridge No. 23-0241G will be added to the Foundation Report for E80-E12/E80 On-Ramp Separation.	

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved
(for Reviewer's use)

FOUNDATION REPORT

E80-E12/E80 ON-RAMP SEPARATION
(BRIDGE NO. 23-0241G)
SOLANO COUNTY, CALIFORNIA
04-Sol-80 PM 13.3/15.7 EA 04-0A5351

For

HDR ENGINEERING INC.
2121 N. California Blvd., Suite 475
Walnut Creek, CA 94596-7334

PARIKH CONSULTANTS, INC.
2360 Qume Drive, Suite A, San Jose, CA 95131
(408) 452-9000

December 15, 2010

Job No. 208123.GSS

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Evaluation of Liquefaction Potential

Bearing Capacity, Soil Spring Stiffness, Friction Factor, Seismic Earth Pressure

Lateral Earth Pressure

Settlement Analyses

APPENDIX D

Caltrans Review Comments and PARIKH Responses to Caltrans Review Comments

FOUNDATION REPORT
E80-E12/E80 ON-RAMP SEPARATION
(BRIDGE NO. 23-0241G)
SOLANO COUNTY, CALIFORNIA
04-Sol-80 PM 13.3/15.7 EA 04-0A5351

1. INTRODUCTION

This report presents the results of our geotechnical engineering investigation for the "E80-E12/E80 On-Ramp Separation" in Solano County, California, hereinafter referred to as "PROJECT". The work was performed in general accordance with the scope of work outlined in our proposal to HDR Engineering Inc. (hereinafter referred to as Designer). The general location of the project site is shown on the Project Location Map, Plate 1.

The geotechnical recommendations presented in this report are intended for design input and are not intended to be used as specifications. In addition, the data provided in this report including these geotechnical recommendations should not be used for bidding purposes or directly for construction cost estimates. If the report is provided as a reference document, any interpretation of the data and recommendations should be sole responsibility of the user and PARIKH Consultants, Inc. (PARIKH) shall not be liable for any consequences.

2. PURPOSE AND SCOPE

The purpose of this investigation was to evaluate the general subsurface soil conditions at the project site, to evaluate their engineering properties, and to provide geotechnical recommendations for the foundation design of the proposed project.

The scope of work performed for this investigation included a review of the readily available soils and geologic literature pertaining to the site; site reconnaissance; obtaining representative soil samples and logging soil materials encountered in two exploratory borings and one Cone Penetration Test (CPT); laboratory testing of the collected soil samples, performing engineering analyses based on the field and laboratory data, and preparation of this report for the "EB 80-E12/E80 On-Ramp Separation".

3. PROPOSED CONSTRUCTION

The project site for the proposed "E80-E12/E80 On-Ramp Separation" (herein referred as Connector) is located in Fairfield. The connector will be constructed on the east side of the

relocated truck scale facilities for the eastbound Interstate 80 (I-80) off-ramp to eastbound State Route 12 (SR 12).

There is an existing Suisun Creek Bridge on the west side of the project site. Other than that, there is no existing structure within the project site.

Three different alternate structures were considered at the Advanced Planning Study. The alternative of "Box Culvert Separation Structure" has been identified as the proposed structure for "Type Selection Submittal". In this alternative, "Box Culvert Separation Structure" will be constructed for new truck facility eastbound (EB) on-ramp to I-80. Fill will be placed to the top of the proposed box culvert. The connector will be partly on the "Box Separation Structure" and partly on the embankment fill.

The datum used to reference the elevations in the report is based on the California Coordinate System of 1983, Zone 2, 1991, 35 CA-HPGN.

4. SITE CONDITIONS

The existing project site is a private property used as a farm land. The topography of the project site is relatively flat. The general existing elevations at the proposed location of the separation structure are Elev. +31.4 feet to Elev. +32.4 feet.

5. FIELD EXPLORATION AND LABORATORY TESTING

The following soil borings were drilled and Cone Penetration Test (CPT) was performed for the proposed connector in January 2009.

TABLE 1: BORING/CPT SUMMARY

Boring/CPT	Depth (feet)
R-09-CN-001	81.5
R-09-CN-002	101.5
R-09-CN-003	101.5
R-09-CN-004	81.5
CPT-09-CN-001	100

The approximate locations of the borings are shown on the Site Plan, Plate 2. The details of the

field exploration are included in Appendix A. The descriptions of the materials encountered in the field exploration are shown on the LOTB in Appendix A.

Laboratory tests were performed on selected soil samples collected during field exploration to evaluate the physical and engineering properties of the subsurface soils. The laboratory test methods and test results are presented on plates included in Appendix B. Laboratory test results for moisture content, dry unit weight, unconfined compressive strength, Plasticity Index and grain size classification of the soil samples are presented on the LOTB in Appendix A.

It should be noted that the descriptions of the soils encountered and relevant boring information presented on the LOTB depict subsurface conditions only at the locations indicated on the plan and on the particular date noted on the LOTB. Because of the variability from place to place within soil/rock in general, subsurface conditions at other locations may differ from conditions occurring at the boring locations explored. The abrupt stratum changes shown on the logs may be gradational and relatively minor changes in soil types within a stratum may not be noted on the logs due to field limitations. Also, the passage of time may result in a change in the soil conditions at these locations due to environmental changes.

6. SUBSURFACE CONDITIONS

Based on the available boring/CPT information, the subsurface soil conditions at the project site generally consist of firm to hard lean clays with pockets/lenses of medium dense to very dense silty/clayey sands. Detail subsurface information is depicted in the LOTB sheets. Subsurface soil conditions at the soil borings and CPT locations are described below.

Boring R-09-CN-001

- Approximately 25 feet of stiff to very stiff lean clay, underlain by approximately 15 feet of soft to firm silt, underlain by approximately 15 feet of stiff lean clay/silt, underlain by very stiff to hard lean clay.

Boring R-09-CN-002

- Approximately 20 feet of very stiff lean clay, underlain by approximately 40 feet of firm to stiff lean clay, underlain by approximately 8 feet of dense silty sand, underlain by very stiff to hard sandy lean clay.

Boring R-09-CN-003

- Approximately 30 feet of interbedded layers of stiff to very stiff lean clay, underlain by approximately 40 feet of firm to stiff lean clay, underlain by interbedded layer of dense to very dense clayey/silty sand and hard lean clay/sandy lean clay.

Boring R-09-CN-004

- Approximately 45 feet of interbedded layers of soft to very stiff lean clay, underlain by approximately 13 feet of medium dense silty sand, underlain by very stiff lean clay and very dense clayey sand with gravel.

CPT-09-CN-001

- Approximately 30 feet of stiff to very stiff lean clays, underlain by approximately 15 feet of soft to firm lean clays, underlain by very stiff to hard lean clays with pocket/lens of dense sand.

Groundwater was measured between Elev. + 26.5 feet and Elev. + 28.5 feet (depth of ±6 feet to ±9.5 feet below existing ground surface) in Borings R-09-CN-002, R-09-CN-003, R-09-CN-004 and CPT-09-CN-001 during drilling in January 2009. The groundwater level is anticipated to vary with the passage of time due to seasonal groundwater fluctuations, water elevations in the nearby creeks, surface and subsurface flows, ground surface run-off, and other environmental factors that may not be present at the time of the investigation.

Due to limitations inherent in geotechnical investigations, it is neither uncommon to encounter unforeseen variations in the subsurface soil conditions during construction nor is it practical to determine all such variations during an acceptable program of drilling and sampling for a project of this scope. Such variations, when encountered, generally require additional engineering services to attain a properly constructed project. We, therefore, recommend that a contingency fund be provided to accommodate any additional charges resulting from technical services that may be required during construction. Our recommendations presented in this report are based on the above information; any major deviation should be reported to this office for consideration.

7. GEOLOGY

General geologic features pertaining to the site were evaluated by referring to the published "Geologic Map of the Fairfield South 7.5' Quadrangle, Solano County, California" by Stephen P. Bezore, David L. Wagner, and Janet. M. Sowers, 1998 (California Division of Mines and Geology, now known as the California Geological Survey).

Based upon the published geologic map (see Plate No.3A), the project site is located on a broad, nearly level alluvial plain underlain by an unknown thickness of Holocene-age fan deposits (map symbol "Qhf") that are crossed by Holocene-age fan levee deposits ("Qhl"). The fan deposits consist of sand, gravel, silt, and clay that are moderately to poorly-sorted. The levee deposits consist of silt, sand, and clay. The western edge of a levee deposit is located approximately 150 feet east of the northeastern end of the proposed separation structure. The streams that deposited the alluvial sediments flow from north to south until they reach the northern edge of the San Francisco Bay estuary.

Based upon the site topographic map, we infer that artificial fill forms an approximately 5-foot thick embankment beneath Highway 80. The southern edge of this fill is approximately 40 feet north of the northeastern end of the proposed separation structure. (See Plate No. 3B.)

Our borings revealed that the relatively young, poorly consolidated sediments that form the alluvial plain are potentially subject to settlement under load, long-term subsidence, and liquefaction in the event of strong earthquake shaking. Discussion of the effects these potential hazards could have on the proposed structure and recommended mitigation measures are included in other sections of this report.

8. EARTHQUAKE CONSIDERATIONS

8.1 Seismic Sources

The project site is located in a seismically active part of northern California. Seismic activity may result in geological and seismic hazards including seismically induced fault displacement and rupture, ground shaking, liquefaction, lateral spreading, landslides, avalanches, and structural hazards.

Faults in the vicinity of the project site with a moderate to high potential for surface rupture include the Cordelia Fault and Green Valley Fault. These faults are capable of producing earthquakes, and may cause strong ground shaking at the site. The attached Fault Map (Plate 4) presents the locations of the fault systems relative to the project site.

The Fault Map has been prepared from the Caltrans Seismic Hazard Map (Mualchin, 1996) and presents the maximum credible earthquake magnitudes for the fault systems and the anticipated peak bedrock accelerations at various locations due to seismic activity in the area.

Maximum Credible Earthquake magnitudes for some of the major faults in the area determined by Mualchin (California Seismic Hazard Map 1996) are summarized in Table 1 below. These Maximum Credible Earthquake magnitudes represent the largest earthquakes that could occur on the given fault based on the current understanding of the regional tectonic structure.

TABLE 1: EARTHQUAKE DATA

Fault	Estimated Distance from Project Site (Mile)	Maximum Credible Earthquake (MCE)	Peak Bedrock Acceleration (PBA) (g)	Peak Ground Acceleration (PGA) (g)
Cordelia Fault CDA (strike-slip)	2.2	6.5	0.6	0.60
Green Valley Fault GVY (strike-slip)	3.7	6.75	0.5	0.55
Vaca Fault Zone VME (unpublished)	9.0	6.75	0.4	0.44

8.2 Seismic Parameters

Caltrans has updated the 1996 Seismic Hazard map with the new 2007 Caltrans Deterministic PGA Map and the Caltrans ARS Online (Ver. 1.0.4) for the development of response spectra for design. Based on Caltrans Memorandum subjected "Implementation of Caltrans 2009 Seismic Design Procedure", it is stated that *"Effective September 30, 2009, all projects without previous Type Selection approval shall be designed in accordance with the 2007 Caltrans Fault Data Set and the 2009 Caltrans Seismic Design Criteria (SDC)"*. Since the Type Selection for this bridge structure was approved on July 2, 2009, therefore Caltrans 1996 map was used to develop the ARS design curve in this foundation report.

According to Caltrans Guidelines for Structures Foundation Report (March 2006), the value of PBA (for a specific project site) from the seismic hazard map should be verified with that calculated using the attenuation relation by Sadigh et al (1997). Based on attenuation relation by Sadigh, the maximum PBA anticipated at the project site is 0.6 g.

Based on the available boring information in the vicinity of the project site, the subsurface soil conditions at the project site generally match the criteria for Soil Type D, as per Caltrans Seismic Design Criteria (Version 1.4, June 2006). Based on Caltrans Seismic Design Criteria and the above information, the seismic design criteria are as follows:

1. Closest Distance to Fault = 2.2 miles
2. Peak Bedrock Acceleration = 0.6 g
3. ARS Design Curve = Caltrans Seismic Design Criteria June 2006 Version 1.4 Figure B.7 (Soil Profile Type D) with the following modifications: (1) 20% increase of spectral accelerations (Sa) for structural periods ≥ 1 sec. (2) No change for structural periods ≤ 0.5 sec. And (3) Linear interpolation for structural periods between 0.5 sec. and 1 sec.

A copy of the "ARS Design Curve" (Plate No. 5) is included. The calculation for attenuation relationship based on Sadigh is included in Appendix C.

8.3 Seismic Hazards/Liquefaction Potential

Potential seismic hazards may arise from three sources: surface fault rupture; ground shaking; and liquefaction. Since no active fault passes through the project site, the potential for fault rupture is relatively low. Based on available geological and seismic data, the possibility that the site will experience strong ground shaking may be considered low to moderate.

Liquefaction Potential

Liquefaction is a phenomenon in which saturated cohesionless soils are subject to a temporary but essentially total loss of shear strength under the reversing, cyclic shear

stresses associated with earthquake shaking. Submerged cohesionless sands and silts of low relative density are the type of soils, which usually are susceptible to liquefaction. Clays are generally not susceptible to liquefaction.

Based on available boring/CPT information, the subsurface soil conditions at the project site generally consist of soft to very stiff lean clays with occasional pocket/lens/layer of medium dense to very dense silty/clayey sands in Borings R-09-CN-002 and R-09-CN-003.

Liquefaction potential of the sand deposit in the Borings R-09-CN-002 and R-09-CN-003 were analyzed. The analyses were performed using the procedure developed by Seed and Idriss (1982) for a magnitude 6.5 Earthquake, on the nearby Cordelia Fault, resulting in a peak ground acceleration of about 0.6 g. This method compares the estimates of the earthquake-induced shear stress to the susceptibility of soil liquefaction. Based on the evaluation, the liquefaction potential at the project site is low. Therefore, there is no special recommendation due to liquefaction.

9. FINDINGS AND RECOMMENDATIONS

9.1 General

This report was prepared specifically for the proposed project as shown on the plans provided to us. Normal construction procedures were assumed throughout our analyses and represent one of the bases of recommendations presented herein. Our design criteria have been based upon the subsurface soil materials encountered in the soil borings at the project site. Therefore, we should be notified in the event that these conditions are changed, so as to modify or amend our recommendations.

9.2 Grading

All grading operations should be performed in accordance with the project specifications and Caltrans Standard Specifications for Earthwork (Section 19). A representative from PARIKH or regulatory agency should observe all excavated areas during grading and perform moisture and density tests on prepared subgrade and compacted fill materials.

9.3 Box Structure

Based on the general plan provided by the designer, the proposed "Box Separation Structure" is 39 feet 8 inches wide x 16 feet 6 inches high and will rest at existing grade elevation. This is a non-standard structure and will require special design by the structural engineer.

9.3.1 Foundation Design

a) Recommended soil spring stiffness for the foundation slab is 125 kips/ft^3.

b) Recommended allowable bearing capacity for the structure (include the invert slab) is 2.9 kip per square foot.

9.3.2 Static Lateral Earth Pressures and Coefficient of Friction

For the proposed box structure, the design vertical and lateral earth pressure should conform to Section 6.21 of Caltrans Bridge Design Specifications (April 2000) (BDS). Per Caltrans BDS, the recommended unit weight of soil (vertical pressure) is 140 pcf and the lateral earth pressures are 35 pcf Equivalent Fluid Pressure (EFP) and 100 pcf EFP for Reinforced Concrete Box.

For checking of the stability of the box structure against sliding/twisting, the box structure is believed to behave as a cantilever retaining wall rather than a box culvert according to Biggs Cardosa Associates. An at-rest 55 pcf EFP plus 2 feet live load surcharge is recommended for checking the stability of the box structure against sliding/twisting.

A coefficient of friction of 0.3 may be used to estimate the frictional resistance below the invert slab. Only dead loads should be used to estimate the frictional resistance under the invert slab.

Recommended passive resistance for the engineered fill on the side of the box structure is 530 pcf EFP. Recommended passive resistance on the side of the soil key below the invert slab is 470 pcf EFP. According to Caltrans Bridge Design Specifications (August 2003) Section 5 (5-47), not more than 50% of the available passive lateral earth pressure shall be considered in determining the factor of safety against sliding.

9.3.3 Seismic Lateral Earth Pressures

The proposed box structure will experience increased lateral loads during earthquake shaking. The additional horizontal forces recommended to simulate earthquake loads are dependent upon the magnitude of ground surface accelerations and the retained height of the wall of the box structure, together with the weight and type of material retained by the walls of the box structure. For the seismic earth pressure load, the load distribution should be an inverted triangle shape with maximum load of 56H (psf) at the top and zero value at the bottom of the box with a resultant equal to a value of 28 HxH (in lb per linear foot of box) is recommended as dynamic lateral force in addition to the static earth pressures recommended above (assumed peak ground acceleration of 0.6g). It is recommended that the dynamic lateral force be considered to act a distance 0.67 h (h = height of the wall of the box structure) above the base of the wall.

9.3.4 Foundation Subgrade Preparation

Based upon the measured groundwater elevation (LOTB) and subsurface soil conditions (with the presence of soft to firm clays), a foot thick aggregate base wrapped in subgrade enhancement engineering fabric underneath the "Box Separation Structure" is recommended to facilitate construction and provide a uniform support. The proposed concrete culvert should be supported on a pad, which should be constructed as follows:

(a) Excavate approximately 1 foot of existing soil below the bottom of the concrete culvert. The excavation should extend 2 feet beyond the culvert footprint.

(b) Place a layer of subgrade enhancement geotextile on the subgrade. The subgrade enhancement geotextile should conform to "Guide for Designing Subgrade Enhancement Geotextile" dated April 28, 2009 published by Caltrans.

(c) Place 1 foot of Caltrans Class 3 Aggregate Base over the subgrade enhancement geotextile. The Class 3 Aggregate Base should be compacted to 95-percent relative compaction per Caltrans Test 216.

(d) The subgrade enhancement geotextile should be wrapped on top of the compacted Class 3 Aggregate Base for a minimum overlap of two feet.

9.3.5 Scour

There is no waterway such as creek and/or stream course etc. within the project site, scour is not an issue for this project.

9.4 Wingwall

The wingwalls should be designed as conventional retaining walls supported on spread footings. Wingwalls should be designed to resist the following allowable bearing capacity and applied lateral earth pressures (Equivalent Fluid Pressures):

9.4.1 Foundation Design

Recommended allowable bearing capacity for the wingwalls is 2.9 kip per square foot.

9.4.2 Lateral Earth Pressures

(a) The recommended active pressure is 36 pcf EFP for the engineered fill.

(b) The recommended at-rest pressure is 55 pcf EFP for the engineered fill.

The effect of any surcharge (dead or live load) should be added to the preceding lateral earth pressures for the box structure and wingwall. Use equivalent earth pressure of not less than 2 feet of uniform soil weight at 125 pcf if the traffic (HS20 loading) is within a horizontal distance of one half of the wall height.

9.5 Settlement Evaluation

According to City of Fairfield, a 30-inch water pipeline with 48-inch casing will be installed before the "Box Separation Structure" is constructed. This water pipeline is located near the northern end of the proposed "Box Separation Structure". The water pipeline is planned at the depths of approximately 8 feet to 10 feet below existing ground surface. Based on maximum height of the fill and subsurface soil conditions at the project site (which consists of soft to firm clay layers), the consolidation settlements were estimated to be on the order of 2 inches and mainly in the over-consolidated range.

The designer will continue to coordinate with the City of Fairfield for the ongoing 30-inch waterline design so that the design will accommodate the anticipated magnitude of differential settlement in the pipeline and casing. The casing is proposed to extend

through the proposed State right-of-way, well beyond the limits of the footprint of the proposed fill of the connector and the associated truck ramps. During the ongoing coordination between the designer and City of Fairfield, if it is determined that the ductility of the proposed water pipeline and casing cannot absorb the expected differential settlement, the casing type may have to be modified or additional mitigation measures may need to be incorporated into the design. It is our recommendation that a possible mitigation measure would be to protect the water pipeline and casing with a structure to transfer the load distribution from the fill/culvert. This option should be considered in the waterline casing design process.

Settlement monitoring by the contractor will be required to monitor the settlement during the construction period. Total of eight settlement monitoring devices are recommended to be installed along the approach embankment on the northeast side and southwest side of the E80-E12/E80 Ramp Separation. Four settlement monitoring devices are recommended to be evenly spaced along the length of each approach embankment.

9.6 Corrosion

Chemical tests were performed on soil sample from Borings R-09-CN-002 and R-09-CN-003 to evaluate the corrosion potential of the subsoil. The test results are as follows:

TABLE3: SUMMARY OF CORROSION TEST RESULTS

Boring No.	Depth (ft)	Resistivity (ohm-cm)	pH	Sulfate (ppm)	Chloride (ppm)
R-09-CN-002	16	1740	7.72	37.9	20.9

Based on the corrosion test results, the native subsurface soil in Borings R-09-CN-002 and R-09-CN-003 are considered non-corrosive per Caltrans corrosion design guidelines. Standard Type II modified or Type I-P (MS) modified cement may be used for the concrete substructure. The minimum cement factor and cover thickness should be per Section 5.12 of California Amendments to AASHTO LRFD Bridge Design Specifications – Fourth Edition (December 2008).

10. CONSTRUCTION CONSIDERATIONS

Prospective contractors for the project must evaluate construction-related issues on the basis of their

own knowledge and experience in the local area, on the basis of similar projects in other localities, or on the basis of field investigation on the site performed by them (if necessary), taking into account their own proposed construction methods and procedures.

According to the designer, majority of the works require construction above existing ground and no major excavation will be required. Minor excavation may be required at some locations.

It is possible that unknown old buried utilities or abandoned structures, concrete rubble etc. might be encountered during excavations. This might require special equipment and additional efforts to remove these buried objects or obstructions.

The materials to be excavated are anticipated to be mostly soft to stiff clays and some loose to medium dense sands. Excavations should not be expected to stand vertically without any support. According to OSHA Safety Standards, temporary excavations with personnel working within the excavations should be sloped or shored if the excavations are deeper than 5 feet.

Operation of construction equipment and the resulting vibrations will adversely affect the native soils. The 30-inch water line installed before the "Box Separation Structure" is constructed will be sensitive to such loading conditions. Load from heavy equipment should be spread out using timber blocks or other appropriate measures.

The slope height, inclination, and excavation depths of any temporary slopes should not exceed those specified in local, state, or federal safety regulations. The design of the temporary slopes by the contractor or his specialty subcontractor should conform to the OSHA's "Guidelines for Excavations and Temporary Sloping". The contractor/subcontractor should develop or modify their design based on the subsurface conditions exposed at the time of construction.

For excavations up to 20 feet deep in homogenous soils, OSHA guidelines state that the maximum allowable slope should be 3/4H: 1V, 1H:1V and 1-1/2H:1V for Types A, B and C soil, respectively (In general, Type A soils are stronger; Type B soils are intermediate, and Type C soils are weaker). Based on our evaluation of the materials encountered in our borings and the borings previously performed by others, the native soil on site should be considered as OSHA Type C. It should be noted that the slope ratios recommended by OSHA are for temporary, un-surcharged slopes. Traffic and surcharge loads should be set back at least 15 feet from the top of the excavations unless they are accounted for in the design. The temporary cut slopes discussed above

assume that the groundwater is maintained below the bottom of the excavation at all times during construction. Slopes may need to be flattened based on materials exposed during construction.

Appropriate mitigation measures should be implemented to protect the slopes from sloughing and/or erosion if construction through the winter season is unavoidable. Adequate surface protection, such as temporary fiber-roll, should be provided to protect the slope surface from excessive drying and/or saturation during construction and the exposed slopes should be kept moist (but not saturated) by occasional light spraying of water during construction.

"Storm Water Pollution Prevention Plan" and "Erosion Control Plan" should be submitted by the contractor to the engineer for approval prior to the construction.

11. PLAN REVIEW

We recommend that final foundation plans for the proposed project be reviewed by PARIKH prior to construction so that the intent of our recommendations is included in the project plans and specifications and to further see that no misunderstandings or misinterpretations have occurred.

12. CONSTRUCTION OBSERVATIONS

To a degree, the performance of any structure is dependent upon construction procedures and quality. Hence, geotechnical observation of foundation excavation, and pile installations should be carried out by regulating agencies. If the subsurface conditions different from those forming the basis of our recommendations are encountered, this office should be informed in order to assess the need for design changes. Therefore, the recommendations presented in this report are contingent upon good quality control and these geotechnical observations during construction.

13. INVESTIGATION LIMITATIONS

Our services consist of professional opinions and recommendations made in accordance with generally accepted geotechnical engineering principles and practices and are based on our site reconnaissance and the assumption that the subsurface soil conditions do not deviate from observed conditions. No warranty, expressed or implied, of merchantability or fitness, is made or

intended in connection with our work or by the furnishing of oral or written reports or findings. The scope of our services did not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in structures, soil, surface water, groundwater or air, below or around this site. Unanticipated soil conditions are commonly encountered and cannot be fully determined by taking soil samples and excavating test borings; different soil conditions may require that additional expenditures be made during construction to attain a properly constructed project.

This report has been prepared for the proposed project as described earlier, to assist the engineer in the design of this project. In the event any changes in the design or location of the facilities are planned, or if any variations or undesirable conditions are encountered during construction, our conclusions and recommendations shall not be considered valid unless the changes or variations are reviewed and our recommendations modified or approved by us in writing.

This report is issued with the understanding that it is the designer's responsibility to ensure that the information and recommendations contained herein are incorporated into the project plans and specifications.

The findings in this report are valid as of the present date. However, changes in the subsurface soil conditions can occur with the passage of time, whether they are due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur, whether they result from legislation or from the broadening of knowledge. Accordingly, the findings in this report might be invalidated, wholly or partially, by changes outside of our control.

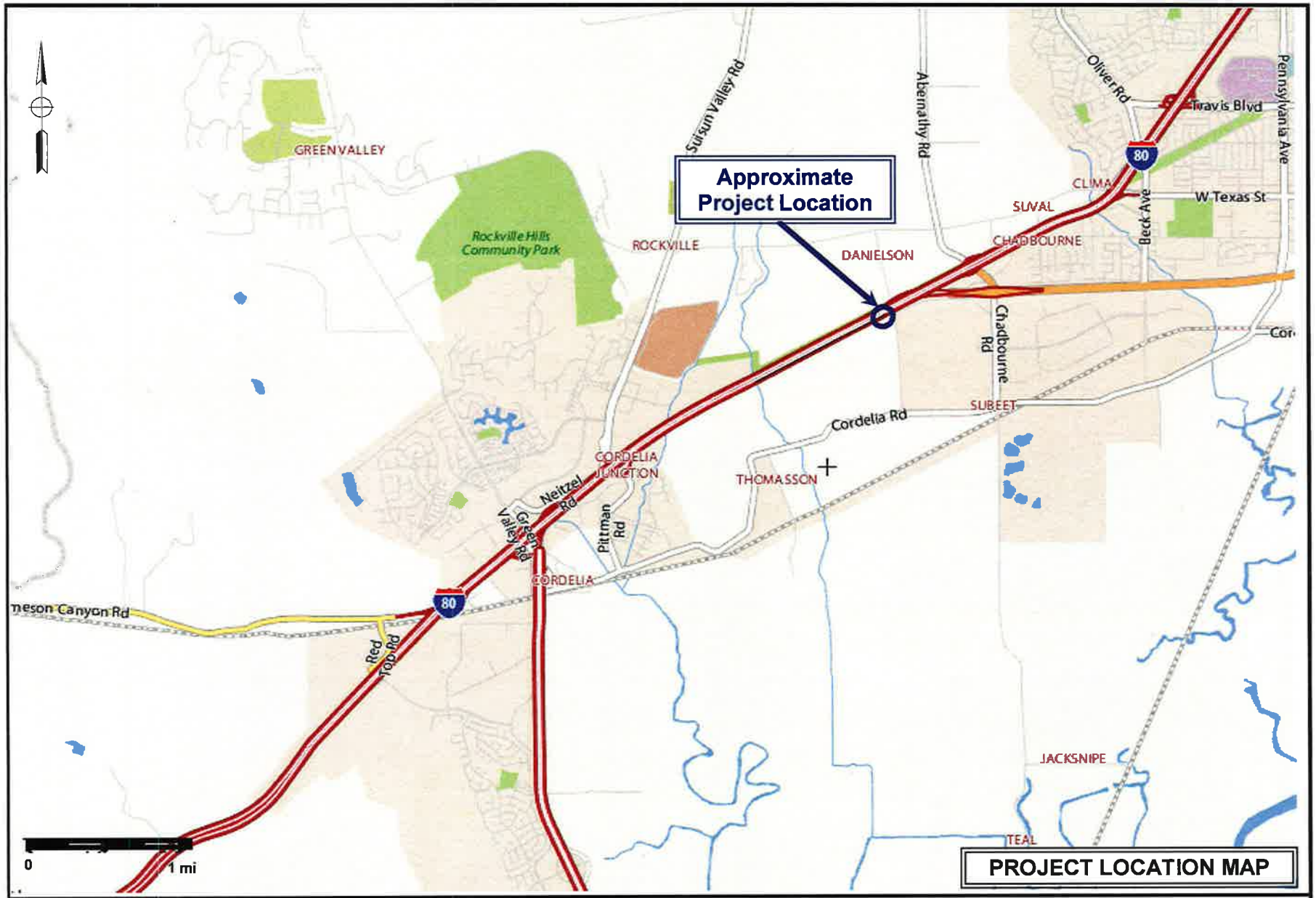
Respectfully submitted,
PARIKH CONSULTANTS, INC.

Alston Lam, P.E., G.E. 2605
Project Engineer

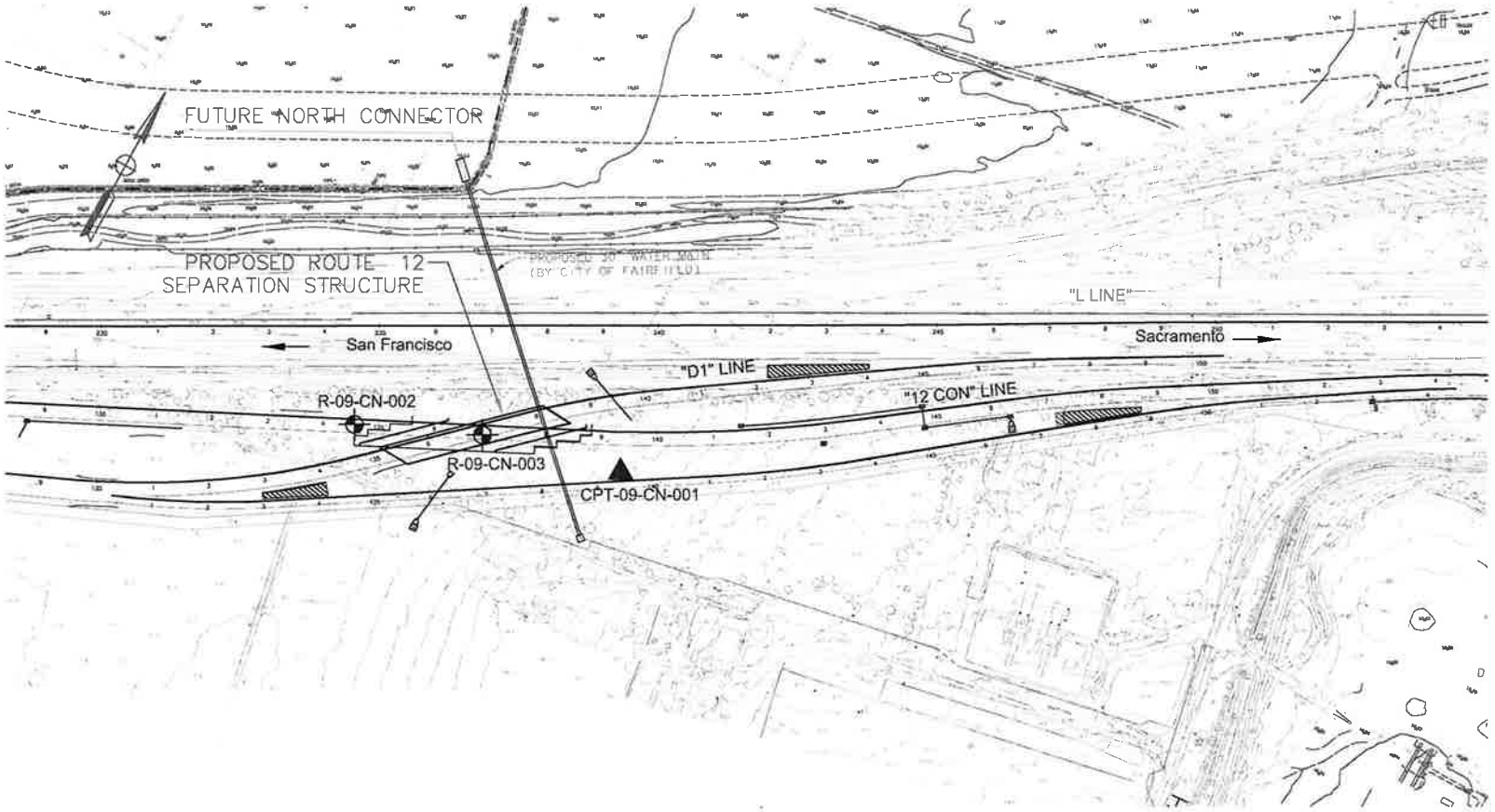
Gary Parikh, P.E., G.E. 666
Project Manager

REGISTERED PROFESSIONAL ENGINEER
GAURANG R. PARIKH
No. 666
EXP. 12-31-11
GEOTECHNICAL
STATE OF CALIFORNIA

S:\Ongoing Projects\2008\208123\EB80-E80 On-Ramp Separation.rpt (12-2010)



PARIKH CONSULTANTS, INC. GEOTECHNICAL CONSULTANTS MATERIALS TESTING	EB 80 TO EB 12 CONNECTOR SOLANO COUNTY, CALIFORNIA	
	JOB NO.: 208123.GSS	PLATE NO.: 1



LEGEND

A-09-101
Approximate auger boring location drilled in 2009

R-09-001
Approximate rotary wash boring location drilled in 2009

CPT-09-001
Approximate CPT location performed in 2009

SCALE 1 inch = 200 feet

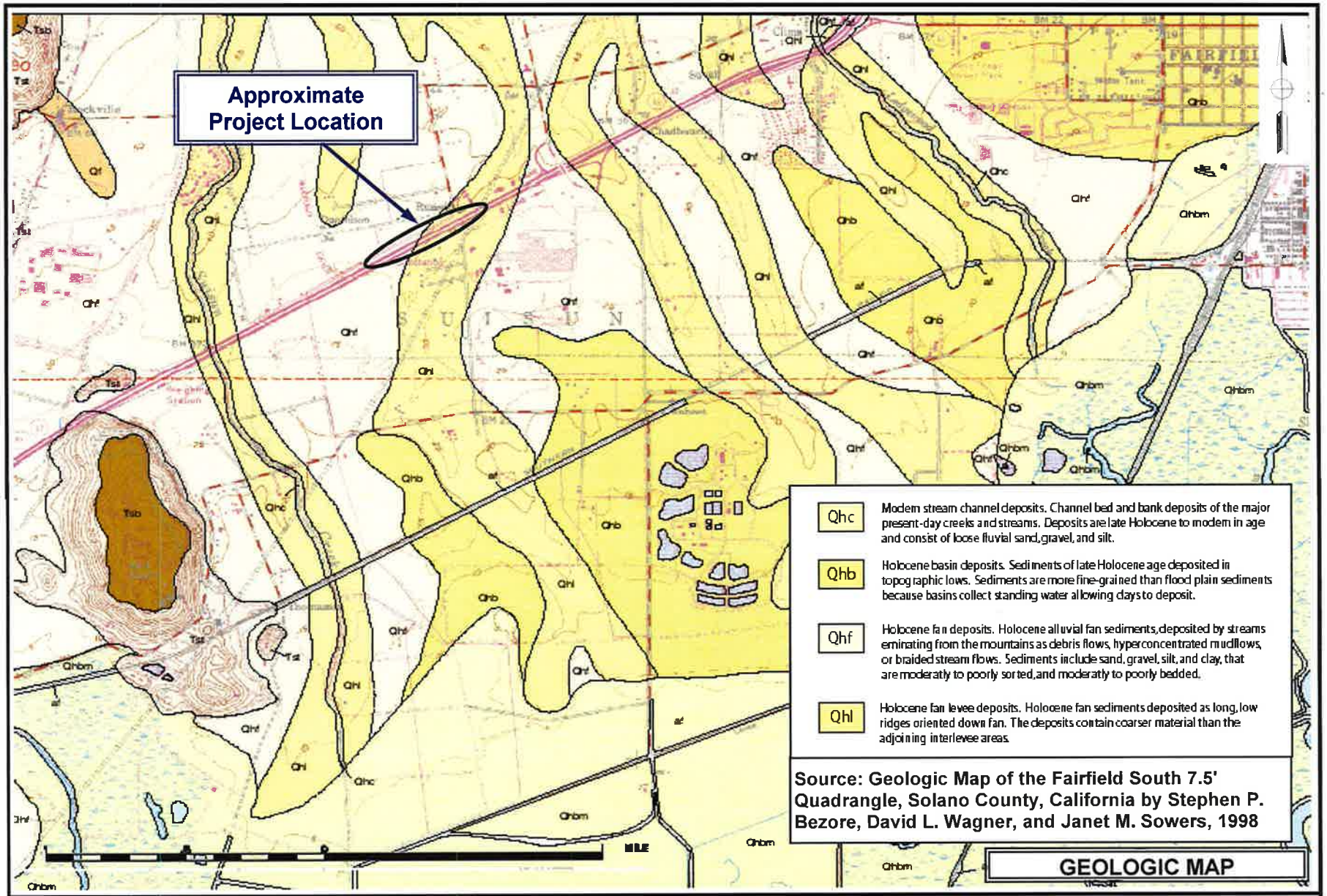
Note: All units are in feet unless otherwise specified
Reference Map was provided by HDR Engineering, Inc.

SITE PLAN

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

EB 80 TO EB 12 CONNECTOR
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GSS | PLATE NO: 2

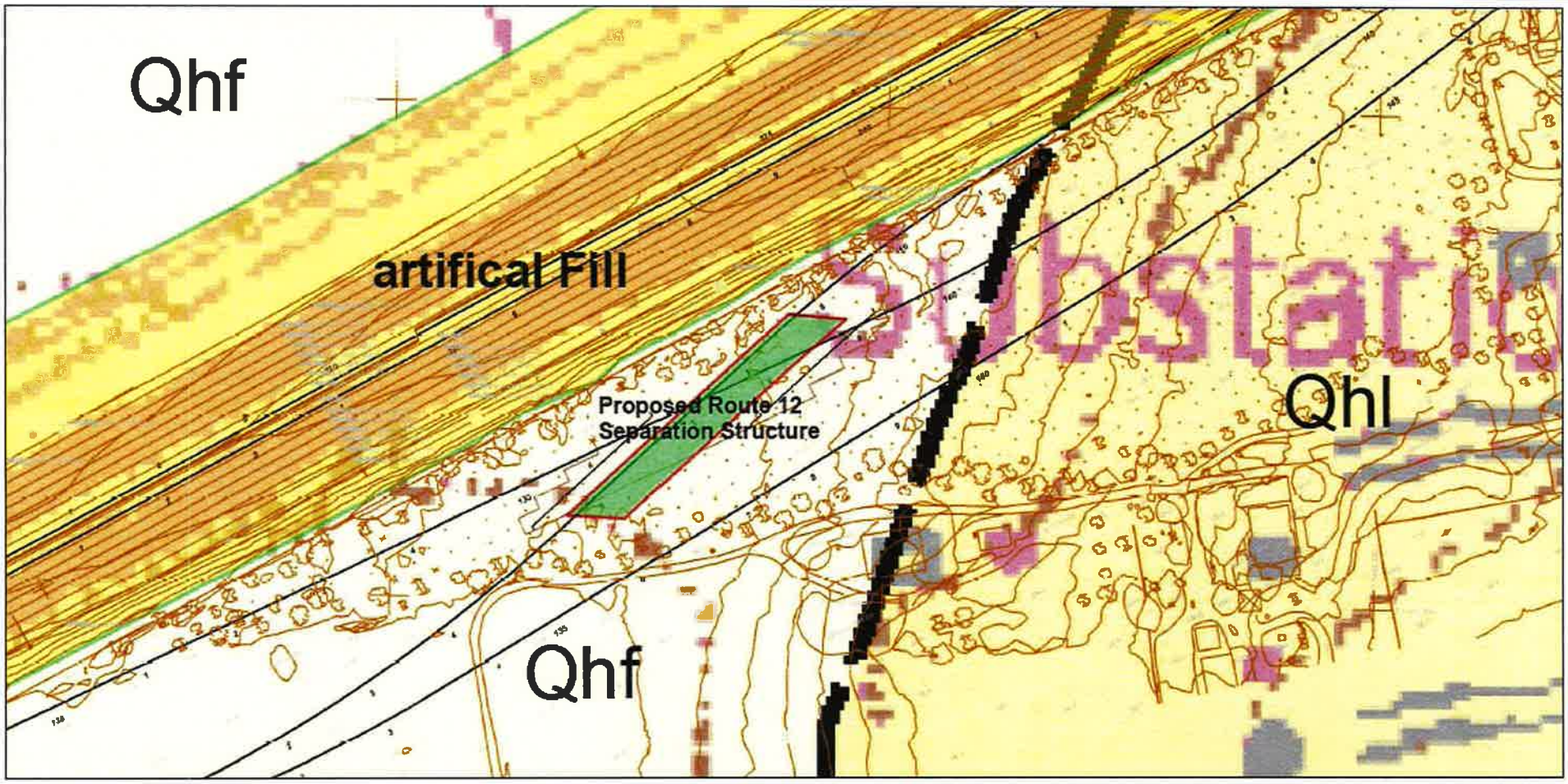


PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

E80-E12/E80 ON-RAMP SEPARATION
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GSS

PLATE NO.: 3A



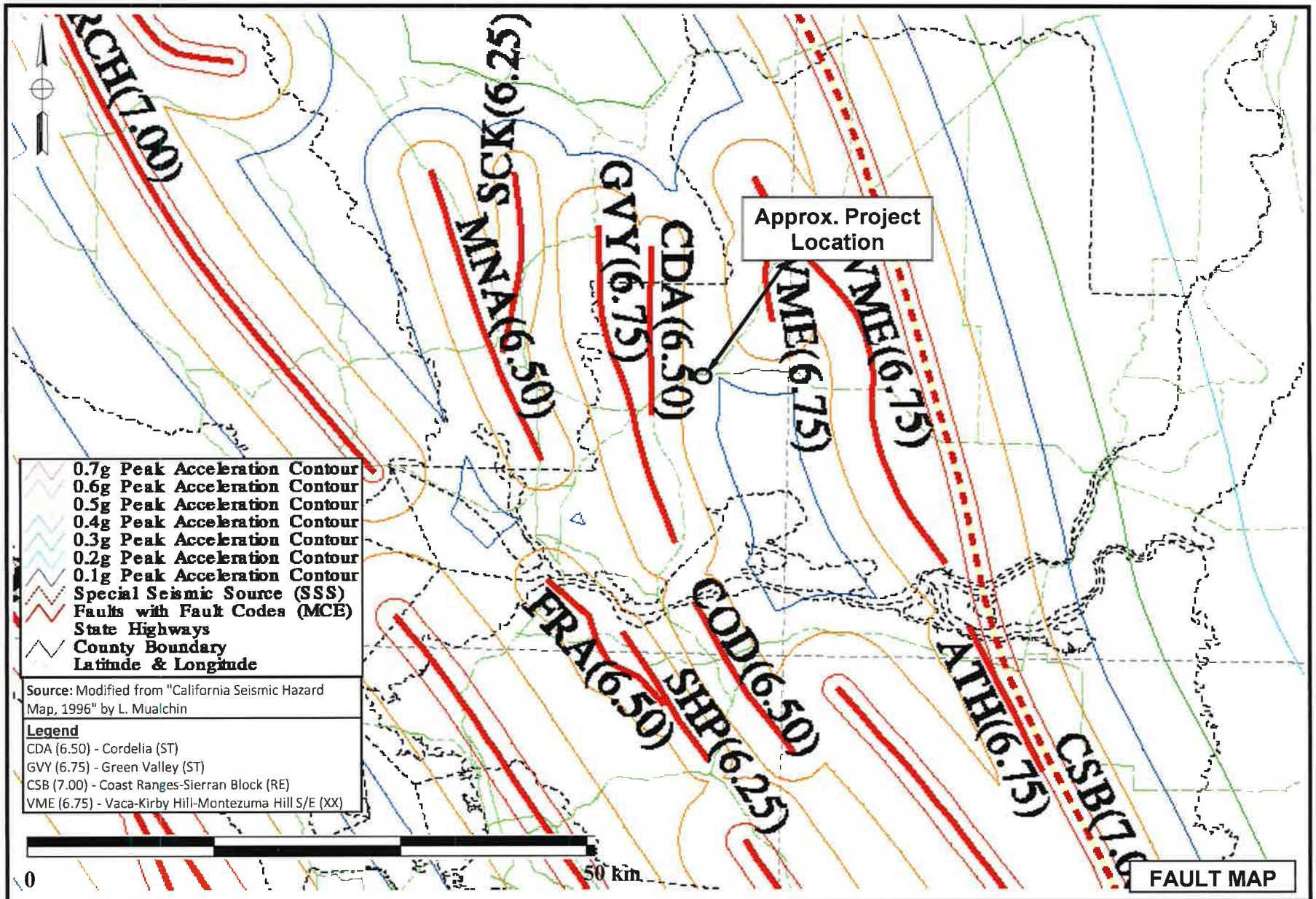
0 50 100 150 200 250 300
Feet

BASE MAP: Bezore, et al; 1998

(see PLATE NO:3A for legend)

SITE GEOLOGIC MAP

PARIKH CONSULTANTS, INC.		E80-E12/E80 ON-RAMP SEPARATION SOLANO COUNTY, CALIFORNIA
		Job No.: 208123.GSS / PLATE NO.: 3B

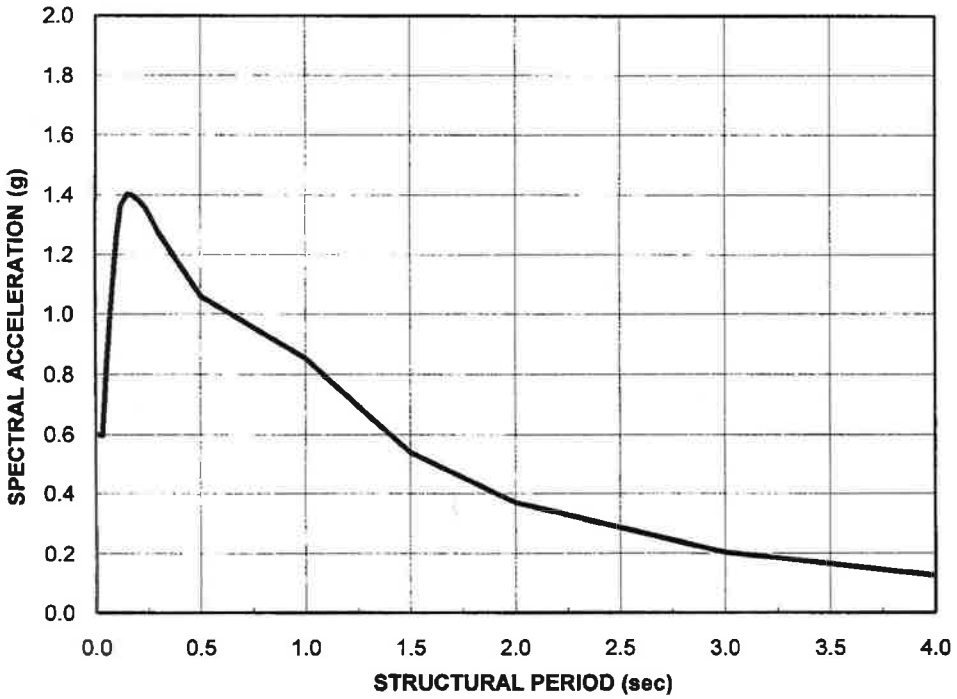


PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

E80-E12/E80 ON-RAMP SEPARATION
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GSS	PLATE NO.: 4

ARS DESIGN CURVE
E80-E12/E80 ON-RAMP SEPARATION
SOLANO COUNTY, CALIFORNIA



Spectral Data

Period (sec)	212 (6.7) Spectral Accel. (g)
0.010	0.600
0.020	0.598
0.030	0.596
0.050	0.817
0.075	1.053
0.100	1.260
0.120	1.362
0.150	1.403
0.170	1.400
0.200	1.386
0.240	1.355
0.300	1.273
0.400	1.166
0.500	1.060
0.750	0.957
1.000	0.853
1.500	0.539
2.000	0.369
3.000	0.203
4.000	0.125

1. Caltrans SDC (v 1.4, February 2006), Figure B.7,
   Governing Fault: Cordelia Fault (212)
   (Mw = 6.7, Soil Profile Type D, PBA = 0.6g)
   with the following modifications:
   (1) No change of Sa for structural periods < 0.5 sec
   (2) 20% increase of Sa for structural periods ≥ 1 sec
   (3) Linear interpolation for structural periods between 0.5 and 1 sec

APPENDIX A

APPENDIX A
FIELD EXPLORATION

The test borings were advanced with truck-mounted drill rig with 8-inch diameter hollow-stem auger and 5-inch diameter rotary wash drilling method. The soil samples were obtained from the borings during drilling at various depths by driving a 2.5-inch Inside Diameter (I. D.) Modified California Sampler or a 1.375-inch I.D. Standard Penetration Sampler (ASTM Test Method No. 1586). The sampler was driven into the subsurface soils under the impact of a 140-pound hammer having a free fall of 30 inches. The blow counts required to drive the sampler for the last 12 inches are presented on the Logs of Test Borings (LOTB), Appendix A. When correlating standard penetration data in similar soils, the blow counts for the Modified California sampler can be taken as roughly twice that for the Standard Penetration Test sampler in similar soils. Pocket penetration tests were also performed on clay samples to evaluate their consistency. Upon completion of drilling, the drillhole was backfilled with cement grout.

The borings were drilled under the technical supervision of our engineer, who visually classified in the field (according to the Unified Soil Classification System) and continuously logged the soils encountered during drilling. The engineer supervised the collection of soil samples at various depths for visual examination and laboratory testing. The soil samples were then transported to our laboratory for further evaluation and testing.

The descriptions of the soils encountered and relevant boring information are presented on the boring logs in the LOTB in Appendix A. The laboratory test methods and results are presented in Appendix B. The logs presented in Appendix A were prepared from the field logs which were edited after visual re-examination of the soil samples in the laboratory and results of classification tests on selected soil samples as indicated on the logs.

The descriptions and related information presented on these LOTB depict subsurface conditions only at the locations indicated on the plan and on the particular date noted on the logs. Because of the variability from place to place within soil/rock in general, subsurface conditions at other locations may differ from conditions occurring at the locations explored. The abrupt stratum changes shown on the logs may be gradational and relatively minor changes in soil types within a stratum may not be noted on the logs due to field limitations. Also, the passage of time may result in a change in the soil conditions at these locations due to environmental changes.

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly graded SAND Poorly graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL		
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (PP) Pocket Penetrometer
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (TV) Pocket Torvane
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)
- (VS) Vane Shear (AASHTO T 223)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SOL	12,80	LT-8/L2.0 13.3/15.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 — GEOTECHNICAL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

PARIKH CONSULTANTS, INC.
2360 OUME DRIVE, SUITE A
SAN JOSE, CA 95131

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE

Description		Size
Boulder		> 12"
Cobble		3" to 12"
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

G. PARIKH — DESIGN OVERSIGHT
SIGN OFF DATE
DRAWN BY: O. GOUTHIER
CHECKED BY: D. WANG
S. DUDDU — FIELD INVESTIGATION BY:
DATE: JANUARY 2009 - JUNE 2009

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

A. LAM — PROJECT ENGINEER

BRIDGE NO. 23-0241G
POST MILES -

E80-E12/E80 ON-RAMP SEPERATION
SOIL LEGEND SHEET 1 OF 2

DOS CIVIL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 04-0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES ——

REVISION DATES: 10/11/10 10/16/10

SHEET 19 OF 22

...\23-0241G-z-ltb01.dgn 11/11/2010 9:49:57 AM

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SOL	12,80	L7.8/L2.0 13.3/13.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. GE 666 — Exp. 12/31/11 — GEOTECHNICAL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

PARIKH CONSULTANTS, INC.
2360 OUME DRIVE, SUITE A
SAN JOSE, CA 95131

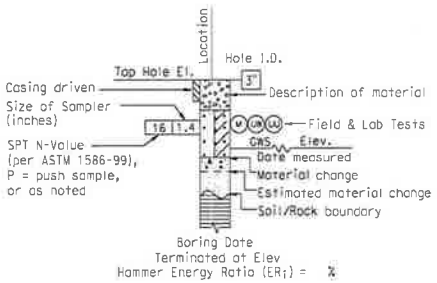
SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

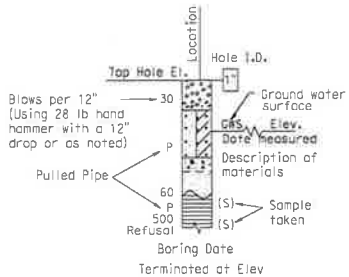
CONSISTENCY OF COHESIVE SOILS				
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
Size	A	Auger Boring
Size	R P	Rotary drilled boring Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778-95)
[ ]	O	Other
Note: Size in inches.		

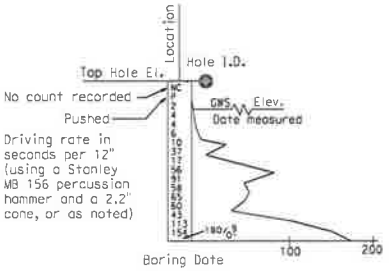
PLASTICITY OF FINE-GRAINED SOILS	
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



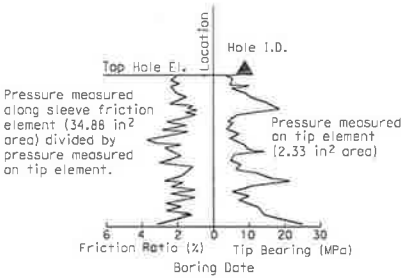
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. 23-0241G	E80-E12/E80 ON-RAMP SEPERATION
SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JUNE 2009			POST MILES -	SOIL LEGEND SHEET 2 OF 2
OGS CIVIL LOG OF TEST BORINGS SHEET (ENGLISH) (REV= 06-01-09)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3			CU 04264 EA 04-0A5351		DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 09/11/09 08/16/10 — SHEET 20 OF 22

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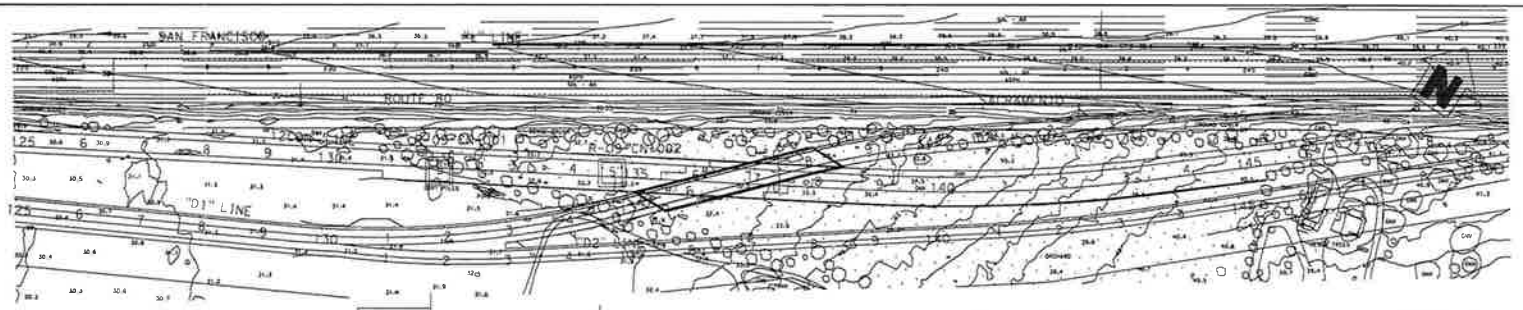

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SOL	80, 12	11.8/15.0 13.3/15.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

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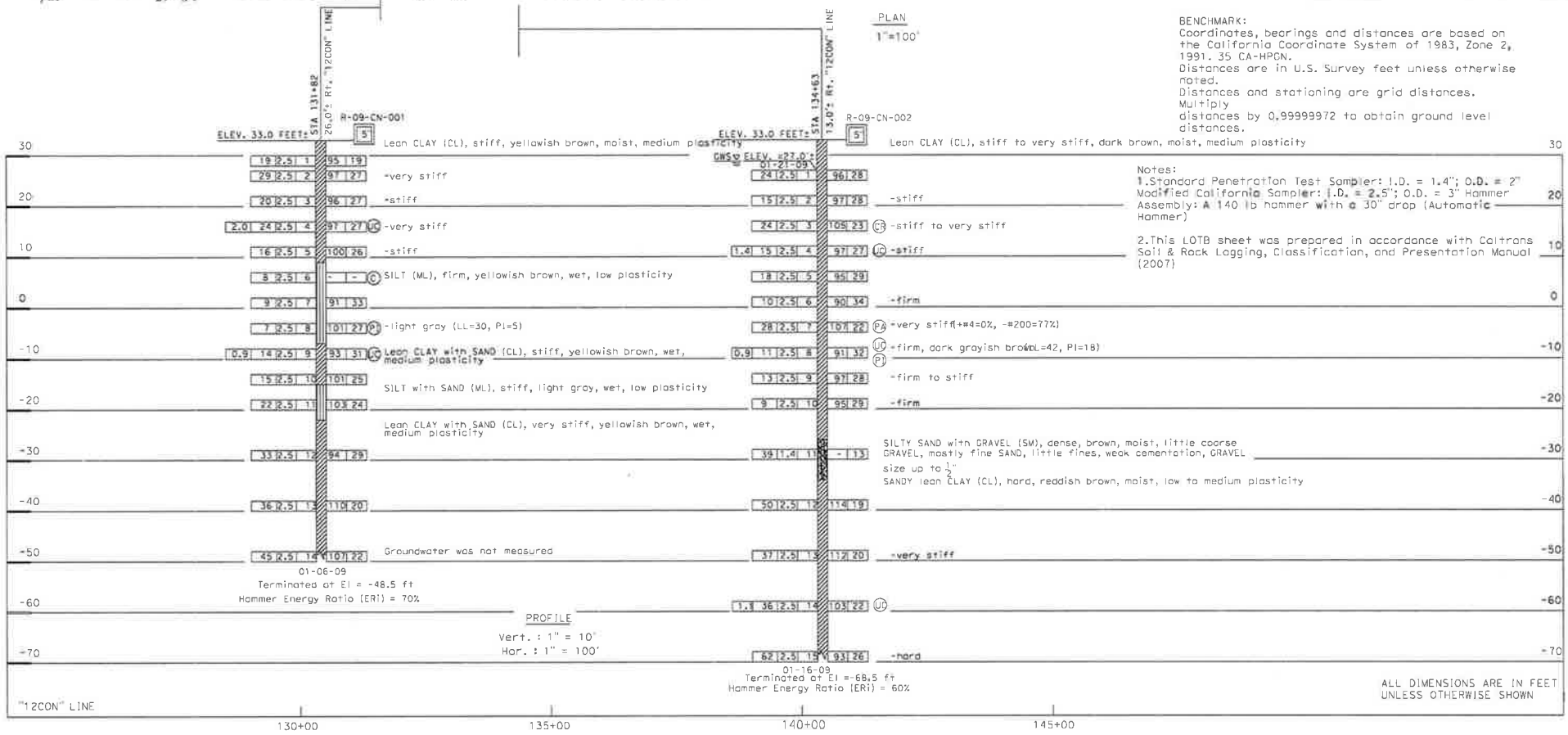
REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 — GEOTECHNICAL — STATE OF CALIFORNIA

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

PLAN
1"=100'

BENCHMARK:
Coordinates, bearings and distances are based on the California Coordinate System of 1983, Zone 2, 1991.35 CA-HPGN.
Distances are in U.S. Survey feet unless otherwise noted.
Distances and stationing are grid distances. Multiply distances by 0.99999972 to obtain ground level distances.



Notes:
1. Standard Penetration Test Sampler: I.D. = 1.4"; O.D. = 2"
Modified California Sampler: I.D. = 2.5"; O.D. = 3" Hammer Assembly: A 140 lb hammer with a 30" drop (Automatic Hammer)

2. This LOTB sheet was prepared in accordance with Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2007)

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. 23-0241G	E80-E12/E80 ON-RAMP SEPERATION
SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JUNE 2009			POST MILES -	LOG OF TEST BORINGS 1 OF 2
DOS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		CU 04264 EA 04-0A5351	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 09/15/09 06/8/10 — SHEET 21 OF 22

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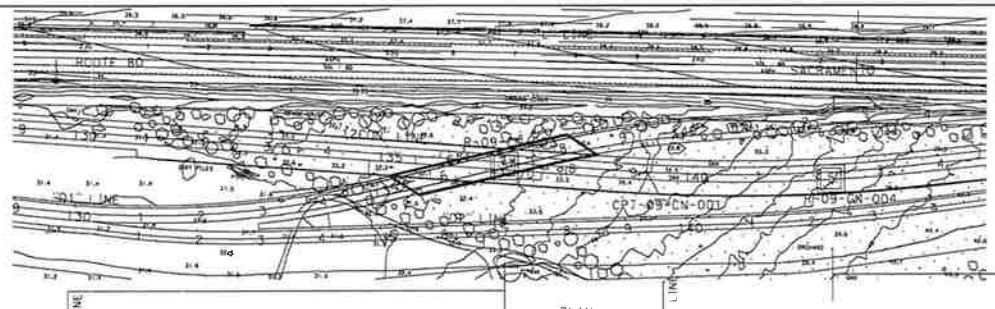

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Distances are in U.S. Survey feet unless otherwise noted.
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Multiply distances by 0.99999972 to obtain ground level distances.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SOL	12,80	L1.8/L2.0 13.3/15.7	---	---

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REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 — GEOTECHNICAL — STATE OF CALIFORNIA

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2360 DUME DRIVE, SUITE A
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SOLANO TRANSPORTATION AUTHORITY
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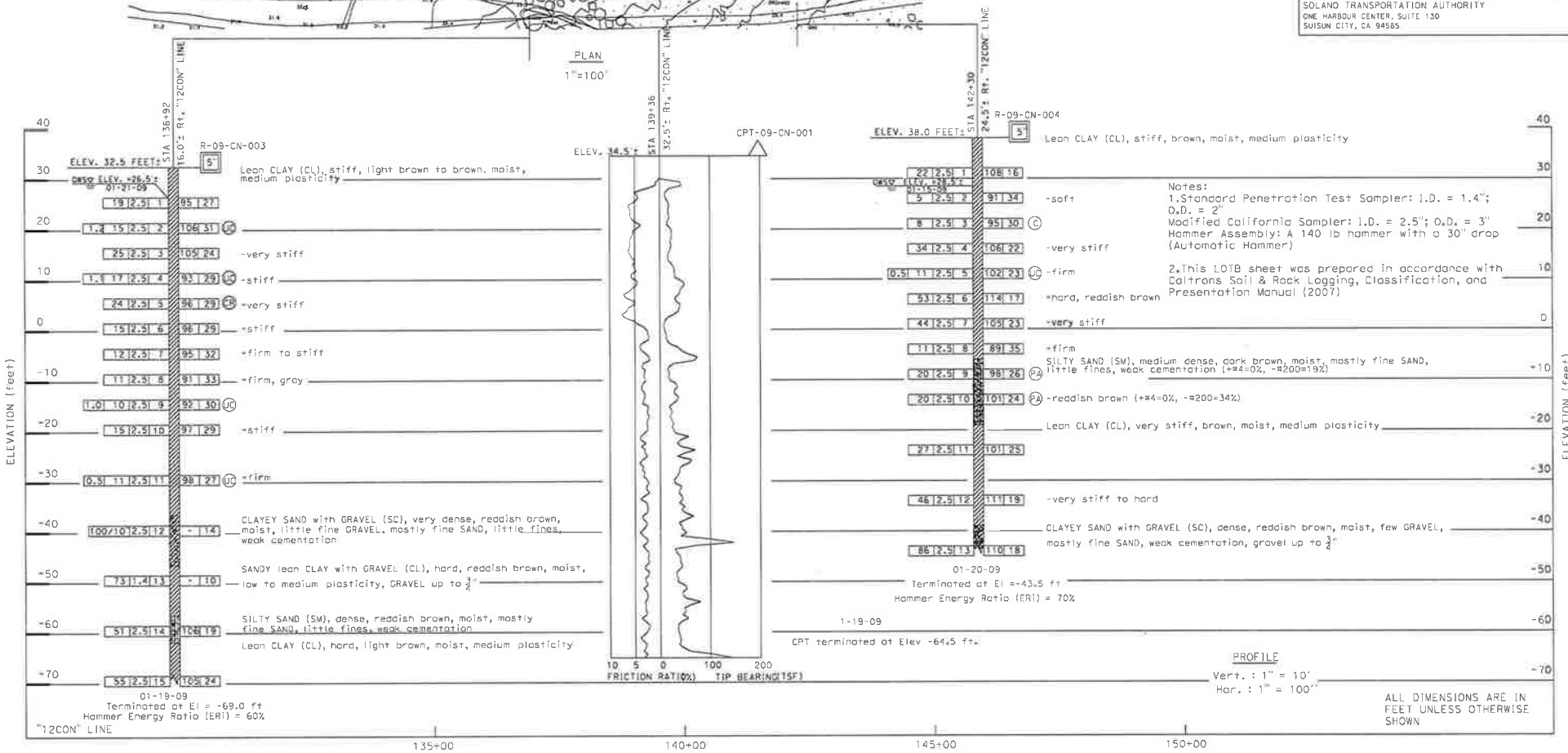
PLAN
1"=100'



Notes:
1.Standard Penetration Test Sampler: I.D. = 1.4"; O.D. = 2"
Modified California Sampler: I.D. = 2.5"; O.D. = 3"
Hammer Assembly: A 140 lb hammer with a 30" drop (Automatic Hammer)
2.This LOTB sheet was prepared in accordance with Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2007)

PROFILE
Vert. : 1" = 10'
Hor. : 1" = 100'

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. 23-0241G
SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JULY 2009			POST MILES -

E80-E12/E80 ON-RAMP SEPERATION
LOG OF TEST BORINGS 2 OF 2

CU 04264
EA 04-0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET | OF
11/11/10 | 22 | 22

DOS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-21-05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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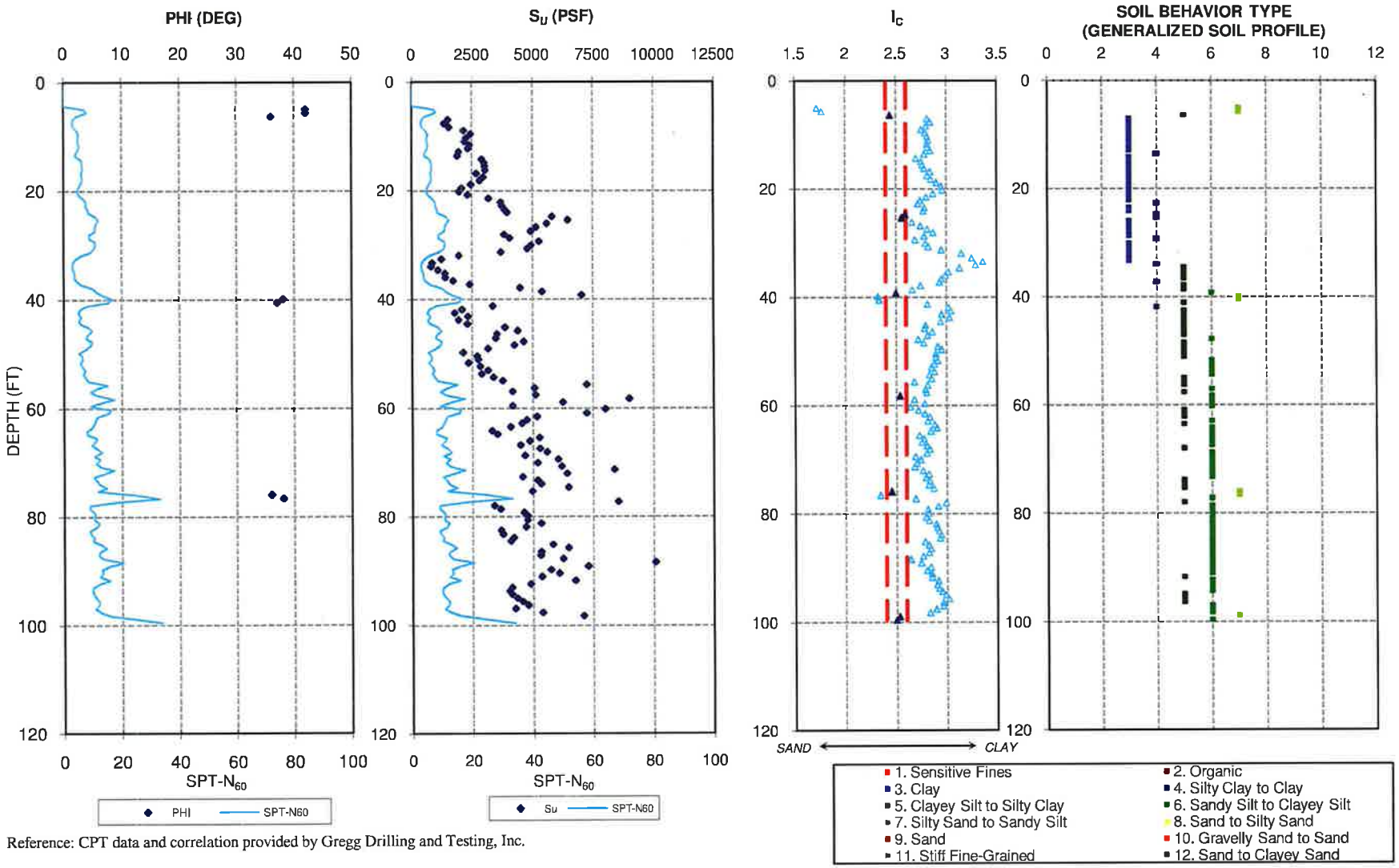
CPT DATA CORRELATION

CPT-09-CN-001



Reference: CPT data and correlation provided by Gregg Drilling and Testing, Inc.

PARIKH

Practicing in the Geosciences

E80-E12/E80 ON-RAMP SEPARATION
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GSS	PLATE NO.:

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

FAULT INFO

PROJECT NAME ***E80-E12/E80 ON-RAMP SEPARATION***
PROJECT NO. ***208123.GSS***
CPT NO. ***CPT-09-CN-001***

CONCORD-GREEN VALLEY FAULT
a_{max} *(g)=* 0.6

FAULT M_w = 6.9
MSF = 1.24

		CPT RESULT INPUT							*CSR*		*CRR 7.5*							*F.S.=(CRR 7.5/CSR)*MSF*Kσ*Kα*		
Depth (ft)		Soil Behavior Type	qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	γ_d	CSR	Ic	C_Q	q_{cIN}	K_C	$(q_{cIN})_{cs}$	$CRR_{7.5}$	Kσ	Kα	F.S.
5.085	7	Silty Sand to Sandy Silt	40.284	0.285	0.299		0.299	1.72	1.46765	0.99	0.386							1.00	1	
5.741	7	Silty Sand to Sandy Silt	44.159	0.357	0.338		0.338	1.77	1.43043	0.99	0.386							1.00	1	
6.398	5	Clayey Silt to Silty Clay	18.475	0.491	0.376		0.376	2.44	1.39594	0.99	0.385							1.00	1	
7.054	3	Clay	11.659	0.581	0.412		0.412	2.81	1.36476	0.99	0.384							1.00	1	
7.71	3	Clay	10.494	0.474	0.449		0.449	2.84	1.33414	0.98	0.384							1.00	1	
8.366	3	Clay	12.014	0.52	0.485	0.011	0.474	2.8	1.31422	0.98	0.392							1.00	1	
9.022	3	Clay	16.717	0.842	0.522	0.032	0.49	2.75	1.30178	0.98	0.408							1.00	1	
9.678	3	Clay	18.779	1.17	0.558	0.052	0.506	2.79	1.28957	0.98	0.421							1.00	1	
10.335	3	Clay	17.433	1.058	0.595	0.073	0.522	2.81	1.27758	0.98	0.435							1.00	1	
10.991	3	Clay	17.106	0.994	0.632	0.093	0.538	2.82	1.26582	0.98	0.448							1.00	1	
11.647	3	Clay	18.588	1.11	0.668	0.114	0.554	2.81	1.25428	0.98	0.459							1.00	1	
12.303	3	Clay	18.182	1.028	0.705	0.134	0.57	2.81	1.24294	0.97	0.470							1.00	1	
12.959	3	Clay	15.236	0.764	0.741	0.155	0.587	2.84	1.23111	0.97	0.479							1.00	1	
13.615	4	Silty Clay to Clay	14.752	0.555	0.779	0.175	0.604	2.78	1.21951	0.97	0.489							1.00	1	
14.272	3	Clay	22.412	1.021	0.815	0.196	0.62	2.7	1.20879	0.97	0.497							1.00	1	
14.928	3	Clay	23.11	1.262	0.852	0.216	0.636	2.75	1.19826	0.97	0.506							1.00	1	
15.584	3	Clay	23.082	1.273	0.888	0.237	0.652	2.76	1.1879	0.97	0.514							1.00	1	
16.24	3	Clay	23.33	1.365	0.925	0.257	0.668	2.78	1.17773	0.97	0.522							1.00	1	
16.896	3	Clay	20.767	1.274	0.962	0.278	0.684	2.84	1.16773	0.96	0.529							1.00	1	
17.552	3	Clay	22.834	1.333	0.998	0.298	0.7	2.81	1.15789	0.96	0.535							1.00	1	
18.209	3	Clay	21.978	1.358	1.035	0.318	0.716	2.85	1.14823	0.96	0.542							1.00	1	
18.865	3	Clay	19.297	1.205	1.071	0.339	0.732	2.9	1.13872	0.96	0.548							1.00	1	
19.521	3	Clay	16.52	0.973	1.108	0.359	0.748	2.95	1.12936	0.96	0.554							1.00	1	
20.177	3	Clay	15.574	0.864	1.144	0.38	0.764	2.96	1.12016	0.96	0.559							1.00	1	
20.833	3	Clay	18.306	0.898	1.181	0.4	0.78	2.87	1.11111	0.95	0.564							1.00	1	
21.49	3	Clay	24.654	1.346	1.217	0.421	0.797	2.8	1.10165	0.95	0.567							1.00	1	
22.146	3	Clay	28.275	1.451	1.254	0.441	0.813	2.74	1.0929	0.95	0.572							1.00	1	
22.802	4	Silty Clay to Clay	28.439	1.362	1.292	0.462	0.83	2.72	1.08374	0.95	0.576							1.00	1	
23.458	3	Clay	29.644	1.706	1.328	0.482	0.846	2.78	1.07527	0.95	0.580							1.00	1	
24.114	3	Clay	30.601	1.726	1.365	0.503	0.862	2.77	1.06693	0.94	0.584							1.00	1	
24.77	4	Silty Clay to Clay	43.979	2.037	1.402	0.523	0.879	2.59	1.0582	0.94	0.586							1.00	1	
25.427	4	Silty Clay to Clay	48.35	2.247	1.44	0.544	0.896	2.56	1.04962	0.94	0.589							1.00	1	
26.083	3	Clay	42.655	2.301	1.476	0.564	0.912	2.66	1.04167	0.94	0.592							1.00	1	
26.739	3	Clay	39.625	2.459	1.513	0.585	0.928	2.74	1.03383	0.94	0.595							1.00	1	
27.395	3	Clay	37.879	2.734	1.549	0.605	0.944	2.81	1.02612	0.93	0.597							1.00	1	
28.051	3	Clay	29.903	2.028	1.586	0.626	0.96	2.87	1.01852	0.93	0.599							1.00	1	
28.707	3	Clay	31.266	1.648	1.623	0.646	0.977	2.78	1.01056	0.93	0.600							1.00	1	
29.364	4	Silty Clay to Clay	40.425	2.043	1.66	0.666	0.994	2.69	1.00273	0.92	0.602							1.00	1	
30.02	3	Clay	38.532	2.404	1.697	0.687	1.01	2.79	0.99548	0.92	0.603							1.00	1	
30.676	3	Clay	37.299	2.439	1.733	0.707	1.026	2.82	0.98832	0.92	0.604							0.99	1	
31.332	3	Clay	29.295	2.205	1.77	0.728	1.042	2.95	0.98127	0.91	0.605							0.99	1	
31.988	3	Clay	16.227	1.149	1.806	0.748	1.058	3.15	0.97431	0.91	0.606							0.99	1	
32.644	3	Clay	10.837	0.569	1.843	0.769	1.074	3.25	0.96746	0.91	0.606							0.99	1	
33.301	3	Clay	8.06	0.369	1.879	0.789	1.09	3.36	0.9607	0.90	0.606							0.98	1	
33.957	4	Silty Clay to Clay	7.841	0.249	1.917	0.81	1.107	3.29	0.95362	0.90	0.606							0.98	1	
34.613	5	Clayey Silt to Silty Clay	9.812	0.258	1.955	0.83	1.124	3.13	0.94664	0.89	0.606							0.98	1	
35.269	5	Clayey Silt to Silty Clay	11.93	0.289	1.992	0.851	1.141	3.02	0.93977	0.89	0.605							0.97	1	
35.925	5	Clayey Silt to Silty Clay	11.857	0.261	2.03	0.871	1.159	2.99	0.9326	0.88	0.604							0.97	1	
36.581	5	Clayey Silt to Silty Clay	14.245	0.355	2.067	0.892	1.176	2.95	0.92593	0.88	0.603							0.97	1	
37.238	4	Silty Clay to Clay	19.77	0.73	2.105	0.912	1.193	2.93	0.91935	0.87	0.601							0.97	1	
37.894	5	Clayey Silt to Silty Clay	35.682	1.435	2.143	0.933	1.21	2.74	0.91286	0.87	0.600							0.96	1	
38.55	5	Clayey Silt to Silty Clay	42.684	1.56	2.18	0.953	1.227	2.66	0.90647	0.86	0.598							0.96	1	
39.206	6	Sandy Silt to Clayey Silt	54.884	1.532	2.218	0.974	1.244	2.5	0.90016	0.86	0.597							0.96	1	
39.862	7	Silty Sand to Sandy Silt	74.823	1.615	2.256	0.994	1.262	2.32	0.89358	0.85	0.594	2.320	0.89	66.86	2.015	134.695	0.31	0.95	1	0.52
40.518	7	Silty Sand to Sandy Silt	68.745	1.388	2.295	1.015	1.281	2.33	0.88674	0.85	0.591	2.330	0.89	60.96	2.049	124.869	0.26	0.95	1	0.44
41.175	5	Clayey Silt to Silty Clay	27.436	0.898	2.333	1.035	1.298	2.81	0.8807	0.84	0.589							0.95	1	
41.831	4	Silty Clay to Clay	17.923	0.649	2.37	1.055	1.315	3.02	0.87475	0.83	0.586							0.95	1	
42.487	5	Clayey Silt to Silty Clay	15.529	0.464	2.408	1.076	1.332	3.04	0.86888	0.83	0.584							0.94	1	
43.143	5	Clayey Silt to Silty Clay	19.663	0.63	2.445	1.096	1.349	2.95	0.86308	0.82	0.581							0.94	1	
43.799	5	Clayey Silt to Silty Clay	16.391	0.529	2.483	1.117	1.366	3.03	0.85737	0.82	0.578							0.94	1	
44.455	5	Clayey Silt to Silty Clay	19.145	0.557	2.521	1.137	1.383	2.94	0.85172	0.81	0.575							0.94	1	
45.112	5	Clayey Silt to Silty Clay	30.827	1.046	2.558	1.158	1.4	2.79	0.84615	0.80	0.572							0.93	1	
45.768	5	Clayey Silt to Silty Clay	34.837	1.312	2.596	1.178	1.418	2.78	0.84034	0.80	0.568							0.93	1	
46.424	5	Clayey Silt to Silty Clay	28.473	1.044	2.633	1.199	1.435	2.86	0.83491	0.79	0.565							0.93	1	
47.08	5	Clayey Silt to Silty Clay	27.504	0.847	2.671	1.219	1.452	2.81	0.82956	0.78	0.561							0.93	1	
47.736	6	Sandy Silt to Clayey Silt	36.471	1.137	2.709	1.24	1.469	2.72	0.82428	0.78	0.558							0.93	1	
48.392	5	Clayey Silt to Silty Clay	33.435	1.094	2.746	1.26	1.486	2.77	0.81906	0.77	0.554							0.92	1	
49.049	5	Clayey Silt to Silty Clay	25.397	0.924	2.784	1.281	1.503	2.91	0.81391	0.76	0.551							0.92	1	
49.705	5	Clayey Silt to Silty Clay	17.433	0.43	2.821	1.301	1.52	2.95	0.80882	0.76	0.547							0.92	1	
50.361	5	Clayey Silt to Silty Clay	21.798	0.582	2.859	1.322	1.537	2.89	0.8038	0.75	0.543							0.92	1	
51.017	5	Clayey Silt to Silty Clay	22.069	0.601	2.897	1.342	1.554	2.89	0.79884	0.74	0.540							0.92	1	
51.673	6	Sandy Silt to Clayey Silt	18.925	0.439	2.934	1.363	1.572	2.91	0.79365	0.74	0.536							0.91	1	
52.329	6	Sandy Silt to Clayey Silt	22.553	0.584	2.972	1.383	1.589	2.88	0.78881	0.73	0.532							0.91	1	
52.986	6	Sandy Silt to Clayey Silt	25.099	0.689	3.009	1.403	1.606	2.85	0.78403	0.72	0.528							0.91	1	
53.642	6	Sandy Silt to Clayey Silt	22.981	0.613	3.047	1.424	1.623	2.88	0.77931	0.72	0.524							0.91	1	
54.298	6	Sandy Silt to Clayey Silt	26.653	0.709	3.085	1.444	1.64	2.83	0.77465	0.71	0.521							0.91	1	
54.954	5	Clayey Silt to Silty Clay	29.699	0.98	3.122	1.465	1.657	2.85	0.77004	0.70	0.517							0.90	1	
55.61	5	Clayey Silt to Silty Clay	56.979	2.227	3.16	1.485	1.674	2.68	0.76548	0.70	0.514							0.90	1	
56.266	5	Clayey Silt to Silty Clay	40.594	1.586	3.197	1.506	1.691	2.81	0.76098	0.69	0.510							0.90	1	
56.923	6	Sandy Silt to Clayey Silt	33.289	0.961	3.235	1.526	1.709	2.79	0.75652	0.69	0.506							0.90	1	
57.579	5	Clayey Silt to Silty Clay	40.521	1.536	3.272	1.547	1.726	2.8	0.75188	0.68	0.503							0.90	1	
58.235	6	Sandy Silt to Clayey Silt	70.486	2.088	3.31	1.567	1.743	2.54	0.74754	0.67	0.499							0.89	1	
58.891	6	Sandy Silt to Clayey Silt	49.477	1.494	3.348	1.588	1.76	2.68	0.74324	0.67	0.496							0.89	1	
59.547	6	Sandy Silt to Clayey Silt	32.821	0.875	3.385	1.608	1.777	2.78	0.739	0.66	0.493							0.89	1	
60.203	6	Sandy Silt to Clayey Silt	62.521	2.209	3.423	1.629	1.794	2.64	0.7348	0.66	0.489							0.89	1	
60.86	5	Clayey Silt to Silty Clay	57.221	2.355	3.46	1.649	1.811	2.72	0.73065	0.65	0.486							0.89	1	
61.516	5	Clayey Silt to Silty Clay	41.062	1.395	3.498	1.67	1.828	2.78	0.72655	0.65	0.483							0.89	1	
62.172	5	Clayey Silt to Silty Clay	38.51	1.361	3.536	1.69	1.846	2.83	0.72226	0.64	0.480							0.88	1	
62.828	6	Sandy Silt to Clayey Silt	36.645	1.121	3.573	1.711	1.863	2.81	0.71825	0.64	0.477							0.88	1	
63.484	5	Clayey Silt to Silty Clay	32.894	1.124	3.611	1.731	1.88	2.88	0.71429	0.63	0.474							0.88	1	

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

FAULT INFO

PROJECT NAME ***E80-E12/E80 ON-RAMP SEPARATION***
PROJECT NO. ***208123.GSS***
CPT NO. ***CPT-09-CN-001***

CONCORD-GREEN VALLEY FAULT
a_{max} (g)= 0.6

FAULT M_w = 6.9
MSF = 1.24

Depth (ft)		Soil Behavior Type	CPT RESULT INPUT qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	CSR γ_d	CSR	$CRR_{7.5}$ Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	$K\sigma$	$K\alpha$	F.S.
64.14	6	Sandy Silt to Clayey Silt	26.637	0.739	3.648	1.752	1.897	2.9	0.71035	0.63	0.471							0.88	1	
64.797	6	Sandy Silt to Clayey Silt	28	0.66	3.686	1.772	1.914	2.84	0.70649	0.62	0.468							0.88	1	
65.453	6	Sandy Silt to Clayey Silt	41.715	1.137	3.724	1.792	1.931	2.73	0.70265	0.62	0.466							0.88	1	
66.109	6	Sandy Silt to Clayey Silt	38.504	1.082	3.761	1.813	1.948	2.77	0.69886	0.61	0.463							0.88	1	
66.765	6	Sandy Silt to Clayey Silt	35.096	0.805	3.799	1.833	1.965	2.75	0.6951	0.61	0.460							0.87	1	
67.421	6	Sandy Silt to Clayey Silt	41.749	1.397	3.836	1.854	1.983	2.8	0.69117	0.61	0.458							0.87	1	
68.077	5	Clayey Silt to Silty Clay	44.962	1.741	3.874	1.874	2	2.83	0.6875	0.60	0.455							0.87	1	
68.734	6	Sandy Silt to Clayey Silt	37.012	1.046	3.912	1.895	2.017	2.8	0.68387	0.60	0.453							0.87	1	
69.39	6	Sandy Silt to Clayey Silt	47.004	1.217	3.949	1.915	2.034	2.69	0.68027	0.60	0.451							0.87	1	
70.046	6	Sandy Silt to Clayey Silt	40.673	1.055	3.987	1.936	2.051	2.74	0.67671	0.59	0.449							0.87	1	
70.702	5	Sandy Silt to Clayey Silt	47.573	1.314	4.024	1.956	2.068	2.7	0.67319	0.59	0.446							0.86	1	
71.358	6	Sandy Silt to Clayey Silt	65.406	2.377	4.062	1.977	2.085	2.68	0.66971	0.58	0.444							0.86	1	
72.014	6	Sandy Silt to Clayey Silt	50.597	1.751	4.1	1.997	2.102	2.76	0.66626	0.58	0.442							0.86	1	
72.671	5	Sandy Silt to Clayey Silt	36.026	1.004	4.137	2.018	2.119	2.82	0.66285	0.58	0.440							0.86	1	
73.327	6	Sandy Silt to Clayey Silt	40.752	1.203	4.175	2.038	2.137	2.79	0.65927	0.58	0.438							0.86	1	
73.983	5	Clayey Silt to Silty Clay	42.233	1.454	4.212	2.059	2.154	2.83	0.65593	0.57	0.436							0.86	1	
74.639	5	Clayey Silt to Silty Clay	51.375	2.107	4.25	2.079	2.171	2.82	0.65263	0.57	0.435							0.86	1	
75.295	5	Clayey Silt to Silty Clay	40.053	1.397	4.288	2.1	2.188	2.87	0.64935	0.57	0.433							0.86	1	
75.951	7	Silty Sand to Sandy Silt	102.445	2.607	4.326	2.12	2.206	2.45	0.64592	0.56	0.431							0.85	1	
76.608	7	Silty Sand to Sandy Silt	146.379	3.732	4.365	2.14	2.224	2.34	0.64252	0.56	0.429							0.83	1	
77.264	6	Sandy Silt to Clayey Silt	67.991	2.373	4.402	2.161	2.241	2.69	0.63935	0.56	0.426							0.85	1	
77.92	5	Clayey Silt to Silty Clay	28.264	0.865	4.44	2.181	2.259	2.99	0.63602	0.56	0.426							0.85	1	
78.576	6	Sandy Silt to Clayey Silt	29.852	0.748	4.478	2.202	2.276	2.91	0.63291	0.55	0.425							0.85	1	
79.232	6	Sandy Silt to Clayey Silt	36.933	0.895	4.515	2.222	2.293	2.81	0.62983	0.55	0.423							0.85	1	
79.888	6	Sandy Silt to Clayey Silt	37.963	0.982	4.553	2.243	2.31	2.82	0.62678	0.55	0.422							0.85	1	
80.545	6	Sandy Silt to Clayey Silt	37.547	0.856	4.59	2.263	2.327	2.79	0.62376	0.55	0.420							0.84	1	
81.201	6	Sandy Silt to Clayey Silt	42.391	1.282	4.628	2.284	2.344	2.82	0.62077	0.54	0.419							0.84	1	
81.857	6	Sandy Silt to Clayey Silt	37.947	1.222	4.666	2.304	2.361	2.89	0.6178	0.54	0.418							0.84	1	
82.513	6	Sandy Silt to Clayey Silt	29.954	0.681	4.703	2.325	2.378	2.9	0.61487	0.54	0.416							0.84	1	
83.169	6	Sandy Silt to Clayey Silt	30.692	0.777	4.741	2.345	2.396	2.92	0.61179	0.54	0.415							0.84	1	
83.825	6	Sandy Silt to Clayey Silt	34.032	1.083	4.778	2.366	2.413	2.94	0.60891	0.54	0.414							0.84	1	
84.482	6	Sandy Silt to Clayey Silt	32.905	0.972	4.816	2.386	2.43	2.93	0.60606	0.53	0.413							0.84	1	
85.138	6	Sandy Silt to Clayey Silt	46.181	1.234	4.854	2.407	2.447	2.78	0.60324	0.53	0.412							0.84	1	
85.794	6	Sandy Silt to Clayey Silt	51.397	1.789	4.891	2.427	2.464	2.82	0.60044	0.53	0.410							0.83	1	
86.45	6	Sandy Silt to Clayey Silt	42.745	1.247	4.929	2.448	2.481	2.84	0.59766	0.53	0.409							0.83	1	
87.106	6	Sandy Silt to Clayey Silt	41.979	1.16	4.966	2.468	2.498	2.82	0.59492	0.53	0.408							0.83	1	
87.762	6	Sandy Silt to Clayey Silt	48.778	1.323	5.004	2.489	2.515	2.76	0.59219	0.52	0.407							0.83	1	
88.419	6	Sandy Silt to Clayey Silt	78.636	2.469	5.041	2.509	2.533	2.64	0.58934	0.52	0.406							0.83	1	
89.075	6	Sandy Silt to Clayey Silt	57.086	1.703	5.079	2.529	2.55	2.74	0.58667	0.52	0.405							0.83	1	
89.731	6	Sandy Silt to Clayey Silt	44.97	1.42	5.117	2.55	2.567	2.84	0.58402	0.52	0.404							0.83	1	
90.387	6	Sandy Silt to Clayey Silt	47.623	1.379	5.154	2.57	2.584	2.8	0.5814	0.52	0.403							0.83	1	
91.043	6	Sandy Silt to Clayey Silt	42.537	1.245	5.192	2.591	2.601	2.85	0.5788	0.52	0.402							0.83	1	
91.699	5	Clayey Silt to Silty Clay	54.089	2.064	5.229	2.611	2.618	2.85	0.57622	0.52	0.401							0.82	1	
92.356	6	Sandy Silt to Clayey Silt	39.574	1.238	5.267	2.632	2.635	2.91	0.57366	0.51	0.401							0.82	1	
93.012	6	Sandy Silt to Clayey Silt	33.632	0.788	5.305	2.652	2.652	2.9	0.57113	0.51	0.400							0.82	1	
93.668	6	Sandy Silt to Clayey Silt	32.686	0.781	5.342	2.673	2.669	2.92	0.56862	0.51	0.399							0.82	1	
94.324	6	Sandy Silt to Clayey Silt	33.497	0.922	5.38	2.693	2.687	2.95	0.56599	0.51	0.398							0.82	1	
94.98	5	Clayey Silt to Silty Clay	35.485	1.235	5.417	2.714	2.704	2.99	0.56352	0.51	0.397							0.82	1	
95.636	5	Clayey Silt to Silty Clay	37.524	1.556	5.455	2.734	2.721	3.02	0.56108	0.51	0.396							0.82	1	
96.293	5	Clayey Silt to Silty Clay	38.842	1.365	5.493	2.755	2.738	2.96	0.55866	0.51	0.396							0.82	1	
96.949	6	Sandy Silt to Clayey Silt	34.635	1.02	5.53	2.775	2.755	2.96	0.55626	0.50	0.395							0.82	1	
97.605	6	Sandy Silt to Clayey Silt	42.667	1.347	5.568	2.796	2.772	2.89	0.55388	0.50	0.394							0.82	1	
98.261	6	Sandy Silt to Clayey Silt	55.864	1.971	5.605	2.816	2.789	2.83	0.55152	0.50	0.393							0.81	1	
98.917	7	Silty Sand to Sandy Silt	104.141	2.755	5.644	2.837	2.807	2.53	0.54904	0.50	0.393							0.81	1	
99.573	6	Sandy Silt to Clayey Silt	140.318	4.644	5.682	2.857	2.825	2.5	0.54658	0.50	0.392							0.81	1	

CSR *$CRR_{7.5}$* *$F.S.=(CRR_{7.5}/CSR)*MSF*K\sigma*K\alpha$*

APPENDIX B

APPENDIX B

LABORATORY TESTS

Classification Tests

The field classification of the samples was visually verified in the laboratory according to the Unified Soil Classification System. The results are presented on "Log of Test Borings", Appendix A.

Moisture-Density

The natural moisture contents and dry unit weights were determined for selected undisturbed samples of the soils in general accordance with ASTM Test Method D 2216-92. This information was used to classify and correlate the soils. The results are presented at the appropriate depths on the "Log of Test Borings", Appendix A.

Atterberg Limits

The Atterberg Limits were determined for selected samples of the fine-grained materials. These results were used to classify the soils, as well as to obtain an indication of the effective strength characteristics and expansion potential with variations in moisture content. The Atterberg Limits were determined in general accordance with ASTM Test Method D 4318-93. The results of these tests are presented on Plate B-2, "Plasticity Chart".

Grain Size Classification

Grain size classification tests (ASTM Test Method D422-63) were performed on selected samples of granular soil to aid in the classification. The results are presented on Plate B-3, "Grain Size Distribution Curves".

Unconfined Compression Tests

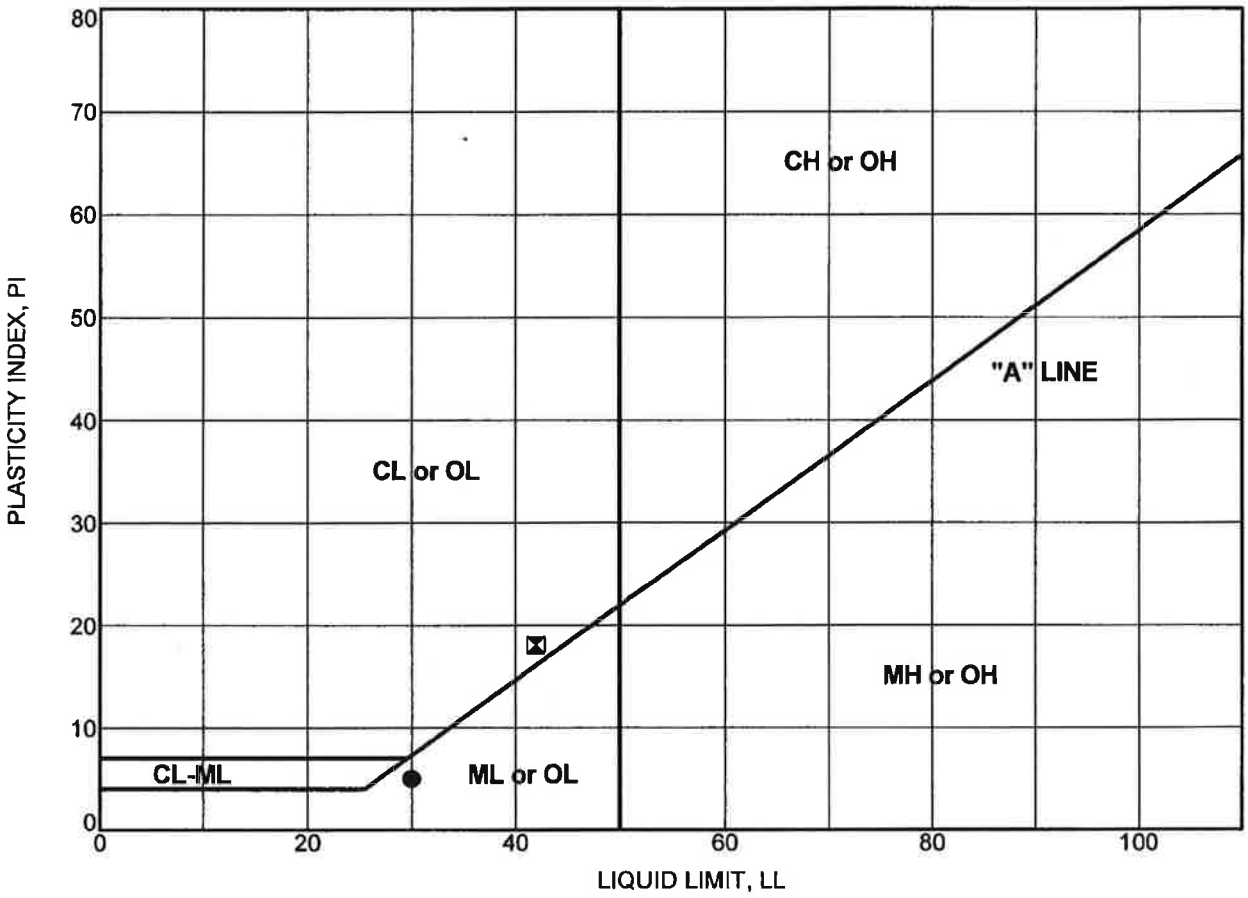
Strength tests were performed on selected undisturbed samples using unconfined compression machine. Unconfined compression tests were performed in general accordance with ASTM Test Method D 2166-91. The results are presented on "Log of Test Borings"

Corrosion Test

Corrosion tests were performed on selected samples to determine the corrosion potential of the soils. The pH and minimum resistively tests were performed according to California Test Method 643. The tests were performed by Sunland Analytical. The tests results are presented on Plate B-4A and Plate B-4B.

Consolidation Tests

Consolidation tests (California Test Method T219) were performed on two selected undisturbed samples. The test results are presented on Plates B-5A through B-5F.



PLASTICITY CHART

Boring Number	Sample Number	Depth (feet)	Test Symbol	Moisture Content (%)	LL	PL	PI	Description
R-09-CN-001	MC-8	36.0	●	27	30	25	5	SILT (ML)
R-09-CN-002	MC-8	41.0	⊠	32	42	24	18	LEAN CLAY (CL)

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

EB 80 TO EB 12 CONNECTOR
SOLANO COUNTY, CALIFORNIA

JOB NO: 208123.GSS

PLATE NO: B - 2

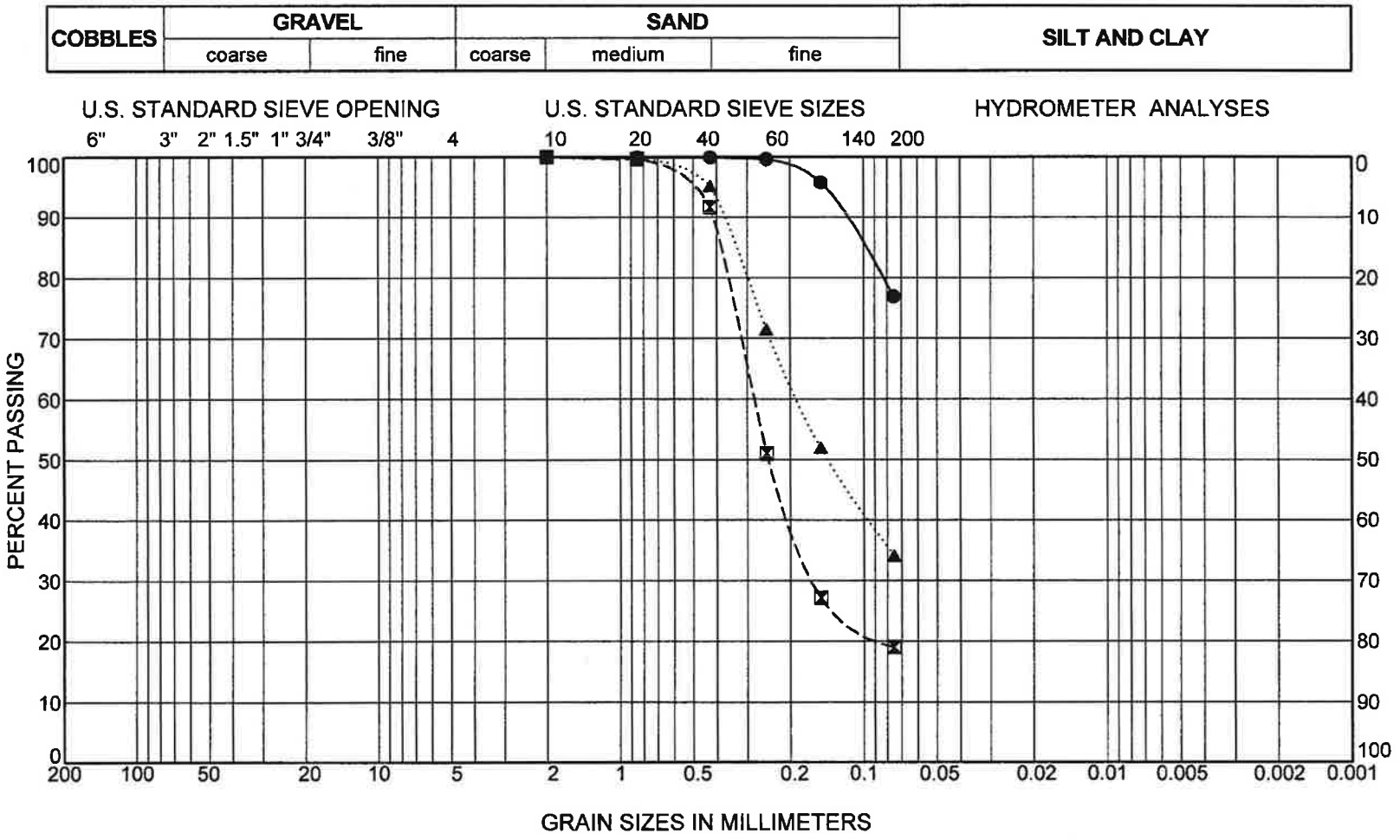
PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

JOB NO: 208123.GSS

EB 80 TO EB 12 CONNECTOR
SOLANO COUNTY, CALIFORNIA

PLATE NO: B - 3

GRAIN SIZE DISTRIBUTION CURVES



Boring Number	Sample Number	Depth (feet)	Symbol	LL	PI	Description
R-09-CN-002	MC-7	36.0	●			LEAN CLAY WITH SAND (CL)
R-09-CN-004	MC-9	46.0	⊠			SILTY SAND (SM)
R-09-CN-004	MC-10	51.0	▲			SILTY SAND (SM)

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 03/18/2009
Date Submitted 03/13/2009

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 208123.GDR EB I-80 Site ID : 008#3@16' (R-09-CN-0022) # 3 @ 16'
Thank you for your business.

* For future reference to this analysis please use SUN # 55240-110995.

EVALUATION FOR SOIL CORROSION

Soil pH	7.72	
Minimum Resistivity	1.74 ohm-cm (x1000)	
Chloride	20.9 ppm	00.00209 %
Sulfate	37.9 ppm	00.00379 %

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

PLATE NO.: B-4A

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 03/18/2009
Date Submitted 03/13/2009

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 208123.GDR EB I-80 Site ID : 09#5@26'. (R-09-CN-003) #5 @ 26'
Thank you for your business.

* For future reference to this analysis please use SUN # 55240-110993.

EVALUATION FOR SOIL CORROSION

Soil pH	7.74	
Minimum Resistivity	1.88 ohm-cm (x1000)	
Chloride	25.8 ppm	00.00258 %
Sulfate	31.7 ppm	00.00317 %

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

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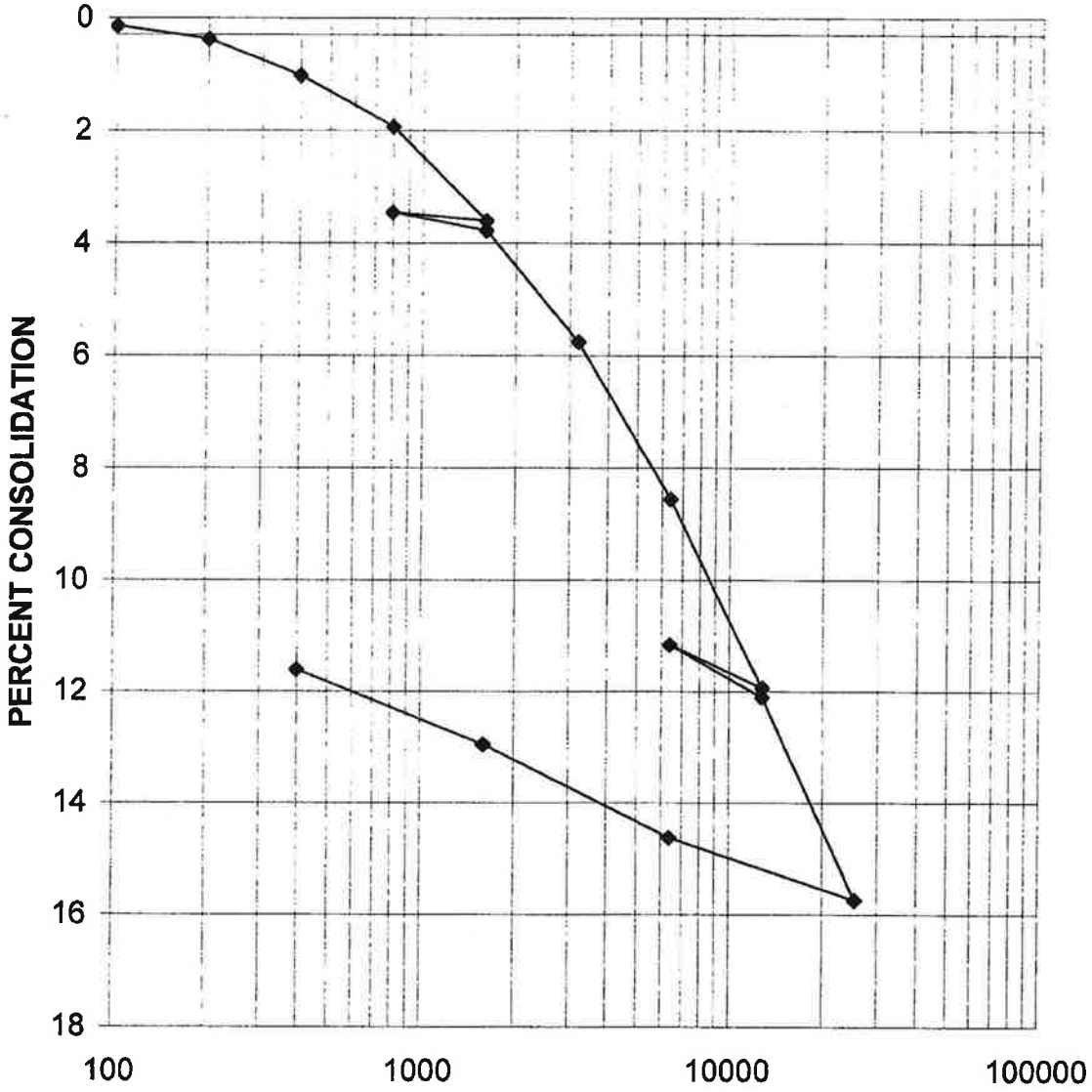
BY

PLATE NO.: B-4B

CONSOLIDATION TEST RESULTS



	MOISTURE CONTENT %	DRY DENSITY PCF	HEIGHT (INCHES)	DIAMETER (INCHES)
INITIAL	29.4	96.3	1.0000	2.416
FINAL	22.9	108.9	0.8839	2.416

BORING NO.	007(R-09-CN-001)	SAMPLE NO.	6	ELEV. OR DEPTH	26'
DESCRIPTION	Lean Clay, reddish brown				

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

EB I-80 Truck Scale Relocation
HDR Engineering, Inc.

DATE	JOB NO:
3/10/2009	208123.GDR

Reported by: Prav Dayah

PLATE NO.: B-5A

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

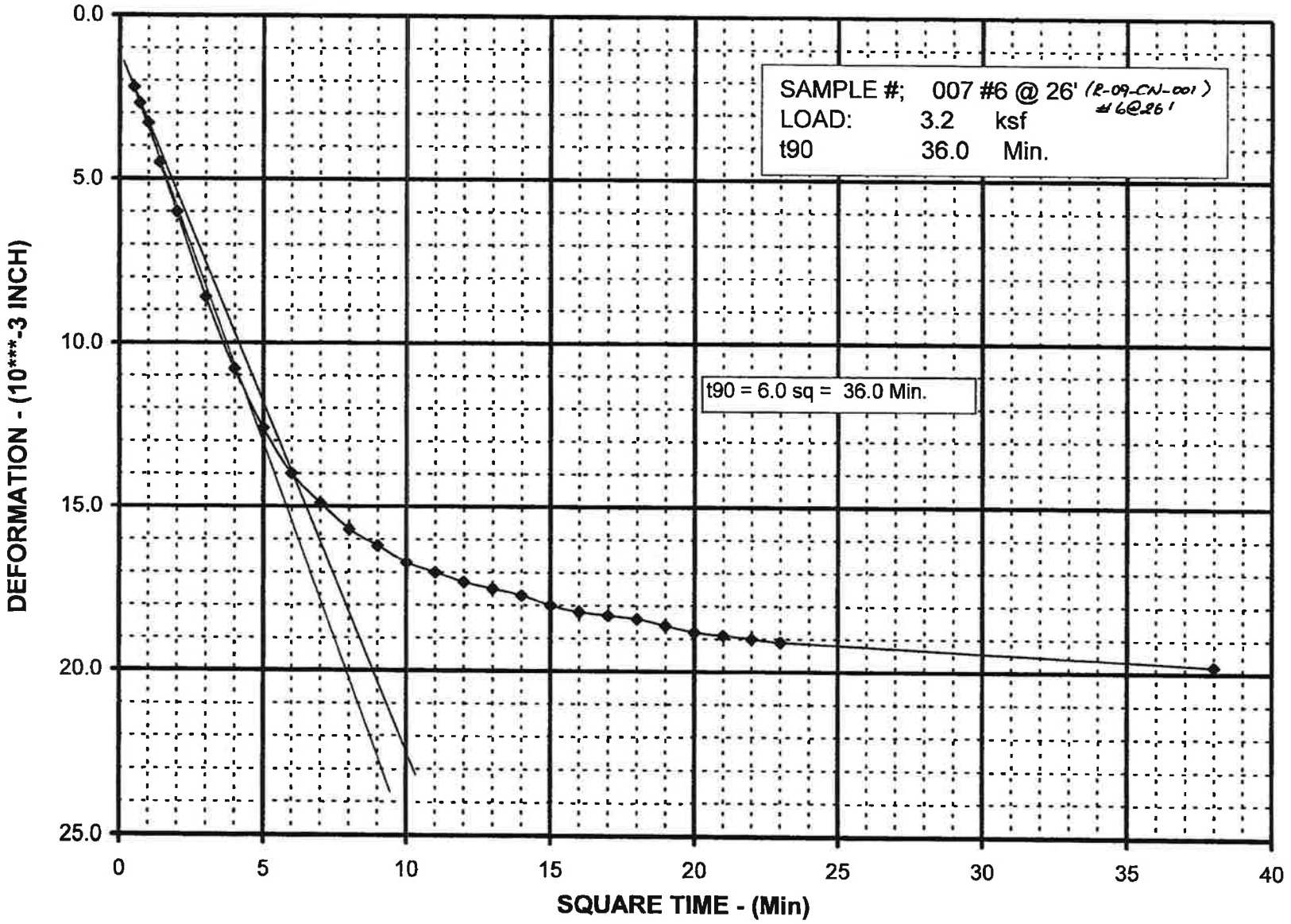


PLATE NO.: B-5B

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

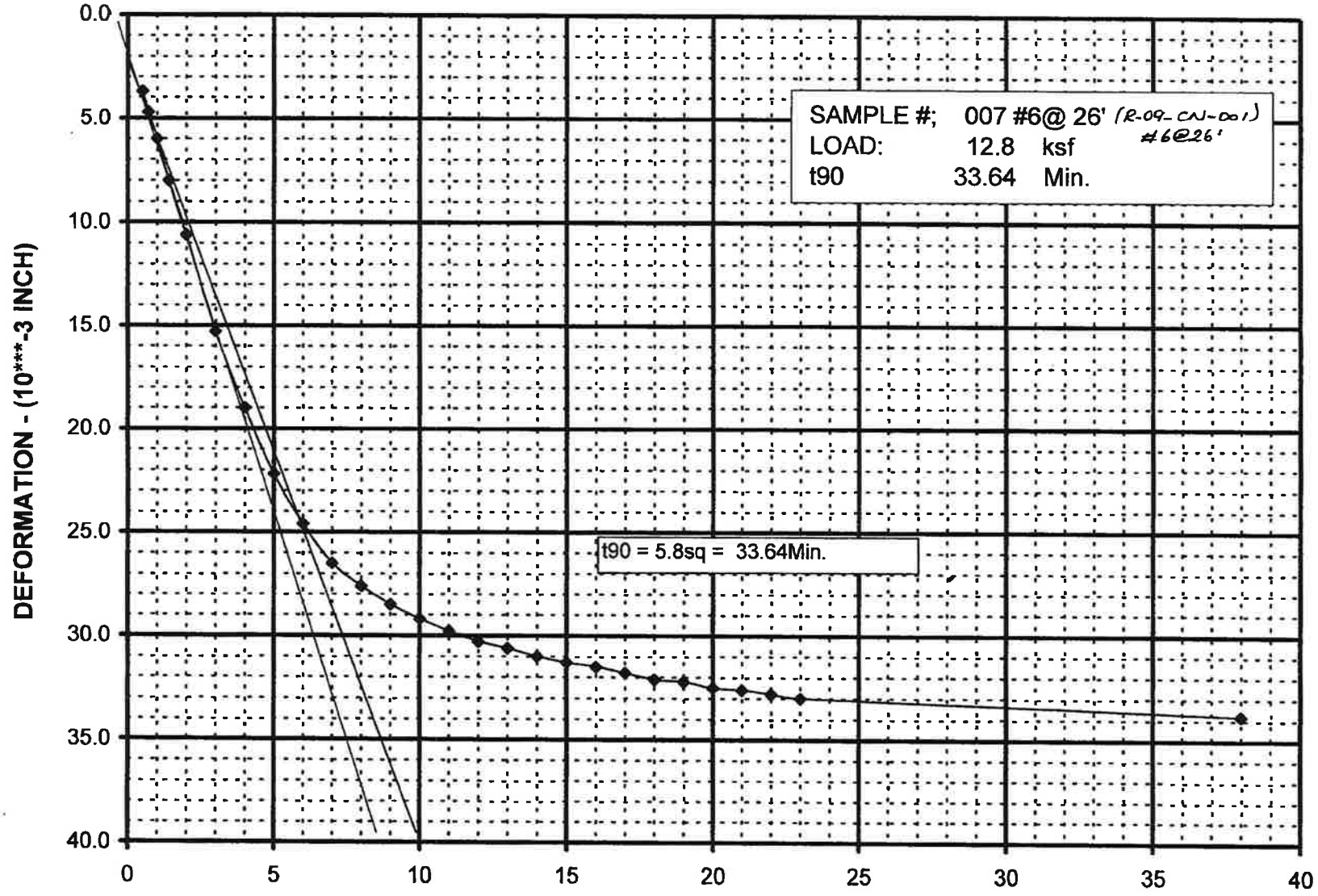
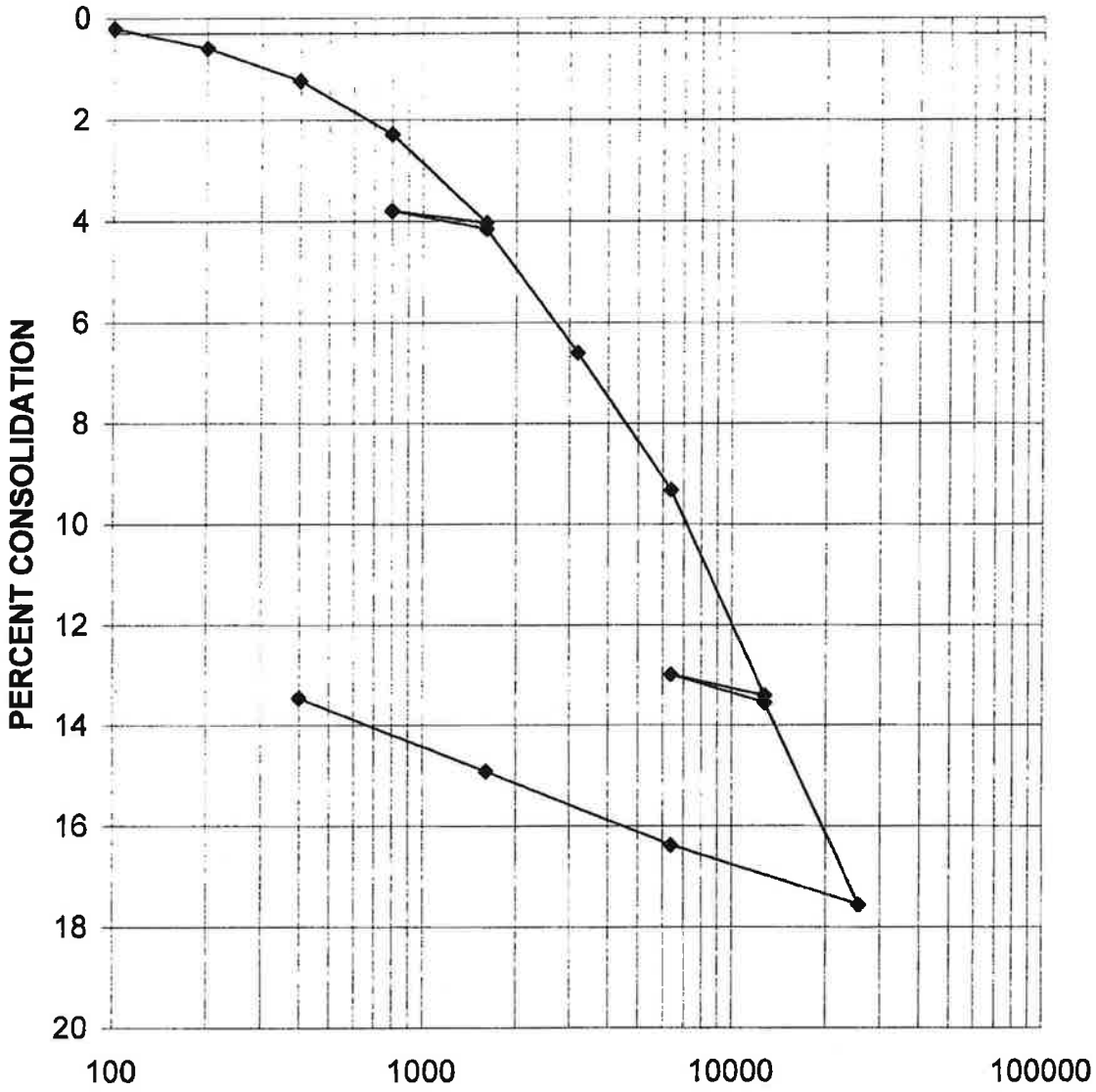


PLATE NO.: B-5C

CONSOLIDATION TEST RESULTS



	MOISTURE CONTENT %	DRY DENSITY PCF	HEIGHT (INCHES)	DIAMETER (INCHES)
INITIAL	30.3	94.6	1.0000	2.416
FINAL	23.0	109.4	0.8654	2.416

BORING NO.	011 (R-09-CN-004)	SAMPLE NO.	3	ELEV. OR DEPTH	16'
DESCRIPTION	Lean Clay, reddish brown				

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

EB I-80 Truck Scale Relocation
HDR Engineering, Inc.

DATE	JOB NO:
3/10/2009	208123.GDR

Reported by: Prav Dayah

PLATE NO.: B-5D

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

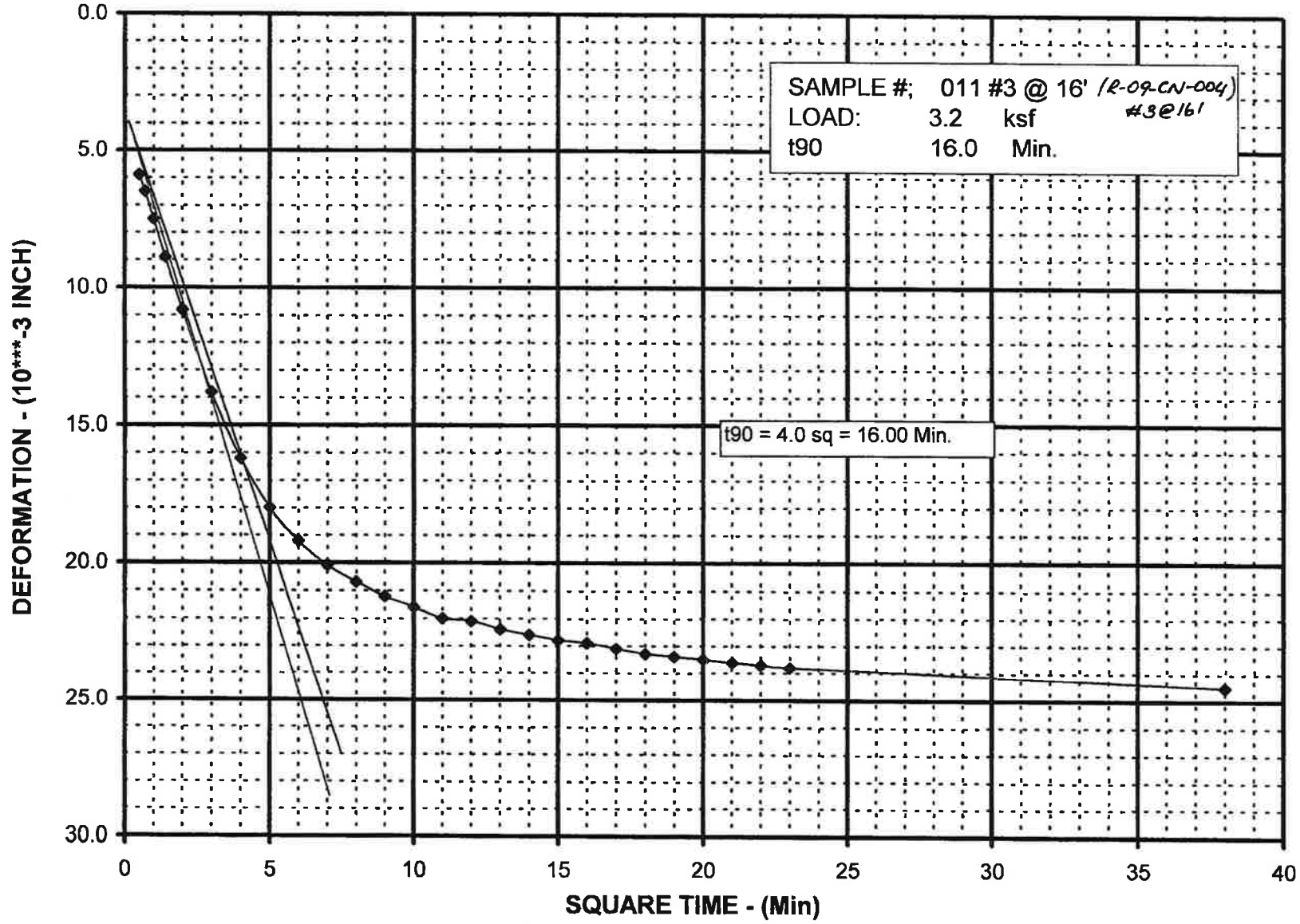


PLATE NO.: B-5E

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

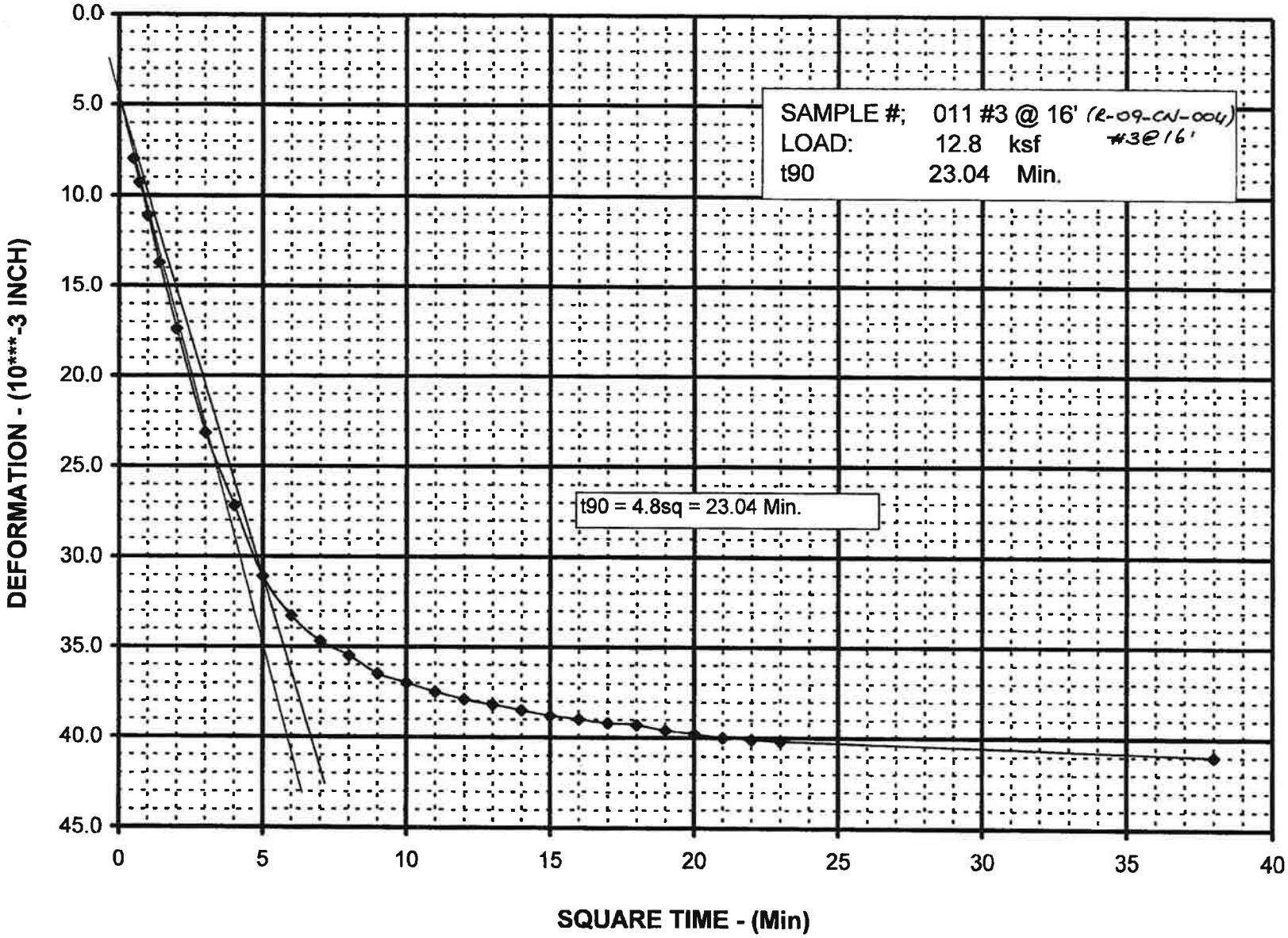


PLATE NO.: B-5F

APPENDIX C

Evaluation of Liquefaction Potential

LIQUEFACTION POTENTIAL ANALYSIS

PROJECT NAME ***E80-E12/E80 On-Ramp Separation***
PROJECT NO. ***208123.GSS***
BORING NO. ***R-09-CN-002***

BOREHOLE DIA (in)= 8
GW DEPTH (ft)= 6

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS

HAMMER TYPE (1/2) = 2
(1. ROPE AND PULLEY; 2. AUTOMATIC)

FAULT INFO
CORDELIA FAULT
a_{max} *(g)=* 0.6
FAULT M_w = 6.5

MSF = 1.44
(Min. FS = 1.1 based on SPT)
F.S.=($CRR_{6.5}$*/CSR)*MSF*K*σ**K*α

					CYCLIC STRESS RATIO (CSR)				*LIQUEFACTION RESISTANCE (*$CRR_{6.5}$*)*												
Sample No	Depth (ft)	Soil Type	Blow Count	Sampler Type	σ_v (psf)	σ_v' (psf)	γ_d	CSR	SPT-N_{60}	C_N	C_E	C_R	C_S	C_B	$(N_1)_{60}$	F.C.	$(N_1)_{60,CS}$	$CRR_{6.5}$	Kσ	Kα	F.S.
1	3.0	2	16	SPT	330.0	330.0	0.99		18	2.00	1	0.75	1.2	1.00	33.23	55%			1.00	1	
2	6.0	2	16	SPT	660.0	660.0	0.97		18	1.74	1	0.75	1.2	1.00	28.92	55%			1.00	1	
3	8.5	2	16	SPT	973.8	816.9	0.96		18	1.56	1	0.75	1.2	1.15	29.90	55%			1.00	1	
4	13.5	2	10	SPT	1623.8	1154.4	0.94		12	1.32	1	0.80	1.2	1.15	16.77	55%			1.00	1	
5	18.5	2	16	SPT	2273.8	1491.9	0.92		18	1.16	1	0.80	1.2	1.15	23.60	55%			1.00	1	
6	23.5	2	10	SPT	2923.8	1829.4	0.89		12	1.05	1	0.80	1.2	1.15	13.32	55%			1.00	1	
7	28.5	2	12	SPT	3573.8	2166.9	0.85		14	0.96	1	0.80	1.2	1.15	14.69	55%			0.98	1	
8	33.5	2	8	SPT	4173.8	2454.4	0.81		9	0.90	1	0.80	1.2	1.15	9.20	55%			0.94	1	
9	38.5	2	19	SPT	4823.8	2791.9	0.76		22	0.85	1	0.80	1.2	1.15	20.49	55%			0.90	1	
10	58.0	2	9	SPT	7261.3	4010.6	0.59		10	0.71	1	0.80	1.2	1.15	8.10	55%			0.81	1	
11	64.0	1	39	SPT	8041.3	4415.6	0.55	0.39	45	0.67	1	0.80	1.2	1.15	33.43	15%	37.54		0.79	1	
12	101.5	2	25	SPT	12916.3	6946.9	0.47		29	0.54	1	0.80	1.2	1.15	17.09	55%			0.69	1	

LIQUEFACTION POTENTIAL ANALYSIS

PROJECT NAME ***E80-E12/E80 On-Ramp Separation***
PROJECT NO. ***208123.GSS***
BORING NO. ***R-09-CN-003***

BOREHOLE DIA (in)= 8
GW DEPTH (ft)= 6

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS

HAMMER TYPE (1/2) = 2
(1. ROPE AND PULLEY; 2. AUTOMATIC)

FAULT INFO
CORDELIA FAULT
a_{max} (g)= 0.6
FAULT M_w = 6.5

MSF = 1.44
(Min. FS = 1.1 based on SPT)
*F.S.=($CRR_{6.5}$/CSR)*MSF*Kσ*Kα*

					CYCLIC STRESS RATIO (CSR)				*LIQUEFACTION RESISTANCE ($CRR_{6.5}$)*												
Sample No	Depth (ft)	Soil Type	Blow Count	Sampler Type	σ_v (psf)	σ_v' (psf)	γ_d	CSR	SPT-N_{60}	C_N	C_E	C_R	C_S	C_B	$(N_1)_{60}$	F.C.	$(N_1)_{60,cs}$	$CRR_{6.5}$	Kσ	Kα	F.S.
1	3.0	2	13	SPT	345.0	345.0	0.99		15	2.00	1	0.75	1.2	1.00	27.00	55%			1.00	1	
2	6.0	2	13	SPT	690.0	690.0	0.97		15	1.70	1	0.75	1.2	1.00	22.98	55%			1.00	1	
3	8.5	2	13	SPT	1003.8	846.9	0.96		15	1.54	1	0.75	1.2	1.15	23.86	55%			1.00	1	
4	13.5	2	10	SPT	1603.8	1134.4	0.94		12	1.33	1	0.80	1.2	1.15	16.91	55%			1.00	1	
5	18.5	2	17	SPT	2228.8	1446.9	0.92		20	1.18	1	0.80	1.2	1.15	25.46	55%			1.00	1	
6	23.5	2	12	SPT	2828.8	1734.4	0.89		14	1.07	1	0.80	1.2	1.15	16.42	55%			1.00	1	
7	28.5	2	16	SPT	3453.8	2046.9	0.85		18	0.99	1	0.80	1.2	1.15	20.15	55%			0.99	1	
8	33.5	2	10	SPT	4053.8	2334.4	0.81		12	0.93	1	0.80	1.2	1.15	11.79	55%			0.95	1	
9	38.5	2	9	SPT	4653.8	2621.9	0.76		10	0.87	1	0.80	1.2	1.15	10.01	55%			0.92	1	
10	48.5	2	8	SPT	5853.8	3196.9	0.67		9	0.79	1	0.80	1.2	1.15	8.06	55%			0.87	1	
11	65.0	2	10	SPT	7833.8	4145.6	0.55		12	0.69	1	0.80	1.2	1.15	8.85	55%			0.80	1	
12	79.0	1	50	SPT	9723.8	5160.6	0.50	0.37	58	0.62	1	0.80	1.2	1.15	39.65	15%	44.06		0.75	1	
13	89.0	2	73	SPT	10973.8	5785.6	0.48		84	0.59	1	0.80	1.2	1.15	54.67	55%			0.73	1	
14	94.0	1	34	SPT	11623.8	6123.1	0.48	0.35	39	0.57	1	0.80	1.2	1.15	24.75	15%	28.44	0.39	0.71	1	1.13
15	101.5	2	36	SPT	12598.8	6629.4	0.47		42	0.55	1	0.80	1.2	1.15	25.19	55%			0.70	1	

Bearing Capacity, Soil Spring Stiffness, Friction Factor, Seismic Earth Pressure

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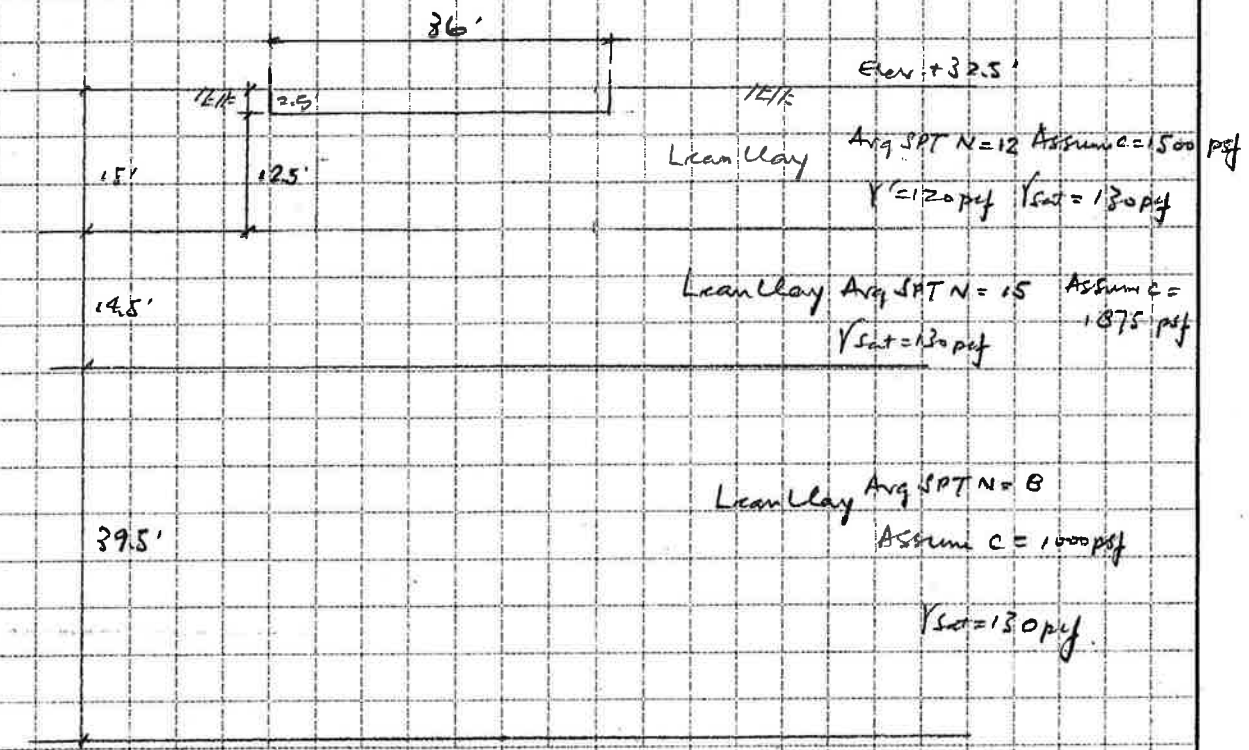
JOB Cordelia Truck Scales Relocation Project EB 8.0 to EB 12
SHEET NO 1 OF 2
CALCULATED BY Alam DATE 7/24/09
CHECKED BY DATE
SCALE

Bearing Capacity Analyses for Foundation Slab (Based on Boring R-09-CN-003)



PARIKH
Practicing in the Geosciences

JOB Cordelia Truck Scales EB0-F12/ EB0 On-Ramp Separation
SHEET NO ____ OF ____
CALCULATED BY A. Lam DATE 11/30/2009
CHECKED BY ____ DATE ____
SCALE ____

Bearing Capacity Analysis - Foundation Slab

Nav Case 1875 c_2 = 1500 psf γ = 120 pcf B = 36' D = 2.5', T = 12.5'

$c_2/c_1 = \frac{1875}{1500}$

$= 1.25$

$T/B = 0.35$

$N_c = 6.4$

$D/B = 2.5/36 = 0.07$

$N_{cD}/N_c = 1.02$

$N_{cD} = 1.02 \times 6.4 = 6.53$

$Q_{ult} = 6.53 \times 1500 + 120 \times 2.5$

$= 10045$ psf

$Q_{all} = \frac{10045}{3}$

$= 3348$ psf say 3.3 ksf

For Wingwall with smaller B

$Q_{all} = \frac{5.7 \times 1500 + 2.5 \times 120}{3}$

$= 2933$ psf say 2.9 ksf

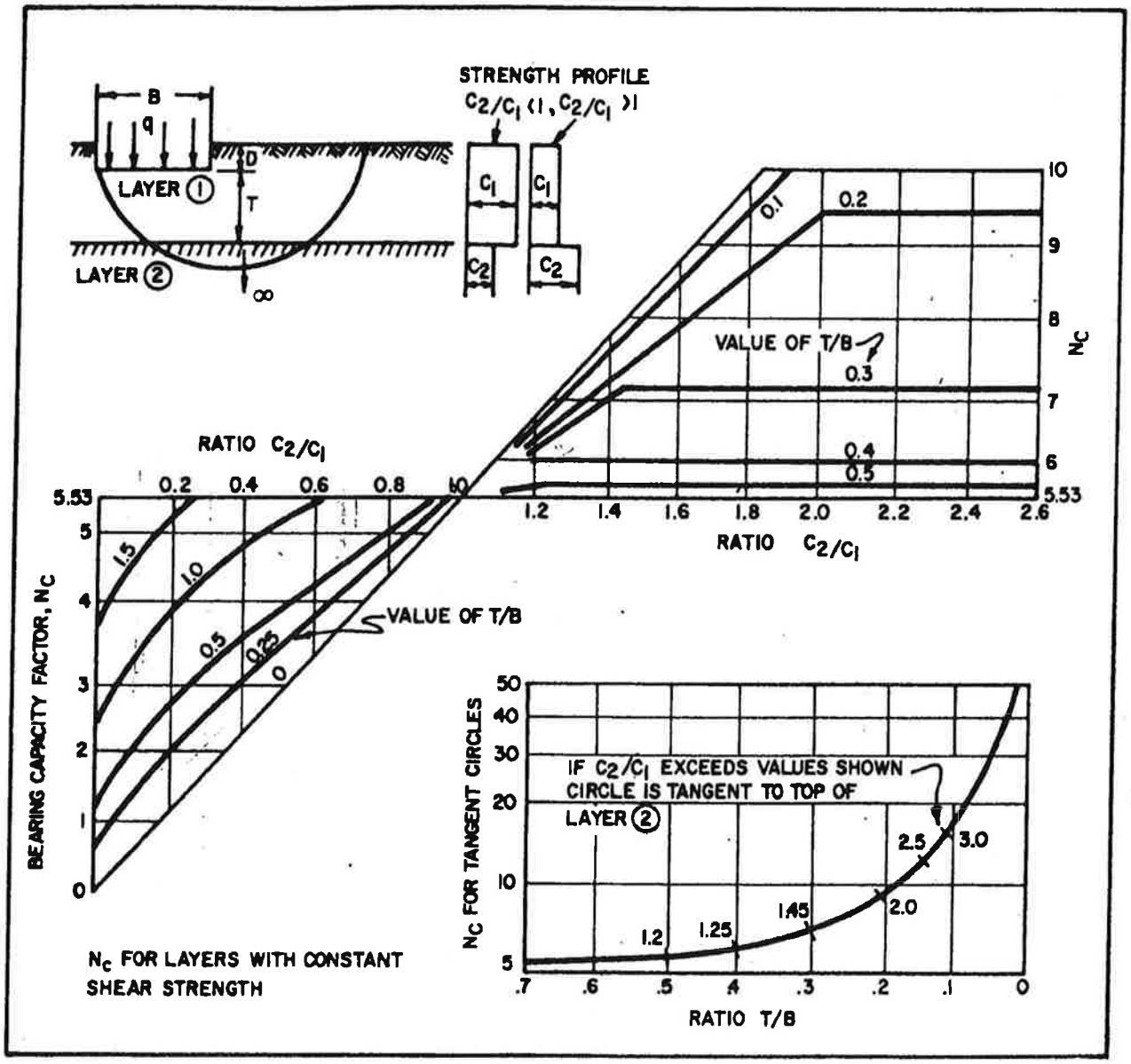
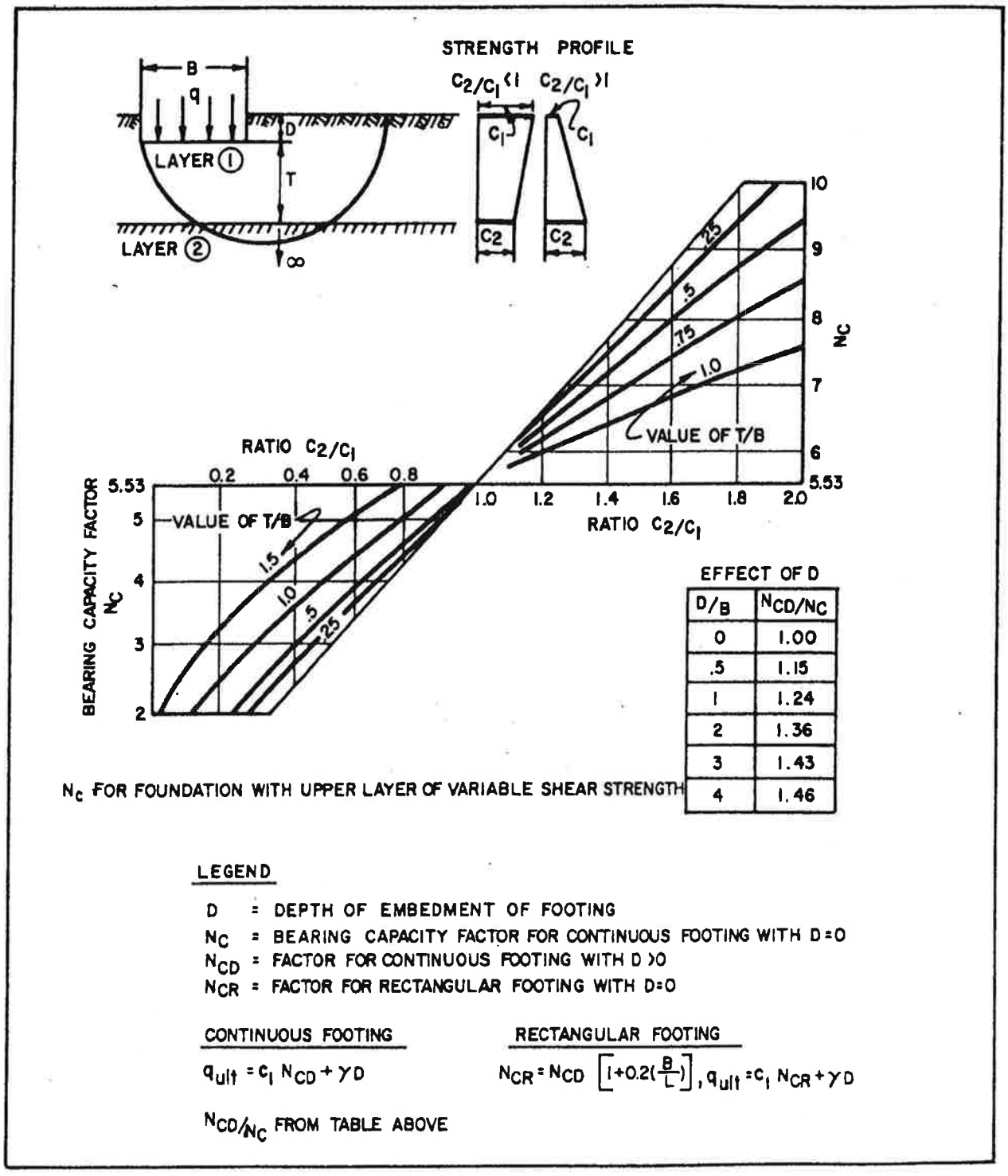


FIGURE 5
Ultimate Bearing Capacity of Two Layer Cohesive Soil (Ø=0)



D/B	N_{CD}/N_C
0	1.00
.5	1.15
1	1.24
2	1.36
3	1.43
4	1.46

LEGEND

D = DEPTH OF EMBEDMENT OF FOOTING
N_C = BEARING CAPACITY FACTOR FOR CONTINUOUS FOOTING WITH D=0
N_{CD} = FACTOR FOR CONTINUOUS FOOTING WITH D>0
N_{CR} = FACTOR FOR RECTANGULAR FOOTING WITH D=0

CONTINUOUS FOOTING

$q_{ult} = c_1 N_{CD} + \gamma D$

RECTANGULAR FOOTING

$N_{CR} = N_{CD}\left[1+0.2\left(\frac{B}{L}\right)\right]$, $q_{ult} = c_1 N_{CR} + \gamma D$

N_{CD}/N_C FROM TABLE ABOVE

FIGURE 5 (continued)
Ultimate Bearing Capacity of Two Layer Cohesive Soil (Ø=0)

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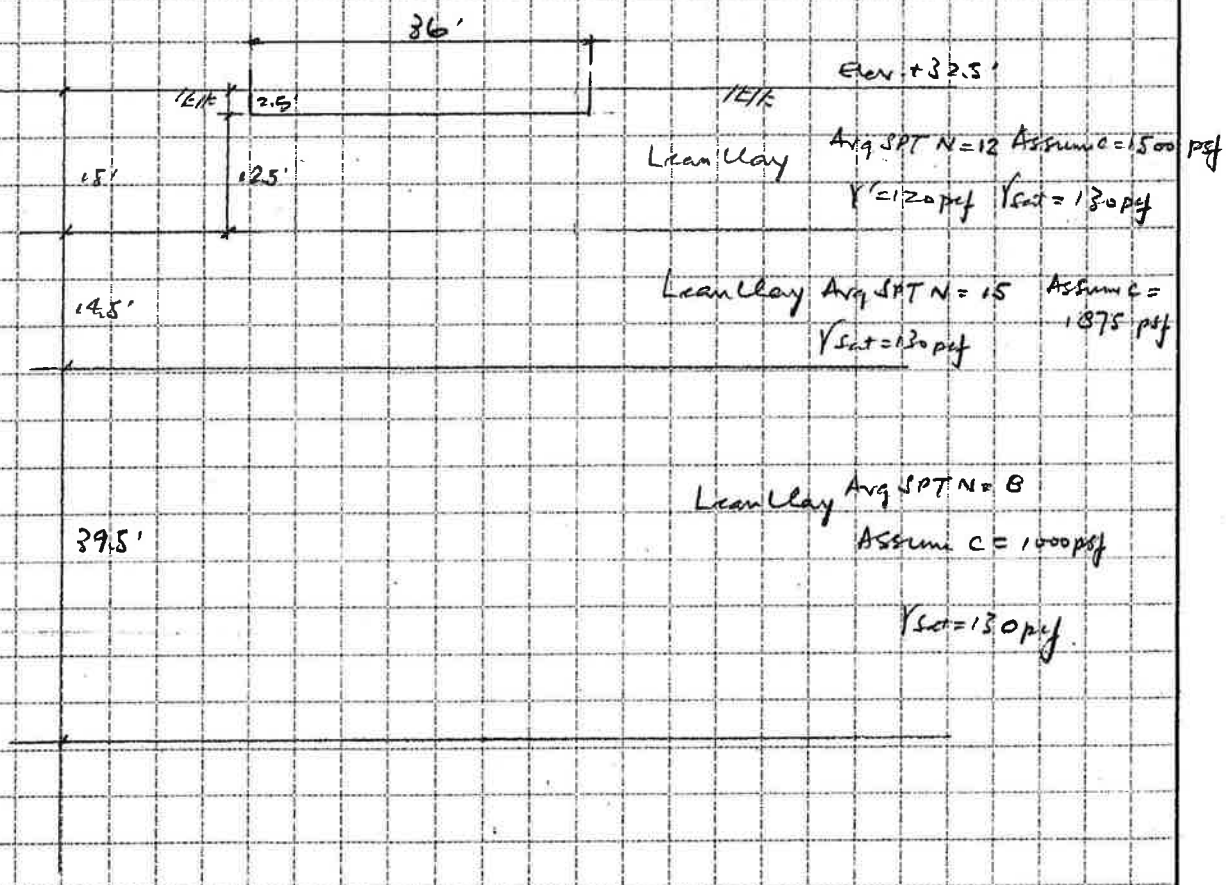
JOB Cordelia Truck Scales Relocation Project EB 8.0 to EB 12
SHEET NO 1 OF 2
CALCULATED BY A Lam DATE 7/24/09
CHECKED BY DATE
SCALE

Soil Spring Stiffness for Foundation Slabs (Based on Boring R-09-CN-003)



PARIKH
Practicing in the Geosciences

JOB Cordelia Tunnel Track Relocation EB80 to EB12 Connector
SHEET NO 2 OF 2
CALCULATED BY A Lam DATE 5/2010
CHECKED BY DATE
SCALE

Soil Spring Stiffness for Foundation Slabs (Based on Boring R-09-CN-1001)

$Q_{all} = 3400$ psf

$k_s = 12 \times 3 \times 3400$ psf $\quad k = 12 FS \cdot Q_{all}$

$= 1224$ kip/ft^3 $\quad$ say 125 kcf

Friction Factor

$\delta = \tan^{2/3} \phi'$

Assume $\phi' = 27°$ $\quad$ Long term for clay

$\delta = \tan 2/3 \times 27°$

$= \tan 18°$

$= 0.32$ $\quad$ say 0.30

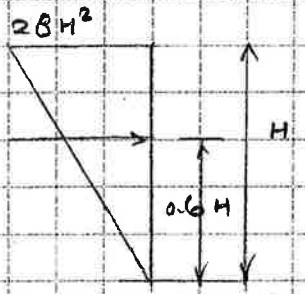
Seismic Earth Pressure - Separation Box Structure

Seismic Earth Pressure

$$PAE = \frac{1}{2}(1.25)(H^2)\left(\frac{3}{4}\right)(0.6) \qquad A_{max} = 0.6g$$

$$= \frac{1}{2}(1.25)(H^2)(0.45)$$

$$= 28.1\,H^2 \qquad \text{say } \underline{\underline{28H^2}}$$



Lateral Earth Pressure

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Practicing in the Geosciences

JOB Arcadia EBB- EB2/EB3 On-Ramp Expansion
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 2/22/2016
CHECKED BY ____ DATE ____
SCALE ____

Lateral Earth Pressure (Acting against the side of the box culvert)

Passive Earth Pressure

For Engineered fill Assume $\phi' = 30°$, $\gamma = 120 pcf$, $\delta/\phi = 0.4$

Based on Caquot & Kerisel

$\phi' = 30°$, $\beta/\phi = 0$, $K_p = 6.6$

Reduction Factor = 0.686

Passive Equivalent Fluid Pressure = $0.686 \times 6.6 \times 120$

$= 543.3 pcf$ or $540 pcf$

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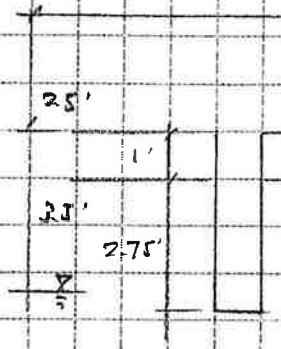
Practicing in the Geosciences

JOB Caltrans Lincoln Scales Grade Separation Structure
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 5/26/10
CHECKED BY ____ DATE ____
SCALE ____

Lateral Earth Pressure (Acting against the side of the shear key) (Ref: 69-CN-003)



Assume $\phi' = 32°$

Natural soil $\phi' = 27°$

Avg $\gamma = 115$ pcf

$$\text{Average } \phi' = \frac{1 \times 32° + 2.75 \times 27°}{3.75}$$

$$= 28.3°$$

Based on Caltrans Manual $\phi' = 28.3°$ / $\delta/\phi' = 0$ $k_p = .57$ $\delta/\phi = 0.4$

$$\text{Reduction factor} = 0.759 - \frac{28.3° - 25°}{30° - 25°}(0.759 - 0.686)$$

$$= 0.71$$

Passive Equivalent Fluid Pressure $= 0.71 \times .57 \times 115$

$= 466$ pcf Use 470 pcf

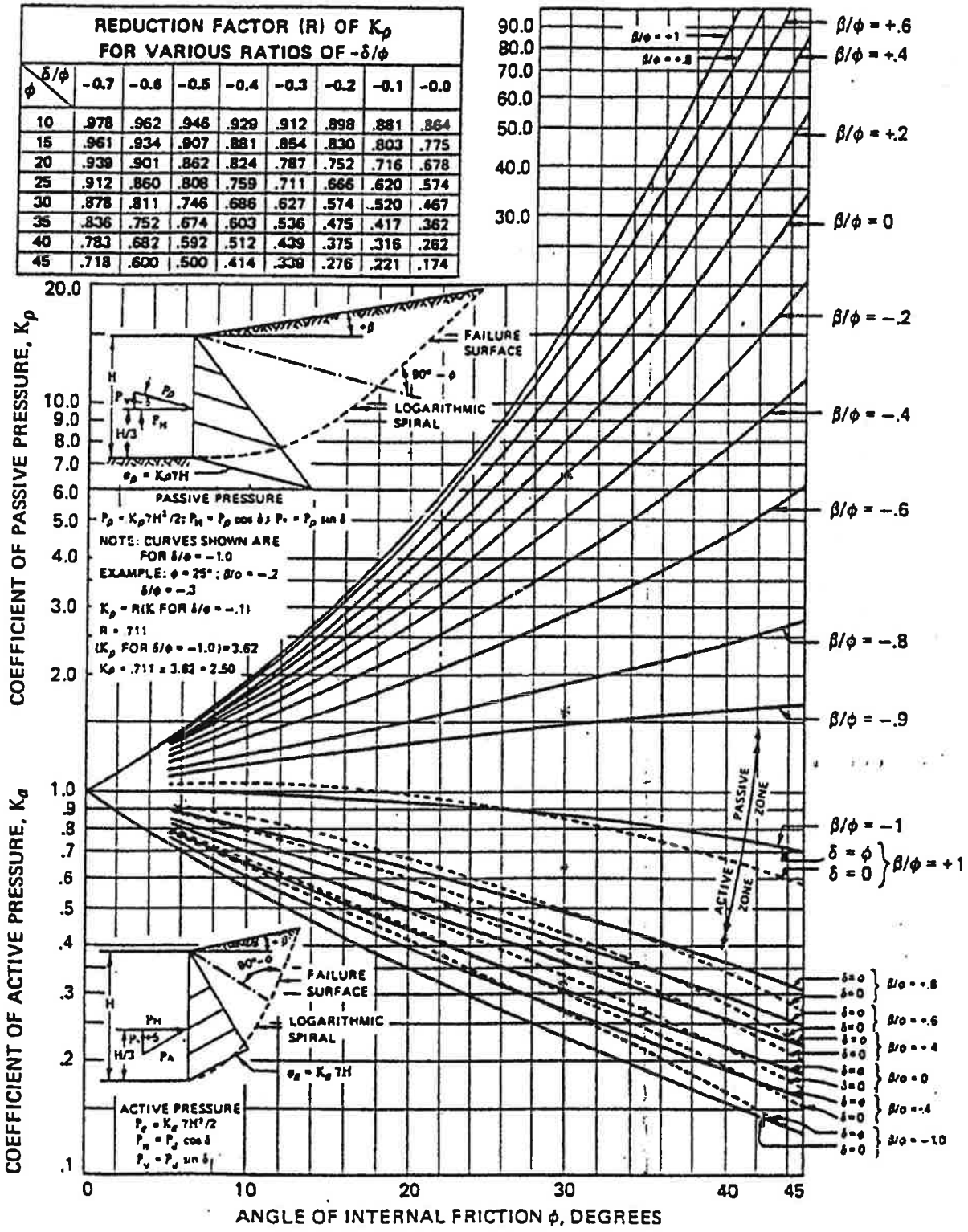


Figure 1

Active and passive coefficients with wall friction (sloping backfill) (after Caquot and Kerisel)

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JOB Cordelia EB0 - E12/EB0 On-ramp Separation 20B123.60R
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 1/21/2010
CHECKED BY ____ DATE ____
SCALE ____

Lateral Earth Pressures - Wing Wall

Assume $\phi' = 32.5°$ for engineered fill $\gamma = 120$ pcf

Active $k_a = \frac{1 - \sin\phi'}{1 + \sin\phi'}$

$= \frac{1 - 0.54}{1 + 0.54}$

$= 0.30$

Active EFP $= 0.3 \times 120$

$= 36$ pcf

At-rest

$k_o = 1 - \sin\phi'$ Jaky 1944

$= 1 - 0.54$

$= 0.46$

At-rest EFP $= 0.46 \times 120$

$= 55$ pcf

Settlement Analyses

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Practicing in the Geosciences

JOB Cordelia Truck Scales Relocation Project 20B1236D1
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 9/09
CHECKED BY ____ DATE ____
SCALE ____

Settlement Analysis - Soil Profile (Boring R-09-CN-002)

6'	8.5'	TEL	Lean Clay	SPT N=16	TEL $\gamma' = 114$ pcf, $\gamma_{sat} = 125$ pcf
	5'		Lean Clay	SPT N=10	$\gamma_{sat} = 125$ pcf
	5'		Lean Clay	SPT N=16	$\gamma_{sat} = 130$ pcf
	5'		Lean Clay	SPT N=14	$\gamma_{sat} = 130$ pcf
	5'		Lean Clay	SPT N=12	$\gamma_{sat} = 130$ pcf
	5'		Lean Clay	SPT N=8	$\gamma_{sat} = 120$ pcf
	5'		Lean Clay	SPT N=19	$\gamma_{sat} = 130$ pcf
	9.5'		Lean Clay	Avg SPT N=9	$\gamma_{sat} = 125$ pcf
	6'		Silty Sand with Gravel	SPT N=39	$\gamma_{sat} = 130$ pcf
	27.5'		Sandy Lean Clay	Avg SPT N=25	$\gamma_{sat} = 130$ pcf

SETTLEMENT ANALYSIS ***EB 80 to EB 12 Connector *** 11/20/09

LOCATION: Fairfield

Based on reference Boring A-09-CN-002 (A-09-008)

Height of fill = 20 ft
Width of fill = 55 ft
Fill Density = 125 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf)	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
			0											
0	6	110	660	330	2317	16	2000	8000.00	28	0.1376	0.0138	0.90	0.00	0.90
6	8.5	63	158	738.75	2092	16	2000	8000.00	28	0.1376	0.0138	0.24	0.00	0.24
8.5	13.5	63	315	975	1921	10	1250	5000.00	28	0.1376	0.0138	0.39	0.00	0.39
13.5	17.5	63	252	1258.5	1743	16	2000	8000.00	23	0.1041	0.0104	0.19	0.00	0.19
17.5	18.5	63	63	1416	1654	16	2000	8000.00	23	0.1041	0.0104	0.04	0.00	0.04
18.5	23.5	63	315	1605	1558	10	1250	5000.00	27	0.1309	0.0131	0.23	0.00	0.23
23.5	28.5	63	315	1920	1415	12	1500	6000.00	29	0.1443	0.0144	0.21	0.00	0.21
28.5	33.5	58	290	2222.5	1291	7	875	3500.00	34	0.1778	0.0178	0.21	0.02	0.23
33.5	38.5	63	315	2525	1183	19	2375	9500.00	22	0.0975	0.0098	0.10	0.00	0.10
38.5	58	58	1131	3248	971	8	1000	4000.00	29	0.1443	0.0144	0.31	0.78	1.09
58	64	63	378	4002.5	807	39				SAND				
64	101.5	63	2363	5372.75	610	25	3125	12500.00	22	0.0975	0.0098	0.20	0.00	0.20

TOTAL SETTLEMENT (IN.) =	3.01	0.80	3.82

O.C. RANGE SETTLEMENT = 3.01 INCHES
N.C. RANGE SETTLEMENT = 0.80 INCHES

Total settlement is approximately 3.0 inches in the OC range (1.3 inches below the 30-inch water line) and 0.8 inches per available boring information.

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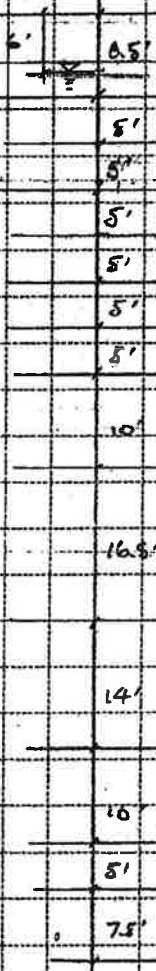
JOB Cordelia Tunnels calc Kalorama Report 20012V.GET
SHEET NO 1 OF
CALCULATED BY A Lam DATE 9/09
CHECKED BY DATE
SCALE

Settlement Analysis - Soil Profile (Boring B-09-CW-003)



Lean Clay SPT N = 13 (EIA) $\gamma' = 115$ pcf, $\gamma_{sat} = 125$ pcf
Lean Clay SPT N = 10 $\gamma_{sat} = 120$ pcf
Lean Clay SPT N = 17 $\gamma_{sat} = 125$ pcf
Lean Clay SPT N = 12 $\gamma_{sat} = 120$ pcf
Lean Clay SPT N = 16 $\gamma_{sat} = 125$ pcf
Lean Clay SPT N = 10 $\gamma_{sat} = 120$ pcf
Lean Clay SPT N = 9 $\gamma_{sat} = 120$ pcf
Lean Clay SPT N = 9 $\gamma_{sat} = 120$ pcf
Lean Clay SPT N = 13 $\gamma_{sat} = 120$ pcf
Clayey Sand with Gravel SPT N = Practical Refusal $\gamma_{sat} = 135$ pcf
Sandy Lean Clay SPT N = 73 $\gamma_{sat} = 125$ pcf
Silty Sand SPT N = 34 $\gamma_{sat} = 130$ pcf
Lean Clay SPT N = 36 $\gamma_{sat} = 130$ pcf

SETTLEMENT ANALYSIS ***EB 80 to EB 12 Connector *** 11/20/09

LOCATION: Fairfield

Based on reference Boring R-09-CN-003 (R-09-009)

Height of fill = 20 ft
Width of fill = 55 ft
Fill Density = 125 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf)	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
			0											
0	6	115	690	345	2317	13	1625	6500.00	27	0.1309	0.0131	0.84	0.00	0.84
6	8.5	63	158	768.75	2092	13	1625	6500.00	27	0.1309	0.0131	0.22	0.00	0.22
8.5	13.5	58	290	992.5	1921	10	1250	5000.00	31	0.1578	0.0158	0.44	0.00	0.44
13.5	17.5	63	252	1263.5	1743	17	2125	8500.00	24	0.1107	0.0111	0.20	0.00	0.20
17.5	18.5	58	58	1418.5	1654	17	2125	8500.00	24	0.1107	0.0111	0.04	0.00	0.04
18.5	23.5	58	290	1592.5	1558	12	1500	6000.00	29	0.1443	0.0144	0.26	0.00	0.26
23.5	28.5	63	315	1895	1415	16	2000	8000.00	29	0.1443	0.0144	0.21	0.00	0.21
28.5	33.5	58	290	2197.5	1291	10	1250	5000.00	29	0.1443	0.0144	0.17	0.00	0.17
33.5	48.5	58	870	2777.5	1089	8	1000	4000.00	31	0.1578	0.0158	0.41	0.00	0.41
48.5	71	63	1418	3921.25	821	9	1125	4500.00	28	0.1376	0.0138	0.22	0.85	1.07
71	79	73	584	4922	671	50				SAND				
79	89	63	630	5529	601	73	9125	36500.00	10	0.0427	0.0043	0.02	0.00	0.02
89	94	68	340	6014	551	34				SAND				
94	101.5	68	510	6439	514	36	4500	18000.00	24	0.1107	0.0111	0.03	0.00	0.03

TOTAL SETTLEMENT (IN.) =	3.07	0.85	3.92

O.C. RANGE SETTLEMENT = 3.07 INCHES
N.C. RANGE SETTLEMENT = 0.85 INCHES

Total settlement is approximately 3.1 inch in the OC range (1.4 inches below the 30-inch water line) and 0.9 inch in the NC range per available boring information.

APPENDIX D

OSFP Review Comment & Response Form

General Project Information	Review Phase	Reviewer Information
Dist: 04 EA: 0A5351 Project Name: E80-E12/E80 on-ramp separation OSFP Liaison: Tracy L. Bertram Phone: 916-227-8397 e-mail:_____	☐ PSR/PDS (Review No. _) ☐ APS/PSR (Review No. _) ☐ APS/PR (Review No. _) ☐ Type Selection ☐ 65% PS&E Unchecked Details ☐ PS&E (Review No. 2) ☐ Construction Support ☒ Other: FR (2nd PS&E Submittal) **Structure Information** (Use when necessary to document comments by individual structure) Structure Name: E80-E12/E80 On-Ramp Separation Br No: _____	Reviewer Name: Suja Ahmed Functional Unit: GS Phone Number: 510-286-4752 e-mail: suja_ahmed@dot.ca.gov Date of Review: 10/07/10

Consultant Information (to be filled in by Consultant)

Consultant Structure Lead (First and Last Name)	Structure Consultant Firm	Phone Number	e-mail	Response Date
Greg Kenning	Biggs Cardosa Associates, Inc.	(408) 296 5515	gkenning@biggscardosa.com	11/11/10

#	Doc. (See Note 1)	Page, Section, or SSP	Review Comments	Consultant Responses	
1	FR	N/A	Foundation Report (FR)- E80-E12/E80 On-Ramp Separation, prepared by Parikh Consultant, Inc. in May 18, 2010		
2	FR	**Seismic Review** Reviewed by Hossain Salimi on 09-27-10	1. According to a cover memo send by Tracy Bertram, both bridges were type selected in July 2009, before the new Caltrans Seismic Design Criteria (SDC) was implemented. Parikh, however has used the new criteria to develop the Acceleration Response Spectrum for the E80-E12/E80 On-Ramp Separation, but stayed with the old SDC for the Suisun Creek Bridge. I'd like to know why this Parikh did this. I would be better to be consistent and use the same criteria for both structures. 2. Plate No. 5 for the E80-E12/E80 On-Ramp Separation structure shows a	1. Old Seismic Design Criteria (SDC) will be used for both Suisun Creek Bridge and E80-E12/E80 On-Ramp Separation since both structures were type selected in July 2009 before the new Caltrans SDC was implemented. 2. ARS curve based on old SDC will be used for the E80-E12/E80 On-Ramp Separation.	

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved
(for Reviewer's use)

			comparison of the 2008 USGS De-Agg, the Caltans ARS on-line, and 2008 USGS De-Agg Hazard, and notes that the ARS curve is governed by the USGS 2008 De-Aggregation (Beta) method. Was this spectrum increased by 20% for periods of 1 second or more? That is not specified. If not, the spectrum needs to be adjusted since the USGS Beta has not taken that into account. 3. I suggest a separate graph titled "Recommended Acceleration Response Spectrum" be generated and added. 4. The Bridge No. needs to be added to the E80-E12/E80 On-Ramp Separation report.	3. A separate graph should not be required since the new SDC will not be used and an ARS curve based on the Old SDC will be prepared in the Foundation Report. 4. Bridge No. 23-0241G will be added to the Foundation Report for E80-E12/E80 On-Ramp Separation.	
3	FR	Section-5, Page 2 and Section-6, Page 3	Two Borings and one CPT (R-09-CN-002, R-09-CN-003 & CPT-09-CN-001) were done for this particular job site. Appendix B, Plate 5A through 5F shows Consolidation Test Results for Borings R-09-CN-001 and R-09-CN-004 which was not mentioned previously in Section 5 & Section 6.	Comment is incorporated. Borings R-09-CN-001 and R-09-CN-004 will be included in the Log of Test Borings and described in Section 5 and Section 6 of the E-80-E12/E80 On-Ramp Separation Foundation Report.	
4	FR	Section 9.3.2, Page 8	Second line should mention "Section 6.21 of Caltrans Bridge Design Specification (April 2000)".	Comment is incorporated. "(April 2000)" will be added after "Caltrans Bridge Design Specifications".	
5	FR	Section 9.3.2, Page 9, 3rd line	According to Caltrans Bridge Design Specifications (August 2003) Section 5 (5-47), not more than 50% of the available passive lateral earth pressure shall be considered in determining the Factor Safety for sliding. The second portion of this (.....100% friction between the footing and the foundation soil shall be considered in determining the factor of safety against	Comment is incorporated. The sentence "and 100% friction between the footing and the foundation soil" will be deleted in the paragraph.	

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved
(for Reviewer's use)

			sliding) is not mentioned in Caltrans Bridge Design Specifications.		
6	FR	Section 9.3.4, Page 10, 2nd line	There is no "Section 88-1.08, Class B2" exists in Caltrans Standard Specification.	Comment is incorporated. The sentence "The subgrade enhancement geotextile should conform to Caltrans Standard Specification (Section 88-1.08, Class B2)" will be replaced by "The subgrade enhancement geotextile should conform to "Guide for Designing Subgrade Enhancement Geotextile" dated April 28, 2009 published by Caltrans".	

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved
(for Reviewer's use)

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: HOOSHMAND NIKOUI
Chief, Branch A
Office of Geotechnical Design-West

Date: January 21, 2010

Attention: Vahid Khata-O-Khotan

File: 04-SOL-80-PM 14.3-14.4
04-0A5351
E 80-E12/E80 On-ramp
Separation

From: ANNA SOJOURNER
Engineering Geologist
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

GRANT WILCOX GWS
Chief, Branch B
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject: E 80-E12/E80 On-ramp Separation Foundation Report

We have reviewed the Foundation Report for the E 80-E12/E80 On-ramp Separation in Solano County, California, by Parikh Consultants. We have the following comments.

The report should be revised to match to the Caltrans Foundation Report guidelines (October 2009). The following sections of the Caltrans Foundation Report guidelines are missing from the report or incomplete:

Section 3.1 (Statement of supercession is missing),
Section 3.2 (datum is not included),
Section 3.7, No scour evaluation is provided. If scour is not an issue, say so.
Section 3.13 Construction considerations are not enumerated or discussed.

We have the following comments on the report:

Section 2 Purpose and Scope

The last paragraph does not pertain to purpose and scope.

Section 6

The Foundation Report is included in the contract documents and may be used by the contractor as a basis for construction claims. The interpretation of the site geology (Section 7) and Borings (Section 6) are inadequate for contract documents.

The interpretation of the boring logs is superficial and inconsistent with the boring logs themselves.

Section 7

This section does not describe the site geology beyond a cursory summary of the geologic map, nor does it conform to Caltrans Foundation Report guidelines for Section 3.6.

A sketch map of the area with surficial geology, topography, and artificial fill areas would be ideal and could be used as a reference for construction observers.

Include discussions of all points in the Foundation Report Guidelines Section 3.6.

Section 8.1

The report was written in November 2009 but does not use the Caltrans seismic design standards that went into effect in August 2009. The entire section needs to be rewritten. Cone penetrometer borings should be used to develop v_{s30} and ARS curves.

Section 8.2

The liquefaction potential section is superficial. It does not contain any more information than a typical Preliminary Foundation Report. Summarize the CPT logs and discuss in detail the reasons you consider liquefaction potential low.

The summary of subsurface soils is superficial.

We would like to review the report before it is finalized. Please include a copy of these comments and your response in the Appendix of the revised report.

If you have any questions or require further information, please contact Anna Sojourner at (510) 622-8839 or Grant Wilcox at (510) 286-4835.

c: TPokrywka, GWilcox, ASojourner, Daily File, Route File, Translab File

ASojourner/mm

PARIKH
Practicing in the Geosciences

Geotechnical ■
Environmental ■
Materials Testing ■
Construction Inspection ■

HDR Engineering, Inc.
2121 N. California Blvd., Suite 475
Walnut Creek, CA 94596-7334

Project No: 208123.GSS
May 17, 2010

Attn: Mr. Carl Haack

Sub: EB 80 – E12/E80 On-Ramp Separation
Solano County, California
04-SOL-80 PM 14.3-14.4 EA 04-0A351

Ref: 1. Foundation Investigation Report (Draft) dated September 2008
2. Caltrans' Comments dated January 21, 2010

Dear Mr. Carl Haack:

Following are our responses to the comments by Caltrans on the referenced report. We have listed the comments and responses in sequences for convenience:

Comment 1: The report should be revised to match to the Caltrans Foundation Report guidelines (October 2009). The following sections of the Caltrans Foundation Report guidelines are missing from the report or incomplete:

Section 3.1 (Statement of supersession is missing),
Section 3.2 (datum is not included),
Section 3.7, No scour evaluation is provided. If scour is not an issue, say so.
Section 3.13 Construction consideration are not enumerated or discussed.

Response 1: Comment regarding Section 3.1 "Statement of supersession is missing" has been verbally resolved between Ms. Anna Sojourner of Caltrans and Alston Lam of PARIKH Consultants, Inc. Comment is incorporated to address Sections 3.2, 3.7, 3.13 of Caltrans Foundation Report guidelines.

Section 2 Purpose and Scope

Comment 2: The last paragraph does not pertain to purpose and scope.

Response 2: Comment is incorporated. The last paragraph of Section 2 is moved to the end of Section 6 "Subsurface Conditions".

Section 6

Comment 3: The foundation Report is included in the contract documents and may be the contractor as a basis for construction claims. The interpretation of the site geology (Section 7) and Borings (Section 6) are inadequate for contract documents.

Response 3: Comment is incorporated. Section 6 "Subsurface Conditions" and Section 7 "Site Geology" is elaborated.

Comment 4: The interpretation of the boring logs is superficial and inconsistent with the boring logs themselves.

Response 4: Comment is incorporated. This comment is similar to Comment No. 3 above. The "subsurface conditions" is elaborated in Section 6.

Section 7

Comment 5: This section does not describe the site geology beyond a cursory summary of the geologic map, nor does it conform to Caltrans Foundation Report guidelines for Section 3.6.

Response 5: Comment is incorporated. This comment is similar to Comment No. 3 above. Section 7 is elaborated.

Comment 6: A sketch map of the area with surficial geology, topography, and artificial fill area would be ideal and could be used as a reference for construction observers.

Response 6: Comment is incorporated. A geologic map showing the surficial geology, extent of work and artificial fill area is included in the report.

Comment 7: Include discussions of all points in the Foundation Report Guidelines Section 3.6.

Response 7: Comment is incorporated. Section 7 is elaborated.

Section 8.1

Comment 8: The report was written in November 2009 but does not use the Caltrans seismic design standards that went into effect in August 2009. The entire section needs t

be rewritten. Cone penetrometer borings should be used to develop v_{s30} and ARS curves.

Response 8: Comment is incorporated. The section is rewritten based on the new 2007 Caltrans Fault Data Set and the 2009 Caltrans Seismic Design Criteria (SDC).

Section 8.2

Comment 9: The liquefaction potential section is superficial. It does not contain any more information than a typical Preliminary Foundation Report. Summarize the CPT logs and discuss in detail the reasons you consider liquefaction potential low.

Response 9: Comment is incorporated. More discussion of the "liquefaction potential" at the project site is provided in this section. Evaluation of liquefaction potential is performed for the soil borings which encountered loose to medium dense sands in the field exploration.

Comment 10: The summary of subsurface soils is superficial.

Response 10: Comment is incorporated. This comment is similar to Comment No. 3 above.

Please call if you have any questions on the above.

Sincerely,
PARIKH CONSULTANTS, INC.

Alston Lam, P.E., G.E. 2605
Project Engineer

Gary Parikh, G.E. 666
Project Manager

REGISTERED PROFESSIONAL ENGINEER
GAURANG R. PARIKH
No. 666
EXP. 12-31-11
GEOTECHNICAL
STATE OF CALIFORNIA

S: 208123\Bridge\E80-E12 to E80 On-Ramp Separation Response to Caltrans' Comments (5-10)

FOUNDATION REPORT

RETAINING WALLS AT E80-E12/E80 ON-RAMP SEPARATION

RETAINING WALL NO. 1 (MSE WALL) (BRIDGE NO. 23E0016)
RETAINING WALL NO. 2 (MSE & Type 1 WALL) (BRIDGE NO. 23E0017)
RETAINING WALL NO. 3 (MSE & Type 1 WALL) (BRIDGE NO. 23E0018)
RETAINING WALL NO. 4 (MSE WALL) (BRIDGE NO. 23E0019)
SOLANO COUNTY, CALIFORNIA
04-Sol-80 PM 13.3/15.7 EA 04-0A5351

For

HDR ENGINEERING INC.
2121 N. California Blvd., Suite 475
Walnut Creek, CA 94596-7334

PARIKH CONSULTANTS, INC.

2360 Qume Drive, Suite A, San Jose, CA 95131
(408) 452-9000

December 15, 2010

Job No. 208123.RET

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APPENDIX D

Caltrans Review Comments and PARIKH Responses to Caltrans Review Comments

FOUNDATION REPORT
RETAINING WALLS AT E80-E12/E80 ON-RAMP SEPARATION
RETAINING WALL NO. 1 (MSE WALL) (BRIDGE NO. 23E0016)
RETAINING WALL NO. 2 (MSE & Type 1 WALL) (BRIDGE NO. 23E0017)
RETAINING WALL NO. 3 (MSE & Type 1 WALL) (BRIDGE NO. 23E0018)
RETAINING WALL NO. 4 (MSE WALL) (BRIDGE NO. 23E0019)
SOLANO COUNTY, CALIFORNIA
04-Sol-80 PM 13.3/15.7 EA 04-0A5351

1. INTRODUCTION

This report presents the results of our geotechnical engineering investigation for the "Retaining Walls at E80-E12/E80 On-ramp Separation" at Interstate 80, hereinafter referred to as "PROJECT", in Solano County, California. The work was performed in general accordance with the scope of work outlined in our proposal to HDR Engineering Inc. (hereinafter referred to as Designer). The general location of the project site is shown on the Project Location Map, Plate 1.

The geotechnical recommendations presented in this report are intended for design input and are not intended to be used as specifications. In addition, the data provided in this report including these geotechnical recommendations should not be used for bidding purposes or directly for construction cost estimates. If the report is provided as a reference document, any interpretation of the data and recommendations should be sole responsibility of the user and PARIKH Consultants, Inc. (PARIKH) shall not be liable for any consequences.

2. PURPOSE AND SCOPE

The purpose of this investigation was to evaluate the general subsurface soil conditions at the project site, to evaluate their engineering properties, and to provide geotechnical recommendations for the foundation design of the proposed project.

The scope of work performed for this investigation included a review of the readily available soils and geologic literature pertaining to the site; site reconnaissance; obtaining representative soil samples and logging soil materials encountered in one Cone Penetration Test (CPT) and four exploratory borings; laboratory testing of the collected soil samples, performing engineering analyses based on the field and laboratory data, and preparation of this foundation report for "Retaining Walls at E80-E12/E80 On-ramp Separation".

3. PROPOSED CONSTRUCTION

As part of the "Eastbound Interstate 80 (EB I-80) Truck Scales Relocation Project", a new E80-

E12 /E80 On-ramp Separation (herein referred as Connector) is proposed. Approach embankments will be required on the northeast side and southwest side of the connector. Due to right-of-way and other geometric constraints, the project will require construction of four retaining walls [Retaining Wall (RW) Nos. 1 and 3 on the southwest side and RW Nos. 2 and 4 on the northeast side] to retain the approach embankments of the connector. The location of the proposed retaining walls should be referred to "Retaining Walls – Plan Exhibit" (Exhibit) prepared by the designer. A copy of the exhibit is included after Plate No. 5 in this report.

Retaining Wall Nos. 1 and 4 will be MSE walls for the entire length. Retaining Wall Nos. 2 and 3 will be MSE walls over the majority of their wall length except near the connector where there will be conflict between MSE wall soil reinforcement and the connector. A Caltrans standard Type 1 retaining wall supported on pile foundation [Caltrans Standard Precast Concrete (Alternate "X") piles] will be utilized at these locations to eliminate the conflicts.

The datum used to reference the elevations in the report is based on the California Coordinate System of 1983, Zone 2, 1991, 35 CA-HPGN.

4. SITE CONDITIONS

The existing project site is a farm land. The topography of the project site is relatively flat. The general existing elevations at the proposed location of the walls is Elev. +31.4 feet to Elev. +39.8 feet.

5. FIELD EXPLORATION AND LABORATORY TESTING

The following soil borings were drilled and Cone Penetration Test (CPT) was performed in the vicinity of the proposed earth retaining systems in January 2009.

TABLE 1: SUMMARY OF REFERENCE BORINGS/CPT

Retaining Wall No.	Reference Borings/CPT (depth of boring/CPT)
RW No. 1	R-09-CN-001 (81.5 ft), R-09-CN-002 (101.5 ft)
RW No. 2	R-09-CN-002 (101.5 ft), R-09-CN-003 (101.5 ft)
RW No. 3	R-09-CN-003 (101.5 ft), CPT-09-CN-001 (100 ft), R-09-CN-004 (81.5 ft)
RW No. 4	CPT-09-CN-001 (100 ft), R-09-CN-004 (81.5 ft)

The approximate locations of the borings are shown on the Site Plan, Plate 2. The details of the field exploration are included in Appendix A. The descriptions of the materials encountered in the field exploration are shown on the LOTB in Appendix A.

Laboratory tests were performed on selected soil samples collected during field exploration to evaluate the physical and engineering properties of the subsurface soils. The laboratory test methods and test results are presented on plates included in Appendix B. Laboratory test results for moisture content, dry unit weight, unconfined compressive strength, Plasticity Index and grain size classification of the soil samples are presented on the LOTB in Appendix A.

It should be noted that the descriptions of the soils encountered and relevant boring information presented on the LOTB depict subsurface conditions only at the locations indicated on the plan and on the particular date noted on the LOTB. Because of the variability from place to place within soil/rock in general, subsurface conditions at other locations may differ from conditions occurring at the boring locations explored. The abrupt stratum changes shown on the logs may be gradational and relatively minor changes in soil types within a stratum may not be noted on the logs due to field limitations. Also, the passage of time may result in a change in the soil conditions at these locations due to environmental changes.

6. SUBSURFACE CONDITIONS

The existing site is a private property currently used as farmland. Based on the available boring/CPT information, the subsurface soil conditions at the project locations of the proposed MSE walls generally consist of soft to very stiff lean clays. Approximate 6 feet to 13 feet thick pocket/lens/layer of medium dense to very dense silty/clayey sands were encountered at the depths between 45 feet and 70 feet in Borings R-09-CN-002 through R-09-CN-004. Detail subsurface information is depicted in the LOTB sheets. Subsurface soil conditions at the soil borings and CPT locations are described below.

Boring R-09-CN-001

- Approximately 25 feet of stiff to very stiff lean clay, underlain by approximately 15 feet of soft to firm silt, underlain by approximately 15 feet of stiff lean clay/silt, underlain by very stiff to hard lean clay.

Boring R-09-CN-002

- Approximately 20 feet of very stiff lean clay, underlain by approximately 40 feet of firm to stiff lean clay, underlain by approximately 8 feet of dense silty sand, underlain by very stiff to hard sandy lean clay.

Boring R-09-CN-003

- Approximately 30 feet of interbedded layers of stiff to very stiff lean clay, underlain by approximately 40 feet of firm to stiff lean clay, underlain by interbedded layer of dense to very dense clayey/silty sand and hard lean clay/sandy lean clay.

Boring R-09-CN-004

- Approximately 45 feet of interbedded layers of soft to very stiff lean clay, underlain by approximately 13 feet of medium dense silty sand, underlain by very stiff lean clay and very dense clayey sand with gravel.

CPT-09-CN-001

- Approximately 30 feet of stiff to very stiff lean clays, underlain by approximately 15 feet of soft to firm lean clays, underlain by very stiff to hard lean clays with pocket/lens of dense sand.

Groundwater

Groundwater was measured at the depths of 6± feet and 9.5± feet below existing ground surface in Borings R-09-CN-002 through R-09-CN-004 during drilling in January 2009.

The groundwater level is anticipated to vary with the passage of time due to seasonal groundwater fluctuations, water elevations in the nearby creeks, surface and subsurface flows, ground surface run-off, and other environmental factors that may not be present at the time of field exploration.

Due to limitations inherent in geotechnical investigations, it is neither uncommon to encounter unforeseen variations in the subsurface soil conditions during construction nor is it practical to determine all such variations during an acceptable program of drilling and sampling for a project of this scope. Such variations, when encountered, generally require additional engineering services to attain properly constructed project. We, therefore, recommend that a contingency fund

be provided to accommodate any additional charges resulting from technical services that may be required during construction. Our recommendations in this report are based on the above information. Any major deviation should be reported to this office for consideration.

7. GEOLOGY

General geologic features pertaining to the site were evaluated by referring to the published "Geologic Map of the Fairfield South 7.5' Quadrangle, Solano County, California" by Stephen P. Bezore, David L. Wagner, and Janet. M. Sowers, 1998 (California Division of Mines and Geology, now known as the California Geological Survey).

Based upon the published geologic map (see Plate No.3A), the project site is located on a broad, nearly level alluvial plain underlain by an unknown thickness of Holocene-age fan deposits (map symbol "Qhf") that are crossed by Holocene-age fan levee deposits ("Qhl"). The fan deposits consist of sand, gravel, silt, and clay that are moderately to poorly-sorted. The levee deposits consist of silt, sand, and clay. The western edge of a levee deposit is located approximately 150 feet east of the northeastern end of the proposed separation structure. The streams that deposited the alluvial sediments flow from north to south until they reach the northern edge of the San Francisco Bay estuary.

Based upon the site topographic map, we infer that artificial fill forms an approximately 5-foot thick embankment beneath Highway 80. The southern edge of this fill is approximately 40 feet north of the northeastern end of the proposed separation structure. (See Plate No. 3B.)

8. EARTHQUAKE CONSIDERATIONS

8.1 Seismic Sources

The project site is located in a seismically active part of northern California. Seismic activity may result in geological and seismic hazards including seismically induced fault displacement and rupture, ground shaking, liquefaction, lateral spreading, landslides, avalanches, and structural hazards.

Faults in the vicinity of the project site with a moderate to high potential for surface

rupture include the Cordelia Fault and Green Valley Fault. These faults are capable of producing earthquakes, and may cause strong ground shaking at the site. The attached Fault Map (Plate 4) presents the locations of the fault systems relative to the project site.

The Fault Map has been prepared from the Caltrans Seismic Hazard Map (Mualchin, 1996) and presents the maximum credible earthquake magnitudes for the fault systems and the anticipated peak bedrock accelerations at various locations due to seismic activity in the area.

Maximum Credible Earthquake magnitudes for some of the major faults in the area determined by Mualchin (California Seismic Hazard Map 1996) are summarized in Table 1 below. These Maximum Credible Earthquake magnitudes represent the largest earthquakes that could occur on the given fault based on the current understanding of the regional tectonic structure.

TABLE 1: EARTHQUAKE DATA

Fault	Estimated Distance from Project Site (Mile)	Maximum Credible Earthquake (MCE)	Peak Bedrock Acceleration (PBA) (g)	Peak Ground Acceleration (PGA) (g)
Cordelia Fault CDA (strike-slip)	2.2	6.5	0.6	0.60
Green Valley Fault GVY (strike-slip)	3.7	6.75	0.5	0.55
Vaca Fault Zone VME (unpublished)	9.0	6.75	0.4	0.44

8.2 Seismic Parameters

Caltrans has updated the 1996 Seismic Hazard map with the new 2007 Caltrans Deterministic PGA Map and the Caltrans ARS Online (Ver. 1.0.4) for the development of response spectra for design. Based on Caltrans Memorandum subjected "Implementation of Caltrans 2009 Seismic Design Procedure", it is stated that *"Effective September 30, 2009, all projects without previous Type Selection approval shall be designed in accordance with the 2007 Caltrans Fault Data Set and the 2009 Caltrans Seismic Design Criteria (SDC)"*. Since the Type Selection for the Suisun Creek Bridge and E80-E12/E80 On-Ramp Separation (the other two structures of the "Truck Scales Relocation Project") were approved on July 2, 2009, therefore Caltrans 1996 map was used to develop the ARS design curve in this foundation report to be consistent with the same Seismic Design

Criteria used for the other two structures of the same project.

According to Caltrans Guidelines for Structures Foundation Report (March 2006), the value of PBA (for a specific project site) from the seismic hazard map should be verified with that calculated using the attenuation relation by Sadigh et al (1997). Based on attenuation relation by Sadigh, the maximum PBA anticipated at the project site is 0.6 g.

Based on the available boring information in the vicinity of the project site, the subsurface soil conditions at the project site generally match the criteria for Soil Type D, as per Caltrans Seismic Design Criteria (Version 1.4, June 2006). Based on Caltrans Seismic Design Criteria and the above information, the seismic design criteria are as follows:

1. Closest Distance to Fault	=	2.2 miles
2. Peak Bedrock Acceleration	=	0.6 g
3. ARS Design Curve	=	Caltrans Seismic Design Criteria June 2006 Version 1.4 Figure B.7 (Soil Profile Type D) with the following modifications: (1) 20% increase of spectral accelerations (Sa) for structural periods ≥ 1 sec. (2) No change for structural periods ≤ 0.5 sec. And (3) Linear interpolation for structural periods between 0.5 sec. and 1 sec.

A copy of the "ARS Design Curve" (Plate No. 5) is included. The calculation for attenuation relationship based on Sadigh is included in Appendix C.

8.3 Seismic Hazards/Liquefaction Potential

Potential seismic hazards may arise from three sources: surface fault rupture; ground shaking; and liquefaction. Since no active fault passes through the project site, the potential for fault rupture is relatively low. Based on available geological and seismic data, the possibility that the site will experience strong ground shaking may be considered low to moderate.

Liquefaction Potential

Liquefaction is a phenomenon in which saturated cohesionless soils are subject to a

temporary but essentially total loss of shear strength under the reversing, cyclic shear stresses associated with earthquake shaking. Submerged cohesionless sands and silts of low relative density are the type of soils, which usually are susceptible to liquefaction. Clays are generally not susceptible to liquefaction.

Based on available boring/CPT information, the subsurface soil conditions at the project site generally consist of soft to very stiff lean clays with occasional pocket/lens/layer of medium dense to very dense silty/clayey sands in Borings R-09-CN-002 through R-09-CN-004.

Liquefaction potential of the sand deposit in the Borings R-09-CN-002 through R-09-CN-004 was analyzed. The analyses were performed using the procedure developed by Seed and Idriss (1982) for a magnitude 6.5 Earthquake, on the nearby Cordelia Fault, resulting in a peak ground acceleration of about 0.6 g. This method compares the estimates of the earthquake-induced shear stress to the susceptibility of soil liquefaction. It is estimated that the maximum post-liquefaction settlement on the order of 3 inches may occur within the sand layer at the location of Boring R-09-CN-004.

However, based on further evaluation, the liquefaction potential at the project site should be low since the medium dense sand is likely to exist in isolated pockets/lenses. The impact of the post-liquefaction settlement on the MSE wall should be relatively small because:

- The potentially liquefiable soil layer is generally covered by predominantly cohesive soils, which tend to serve as a "soil mat" and should reduce the potential impact of liquefaction.
- The post-liquefaction settlement probably would be random and localized and could spread out over some distance/area.

Therefore, there is no special recommendation due to liquefaction.

9. FINDINGS AND RECOMMENDATIONS

9.1 General

This report was prepared specifically for the proposed project as shown on the plans provided to us. Normal construction procedures were assumed throughout our analyses

and represent one of the bases of recommendations presented herein. Our design criteria have been based upon the subsurface soil materials encountered in the soil borings and CPT at the project site. Therefore, we should be notified in the event that these conditions are changed, so as to modify or amend our recommendations.

9.2 Grading

All grading operations should be performed in accordance with the project specifications and Caltrans Standard Specifications for Earthwork (Section 19). A representative from PARIKH or regulatory agency should observe all excavated areas during grading and perform moisture and density tests on prepared subgrade and compacted fill materials.

9.3 Earth Retaining System (Nonstandard Caltrans Retaining Wall)

Based on the exhibit, "South Retaining Walls - Profile Exhibit' and "North Retaining Walls - Profile Exhibit" (Profiles) provided by the designer, information of approximate wall locations, type of walls, design loading cases, and maximum wall heights is summarized in Table 3 below.

TABLE 3: SUMMARY OF PROPOSED RETAINING WALLS

Wall No.	Wall Type	Location (Along approx. Sta.)	Maximum Height (ft)[1]	Approx. Bottom of Wall Elev. (ft)	Total Length ft)
RW No. 1	MSE	"12CON" Line 131+18.00 to 135+03.00	24.63	32.0	385.00
RW No. 2	MSE/ Caltrans Type 1	"12CON" Line 134+00.00 to 136+66.92	18.54	38.0	266.92
RW No. 3	MSE/ Caltrans Type 1	"12CON" Line 136+75.61 to 145+31.56	17.90	42.0 – 47.0	864.92
RW No. 4	MSE	"12CON" Line 138+47.00 to 154+57.54	28.25	32.0 – 39.9	1610.00

(1) The maximum wall height is subject to change. Wall height is based upon 0.1H or 2'-0" minimum embedment depth from finished grade at front of wall.

- **Retaining Wall No. 1 - "12CON" Line, 131+18.00 to 135+03.00**

  This wall is along the south shoulder of the connector. The anticipated total wall length is about 385 feet with a maximum height of 24.63 feet. Based on the boring data (R-09-CN-001 and R-09-CN-002) in the vicinity of the proposed wall, the subsurface soil materials at the anticipated footing subgrade to the approximate zone of influence generally consists of firm to stiff lean clays. Groundwater was measured at Elev. +27.0 feet (depth of 6 feet below existing ground surface) in Boring R-09-CN-002 during drilling in January 2009.

MSE Wall is proposed for Retaining Wall No. 1. In our opinion, Standard Caltrans Type MSE wall can be used for this location. The following parameters are recommended for the retaining wall design:

Loading Case = 1
Friction Angle = 34 degrees (backfill)
Soil Unit Weight = 120 lb/ft^3

Based on the bearing capacity analyses, the recommended allowable bearing capacity is 3.5 ksf.

- **Retaining Wall No. 2 "12CON" Line, 134+00.00 to 136+66.92**

This wall is along the north shoulder of the connector. The anticipated total wall length is about 266.92 feet with a maximum height of 18.54 feet. Based on the boring data (R-09-CN-002 and R-09-CN-003) in the vicinity of the proposed wall, the subsurface soil materials at the anticipated footing subgrade to the approximate zone of influence generally consists of soft to stiff lean clays. Groundwater was measured between Elev. +26.5 feet and +27.0 feet (depth of 6 feet below existing ground surface) during drilling in January 2009.

MSE Wall is proposed for Retaining Wall No. 2. In our opinion, Standard Caltrans Type MSE wall can be used for this location. The following parameters are recommended for the retaining wall design:

Loading Case = 1
Friction Angle = 34 degrees (backfill)
Soil Unit Weight = 120 lb/ft^3

Based on the bearing capacity analyses, the recommended allowable bearing capacity is 3.0 ksf.

- **Retaining Wall No. 3 - "12CON" Line, 136+75.61 to 145+31.56**

This wall is along the south shoulder of the connector. The anticipated total wall length is about 864.9 feet with a maximum height of 17.9 feet. Based on the boring data (R-09-CN-003) in the vicinity of the proposed wall, the subsurface soil materials at the anticipated footing subgrade to the zone of influence generally consists of soft

to stiff lean clays. Groundwater was measured at Elev. +26.5 feet (depth of 6 feet below existing ground surface) during drilling in January 2009.

MSE Wall is proposed for Retaining Wall No. 3. In our opinion, Standard Caltrans Type MSE wall can be used for this location. The following parameters are recommended for the retaining wall design:

Loading Case = 1
Friction Angle = 34 degrees (backfill)
Soil Unit Weight = 120 lb/ft^3

Based on the bearing capacity analyses, the recommended allowable bearing capacity is 3.1 ksf.

- **Retaining Wall No. 4 "12CON" Line, 138+47.00 to 154+57.54**

  This wall is along the north shoulder of the connector. The anticipated total wall length is about 1610 feet with a maximum height of 28.25 feet. Based on the boring data (CPT-09-CN-001 and R-09-CN-004) in the vicinity of the proposed wall, the subsurface soil materials at the anticipated footing subgrade to the approximate zone of influence generally consists of firm to very stiff lean clays. Groundwater was measured at Elev. + 28.5 feet (depth of 9.5 feet below existing ground surface) during drilling in January 2009.

  MSE Wall is proposed for Retaining Wall No. 4. In our opinion, Standard Caltrans Type MSE wall can be used for this location. The following parameters are recommended for the retaining wall design:

  Loading Case = 1
  Friction Angle = 34 degrees (backfill)
  Soil Unit Weight = 120 lb/ft^3

  Based on the bearing capacity analyses, the recommended allowable bearing capacity is 4.1 ksf in the vicinity of CPT-09-CN-001 and 2.9 ksf in the vicinity of Boring R-09-CN-001.

The recommended minimum base width of the reinforced section for the MSE walls will vary with the heights of the MSE walls. According to the "Soil Reinforcement Design

Layouts" of Caltrans "Bridge Design Aids" (March 2009), the base width must be a minimum of 70% of the height for loading condition 1 (level ground). Based on the bearing capacity analyses, the recommended base width of the reinforced section for the MSE walls of Retaining Wall Nos. 1 through 4 are minimum 80% of the wall height for wall height equal or less than 20 feet and minimum 100% of the wall height for wall height greater than 20 feet.

9.4 Retaining Wall Nos. 2 and 3 (Caltrans Type 1 Wall) Foundation

Based on the available boring information, Caltrans Standard Precast Concrete piles (Alternate "X") are recommended to be the foundation system for the Caltrans Type 1 wall for Retaining Wall Nos. 2 and 3. These piles may be designed for service load of 45 tons to the recommended pile tip elevations. Pertinent foundation design information provided by Biggs Cardosa Associates (Structural designer), including Foundation Design Data and Foundation Loads, are presented in the following tables.

TABLE 4: FOUNDATION DESIGN DATA

Retaining Wall No.	Pile Type	Finish Grade Elev. (ft)	Pile Cut-off Elev. (ft)	Pile Cap Size(ft)		Permissible Settlement (in)	No. of Piles per Support
				B	L		
RW No. 2	Class 90 Alt "X"	38.5	35.5	10.0	66.92	1.00	19
RW No. 3	Class 90 Alt "X"	42.0	39.0	9.0	64.42	1.00	15

Consistent with Caltrans requirements, Working Stress Design (WSD) is used for the retaining wall foundations. The retaining wall foundations are evaluated for the foundation design data and loading condition using Caltrans November 2003 Bridge Design Specifications for foundations, using Working Stress Design (WSD) methods with "LRFD Service-I Loads".

Based on the load demand and the subsurface soil information, the recommended specified pile tip elevations are shown in the Pile Data Table below.

TABLE 5: PILE DATA TABLE

Retaining Wall No.	Pile Type	Nominal Resistance (kips)		Design Tip Elev. (ft)	Specified Tip Elev. (ft)
		Compression	Tension		
RW No. 2	Class 90 Alt "X"	180	0	-13.5(a), 18.0(b)	-13.5
RW No. 3	Class 90 Alt "X"	180	0	-13.5(a), 22.0(b)	-13.5

Notes
(i) Design tip elevations are controlled by (a) Compression, (b) lateral Load.
(ii) The specified tip elevation shall not be raised above the design tip elevations from lateral.

The estimation of the driven pile capacity in clay is based on the adhesion factor per FHWA manual (Tomlinson 1980). The pile capacity should be derived primarily from frictional resistance along the pile shafts. A factor of safety of 2 was used to estimate the allowable pile capacity. Based on the Pile Data Table 5, the pile tip elevation is controlled by the demand in compression on the pile. The pile capacity calculations are provided in Appendix C.

The design tip elevations and specified tip elevations are based on the "pile cut-off" elevation provided by the designer. In the event that the "pile cut-off" elevations are changed, the design pile tip elevations may have to be revised accordingly.

The piles should not be spaced closer than 3 times the pile diameter measured center-to-center. For piles spaced at center-to-center distance greater than or equal to 3 times the pile diameter, there is no group effect for pile vertical capacity.

We recommend that the piles be driven to the specified tip elevations. It is anticipated that the pile capacity should develop after driving as a result of soil "freeze" and dissipation of excess pore water pressures. The gain of pile capacity after initial driving may be evaluated based on "re-driving" after 24-hour (min.) set up.

In the event that unanticipated pile driving conditions are encountered, it is recommended that a Pile Driving Analyzer (PDA) be used to evaluate the pile capacity and integrity of the precast prestressed concrete piles. Typical applications of the PDA include capacity evaluation (for both during driving and re-driving) and integrity testing for piles that have experienced hard driving. The geotechnical engineer should be consulted for any unanticipated pile driving conditions.

According to the designer, fill will be placed prior to the pile cap construction. It is recommended to follow Caltrans standard specifications (Section 49-1.06) for oversize predrill through the existing embankment.

It is prudent to make the contractor aware of these conditions so that appropriate steps can be taken to comply with the standards and maintain the integrity of the piles.

9.5 Lateral Design for Piles

Lateral pile capacity analyses were performed for the Class 90 Alt "X" concrete piles using the L-PILE program. According to Biggs Cardosa Associates, the pile and pile cap connection was designed as "Pinned" and assumed to be "Free" in the analyses. According to Caltrans, group effect for lateral pile resistance analyses was accounted for by adopting a p-y reduction factor of 40% (60% effective) for a pile spacing of 3D.

The results of lateral pile analyses, with the plots of the pile deflection, moment, shear and soil reaction along the pile length and the input files are included in the Appendix C.

9.6 Lateral Earth Pressures

Retaining walls should be designed to resist the following applied lateral earth pressures and live loads. These values assume no hydrostatic pore pressure build-up behind the wall and are based on well-drained backfill behind the walls.

Applied Lateral Earth Pressures

Active Condition	36 pcf Equivalent Fluid Pressure (EFP) for engineered fill.
At-Rest Condition	55 pcf Equivalent Fluid Pressure (EFP) for engineered fill.
Passive Resistance	5.0 ksf (ultimate) for seismic design of the abutment wall (5.5 feet or greater); for activated height less than 5.5 feet, modify proportionally i.e. 5.0 x (H/5.5) ksf per Caltrans SDC v.1.4. A minimum lateral wall movement of 2% of wall height to mobilize the full ultimate passive resistance is required.
Traffic Load Surcharge	The effect of any surcharge (dead or live load) should be added to the preceding lateral earth pressures. An additional height

with equivalent earth pressure of not less than 2 feet of uniform soil weight at 125 pcf is added to the ground profile to account for the additional earth pressure resulting from the surcharge. Surcharge load due to the traffic has to be included in the design if the traffic is within a horizontal distance of one half of the wall height. A coefficient of 0.4 may be used to determine the additional lateral earth pressures resulting from the surcharge.

Cantilever walls which are free to rotate at least 0.005 radii may be assumed flexible for the active condition. Walls that are not capable of this movement should be assumed rigid and designed for the at-rest condition. The effect of any surcharge (dead or live load) should be added to the preceding lateral earth pressures. A coefficient of 0.3 and 0.5 may be used to determine the additional earth pressure resulting from the surcharge for cantilever walls and rigid walls, respectively.

9.7 Settlement Evaluation

Embankment fill (MSE) will be required for the approach embankments on both sides of the connector. The maximum height of the embankment fill is approximately 28 feet above the existing ground surface.

Based on the estimated maximum fill thickness and the subsurface soil conditions, typical soil profiles of the borings (Borings R-09-CN-002 through R-09-CN-004) at the approach embankments on both sides of the connector were selected for settlement analyses.

The evaluation of the consolidation settlements under the new fill was based on the consolidation test results, understanding of the consolidation behavior of the clay and empirical correlations in the literatures. Based on the results of the settlement analyses, the maximum consolidation settlements are estimated to be on the order of 4 inches at the connector. Majority of settlements are in the overconsolidated/elastic range. A 30-day settlement period is recommended for ground adjustment under the 28-foot embankment. This should be confirmed during construction. It is therefore recommended that settlement platforms be installed and settlement be monitored (per California Test 112) by the contractor during construction. Based on this, the settlement period may have to be

modified. A minimum of four settlement platforms be installed along each of the approach embankment. These settlement platforms should be evenly distributed along the length of each approach embankment.

Settlement discussions at the crossing of the "Box Separation Structure" and the City of Fairfield Waterline are discussed in the Foundation Report for the "E80-E12/E80 On-Ramp Separation". Therefore, it is not repeated in this report. This should also be referred to for the overall settlement considerations.

The calculations for the estimation of the consolidation settlement are included in Appendix C of this report.

9.8 MSE Wall Stability

The global stability of the MSE wall (Retaining Wall Nos. 1 through 4) was evaluated under the static condition and long-term pseudo-static condition. Per Caltrans "Guidelines for Foundation Investigations and Reports", pseudo-static analyses may be performed using a seismic coefficient equal to one third of the horizontal peak ground acceleration and not exceeding 0.2 g. A minimum factor of safety of 1.5 is required for the static condition and 1.1 is required for the pseudo-static condition.

A minimum Factor of Safety of 1.7 and 1.1 is obtained under the static and "pseudo-static" conditions, respectively. Based on the results of the stability analyses, the stability of the proposed MSE walls appears reasonable.

9.9 Corrosion

Chemical tests were performed on soil sample from Borings R-09-CN-002 and R-09-CN-003 to evaluate the corrosion potential of the subsoil. The test results are as follows:

TABLE 6: SUMMARY OF CORROSION TEST RESULT

Boring	Depth (ft)	Minimum Resistivity (ohms-cm)	pH	Water-soluble Chloride (ppm)	Water-soluble Sulfate (ppm)
R-09-CN-002	16.0	1740	7.72	20.9	37.9
R-09-CN-003	26.0	1880	7.74	25.8	31.7

Based on the corrosion test results, the native subsurface soils in Borings R-09-CN-002 and R-09-CN-003 are considered non-corrosive per Caltrans corrosion design guidelines.

Standard Type II modified or Type I-P (MS) modified cement may be used for the concrete substructure. The minimum cement factor and cover thickness should be per Section 5.12 of California Amendments to AASHTO LRFD Bridge Design Specifications – Fourth Edition (December 2008).

10. CONSTRUCTION CONSIDERATIONS

Prospective contractors for the project must evaluate construction-related issues on the basis of their own knowledge and experience in the local area, on the basis of similar projects in other localities, or on the basis of field investigation on the site performed by them (if necessary), taking into account their own proposed construction methods and procedures.

According to the designer, majority of the works require construction above existing ground and no major excavation will be required. Minor excavation may be required at some locations.

It is possible that unknown old buried utilities or abandoned structures, concrete rubble etc. might be encountered during excavations. This might require special equipment and additional efforts to remove these buried objects or obstructions.

The materials to be excavated are anticipated to be mostly soft to stiff clays and some loose to medium dense sands. Excavations should not be expected to stand vertically without any support. According to OSHA Safety Standards, temporary excavations with personnel working within the excavations should be sloped or shored if the excavations are deeper than 5 feet.

A 30-inch water line will be installed before the "Box Separation Structure" is constructed. This water line may be sensitive to loading from the construction equipments. Load from heavy equipment should be spread out to no more than the normal surcharge allowed in the design with equivalent earth pressure of 2 feet of uniform soil weight at 125 pcf.

The slope height, inclination, and excavation depths of any temporary slopes should not exceed those specified in local, state, or federal safety regulations. The design of the temporary slopes by the contractor or his specialty subcontractor should conform to the OSHA's "Guidelines for Excavations and Temporary Sloping". The contractor/subcontractor should develop or modify their design based on the subsurface conditions exposed at the time of construction.

For excavations up to 20 feet deep in homogenous soils, OSHA guidelines state that the maximum allowable slope should be 3/4H: 1V, 1H:1V and 1-1/2H:1V for Types A, B and C soil, respectively (In general, Type A soils are stronger; Type B soils are intermediate, and Type C soils are weaker). Based on our evaluation of the materials encountered in our borings and the borings previously performed by others, the native soil on site should be considered as OSHA Type C. It should be noted that the slope ratios recommended by OSHA are for temporary, un-surcharged slopes. Traffic and surcharge loads should be set back at least 15 feet from the top of the excavations unless they are accounted for in the design. The temporary cut slopes discussed above assume that the groundwater is maintained below the bottom of the excavation at all times during construction. Slopes may need to be flattened based on materials exposed during construction.

Appropriate mitigation measures should be implemented to protect the slopes from sloughing and/or erosion if construction through the winter season is unavoidable. Adequate surface protection, such as temporary fiber-roll, should be provided to protect the slope surface from excessive drying and/or saturation during construction and the exposed slopes should be kept moist (but not saturated) by occasional light spraying of water during construction.

Settlement monitoring is recommended for the embankments. This is discussed in Section 9.7 of this report.

"Storm Water Pollution Prevention Plan" and "Erosion Control Plan" should be submitted by the contractor to the engineer for approval prior to the construction.

11. PLAN REVIEW

We recommend that final foundation plans for the proposed project be reviewed by PARIKH prior to construction so that the intent of our recommendations is included in the project plans and specifications and to further see that no misunderstandings or misinterpretations have occurred.

12. CONSTRUCTION OBSERVATIONS

To a degree, the performance of any structure is dependent upon construction procedures and quality. Hence, geotechnical observation of foundation excavation, and pile installations should be carried out by regulating agencies. If the subsurface conditions different from those forming

the basis of our recommendations are encountered, this office should be informed in order to assess the need for design changes. Therefore, the recommendations presented in this report are contingent upon good quality control and these geotechnical observations during construction.

13. INVESTIGATION LIMITATIONS

Our services consist of professional opinions and recommendations made in accordance with generally accepted geotechnical engineering principles and practices and are based on our site reconnaissance and the assumption that the subsurface soil conditions do not deviate from observed conditions. No warranty, expressed or implied, of merchantability or fitness, is made or intended in connection with our work or by the furnishing of oral or written reports or findings. The scope of our services did not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in structures, soil, surface water, groundwater or air, below or around this site. Unanticipated soil conditions are commonly encountered and cannot be fully determined by taking soil samples and excavating test borings; different soil conditions may require that additional expenditures be made during construction to attain a properly constructed project.

This report has been prepared for the proposed project as described earlier, to assist the engineer in the design of this project. In the event any changes in the design or location of the facilities are planned, or if any variations or undesirable conditions are encountered during construction, our conclusions and recommendations shall not be considered valid unless the changes or variations are reviewed and our recommendations modified or approved by us in writing.

This report is issued with the understanding that it is the designer's responsibility to ensure that the information and recommendations contained herein are incorporated into the project plans and specifications.

The findings in this report are valid as of the present date. However, changes in the subsurface soil conditions can occur with the passage of time, whether they are due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur, whether they result from legislation or from the broadening of knowledge. Accordingly, the findings in this report might be invalidated, wholly or partially, by changes outside of our control.

Respectfully submitted,
PARIKH CONSULTANTS, INC.

Alston Lam, P.E., G.E. 2605
Project Engineer

Gary Parikh, P.E., G.E. 666
Project Manager

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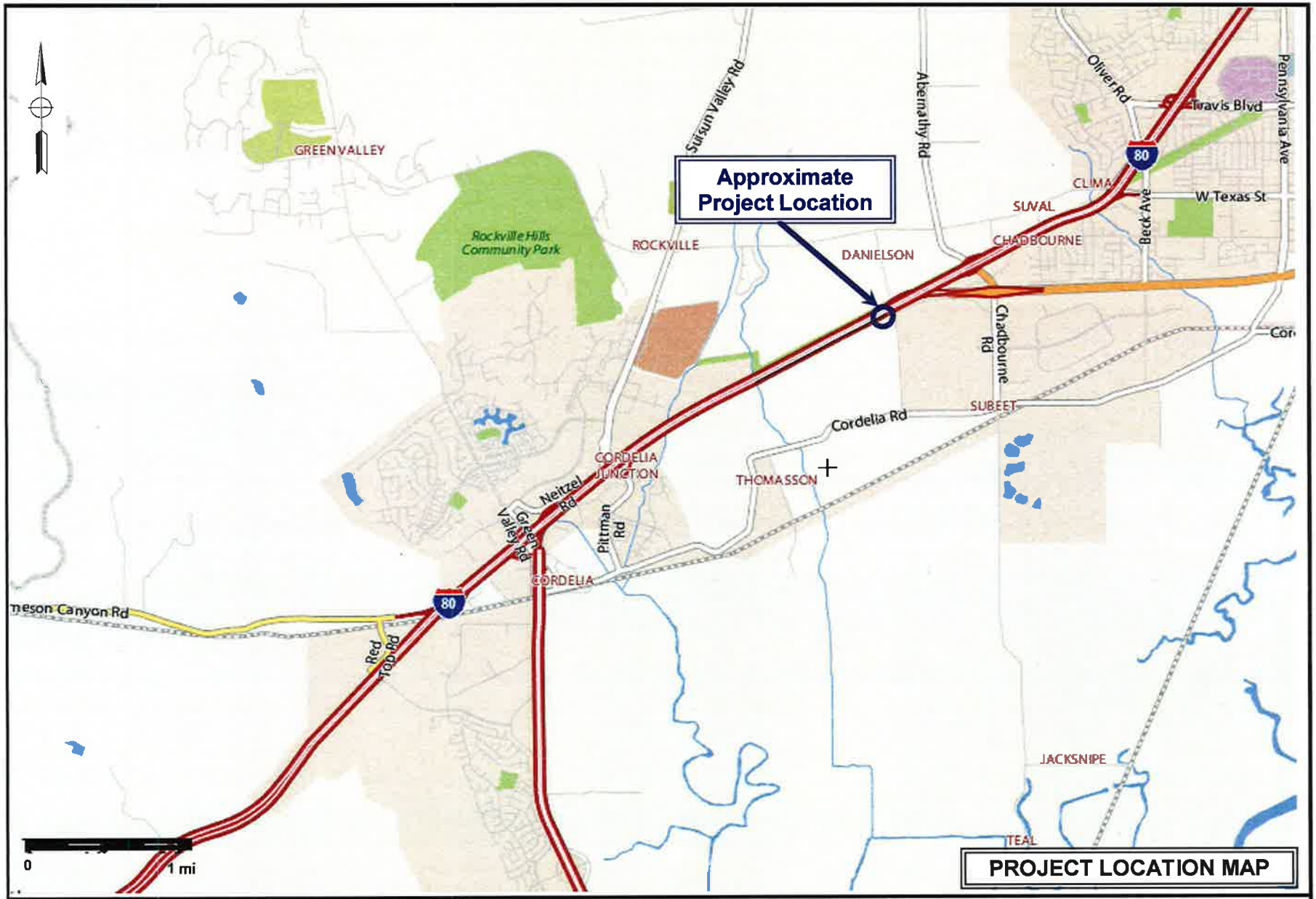
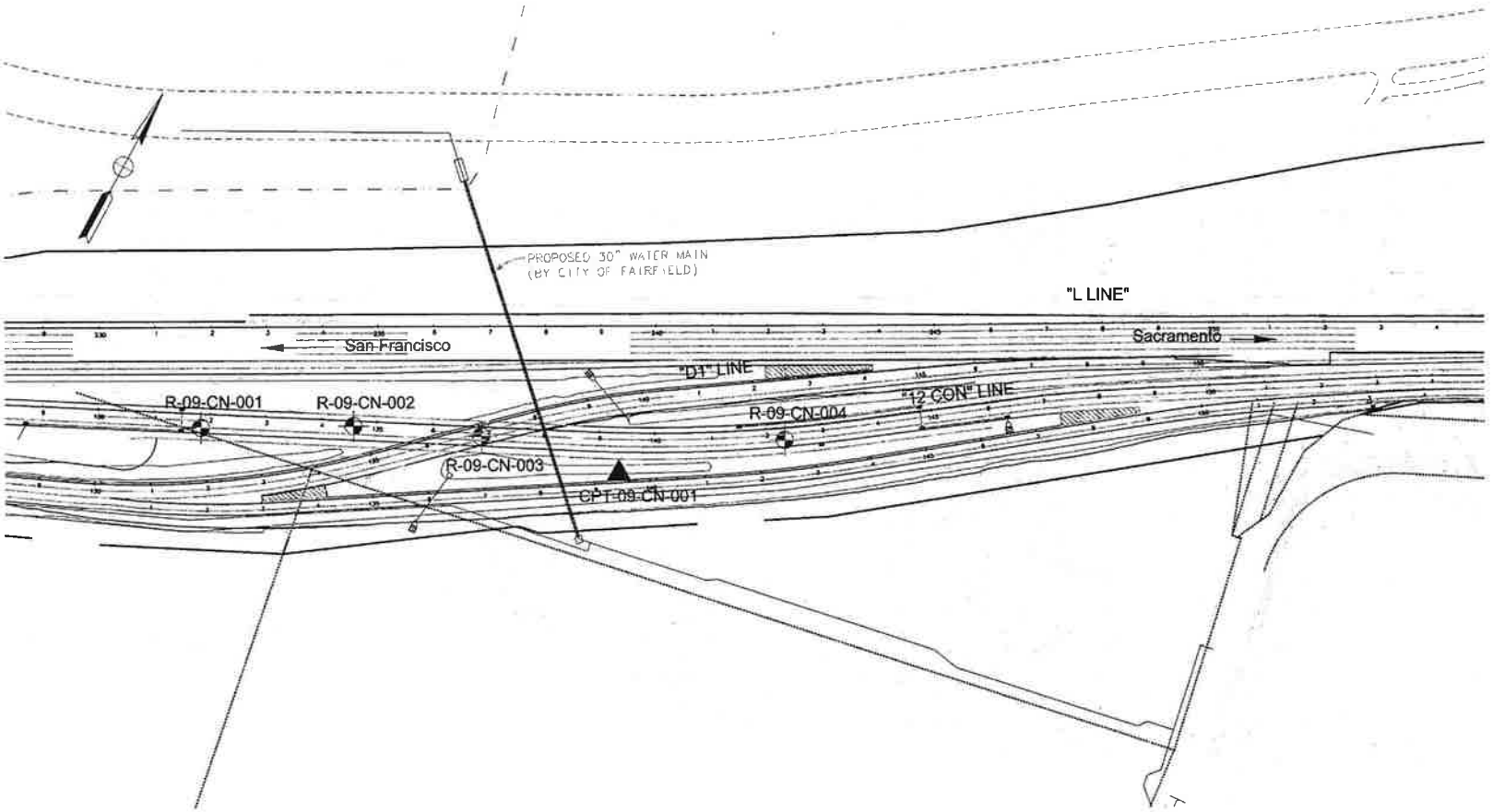


PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

RETAINING WALLS AT E80-E12/ E80 ON-RAMP SEPARATION
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.RET	PLATE NO.: 1



LEGEND

A-09-101
Approximate auger boring location drilled in 2009

R-09-001
Approximate rotary wash boring location drilled in 2009

CPT-09-001
Approximate CPT location performed in 2009

SCALE 1 inch = 200 feet

Note: All units are in feet unless otherwise specified
Reference Map was provided by HDR Engineering, Inc.

SITE PLAN

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

RETAINING WALLS AT EB 80-EB 12/ E 80 ON-RAMP SEPARATION
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.GSS | PLATE NO: 2

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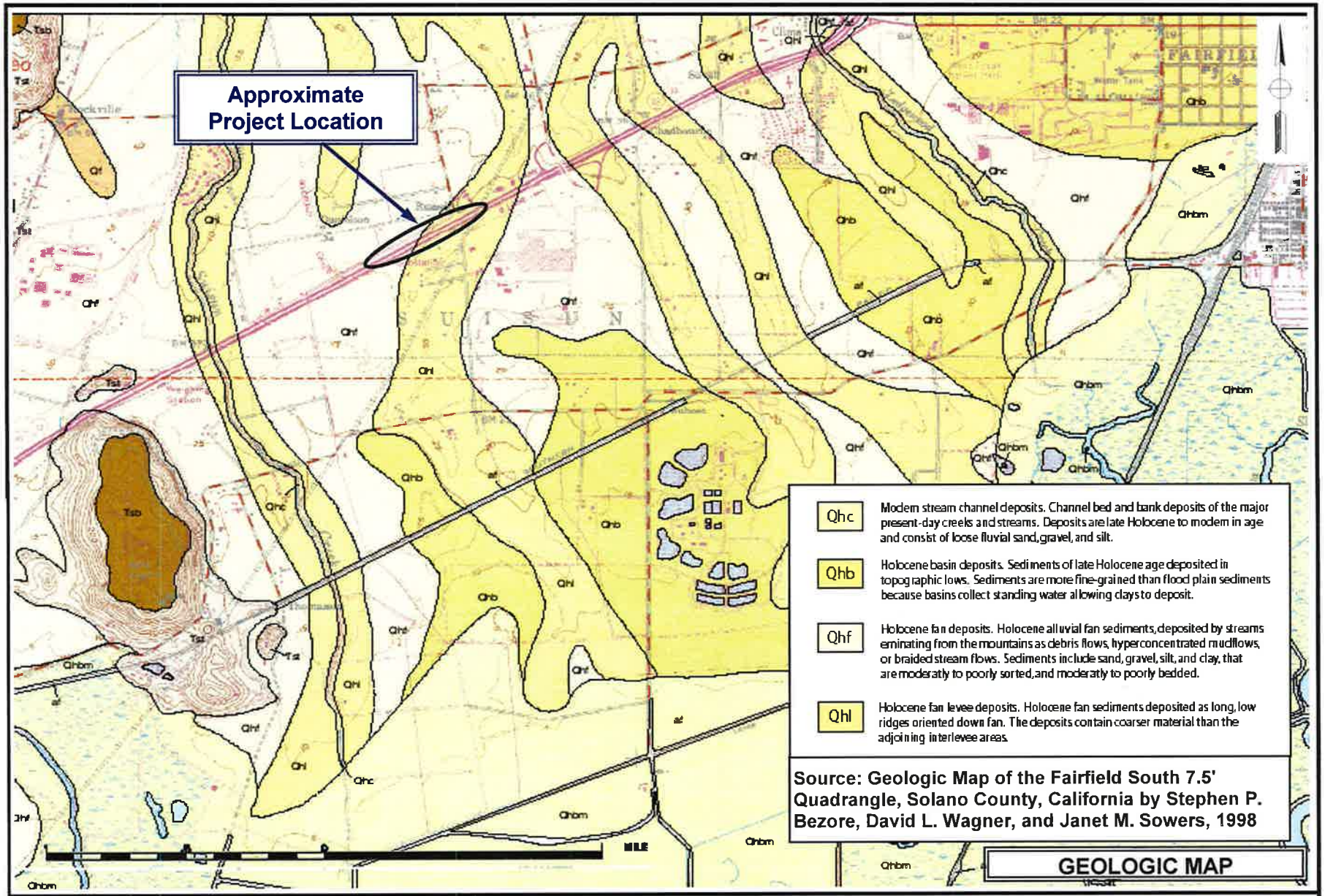

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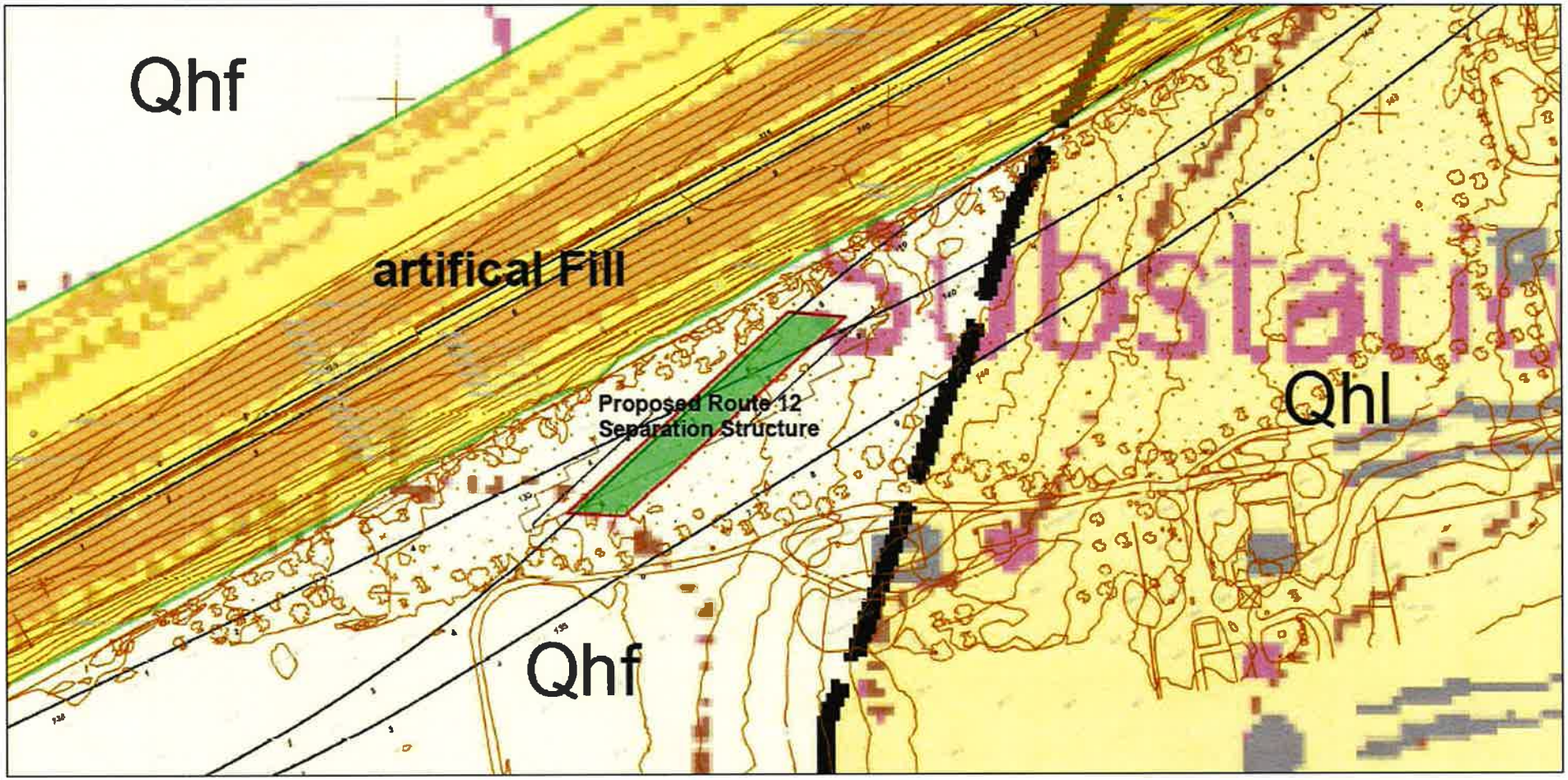
MATERIALS TESTING

RETAINING WALLS AT E80-E12/ E80 ON-RAMP SEPARATION
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.RET | **PLATE NO.: 3A**



0 50 100 150 200 250 300
Feet

BASE MAP: Bezore, et al; 1998

(see PLATE NO:3A for legend)

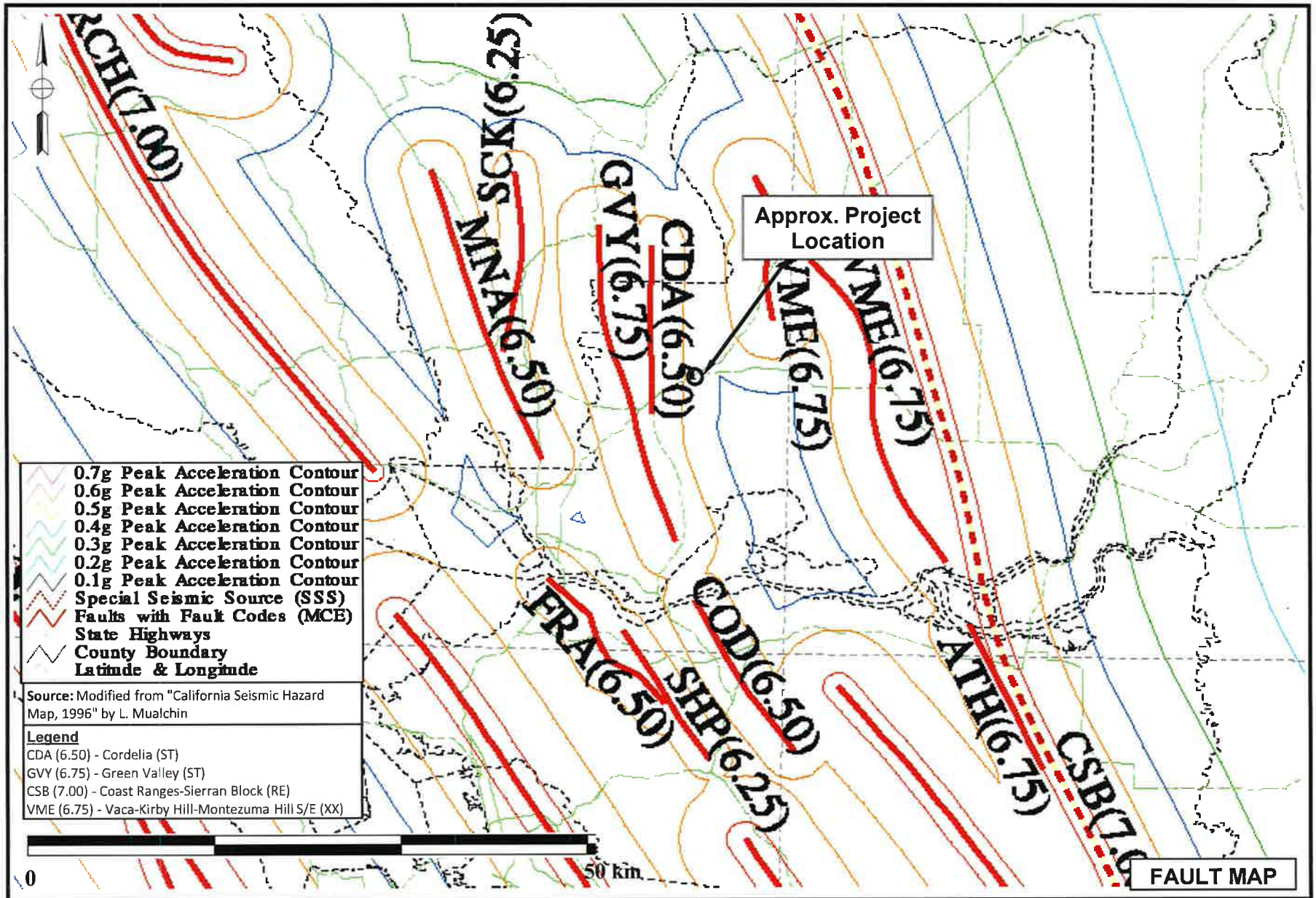
SITE GEOLOGIC MAP

PARIKH CONSULTANTS, INC.

RETAINING WALLS AT
E80-E12/E80 ON-RAMP SEPARATION
SOLANO COUNTY, CALIFORNIA

Job No.: 208123.RET

PLATE NO.: 3B

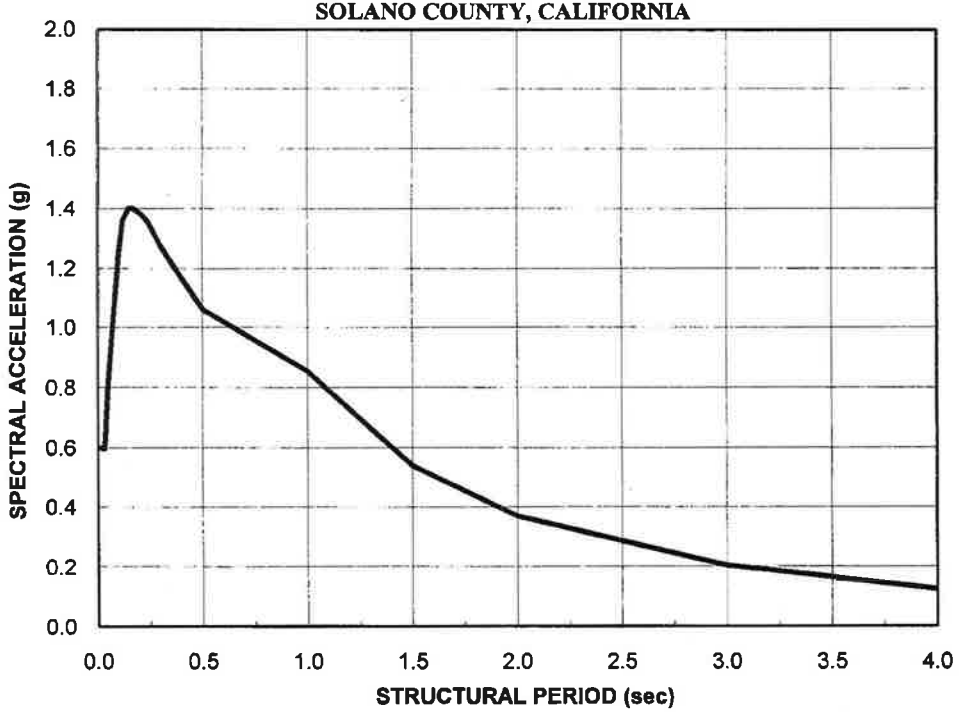


PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

RETAINING WALLS AT E80-E12/E80 ON-RAMP SEPARATION
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.RET	PLATE NO.: 4

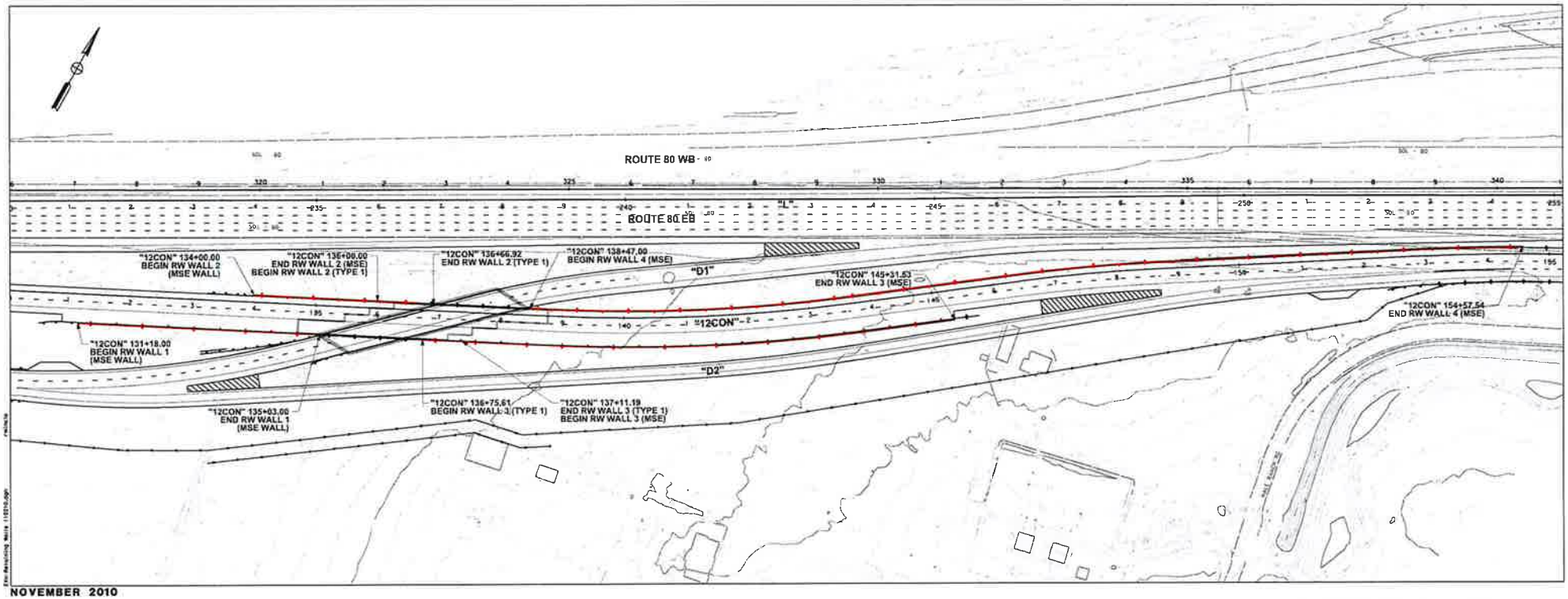
ARS DESIGN CURVE
RETAINING WALLS
AT E80-E12/E80 ON-RAMP SEPARATION
SOLANO COUNTY, CALIFORNIA



Spectral Data

Period (sec)	212 (6.7) Spectral Accel. (g)
0.010	0.600
0.020	0.598
0.030	0.596
0.050	0.817
0.075	1.053
0.100	1.260
0.120	1.362
0.150	1.403
0.170	1.400
0.200	1.386
0.240	1.355
0.300	1.273
0.400	1.166
0.500	1.060
0.750	0.957
1.000	0.853
1.500	0.539
2.000	0.369
3.000	0.203
4.000	0.125

1. Caltrans SDC (v 1.4, February 2006), Figure B.7,
   Governing Fault: Cordelia Fault (212)
   (Mw = 6.7, Soil Profile Type D, PBA = 0.6g)
   with the following modifications:
   (1) No change of Sa for structural periods < 0.5 sec
   (2) 20% increase of Sa for structural periods ≥ 1 sec
   (3) Linear interpolation for structural periods between 0.5 and 1 sec



NOVEMBER 2010

HDR | ONE COMPANY *Many Solutions℠*

RETAINING WALL - PLAN EXHIBIT
SOLANO TRANSPORTATION AUTHORITY STA
PS&E for I-80 EASTBOUND CORDELIA TRUCK SCALES RELOCATION PROJECT

APPENDIX A

APPENDIX A
FIELD EXPLORATION

The test borings were advanced with truck-mounted drill rig with 8-inch diameter hollow-stem auger and 5-inch diameter rotary wash drilling method. The soil samples were obtained from the borings during drilling at various depths by driving a 2.5-inch Inside Diameter (I. D.) Modified California Sampler or a 1.375-inch I.D. Standard Penetration Sampler (ASTM Test Method No. 1586). The sampler was driven into the subsurface soils under the impact of a 140-pound hammer having a free fall of 30 inches. The blow counts required to drive the sampler for the last 12 inches are presented on the Logs of Test Borings (LOTB), Appendix A. When correlating standard penetration data in similar soils, the blow counts for the Modified California sampler can be taken as roughly twice that for the Standard Penetration Test sampler in similar soils. Pocket penetration tests were also performed on clay samples to evaluate their consistency. Upon completion of drilling, the drillhole was backfilled with cement grout.

The borings were drilled under the technical supervision of our engineer, who visually classified in the field (according to the Unified Soil Classification System) and continuously logged the soils encountered during drilling. The engineer supervised the collection of soil samples at various depths for visual examination and laboratory testing. The soil samples were then transported to our laboratory for further evaluation and testing.

The descriptions of the soils encountered and relevant boring information are presented on the boring logs in the LOTB in Appendix A. The laboratory test methods and results are presented in Appendix B. The logs presented in Appendix A were prepared from the field logs which were edited after visual re-examination of the soil samples in the laboratory and results of classification tests on selected soil samples as indicated on the logs.

The descriptions and related information presented on these LOTB depict subsurface conditions only at the locations indicated on the plan and on the particular date noted on the logs. Because of the variability from place to place within soil/rock in general, subsurface conditions at other locations may differ from conditions occurring at the locations explored. The abrupt stratum changes shown on the logs may be gradational and relatively minor changes in soil types within a stratum may not be noted on the logs due to field limitations. Also, the passage of time may result in a change in the soil conditions at these locations due to environmental changes.

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GM	SILTY GRAVEL SILTY GRAVEL with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL
SP	Poorly graded SAND Poorly graded SAND with GRAVEL
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SM	SILTY SAND SILTY SAND with GRAVEL
SC	CLAYEY SAND CLAYEY SAND with GRAVEL
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL
PT	PEAT
	COBBLES COBBLES and BOULDERS BOULDERS

Graphic/Symbol	Group Names
CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (PP) Pocket Penetrometer
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (TV) Pocket Torvane
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)
- (VS) Vane Shear (AASHTO T 223)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SOL	12,80	13.8/12.0 13.3/15.1	---	---

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — CARY PARIKH — No. G.C. 666 — Exp. 12/31/11 — GEOTECHNICAL — STATE OF CALIFORNIA

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SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE

Description		Size
Boulder		> 12"
Cobble		3" to 12"
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

C. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER
SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JUNE 2009		

BRIDGE NO. -
POST MILES -

RETAINING WALLS
SOIL LEGEND SHEET 1 OF 2

(DOS CIVIL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09))

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 04-0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 28 OF 33

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REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	12,80	11.8/13.0 13.3/15.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

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CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS

Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

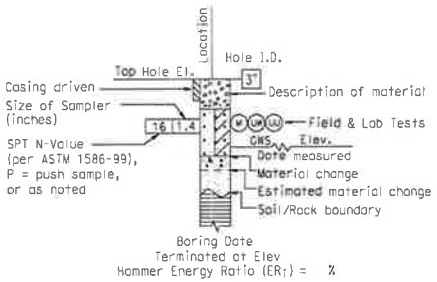
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring
Size	R P	Rotary drilled boring Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778-95)
[ ]	O	Other

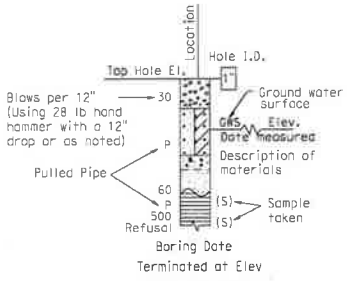
Note: Size in inches.

PLASTICITY OF FINE-GRAINED SOILS

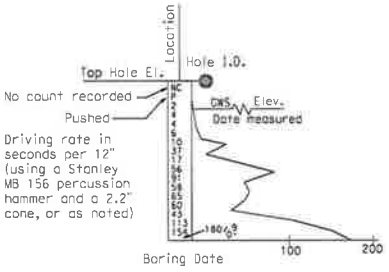
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



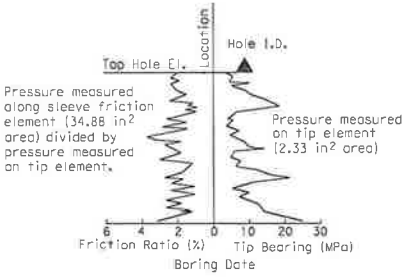
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO.	RETAINING WALLS
SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JUNE 2009			POST MILES	SOIL LEGEND SHEET 2 OF 2
DOS CIVIL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-08)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				CU 04264 EA 04-0A5351	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES — SHEET 29 OF 33

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	12,80	11.8/12.0 13.3/15.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

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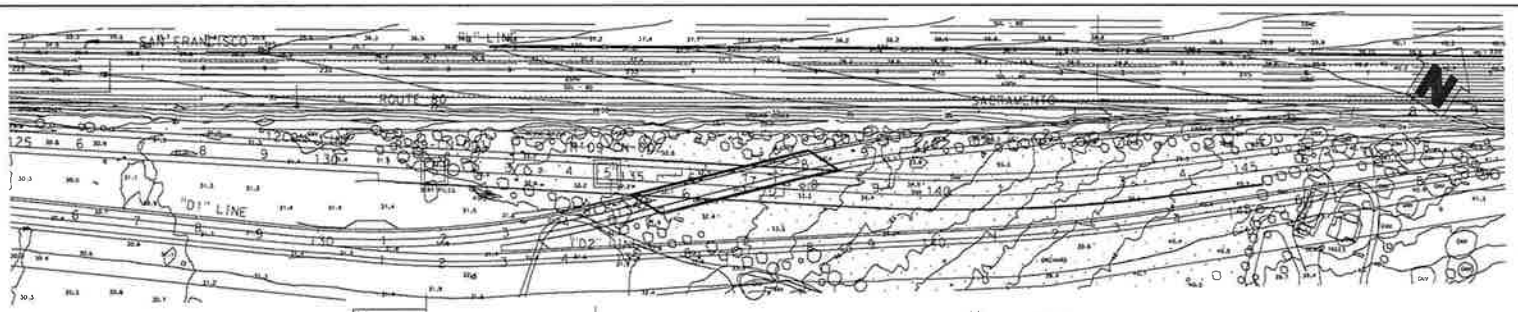
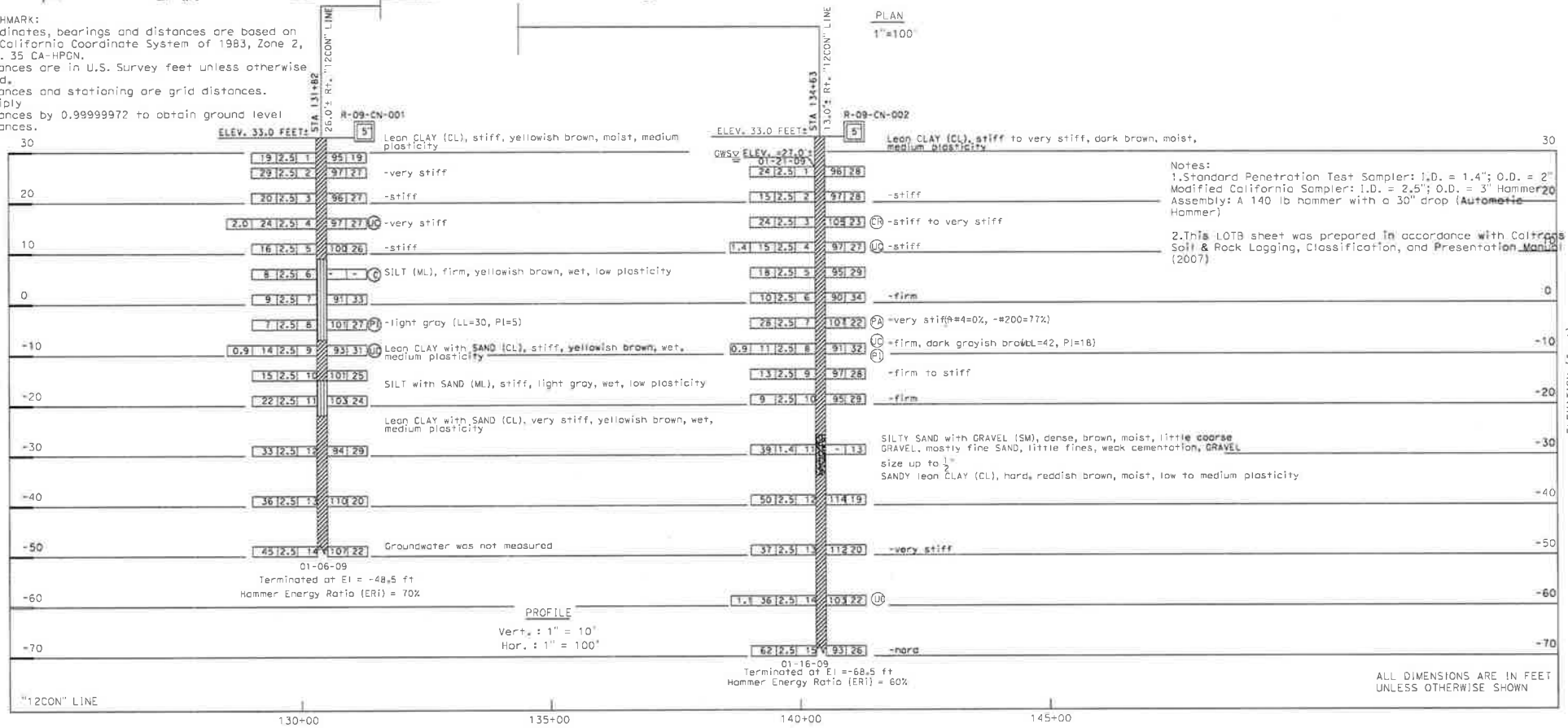
SUISUN CITY, CA 94585



BENCHMARK:
Coordinates, bearings and distances are based on the California Coordinate System of 1983, Zone 2, 1991.35 CA-HPGN.
Distances are in U.S. Survey feet unless otherwise noted.
Distances and stationing are grid distances. Multiply distances by 0.99999972 to obtain ground level distances.

PLAN
1"=100'



PROFILE
Vert. : 1" = 10'
Hor. : 1" = 100'

Notes:
1.Standard Penetration Test Sampler: I.D. = 1.4"; O.D. = 2" Modified California Sampler: I.D. = 2.5"; O.D. = 3" Hammer Assembly: A 140 lb hammer with a 30" drop (Automatic Hammer)

2.This LOTB sheet was prepared in accordance with Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2007)

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. -
SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JULY 2009			POST MILES -

RETAINING WALLS
LOG OF TEST BORINGS 1 OF 4

CU 04264
EA 04-0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES							SHEET	OF
							30	33

DOS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-21-07)

ORIGINAL SCALE IN INCHES FOR RESIZED PLANS 0 1 2 3

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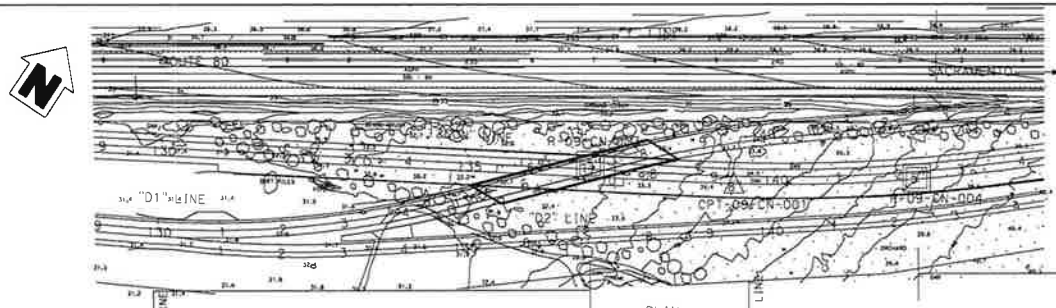

PLAN
1"=100'

BENCHMARK:
Coordinates, bearings and distances are based on the California Coordinate System of 1983, Zone 2, 1991.35 CA-HPGN.
Distances are in U.S. Survey feet unless otherwise noted.
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Multiply distances by 0.99999972 to obtain ground level distances.
Notes:
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2.This LOTB sheet was prepared in accordance with Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2007)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	12,80	LT.8/LT.2.0 13.3/15.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 — GEOTECHNICAL — STATE OF CALIFORNIA

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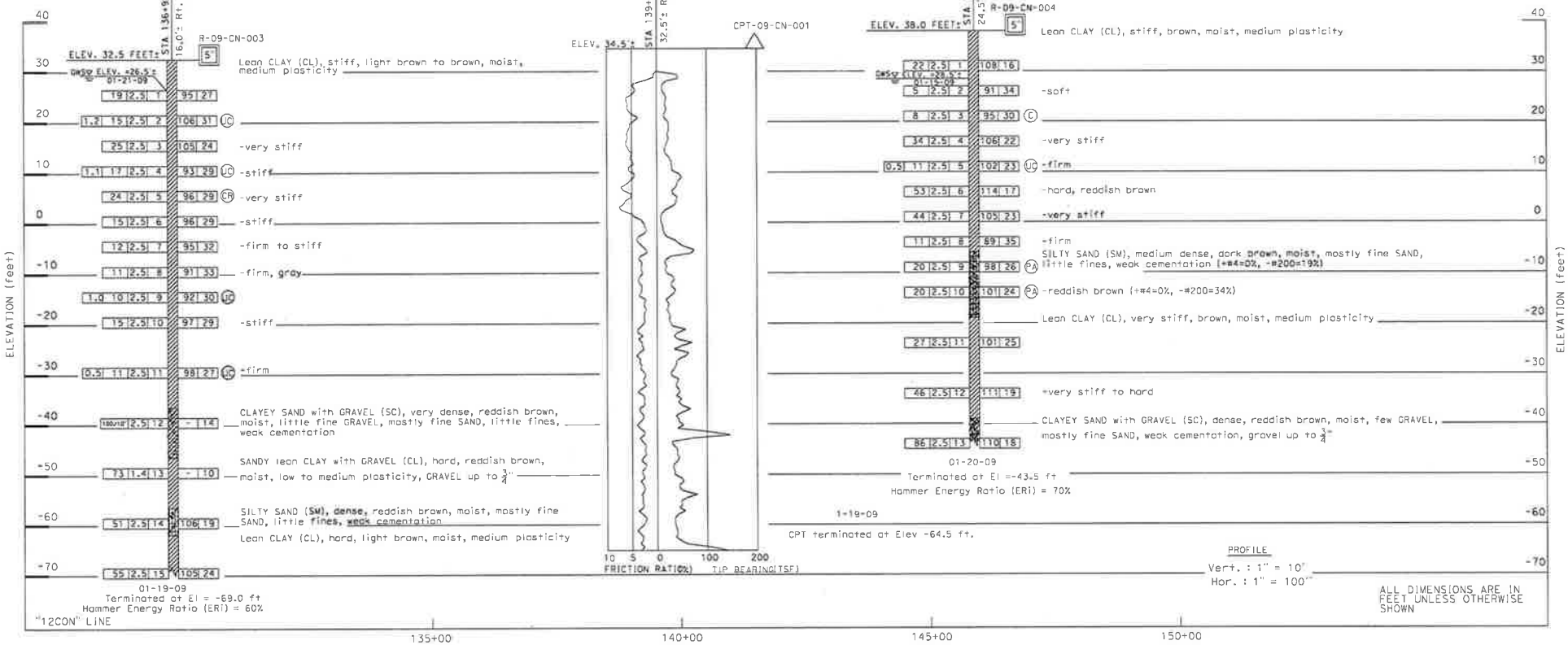

G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. -	**RETAINING WALLS** **LOG OF TEST BORINGS 2 OF 4**
SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JULY 2009			POST MILES -	
DOS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		CU 04264 EA 04-0A5351	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES: 09/19/09 10/16/10	SHEET 31 OF 33

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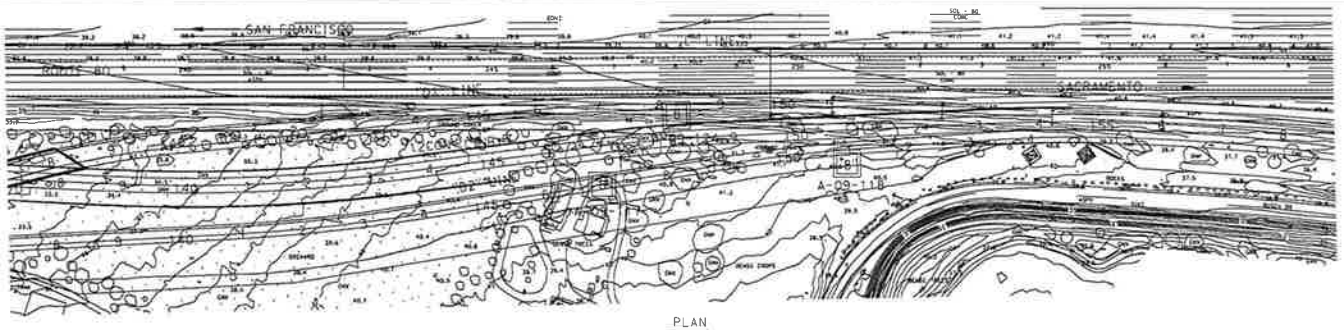

PLAN
1"=100'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SOL	12,80	11.8/12.0 13.3/15.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

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ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

BENCHMARK:
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Multiply distances by 0.99999972 to obtain ground level distances.

Notes:
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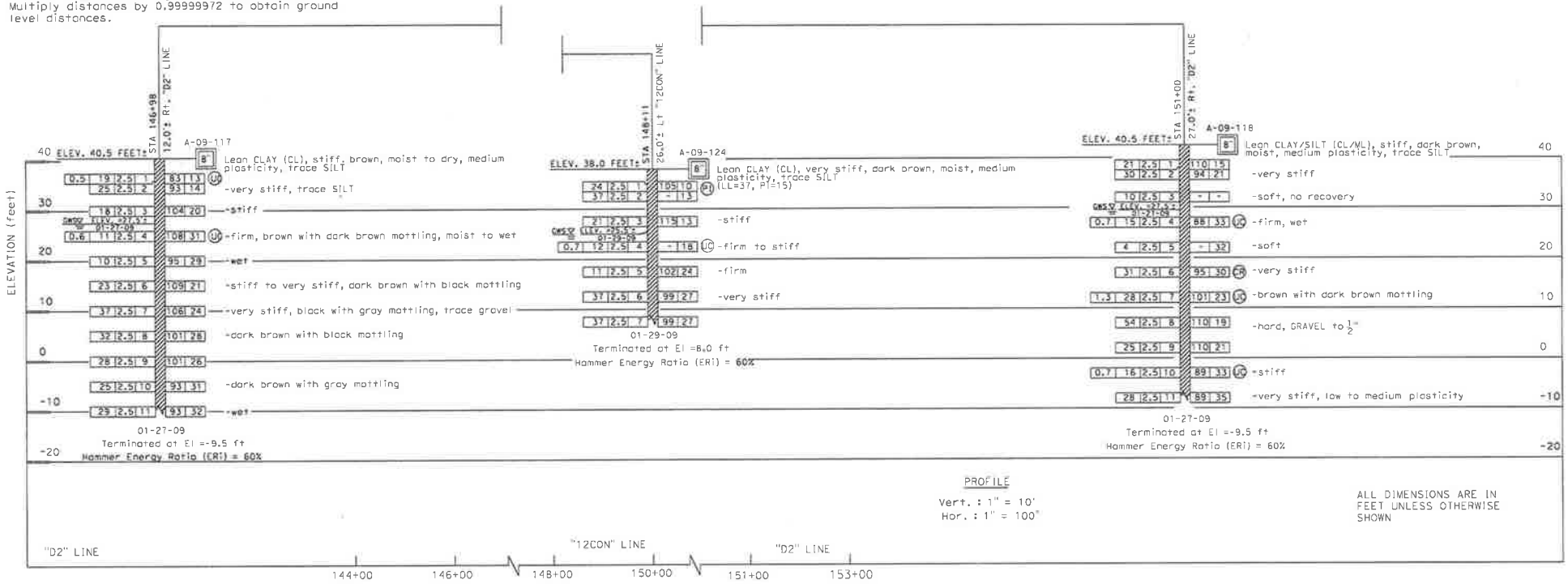
Modified California Sampler: I.D. = 2.5"; O.D. = 3" Hammer Assembly: A 140 lb hammer with a 30" drop (Automatic Hammer)

2.This LOTB sheet was prepared in accordance with Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2007)



PROFILE
Vert. : 1" = 10'
Hor. : 1" = 100'

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. -
SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JULY 2009			POST MILES -

RETAINING WALLS
LOG OF TEST BORINGS 3 OF 4

DOS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-08)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 04-0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET 32 OF 33

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SOL	12,80	11.8/12.0 13.3/15.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

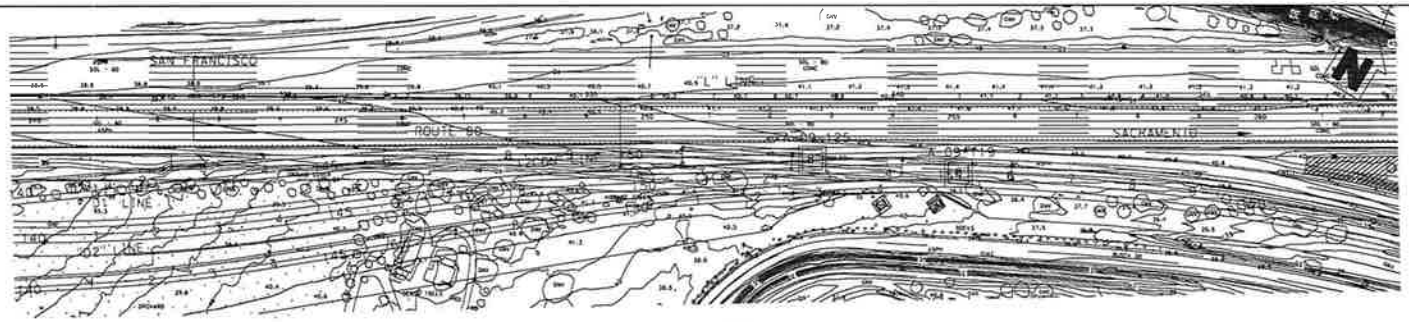
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 — CIVIL — STATE OF CALIFORNIA

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

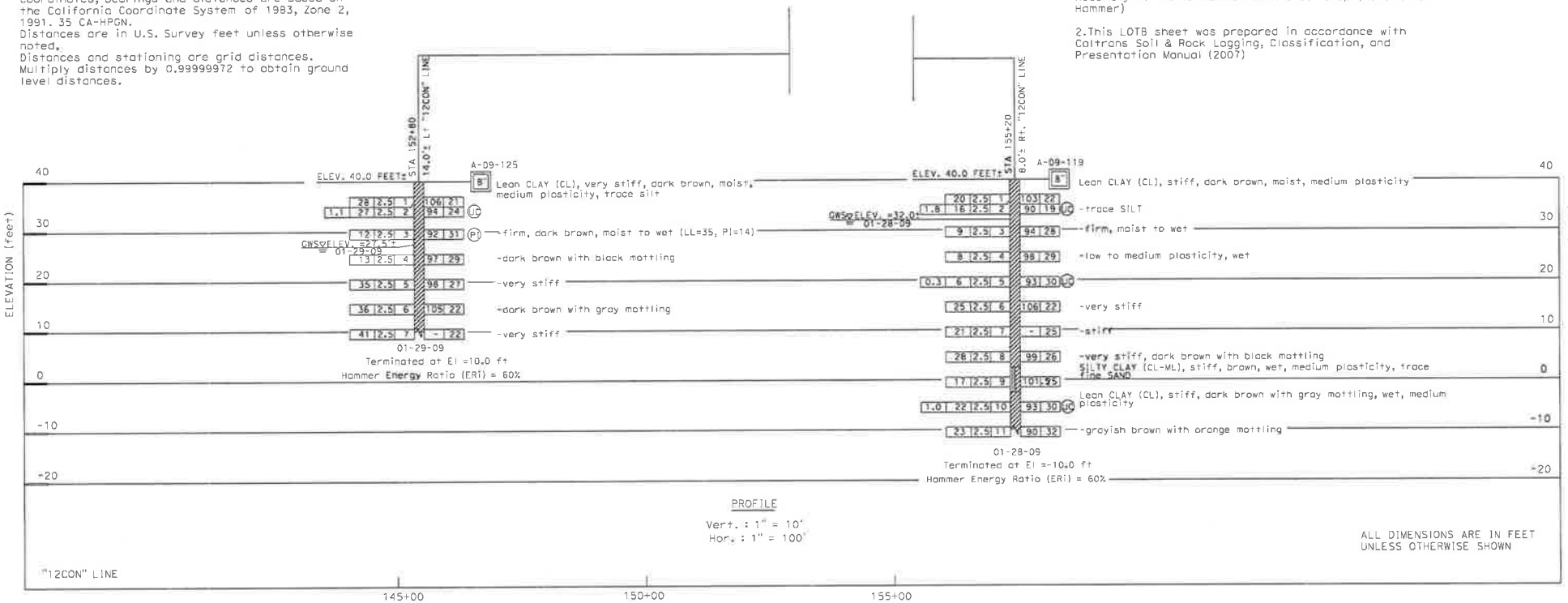


PLAN
1"=100'

BENCHMARK:
Coordinates, bearings and distances are based on the California Coordinate System of 1983, Zone 2, 1991.35 CA-HPGN.
Distances are in U.S. Survey feet unless otherwise noted.
Distances and stationing are grid distances.
Multiply distances by 0.99999972 to obtain ground level distances.

Notes:
1. Standard Penetration Test Sampler: I.D. = 1.4"; O.D. = 2"
Modified California Sampler: I.D. = 2.5"; O.D. = 3" Hammer Assembly: A 140 lb hammer with a 30" drop (Automatic Hammer)

2. This LOTB sheet was prepared in accordance with Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2007)



G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. - POST MILES -	RETAINING WALLS LOG OF TEST BORINGS 4 OF 4
SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JULY 2009		CU 04264 EA 04-0A5351	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES: 05/11/09 06/8/10 — SHEET 33 OF 33

DES GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

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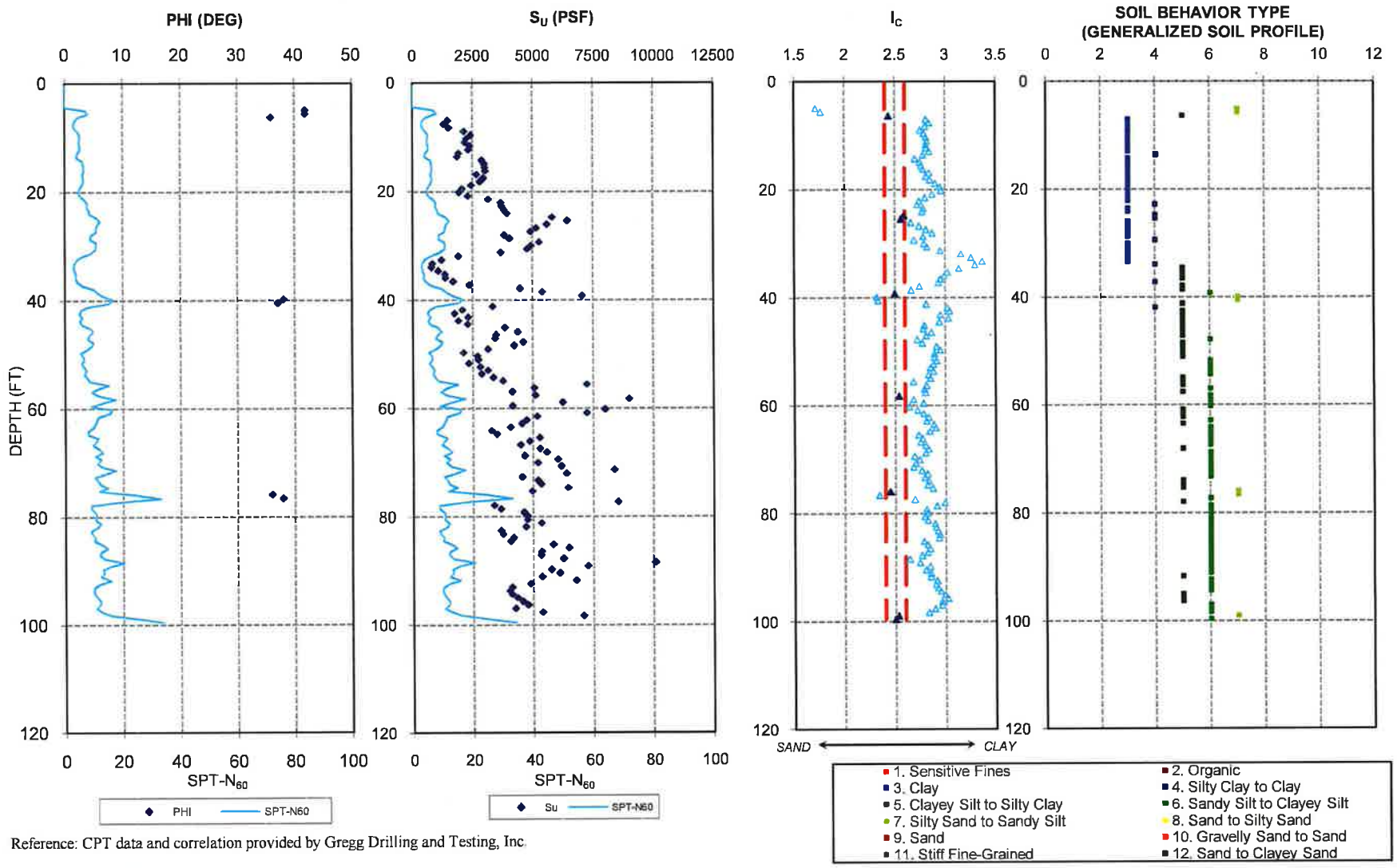
CPT DATA CORRELATION

CPT-09-CN-001



Reference: CPT data and correlation provided by Gregg Drilling and Testing, Inc.

PARIKH

Practicing in the Geosciences

RETAINING WALLS AT E80-E12/ E80 ON-RAMP SEPARATION
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.RET	PLATE NO.:

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

FAULT INFO

PROJECT NAME ***RETAINING WALLS***
PROJECT NO. ***208123.RET***
CPT NO. ***CPT-09-CN-001***

CONCORD-GREEN VALLEY FAULT
a_{max} (g)= 0.6

FAULT M_w = 6.9
MSF = 1.24

		CPT RESULT INPUT							*CSR*		*$CRR_{7.5}$*						*$F.S.=(CRR_{7.5}/CSR)*MSF*K_\sigma*K_\alpha$*		
Depth (ft)		Soil Behavior Type	qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	r_d	CSR	Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	$K\sigma$	$K\alpha$	F.S.
5.085	7	Silty Sand to Sandy Silt	40.284	0.285	0.299		0.299	1.72	1.46765	0.99	0.386							1.00	1	
5.741	7	Silty Sand to Sandy Silt	44.159	0.357	0.338		0.338	1.77	1.43043	0.99	0.386							1.00	1	
6.398	5	Clayey Silt to Silty Clay	18.475	0.491	0.376		0.376	2.44	1.39594	0.99	0.385							1.00	1	
7.054	3	Clay	11.659	0.581	0.412		0.412	2.81	1.36476	0.99	0.384							1.00	1	
7.71	3	Clay	10.494	0.474	0.449		0.449	2.84	1.33414	0.98	0.384							1.00	1	
8.366	3	Clay	12.014	0.52	0.485	0.011	0.474	2.8	1.31422	0.98	0.392							1.00	1	
9.022	3	Clay	16.717	0.842	0.522	0.032	0.49	2.75	1.30178	0.98	0.408							1.00	1	
9.678	3	Clay	18.779	1.17	0.558	0.052	0.506	2.79	1.28957	0.98	0.421							1.00	1	
10.335	3	Clay	17.433	1.058	0.595	0.073	0.522	2.81	1.27758	0.98	0.435							1.00	1	
10.991	3	Clay	17.106	0.994	0.632	0.093	0.538	2.82	1.26582	0.98	0.448							1.00	1	
11.647	3	Clay	18.588	1.11	0.668	0.114	0.554	2.81	1.25428	0.98	0.459							1.00	1	
12.303	3	Clay	18.182	1.028	0.705	0.134	0.57	2.81	1.24294	0.97	0.470							1.00	1	
12.959	3	Clay	15.236	0.764	0.741	0.155	0.587	2.84	1.23111	0.97	0.479							1.00	1	
13.615	4	Silty Clay to Clay	14.752	0.555	0.779	0.175	0.604	2.78	1.21951	0.97	0.489							1.00	1	
14.272	3	Clay	22.412	1.021	0.815	0.196	0.62	2.7	1.20879	0.97	0.497							1.00	1	
14.928	3	Clay	23.11	1.262	0.852	0.216	0.636	2.75	1.19826	0.97	0.506							1.00	1	
15.584	3	Clay	23.082	1.273	0.888	0.237	0.652	2.76	1.1879	0.97	0.514							1.00	1	
16.24	3	Clay	23.33	1.365	0.925	0.257	0.668	2.78	1.17773	0.97	0.522							1.00	1	
16.896	3	Clay	20.767	1.274	0.962	0.278	0.684	2.84	1.16773	0.96	0.529							1.00	1	
17.552	3	Clay	22.834	1.333	0.998	0.298	0.7	2.81	1.15789	0.96	0.535							1.00	1	
18.209	3	Clay	21.978	1.358	1.035	0.318	0.716	2.85	1.14823	0.96	0.542							1.00	1	
18.865	3	Clay	19.297	1.205	1.071	0.339	0.732	2.9	1.13872	0.96	0.548							1.00	1	
19.521	3	Clay	16.52	0.973	1.108	0.359	0.748	2.95	1.12936	0.96	0.554							1.00	1	
20.177	3	Clay	15.574	0.864	1.144	0.38	0.764	2.96	1.12016	0.96	0.559							1.00	1	
20.833	3	Clay	18.306	0.898	1.181	0.4	0.78	2.87	1.11111	0.95	0.564							1.00	1	
21.49	3	Clay	24.654	1.346	1.217	0.421	0.797	2.8	1.10165	0.95	0.567							1.00	1	
22.146	3	Clay	26.275	1.451	1.254	0.441	0.813	2.74	1.0929	0.95	0.572							1.00	1	
22.802	4	Silty Clay to Clay	28.439	1.362	1.292	0.462	0.83	2.72	1.08374	0.95	0.576							1.00	1	
23.458	3	Clay	29.644	1.706	1.328	0.482	0.846	2.78	1.07527	0.95	0.580							1.00	1	
24.114	3	Clay	30.601	1.726	1.365	0.503	0.862	2.77	1.06693	0.94	0.584							1.00	1	
24.77	4	Silty Clay to Clay	43.979	2.037	1.402	0.523	0.879	2.59	1.0582	0.94	0.586							1.00	1	
25.427	4	Silty Clay to Clay	48.35	2.247	1.44	0.544	0.896	2.56	1.04962	0.94	0.589							1.00	1	
26.083	3	Clay	42.655	2.301	1.476	0.564	0.912	2.66	1.04167	0.94	0.592							1.00	1	
26.739	3	Clay	39.625	2.459	1.513	0.585	0.928	2.74	1.03383	0.94	0.595							1.00	1	
27.395	3	Clay	37.979	2.734	1.549	0.605	0.944	2.81	1.02612	0.93	0.597							1.00	1	
28.051	3	Clay	29.903	2.028	1.586	0.626	0.96	2.87	1.01852	0.93	0.599							1.00	1	
28.707	3	Clay	31.266	1.648	1.623	0.646	0.977	2.78	1.01056	0.93	0.600							1.00	1	
29.364	4	Silty Clay to Clay	40.425	2.043	1.66	0.666	0.994	2.69	1.00273	0.92	0.602							1.00	1	
30.02	3	Clay	38.532	2.404	1.697	0.687	1.01	2.79	0.99548	0.92	0.603							1.00	1	
30.676	3	Clay	37.299	2.439	1.733	0.707	1.026	2.82	0.98832	0.92	0.604							0.99	1	
31.332	3	Clay	29.295	2.205	1.77	0.728	1.042	2.95	0.98127	0.91	0.605							0.99	1	
31.988	3	Clay	16.227	1.149	1.806	0.748	1.058	3.15	0.97431	0.91	0.606							0.99	1	
32.644	3	Clay	10.837	0.569	1.843	0.769	1.074	3.25	0.96746	0.91	0.606							0.99	1	
33.301	3	Clay	8.06	0.369	1.879	0.789	1.09	3.36	0.9607	0.90	0.606							0.98	1	
33.957	4	Silty Clay to Clay	7.841	0.249	1.917	0.81	1.107	3.29	0.95362	0.90	0.606							0.98	1	
34.613	5	Clayey Silt to Silty Clay	9.812	0.258	1.955	0.83	1.124	3.13	0.94664	0.89	0.606							0.98	1	
35.269	5	Clayey Silt to Silty Clay	11.93	0.289	1.992	0.851	1.141	3.02	0.93977	0.89	0.605							0.97	1	
35.925	5	Clayey Silt to Silty Clay	11.857	0.261	2.03	0.871	1.159	2.99	0.9326	0.88	0.604							0.97	1	
36.581	5	Clayey Silt to Silty Clay	14.245	0.355	2.067	0.892	1.176	2.95	0.92593	0.88	0.603							0.97	1	
37.238	4	Silty Clay to Clay	19.77	0.73	2.105	0.912	1.193	2.93	0.91935	0.87	0.601							0.97	1	
37.894	5	Clayey Silt to Silty Clay	35.682	1.435	2.143	0.933	1.21	2.74	0.91286	0.87	0.600							0.96	1	
38.55	5	Clayey Silt to Silty Clay	42.684	1.56	2.18	0.953	1.227	2.66	0.90647	0.86	0.598							0.96	1	
39.206	6	Sandy Silt to Clayey Silt	54.884	1.532	2.218	0.974	1.244	2.5	0.90016	0.86	0.597							0.96	1	
39.862	7	Silty Sand to Sandy Silt	74.823	1.615	2.256	0.994	1.262	2.32	0.89358	0.85	0.594	2.320	0.89	66.86	2.015	134.695	0.31	0.95	1	0.52
40.519	7	Silty Sand to Sandy Silt	68.745	1.388	2.295	1.015	1.281	2.33	0.88674	0.85	0.591	2.330	0.89	60.96	2.049	124.889	0.26	0.95	1	0.44
41.175	5	Clayey Silt to Silty Clay	27.436	0.898	2.333	1.035	1.298	2.81	0.8807	0.84	0.589							0.95	1	
41.831	4	Silty Clay to Clay	17.923	0.649	2.37	1.055	1.315	3.02	0.87475	0.83	0.586							0.95	1	
42.487	5	Clayey Silt to Silty Clay	15.529	0.464	2.408	1.076	1.332	3.04	0.86886	0.83	0.584							0.94	1	
43.143	5	Clayey Silt to Silty Clay	19.663	0.63	2.445	1.096	1.349	2.95	0.86308	0.82	0.581							0.94	1	
43.799	5	Clayey Silt to Silty Clay	16.391	0.529	2.483	1.117	1.366	3.03	0.85737	0.82	0.578							0.94	1	
44.455	5	Clayey Silt to Silty Clay	19.145	0.557	2.521	1.137	1.383	2.94	0.85172	0.81	0.575							0.94	1	
45.112	5	Clayey Silt to Silty Clay	30.827	1.046	2.558	1.158	1.4	2.79	0.84615	0.80	0.572							0.93	1	
45.768	5	Clayey Silt to Silty Clay	34.837	1.312	2.596	1.178	1.418	2.78	0.84034	0.80	0.568							0.93	1	
46.424	5	Clayey Silt to Silty Clay	28.473	1.044	2.633	1.199	1.435	2.86	0.83491	0.79	0.565							0.93	1	
47.08	5	Clayey Silt to Silty Clay	27.504	0.847	2.671	1.219	1.452	2.81	0.82956	0.78	0.561							0.93	1	
47.736	6	Sandy Silt to Clayey Silt	36.471	1.137	2.709	1.24	1.469	2.72	0.82428	0.78	0.558							0.93	1	
48.392	5	Clayey Silt to Silty Clay	33.435	1.094	2.746	1.26	1.486	2.77	0.81906	0.77	0.554							0.92	1	
49.049	5	Clayey Silt to Silty Clay	25.397	0.924	2.784	1.281	1.503	2.91	0.81391	0.76	0.551							0.92	1	
49.705	5	Clayey Silt to Silty Clay	17.433	0.43	2.821	1.301	1.52	2.95	0.80882	0.76	0.547							0.92	1	
50.361	5	Clayey Silt to Silty Clay	21.798	0.582	2.859	1.322	1.537	2.89	0.8038	0.75	0.543							0.92	1	
51.017	5	Clayey Silt to Silty Clay	22.069	0.601	2.897	1.342	1.554	2.89	0.79884	0.74	0.540							0.92	1	
51.673	6	Sandy Silt to Clayey Silt	18.925	0.439	2.934	1.363	1.572	2.91	0.79365	0.74	0.536							0.91	1	
52.329	6	Sandy Silt to Clayey Silt	22.553	0.584	2.972	1.383	1.589	2.88	0.78881	0.73	0.532							0.91	1	
52.986	6	Sandy Silt to Clayey Silt	25.099	0.689	3.009	1.403	1.606	2.85	0.78403	0.72	0.528							0.91	1	
53.642	6	Sandy Silt to Clayey Silt	22.981	0.613	3.047	1.424	1.623	2.88	0.77931	0.72	0.524							0.91	1	
54.298	6	Sandy Silt to Clayey Silt	26.653	0.709	3.085	1.444	1.64	2.83	0.77465	0.71	0.521							0.91	1	
54.954	5	Clayey Silt to Silty Clay	29.699	0.98	3.122	1.465	1.657	2.85	0.77004	0.70	0.517							0.90	1	
55.61	5	Clayey Silt to Silty Clay	56.979	2.227	3.16	1.485	1.674	2.68	0.76548	0.70	0.514							0.90	1	
56.266	5	Clayey Silt to Silty Clay	40.594	1.586	3.197	1.506	1.691	2.81	0.76098	0.69	0.510							0.90	1	
56.923	6	Sandy Silt to Clayey Silt	33.289	0.961	3.235	1.526	1.709	2.79	0.75627	0.69	0.506							0.90	1	
57.579	5	Clayey Silt to Silty Clay	40.521	1.536	3.272	1.547	1.726	2.8	0.75188	0.68	0.503							0.90	1	
58.235	6	Sandy Silt to Clayey Silt	70.486	2.088	3.31	1.567	1.743	2.54	0.74754	0.67	0.499							0.89	1	
58.891	6	Sandy Silt to Clayey Silt	49.477	1.494	3.348	1.588	1.76	2.68	0.74324	0.67	0.496							0.89	1	
59.547	6	Sandy Silt to Clayey Silt	32.821	0.875	3.385	1.608	1.777	2.78	0.739	0.66	0.493							0.89	1	
60.203	6	Sandy Silt to Clayey Silt	62.521	2.209	3.423	1.629	1.794	2.64	0.7348	0.66	0.489							0.89	1	
60.86	5	Clayey Silt to Silty Clay	57.221	2.355	3.46	1.649	1.811	2.72	0.73065	0.65	0.486							0.89	1	
61.516	5	Clayey Silt to Silty Clay	41.062	1.395	3.498	1.67	1.828	2.78	0.72655	0.65	0.483							0.89	1	
62.172	5	Clayey Silt to Silty Clay	38.51	1.361	3.536	1.69	1.846	2.83	0.72226	0.64	0.480							0.88	1	
62.828	6	Sandy Silt to Clayey Silt	36.645	1.121	3.573	1.711	1.863	2.81	0.71825	0.64	0.477							0.88	1	
63.484	5	Clayey Silt to Silty Clay	32.894	1.124	3.611	1.731	1.88	2.88	0.71429	0.63	0.474							0.88	1	

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

FAULT INFO

PROJECT NAME ***RETAINING WALLS***
PROJECT NO ***208123.RET***
CPT NO ***CPT-09-CN-001***

CONCORD-GREEN VALLEY FAULT
a_{max} (g)= 0.6

FAULT M_w = 6.9
MSF = 1.24

Depth (ft)		Soil Behavior Type	CPT RESULT INPUT qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	CSR γ_d	CSR	$CRR_{7.5}$ Ic	C_D	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	F.S.=($CRR_{7.5}$/CSR)*MSF*K_σ*K_α K_σ	K_α	F.S.
64.14	6	Sandy Silt to Clayey Silt	26.637	0.739	3.648	1.752	1.897	2.9	0.71036	0.63	0.471							0.88	1	
64.797	6	Sandy Silt to Clayey Silt	28	0.66	3.686	1.772	1.914	2.84	0.70649	0.62	0.468							0.88	1	
65.453	6	Sandy Silt to Clayey Silt	41.715	1.137	3.724	1.792	1.931	2.73	0.70265	0.62	0.466							0.88	1	
66.109	6	Sandy Silt to Clayey Silt	36.504	1.082	3.761	1.813	1.948	2.77	0.69886	0.61	0.463							0.88	1	
66.765	6	Sandy Silt to Clayey Silt	35.096	0.805	3.799	1.833	1.965	2.75	0.6951	0.61	0.460							0.87	1	
67.421	6	Sandy Silt to Clayey Silt	41.749	1.397	3.836	1.854	1.983	2.8	0.69117	0.61	0.458							0.87	1	
68.077	5	Clayey Silt to Silty Clay	44.982	1.741	3.874	1.874	2	2.83	0.6875	0.60	0.455							0.87	1	
68.734	6	Sandy Silt to Clayey Silt	37.012	1.046	3.912	1.895	2.017	2.8	0.68387	0.60	0.453							0.87	1	
69.39	6	Sandy Silt to Clayey Silt	47.004	1.217	3.949	1.915	2.034	2.69	0.68027	0.60	0.451							0.87	1	
70.048	6	Sandy Silt to Clayey Silt	40.873	1.055	3.987	1.936	2.051	2.74	0.67671	0.59	0.449							0.87	1	
70.702	6	Sandy Silt to Clayey Silt	47.573	1.314	4.024	1.956	2.068	2.7	0.67319	0.59	0.446							0.86	1	
71.358	6	Sandy Silt to Clayey Silt	65.406	2.377	4.062	1.977	2.085	2.68	0.66971	0.58	0.444							0.86	1	
72.014	6	Sandy Silt to Clayey Silt	50.597	1.751	4.1	1.997	2.102	2.76	0.66626	0.58	0.442							0.86	1	
72.671	6	Sandy Silt to Clayey Silt	36.026	1.004	4.137	2.018	2.119	2.82	0.66285	0.58	0.440							0.86	1	
73.327	6	Sandy Silt to Clayey Silt	40.752	1.203	4.175	2.038	2.137	2.79	0.65927	0.58	0.438							0.86	1	
73.983	5	Clayey Silt to Silty Clay	42.233	1.454	4.212	2.059	2.154	2.83	0.65593	0.57	0.436							0.86	1	
74.639	5	Clayey Silt to Silty Clay	51.375	2.107	4.25	2.079	2.171	2.82	0.65263	0.57	0.435							0.86	1	
75.295	5	Clayey Silt to Silty Clay	40.053	1.397	4.288	2.1	2.188	2.87	0.64935	0.57	0.433							0.86	1	
75.951	7	Silty Sand to Sandy Silt	102.445	2.607	4.326	2.12	2.206	2.45	0.64592	0.56	0.431							0.85	1	
76.608	7	Silty Sand to Sandy Silt	146.379	3.732	4.365	2.14	2.224	2.34	0.64252	0.56	0.429							0.83	1	
77.264	6	Sandy Silt to Clayey Silt	67.991	2.373	4.402	2.161	2.241	2.69	0.63935	0.56	0.428							0.85	1	
77.92	5	Clayey Silt to Silty Clay	28.264	0.865	4.44	2.181	2.259	2.99	0.63602	0.56	0.426							0.85	1	
78.576	6	Sandy Silt to Clayey Silt	29.852	0.748	4.478	2.202	2.276	2.91	0.63291	0.55	0.425							0.85	1	
79.232	6	Sandy Silt to Clayey Silt	36.933	0.895	4.515	2.222	2.293	2.81	0.62983	0.55	0.423							0.85	1	
79.888	6	Sandy Silt to Clayey Silt	37.963	0.982	4.553	2.243	2.31	2.82	0.62678	0.55	0.422							0.85	1	
80.545	6	Sandy Silt to Clayey Silt	37.547	0.856	4.59	2.263	2.327	2.79	0.62376	0.55	0.420							0.84	1	
81.201	6	Sandy Silt to Clayey Silt	42.391	1.282	4.628	2.284	2.344	2.82	0.62077	0.54	0.419							0.84	1	
81.857	6	Sandy Silt to Clayey Silt	37.947	1.222	4.666	2.304	2.361	2.89	0.6178	0.54	0.418							0.84	1	
82.513	6	Sandy Silt to Clayey Silt	29.954	0.681	4.703	2.325	2.378	2.9	0.61487	0.54	0.416							0.84	1	
83.169	6	Sandy Silt to Clayey Silt	30.692	0.777	4.741	2.345	2.396	2.92	0.61179	0.54	0.415							0.84	1	
83.825	6	Sandy Silt to Clayey Silt	34.032	1.083	4.778	2.366	2.413	2.94	0.60891	0.54	0.414							0.84	1	
84.482	6	Sandy Silt to Clayey Silt	32.905	0.972	4.816	2.386	2.43	2.93	0.60606	0.53	0.413							0.84	1	
85.138	6	Sandy Silt to Clayey Silt	46.181	1.234	4.854	2.407	2.447	2.78	0.60324	0.53	0.412							0.84	1	
85.794	6	Sandy Silt to Clayey Silt	51.397	1.789	4.891	2.427	2.464	2.82	0.60044	0.53	0.410							0.83	1	
86.45	6	Sandy Silt to Clayey Silt	42.745	1.247	4.929	2.448	2.481	2.84	0.59766	0.53	0.409							0.83	1	
87.106	6	Sandy Silt to Clayey Silt	41.979	1.16	4.966	2.468	2.498	2.82	0.59492	0.53	0.408							0.83	1	
87.762	6	Sandy Silt to Clayey Silt	46.778	1.323	5.004	2.489	2.515	2.76	0.59219	0.52	0.407							0.83	1	
88.419	6	Sandy Silt to Clayey Silt	78.636	2.469	5.041	2.509	2.533	2.64	0.58934	0.52	0.406							0.83	1	
89.075	6	Sandy Silt to Clayey Silt	57.086	1.703	5.079	2.529	2.55	2.74	0.58667	0.52	0.405							0.83	1	
89.731	6	Sandy Silt to Clayey Silt	44.97	1.42	5.117	2.55	2.567	2.84	0.58402	0.52	0.404							0.83	1	
90.387	6	Sandy Silt to Clayey Silt	47.623	1.379	5.154	2.57	2.584	2.8	0.5814	0.52	0.403							0.83	1	
91.043	6	Sandy Silt to Clayey Silt	42.537	1.245	5.192	2.591	2.601	2.85	0.5788	0.52	0.402							0.83	1	
91.699	5	Clayey Silt to Silty Clay	54.089	2.064	5.229	2.611	2.618	2.85	0.57622	0.52	0.401							0.82	1	
92.356	6	Sandy Silt to Clayey Silt	39.574	1.238	5.267	2.632	2.635	2.91	0.57366	0.51	0.401							0.82	1	
93.012	6	Sandy Silt to Clayey Silt	33.632	0.788	5.305	2.652	2.652	2.9	0.57113	0.51	0.400							0.82	1	
93.668	6	Sandy Silt to Clayey Silt	32.686	0.761	5.342	2.673	2.669	2.92	0.56862	0.51	0.399							0.82	1	
94.324	6	Sandy Silt to Clayey Silt	33.497	0.922	5.38	2.693	2.687	2.95	0.56599	0.51	0.398							0.82	1	
94.98	5	Clayey Silt to Silty Clay	35.485	1.235	5.417	2.714	2.704	2.99	0.56352	0.51	0.397							0.82	1	
95.636	5	Clayey Silt to Silty Clay	37.524	1.556	5.455	2.734	2.721	3.02	0.56108	0.51	0.396							0.82	1	
96.293	5	Clayey Silt to Silty Clay	38.842	1.365	5.493	2.755	2.738	2.96	0.55866	0.51	0.396							0.82	1	
96.949	6	Sandy Silt to Clayey Silt	34.635	1.02	5.53	2.775	2.755	2.96	0.55626	0.50	0.395							0.82	1	
97.605	6	Sandy Silt to Clayey Silt	42.667	1.347	5.568	2.796	2.772	2.89	0.55388	0.50	0.394							0.82	1	
98.261	6	Sandy Silt to Clayey Silt	55.864	1.971	5.605	2.816	2.789	2.83	0.55152	0.50	0.393							0.81	1	
98.917	7	Silty Sand to Sandy Silt	104.141	2.755	5.644	2.837	2.807	2.53	0.54904	0.50	0.393							0.81	1	
99.573	6	Sandy Silt to Clayey Silt	140.318	4.644	5.682	2.857	2.825	2.5	0.54658	0.50	0.392							0.81	1	

APPENDIX B

APPENDIX B

LABORATORY TESTS

Classification Tests

The field classification of the samples was visually verified in the laboratory according to the Unified Soil Classification System. The results are presented on "Log of Test Borings", Appendix A.

Moisture-Density

The natural moisture contents and dry unit weights were determined for selected undisturbed samples of the soils in general accordance with ASTM Test Method D 2216-92. This information was used to classify and correlate the soils. The results are presented at the appropriate depths on the "Log of Test Borings", Appendix A.

Atterberg Limits

The Atterberg Limits were determined for selected samples of the fine-grained materials. These results were used to classify the soils, as well as to obtain an indication of the effective strength characteristics and expansion potential with variations in moisture content. The Atterberg Limits were determined in general accordance with ASTM Test Method D 4318-93. The results of these tests are presented on Plate B-2, "Plasticity Chart".

Grain Size Classification

Grain size classification tests (ASTM Test Method D422-63) were performed on selected samples of granular soil to aid in the classification. The results are presented on Plate B-3, "Grain Size Distribution Curves".

Unconfined Compression Tests

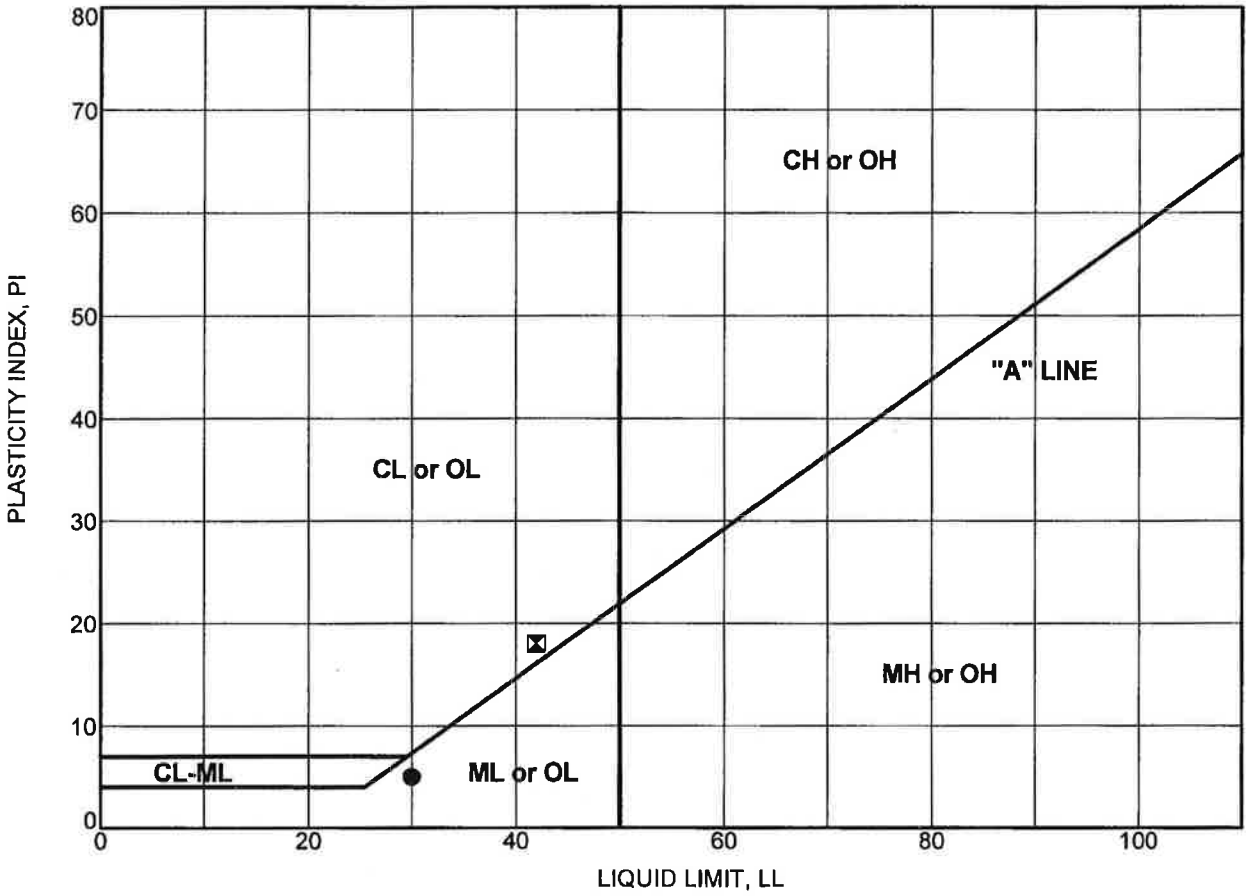
Strength tests were performed on selected undisturbed samples using unconfined compression machine. Unconfined compression tests were performed in general accordance with ASTM Test Method D 2166-91. The results are presented on "Log of Test Borings"

Corrosion Test

Corrosion tests were performed on selected samples to determine the corrosion potential of the soils. The pH and minimum resistively tests were performed according to California Test Method 643. The tests were performed by Sunland Analytical. The tests results are presented on Plate B-4A and Plate B-4B.

Consolidation Tests

Consolidation tests (California Test Method T219) were performed on two selected undisturbed samples. The test results are presented on Plates B-5A through B-5F.



PLASTICITY CHART

Boring Number	Sample Number	Depth (feet)	Test Symbol	Moisture Content (%)	LL	PL	PI	Description
R-09-CN-001	MC-8	36.0	●	27	30	25	5	SILT (ML)
R-09-CN-002	MC-8	41.0	⊠	32	42	24	18	LEAN CLAY (CL)

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

RETAINING WALLS AT E80-E12/E80 ON-RAMP SEPARATION
SOLANO COUNTY, CALIFORNIA

JOB NO: 208123.GDR

PLATE NO: B - 2

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

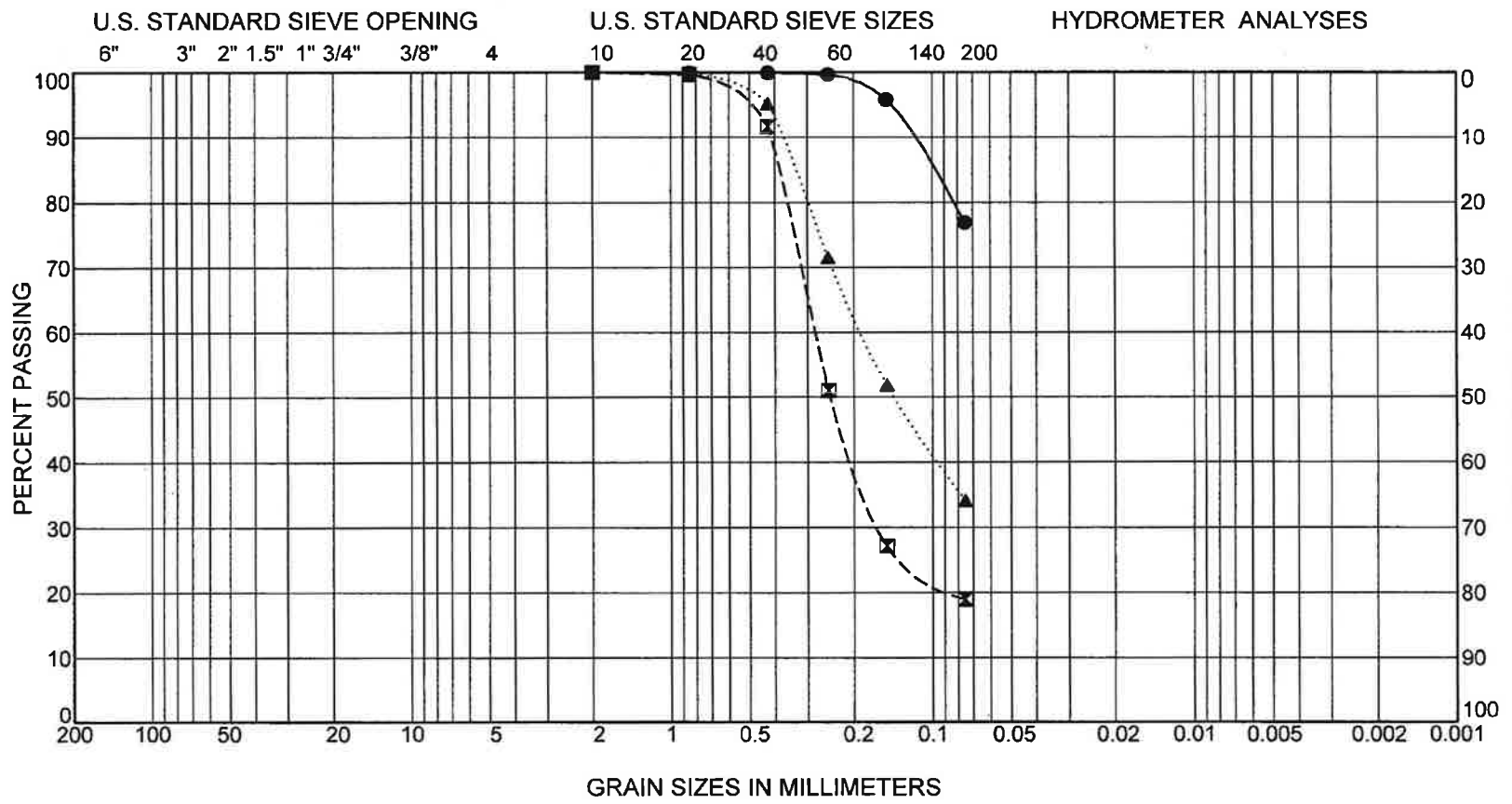
JOB NO: 208123.GDR

RETAINING WALLS AT E80-E12/E80 ON-RAMP SEPARATION
SOLANO COUNTY, CALIFORNIA

PLATE NO: B - 3

GRAIN SIZE DISTRIBUTION CURVES

COBBLES	GRAVEL		SAND			SILT AND CLAY
	coarse	fine	coarse	medium	fine	



Boring Number	Sample Number	Depth (feet)	Symbol	LL	PI	Description
R-09-CN-002	MC-7	36.0	●			LEAN CLAY WITH SAND (CL)
R-09-CN-004	MC-9	46.0	⊠			SILTY SAND (SM)
R-09-CN-004	MC-10	51.0	▲			SILTY SAND (SM)

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 03/18/2009
Date Submitted 03/13/2009

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 208123.GDR EB I-80 Site ID : 008#3@16' (R-09-CN-002) #3 @ 16'
Thank you for your business.

* For future reference to this analysis please use SUN # 55240-110995.

EVALUATION FOR SOIL CORROSION

Soil pH	7.72		
Minimum Resistivity	1.74 ohm-cm (x1000)		
Chloride	20.9 ppm	00.00209	%
Sulfate	37.9 ppm	00.00379	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

PLATE NO.: B-4A

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 03/18/2009
Date Submitted 03/13/2009

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 208123.GDR EB I-80 Site ID : 609#5@26'. (R-09-CN-003) #5@26'
Thank you for your business.

* For future reference to this analysis please use SUN # 55240-110993.

EVALUATION FOR SOIL CORROSION

Soil pH	7.74		
Minimum Resistivity	1.88 ohm-cm (x1000)		
Chloride	25.8 ppm	00.00258	%
Sulfate	31.7 ppm	00.00317	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

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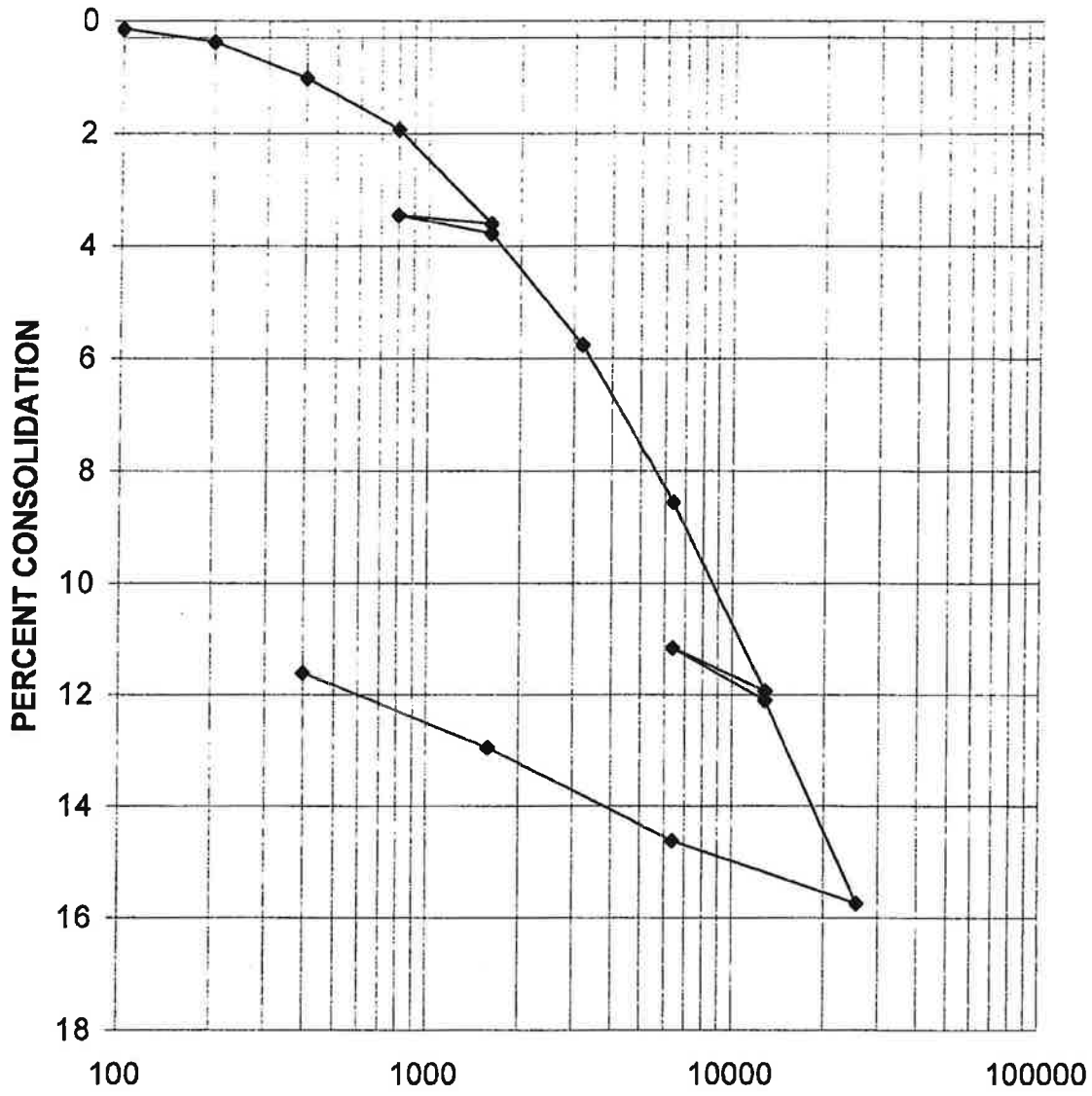
PLATE NO.: B-4B

CONSOLIDATION TEST RESULTS



	MOISTURE CONTENT %	DRY DENSITY PCF	HEIGHT (INCHES)	DIAMETER (INCHES)
INITIAL	29.4	96.3	1.0000	2.416
FINAL	22.9	108.9	0.8839	2.416

BORING NO.	007(R-09-CN-001)	SAMPLE NO.	6	ELEV. OR DEPTH	26'
DESCRIPTION	Lean Clay, reddish brown				

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GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

EB I-80 Truck Scale Relocation
HDR Engineering, Inc.

DATE	JOB NO:
3/10/2009	208123.GDR

Reported by: Prav Dayah

PLATE NO.: B-5A

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

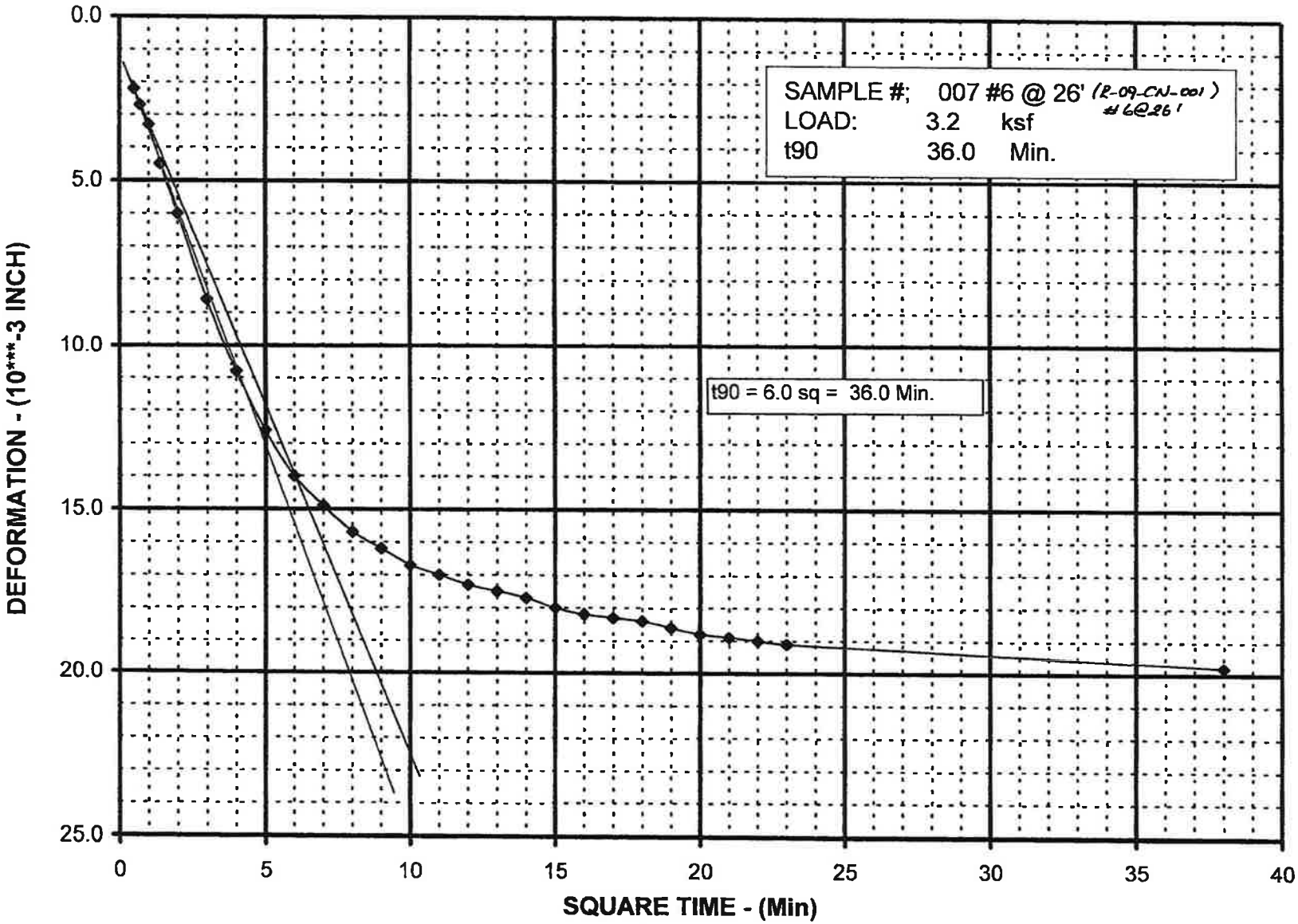


PLATE NO.: B-5B

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

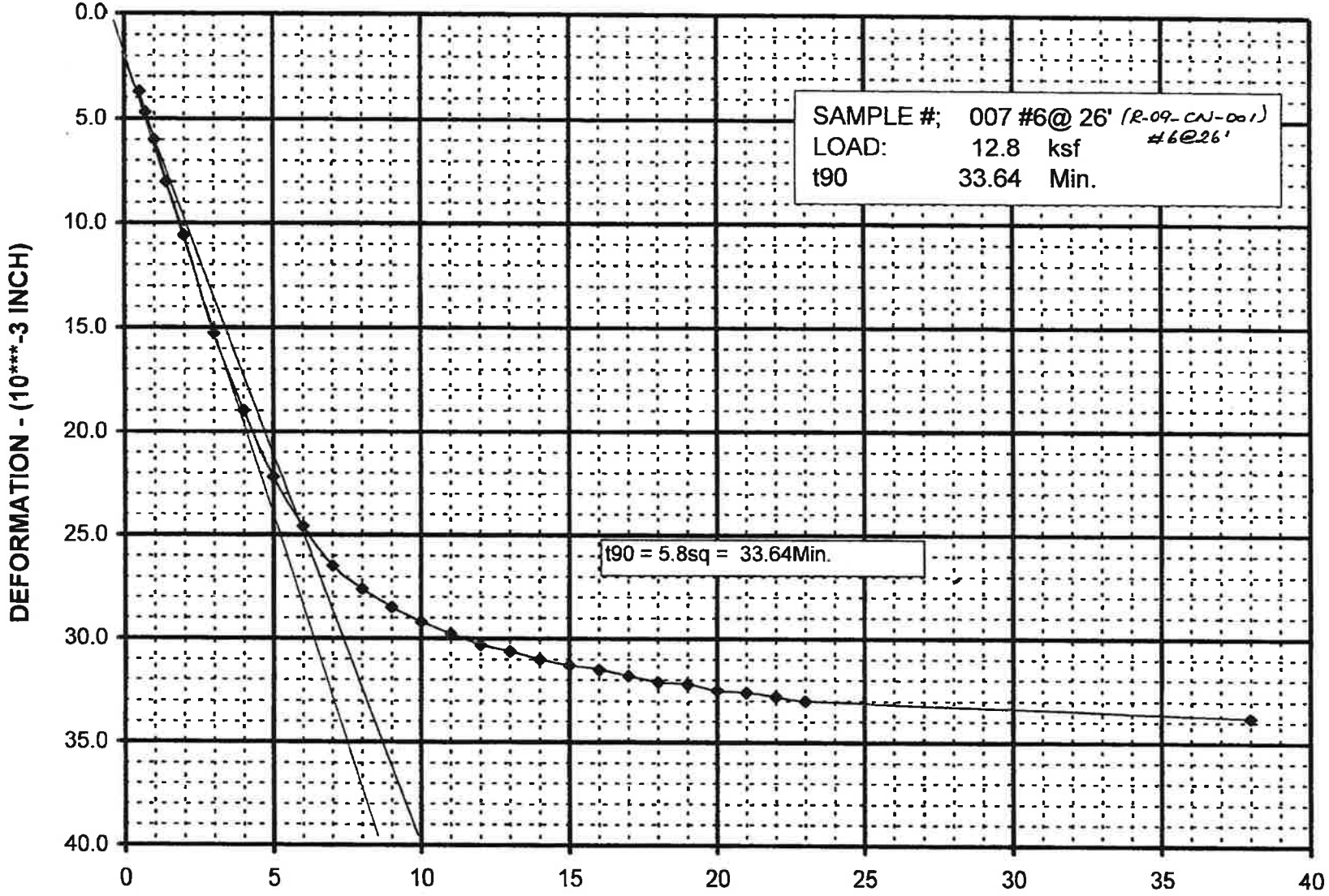
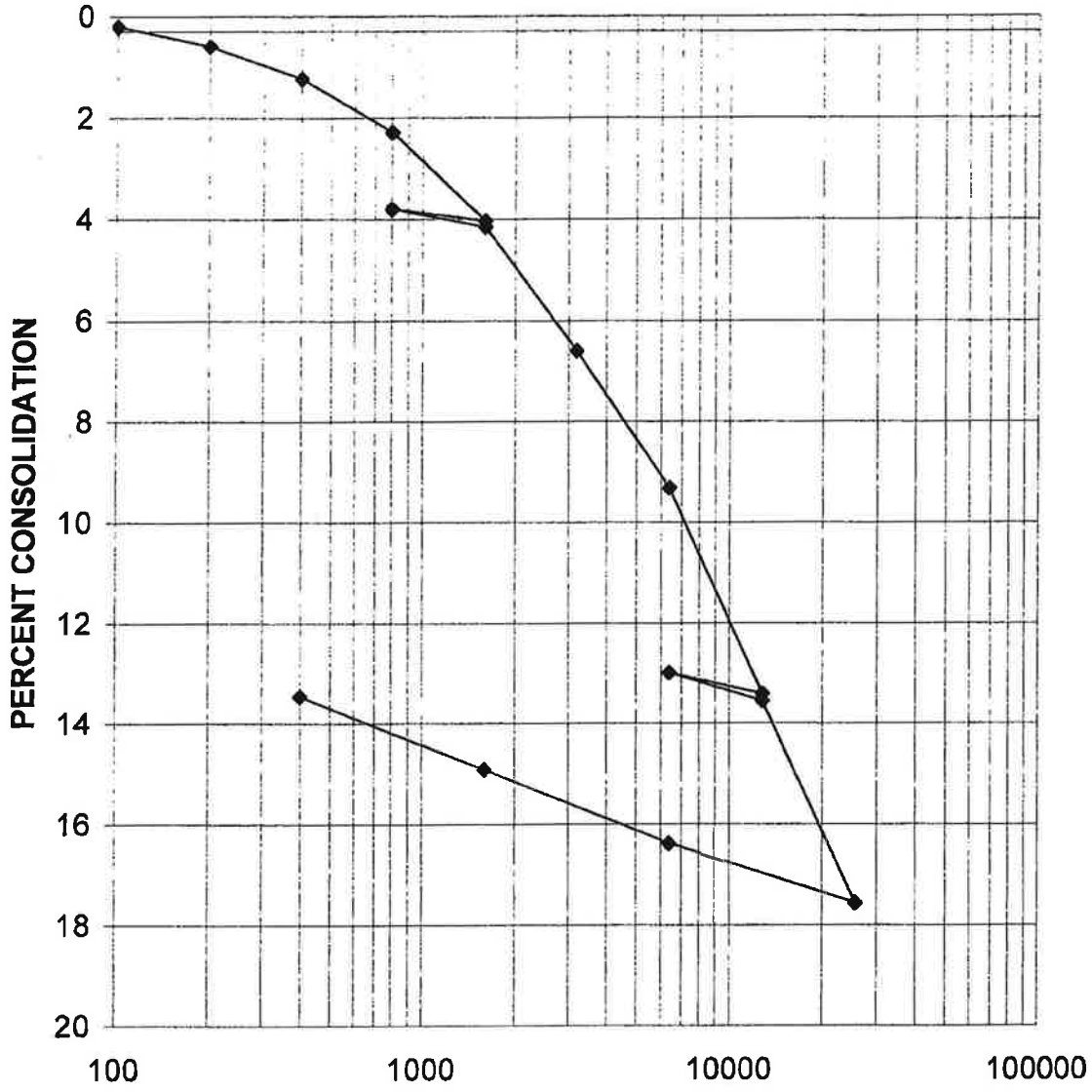


PLATE NO.: B-5C

CONSOLIDATION TEST RESULTS



	MOISTURE CONTENT %	DRY DENSITY PCF	HEIGHT (INCHES)	DIAMETER (INCHES)
INITIAL	30.3	94.6	1.0000	2.416
FINAL	23.0	109.4	0.8654	2.416

BORING NO.	011 (R-09-CN-004)	SAMPLE NO.	3	ELEV. OR DEPTH	16'
DESCRIPTION	Lean Clay, reddish brown				

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

EB I-80 Truck Scale Relocation
HDR Engineering, Inc.

DATE	JOB NO:
3/10/2009	208123.GDR

Reported by: Prav Dayah

PLATE NO.: B-5D

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

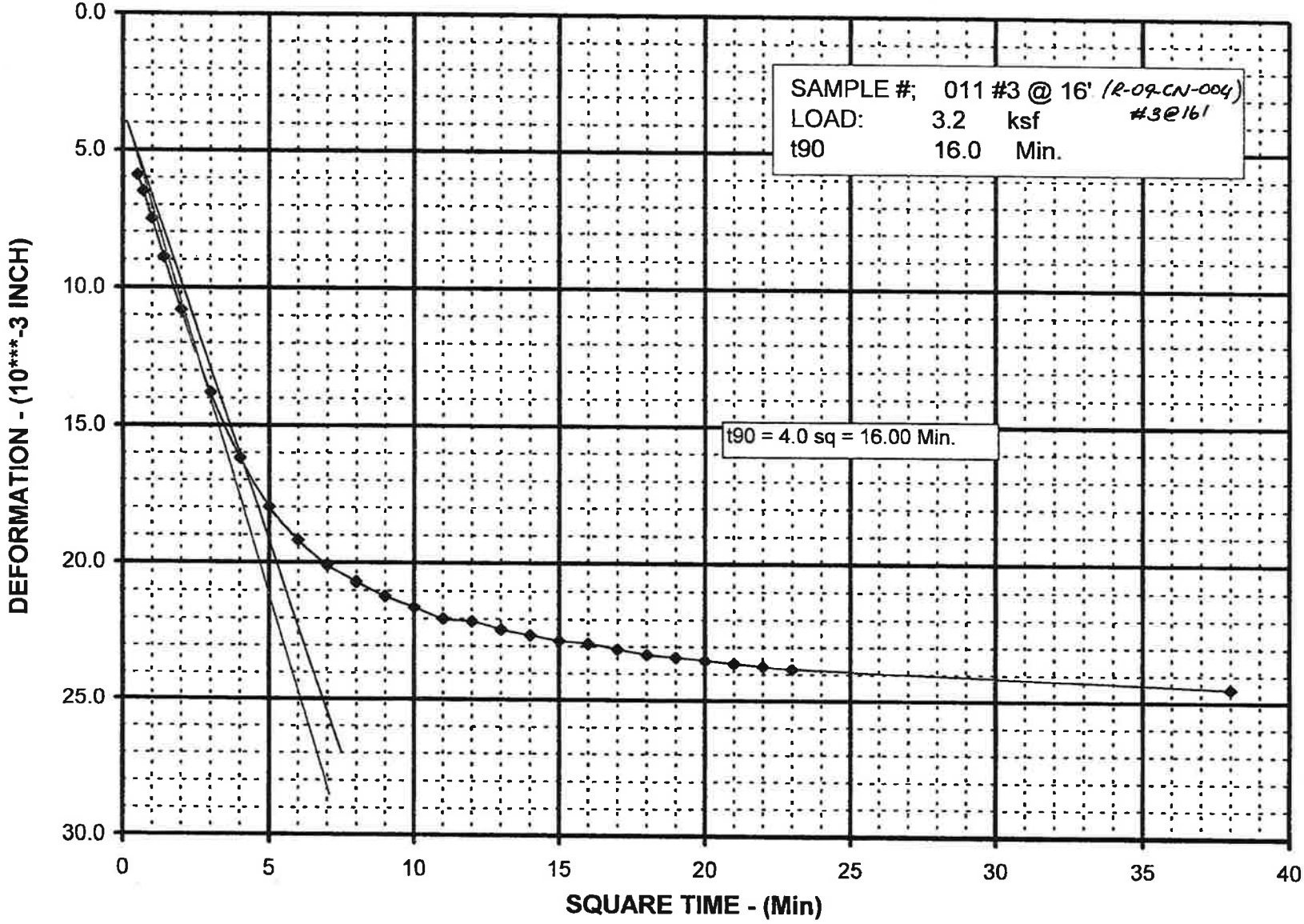


PLATE NO.: B-5E

CONSOLIDATION TEST - TIME CURVE

JOB #: 208123.GDR

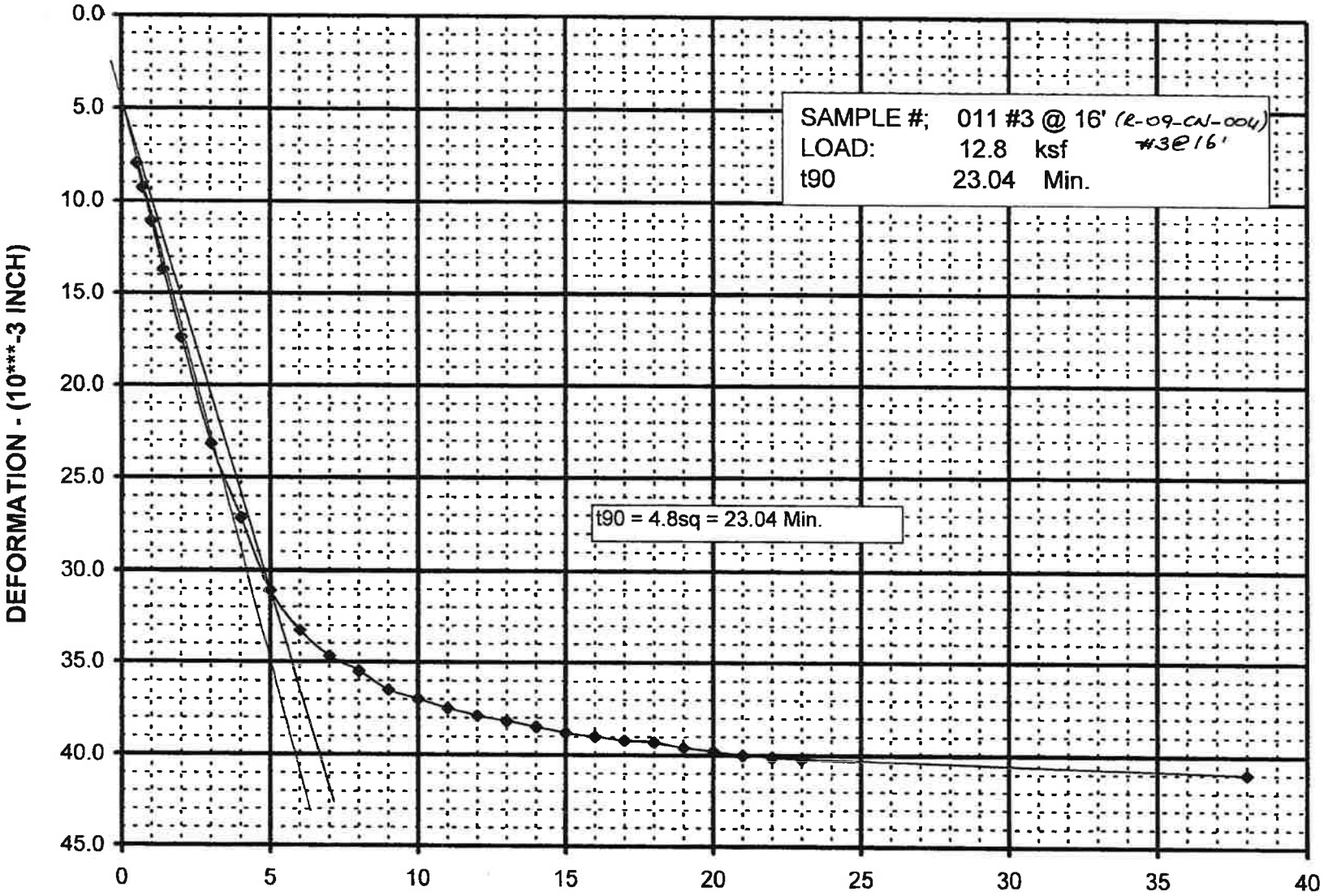


PLATE NO.: B-5F

APPENDIX C

Evaluation of Liquefaction Potential

LIQUEFACTION POTENTIAL ANALYSIS

PROJECT NAME ***Retaining Walls at E80-E12/E80 On-Ramp Separation***
PROJECT NO. ***208123.RET***
BORING NO. ***R-09-CN-002***

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS

FAULT INFO
CORDELIA FAULT
a_{max} (g)= 0.6
FAULT M_w = 6.5

BOREHOLE DIA (in)= 8
GW DEPTH (ft)= 6

HAMMER TYPE (1/2) = 2
(1. ROPE AND PULLEY; 2. AUTOMATIC)

MSF = 1.44
(Min. FS = 1.1 based on SPT)
*F.S.=($CRR_{6.5}$/CSR)*MSF*Kσ*Kα*

					CYCLIC STRESS RATIO (CSR)				*LIQUEFACTION RESISTANCE ($CRR_{6.5}$)*											
Sample No	Depth (ft)	Soil Type	Blow Count	Sampler Type	σ_v (psf)	σ_v' (psf)	γ_d	CSR	SPT-N_{60}	C_N	C_E	C_R	C_S	C_B	$(N_1)_{60}$	F.C.	$(N_1)_{60,CS}$	$CRR_{6.5}$	Kσ	Kα	F.S.
1	3.0	2	16	SPT	330.0	330.0	0.99		18	2.00	1	0.75	1.2	1.00	33.23	55%			1.00	1	
2	6.0	2	16	SPT	660.0	660.0	0.97		18	1.74	1	0.75	1.2	1.00	28.92	55%			1.00	1	
3	8.5	2	16	SPT	973.8	816.9	0.96		18	1.56	1	0.75	1.2	1.15	29.90	55%			1.00	1	
4	13.5	2	10	SPT	1623.8	1154.4	0.94		12	1.32	1	0.80	1.2	1.15	16.77	55%			1.00	1	
5	18.5	2	16	SPT	2273.8	1491.9	0.92		18	1.16	1	0.80	1.2	1.15	23.60	55%			1.00	1	
6	23.5	2	10	SPT	2923.8	1829.4	0.89		12	1.05	1	0.80	1.2	1.15	13.32	55%			1.00	1	
7	28.5	2	12	SPT	3573.8	2166.9	0.85		14	0.96	1	0.80	1.2	1.15	14.69	55%			0.98	1	
8	33.5	2	8	SPT	4173.8	2454.4	0.81		9	0.90	1	0.80	1.2	1.15	9.20	55%			0.94	1	
9	38.5	2	19	SPT	4823.8	2791.9	0.76		22	0.85	1	0.80	1.2	1.15	20.49	55%			0.90	1	
10	58.0	2	9	SPT	7261.3	4010.6	0.59		10	0.71	1	0.80	1.2	1.15	8.10	55%			0.81	1	
11	64.0	1	39	SPT	8041.3	4415.6	0.55	0.39	45	0.67	1	0.80	1.2	1.15	33.43	15%	37.54		0.79	1	
12	101.5	2	25	SPT	12916.3	6946.9	0.47		29	0.54	1	0.80	1.2	1.15	17.09	55%			0.69	1	

LIQUEFACTION POTENTIAL ANALYSIS

PROJECT NAME ***Retaining Walls at E80-E12/E80 On-Ramp Separation***
PROJECT NO. ***208123.RET***
BORING NO. ***R-09-CN-003***

BOREHOLE DIA (in)= 8
GW DEPTH (ft)= 6

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS

HAMMER TYPE (1/2) = 2
(1. ROPE AND PULLEY; 2. AUTOMATIC)

FAULT INFO
CORDELIA FAULT
a_{max} (g)= 0.6
FAULT M_w = 6.5

MSF = 1.44
(Min. FS = 1.1 based on SPT)
*F.S.=($CRR_{6.5}$/CSR)*MSF*Kσ*Kα*

					CYCLIC STRESS RATIO (CSR)				*LIQUEFACTION RESISTANCE ($CRR_{6.5}$)*												
Sample No	Depth (ft)	Soil Type	Blow Count	Sampler Type	σ_v (psf)	σ_v' (psf)	γ_d	CSR	SPT-N_{60}	C_N	C_E	C_R	C_S	C_B	$(N_1)_{60}$	F.C.	$(N_1)_{60,CS}$	$CRR_{6.5}$	Kσ	Kα	F.S.
1	3.0	2	13	SPT	345.0	345.0	0.99		15	2.00	1	0.75	1.2	1.00	27.00	55%			1.00	1	
2	6.0	2	13	SPT	690.0	690.0	0.97		15	1.70	1	0.75	1.2	1.00	22.98	55%			1.00	1	
3	8.5	2	13	SPT	1003.8	846.9	0.96		15	1.54	1	0.75	1.2	1.15	23.86	55%			1.00	1	
4	13.5	2	10	SPT	1603.8	1134.4	0.94		12	1.33	1	0.80	1.2	1.15	16.91	55%			1.00	1	
5	18.5	2	17	SPT	2228.8	1446.9	0.92		20	1.18	1	0.80	1.2	1.15	25.46	55%			1.00	1	
6	23.5	2	12	SPT	2828.8	1734.4	0.89		14	1.07	1	0.80	1.2	1.15	16.42	55%			1.00	1	
7	28.5	2	16	SPT	3453.8	2046.9	0.85		18	0.99	1	0.80	1.2	1.15	20.15	55%			0.99	1	
8	33.5	2	10	SPT	4053.8	2334.4	0.81		12	0.93	1	0.80	1.2	1.15	11.79	55%			0.95	1	
9	38.5	2	9	SPT	4653.8	2621.9	0.76		10	0.87	1	0.80	1.2	1.15	10.01	55%			0.92	1	
10	48.5	2	8	SPT	5853.8	3196.9	0.67		9	0.79	1	0.80	1.2	1.15	8.06	55%			0.87	1	
11	65.0	2	10	SPT	7833.8	4145.6	0.55		12	0.69	1	0.80	1.2	1.15	8.85	55%			0.80	1	
12	79.0	1	50	SPT	9723.8	5160.6	0.50	0.37	58	0.62	1	0.80	1.2	1.15	39.65	15%	44.06		0.75	1	
13	89.0	2	73	SPT	10973.8	5785.6	0.48		84	0.59	1	0.80	1.2	1.15	54.67	55%			0.73	1	
14	94.0	1	34	SPT	11623.8	6123.1	0.48	0.35	39	0.57	1	0.80	1.2	1.15	24.75	15%	28.44	0.39	0.71	1	1.13
15	101.5	2	36	SPT	12598.8	6629.4	0.47		42	0.55	1	0.80	1.2	1.15	25.19	55%			0.70	1	

LIQUEFACTION POTENTIAL ANALYSIS

PROJECT NAME ***Retaining Walls at E80-E12/E80 On-Ramp Separation***
PROJECT NO. ***208123.RET***
BORING NO. ***R-09-CN-004***

BOREHOLE DIA (in)= 8
GW DEPTH (ft)= 9.5

SOIL GROUPS
1. GRAVELS, SANDS AND NONPLASTIC SILTS
2. CLAYS AND PLASTIC SILTS

HAMMER TYPE (1/2) = 2
(1. ROPE AND PULLEY; 2. AUTOMATIC)

FAULT INFO
CORDELIA FAULT
a_{max} (g)= 0.6
FAULT M_w = 6.5

MSF = 1.44
(Min. FS = 1.1 based on SPT)
*F.S.=($CRR_{6.5}$/CSR)*MSF*Kσ*Kα*

					CYCLIC STRESS RATIO (CSR)				*LIQUEFACTION RESISTANCE ($CRR_{6.5}$)*													
Sample No	Depth (ft)	Soil Type	Blow Count	Sampler Type	σ_v (psf)	σ_v' (psf)	γ_d	CSR	SPT-N_{60}	C_N	C_E	C_R	C_S	C_B	$(N_1)_{60}$	F.C.	$(N_1)_{60,cs}$	$CRR_{6.5}$	Kσ	Kα	F.S.
1	5.0	2	15	SPT	625.0	625.0	0.98		17	1.79	1	0.75	1.2	1.00	27.86	55%			1.00	1	
2	9.5	2	15	SPT	1187.5	1187.5	0.96		17	1.30	1	0.75	1.2	1.00	20.22	55%			1.00	1	
3	19.5	2	6	SPT	2388.7	1763.1	0.91		7	1.07	1	0.85	1.2	1.15	8.65	55%			1.00	1	
4	24.5	2	23	SPT	3013.7	2075.6	0.88		27	0.98	1	0.80	1.2	1.15	28.76	55%			0.99	1	
5	29.5	2	8	SPT	3613.7	2363.1	0.84		9	0.92	1	0.80	1.2	1.15	9.38	55%			0.95	1	
6	40.0	2	32	SPT	4978.7	3071.8	0.75		37	0.81	1	0.80	1.2	1.15	32.89	55%			0.88	1	
7	44.0	2	8	SPT	5458.7	3301.8	0.71		9	0.78	1	0.80	1.2	1.15	7.93	55%			0.86	1	
8	57.0	1	13	SPT	7083.7	4114.3	0.60	0.40	15	0.70	1	0.80	1.2	1.15	11.55	15%	14.60	0.16	0.81	1	0.45 <- LIQ!!
9	97.0	2	24	SPT	12083.7	6614.3	0.47		28	0.55	1	0.80	1.2	1.15	16.81	55%			0.70	1	
10	101.5	1	56	SPT	12668.7	6918.1	0.47	0.33	65	0.54	1	0.80	1.2	1.15	38.36	15%	42.70		0.69	1	

Evaluation of Post-liquefaction Settlement at Retaining Walls at EB0-E12/EB0 On-Ramp Separation

Boring R-09-CN-004

Based on the result of the liquefaction potential analysis

Sample No. B $(N_1)_{60cs}$ = 14.8 CSR = 0.40

Volumetric strain = 0.0%

Post-liquefaction settlement = 0.02 x 18 x 12

= 3.12 inches say 3.1 inches

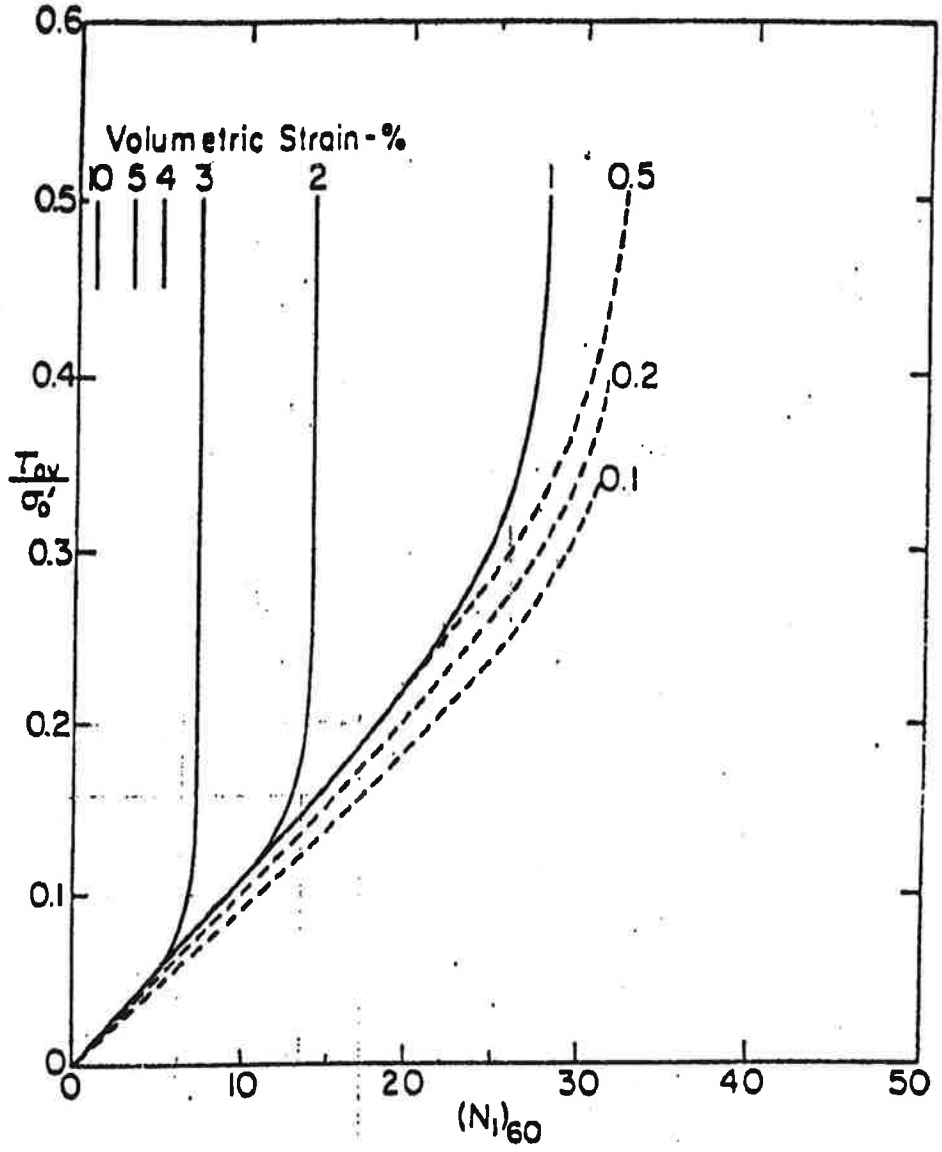


Figure A-2: Proposed Relationship Between Cyclic Stress Ratio $(N_1)_{60}$ and Volumetric Strain (ε_v) for Saturated Clean Sands for M = 7.5 Earthquakes. (Tokimatsu and Seed, 1984)

$$MSF = \frac{10^{2.24}}{M_w^{2.56}}$$

Bearing Capacity Analyses

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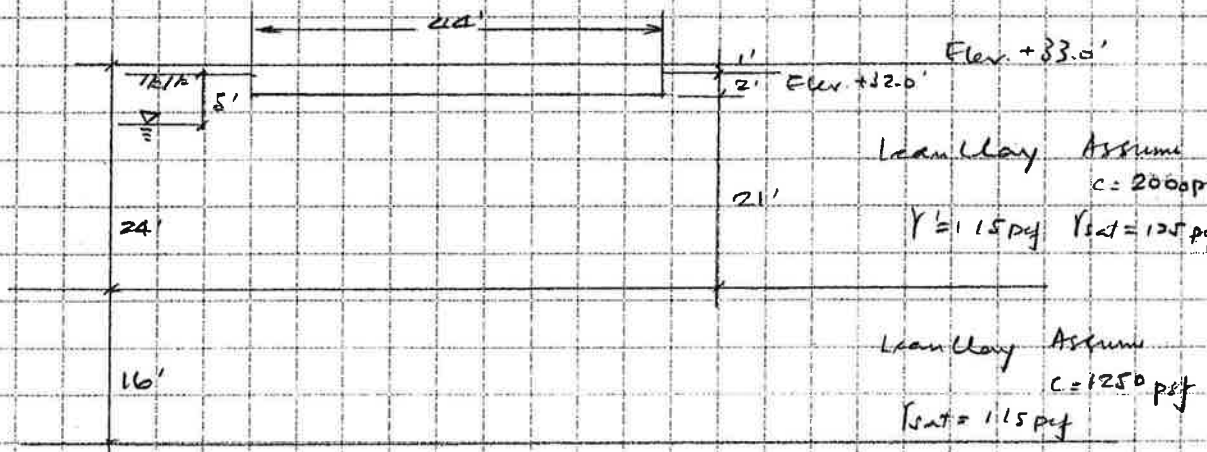
JOB Cordelia Truck Scales Relocation Project 2008.23.001
SHEET NO ____ OF ____
CALCULATED BY Alam DATE 7/13/2009
CHECKED BY ____ DATE ____
SCALE ____

Bearing Capacity Analysis - MSE Wall No. 1 (Boring R-09-CN-001)



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JOB Cordelia Truck Scales Relocation Project 20B128.01
SHEET NO OF
CALCULATED BY A Lam DATE 11/17/2009
CHECKED BY DATE
SCALE

Bearing Capacity Analyses - MSE Wall No. 1 (Boring R-09-CH-0001) Maximum Wall Height = 23.7 feet

Assume D = 2', T = 21', B = 30'

$C_2/C_1 = 1250/20000 = 0.063$

$T/B = 21/30 = 0.7$

$N_c = 4.7$

$D/B = 2/30 = 0.07$

$N_{co}/N_c = 1.02$ $N_{cD} = 4.7 \times 1.02 = 4.8$

$Q_{ult} = 4.8 \times 2000 + 2 \times 115$

$= 9830$ psf

$Q_{all} = \frac{9830}{2.5}$ Assume F.S. = 2.5 for MSE wall

$= 3932$ psf Say 370 ksf

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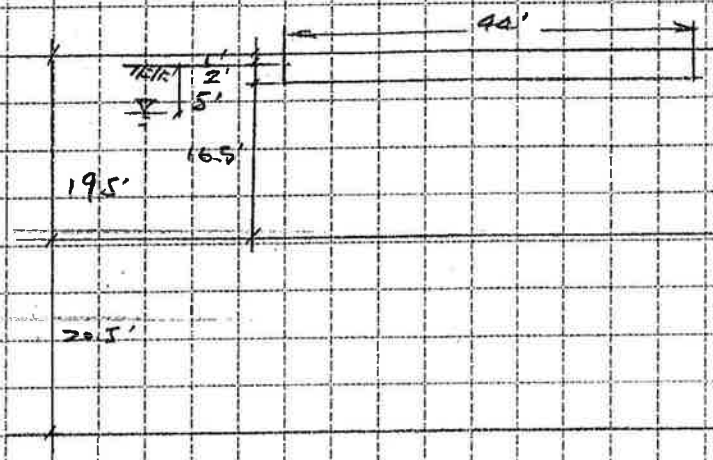
JOB Cordelia Tunnel Seismic Relocation Project 20823.60R
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 11/17/2009
CHECKED BY ____ DATE ____
SCALE ____

Bearing Capacity Analysis: MSE Wall Nos. 1 and 2 (Boring R-09-CN-0021)



Lean Clay Avg SPT N=14
Assume c = 175 psf
γ' = 115 pcf γ_wet = 125 pcf

Lean Clay Avg SPT N=12
Assume c = 1500 psf

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JOB Cordelia Truck Scales Relocation Project 20813.401
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 11/17/09
CHECKED BY ____ DATE ____
SCALE ____

Bearing Capacity Analysis: MSE Wall Nos 1 & 2 (Boring R-09-CN-002)
RW No 1 (Maximum height = 23.7 feet)
RW No 21 Maximum height = 18.6 feet

Assume D = 2' T = 16.5' B = 30'

$C_2/C_1 = 1500/1750 = 0.86$

$T/B = 16.5/30 = 0.55$

$N_c = 5.2$

$D/B = 2/30 = 0.07$

$N_{cD}/N_c = 1.02$ $N_{cD} = 5.2 \times 1.02 = 5.3$

$Q_{ult} = 5.3 \times 1750 \times 2 \times 1.15$

$= 9505$ psf

$Q_{all} = \frac{9505}{2.5}$

$= 3802$ psf say 3.50 ksf

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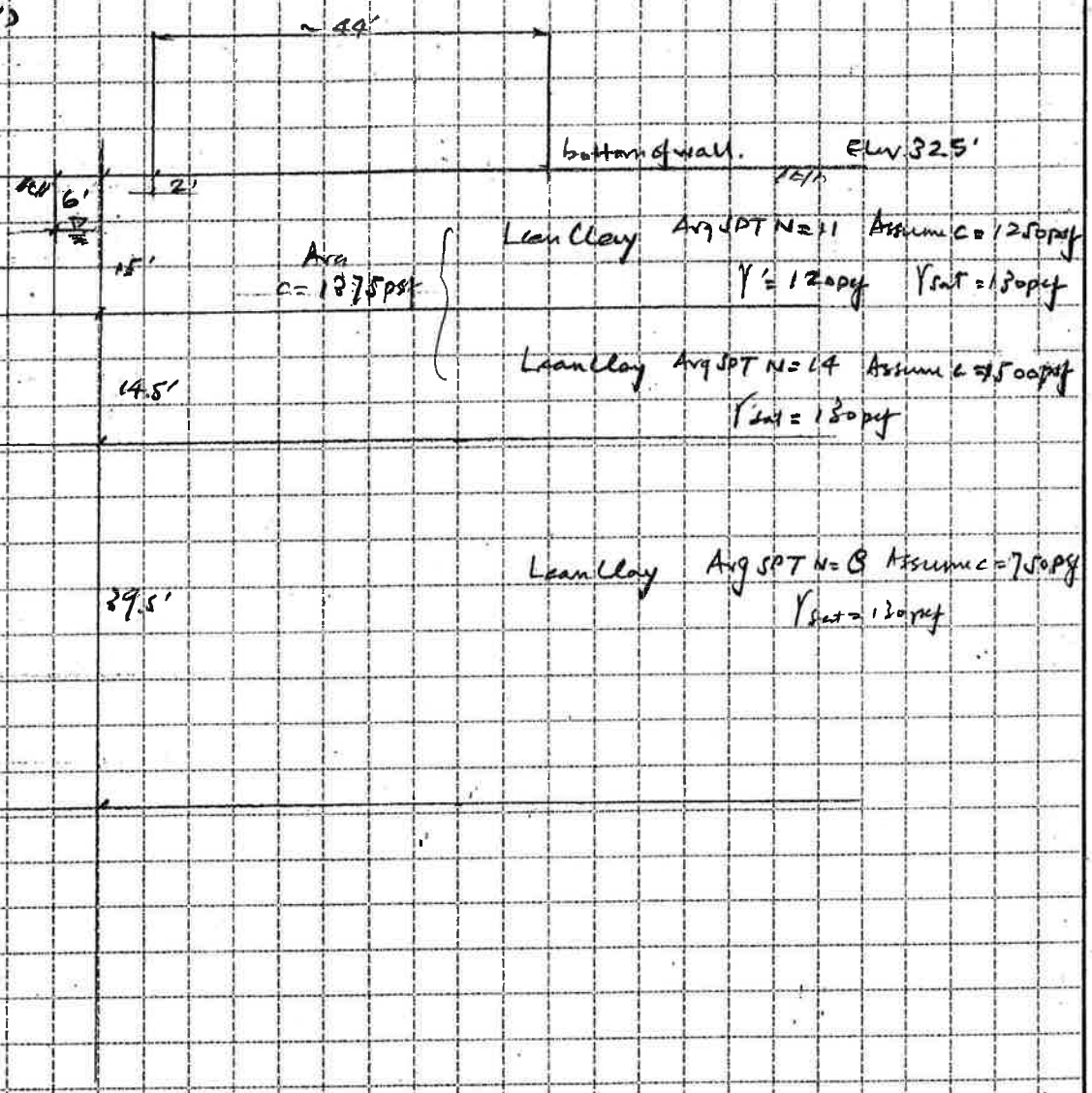
JOB Cordelia Truck Scales Relocation Project 20023.60R
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 11/17/2009
CHECKED BY ____ DATE ____
SCALE ____

Bearing Capacity Analysis: MSE Wall Nos 2 & 3 (Boring B-09-CN-003)

Wall No. 2
(Max height = 38.6')



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JOB Cordelia Truck Scales Relocation Project 20823.001
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 11/17/2009
CHECKED BY ____ DATE ____
SCALE ____

Bearing Capacity Analysis - MSE Wall No. 2: Maximum Wall Height = 18.6 feet

Assume D = 2', T = 27.5' B = 30'

$C_u/\gamma_1 = \frac{750}{1875} = 0.55$

$T/B = 27.5/30 = 0.92$

$N_c = 5.1$

$\frac{D'}{B} = \frac{2}{30} = 0.07$

$\frac{N_{cD}}{N_c} = 1.02$ $N_{cD} = 1.02 \times 5.1 = 5.2$

For continuous footing $Q_{ult} = C_1 N_{cD} + \gamma D$

$= 5.2 \times 1875 + 2 \times 120$

$= 7890$ psf

Assume factor of safety of 2.5 for MSE wall

$Q_{all} = \frac{7890}{2.5}$

$= 2956$ psf say 3.0 ksf

Foundation Pressure = 2.8 ksf

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JOB Cordelia Truck Scales Relocation Project R0223.6 D
SHEET NO OF
CALCULATED BY A Lam DATE 11/17/2009
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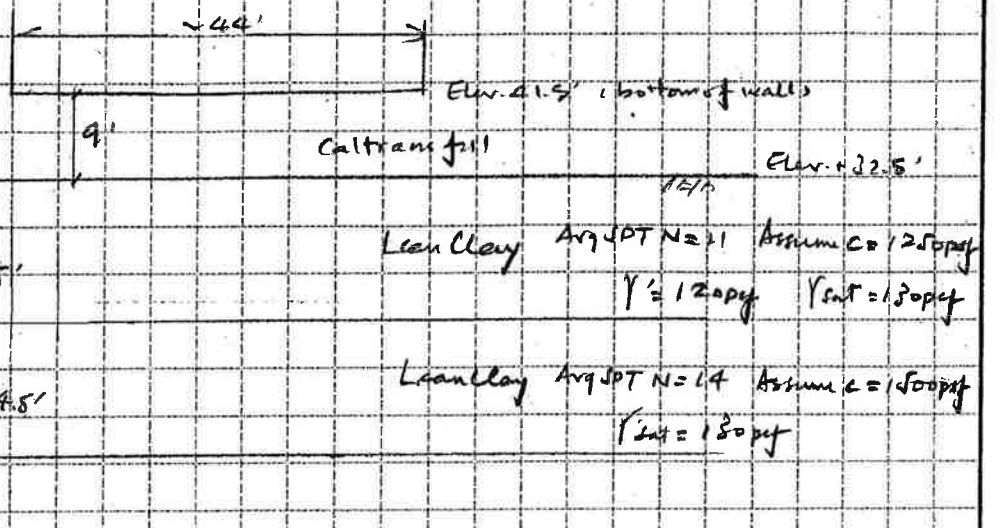
SCALE

Bearing Capacity Analysis MSE Wall Nos 2 & 3 (Boring R-09-CN-003)

Wall No. 3
(Max height = 17.9')



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JOB Cordelia Truck Scales Relocation Project 20B123 601
SHEET NO OF
CALCULATED BY A Lam DATE 11/17/2009
CHECKED BY DATE
SCALE

Bearing Capacity Analysis - MSE Wall No. 3 Maximum height = 17.9 feet

Assume D = 2', T = 36.5' B = 30'

$C/C_1 = \frac{750}{1875} = 0.59$

$T/B = 365/30 = 1.20$

$N_{c0} = 5.5$

$\frac{D}{B} = \frac{2}{30} = 0.07$

$\frac{N_{cD}}{N_c} = 1.02$ $N_{cD} = 5.5 \times 1.02$

$= 5.6$

For continuous footing $Q_{ult} = qN_{cD} + \gamma D$

$= 5.6 \times 1375 + 2 \times 120$

$= 7940$ psf

Assume factor of safety of 2.5 for MSE Wall

$Q_{all} = \frac{7940}{2.5}$

$= 3176$ psf say 3.1 ksf

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JOB Cordelia Truck Scales Relocation Project 858.128.60R
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 11/17/2009
CHECKED BY ____ DATE ____
SCALE ____

Bearing Capacity Analysis - MSE Wall No.4 (GPT-09-CN-001) Maximum height = 28.4 feet

Lean Clay
Assume c = 1800 psf
$\gamma' = 115$ psf $\gamma_{sat} = 125$ psf

Lean Clay
Assume c = 3500 psf

40'

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JOB Cordelia Truck Scales Relocation Project 20813.01
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 11/17/2009
CHECKED BY ____ DATE ____
SCALE ____

Bearing Capacity Analysis - MSE Wall No. 4

Assume D = 2', T = 31.5', B = 20'

$C_2/C_1 = \frac{3800}{1800} = 2.0$

$T/B = 31.5/20 = 1.05$

$N_c = 5.53$

$\frac{D}{B} = \frac{2}{20} = 0.07$

$\frac{N_{cD}}{N_c} = 1.02 \quad N_{cD} = 5.6$

$Q_{ult} = N_{cD} \times C_1 + \gamma D$

$= 5.63 \times 1800 + 115 \times 2$

$= 10310$ psf

$Q_{all} = \frac{10310}{2.5}$

$= 4124$ psf Say 4.1 ksf

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JOB Cordelia Truck Scales Relocation Project 20823.001
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 7/2009
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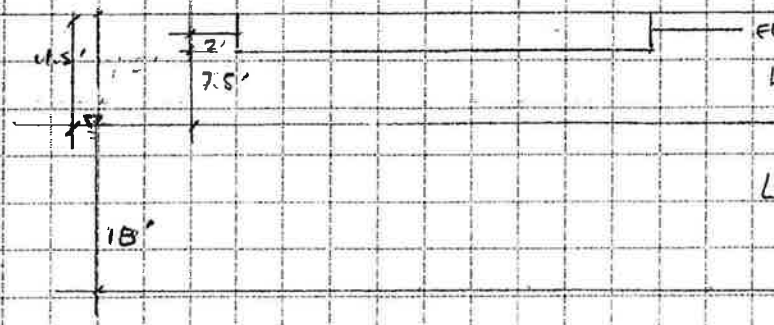
SCALE ____

Bearing Capacity Analysis - MSE Wall No. 4 (R-09-EN-0043) Maximum height = 26.1 feet



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JOB Cordelia Truck Scales Relocation Project 20813.60R
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 7/14/09
CHECKED BY ____ DATE ____
SCALE ____

Bearing Capacity Analysis - MSE Wall No. 4 (R-09-CN-004)

Assume D = 2', T = 55', B = 26'

$C_2/C_1 = 1000/1800 = 0.56$

$T/B = 7.5/30 = 0.25$

$N_c = 3.7$

$D/B = 2/26 = 0.08$

$N_{cD}/N_c = 1.02$ $N_{cD} = 1.02 \times 3.7 = 3.8$

$Q_{ult} = 3.8 \times 1800 + 2 \times 115$

$= 7070$ psf

$Q_{all} = \frac{7070}{2.5}$

$= 2828$ psf say 2.9 ksf

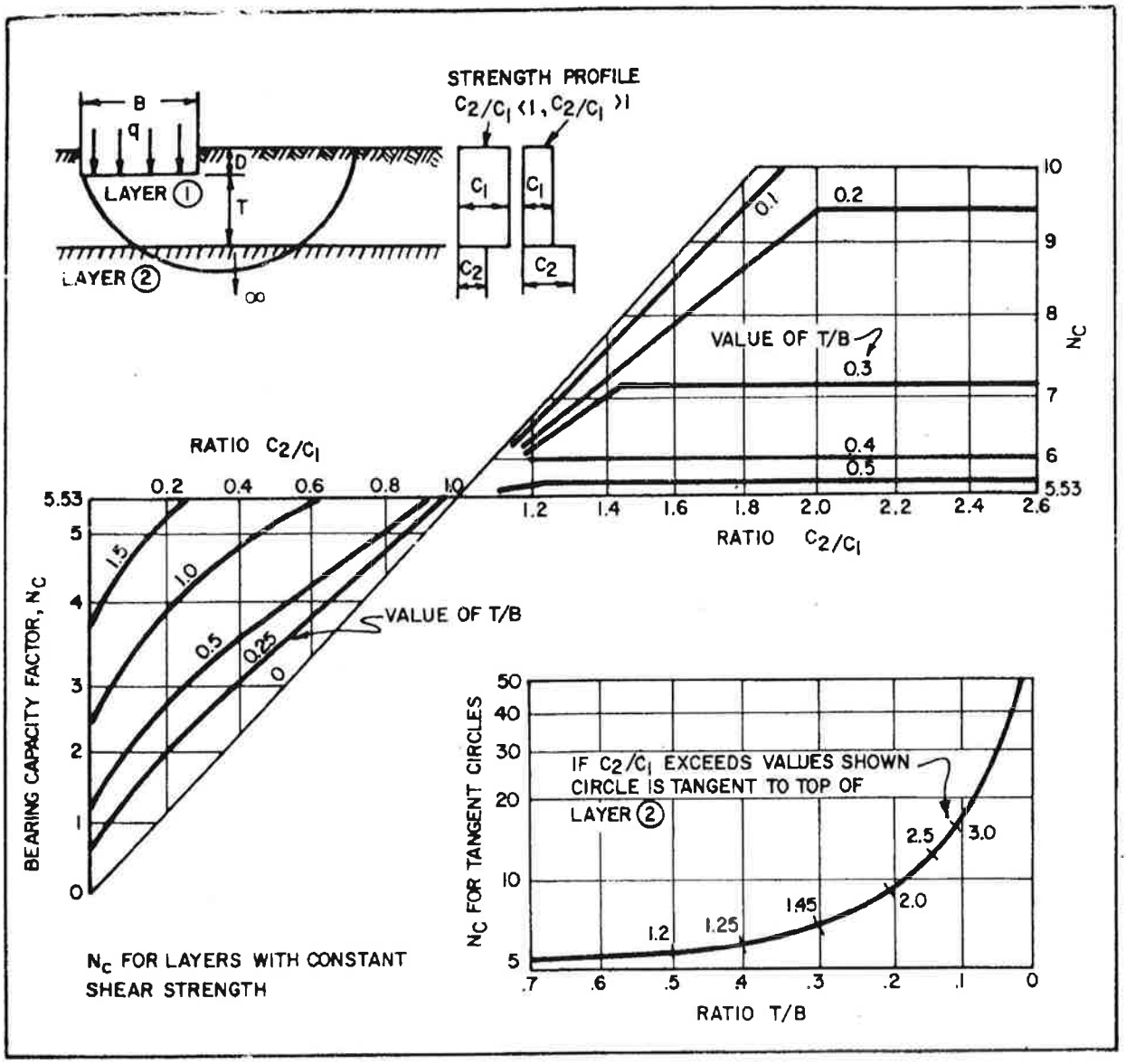
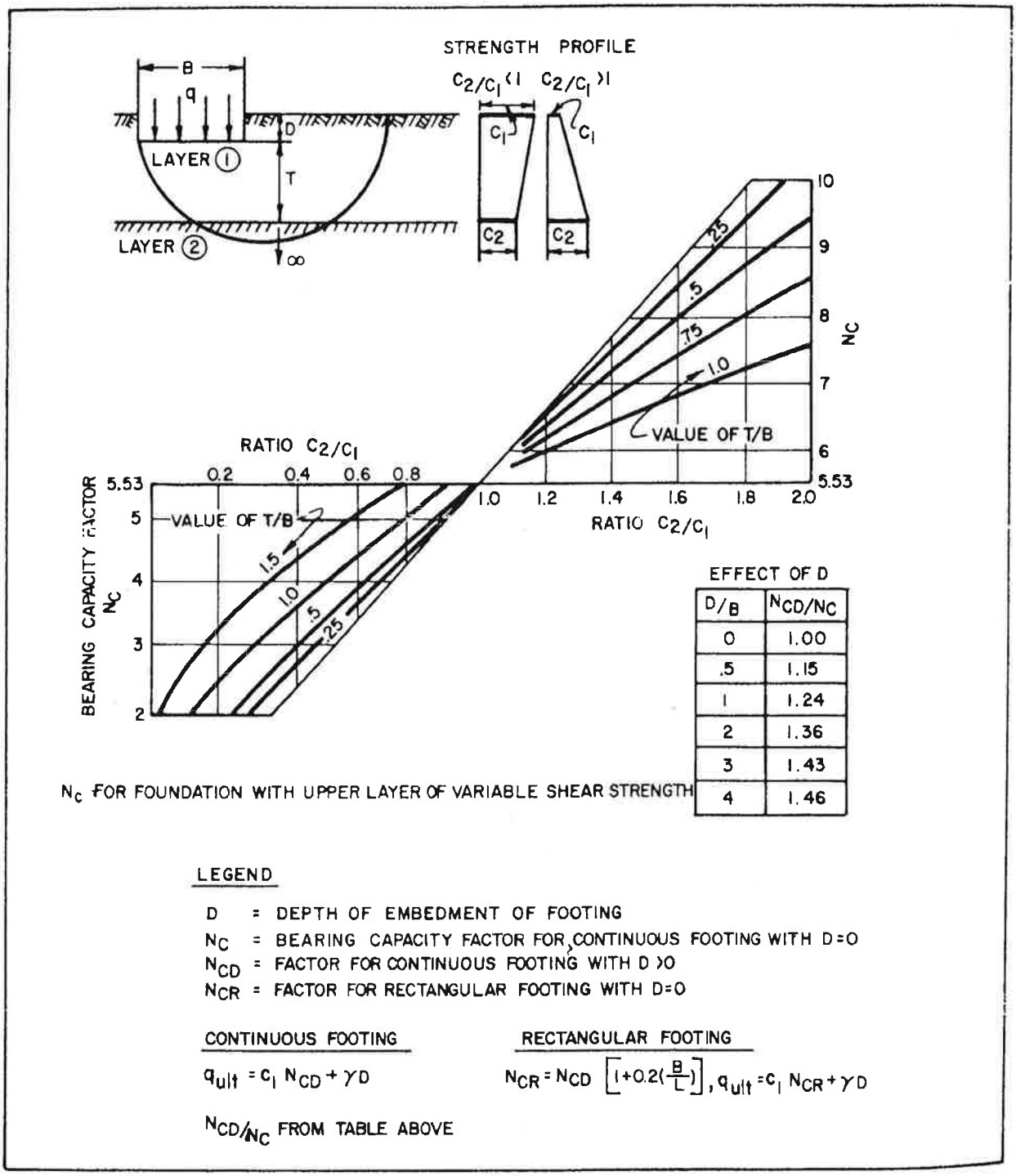


FIGURE 5
Ultimate Bearing Capacity of Two Layer Cohesive Soil (Ø=0)



D/B	N_{CD}/N_C
0	1.00
.5	1.15
1	1.24
2	1.36
3	1.43
4	1.46

LEGEND

D = DEPTH OF EMBEDMENT OF FOOTING
N_C = BEARING CAPACITY FACTOR FOR CONTINUOUS FOOTING WITH D=0
N_{CD} = FACTOR FOR CONTINUOUS FOOTING WITH D>0
N_{CR} = FACTOR FOR RECTANGULAR FOOTING WITH D=0

CONTINUOUS FOOTING

$q_{ult} = c_1 N_{CD} + \gamma D$

N_{CD}/N_C FROM TABLE ABOVE

RECTANGULAR FOOTING

$N_{CR} = N_{CD}\left[1+0.2\left(\frac{B}{L}\right)\right]$, $q_{ult} = c_1 N_{CR} + \gamma D$

FIGURE 5 (continued)
Ultimate Bearing Capacity of Two Layer Cohesive Soil (Ø=0)

Pile Capacity Calculations/Lateral Pile Capacity Analyses

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JOB Cordelia Truck Scales Relocation Project 20022.GDR
SHEET NO 1 OF
CALCULATED BY A Lam DATE 7/22/09
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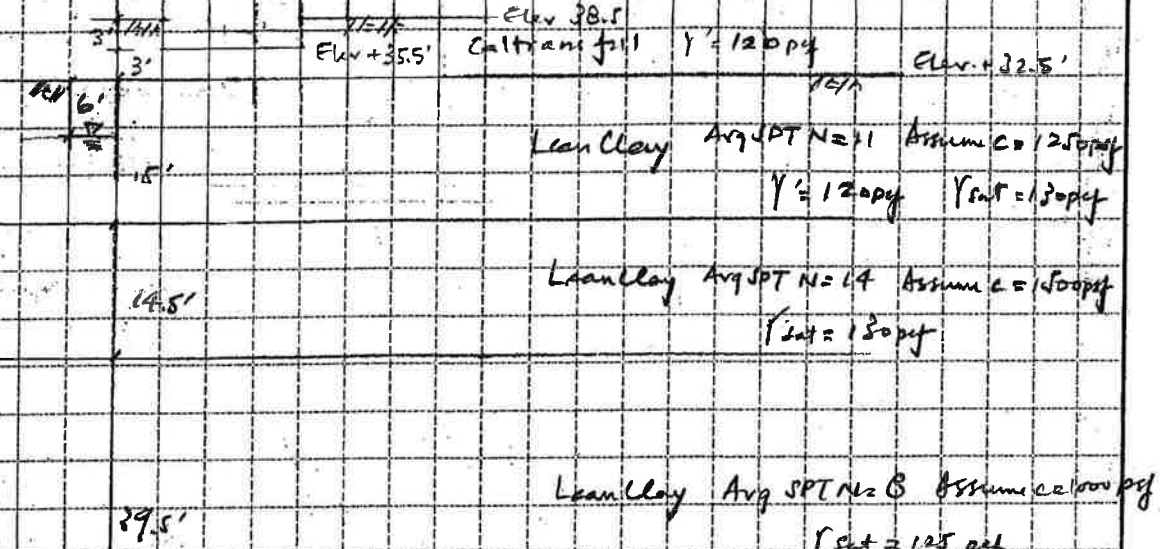
Pile Capacity Analysis - Retaining Wall RW2 (Boring B-09-GN-003) 14" ø PCY PS pile Service Load 45 tons



(TEMPLATE)

DRIVEN PILE CAPACITY - ***Cordelia Truck Scales Relocation*** ***Retaining Wall No. 2*** **ALLOWABLE FRICTIONAL PILE CAPACTY** 11/23/09

Design per FHWA Manual — GROUPS — INCREAMENTS — 208123.RET

PILE DIA, B (ft) = 1.17 — 1- GRAVELS, SANDS (FT)= 5 — F.S. FOR COMPRESSION = 1

PILE SHAPE = 2 — AND NONPLASTIC SILTS

(1=CIRCLE, 2=SQ., 3=OCT.) — 2- CLAYS AND PLASTIC SILTS — F.S. FOR UPLIFT = 1

PILE MATERIAL = 2 — SOIL TYPES

(1=CONCRETE ,2=STEEL) — GRAVEL, SAND, NSILT Ref: R-09-CN-003 (Parikh 2009) — PERIMETER OF THE PILE (ft) = 4.50 SQ. FT.

DRIVEN/DRILLED = 1 — CLAY, PSILT — AREA OF THE PILE TIP 1.35 SQ. FT.

(1=DRIVEN ,2=DRILLED)

Class 140 Alt. "X" - 14" square precast prestressed c

DEPTH FROM	TO	SOIL GROUP	EFFECTIVE UNIT WEIGHT(pcf)	WEIGHT OF LAYER (psf)	EFFECTIVE OVERBURDEN PRESSURE (psf)	SOIL TYPE	CONSISTENCY	SHEAR STRENGTH PARAMETERS c(psf)	SHEAR STRENGTH PARAMETERS ϕ (°)	FHWA Manual (Tomlinson, 1980) α	PER SECTION COMP. (Ton)	ULTIMATE COMPRESSION CAPACITY (Ton)	PER SECTION UPLIFT (Ton)	ULTIMATE UPLIFT CAPACITY (Ton)
0.0	3.0 BT2 FTG	1	120	360	180	SAND	V. DENSE	0	41	0.00	0.00	0.00	0.00	0.00
3.0	6.0	1	120	360	540	SAND	V. DENSE	0	40	0.00	0.00	0.00	0.00	0.00
6.0	9.0	2	120	360	900	CLAY	STIFF	1250	0	0.85	7.17	7.17	7.17	7.17
9.0	12.0	2	120	360	1260	CLAY	STIFF	1250	0	0.85	7.17	14.34	7.17	14.34
12.0	15.0	2	68	204	1542	CLAY	STIFF	1250	0	0.85	7.17	21.52	7.17	21.52
15.0	18.0	2	68	204	1746	CLAY	STIFF	1250	0	0.85	7.17	28.69	7.17	28.69
18.0	21.0	2	68	204	1746	CLAY	STIFF	1250	0	0.85	7.17	35.86	7.17	35.86
21.0	26.0	2	68	340	2222	CLAY	STIFF	1500	0	0.55	9.28	45.14	9.28	45.14
26.0	31.0	2	68	340	2562	CLAY	STIFF	1500	0	0.55	9.28	54.42	9.28	54.42
31.0	35.5	2	68	306	2885	CLAY	STIFF	1500	0	0.55	8.35	62.78	9.11	63.53
35.5	40.0	2	63	283.5	2874	CLAY	MEDIUM	1000	0	0.90	9.11	71.89	9.11	72.65
40.0	45.0	2	63	315	3479	CLAY	MEDIUM	1000	0	0.90	10.13	82.01	10.13	82.77
45.0	52.0	2	63	441	3857	CLAY	MEDIUM	1000	0	0.90	14.18	96.19	14.18	96.95
52.0	55.0	2	63	189	4172	CLAY	MEDIUM	1000	0	0.90	6.08	102.26	6.08	103.02
55.0	60.0	2	63	315	4424	CLAY	MEDIUM	1000	0	0.90	10.13	112.39	18.00	121.02
60.0	65.0	2	63	315	3794	CLAY	MEDIUM	1000	0	0.90	10.13	122.51	10.13	131.15
65.0	70.0	2	63	315	4235	CLAY	MEDIUM	1000	0	0.90	10.13	132.64	10.13	141.27
70.0	75.0	2	63	315	5054	CLAY	MEDIUM	1000	0	0.90	10.13	142.76	10.13	151.40

Wall RW2

Assume pre-drill through the exsiting Caltrans fill to Elev. +32.5 feet

Pile Length @ Retaining Wall RW2 = 52.0' - 3.0' = 49 '

Adopt pile tip at 49' below bootom of pile footing (pile tip @ Elev. -13.5', pile cut-off elev @ Elev. 35.5'), available Ult. Pile Capacity = 96.2 tons > Nominal Resistance (180k/90 tons), OK

S:\Ongoing Projects\2008\20812310\Cordelia Truck Scales Retaining Wall No. 2

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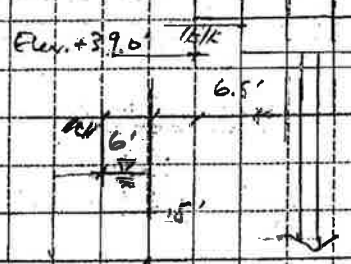
JOB Cordelia Truck Scales Relocation Project R0823.60R
SHEET NO 1 OF
CALCULATED BY A Lam DATE 7/22/09
CHECKED BY DATE
SCALE

Pile Capacity Analysis - Retaining Wall RW3 (Boring B-09-GW-003) 14" ⌀
PC/PS pile Single Load 45 tons



Lean Clay Avg SPT N=11 Assume c = 1250 psf
γ' = 120 pcf γsat = 130 pcf

Lean Clay Avg SPT N=14 Assume c = 1500 psf
γsat = 130 pcf

Lean Clay Avg SPT N=8 Assume c = 1000 psf
γsat = 125 pcf

(TEMPLATE)

DRIVEN PILE CAPACITY - ***Cordelia Truck Scales Relocation*** ***Retaining Wall No. 3*** **ALLOWABLE FRICTIONAL PILE CAPACTY** 11/23/09

Design per FHWA Manual GROUPS INCREAMENTS 208123.RET

PILE DIA, B (ft) = 1.17 1- GRAVELS, SANDS (FT)= 5 F.S. FOR COMPRESSION = 1

PILE SHAPE = 2 AND NONPLASTIC SILTS

(1=CIRCLE, 2=SQ., 3=OCT.) 2- CLAYS AND PLASTIC SILTS F.S. FOR UPLIFT = 1

PILE MATERIAL = 2 SOIL TYPES

(1=CONCRETE ,2=STEEL) GRAVEL, SAND, NSILT Ref: R-09-CN-003 (Parikh 2009) PERIMETER OF THE PILE (ft) : 4.50 SQ. FT.

DRIVEN/DRILLED = 1 CLAY, PSILT AREA OF THE PILE TIP 1.35 SQ. FT.

(1=DRIVEN ,2=DRILLED)

Class 140 Alt. "X" - 14" square precast prestressed c

DEPTH FROM	TO	SOIL GROUP	EFFECTIVE UNIT WEIGHT(pcf)	WEIGHT OF LAYER (psf)	EFFECTIVE OVERBURDEN PRESSURE (psf)	SOIL TYPE	CONSISTENCY	SHEAR STRENGTH PARAMETERS c(psf)	SHEAR STRENGTH PARAMETERS ϕ (°)	FHWA Manual (Tomlinson, 1980) α	PER SECTION COMP. (Ton)	ULTIMATE COMPRESSION CAPACITY (Ton)	PER SECTION UPLIFT (Ton)	ULTIMATE UPLIFT CAPACITY (Ton)
0.0	3.0 BT2 FTG	1	120	360	180	SAND	V. DENSE	0	41	0.00	0.00	0.00	0.00	0.00
3.0	6.5	1	120	420	570	SAND	V. DENSE	0	40	0.00	0.00	0.00	0.00	0.00
6.5	9.5	2	120	360	960	CLAY	STIFF	1250	0	0.85	0.00	0.00	0.00	0.00
9.5	15.5	2	120	720	1500	CLAY	STIFF	1250	0	0.85	14.34	14.34	14.34	14.34
15.5	20.0	2	68	306	2013	CLAY	STIFF	1250	0	0.85	10.76	25.10	10.76	25.10
20.0	24.5	2	68	306	2319	CLAY	STIFF	1250	0	0.85	10.76	35.86	8.35	33.45
24.5	29.0	2	68	306	2319	CLAY	STIFF	1500	0	0.55	8.35	44.21	8.35	41.81
29.0	34.0	2	68	340	2948	CLAY	STIFF	1500	0	0.55	9.28	53.49	9.28	51.09
34.0	39.0	2	68	340	3288	CLAY	STIFF	1500	0	0.55	9.28	62.78	9.28	60.37
39.0	43.5	2	63	283.5	3600	CLAY	MEDIUM	1000	0	0.90	9.11	71.89	9.11	69.48
43.5	48.5	2	63	315	3616	CLAY	MEDIUM	1000	0	0.90	10.13	82.01	10.13	79.61
48.5	55.5	2	63	441	4277	CLAY	MEDIUM	1000	0	0.90	14.18	96.19	14.18	93.78
55.5	58.5	2	63	189	4592	CLAY	MEDIUM	1000	0	0.90	6.08	102.26	6.08	99.86
58.5	63.5	2	63	315	4844	CLAY	MEDIUM	1000	0	0.90	10.13	112.39	9.00	108.86
63.5	68.5	2	63	315	5159	CLAY	MEDIUM	1000	0	0.90	10.13	122.51	18.00	126.86
68.5	73.5	2	63	315	4655	CLAY	MEDIUM	1000	0	0.90	10.13	132.64	10.13	136.98
73.5	78.5	2	63	315	4844	CLAY	MEDIUM	1000	0	0.90	10.13	142.76	9.00	145.98

Wall RW3 Assume pre-drill through the exsiting Caltrans fill to Elev. +32.5 feet

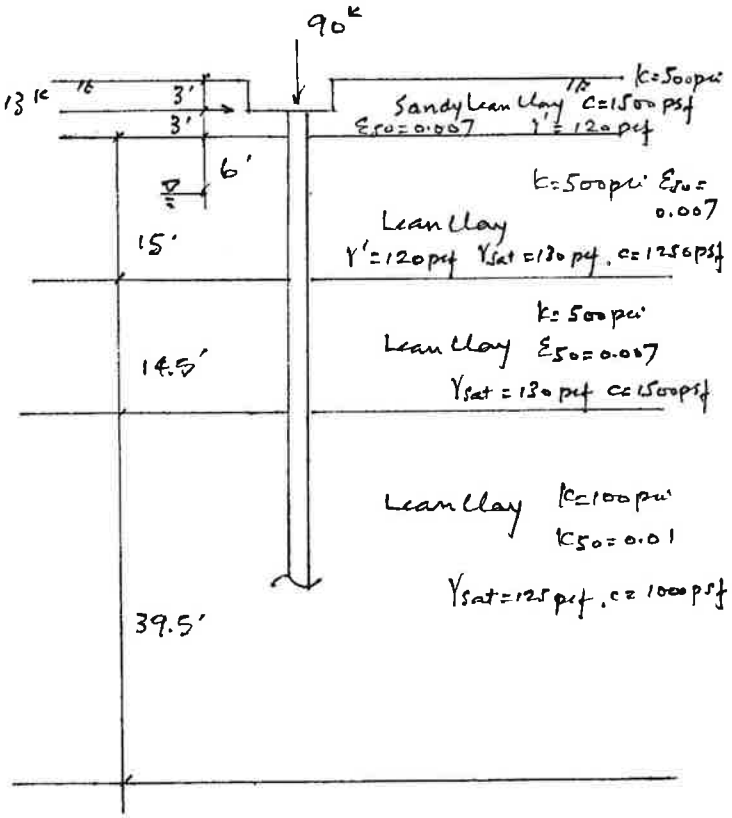
Pile Length @ Retaining Wall RW3 = 55.5' - 3.0' = 52.5 '

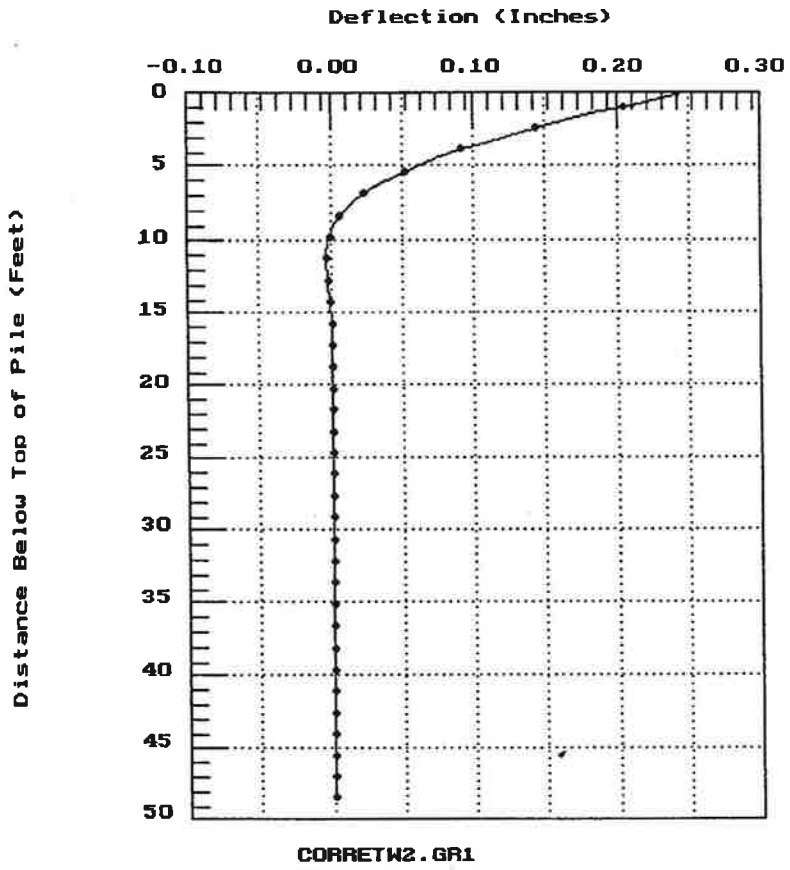
Adopt pile tip at 52.5' below bootom of pile footing (pile tip @ Elev. -13.5', pile cut-off elev @ Elev. 39.0'), available Ult. Pile Capacity = 96.2 tons > Nominal Resistance (180k/90 tons), OK

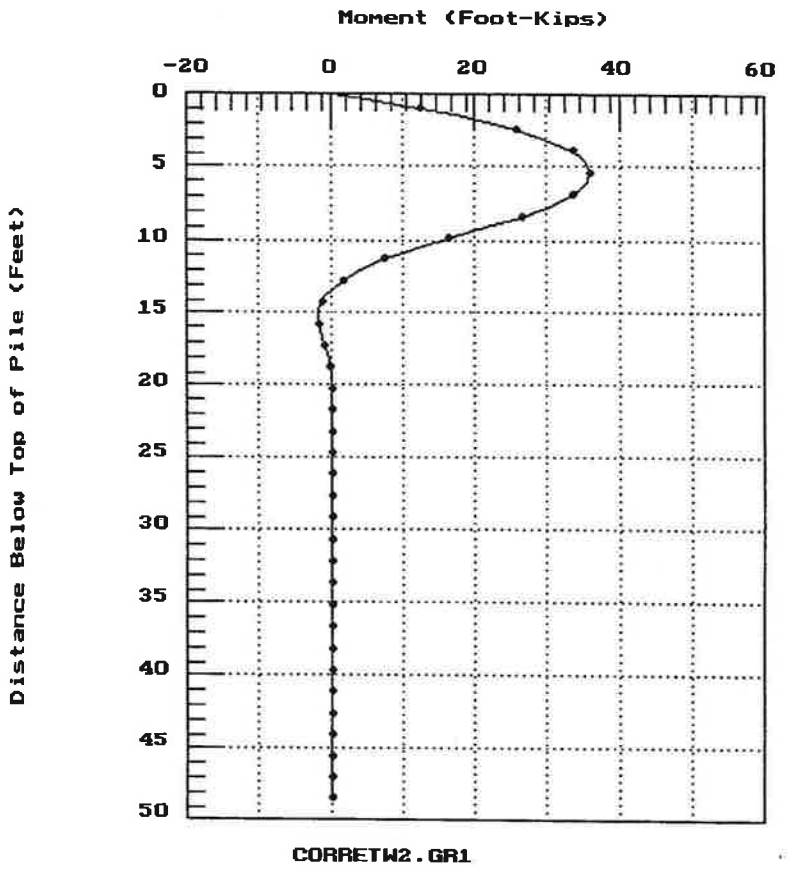
S:\Ongoing Projects\2008\20812310\Cordelia Truck Scales Retaining Wall No. 3

Corelia Retaining Wall No. 2 (R-09-CN-003) (14-inch Precast Concrete Pile)

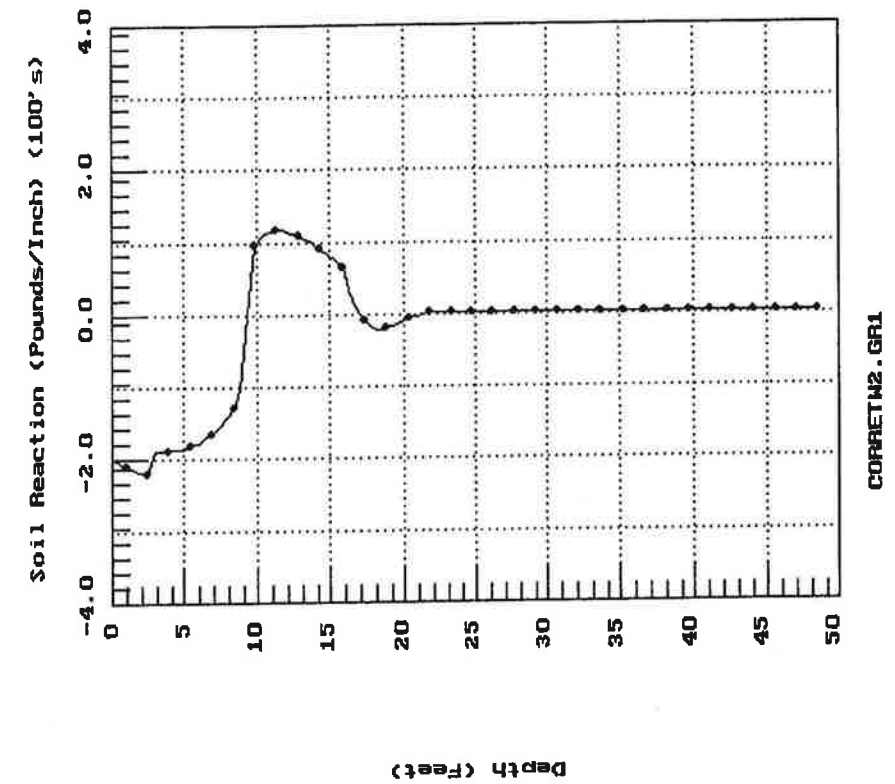
```
    1      1      0      0      0
   98      2    -36.0    588.0    0.0
    0.0    14.0         3112.00        194.00        3600000
  588.0    14.0         3112.00        194.00        3600000
    5     10        8      0      2
    3    -36.0    36.0      500.0  500.0
    3     36.0   108.0      500.0  500.0
    3    108.0   216.0      500.0  500.0
    3    216.0   390.0      500.0  500.0
    3    390.0   864.0      100.0  100.0
  -36.0     0.069
   36.0     0.069
   36.0     0.069
  108.0     0.069
  108.0     0.039
  216.0     0.039
  216.0     0.039
  390.0     0.039
  390.0     0.036
  864.0     0.036
  -36.0    10.42      0.0    0.007
   36.0    10.42      0.0    0.007
   36.0     8.68      0.0    0.007
  216.0     8.68      0.0    0.007
  216.0    10.42      0.0    0.007
  390.0    10.42      0.0    0.007
  390.0     6.94      0.0    0.01
  864.0     6.94      0.0    0.01
  -36.0    0.6   1
  864.0    0.6   1
    0      1     1
    1
    1    1.30D+04  0.0D+05  9.00D+04
    0
    1      1      0
  500    1.00D-5   2500.0
```

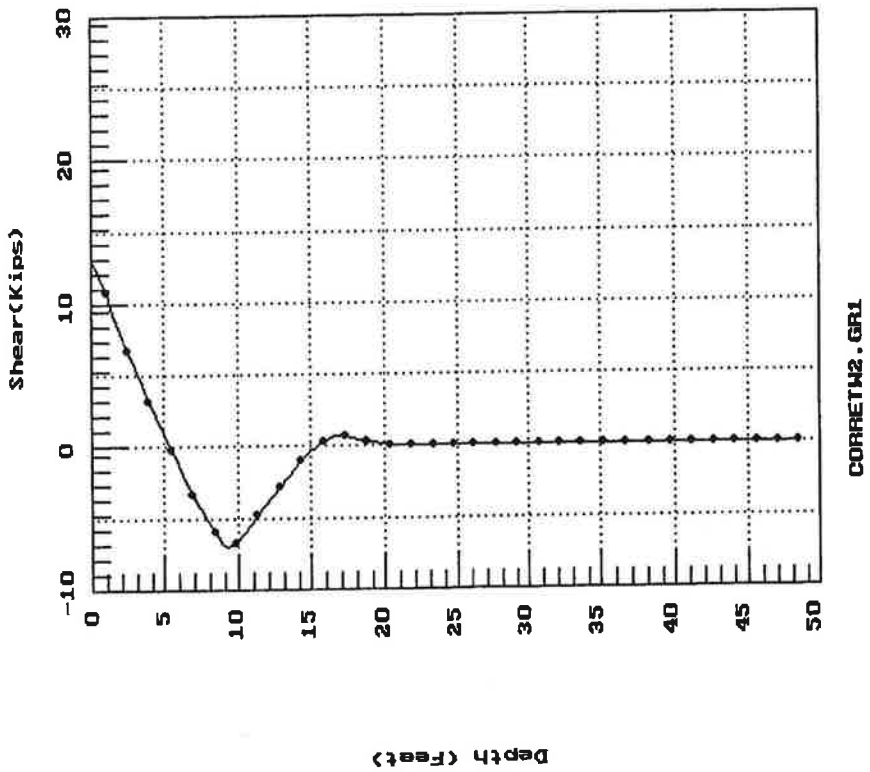






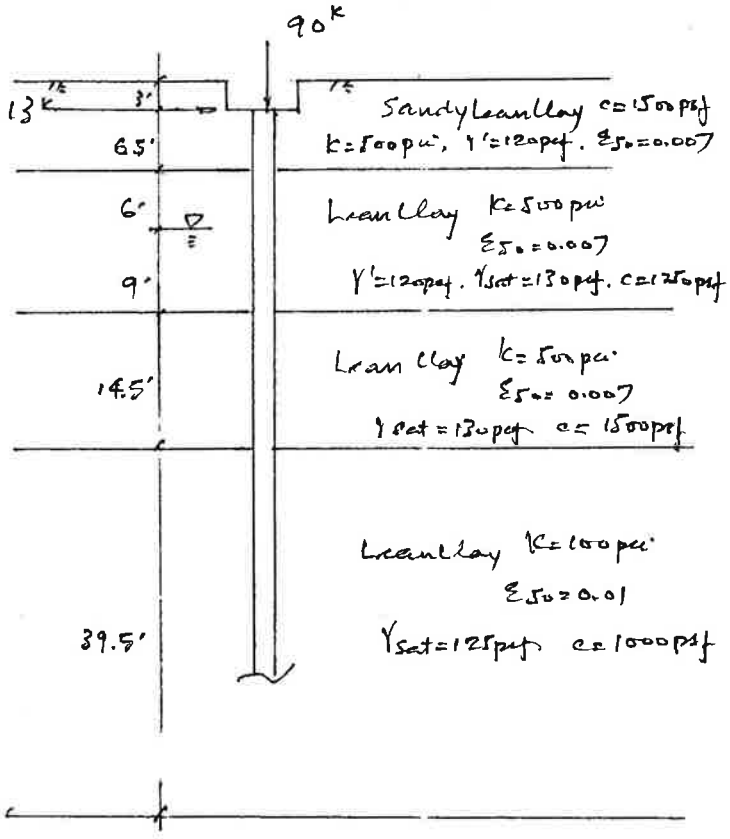
RETAINING WALL NO. 2. Free Head → . 13[K]

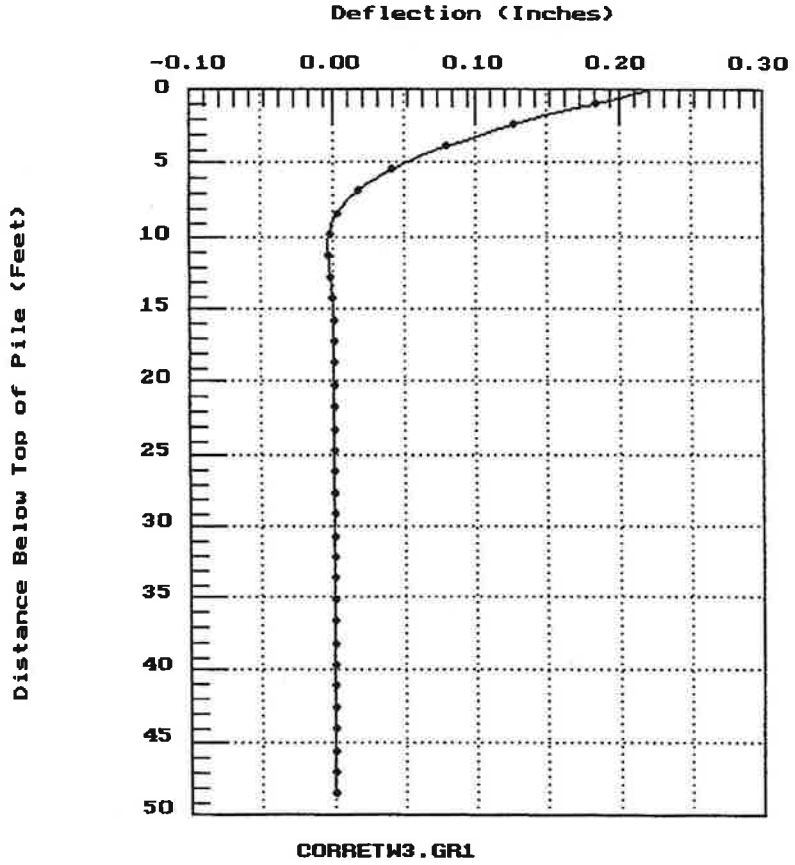

Soil Reaction (Pounds/Inch) (100's)
4.0
2.0
0.0
-2.0
-4.0
0
5
10
15
20
25
30
35
40
45
50
Depth (Feet)
CORRETW2.GR1

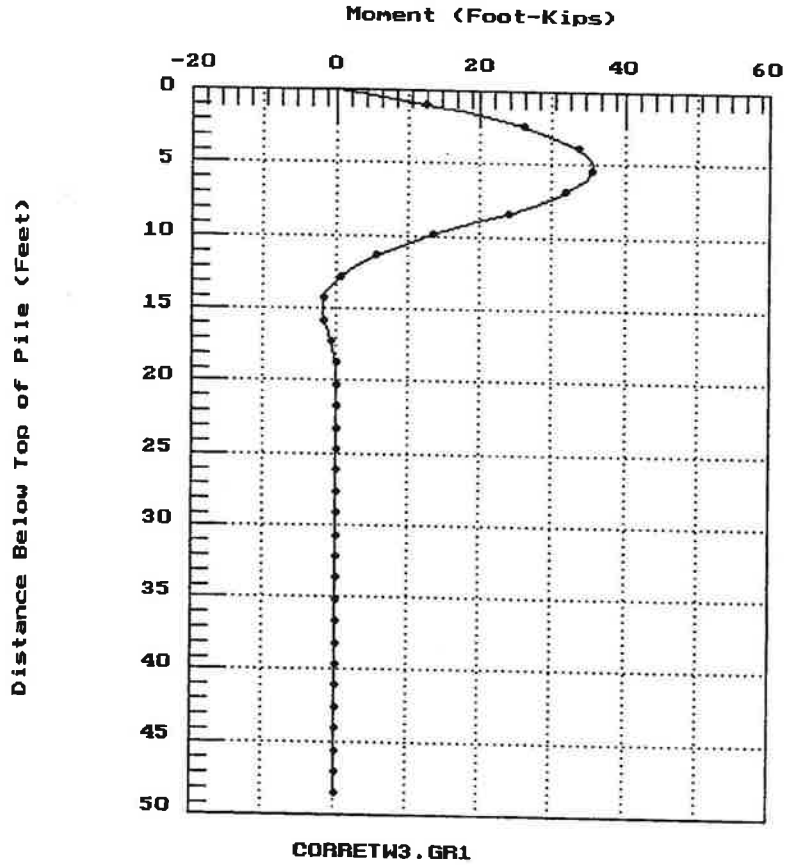

Shear(Kips)
30
20
10
0
-10
0
5
10
15
20
25
30
35
40
45
50
Depth (Feet)
CORRETW2.GR1

Corelia Retaining Wall No. 3 (R-09-CN-003) (14-inch Precast Concrete Pile)

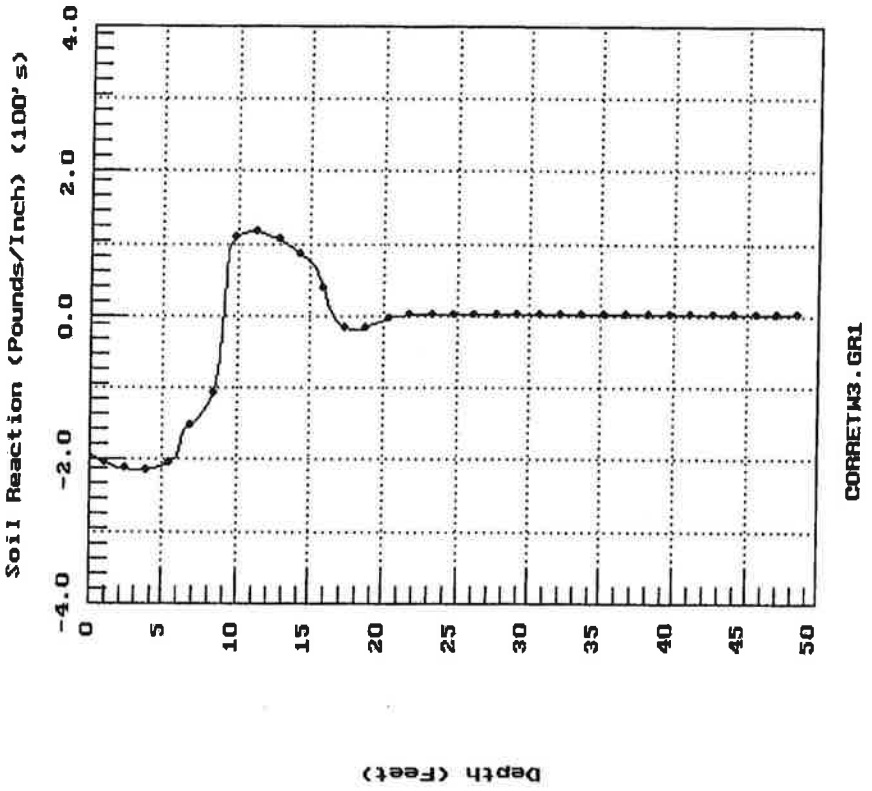
```
    1      1      0      0      0
   98      2    -36.0    588.0    0.0
    0.0    14.0         3112.00        194.00        3600000
  588.0    14.0         3112.00        194.00        3600000
    5     10      8      0      2
    3    -36.0   78.0     500.0  500.0
    3     78.0  150.0     500.0  500.0
    3    150.0  258.0     500.0  500.0
    3    258.0  432.0     500.0  500.0
    3    432.0  906.0     100.0  100.0
 -36.0     0.069
  78.0     0.069
  78.0     0.069
 150.0     0.069
 150.0     0.039
 258.0     0.039
 258.0     0.039
 432.0     0.039
 432.0     0.036
 906.0     0.036
 -36.0    10.42      0.0    0.007
  78.0    10.42      0.0    0.007
  78.0     8.68      0.0    0.007
 258.0     8.68      0.0    0.007
 258.0    10.42      0.0    0.007
 432.0    10.42      0.0    0.007
 432.0     6.94      0.0    0.01
 906.0     6.94      0.0    0.01
 -36.0    0.6   1
 906.0    0.6   1
   0      1     1
   1
   1    1.30D+04  0.0D+05  9.00D+04
   0
   1      1      0
 500    1.00D-5   2500.0
```

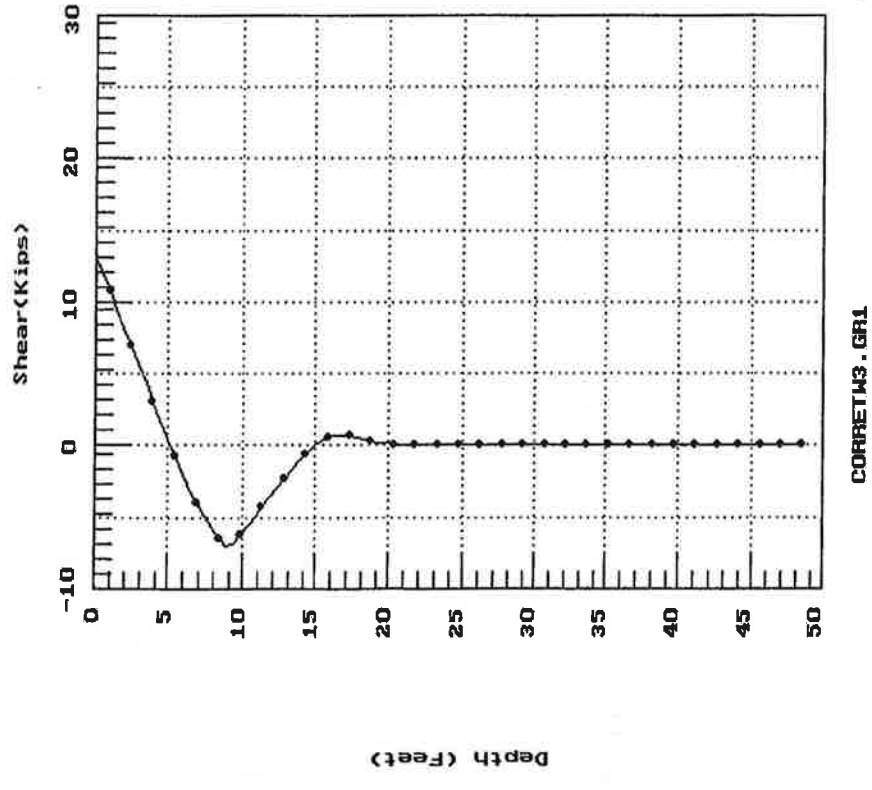






RETAINING WALL No. 3. FREE HEAD ⟶ .13^{k}


Soil Reaction (Pounds/Inch) (100's)
4.0
2.0
0.0
-2.0
-4.0
0
5
10
15
20
25
30
35
40
45
50
Depth (Feet)
CORRETW3.GR1


Shear(Kips)
30
20
10
0
-10
0
5
10
15
20
25
30
35
40
45
50
Depth (Feet)
CORRETW3.GR1

Settlement Analyses

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SHEET NO _____ OF _____
CALCULATED BY A Lam DATE 9/09
CHECKED BY _____ DATE _____
SCALE _____

Settlement Analysis - Soil Profile (Boring R-09-CN-002)

6'	8.5'	Lean Clay	SPT N=16 $\gamma' = 110$ pcf, $\gamma_{sat} = 125$ pcf
	5'	Lean Clay	SPT N=10 $\gamma_{sat} = 130$ pcf
	5'	Lean Clay	SPT N=16 $\gamma_{sat} = 130$ pcf
	5'	Lean Clay	SPT N=12 $\gamma_{sat} = 130$ pcf
	5'	Lean Clay	SPT N=12 $\gamma_{sat} = 130$ pcf
	5'	Lean Clay	SPT N=8 $\gamma_{sat} = 120$ pcf
	5'	Lean Clay	SPT N=19 $\gamma_{sat} = 130$ pcf
	9.5'	Lean Clay	Avg SPT N=9 $\gamma_{sat} = 125$ pcf
	6'	Silty Sand with Gravel	SPT N=39 $\gamma_{sat} = 130$ pcf
	27.5'	Sandy Lean Clay	Avg SPT N=25 $\gamma_{sat} = 130$ pcf

SETTLEMENT ANALYSIS ***EB 80 to EB 12 Connector *** 09/28/09

LOCATION: Fairfield

Retaining Wall No. 1 - Based on reference Boring R-09-CN-002 (A-09-008)

Height of fill = 24.5 ft
Width of fill = 45 ft
Fill Density = 125 pcf

- ☐ The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- ☐ Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- ☐ The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- ☐ The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- ☐ The applied pressure is estimated from 2V:1H distribution of the embankment load.

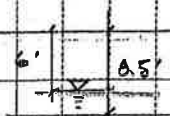
DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf) 0	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
0	6	110	660	330	2839	16	2000	8000.00	28	0.1376	0.0138	0.97	0.00	0.97
6	8.5	63	158	738.75	2563	16	2000	8000.00	28	0.1376	0.0138	0.27	0.00	0.27
8.5	13.5	63	315	975	2353	10	1250	5000.00	28	0.1376	0.0138	0.44	0.00	0.44
13.5	18.5	63	315	1290	2112	16	2000	8000.00	23	0.1041	0.0104	0.26	0.00	0.26
18.5	23.5	63	315	1605	1908	10	1250	5000.00	27	0.1309	0.0131	0.27	0.00	0.27
23.5	28.5	63	315	1920	1733	12	1500	6000.00	29	0.1443	0.0144	0.24	0.00	0.24
28.5	33.5	58	290	2222.5	1581	8	1000	4000.00	34	0.1778	0.0178	0.25	0.00	0.25
33.5	38.5	63	315	2525	1450	19	2375	9500.00	22	0.0975	0.0098	0.12	0.00	0.12
38.5	58	58	1131	3248	1190	9	1063	4250.00	29	0.1443	0.0144	0.39	0.63	1.03
58	64	63	378	4002.5	988	39	SAND							
64	101.5	63	2363	5372.75	747	25	3125	12500.00	22	0.0975	0.0098	0.25	0.00	0.25

TOTAL SETTLEMENT (IN.) =	3.46	0.63	4.09

O.C. RANGE SETTLEMENT = 3.46 INCHES
N.C. RANGE SETTLEMENT = 0.63 INCHES

Total settlement is approximately 4.1 inches with 3.5 inches in the OC range and 0.6 inches in the NC range per available boring information.

Settlement Analysis - Soil Profile (Boring R-09-CN-003)



6'	Lean Clay SPT N = 13	$\gamma' = 115$ pcf, $\gamma_{sat} = 125$ pcf
8.5'		
5'	Lean Clay SPT N = 10	$\gamma_{sat} = 120$ pcf
5'	Lean Clay SPT N = 17	$\gamma_{sat} = 125$ pcf
5'	Lean Clay SPT N = 12	$\gamma_{sat} = 120$ pcf
5'	Lean Clay SPT N = 16	$\gamma_{sat} = 125$ pcf
5'	Lean Clay SPT N = 10	$\gamma_{sat} = 120$ pcf
5'	Lean Clay SPT N = 9	$\gamma_{sat} = 120$ pcf
10'	Lean Clay SPT N = 8	$\gamma_{sat} = 120$ pcf
16.5'	Lean Clay SPT N = 10	$\gamma_{sat} = 120$ pcf
14'	Clayey Sand with Gravel SPT N = "Practical Refusal"	$\gamma_{sat} = 135$ pcf
10	Sandy Lean Clay SPT N = 75	$\gamma_{sat} = 125$ pcf
5'	Silty Sand SPT N = 34	$\gamma_{sat} = 120$ pcf
75'	Lean Clay SPT N = 36	$\gamma_{sat} = 130$ pcf

SETTLEMENT ANALYSIS ***EB 80 to EB 12 Connector*** 09/26/09

LOCATION: Fairfield

Retaining Wall No. 4 - Based on reference Boring R-09-CN-003 (R-09-009)

Height of fill = 28.5 ft
Width of fill = 44 ft
Fill Density = 125 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf) 0	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
0	6	115	690	345.00	3335	13	1625	6500.00	27	0.1309	0.0131	0.97	0.00	0.97
6	8.5	63	158	768.75	3059	13	1625	6500.00	27	0.1309	0.0131	0.27	0.00	0.27
8.5	13.5	58	290	992.50	2850	10	1250	5000.00	31	0.1578	0.0158	0.56	0.00	0.56
13.5	18.5	63	315	1295.00	2613	17	2125	8500.00	24	0.1107	0.0111	0.32	0.00	0.32
18.5	23.5	58	290	1597.50	2412	12	1500	6000.00	29	0.1443	0.0144	0.35	0.00	0.35
23.5	28.5	63	315	1900.00	2239	16	2000	8000.00	29	0.1443	0.0144	0.29	0.00	0.29
28.5	33.5	58	290	2202.50	2090	10	1250	5000.00	29	0.1443	0.0144	0.25	0.00	0.25
33.5	38.5	58	290	2492.50	1306	9	1125	4500.00	31	0.1578	0.0158	0.17	0.00	0.17
38.5	48.5	58	580	2927.50	1194	8	1000	4000.00	31	0.1578	0.0158	0.26	0.25	0.50
48.5	65	58	957	3116.00	1037	10	1250	5000.00	31	0.1578	0.0158	0.39	0.00	0.39
65	79	73	1022	4685.50	1351	50	SAND							
79	89	63	630	5511.50	1225	73	9125	36500.00	10	0.0427	0.0043	0.04	0.00	0.04
89	94	68	340	5996.50	1157	34	SAND							
94	101.5	68	510	6421.50	1106	36	4500	18000.00	24	0.1107	0.0111	0.07	0.00	0.07

TOTAL SETTLEMENT (IN.) = 3.94 0.25 4.19

O.C. RANGE SETTLEMENT = 3.94 INCHES
N.C. RANGE SETTLEMENT = 0.25 INCHES

Total settlement is approximately 4.2 inches with 3.9 inch in the OC range and 0.3 inch in the NC range per available boring information.

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JOB Cordelia Truck Scales Relocation Project 40173.GDR
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 9/09
CHECKED BY ____ DATE ____
SCALE ____

Settlement Analysis - Soil Profile (Boring B-09-CN-004)

10ft	Lean Clay	SPT N = 15 (15/4) γ_{sat} = 125 pcf
9.5'		
▽		
10'	Lean Clay	Avg SPT N = 6 γ_{sat} = 120 pcf
5'	Lean Clay	SPT N = 23 γ_{sat} = 125 pcf
5'	Lean Clay	SPT N = 8 γ_{sat} = 120 pcf
10.5'	Lean Clay	Avg SPT N = 32 γ_{sat} = 130 pcf
4'	Lean Clay	SPT N = 8 γ_{sat} = 120 pcf
13'	Sandy Sand	Avg SPT N = 13 γ_{sat} = 125 pcf
20'	Lean Clay	Avg SPT N = 24 γ_{sat} = 125 pcf
45'	Clayey Sand with Gravel	SPT N = 56 γ_{sat} = 130 pcf

SETTLEMENT ANALYSIS ***EB 80 to EB 12 Connector ***

LOCATION: Fairfield

Retaining Wall No. 4 - Based on reference Boring R-09-CN-004 (A-09-011)

09/29/09

Height of fill = 18 ft
Width of fill = 45 ft
Fill Density = 125 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf)	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
			0											
0	9.5	125	1188	593.75	1998	15	1875	7500.00	16	0.0613	0.0061	0.45	0.00	0.45
9.5	19.5	58	580	1477.5	1602	6	750	3000.00	32	0.1645	0.0165	0.61	0.22	0.83
19.5	24.5	63	315	1925	1375	23	2875	11500.00	22	0.0975	0.0098	0.14	0.00	0.14
24.5	29.5	58	290	2227.5	1250	8	1000	4000.00	23	0.1041	0.0104	0.12	0.00	0.12
29.5	40	68	714	2729.5	1088	32	4000	16000.00	20	0.0847	0.0085	0.16	0.00	0.16
40	44	58	232	3202.5	964	8	1000	4000.00	35	0.1844	0.0184	0.09	0.16	0.24
44	57	63	819	3728	845	13	SAND							
57	77	63	1260	4767.5	669	24	3000	12000.00	22	0.0975	0.0098	0.13	0.00	0.13
77	81.5	68	306	5550.5	573	56	SAND							

TOTAL SETTLEMENT (IN.) =	1.69	0.38	2.07

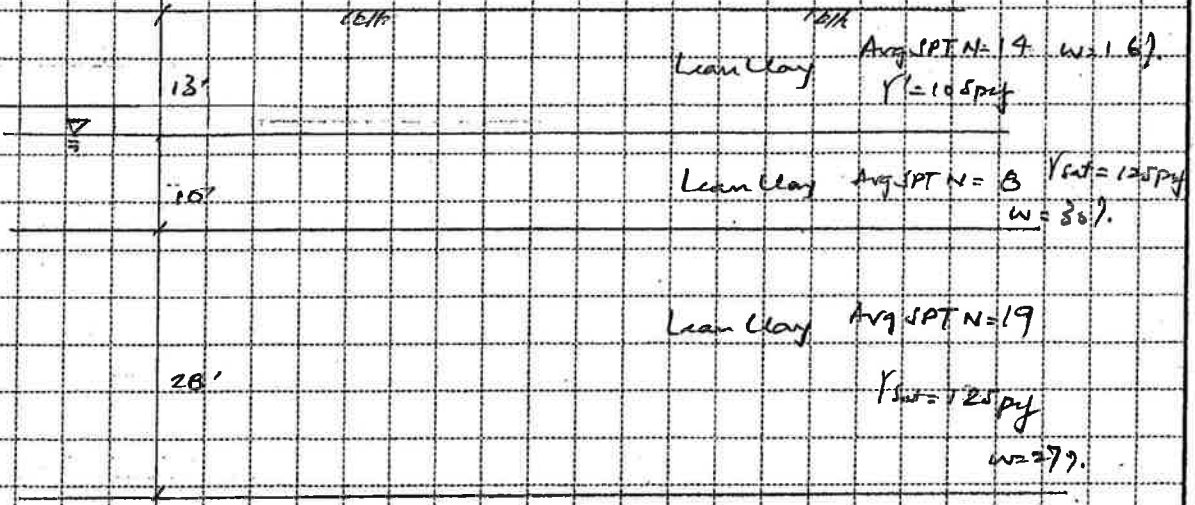
O.C. RANGE SETTLEMENT = 1.69 INCHES
N.C. RANGE SETTLEMENT = 0.38 INCHES

Total settlement is approximately 2.1 inches with 1.7 inches in the OC range and 0.4 inches in the NC range per available boring information.

PARIKH
Practicing in the Geosciences

JOB Cordelia Truck Trailer Relocation Project 20123.6DE
SHEET NO OF
CALCULATED BY A Lam DATE 9/09
CHECKED BY DATE
SCALE

Settlement Analysis - Soil Profile (Boring A-09-117)



SETTLEMENT ANALYSIS ***Truck On-ramp SR 12 ***

LOCATION: Fairfield

Embankment Fill - Based on reference Boring A-09-117

10/01/09

Height of fill = 9 ft
Width of fill = 45 ft
Fill Density = 125 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf)	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
			0											
0	13	110	1430	715	958	14	1750	7000.00	16	0.0613	0.0061	0.35	0.00	0.35
13	23	63	630	1745	745	8	1000	4000.00	30	0.1511	0.0151	0.28	0.00	0.28
23	51	63	1764	2942	524	19	2375	9500.00	27	0.1309	0.0131	0.31	0.00	0.31

TOTAL SETTLEMENT (IN.) =	0.95	0.00	0.95

O.C. RANGE SETTLEMENT = 0.95 INCHES
N.C. RANGE SETTLEMENT = 0.00 INCHES

Total settlement is approximately 1.0 inches and in the OC range per available boring information.

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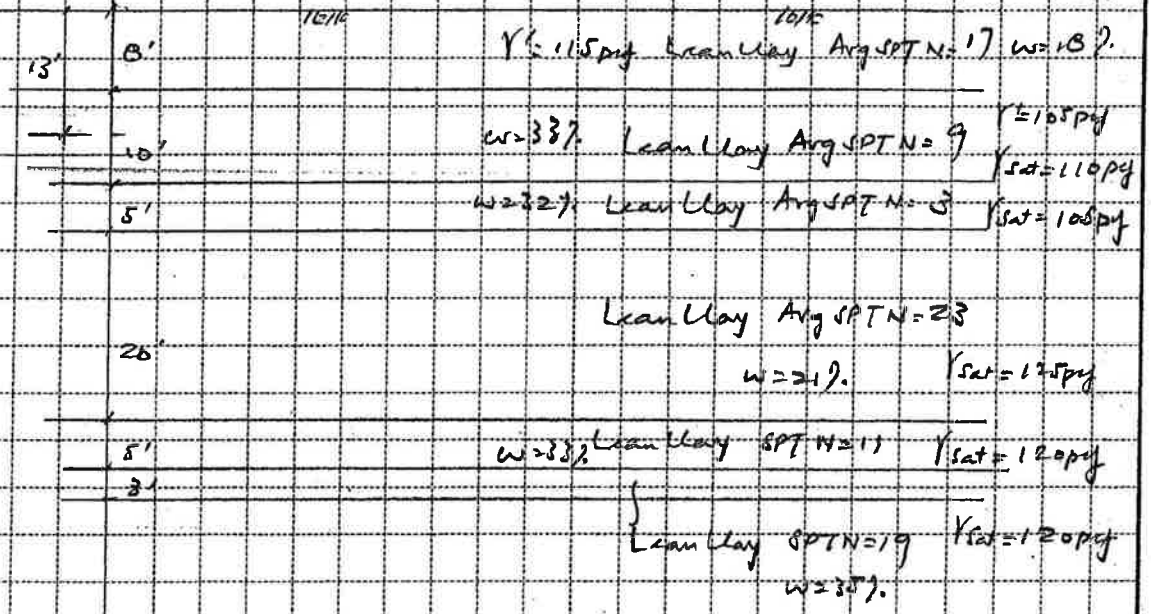
JOB Cordelia Truck Scales Relocation Project 20B125.6DR
SHEET NO OF
CALCULATED BY A Lam DATE 9/09
CHECKED BY DATE
SCALE

Settlement Analyses - For Profile (Boring A-09-11B)



SETTLEMENT ANALYSIS ***Truck On-ramp SR 12 ***

LOCATION: Fairfield

10/01/09

Embankment Fill - Based on reference Boring A-09-118

Height of fill = 5 ft
Width of fill = 45 ft
Fill Density = 125 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf)	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
			0											
0	8	115	920	460	565	17	2125	8500.00	18	0.0725	0.0072	0.24	0.00	0.24
8	13	105	525	1182.5	486	9	1125	4500.00	33	0.1712	0.0171	0.15	0.00	0.15
13	18	48	240	1565	436	9	1125	4500.00	32	0.1645	0.0165	0.11	0.00	0.11
18	23	43	215	1792.5	393	4	500	2000.00	32	0.1645	0.0165	0.05	0.38	0.43
23	43	63	1260	2530	312	23	2875	11500.00	21	0.0910	0.0091	0.11	0.00	0.11
43	38	58	-290	3015	274	11	1375	5500.00	33	0.1712	0.0171	-0.04	0.00	-0.04
48	51	58	174	2957	238	19	2375	9500.00	35	0.1844	0.0184	0.02	0.00	0.02

	OC	NC	SUM
TOTAL SETTLEMENT (IN.) =	0.64	0.38	1.02

O.C. RANGE SETTLEMENT = 0.64 INCHES
N.C. RANGE SETTLEMENT = 0.38 INCHES

Total settlement is approximately 1.0 inches with 0.6 inches in the OC range and 0.4 inches in the NC range per available boring information.

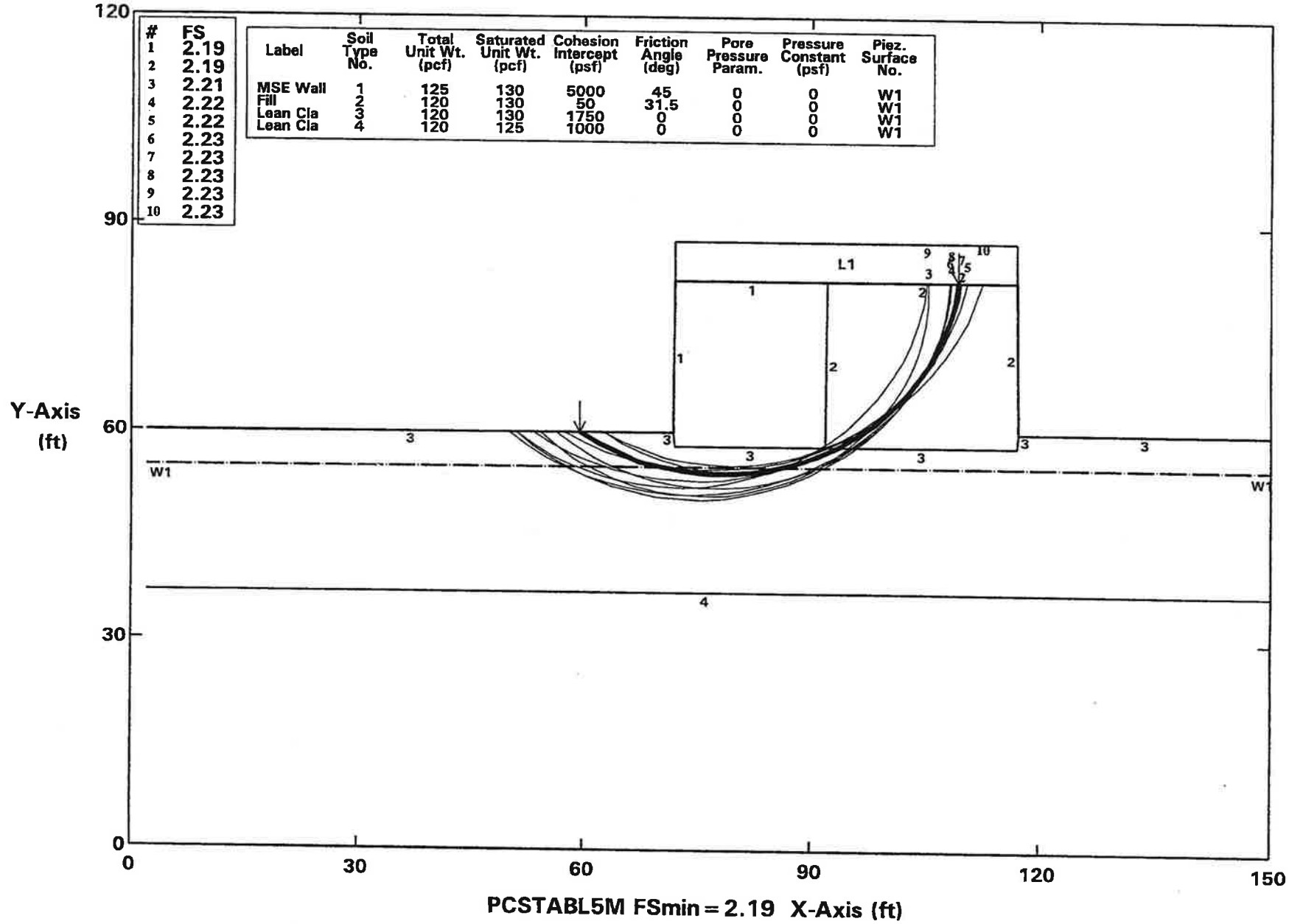
MSE Wall Stability Analyses

Cordelia Truck Scales Relocation RW NO.1 (09-CN-001) -Static

Ten Most Critical. C:CTSRW1ST.PLT By: AL 07-17-09 8:21am

#	FS
1	2.19
2	2.19
3	2.21
4	2.22
5	2.22
6	2.23
7	2.23
8	2.23
9	2.23
10	2.23

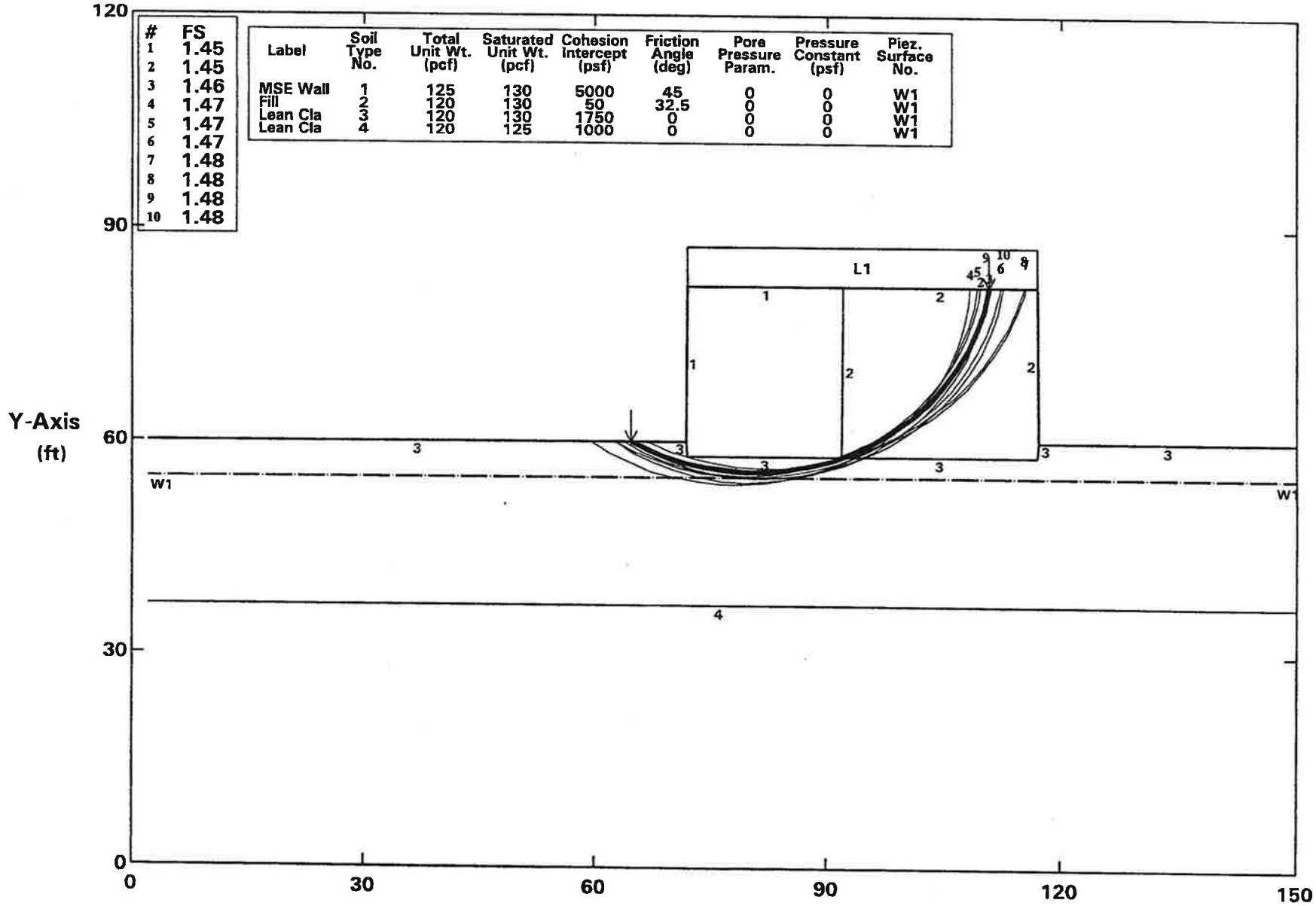
Label	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
MSE Wall	1	125	130	5000	45	0	0	W1
Fill	2	120	130	50	31.5	0	0	W1
Lean Cla	3	120	130	1750	0	0	0	W1
Lean Cla	4	120	125	1000	0	0	0	W1



PCSTABL5M FSmin = 2.19 X-Axis (ft)

Cordelia Truck Scales Relocation RW NO.1 (09-CN-001) -Seismic

Ten Most Critical. C:CTSRW1SE.PLT By: AL 07-17-09 8:24am



#	FS
1	1.45
2	1.45
3	1.46
4	1.47
5	1.47
6	1.47
7	1.48
8	1.48
9	1.48
10	1.48

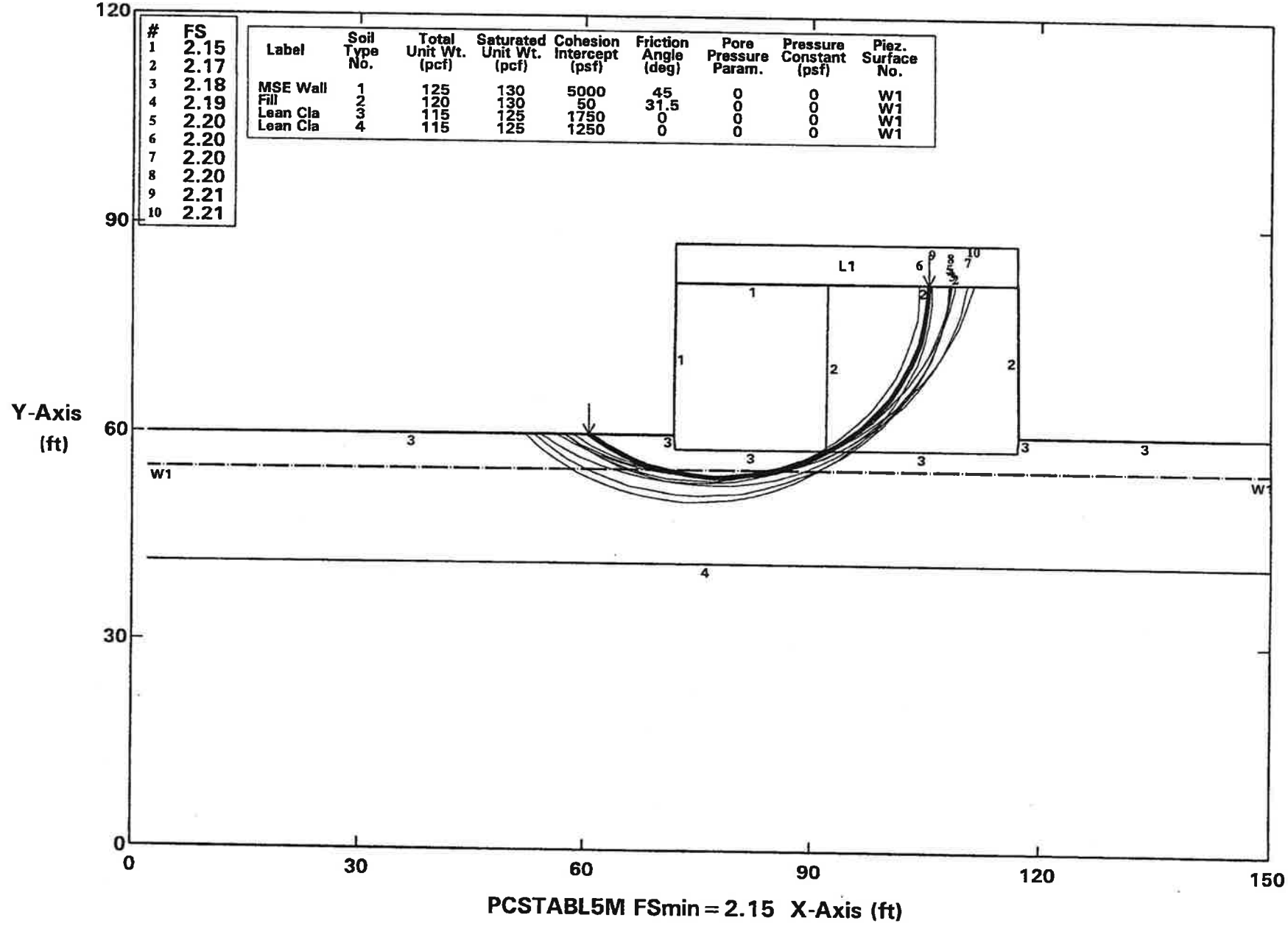
Label	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
MSE Wall	1	125	130	5000	45	0	0	W1
Fill	2	120	130	50	32.5	0	0	W1
Lean Cla	3	120	130	1750	0	0	0	W1
Lean Cla	4	120	125	1000	0	0	0	W1

Cordelia Truck Scales Relocation RW NO.1 (09-CN-002) -Static

Ten Most Critical. C:CTRW12ST.PLT By: AL 07-17-09 9:24am

#	FS
1	2.15
2	2.17
3	2.18
4	2.19
5	2.20
6	2.20
7	2.20
8	2.20
9	2.21
10	2.21

Label	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
MSE Wall	1	125	130	5000	45	0	0	W1
Fill	2	120	130	50	31.5	0	0	W1
Lean Cla	3	115	125	1750	0	0	0	W1
Lean Cla	4	115	125	1250	0	0	0	W1



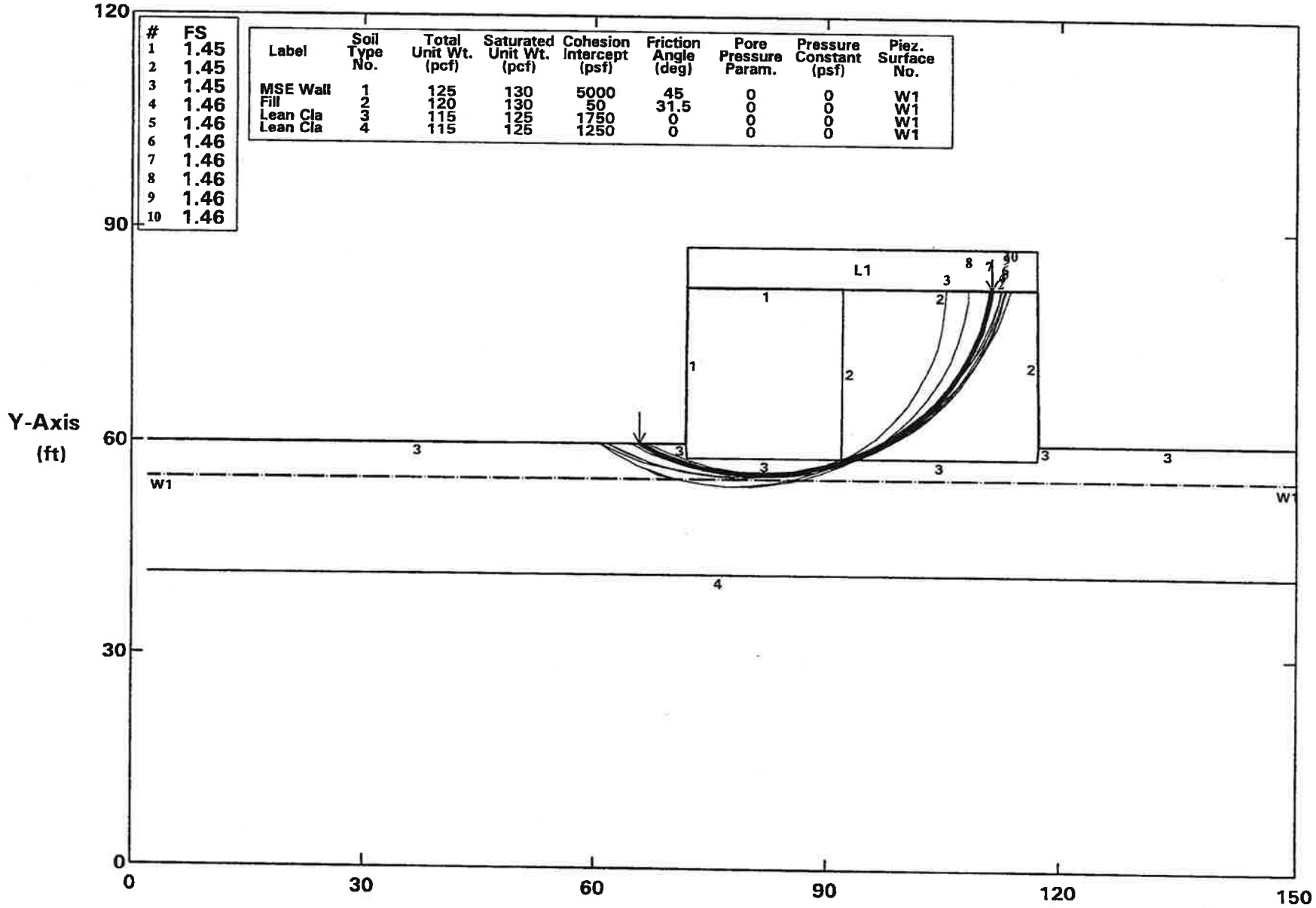
PCSTABL5M FSmin = 2.15 X-Axis (ft)

Cordelia Truck Scales Relocation RW NO.1 (09-CN-002) -Seismic

Ten Most Critical. C:CTRW12SE.PLT By: AL 07-17-09 9:26am

#	FS
1	1.45
2	1.45
3	1.45
4	1.46
5	1.46
6	1.46
7	1.46
8	1.46
9	1.46
10	1.46

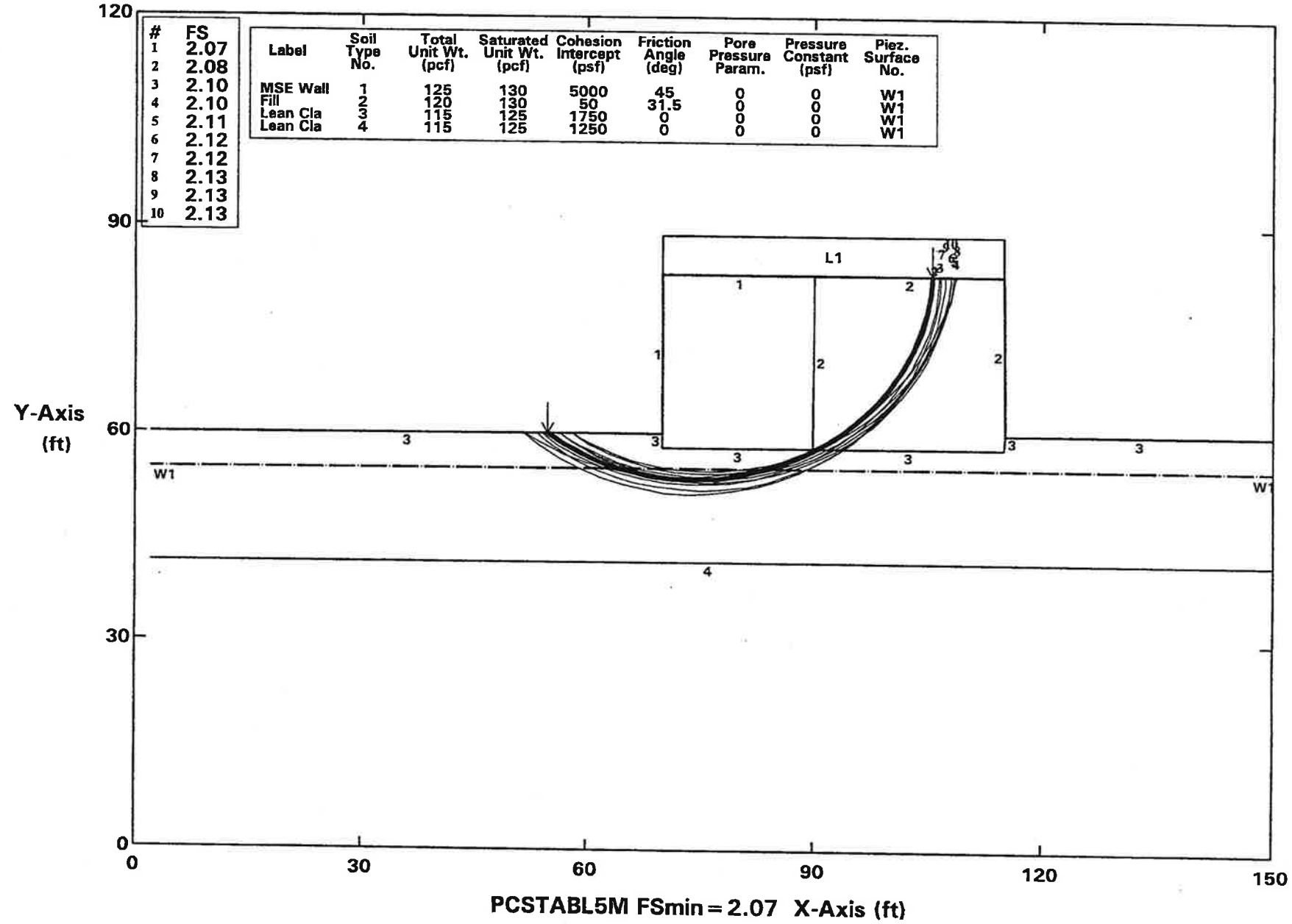
Label	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
MSE Wall	1	125	130	5000	45	0	0	W1
Fill	2	120	130	50	31.5	0	0	W1
Lean Cla	3	115	125	1750	0	0	0	W1
Lean Cla	4	115	125	1250	0	0	0	W1



PCSTABL5M FSmin = 1.45 X-Axis (ft)

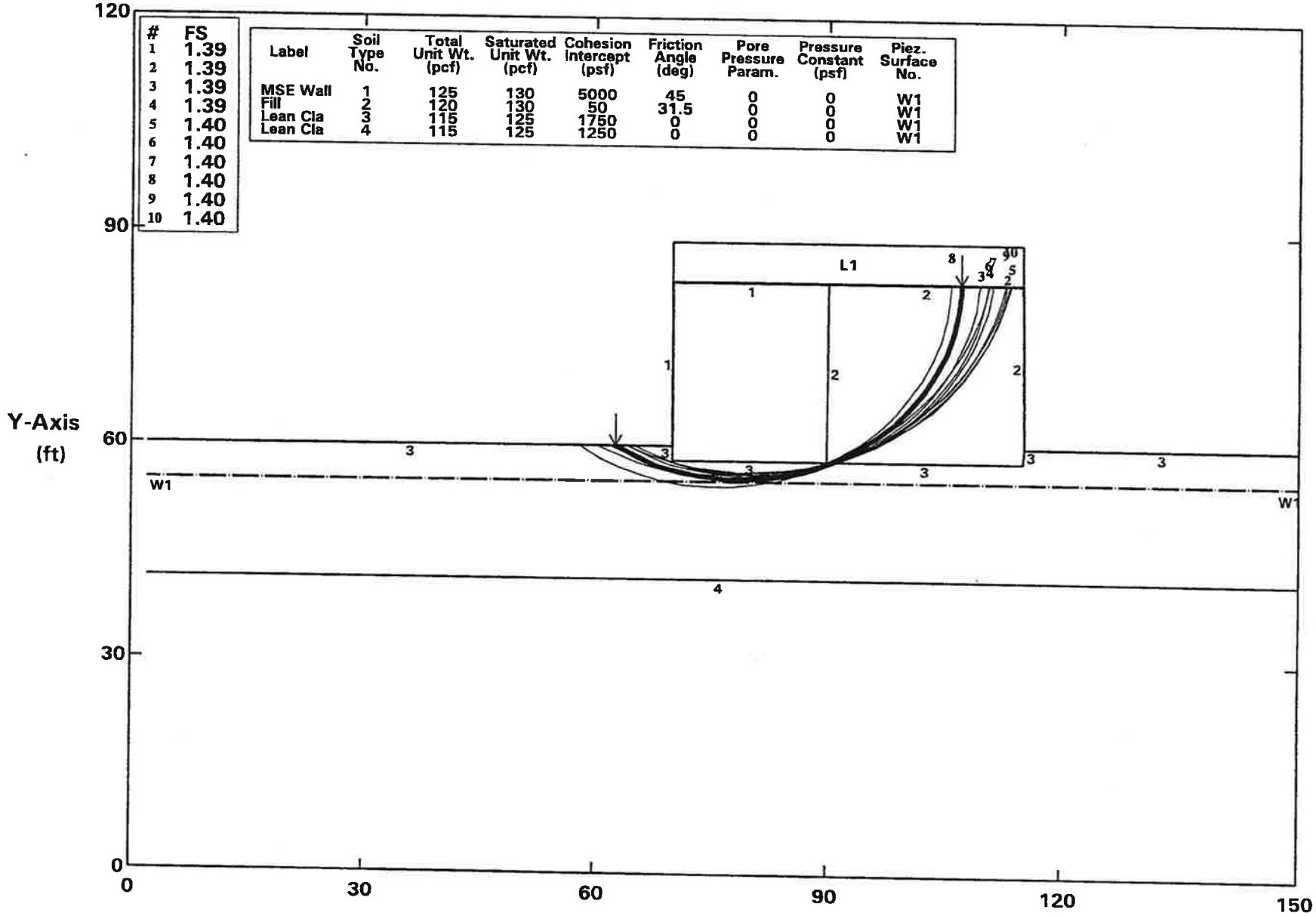
Cordelia Truck Scales Relocation RW NO.2 (09-CN-002) -Static

Ten Most Critical. C:CTRW22ST.PLT By: AL 07-17-09 9:45am



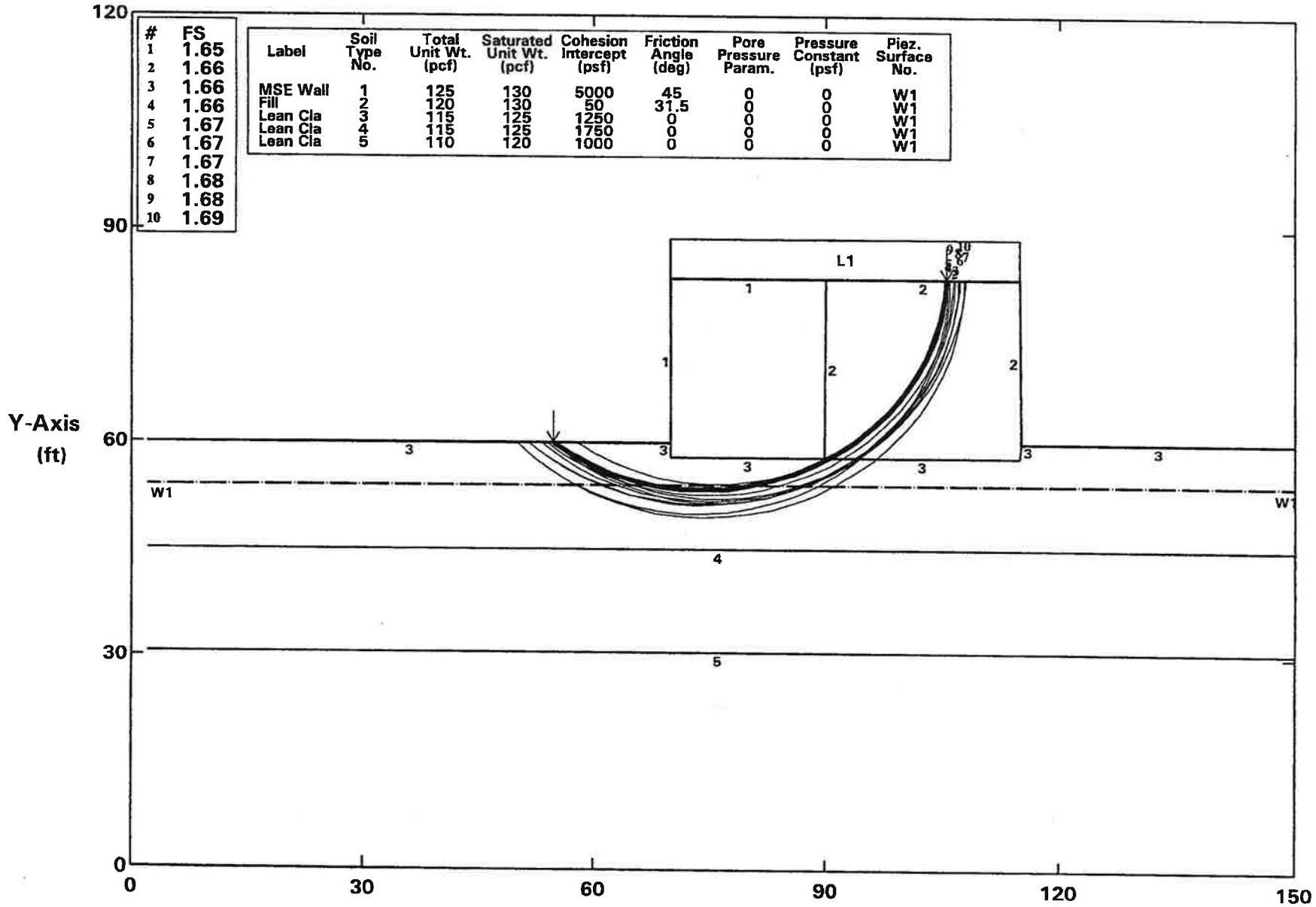
Cordelia Truck Scales Relocation RW NO.2 (09-CN-002) -Seismic

Ten Most Critical. C:CTRW22SE.PLT By: AL 07-17-09 9:46am



Cordelia Truck Scales Relocation RW NO.2 (09-CN-003) -Static

Ten Most Critical. C:CTRW23ST.PLT By: AL 07-17-09 10:06am

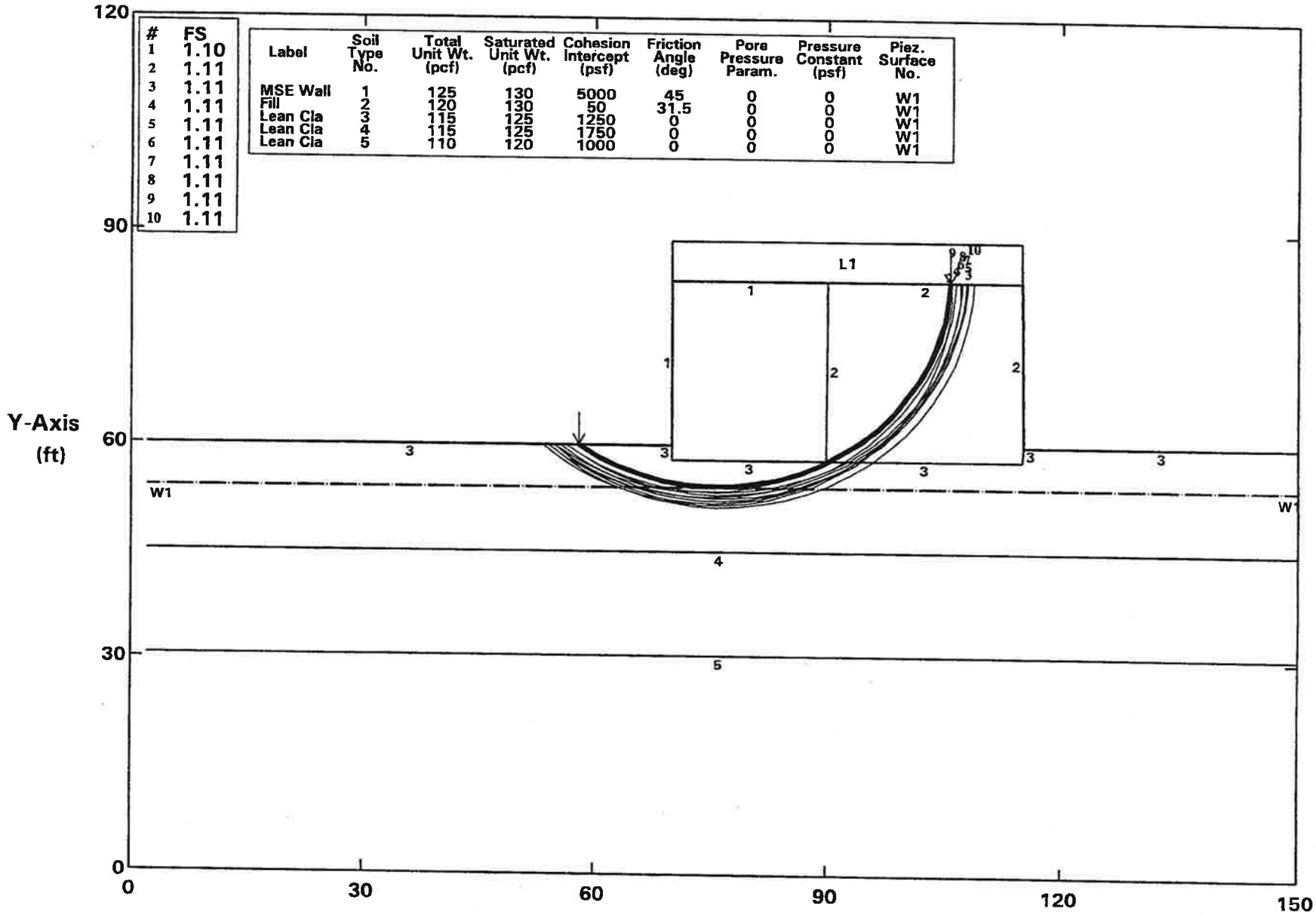


#	FS
1	1.65
2	1.66
3	1.66
4	1.66
5	1.67
6	1.67
7	1.67
8	1.68
9	1.68
10	1.69

Label	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
MSE Wall	1	125	130	5000	45	0	0	W1
Fill	2	120	130	50	31.5	0	0	W1
Lean Cla	3	115	125	1250	0	0	0	W1
Lean Cla	4	115	125	1750	0	0	0	W1
Lean Cla	5	110	120	1000	0	0	0	W1

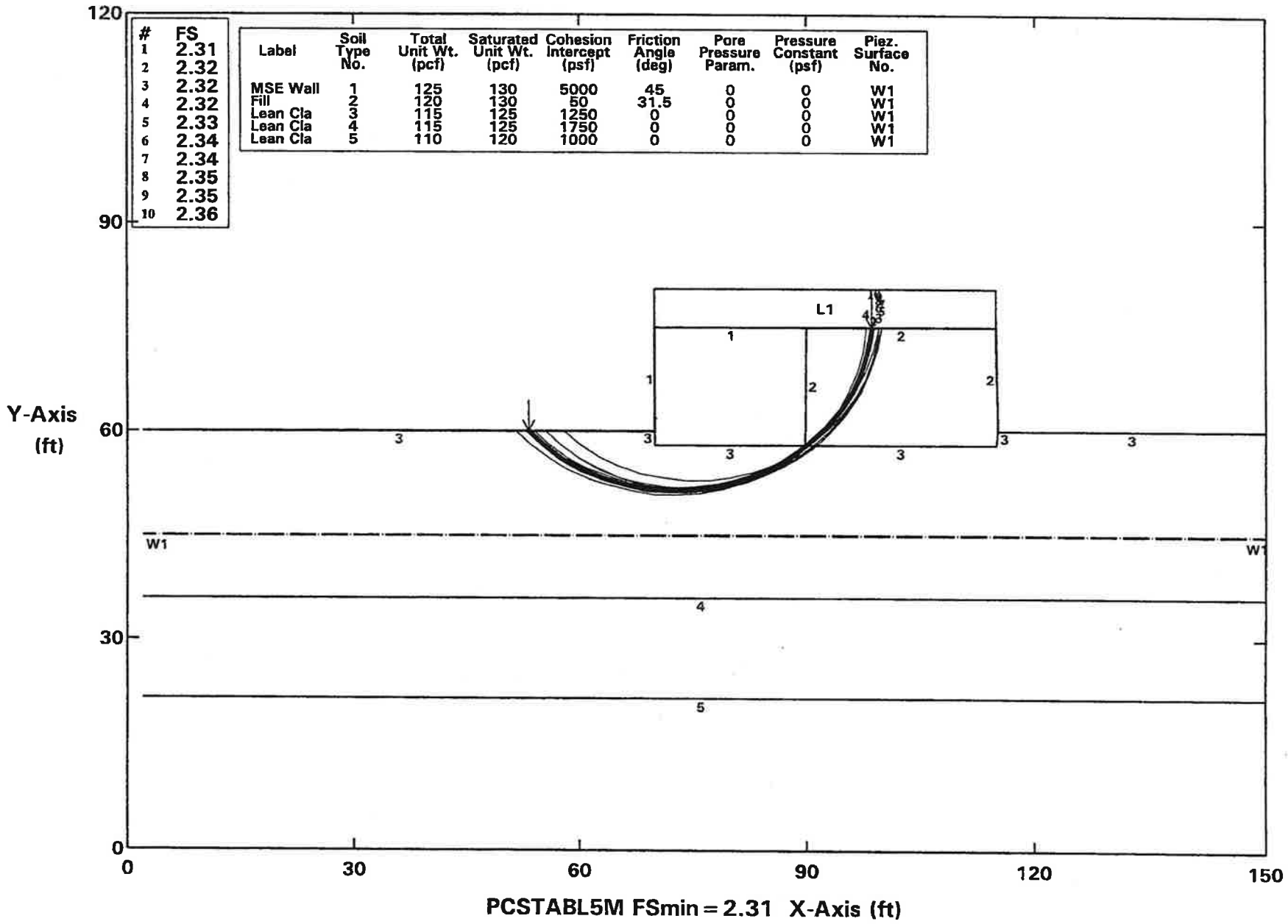
Cordelia Truck Scales Relocation RW NO.2 (09-CN-003) -Seismic

Ten Most Critical. C:CTRW23SE.PLT By: AL 07-17-09 10:08am



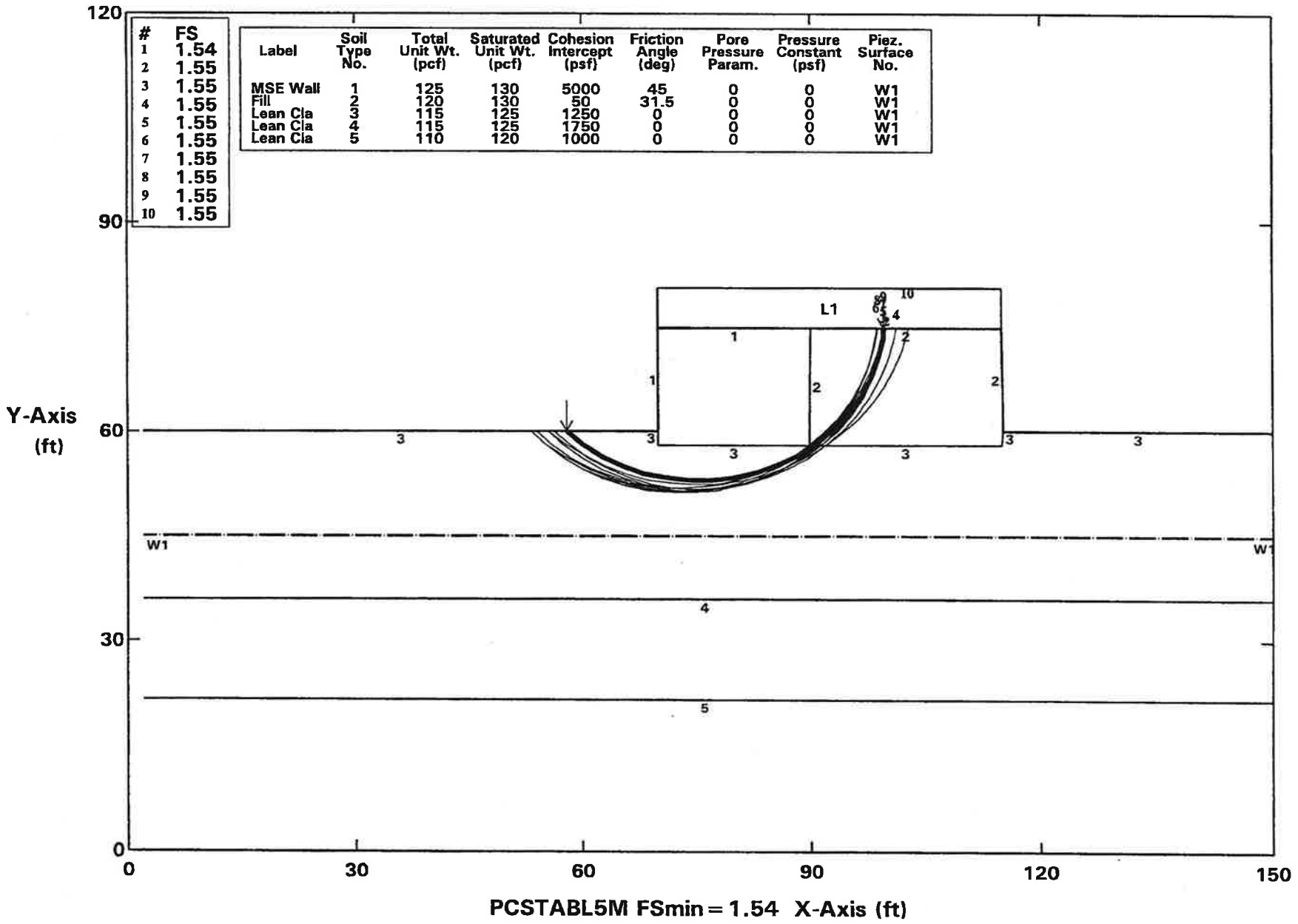
Cordelia Truck Scales Relocation RW NO.3 (09-CN-003) -Static

Ten Most Critical. C:CTRW33ST.PLT By: AL 07-17-09 10:49am



Cordelia Truck Scales Relocation RW NO.3 (09-CN-003) -Seismic

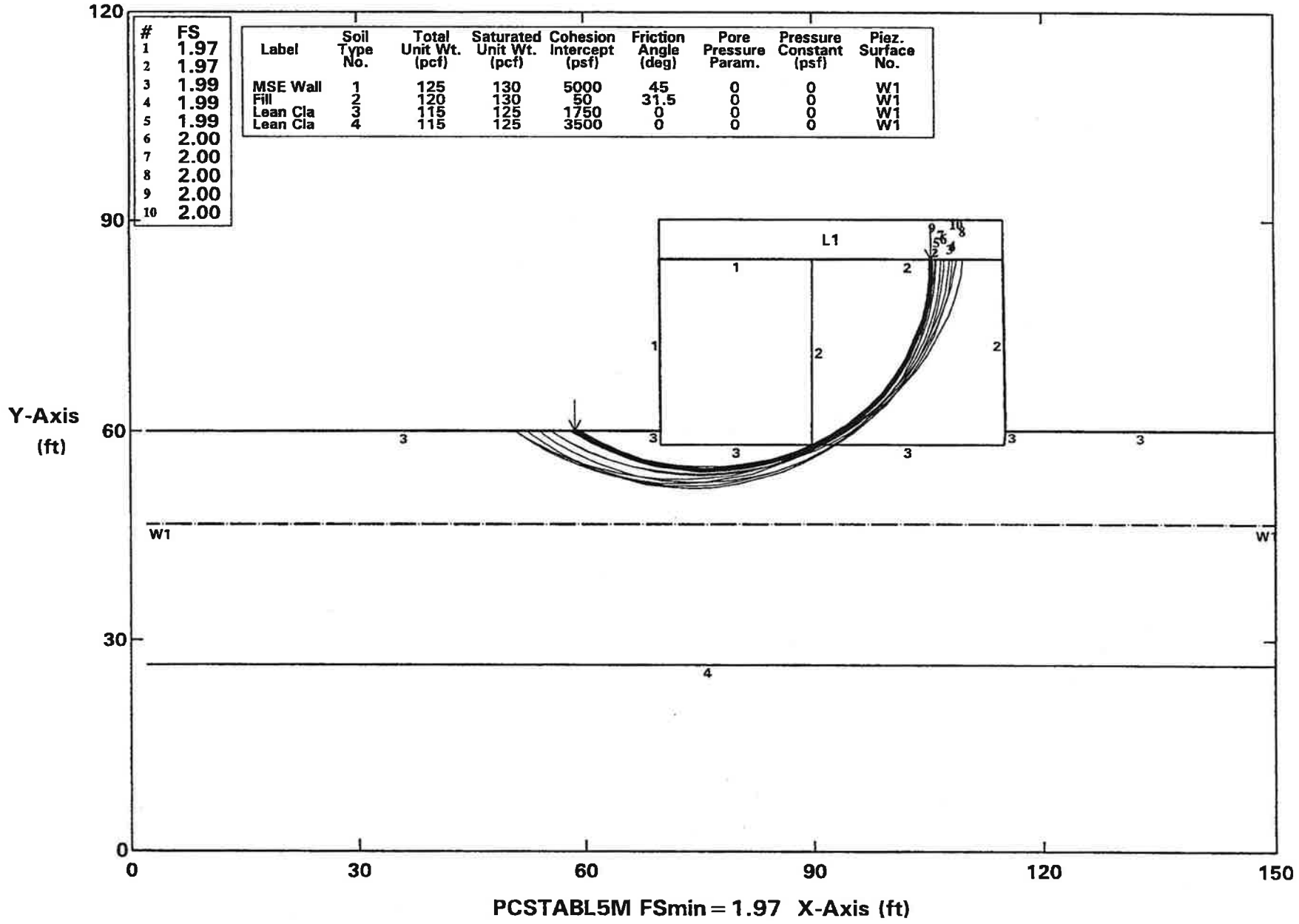
Ten Most Critical. C:CTRW33SE.PLT By: AL 07-17-09 10:52am



PCSTABL5M FSmin = 1.54 X-Axis (ft)

Cordelia Truck Scales Relocation RW NO.4 (CPT-09-CN-001) -Static

Ten Most Critical. C:CTRW41ST.PLT By: AL 07-17-09 11:10am



Cordelia Truck Scales Relocation RW NO.4 (CPT-09-CN-001) -Seismic

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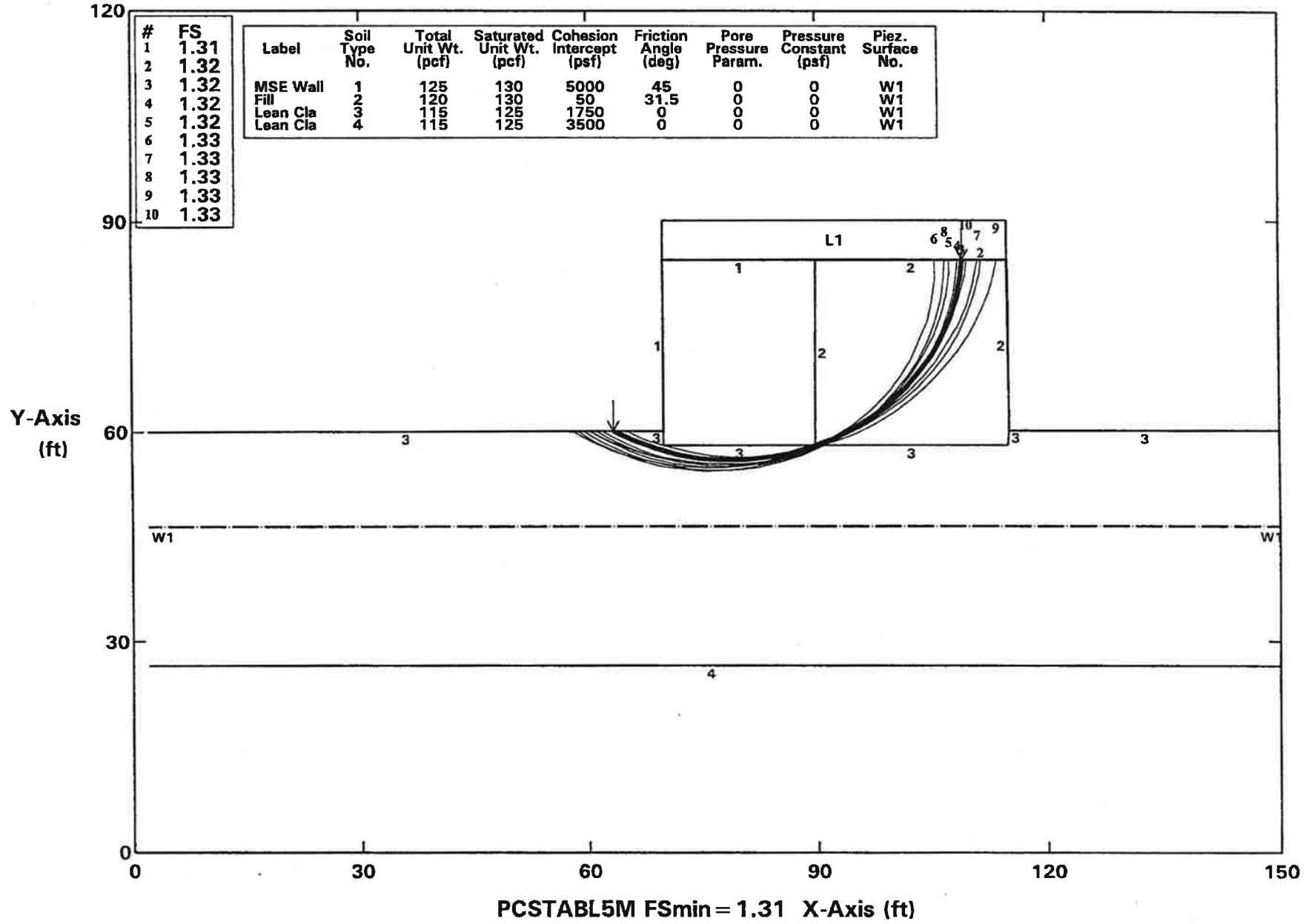
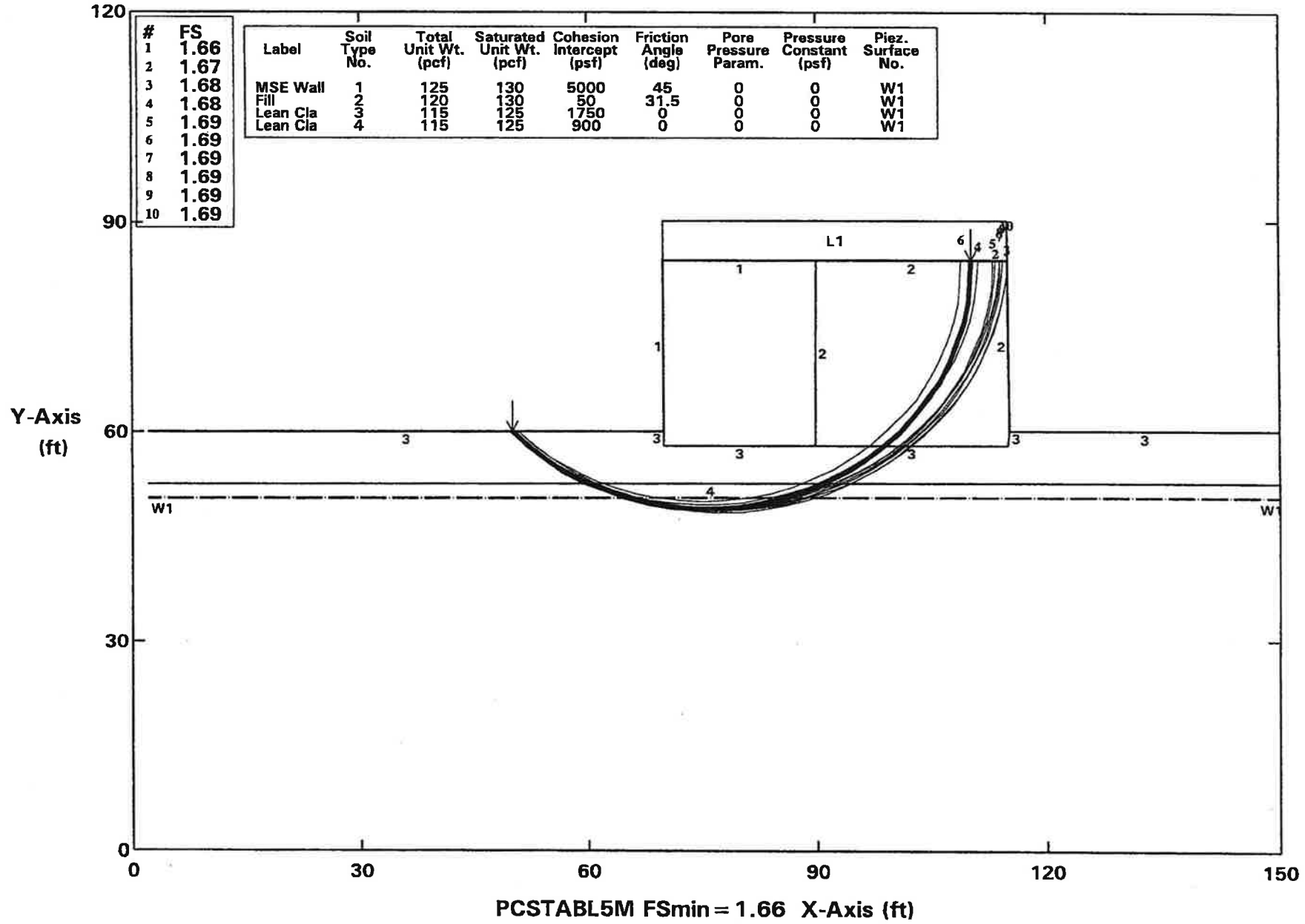


#	FS
1	1.31
2	1.32
3	1.32
4	1.32
5	1.32
6	1.33
7	1.33
8	1.33
9	1.33
10	1.33

Label	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
MSE Wall	1	125	130	5000	45	0	0	W1
Fill	2	120	130	50	31.5	0	0	W1
Lean Cla	3	115	125	1750	0	0	0	W1
Lean Cla	4	115	125	3500	0	0	0	W1

Cordelia Truck Scales Relocation RW NO.4 (09-CN-004) -Static

Ten Most Critical. C:CTRW44ST.PLT By: AL 07-17-09 11:16am



Cordelia Truck Scales Relocation RW NO.4 (09-CN-004) -Seismic

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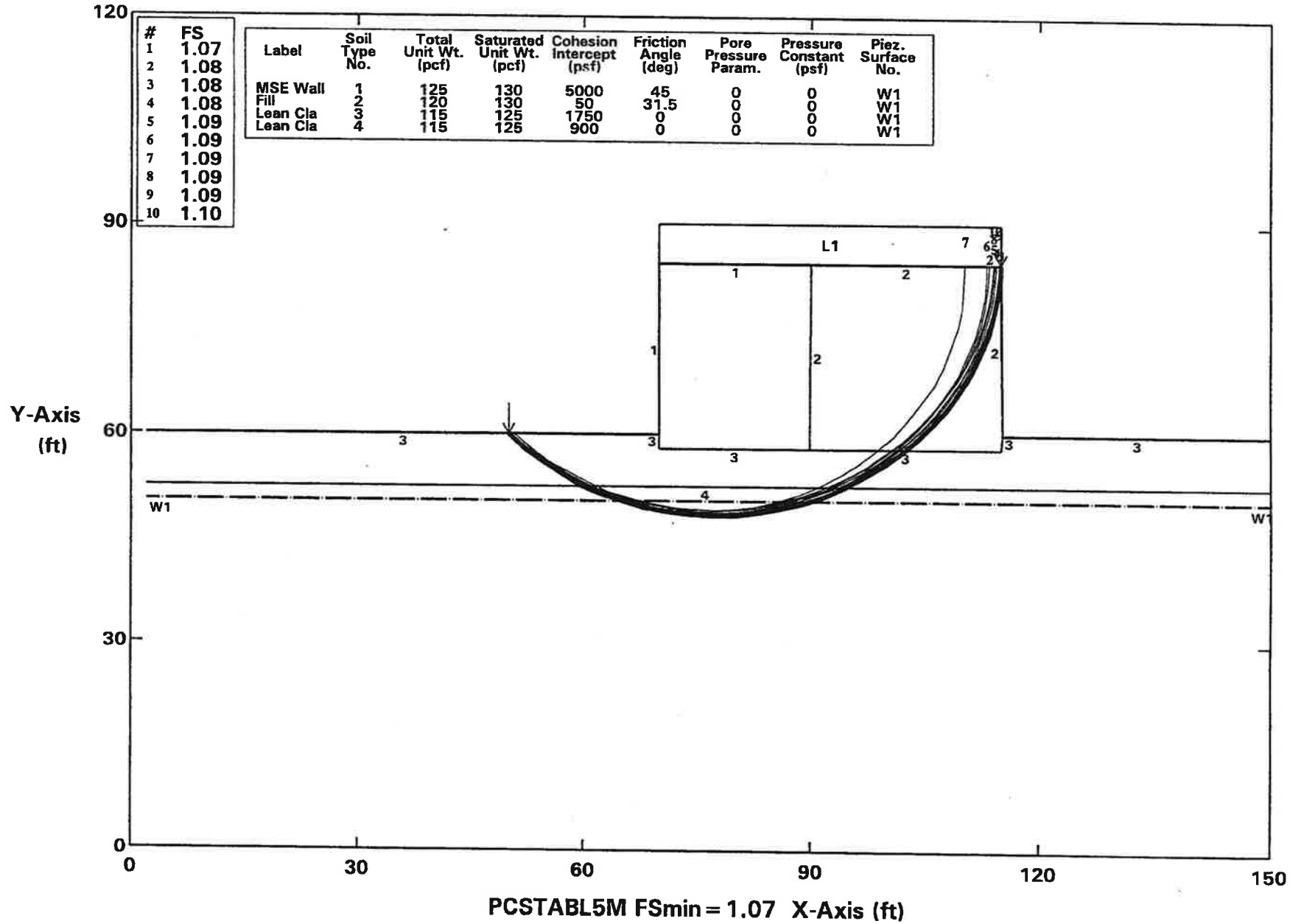

APPENDIX D

OSFP Review Comment & Response Form

General Project Information	Review Phase	Reviewer Information
Dist: 04 EA: 0A5351 Project Name: Retaing Walls Nos. 1, 2, 3 & 4 OSFP Liaison: Tracy L. Bertram Phone: 916-227-8397 e-mail:_____	☐ PSR/PDS (Review No. _) ☐ APS/PSR (Review No. _) ☐ APS/PR (Review No. _) ☐ Type Selection ☐ 65% PS&E Unchecked Details ☐ PS&E (Review No. 2) ☐ Construction Support ☒ Other: FR (2nd PS&E Submittal) **Structure Information** (Use when necessary to document comments by individual structure) Structure Name: Retaing Walls Nos. 1, 2, 3 & 4 Br No: ____	Reviewer Name: Suja Ahmed Functional Unit: GS Phone Number: 510-286-4752 e-mail: suja_ahmed@dot.ca.gov Date of Review: 10/07/10

Consultant Information (to be filled in by Consultant)

Consultant Structure Lead (First and Last Name)	Structure Consultant Firm	Phone Number	e-mail	Response Date
Greg Kenning	Biggs Cardosa Associates, Inc.	(408) 296 5515	gkenning@biggscardosa.com	11/11/10

#	Doc. (See Note 1)	Page, Section, or SSP	Review Comments	Consultant Responses	
1	FR	N/A	Foundation Report (FR)- E80-E12/E80 On-Ramp Separation Retaining Walls 1, 2, 3, & 4 prepared by Parikh Consultant, Inc. in May 18, 2010		
2		Page-2, Section-3, Second Paragraph	Retaining Wall 2 &3 Label the portion of walls proposed as MSE wall and Type 1 Retaining Wall (near the connector) in Retaining Wall Plan next to Plate 5.	Comment is incorporated. A new "Retaining Wall Plan" with the label of the portion of walls proposed as MSE Wall and Type 1 Retaining Wall will be included next to Plate 5 in the Foundation Report.	
3		Page 3, Section 6	Description of Boring R-09-CN-001 is missing.	Comment is incorporated. Description of Boring R-09-CN-001 will be included in the Foundation Report.	
4		**Seismic Review** Reviewed by Hossain Salimi on 09-27-10	Parikh Consultants, Inc. needs to make corrections and adjustments of the following if necessary. 1. According to a cover memo send by Tracy Bertram, both bridges were type selected in July 2009, before the new	1. Old Seismic Design Criteria (SCD) will be used for both Suisun Creek Bridge and E80-E12/E80 On-Ramp Separation since both structures were type selected in July 2009 before the new Caltrans SDC was implemented. Old SDC will also be used for the Foundation Report of E80-	

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved
(for Reviewer's use)

			Caltrans Seismic Design Criteria (SDC) was implemented. Parikh, however has used the new criteria to develop the Acceleration Response Spectrum for the E80-E12/E80 On-Ramp Separation, but stayed with the old SDC for the Suisun Creek Bridge. I'd like to know why this Parikh did this. I would be better to be consistent and use the same criteria for both structures.	E12/E80 On-Ramp Separation Retaining Walls 1, 2, 3 and 4 to be consistent with the foundation report for the other two structures of the project.	
			2. Plate No. 5 for the E80-E12/E80 On-Ramp Separation structure shows a comparison of the 2008 USGS De-Agg, the Caltans ARS on-line, and 2008 USGS De-Agg Hazard, and notes that the ARS curve is governed by the USGS 2008 De-Aggregation (Beta) method. Was this spectrum increased by 20% for periods of 1 second or more? That is not specified. If not, the spectrum needs to be adjusted since the USGS Beta has not taken that into account.	2. ARS curve based on the Old SDC will be used for the E80-E12/E80 On-Ramp Separation Retaining Wall 1, 2, 3 and 4.	
			3. I suggest a separate graph titled "Recommended Acceleration Response Spectrum" be generated and added.	3. A separate graph should not be required since the new SDC will not be used and an ARS curve based on the Old SDC will be prepared in the Foundation Report.	
			4. The Bridge No. needs to be added to the E80-E12/E80 On-Ramp Separation report.	4. Comment is incorporated. Updated bridge nos. will be added to the Foundation Report for E80-E12/E80 On-Ramp Separation Retaining Walls 1, 2, 3 and 4.	
5		**Geologic Review** Reviewed by Christopher Risden on 10/07/10	1. Project elevations should be described in a topography section. 2. Report should follow the December 2009 FR guidelines and sections should be fully developed to comply with the guidelines.	1. Comment is incorporated. Project elevations will be described in the Foundation Report. 2. Comment is noted as discussed between Mr. Christopher Risden of Caltrans and Alston Lam of PARIKH Consultants, Inc.	

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved
(for Reviewer's use)

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved
(for Reviewer's use)

FOUNDATION REPORT

COMMERCIAL VEHICLE ENFORCEMENT FACILITY
(BRIDGE NO. 23W001R)
(I-80 EB CORDELIA TRUCK SCALES RELOCATION PROJECT)
SOLANO COUNTY, CALIFORNIA
04-Sol-80 PM 13.3/15.7 EA 04-0A5351

For

HDR ENGINEERING, INC.
2121 N. California Blvd., Suite 475
Walnut Creek, CA 94596-7334

PARIKH CONSULTANTS, INC.
2360 Qume Drive, Suite A, San Jose, CA 95131
(408) 452-9000

November 12, 2010

Job No. 208123.TSF

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1. INTRODUCTION 1

2. PURPOSE AND SCOPE 1

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FOUNDATION REPORT
COMMERCIAL VEHICLE ENFORCEMENT FACILITY
(BRIDGE NO. 23W001R)
(I-80 EB CORDELIA TRUCK SCALES RELOCATION PROJECT)
SOLANO COUNTY, CALIFORNIA
04-Sol-80 PM 13.3/15.7 EA 04-0A5351

1. INTRODUCTION

This report presents the results of our geotechnical engineering investigation for the "Commercial Vehicle Enforcement Facility" of the "I-80 EB Cordelia Truck Scales Relocation Project" along EB I-80 in Solano County, California (hereinafter referred to as "PROJECT"). The work was performed in general accordance with the scope of work outlined in our proposal to HDR Engineering, Inc. (hereinafter referred to as Designer). The approximate location of the project site is shown on the Project Location Map, Plate 1.

The geotechnical recommendations presented in this report are intended for design input and are not intended to be used as specifications. In addition, the data provided in this report including these geotechnical recommendations should not be used for bidding purposes or for construction cost estimates. If the report is provided as a reference document, any interpretation of the data and recommendations should be the sole responsibility of the user and PARIKH Consultants, Inc. (PARIKH) shall not be liable for any consequences.

2. PURPOSE AND SCOPE

The purpose of this investigation was to evaluate the general subsurface conditions at the project site, to evaluate their engineering properties, and to provide geotechnical recommendations for the foundation design of the proposed project.

The scope of work performed for this investigation included a review of the readily available soils and geologic literature pertaining to the site; site reconnaissance; obtaining representative soil samples and logging soil materials encountered in eleven exploratory soil borings and one Cone Penetration Test (CPT); laboratory testing of the collected soil samples, performing engineering analyses based on the field and laboratory data, and preparation of this report.

Due to limitations inherent in geotechnical investigations, it is neither uncommon to encounter unforeseen variations in the subsurface soil conditions during construction nor is it practical to determine all such variations during an acceptable program of drilling and sampling for a project of this scope. Such variations, when encountered, generally require additional engineering

services to attain a properly constructed project. We, therefore, recommend that a contingency fund be provided to accommodate any additional charges resulting from technical services that may be required during construction.

3. PROPOSED CONSTRUCTION

The Cordelia Commercial Vehicle Enforcement Facility (CVEF) is part of the "I-80 EB Cordelia Truck Scales Relocation Project", by which a new relocated truck scales will be constructed along the eastbound Interstate 80 (I-80) in Cordelia, Solano County. The CVEF will include "Inspection Building", "Office Building" and "Generator Building". Each building will be a single-story structure. Inspection building will have six inspection pits (top of footing at the depth of 4.5 feet) below the floor level and three tunnels (top of footing at the depth of 8 feet). Each tunnel will provide access to a pair of pits. Pit and tunnel wall will be structures designed as cantilever retaining walls. Based on the field reconnaissance, the existing farmland is approximately 3 feet to 4 feet below the adjacent I-80. Therefore, 3 to 4 feet of compacted fill is anticipated to be placed on the farmland for the new commercial vehicle enforcement facility to match the existing ground elevation of the I-80.

Our recommendations presented in this report are based on the above information. Any major deviation should be reported to PARIKH for further consideration.

4. SITE CONDITIONS

The project site is located on the south side of I-80 between Suisun Creek and Raines Drain. The existing project site is a farmland. The project site is partly within the private property and partly within Solano County property. The topography of the project site is relatively flat. However, it is a few feet below the existing I-80 corridor.

5. FIELD EXPLORATION AND LABORATORY TESTING

Eight 20-foot deep borings (Borings A-09-106 through A-09-113), one 60-foot deep boring (A-09-TS-003), two 100-foot deep borings (A-09-TS-001 and A-09-TS-002) were drilled and one 100-foot deep CPT (CPT-09-TS-001) were conducted for the CVEF.

The approximate locations of the borings are shown on the Site Plan, Plate 2. The details of the field exploration are included in Appendix A. The descriptions of the materials encountered in the field exploration are shown on the LOTB in Appendix A.

Laboratory tests were performed on selected soil samples collected during field exploration to evaluate the physical and engineering properties of the subsurface soils. The laboratory test methods and test results are presented on plates included in Appendix B. Laboratory test results for moisture content, dry unit weight, unconfined compressive strength, Plasticity Index and grain size classification of the soil samples are presented on the LOTB in Appendix A.

It should be noted that the descriptions of the soils encountered and relevant boring information presented on the LOTB depict subsurface conditions only at the locations indicated on the plan and on the particular date noted on the LOTB. Because of the variability from place to place within soil/rock in general, subsurface conditions at other locations may differ from conditions occurring at the boring locations explored. The abrupt stratum changes shown on the logs may be gradational and relatively minor changes in soil types within a stratum may not be noted on the logs due to field limitations. Also, the passage of time may result in a change in the subsurface soil conditions at these locations due to environmental changes.

6. SUBSURFACE CONDITIONS

Based on the available boring and CPT information, the subsurface soil conditions at the project site generally consist of firm to very stiff lean clays, underlain by very stiff to hard lean clays with the following additional findings in some of the soil borings.

1. Soft to firm lean clays were encountered at shallow depths in Borings A-09-TS-001, A-09-TS-002, A-09-107, A-09-109 and A-09-128. Pocket/lens (estimated to be less than 5 feet thick) of soft lean clay was encountered at approximate depth of 47 feet below existing ground surface in Boring A-09-TS-003.
2. Pocket/lens of very loose to loose silty/clayey sands was encountered near the top of the boring in Borings A-09-107 and A-09-128.
3. Pocket/lens of medium dense to very dense sands was encountered at various depths in Borings A-09-TS-001 through A-09-TS-003 and CPT-09-TS-001.

Groundwater was recorded between the depths of 1.5 feet and 13 feet (between Elev. + 15.0 feet

and +26.5 feet) in all of the soil borings during drilling. The groundwater level is anticipated to vary with the passage of time due to seasonal groundwater fluctuations, water elevations in the nearby creeks, surface and subsurface flows, ground surface run-off, and other environmental factors that may not be present at the time of the investigation.

7. GEOLOGY

General geologic features pertaining to the site were evaluated with reference to the "Geologic Map of the Fairfield South 7.5' Quadrangle, Solano County, California by Stephen P. Bezore, David L. Wagner, and Janet M. Sowers, 1998".

Based on the geologic map (Plate No. 3), the project site is mapped as Holocene fan deposits (Qhf). Holocene fan deposits consist of sand, gravel, silt, and clay, and are moderately to poorly-sorted.

8. EARTHQUAKE CONSIDERATIONS

8.1 Seismic Sources

The project site is located in a seismically active part of northern California. Many faults, which are capable of producing earthquakes, exist in the San Francisco Bay Area. These faults may cause strong ground shaking at the site. Based on the "Maps of Known Active Fault & Near- Source Zones" published by International Conference of Building Officials (February 1998), the governing fault for the site is the Concord-Green Valley Fault (Type B, Mw=6.9) located at about 0.8 miles from the site. The attached Fault Map, Plate No. 4, presents the locations of the fault systems relative to the project site.

According to the Alquist-Priolo Earthquake Fault Zone Map, the project site is not located inside the special studies zones. In our opinion, the potential of fault rupture is considered relatively low.

8.2 Seismic Design Criteria

According to the boring data, the subsoil can be categorized as Site Class D (S_D) based on Chapter 16 of the 2007 California Building Code (CBC). The relevant seismic coefficients per 2007 CBC seismic criteria are shown as follows:

TABLE 1: SESIMIC COEFFICIENT PER 2007 CBC SEISMIC CRITERIA

Coefficient	Recommended Value
Site Coefficient, F_a (Table 1613.5.3 (1))	1.00
Site Coefficient, F_v (Table 1613.5.3 (2))	1.50
S_S (Figure 1613.5 (3))	1.702
S_1 (Figure 1613.5 (4))	0.604
$S_{MS} = F_a \times S_S$ (Equation 16-37)	1.702
$S_{M1} = F_v \times S_1$ (Equation 16-38)	0.906
$S_{DS} = 2/3 \times S_{MS}$ (Equation 16-39)	1.135
$S_{D1} = 2/3 \times S_{M1}$ (Equation 16-40)	0.604

8.3 Seismic Hazards/Liquefaction Potential

Potential seismic hazards may arise from three sources: surface fault rupture; ground shaking; and liquefaction. Since no active fault passes through the project site, the potential for fault rupture is relatively low. Based on available geological and seismic data, the possibility that the project site will experience strong ground shaking should be considered low to moderate.

Liquefaction Potential

Liquefaction is a phenomenon in which saturated cohesionless soils are subject to a temporary but essentially total loss of shear strength under the reversing, cyclic shear stress associated with earthquake shaking. Submerged cohesionless sands and silts of low relative density are susceptible to liquefaction. Clays are generally not susceptible to liquefaction.

Based on the available boring and CPT data, the subsurface soil at the project site generally consists of firm to hard lean clays. Isolated pocket/lens of loose silty sand/clayey sand (for example as encountered in Borings A-09-107 and A-09-128) may liquefy during shaking.

In our opinion, the liquefaction potential within the project site is generally relatively low to moderate. The impact of the post-liquefaction settlement on the structures should be relatively small because:

- The potentially liquefiable soil layers are generally covered by predominantly cohesive soils, which tend to serve as a "soil mat" and should reduce the potential impact of liquefaction.
- The post-liquefaction settlement probably would be random and localized and could spread out over some distance/area.

9. FINDINGS AND RECOMMENDATIONS

9.1 General

This report was prepared specifically for the proposed project. Normal construction procedures were assumed throughout our analyses and represent one of the bases of recommendations presented herein. Our design criteria have been based upon the materials and conditions encountered in the soil borings. Therefore, we should be notified in the event that these conditions are changed, so as to modify or amend our recommendations.

9.2 Grading

All earthwork and grading operations should be performed in accordance with the project specifications and Caltrans Standard Specifications for Earthwork (Section 19). A representative from PARIKH or regulatory agency should observe all excavated areas during grading and perform moisture and density tests on prepared subgrade and compacted fill materials. Any fill material imported to the site should be reviewed by the Geotechnical Engineer or regulatory agency.

Depression resulting from stripping, removal of trees, and other construction activities should be backfilled and properly compacted. Areas receiving fill should be scarified to a minimum depth of 6 inches or to a greater depth determined necessary by the Geotechnical Engineer at the time of construction, moisture conditioned and compacted to required percent of relative compaction as per specifications.

9.3 Slabs-on-grade Subgrade Preparation (including pit/tunnel floor slabs)

Slabs-on-grade floors of the new building structures should be supported on a minimum

section of 2 feet of engineered fill. The engineered fill constructed to support the new slab-on-grade should be compacted to a minimum relative compaction of 95% of maximum dry density in accordance with the specifications.

If moisture migration in and through the floor slab is undesirable, a capillary break and a moisture barrier should be provided below the slab in accordance with IBC 1807. This section should be in addition to the 2 feet of engineered fill recommended above.

9.4 Foundation of Buildings and Retaining Walls

Based on the site conditions and as discussed in "Proposed Construction", it is our understanding that the "Inspection Building", "Office Building" and "Generator Building" will be supported on engineered fill and the retaining walls for the inspection pit and tunnel will be supported on existing native soil.

The "Inspection Building", "Office Building" and "Generator Building" may be supported on a conventional spread footing foundation established on properly compacted engineered fill. An allowable bearing capacity of 2.75 kips per square foot (ksf) (bottom of footing at a minimum depth of 1½ feet below adjacent grade) may be used for the design with respect to dead-plus-live-loads. For total loads, including wind or seismic, this bearing capacity may be increased by one-third. Foundation designed as flexible mat may be designed for a modulus of vertical subgrade reaction of 95 kip/ft^3 (or 55 pci).

Caltrans Standard wall (design height H less than 8 feet) supported on strip footing can be used to support the inspection pit and tunnel. An allowable bearing capacity (based on Factor of Safety of 3) of 2.5 ksf is available for design (bottom of footing at a minimum depth of 1½ feet below adjacent grade). For total loads, including wind or seismic, this bearing capacity may be increased by one-third.

Based on Section 6 "Subsurface Soil Conditions", soft to firm lean clays and groundwater were encountered at shallow depth in some of the soil borings. In the event foundation subgrade of the retaining wall footing consists of soft to firm/loose soils, the following subgrade improvements are recommended for the foundation subgrade of the retaining wall:

a) Foundation subgrade should be over-excavated a minimum of 2 feet below the bottom of the retaining wall footing. The excavation should extend 2 feet beyond the footprint of the retaining wall footing.

b) A layer of subgrade enhancement geotextile should be placed at the bottom of the excavation.

c) The excavation should be backfilled with compacted Class 3 Aggregate Base. The Class 3 Aggregate Base should be as per Caltrans Standard Specifications and should be compacted to not less than 95 percent relative compaction of maximum dry density as per Caltrans standards. As an option, the Class 3 Aggregate Base may be substituted with Lean Concrete Base (LCB).

9.5 Engineered Fill

The engineered fill should be as per Caltrans Standard Specifications. Engineered fill should be non-expansive and consist of relatively granular material, free of organic and inorganic debris, having a Plasticity Index of less than 15. Rocks or cobbles should be broken down and shall not exceed 3 inches in size. The on-site soil materials may be used as engineered fill, provided they meet the engineered fill criteria.

9.6 Lateral Earth Pressures

For the lateral design of the retaining walls, the following lateral earth pressures (Equivalent Fluid Pressures EFP) should be used. These values assume no hydrostatic pore pressure build-up behind the wall and are based on well-drained structure backfill behind the walls.

Applied Lateral Earth Pressures

(a) The recommended active pressure is 45 pcf EFP for the native soil material and 36 pcf EFP for the structure backfill.

(b) The recommended at-rest pressure is 60 pcf EFP for the native soil material and 50 pcf EFP for the structure backfill fill.

(c) The recommended passive resistance against the side of the wall footing is 340 pcf EFP.

(d) A coefficient of friction of 0.3 may be used to estimate the frictional resistance

along the bottom of the footing. Only dead loads should be used to estimate the frictional resistance at the bottom of footings.

(e) Sliding resistance should be calculated using 100% of the base resistance plus 50% of passive resistance.

(f) The effect of any surcharge (dead or live load) should be added to the preceding lateral earth pressures. Use equivalent earth pressure of not less than 2 feet of uniform soil weight at 125 pcf if the traffic (HS20 loading) is within a horizontal distance of one half of the wall height.

Cantilever walls, which are free to rotate by at least 0.01 radii, may be assumed flexible and designed for the active condition. Walls that are not capable of this movement should be assumed rigid and designed for the at-rest condition. A coefficient of 0.4 and 0.5 may be used to determine the additional lateral earth pressures resulting from the surcharge for cantilever walls and rigid walls, respectively.

9.7 Settlement Evaluation

It is estimated that three to four feet of compacted fill will be required to be placed on the existing ground surface as discussed in Section 3 "Proposed Construction" above. Based on the fill thickness and subsurface soil conditions at the project site (which consists of mainly firm to hard lean clays), the consolidation settlements were estimated to be on the order of ½ inch and mainly in the over-consolidated range. Caltrans standard 30-day waiting period is recommended prior to the construction of the structural pavement, buildings and any other critical structures.

9.8 Corrosion

Chemical tests were performed on soil sample from Borings A-09-TS-003 and A-09-106 to evaluate the corrosion potential of the subsoil. The test results are as follows:

TABLE2: SUMMARY OF CORROSION TEST RESULTS

Boring No.	Depth (ft)	Resistivity (ohm-cm)	pH	Sulfate (ppm)	Chloride (ppm)
A-09-106	9.5	1800	7.74	14.9	33.8
A-09-TS-003	14.5	1070	7.01	26.2	37.9

Based on the corrosion test results, the native subsurface soils in Borings A-09-TS-003 and A-09-106 are considered non-corrosive per Caltrans corrosion design guidelines. Standard Type II modified or Type I-P (MS) modified cement may be used for the concrete substructure. The minimum cement factor and cover thickness should be per Section 5.12 of California Amendments to AASHTO LRFD Bridge Design Specifications – Fourth Edition (December 2008).

9.9 Construction Considerations

Prospective contractors for the project must evaluate construction-related issues on the basis of their own knowledge and experience in the local area, on the basis of similar projects in other localities, taking into account their own proposed construction methods and procedures.

9.9.1 Temporary Excavation Slope and Shoring

Excavations should not be expected to stand vertically without any support. According to Occupational Safety and Health Administration (OSHA) safety standards, temporary excavations with personnel working within the excavations should be sloped or shored if the excavations are deeper than 5 feet.

All excavations should be closely monitored during excavation/construction to detect any evidence of instability, soil creep, settlements, etc. Appropriate mitigation measures and a comprehensive monitoring plan should be implemented to correct such situations that may cause or lead to future damage to facilities, utilities and other improvements.

Operation of construction equipment and the resulting vibrations may adversely affect the native soils and other buildings/improvements at the site. This should be taken into consideration in the evaluation of temporary slope stability and shoring system.

Temporary Excavation Slope

The slope height, inclination, and excavation depths should not exceed those specified in local, state, or federal safety regulations. The design of the temporary

slopes by the contractor or his specialty subcontractor should conform to the OSHA's "Guidelines for Excavations and Temporary Sloping". The contractor or responsible subcontractor should develop or modify their design based on the subsurface soil conditions exposed at the time of construction.

OSHA guidelines state that, for excavations up to 20 feet deep in homogenous soils, the maximum allowable slope should be 3/4H: 1V, 1H:1V and 1-1/2H:1V for Type A, B and C soils, respectively. (In general, Type A soils are stronger; Type B soils are intermediate, and Type C soils are weaker.) Based on the evaluation of the subsurface soil materials encountered in the current soil borings, the sand and clay (multi-layer formation) should be considered as OSHA Type C. It should be noted that the slope ratios recommended by OSHA are for temporary, un-surcharged slopes. Traffic and surcharge loads should be set back at least 15 feet from the top of the excavations unless they are accounted for in the design. The temporary cut slopes discussed above assume that the groundwater is maintained below the bottom of the excavation at all times during construction. Slopes may need to be flattened based on the soil materials exposed during construction since loose and soft soils are anticipated at locations in the vicinity of those borings as described in Section 6 "Subsurface Soil Conditions (Items 1 and 2)".

Surficial drying of these granular soils may result in erosion and/or minor sloughing if the bare (before the application of surface protection) surficial soil materials are exposed to weather and rain for extended period of time. Stiff clays also tend to develop soil creep due to seasonal change in moisture content resulting in sloughing and cracking. Adequate surface protection should be provided to the slope surface after its exposure from excessive drying and/or saturation during construction and the exposed slopes should be kept moist (but not saturated) by occasional light spraying of water during construction.

Selection of Shoring System

Temporary shoring may be necessary for the support of proposed excavations for the footing construction. The selection, design and performance of the temporary

shoring system should be the responsibility of the contractor. The contractor should have the shoring system designed and signed by a Registered Engineer. The contractor should evaluate the conditions and select appropriate construction methods.

The shoring system should be designed to be relatively rigid and with as many supports or struts as necessary to prevent excessive straining and deformation of the supported soils. This is also important with regard to existing surface improvements and existing utilities where tension cracking or movement may develop, even under minor strains.

9.9.2 Excavation Bottom Stability

Due to fluctuation in groundwater elevation, excavation bottom instability during the excavation for the wall footing may occur as a result of bottom heave, piping, or blow-out. If excavation bottom failure due to bottom heave, piping or blow-out occurs, measures such as trimie seal course, dewatering, installing deep sheeting, continuous inter-locking sheet piles, deep soil mix walls etc. will be required to mitigate these conditions. It s recommended supplemental funds be provided for such mitigation measure(s).

9.9.3 Dewatering

Dewatering of excavations is normally the responsibility of the contractor. As described in Section 6 "Subsurface Conditions", groundwater was measured at the depths between 1.5 feet and 13 feet (between Elev. +15.0 feet and +26.5 feet) during drilling in January and June 2009. Groundwater should be expected during excavations. A properly designed and constructed dewatering operation is recommended irrespective of the construction method used. This may include, but not limited to, continuous inter-locking sheet piles, deep soil mix walls or other appropriate methods. The groundwater should be maintained at least 3 feet below the bottom of the excavation at all times.

10. PLAN REVIEW

This report is prepared for the proposed "Commercial Vehicle Enforcement Facility". We recommend that final foundation plans for the proposed project be reviewed by PARIKH prior to construction so that the intent of our recommendations is included in the project plans and specifications and to further see that no misunderstandings or misinterpretations have occurred. However, design-build elements should be reviewed only from overall compliance standpoint.

11. CONSTRUCTION OBSERVATION

To a degree, the performance of any structure is dependent upon construction procedures and quality control measures. Hence, geotechnical observation and testing of grading operations, and foundation excavations should be carried out by a Geotechnical Engineer. If the subsurface conditions different from those forming the basis of our recommendations are encountered, this office should be informed in order to assess the need for design changes. Therefore, the recommendations presented in this report are contingent upon good quality control and these geotechnical observations during construction.

12. INVESTIGATION LIMITATIONS

Our services consist of professional opinions and recommendations made in accordance with generally accepted geotechnical engineering principles and practices and are based on our site reconnaissance and the assumption that the subsurface conditions do not deviate from observed conditions. All work done is in accordance with generally accepted geotechnical engineering principles and practices. No warranty, expressed or implied, of merchantability or fitness, is made or intended in connection with our work or by the furnishing of oral or written reports or findings. The scope of our services did not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in structures, soil, surface water, groundwater or air, below or around this site. Unanticipated soil conditions are commonly encountered and cannot be fully determined by taking soil samples and excavating test borings; different soil conditions may require that additional expenditures be made during

construction to attain a properly constructed project. Some contingency fund is thus recommended to accommodate these possible extra costs.

This report has been prepared for the proposed project as described earlier, to assist the engineer in the design of this project. In the event any changes in the design or location of the facilities are planned, or if any variations or undesirable conditions are encountered during construction, our conclusions and recommendations shall not be considered valid unless the changes or variations are reviewed and our recommendations modified or approved by us in writing.

This report is issued with the understanding that it is the designer's responsibility to ensure that the information and recommendations contained herein are incorporated into the project plans and specifications.

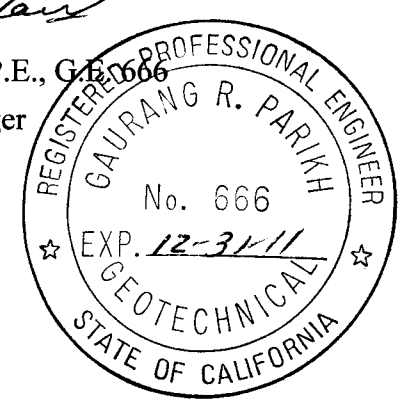
The findings in this report are valid as of the present date. However, changes in the subsurface conditions can occur with the passage of time, whether they are due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur, whether they result from legislation or from the broadening of knowledge. Accordingly, the findings in this report might be invalidated, wholly or partially, by changes outside of our control.

Respectfully submitted,

PARIKH CONSULTANTS, INC.

Alston Lam, P.E., G.E. 2605
Project Engineer

Gary Parikh, P.E., G.E. 666
Project Manager



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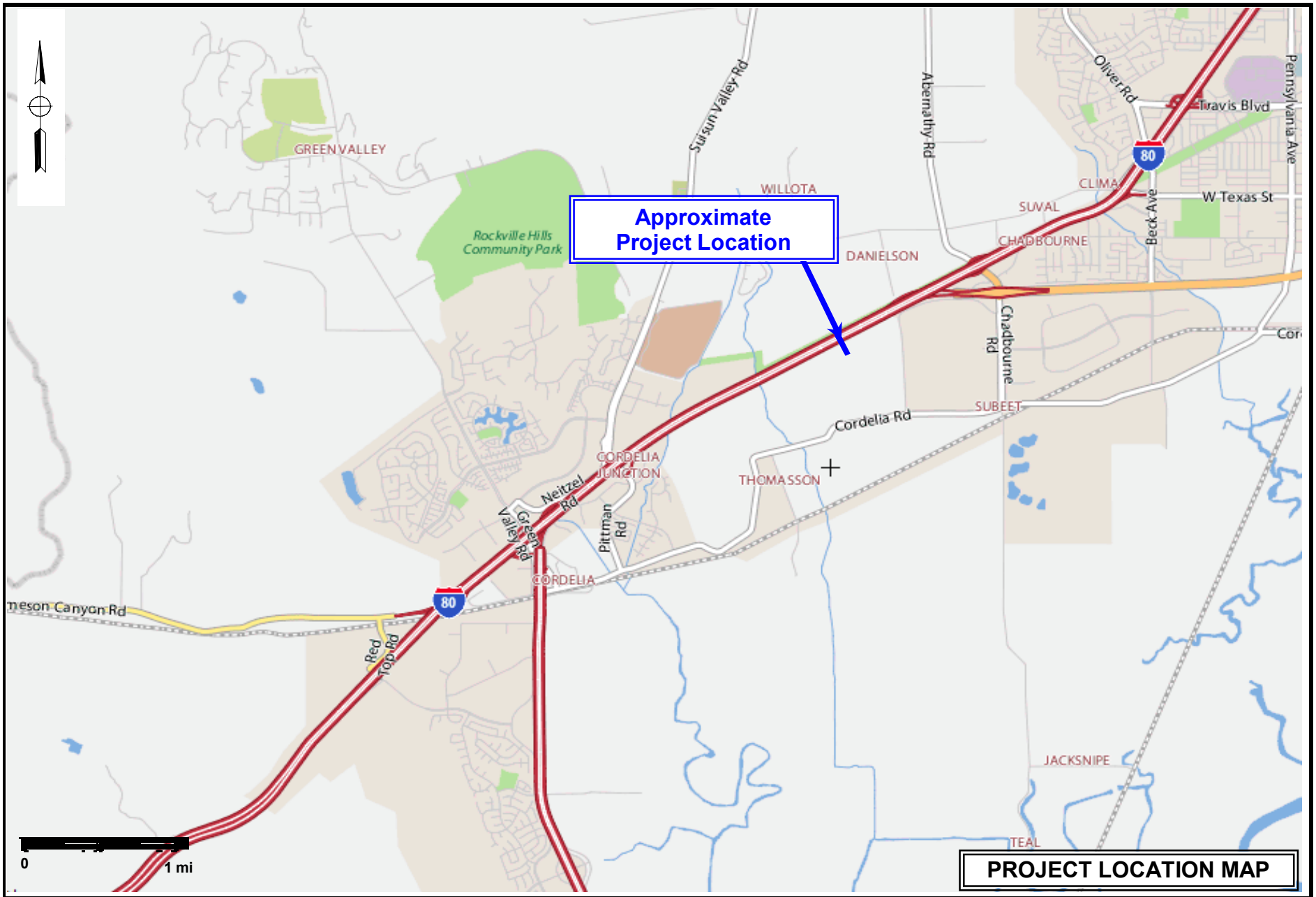
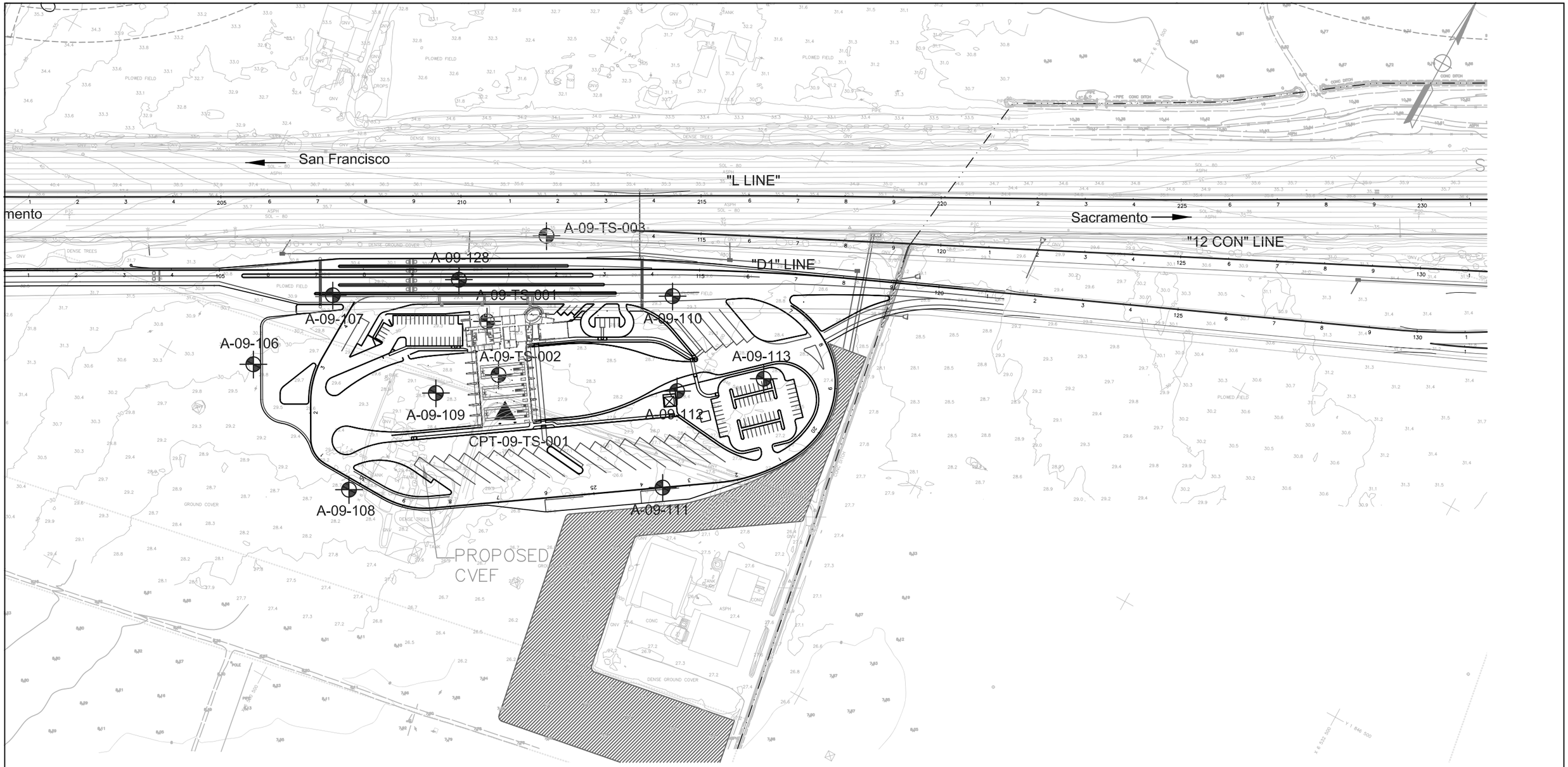


PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

COMMERCIAL VEHICLE ENFORCEMENT FACILITY
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.TSF	PLATE NO.: 1



LEGEND

A-09-TS-001
Approximate auger wash boring location drilled in 2009

CPT-09-TS-001
Approximate CPT location performed in 2009

SCALE 1 inch = 200 feet

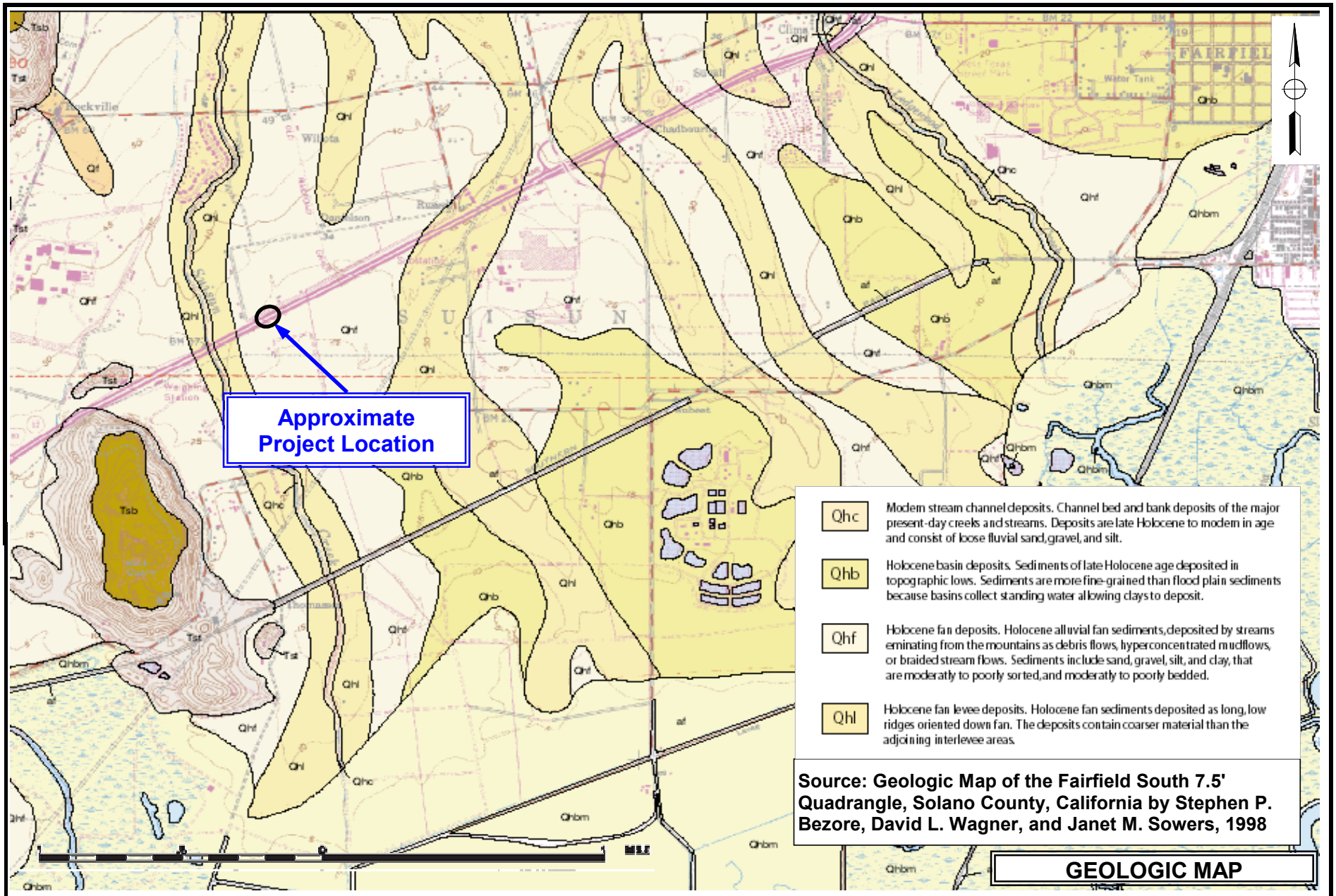
Note: All units are in feet unless otherwise specified
Reference Map was provided by HDR Engineering, Inc.

SITE PLAN

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

COMMERCIAL VEHICLE ENFORCEMENT FACILITY
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.TSF | PLATE NO: 2



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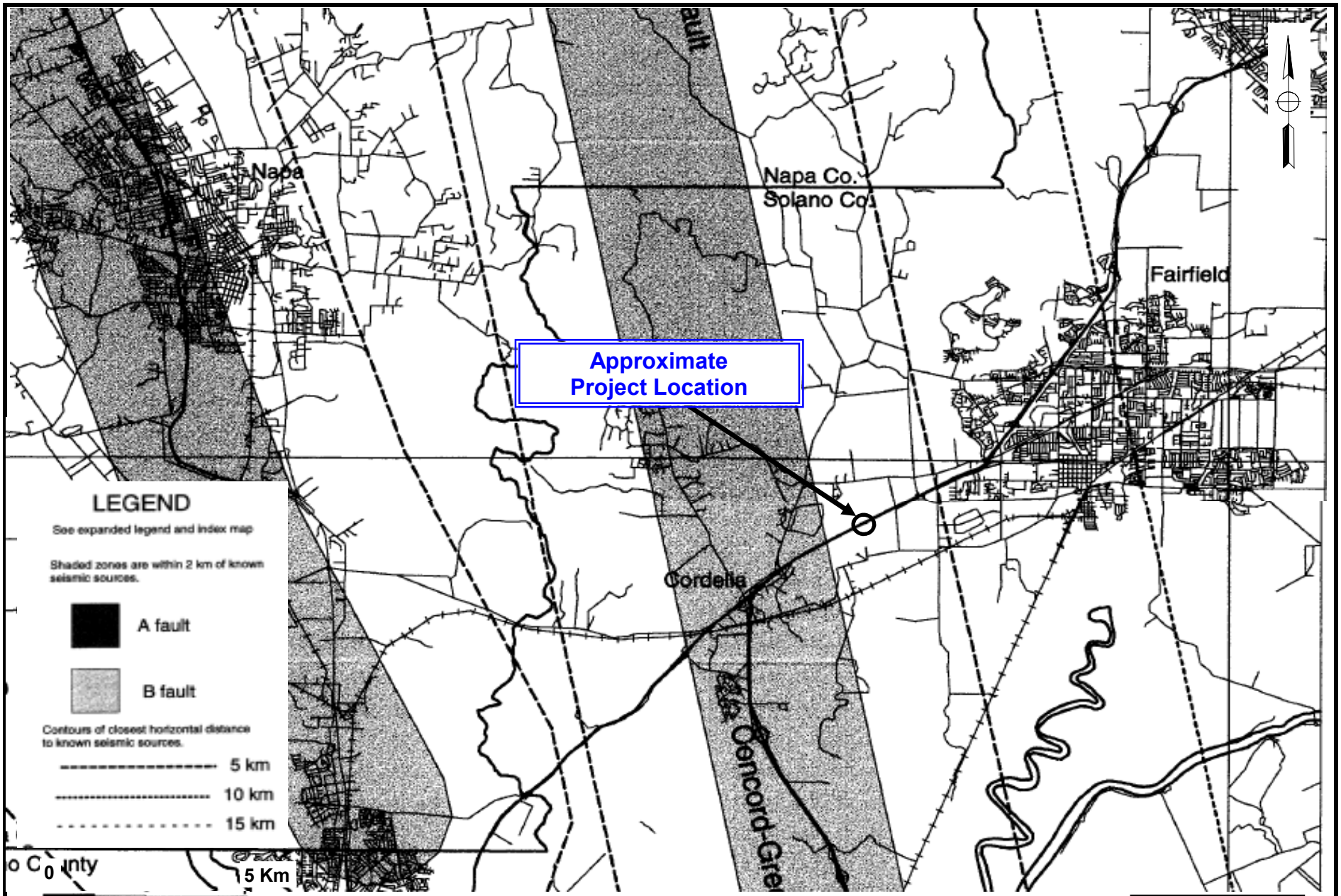
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

COMMERCIAL VEHICLE ENFORCEMENT FACILITY
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.TSF	PLATE NO.: 3



FAULT MAP

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

COMMERCIAL VEHICLE ENFORCEMENT FACILTY
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.TSF	PLATE NO.: 4

APPENDIX A

APPENDIX A
FIELD EXPLORATION

The test borings were advanced with truck-mounted drill rig with 8-inch diameter hollow-stem auger drilling method. The soil samples were obtained from the borings during drilling at various depths by driving a 2.5-inch Inside Diameter (I. D.) Modified California Sampler or a 1.375-inch I.D. Standard Penetration Sampler (ASTM Test Method No. 1586). The sampler was driven into the subsurface soils under the impact of a 140-pound hammer having a free fall of 30 inches. The blow counts required to drive the sampler for the last 12 inches are presented on the Logs of Test Borings (LOTB), Appendix A. When correlating standard penetration data in similar soils, the blow counts for the Modified California sampler can be taken as roughly twice that for the Standard Penetration Test sampler in similar soils. Pocket penetration tests were also performed on clay samples to evaluate their consistency. Upon completion of drilling, the drillhole was backfilled with cement grout.

The borings were drilled under the technical supervision of our engineer, who visually classified in the field (according to the Unified Soil Classification System) and continuously logged the soils encountered during drilling. The engineer supervised the collection of soil samples at various depths for visual examination and laboratory testing. The soil samples were then transported to our laboratory for further evaluation and testing.

The descriptions of the soils encountered and relevant boring information are presented on the boring logs in the LOTB in Appendix A. The laboratory test methods and results are presented in Appendix B. The logs presented in Appendix A were prepared from the field logs which were edited after visual re-examination of the soil samples in the laboratory and results of classification tests on selected soil samples as indicated on the logs.

The descriptions and related information presented on these LOTB depict subsurface conditions only at the locations indicated on the plan and on the particular date noted on the logs. Because of the variability from place to place within soil/rock in general, subsurface conditions at other locations may differ from conditions occurring at the locations explored. The abrupt stratum changes shown on the logs may be gradational and relatively minor changes in soil types within a stratum may not be noted on the logs due to field limitations. Also, the passage of time may result in a change in the soil conditions at these locations due to environmental changes.

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly graded SAND Poorly graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL		
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90)
Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (PP) Pocket Penetrometer
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (TV) Pocket Torvane
- (UC) Unconfined Compression-Soil (ASTM D 2166)
Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)
- (VS) Vane Shear (AASHTO T 223)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	12,80	L1.8/L2.0 13.3/15.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 — GEOTECHNICAL — STATE OF CALIFORNIA

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SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE

Description		Size
Boulder		> 12"
Cobble		3" to 12"
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

G. PARIKH
DESIGN OVERSIGHT

SIGN OFF DATE

DRAWN BY: O. GOUTHIER
CHECKED BY: D. WANG

S. DUDDU
FIELD INVESTIGATION BY:
DATE: JANUARY 2009 - JUNE 2009

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

A. LAM
PROJECT ENGINEER

BRIDGE NO. 23W0001R
POST MILES 14.8

EASTBOUND CORDELIA CVEF
SOIL LEGEND SHEET 1 OF 2

OGS CIVIL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 04-0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES		SHEET	OF
09/11/09	08/16/10		

...\CVEF\23-W0001R-z-ltb01.dgn 11/11/2010 9:26:30 AM

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	12,80	L1.8/L2.0 13.3/15.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 — GEOTECHNICAL — STATE OF CALIFORNIA

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ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring
Size	R P	Rotary drilled boring Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778-95)
	O	Other

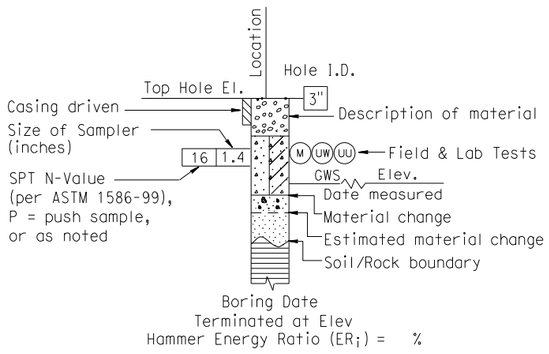
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

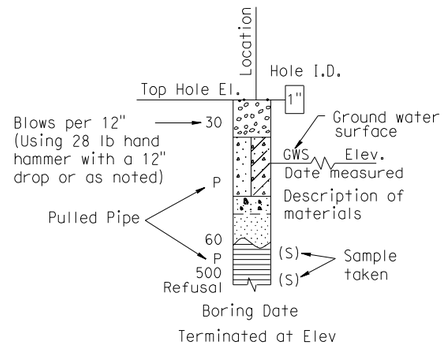
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

PLASTICITY OF FINE-GRAINED SOILS

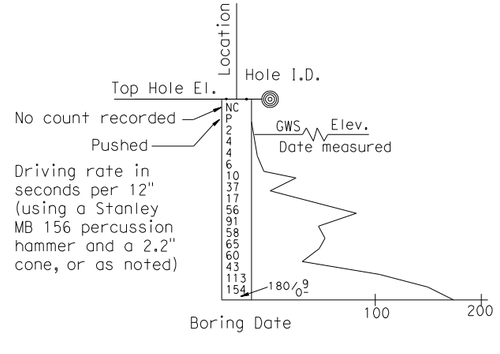
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



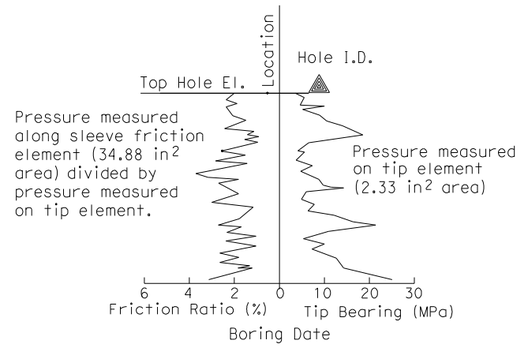
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. 23W0001R POST MILES 14.8
SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JUNE 2009			EASTBOUND CORDELIA CVEF SOIL LEGEND SHEET 2 OF 2

OGS CIVIL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 04-0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES										SHEET	OF
09/11/09	08/16/10										

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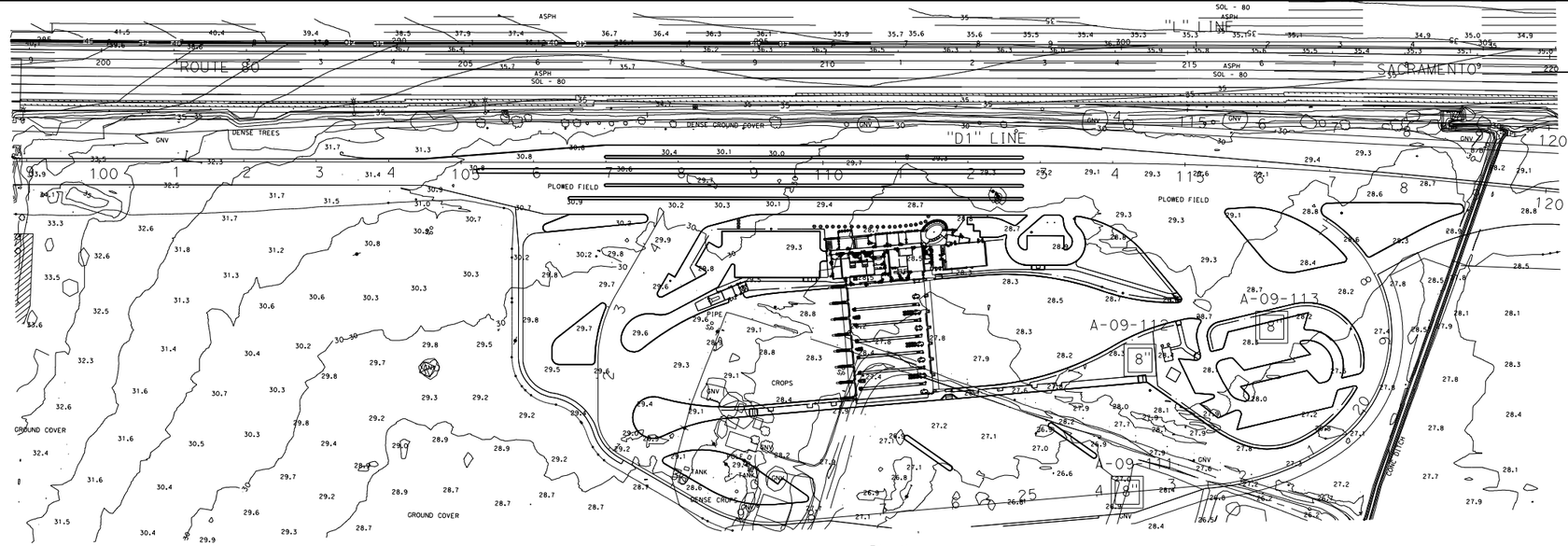
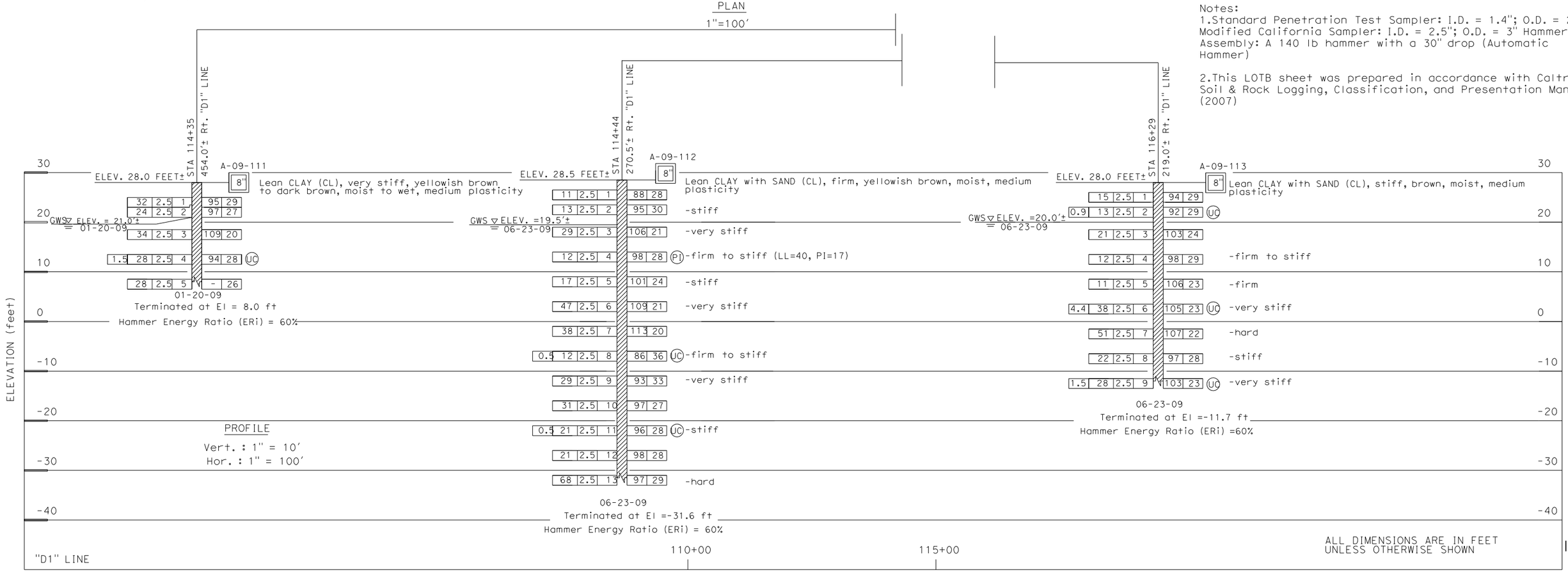


PLAN
1"=100'



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	12,80	L1.8/L2.0 13.3/15.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/11 — GEOTECHNICAL — STATE OF CALIFORNIA

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BENCHMARK:
Coordinates, bearings and distances are based on the California Coordinate System of 1983, Zone 2, 1991. 35 CA-HPGN.
Distances are in U.S. Survey feet unless otherwise noted.
Distances and stationing are grid distances.
Multiply distances by 0.99999972 to obtain ground level distances.

Notes:
1.Standard Penetration Test Sampler: I.D. = 1.4"; O.D. = 2" Modified California Sampler: I.D. = 2.5"; O.D. = 3" Hammer Assembly: A 140 lb hammer with a 30" drop (Automatic Hammer)

2.This LOTB sheet was prepared in accordance with Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2007)

G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. 23W0001R	EASTBOUND CORDELIA CVEF
SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JULY 2009			POST MILES 14.8	LOG OF TEST BORINGS 1 OF 5

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 04-0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES										SHEET	OF
09/11/09	08/16/10	-----	-----	-----	-----	-----	-----	-----	-----		

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	12,80	L1.8/L2.0 13.3/15.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

REGISTERED PROFESSIONAL ENGINEER
GARY PARIKH
No. G.E. 666
Exp. 12/31/11
GEOTECHNICAL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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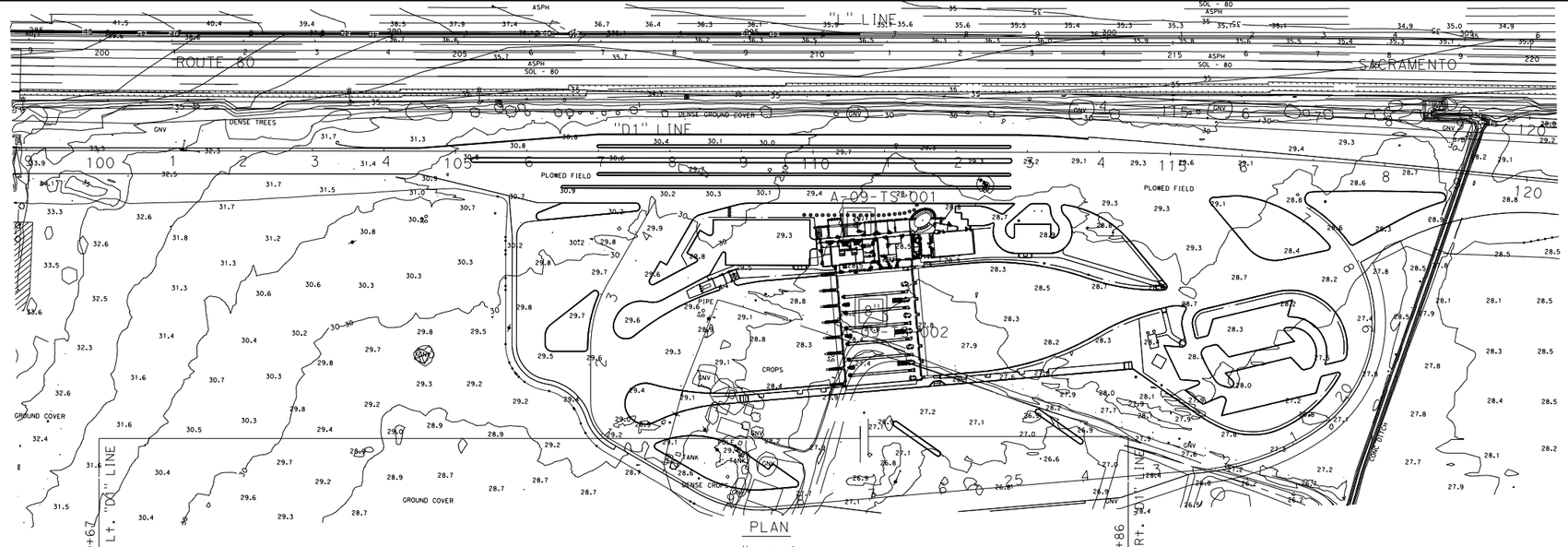
SUISUN CITY, CA 94585



PLAN
1"=100'

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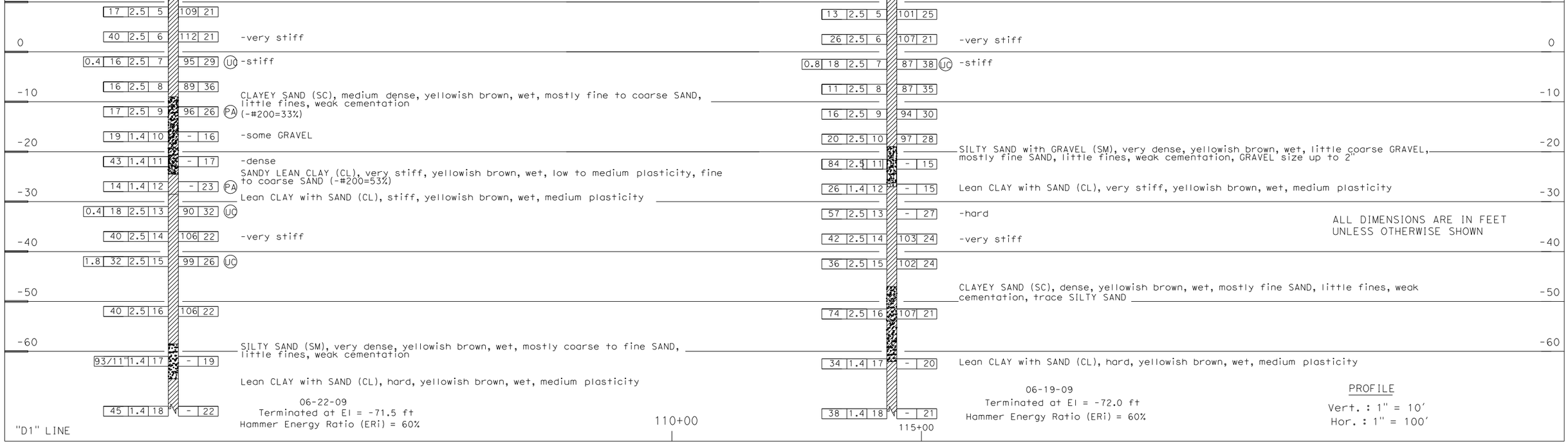

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

PROFILE
Vert. : 1" = 10'
Hor. : 1" = 100'

G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER
? SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JULY 2009		

BRIDGE NO. 23W0001R
POST MILES 14.8

EASTBOUND CORDELIA CVEF
LOG OF TEST BORINGS 2 OF 5

CU 04264
EA 04-0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES										SHEET	OF
09/11/09	08/16/10	-----	-----	-----	-----	-----	-----	-----	-----		

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	12,80	L1.8/L2.0 13.3/15.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
GARY PARIKH
No. G.E. 666
Exp. 12/31/11
GEOTECHNICAL
STATE OF CALIFORNIA

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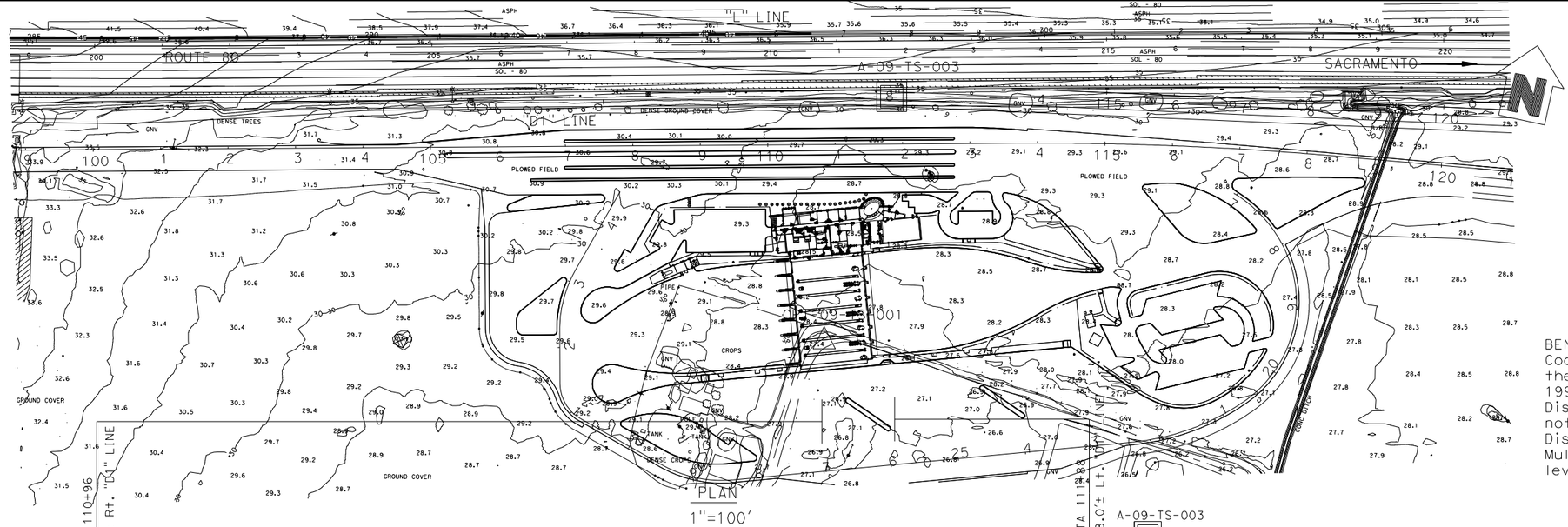

BENCHMARK:
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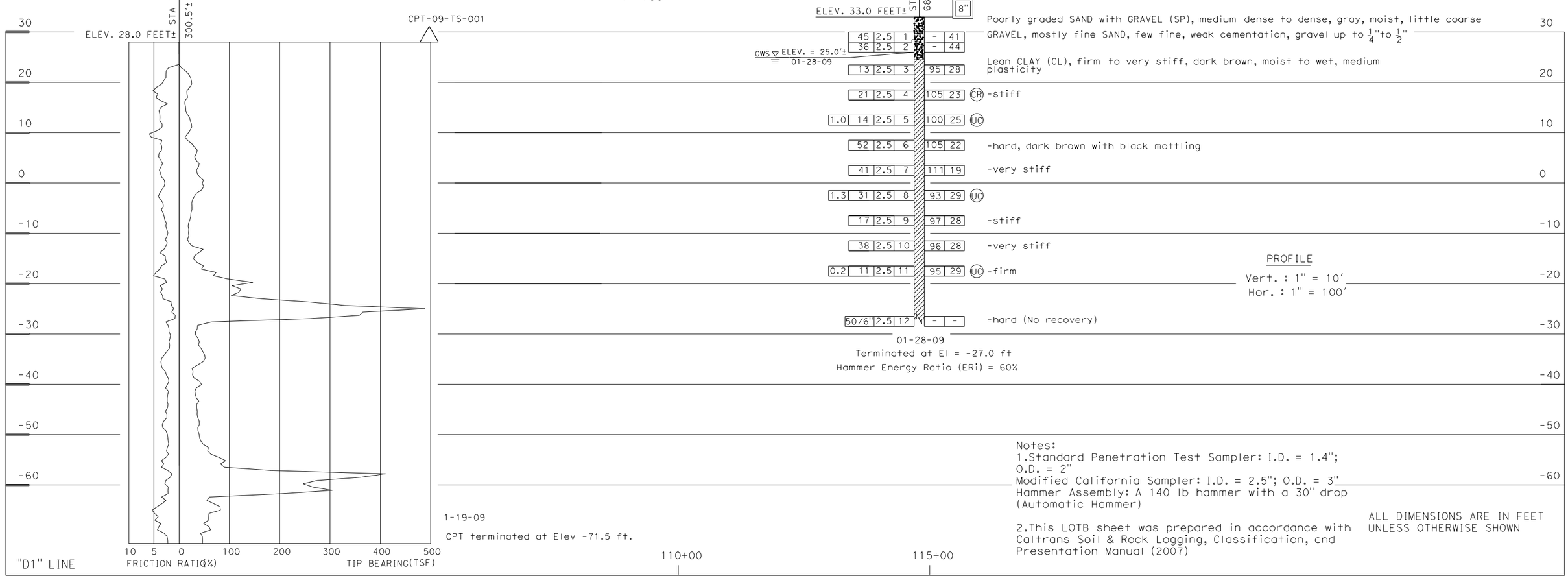

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2.This LOTB sheet was prepared in accordance with Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2007)

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? SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JULY 2009		

BRIDGE NO. 23W0001R
POST MILES 14.8

EASTBOUND CORDELIA CVEF
LOG OF TEST BORINGS 3 OF 5

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 04-0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES									SHEET	OF
09/11/09	08/16/10	-----	-----	-----	-----	-----	-----	-----		

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	12,80	L1.8/L2.0 13.3/15.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

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REGISTERED PROFESSIONAL ENGINEER
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STATE OF CALIFORNIA

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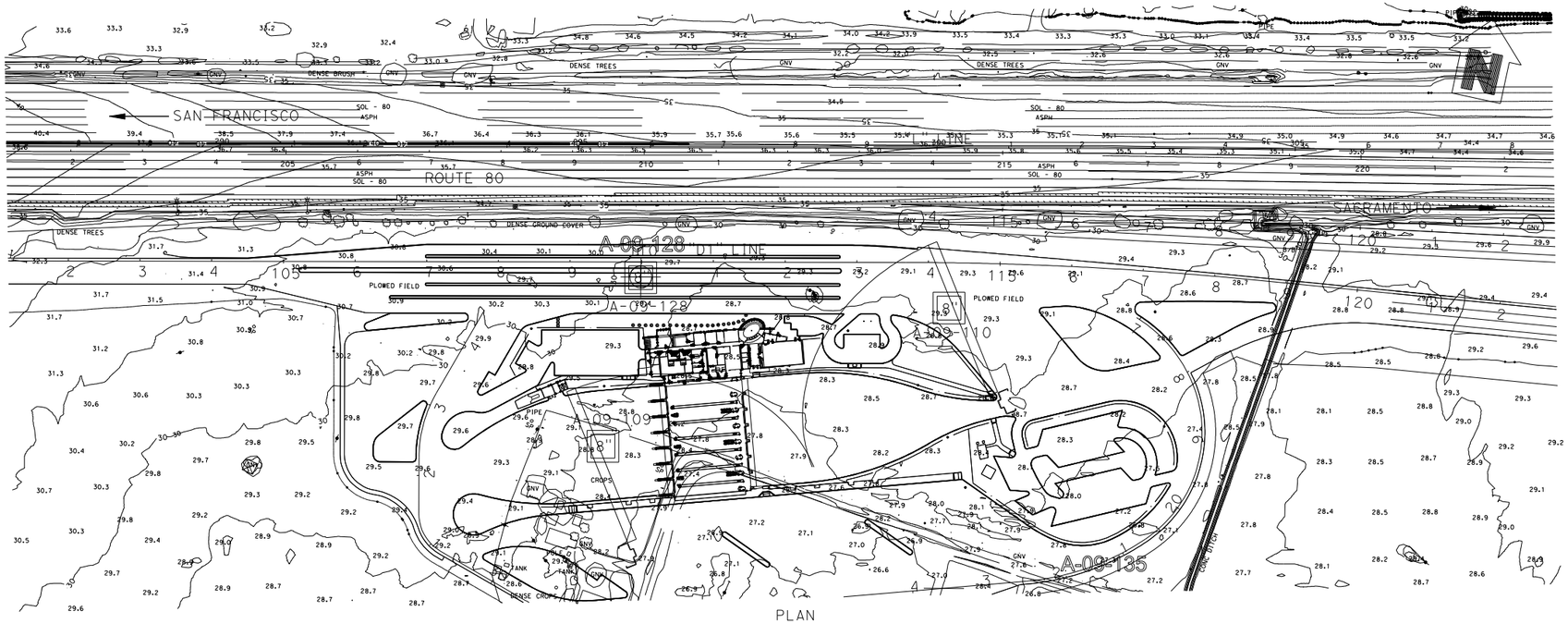

PLAN
1"=100'

BENCHMARK:
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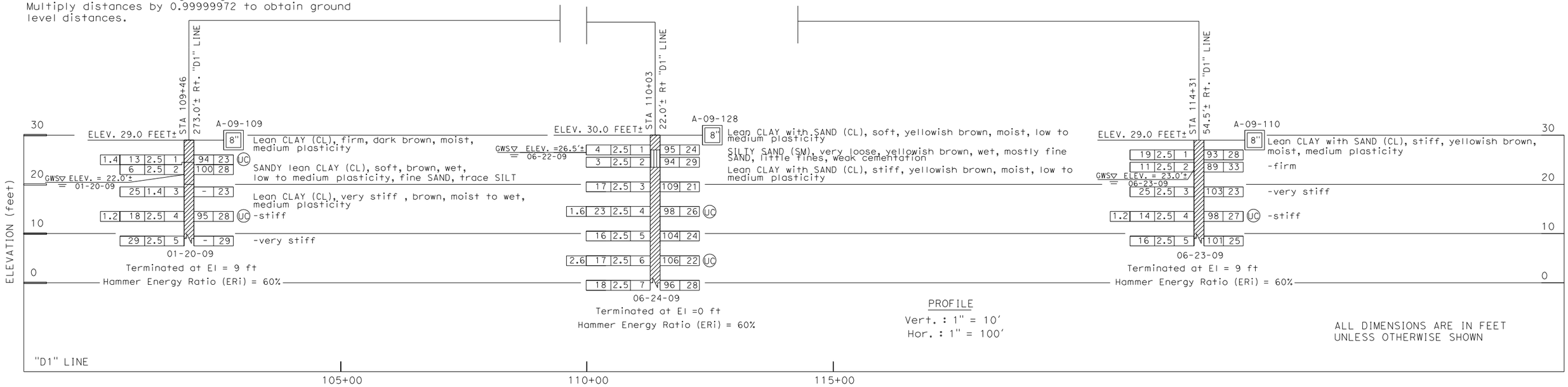


PROFILE
Vert. : 1" = 10'
Hor. : 1" = 100'

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER
? SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JULY 2009		

BRIDGE NO. 23W0001R
POST MILES 14.8

EASTBOUND CORDELIA CVEF
LOG OF TEST BORINGS 4 OF 5

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04264
EA 04-0A5351

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES										SHEET	OF
09/11/09	08/16/10	-----	-----	-----	-----	-----	-----	-----	-----		

...\CVEF\23-W0001R-z-ltb06.dgn 11/11/2010 9:36:45 AM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	12,80	L1.8/L2.0 13.3/15.7	---	---

GEOTECHNICAL PROFESSIONAL DATE

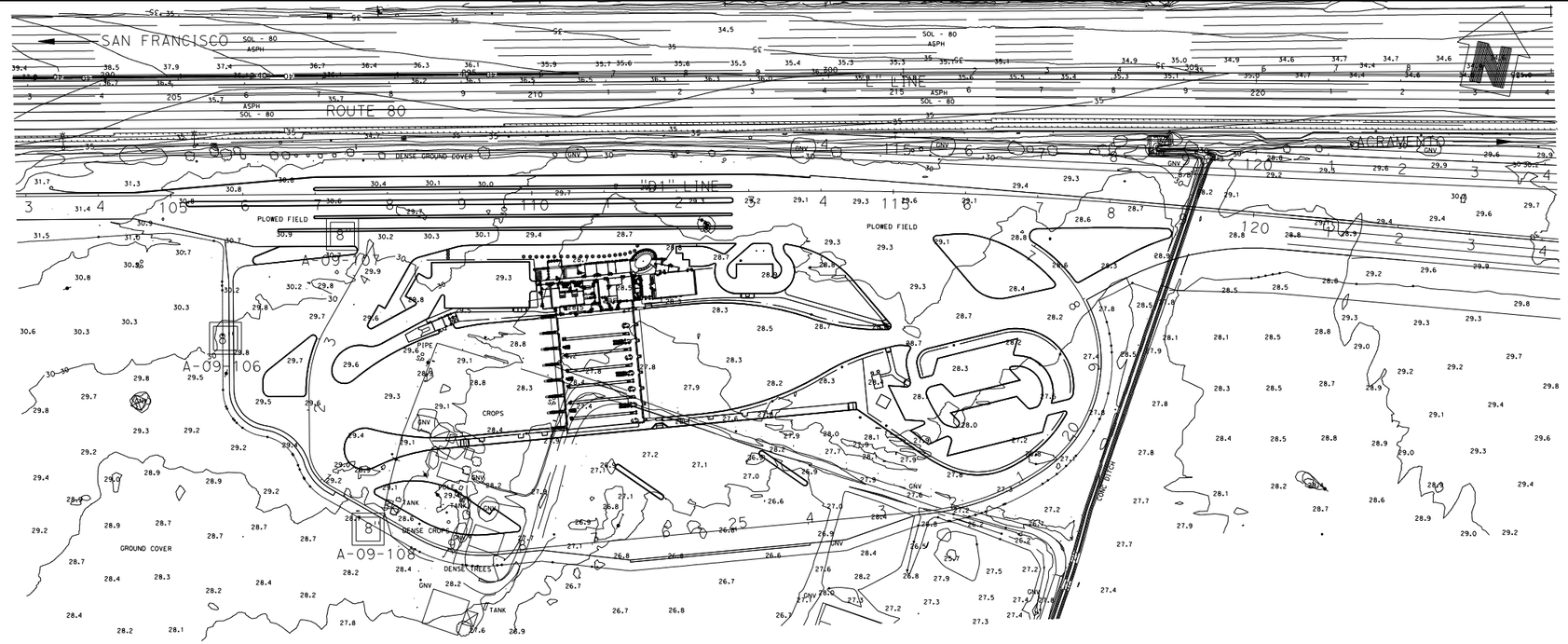
REGISTERED PROFESSIONAL ENGINEER
GARY PARIKH
No. G.E. 666
Exp. 12/31/11
GEOTECHNICAL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

PARIKH CONSULTANTS, INC.
2360 OUME DRIVE, SUITE A
SAN JOSE, CA 95131

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOUR CENTER, SUITE 130
SUISUN CITY, CA 94585

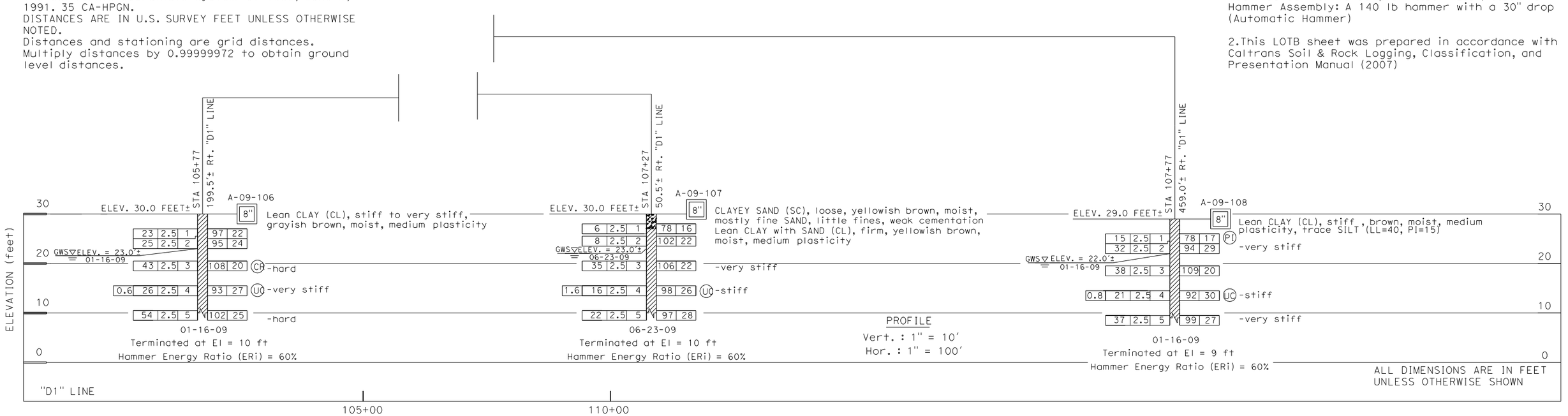


PLAN
1"=100'

BENCHMARK:
Coordinates, bearings and distances are based on the California Coordinate System of 1983, Zone 2, 1991.35 CA-HPGN.
DISTANCES ARE IN U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
Distances and stationing are grid distances.
Multiply distances by 0.99999972 to obtain ground level distances.

Notes:
1.Standard Penetration Test Sampler: I.D. = 1.4"; O.D. = 2"
Modified California Sampler: I.D. = 2.5"; O.D. = 3"
Hammer Assembly: A 140 lb hammer with a 30" drop (Automatic Hammer)

2.This LOTB sheet was prepared in accordance with Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2007)



G. PARIKH DESIGN OVERSIGHT	DRAWN BY	O. GOUTHIER	S. DUDDU FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	A. LAM PROJECT ENGINEER	BRIDGE NO. 23W0001R POST MILES 14.8	EASTBOUND CORDELIA CVEF LOG OF TEST BORINGS 5 OF 5
? SIGN OFF DATE	CHECKED BY	D. WANG	DATE: JANUARY 2009 - JULY 2009		CU 04264 EA 04-0A5351		

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

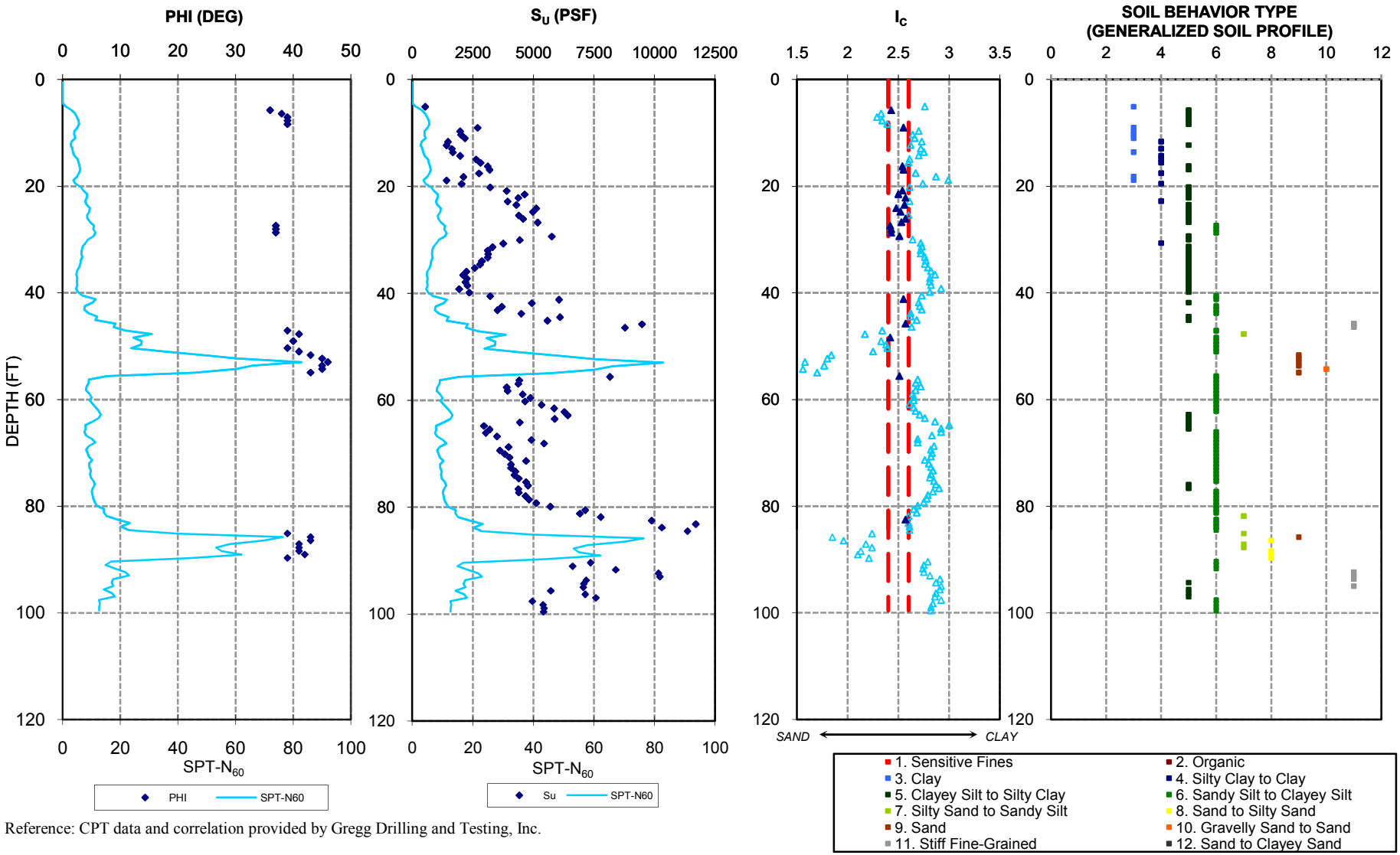
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES → REVISION DATES: 09/11/09, 08/16/10 | SHEET | OF

...\CVEF\23-W0001R-z-ltb07.dgn 11/11/2010 9:38:02 AM

CPT DATA CORRELATION

CPT-09-TS-001



Reference: CPT data and correlation provided by Gregg Drilling and Testing, Inc.

PARIKH

Practicing in the Geosciences

COMMERCIAL VEHICLE ENFORCEMENT FACILITY
SOLANO COUNTY, CALIFORNIA

JOB NO.: 208123.TSF

PLATE NO.:

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

PROJECT NAME ***COMMERCIAL VEHICLE ENFORCEMENT FACILITY***
PROJECT NO. ***208123.TSF***
CPT NO. ***CPT-09-TS-001***

FAULT INFO
CONCORD-GREEN VALLEY FAULT
a_{max} *(g)=* 0.6

FAULT M_w = 6.9
MSF = 1.24

		CPT RESULT INPUT							*CSR*				*$CRR_{7.5}$*					*F.S.=($CRR_{7.5}$/CSR)*MSF*K_σ*K_α*		
Depth (ft)		Soil Behavior Type	qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	γ_d	CSR	Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	$K\sigma$	$K\alpha$	F.S.
5.085	3	Clay	4.196	0.091	0.283	0.034	0.249	2.76	1.51829	0.99	0.439							1.00	1	
5.741	5	Clayey Silt to Silty Clay	13	0.339	0.321	0.054	0.267	2.43	1.49966	0.99	0.463	2.430	1.50	19.50	2.439	47.550	0.09	1.00	1	0.19
6.398	5	Clayey Silt to Silty Clay	18.976	0.497	0.358	0.075	0.284	2.33	1.48248	0.99	0.485	2.330	1.48	28.13	2.049	57.634	0.10	1.00	1	0.20
7.054	5	Clayey Silt to Silty Clay	22.626	0.599	0.396	0.095	0.301	2.29	1.46569	0.99	0.506	2.290	1.47	33.16	1.917	63.575	0.10	1.00	1	0.21
7.71	5	Clayey Silt to Silty Clay	24.338	0.754	0.434	0.116	0.318	2.34	1.44928	0.98	0.524	2.340	1.45	35.27	2.084	73.500	0.12	1.00	1	0.22
8.366	5	Clayey Silt to Silty Clay	24.8	0.872	0.471	0.136	0.335	2.39	1.43322	0.98	0.539	2.390	1.43	35.54	2.272	80.757	0.13	1.00	1	0.24
9.022	3	Clay	20.621	0.945	0.508	0.157	0.351	2.55	1.41844	0.98	0.554	2.550	1.42	29.25	3.034	88.750	0.15	1.00	1	0.26
9.678	3	Clay	15.304	0.805	0.544	0.177	0.367	2.7	1.40396	0.98	0.566							1.00	1	
10.335	3	Clay	15.377	0.662	0.581	0.198	0.383	2.64	1.38977	0.98	0.579							1.00	1	
10.991	3	Clay	16.74	0.782	0.617	0.218	0.399	2.66	1.37586	0.98	0.589							1.00	1	
11.647	4	Silty Clay to Clay	11.479	0.432	0.655	0.239	0.416	2.73	1.36139	0.98	0.599							1.00	1	
12.303	5	Clayey Silt to Silty Clay	10.815	0.259	0.693	0.259	0.434	2.62	1.34639	0.97	0.607							1.00	1	
12.959	4	Silty Clay to Clay	12.471	0.471	0.73	0.279	0.451	2.72	1.33253	0.97	0.614							1.00	1	
13.615	3	Clay	12.977	0.533	0.767	0.3	0.467	2.75	1.31974	0.97	0.622							1.00	1	
14.272	4	Silty Clay to Clay	15.118	0.598	0.804	0.32	0.484	2.7	1.30641	0.97	0.628							1.00	1	
14.928	4	Silty Clay to Clay	20.058	0.786	0.842	0.341	0.501	2.61	1.29336	0.97	0.635							1.00	1	
15.584	4	Silty Clay to Clay	21.472	0.847	0.88	0.361	0.518	2.6	1.28056	0.97	0.641							1.00	1	
16.24	5	Clayey Silt to Silty Clay	23.73	0.826	0.917	0.382	0.535	2.54	1.26801	0.97	0.646	2.540	1.27	30.09	2.979	89.637	0.15	1.00	1	0.23
16.896	5	Clayey Silt to Silty Clay	24.609	0.849	0.955	0.402	0.552	2.55	1.25571	0.96	0.651	2.550	1.26	30.90	3.034	93.763	0.16	1.00	1	0.24
17.552	4	Silty Clay to Clay	21.466	0.923	0.992	0.423	0.57	2.67	1.24294	0.96	0.654							1.00	1	
18.209	3	Clay	16.785	0.999	1.029	0.443	0.586	2.87	1.2318	0.96	0.658							1.00	1	
18.865	3	Clay	11.581	0.652	1.065	0.464	0.602	2.99	1.22087	0.96	0.662							1.00	1	
19.521	4	Silty Clay to Clay	15.918	0.562	1.103	0.484	0.619	2.74	1.20946	0.96	0.666							1.00	1	
20.177	5	Clayey Silt to Silty Clay	24.31	0.921	1.141	0.505	0.636	2.61	1.19826	0.96	0.669							1.00	1	
20.833	5	Clayey Silt to Silty Clay	29.081	1.043	1.178	0.525	0.653	2.54	1.18726	0.95	0.672	2.540	1.19	34.53	2.979	102.854	0.18	1.00	1	0.27
21.49	5	Clayey Silt to Silty Clay	34.905	1.267	1.216	0.546	0.67	2.5	1.17647	0.95	0.674	2.500	1.18	41.06	2.768	113.685	0.22	1.00	1	0.32
22.146	5	Clayey Silt to Silty Clay	33.536	1.363	1.253	0.566	0.687	2.57	1.16587	0.95	0.676	2.570	1.17	39.10	3.148	123.081	0.25	1.00	1	0.37
22.802	4	Silty Clay to Clay	30.269	1.253	1.291	0.587	0.704	2.61	1.15546	0.95	0.679							1.00	1	
23.458	5	Clayey Silt to Silty Clay	33.221	1.226	1.329	0.607	0.722	2.56	1.14464	0.95	0.680	2.560	1.14	38.03	3.091	117.522	0.23	1.00	1	0.34
24.114	5	Clayey Silt to Silty Clay	39.085	1.306	1.366	0.628	0.739	2.48	1.13461	0.94	0.681	2.480	1.13	44.35	2.669	118.375	0.23	1.00	1	0.34
24.77	5	Clayey Silt to Silty Clay	37.637	1.4	1.404	0.648	0.756	2.52	1.12474	0.94	0.683	2.520	1.12	42.33	2.872	121.561	0.25	1.00	1	0.36
25.427	5	Clayey Silt to Silty Clay	33.148	1.359	1.441	0.668	0.773	2.6	1.11505	0.94	0.684							1.00	1	
26.083	5	Clayey Silt to Silty Clay	34.218	1.314	1.479	0.689	0.79	2.57	1.10553	0.94	0.685	2.570	1.11	37.83	3.148	119.084	0.24	1.00	1	0.35
26.739	5	Clayey Silt to Silty Clay	38.504	1.423	1.517	0.709	0.807	2.53	1.09616	0.94	0.686	2.530	1.10	42.21	2.925	123.445	0.25	1.00	1	0.37
27.395	6	Sandy Silt to Clayey Silt	46.334	1.417	1.554	0.73	0.824	2.42	1.08696	0.93	0.686	2.420	1.09	50.36	2.396	120.663	0.24	1.00	1	0.35
28.051	6	Sandy Silt to Clayey Silt	45.185	1.316	1.592	0.75	0.841	2.43	1.0779	0.93	0.686	2.430	1.08	48.71	2.439	118.793	0.24	1.00	1	0.34
28.707	6	Sandy Silt to Clayey Silt	48.119	1.47	1.629	0.771	0.858	2.43	1.069	0.93	0.686	2.430	1.07	51.44	2.439	125.461	0.26	1.00	1	0.38
29.364	5	Clayey Silt to Silty Clay	43.974	1.547	1.667	0.791	0.876	2.51	1.05973	0.92	0.686	2.510	1.06	46.60	2.820	131.391	0.29	1.00	1	0.42
30.02	5	Clayey Silt to Silty Clay	33.948	1.355	1.705	0.812	0.893	2.64	1.05112	0.92	0.685							1.00	1	
30.676	4	Silty Clay to Clay	29.059	1.234	1.742	0.832	0.91	2.72	1.04265	0.92	0.685							1.00	1	
31.332	5	Clayey Silt to Silty Clay	25.747	0.966	1.78	0.853	0.927	2.73	1.03432	0.91	0.684							1.00	1	
31.988	5	Clayey Silt to Silty Clay	24.068	0.808	1.817	0.873	0.944	2.72	1.02612	0.91	0.683							1.00	1	
32.644	5	Clayey Silt to Silty Clay	24.107	0.795	1.855	0.894	0.961	2.72	1.01805	0.91	0.682							1.00	1	
33.301	5	Clayey Silt to Silty Clay	24.327	0.898	1.892	0.914	0.978	2.76	1.0101	0.90	0.680							1.00	1	
33.957	5	Clayey Silt to Silty Clay	22.446	0.752	1.93	0.935	0.995	2.77	1.00228	0.90	0.679							1.00	1	
34.613	5	Clayey Silt to Silty Clay	22.007	0.689	1.968	0.955	1.013	2.76	0.99413	0.89	0.677							1.00	1	
35.269	5	Clayey Silt to Silty Clay	20.26	0.615	2.005	0.976	1.03	2.79	0.98655	0.89	0.675							0.99	1	
35.925	5	Clayey Silt to Silty Clay	17.442	0.48	2.043	0.996	1.047	2.82	0.97908	0.88	0.673							0.99	1	
36.581	5	Clayey Silt to Silty Clay	16.492	0.47	2.08	1.017	1.064	2.86	0.97173	0.88	0.670							0.99	1	
37.238	5	Clayey Silt to Silty Clay	17.844	0.464	2.118	1.037	1.081	2.81	0.96449	0.87	0.668							0.98	1	
37.894	5	Clayey Silt to Silty Clay	17.219	0.422	2.156	1.057	1.098	2.81	0.95735	0.87	0.665							0.98	1	
38.55	5	Clayey Silt to Silty Clay	17.675	0.459	2.193	1.078	1.115	2.82	0.95032	0.86	0.662							0.98	1	
39.206	5	Clayey Silt to Silty Clay	15.478	0.457	2.231	1.098	1.132	2.92	0.9434	0.86	0.659							0.98	1	
39.862	5	Clayey Silt to Silty Clay	18.48	0.471	2.268	1.119	1.15	2.81	0.93617	0.85	0.656							0.97	1	
40.518	6	Sandy Silt to Clayey Silt	24.693	0.696	2.306	1.139	1.167	2.73	0.92945	0.85	0.652							0.97	1	
41.175	6	Sandy Silt to Clayey Silt	45.877	1.431	2.344	1.16	1.184	2.55	0.92282	0.84	0.649	2.550	0.92	42.34	3.034	128.458	0.28	0.97	1	0.43
41.831	5	Clayey Silt to Silty Clay	38.51	1.53	2.381	1.18	1.201	2.7	0.91628	0.83	0.645							0.96	1	
42.487	6	Sandy Silt to Clayey Silt	28.535	0.836	2.419	1.201	1.218	2.71	0.90984	0.83	0.641							0.96	1	
43.143	6	Sandy Silt to Clayey Silt	27.397	0.787	2.456	1.221	1.235	2.73	0.90349	0.82	0.637							0.96	1	
43.799	6	Sandy Silt to Clayey Silt	34.381	0.9	2.494	1.242	1.252	2.62	0.89723	0.82	0.634							0.96	1	
44.455	5	Clayey Silt to Silty Clay	46.643	1.697	2.532	1.262	1.269	2.62	0.89105	0.81	0.630							0.95	1	
45.112	5	Clayey Silt to Silty Clay	42.717	1.717	2.569	1.283	1.287	2.68	0.8846	0.80	0.625							0.95	1	
45.768	11	Sitff Fine-Grained	73.009	3.378	2.612	1.303	1.309	2.57	0.87684	0.80	0.619	2.570	0.88	64.02	3.148	201.524		0.95	1	
46.424	11	Sitff Fine-Grained	68.126	3.51	2.655	1.324	1.331	2.63	0.86922	0.79	0.614							0.94	1	
47.08	6	Sandy Silt to Clayey Silt	96.418	2.737	2.692	1.344	1.348	2.34	0.86342	0.78	0.610	2.340	0.86	83.25	2.084	173.472		0.93	1	
47.736	7	Silty Sand to Sandy Silt	146.379	3.623	2.731	1.365	1.367	2.17	0.85703	0.78	0.605	2.170	0.86	125.45	1.596	200.268		0.91	1	
48.392	6	Sandy Silt to Clayey Silt	104.952	3.966	2.769	1.385	1.384	2.42	0.85139	0.77	0.600	2.420	0.85	89.36	2.396	214.083		0.94	1	
49.049	6	Sandy Silt to Clayey Silt	122.063	4.078	2.806	1.405	1.401	2.33	0.84583	0.76	0.596	2.330	0.85	103.24	2.049	211.521		0.92	1	
49.705	6	Sandy Silt to Clayey Silt	118.627	4.367	2.844	1.426	1.418	2.38	0.84034	0.76	0.591	2.380	0.84	99.69	2.233	222.558		0.93	1	
50.361	6	Sandy Silt to Clayey Silt	103.081	3.421	2.881	1.446	1.435	2.39	0.83491	0.75	0.586	2.390	0.83	86.06	2.272	195.539		0.92	1	
51.017	6	Sandy Silt to Clayey Silt	164.42	5.32	2.919	1.467	1.452	2.25	0.82956	0.74	0.582	2.250	0.83	136.40	1.798	245.276		0.90	1	
51.673	9	Sand	260.872	3.682	2.96	1.487	1.472	1.84	0.82335	0.74	0.577	1.840	0.82	214.79	1.137	244.223		0.86	1	
52.329	9	Sand	331.431	5.071	3	1.508	1.493	1.8	0.81693	0.73	0.571	1.800	0.82	270.76	1.107	299.636		0.85	1	
52.986	9	Sand	488.473	5.259	3.041	1.528	1.513	1.58	0.81091	0.72	0.567	1.580	0.81	396.11	1.000	396.108		0.85	1	
53.642	9	Sand	364.686	5.387	3.082	1.549	1.533	1.77	0.80498	0.72	0.562	1.770	0.80	293.56	1.085	318.619		0.84	1	
54.298	10	Gravelly Sand to Sand	358.344	2.641	3.124	1.569	1.554	1.56	0.79884	0.71	0.557	1.560	0.80	286.26	1.000	286.259		0.84	1	
54.954	9	Sand	259.943	2.195	3.164	1.59	1.575	1.7	0.79279	0.70	0.551	1.700	0.79	206.08	1.038	213.882		0.84	1	
55.61	6	Sandy Silt to Clayey Silt	63.119	1.691	3.202	1.61	1.592	2.51	0.78797	0.70	0.547	2.510	0.79	49.74	2.820	140.230	0.34	0.91	1	0.61
56.266	6	Sandy Silt to Clayey Silt	34.06	0.794	3.24	1.631	1.609	2.69	0.7832	0.69	0.543							0.91	1	
56.923	6	Sandy Silt to Clayey Silt	33.863	0.729	3.277	1.651	1.626	2.67	0.77849	0.69	0.539							0.91	1	
57.579	6	Sandy Silt to Clayey Silt	30.427	0.658	3.315	1.672	1.643	2.72	0.77383	0.68	0.535							0.91	1	
58.235	6	Sandy Silt to Clayey Silt	30.562	0.553	3.352	1.692	1.66	2.67	0.76923	0.67	0.531							0.90	1	
58.891	6	Sandy Silt to Clayey Silt	35.316	0.69	3.39	1.713	1.677	2.64	0.76469	0.67	0.527							0.90	1	
59.547	6	Sandy Silt to Clayey Silt	38.082	0.806	3.428	1.733	1.695	2.65	0.75993	0.66	0.523							0.90	1	
60.203	6	Sandy Silt to Clayey Silt	35.829	0.732	3.465	1.754	1.712	2.65	0.75549	0.66	0.519							0.90	1	
60.86	6	Sandy Silt to Clayey Silt	40.701	0.842	3.503	1.774	1.729	2.61	0.75111	0.65	0.515							0.90	1	
61.516	6	Sandy Silt to Clayey Silt	44.374	1.193	3.54	1.794	1.746	2.65	0.74678	0.65	0.512							0.89	1	
62.172	6	Sandy Silt to Clayey Silt	47.646	1.489	3.578	1.815	1.763	2.67	0.74249	0.64	0.508							0.89	1	
62.828	5	Clayey Silt to Silty Clay	49.167	1.789	3.616	1.835	1.78	2.71	0.73826	0.64	0.505							0.89	1	
63.484	5	Clayey Silt to Silty Clay	45.292	1.719	3.653	1.856	1.797	2.76	0.73407	0.63	0.502							0.89	1	
64.14	5	Clayey Silt to Silty Clay	35.373	1.316	3.691	1.876	1.814	2.86	0.72993	0.63	0.498							0.89	1	
64.797	5	Clayey Silt to Silty Clay	24.885	0.869	3.728	1.897	1.832	3	0.72559	0.62	0.495							0.89	1	
65.453	5	Clayey Silt to Silty Clay	26.344	0.76	3.766	1.917	1.849	2.92	0.72155	0.62	0.492							0.88	1	
66.109	6	Sandy Silt to Clayey Silt	25.071	0.679	3.804	1.938	1.866	2.92	0.71755	0.61	0.489							0.88	1	
66.765	6	Sandy Silt to Clayey Silt	28.281	0.648	3.841	1.958	1.883	2.83	0.71359	0.61	0.486							0.88	1	
67.421	6	Sandy Silt to Clayey Silt	38.183	0.828	3.879	1.979	1.9	2.69	0.70968	0.61	0.483							0.88	1	
68.077	6	Sandy Silt to Clayey Silt	42.334	1.052	3.916	1.999	1.917	2.69	0.70581	0.60	0.480							0.88	1	
68.734	6	Sandy Silt to Clayey Silt	31.154	0.908	3.954	2.02	1.934	2.85	0.70198	0.60	0.478							0.88	1	

LIQUEFACTION POTENTIAL ANALYSIS (per Youd & Idriss, 2001)

PROJECT NAME ***COMMERCIAL VEHICLE ENFORCEMENT FACILITY***
PROJECT NO. ***208123.TSF***
CPT NO. ***CPT-09-TS-001***

FAULT INFO
CONCORD-GREEN VALLEY FAULT
a_{max} *(g)=* 0.6

FAULT M_w = 6.9
MSF = 1.24

			CPT RESULT INPUT							*CSR*		*$CRR_{7.5}$*						*$F.S.=(CRR_{7.5}/CSR)*MSF*K_\sigma*K_\alpha$*		
Depth (ft)		Soil Behavior Type	qc (tsf)	fs (tsf)	σ_v (tsf)	u (tsf)	σ_v' (tsf)	Ic*	C_N*	γ_d	CSR	Ic	C_Q	q_{c1N}	K_C	$(q_{c1N})_{cs}$	$CRR_{7.5}$	$K\sigma$	$K\alpha$	F.S.
69.39	6	Sandy Silt to Clayey Silt	28.377	0.652	3.991	2.04	1.951	2.82	0.69819	0.60	0.475							0.87	1	
70.046	6	Sandy Silt to Clayey Silt	30.078	0.742	4.029	2.061	1.968	2.83	0.69444	0.59	0.472							0.87	1	
70.702	6	Sandy Silt to Clayey Silt	31.644	0.809	4.067	2.081	1.986	2.82	0.69052	0.59	0.470							0.87	1	
71.358	6	Sandy Silt to Clayey Silt	36.871	0.927	4.104	2.102	2.003	2.76	0.68686	0.58	0.467							0.87	1	
72.014	6	Sandy Silt to Clayey Silt	32.404	0.768	4.142	2.122	2.02	2.8	0.68323	0.58	0.465							0.87	1	
72.671	6	Sandy Silt to Clayey Silt	32.213	0.804	4.179	2.142	2.037	2.82	0.67964	0.58	0.463							0.87	1	
73.327	6	Sandy Silt to Clayey Silt	33.553	0.971	4.217	2.163	2.054	2.84	0.67609	0.58	0.461							0.87	1	
73.983	6	Sandy Silt to Clayey Silt	33.12	0.86	4.255	2.183	2.071	2.82	0.67258	0.57	0.458							0.86	1	
74.639	6	Sandy Silt to Clayey Silt	34.303	0.907	4.292	2.204	2.088	2.81	0.6691	0.57	0.456							0.86	1	
75.295	6	Sandy Silt to Clayey Silt	36.73	1.195	4.33	2.224	2.105	2.85	0.66566	0.57	0.454							0.86	1	
75.951	5	Clayey Silt to Silty Clay	37.862	1.344	4.367	2.245	2.123	2.87	0.66205	0.56	0.452							0.86	1	
76.608	5	Clayey Silt to Silty Clay	34.899	1.227	4.405	2.265	2.14	2.9	0.65868	0.56	0.450							0.86	1	
77.264	6	Sandy Silt to Clayey Silt	34.697	0.971	4.443	2.286	2.157	2.84	0.65535	0.56	0.449							0.86	1	
77.92	6	Sandy Silt to Clayey Silt	36.764	0.928	4.48	2.306	2.174	2.79	0.65205	0.56	0.447							0.86	1	
78.576	6	Sandy Silt to Clayey Silt	37.603	0.921	4.518	2.327	2.191	2.78	0.64878	0.55	0.445							0.85	1	
79.232	6	Sandy Silt to Clayey Silt	39.997	0.936	4.555	2.347	2.208	2.75	0.64554	0.55	0.443							0.85	1	
79.888	6	Sandy Silt to Clayey Silt	44.047	0.969	4.593	2.368	2.225	2.69	0.64234	0.55	0.442							0.85	1	
80.545	6	Sandy Silt to Clayey Silt	54.918	1.356	4.631	2.388	2.242	2.65	0.63916	0.55	0.440							0.85	1	
81.201	6	Sandy Silt to Clayey Silt	53.696	1.415	4.668	2.409	2.26	2.68	0.63584	0.54	0.438							0.85	1	
81.857	7	Silty Sand to Sandy Silt	59.429	1.33	4.707	2.429	2.278	2.6	0.63255	0.54	0.437							0.85	1	
82.513	6	Sandy Silt to Clayey Silt	75.657	2.04	4.744	2.45	2.295	2.57	0.62947	0.54	0.435	2.570	0.63	47.62	3.148	149.918	0.39	0.85	1	0.90
83.169	6	Sandy Silt to Clayey Silt	91.011	3.25	4.782	2.47	2.312	2.6	0.62642	0.54	0.434							0.85	1	
83.825	6	Sandy Silt to Clayey Silt	79.216	2.493	4.82	2.491	2.329	2.61	0.62341	0.54	0.432							0.84	1	
84.482	6	Sandy Silt to Clayey Silt	88.966	3.122	4.857	2.511	2.346	2.61	0.62042	0.53	0.431							0.84	1	
85.138	7	Silty Sand to Sandy Silt	182	4.146	4.896	2.531	2.364	2.24	0.61728	0.53	0.430	2.240	0.62	112.35	1.770	198.906		0.80	1	
85.794	9	Sand	409.94	5.84	4.937	2.552	2.385	1.85	0.61367	0.53	0.428	1.850	0.61	251.57	1.145	288.065		0.71	1	
86.45	8	Sand to Silty Sand	361.205	6.35	4.976	2.572	2.404	1.96	0.61043	0.53	0.426	1.960	0.61	220.49	1.251	275.857		0.71	1	
87.106	7	Silty Sand to Sandy Silt	273.5	7.346	5.015	2.593	2.422	2.18	0.6074	0.53	0.425	2.180	0.61	166.12	1.619	268.982		0.75	1	
87.762	7	Silty Sand to Sandy Silt	246.165	7.021	5.054	2.613	2.44	2.24	0.6044	0.52	0.424	2.240	0.60	148.78	1.770	263.415		0.76	1	
88.419	8	Sand to Silty Sand	265.491	5.749	5.093	2.634	2.459	2.13	0.60126	0.52	0.423	2.130	0.60	159.63	1.512	241.319		0.75	1	
89.075	8	Sand to Silty Sand	304.153	6.7	5.133	2.654	2.479	2.1	0.59799	0.52	0.421	2.100	0.60	181.88	1.455	264.591		0.73	1	
89.731	8	Sand to Silty Sand	206.895	4.497	5.173	2.675	2.498	2.21	0.59492	0.52	0.420	2.210	0.59	123.09	1.692	208.213		0.78	1	
90.387	6	Sandy Silt to Clayey Silt	59.446	2.107	5.21	2.695	2.515	2.79	0.59219	0.52	0.419							0.83	2	
91.043	6	Sandy Silt to Clayey Silt	53.949	1.432	5.248	2.716	2.532	2.75	0.5895	0.52	0.418							0.83	3	
91.699	6	Sandy Silt to Clayey Silt	66.273	2.316	5.285	2.736	2.549	2.74	0.58682	0.52	0.417							0.83	4	
92.356	11	Sitff Fine-Grained	78.563	3.566	5.328	2.757	2.571	2.75	0.5834	0.51	0.415							0.83	5	
93.012	11	Sitff Fine-Grained	80.264	4.402	5.371	2.777	2.594	2.81	0.57986	0.51	0.414							0.83	6	
93.668	11	Sitff Fine-Grained	57.869	2.891	5.414	2.798	2.616	2.91	0.57652	0.51	0.412							0.83	7	
94.324	5	Clayey Silt to Silty Clay	57.452	2.444	5.451	2.818	2.633	2.87	0.57396	0.51	0.411							0.82	8	
94.98	11	Sitff Fine-Grained	57.953	2.844	5.494	2.839	2.656	2.92	0.57054	0.51	0.410							0.82	9	
95.636	5	Clayey Silt to Silty Clay	47.308	1.74	5.532	2.859	2.673	2.91	0.56804	0.51	0.409							0.82	10	
96.293	5	Clayey Silt to Silty Clay	57.875	2.397	5.569	2.879	2.69	2.87	0.56555	0.51	0.408							0.82	11	
96.949	5	Clayey Silt to Silty Clay	61.266	2.698	5.607	2.9	2.707	2.86	0.56309	0.50	0.407							0.82	12	
97.605	6	Sandy Silt to Clayey Silt	41.321	1.264	5.645	2.92	2.724	2.92	0.56065	0.50	0.407							0.82	13	
98.261	6	Sandy Silt to Clayey Silt	44.419	1.112	5.682	2.941	2.741	2.84	0.55823	0.50	0.406							0.82	14	
98.917	6	Sandy Silt to Clayey Silt	44.3	1.054	5.72	2.961	2.758	2.82	0.55584	0.50	0.405							0.82	15	
99.573	6	Sandy Silt to Clayey Silt	44.261	1.041	5.757	2.982	2.775	2.82	0.55346	0.50	0.404							0.82	16	

APPENDIX B

APPENDIX B

LABORATORY TESTS

Classification Tests

The field classification of the samples was visually verified in the laboratory according to the Unified Soil Classification System. The results are presented on "Log of Test Borings", Appendix A.

Moisture-Density

The natural moisture contents and dry unit weights were determined for selected undisturbed samples of the soils in general accordance with ASTM Test Method D 2216-92. This information was used to classify and correlate the soils. The results are presented at the appropriate depths on the "Log of Test Borings", Appendix A.

Atterberg Limits

The Atterberg Limit was determined for selected sample of the fine-grained materials. These result was used to classify the soils, as well as to obtain an indication of the effective strength characteristics and expansion potential with variations in moisture content. The Atterberg Limit was determined in general accordance with ASTM Test Method D 4318-93. The result of this test is presented on Plate B-2, "Plasticity Chart".

Grain Size Classification

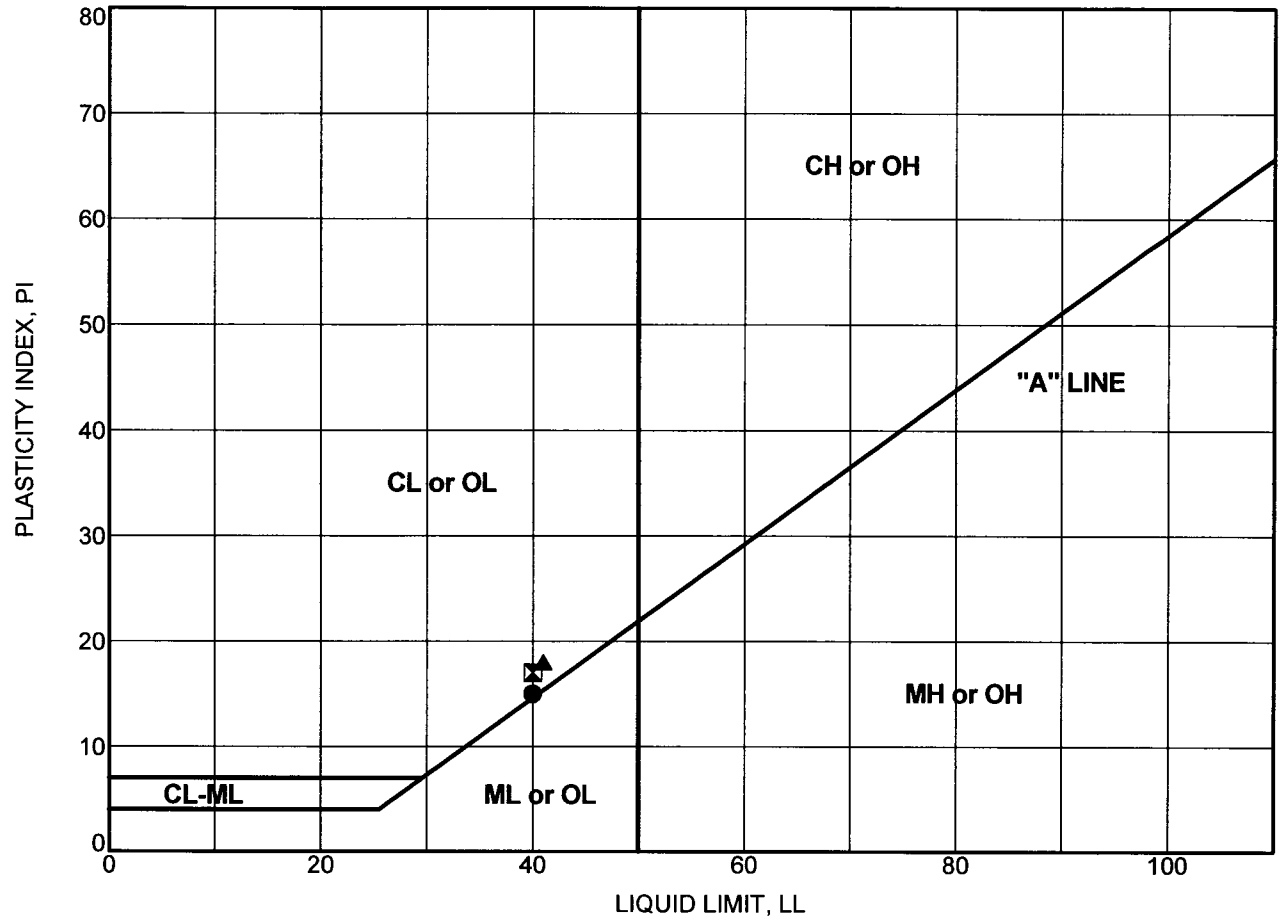
Grain size classification tests (ASTM Test Method D422-63) were performed on selected samples of granular soil to aid in the classification. The results are presented on Plate B-3, "Grain Size Distribution Curves".

Unconfined Compression Tests

Strength tests were performed on selected undisturbed samples using unconfined compression machine. Unconfined compression tests were performed in general accordance with ASTM Test Method D 2166-91. The results are presented on "Log of Test Borings"

Corrosion Test

Corrosion test was performed on selected sample to determine the corrosion potential of the soils. The pH and minimum resistively test was performed according to California Test Method 643. The test was performed by Sunland Analytical. The test result is presented on Plate B-4A and Plate B-4B.



PLASTICITY CHART

Boring Number	Sample Number	Depth (feet)	Test Symbol	Moisture Content (%)	LL	PL	PI	Description
A-09-108	MC-1	3.0	●	22	40	25	15	LEAN CLAY (CL)
A-09-112	MC-4	14.5	⊠	28	40	23	17	LEAN CLAY WITH SAND (CL)
A-09-TS-002	MC-2	4.5	▲	31	41	23	18	LEAN CLAY WITH SAND (CL)

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

COMMERCIAL VEHICLE ENFORCEMENT FACILITY
SOLANO COUNTY, CALIFORNIA

JOB NO: 208123.TSF

PLATE NO: B - 2

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

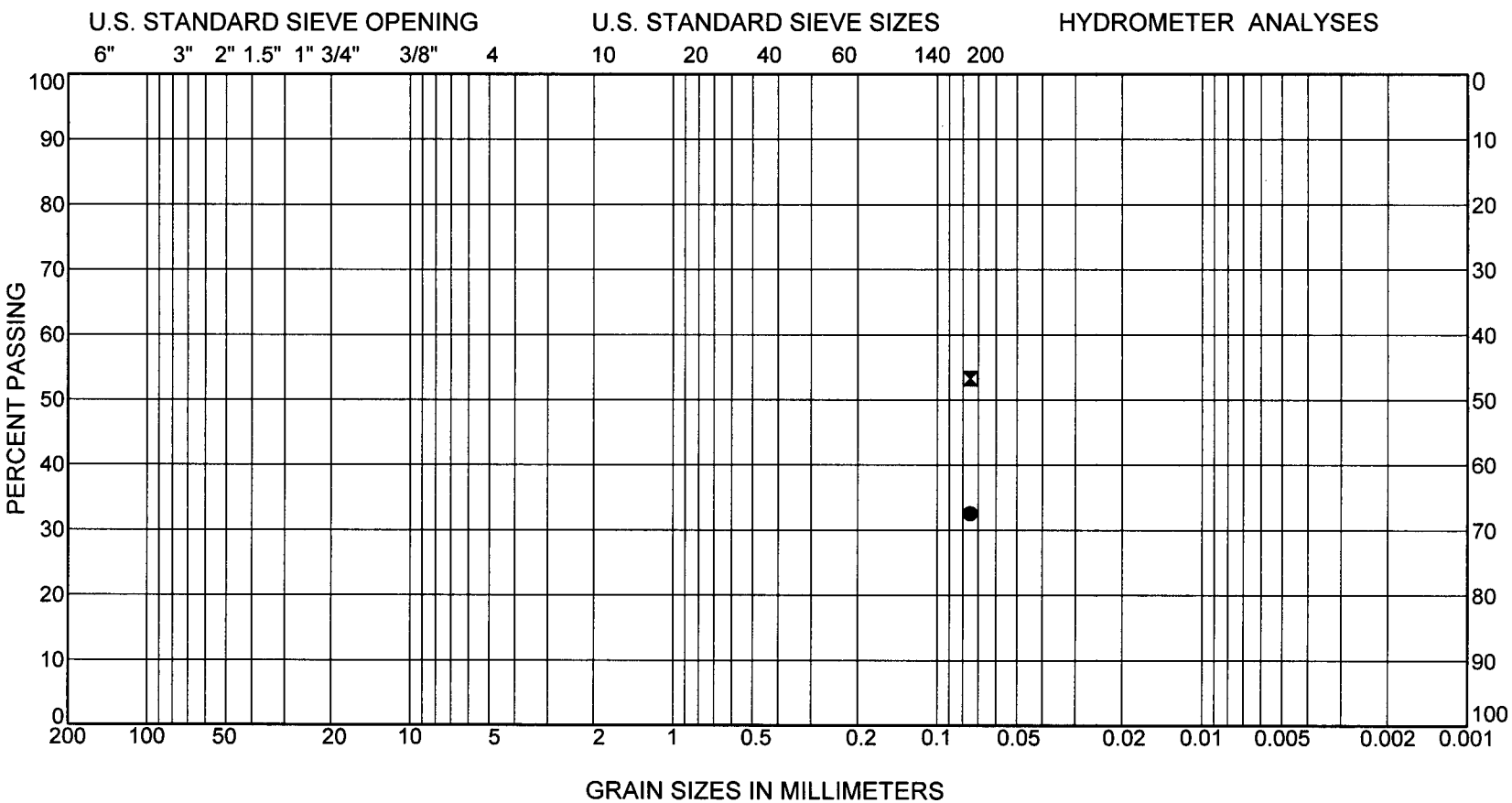
JOB NO: 208123.TSF

PLATE NO: B - 3

COMMERCIAL VEHICLE ENFORCEMENT FACILITY
SOLANO COUNTY, CALIFORNIA

GRAIN SIZE DISTRIBUTION CURVES

COBBLES	GRAVEL		SAND			SILT AND CLAY
	coarse	fine	coarse	medium	fine	



Boring Number	Sample Number	Depth (feet)	Symbol	LL	PI	Description
A-09-TS-001	MC-9	39.5	●			CLAYEY SAND (SC)
A-09-TS-001	SPT-12	54.5	⊠			SANDY LEAN CLAY (CL)

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 03/18/2009
Date Submitted 03/13/2009

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 208123.GDR EB I-80 Site ID : 106#3@9.5'.
Thank you for your business.

* For future reference to this analysis please use SUN # 55240-110994.

EVALUATION FOR SOIL CORROSION

Soil pH	7.74	
Minimum Resistivity	1.80 ohm-cm (x1000)	
Chloride	33.8 ppm	00.00338 %
Sulfate	14.9 ppm	00.00149 %

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

PLATE NO.: B-4A

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 09/02/2009
Date Submitted 08/28/2009

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 208123.GDR EB I80 Site ID : A09-006#4@14.5'. (A-09-TS-003)#4@14.5'
Thank you for your business.

* For future reference to this analysis please use SUN # 56632-114400.

EVALUATION FOR SOIL CORROSION

Soil pH	7.01		
Minimum Resistivity	1.07 ohm-cm (x1000)		
Chloride	37.9 ppm	00.00379	%
Sulfate	26.2 ppm	00.00262	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

PLATE NO.: B-4B

APPENDIX C

Bearing Capacity Analyses

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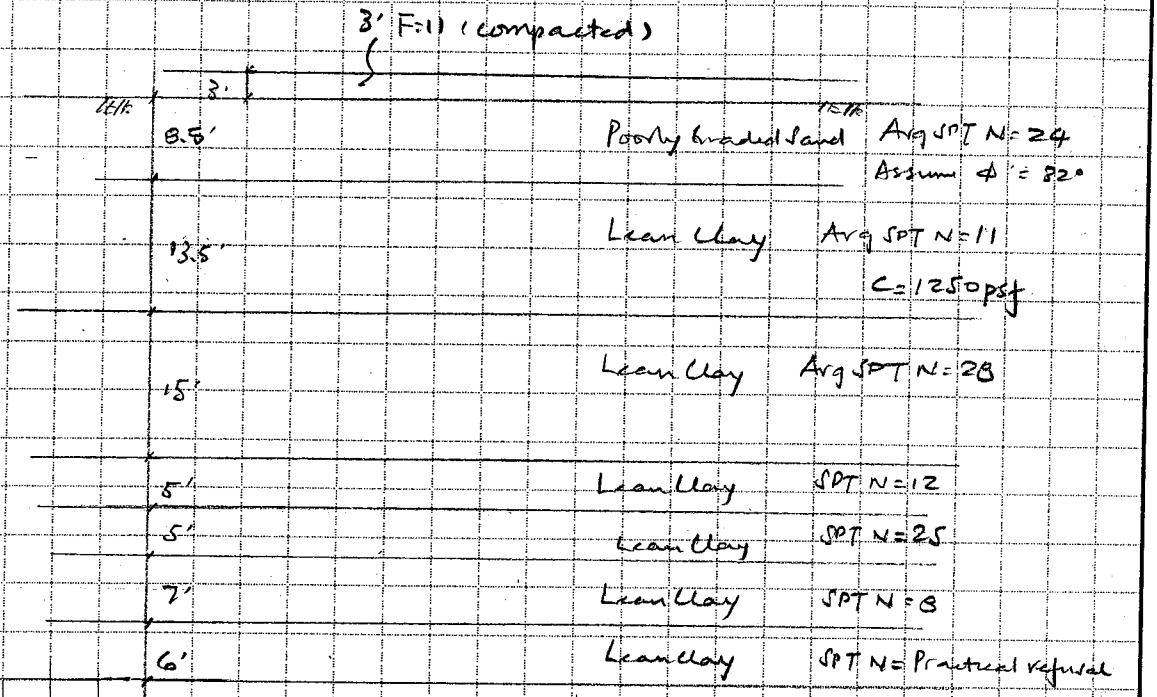
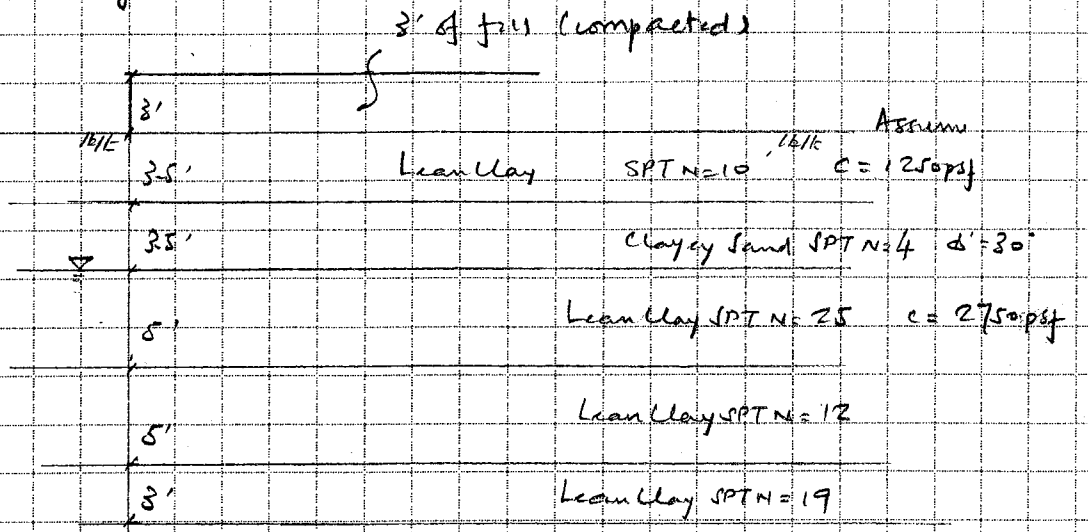
JOB Commercial Vehicle Enforcement Facility 20812.7
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 12/2009
CHECKED BY ____ DATE ____
SCALE ____

Bearing Capacity Analysis - Boring A-09-0069



Bearing Capacity Analysis - (Boring 109)



Bearing Capacity Analyses

Office and Inspection Building (Strip footing)

Assume w = 4', d = ½', c = 1500 psf (for compacted fill)
γ = 125 pcf

$Q_{ult} = cN_c + \gamma D$ $\phi = 0$

$N_c = 5.7$

$$Q_{all} = \frac{1500 \times 5.7 + 125 \times 0.5}{3}$$

$= 2870.8$ psf Say **2750 psf**

Inspection Pit / Tunnel - Retaining Wall (Strip footing)

D = 4' c = 1250 psf γ = 120 pcf

$$Q_{all} = \frac{1250 \times 5.7 + 4 \times 120}{3}$$

$= 2535$ psf Say **2500 psf**

Lateral Earth Pressure and Friction Coefficient

Lateral Earth Pressure

For lean clay PI = 15 Assum $\phi' = 27.5°$, $c' = 50$ psf

Active

$$k_a = \frac{1-\sin 27.5°}{1+\sin 27.5°}$$

$$= 0.37$$

Active EFP = $0.37 \times 120 = 44.2$ pcf Say **45 pcf**

Passive

$$P_p = k_p \gamma H + 2c\sqrt{k_p}$$

$$k_p = \frac{1+\sin 27.5°}{1-\sin 27.5°} = 2.72$$

At height = 0 $2c\sqrt{k_p} = 2 \times 50 \times \sqrt{2.72} = 165$ pcf

height = 10' $P_p = 2.72 \times 120 \times 10 + 165 = 3429$ pcf

Average EFP = $\frac{165 + 3429}{10} = 359.4$ pcf

Say **340 pcf**

Imported Granular Fill

Assum $\phi' = 32.5°$

$$k_a = \frac{1-\sin\phi}{1+\sin\phi}$$

$$= \frac{1-0.54}{1+0.54}$$

$$= 0.30$$

Active EFP = $0.3 \times 120 =$ **36 pcf**

Lateral Earth Pressure

At-rest

$K_o = 0.95 - \sin\phi$ Jacky 1944

$= 0.95 - \sin 32.5°$

$= 0.41$

Imported Engineered fill At-rest EFP $= 0.41 \times 120$

$= 49.2$ pcf Say 50 pcf

Native soil $K_o = 0.95 - \sin 27.5°$

$= 0.49$

At-rest EFP $= 0.49 \times 120$

$= 58.6$ pcf Say 60 pcf

Friction

$\delta = 2/3\phi' = 2/3 \times 27.5°$

$= 18.3°$

Friction coefficient $\mu = \tan 18.3°$

$= 0.33$ Say 0.3

Settlement Analyses

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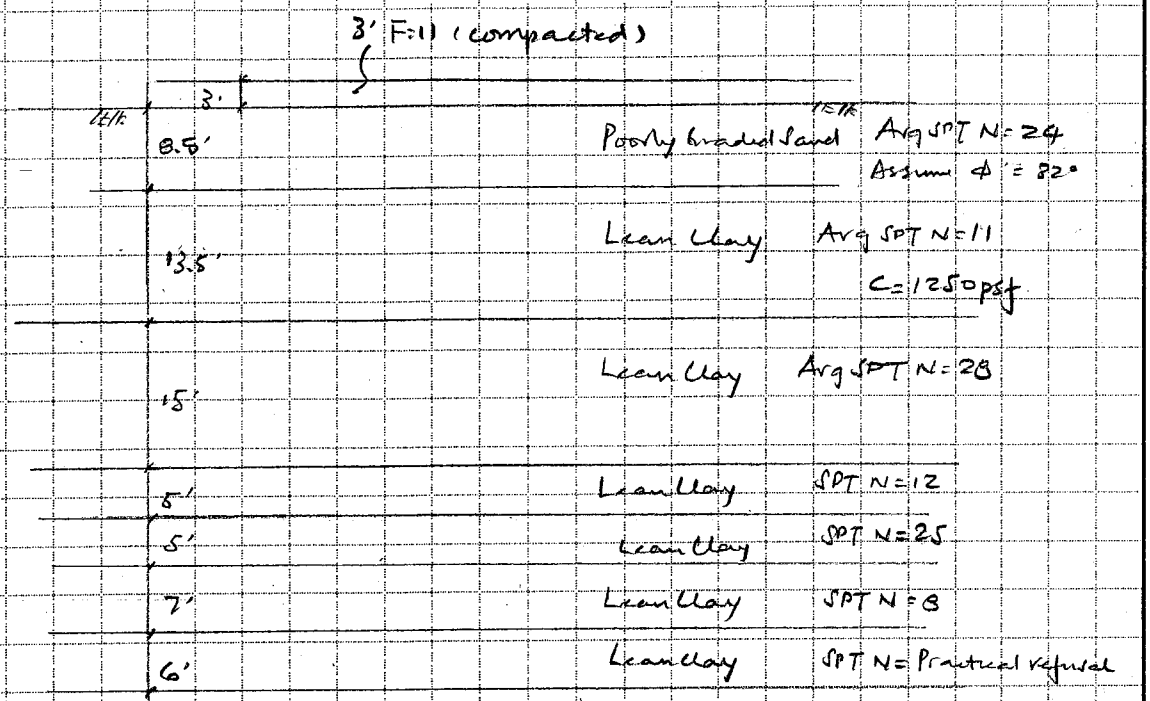
JOB Commercial Vehicle Enforcement Facility 20812.75F
SHEET NO ____ OF ____
CALCULATED BY A Lam DATE 12/2009
CHECKED BY ____ DATE ____
SCALE ____

Settlement Analyses - (Boring A-09-0060)



SETTLEMENT ANALYSIS ***Commercial Vehicle Enforcement Facility*** 12/09/09

LOCATION: Fairfield

Based on reference Boring A-09-006

Height of fill = 5 ft
Width of fill = 200 ft
Fill Density = 130 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

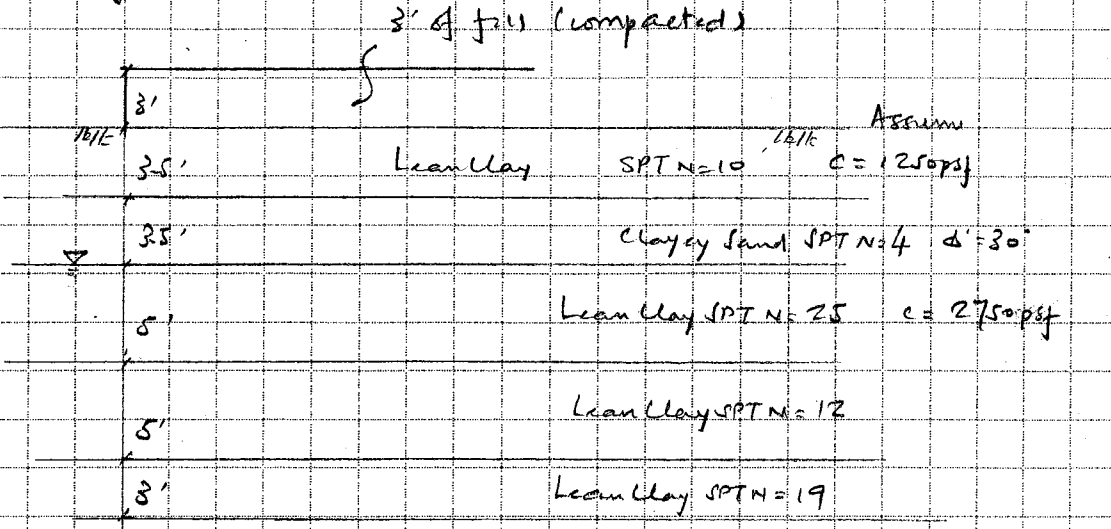
DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf)	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
			0											
0	7	115	805	402.5	639	24				SAND				
7	8.5	63	94.5	852.25	626	24				SAND				
8.5	22	63	851	425.25	604	11	1375	5500.00	10	0.0427	0.0043	0.27	0.00	0.27
22	37	68	1020	2260	566	28	3500	14000.00	10	0.0427	0.0043	0.07	0.00	0.07
37	42	63	315	2927.5	543	12	1500	6000.00	10	0.0427	0.0043	0.02	0.00	0.02
42	47	63	315	3242.5	532	25	3125	12500.00	28	0.1376	0.0138	0.05	0.00	0.05
47	54	63	441	3620.5	519	8	1000	4000.00	10	0.0427	0.0043	0.02	0.05	0.07
54	60	68	408	4045	506	50	6250	25000.00	28	0.1376	0.0138	0.05	0.00	0.05

	OC	NC	SUM
TOTAL SETTLEMENT (IN.) =	0.48	0.05	0.53

O.C. RANGE SETTLEMENT = 0.48 INCHES
N.C. RANGE SETTLEMENT = 0.05 INCHES

Total settlement is approximately 0.5 inch in the OC range per available boring information.

Settlement Analysis - (Boring 109)



SETTLEMENT ANALYSIS ***Commercial Vehicle Enforcement Facility*** 12/09/09

LOCATION: Fairfield

Based on reference Boring A-09-109

Height of fill = 5 ft
Width of fill = 200 ft
Fill Density = 130 pcf

- The undrained shear strength (Su) is correlated with SPT-N values based on Terzaghi and Peck (1967), and NAVFAC DM-7.1 (1982
- Approximate estimation of preconsolidation pressure is based on Su/P ratio per Skempton (1957).
- The modified compression index (Cc/1+e0) is correlated with natural moisture content based on Lambe and Whitman (1969).
- The recompression index is adopted as 10% of the virgin compression index, which is typically 5% to 10% of the compression index (Holtz and Kovacs, 1982).
- The applied pressure is estimated from 2V:1H distribution of the embankment load.

DEPTH FROM	TO	EFFECTIVE UNIT WEIGHT(pcf) (psf)	WEIGHT OF LAYER (psf)	MIDLAYER EFFECTIVE OVERBURDEN PRESSURE (psf)	APPLIED PRESSURE (psf)	GENERALIZED AVERAGE SPT-N VALUES	UNDRAINED SHEAR STRENGTH (psf)	PRECONSO-LIDATION PRESSURE (psf)	NATURAL WATER CONTENT (%)	MODIFIED VIRGIN COM-PRESSION INDEX	MODIFIED RECOM-PRESSION INDEX	CONSOLIDATION SETTLEMENTS (in.) OC	NC	SUM
			0											
0	3.5	115	403	201.25	644	10	1250	5000.00	10	0.0427	0.0043	0.11	0.00	0.11
3.5	7	115	403	603.75	633	4				SAND				
7	12	63	315	157.5	621	25	3125	12500.00	10	0.0427	0.0043	0.18	0.00	0.18
12	17	68	340	1290	606	12	1500	6000.00	10	0.0427	0.0043	0.04	0.00	0.04
17	20	63	189	1554.5	595	19	2375	9500.00	10	0.0427	0.0043	0.02	0.00	0.02

TOTAL SETTLEMENT (IN.) =	0.24	0.00	0.24

O.C. RANGE SETTLEMENT = 0.24 INCHES
N.C. RANGE SETTLEMENT = 0.00 INCHES

Total settlement is approximately 0.25 inch in the OC range per available boring information.

Eastbound Cordelia Truck Scales Relocation Project
Solano County, California
EA 04-0A5351
September 2010

Draft Storm Water Information Handout

Prepared for:

Caltrans

Prepared by:

WRECO

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Appendices

Appendix A Notice of Intent (NOI)
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Appendix E Off-Site Watershed Map

Disclaimer

A "Disclaimer" is required specifying that the information provided in the Storm Water Information Handout is just a guideline and is to be used for information purposes only and should not be considered a sole source document to adhere to the requirements of the new National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP), Number CAS000002, adopted on September 2, 2009. The contractor is required to provide water quality monitoring, sampling and implement best management practices (BMPs) based on standard industry operations, field conditions and conditions encountered based on the contractor's means and methods. The information in this handout is not to be construed in any way as a waiver of the provisions in the CGP. Bidders and contractors are cautioned to make independent investigations and examinations as they deem necessary to satisfy the conditions encountered in performance of work, with respect to the following: sampling and monitoring locations, distribution of watershed areas for sizing of BMPs, and selection of BMPs in order to conform to the requirement of the contract documents and the CGP.

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1 OVERVIEW

1.1 Intent of this Document

The objectives of this Water Quality Information Handout are: to summarize general water quality information of the Project; to summarize updated requirements per the new Construction General Permit (CGP) adopted on September 2, 2009; to provide general guidelines for contractors to bid on the project; to aid in developing the Storm Water Pollution Prevention Plan (SWPPP) of the project; and to highlight information necessary to file Project Registration Documents (PRDs) to the State Water Resources Control Board via the Stormwater Multi Application Reporting and Tracking System (SMARTS) and file the Notice of Intent at the start of construction.

1.2 Summary of New Requirements

A new CGP was adopted on September 2, 2009 and has been effective starting July 1, 2010. This revised "National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities" (NPDES Number CAS000002) regulates discharges from construction activities within the Project area.

The new CGP is based on a risk level (RL) permitting approach. There are three levels of risk, with RL 3 being the highest. The RL is calculated by 1) project sediment risk, and 2) receiving water risk.

Risk Level 1 projects will be subject to minimum best management practice (BMP) implementation and visual monitoring requirements. Risk Level 2 projects will be subject to Numeric Action Levels (NALs) and some additional monitoring requirements. Risk Level 3 projects will be subject to Numeric Effluent Limitations (NELs) and more rigorous monitoring requirements such as receiving water monitoring and, in some cases, bioassessments. All projects will have to upload storm water data into SMARTS, such as Notices of Intent (NOIs), SWPPPs, annual reports, and monitoring data, as applicable.

A risk assessment was done for the Eastbound Cordelia Truck Scales Relocation Project (Project), and based on a number of factors set forth in the CGP, it was determined to be Risk Level 2. See the risk assessment calculations in Section 0 of this document for details.

2 GENERAL PROJECT INFORMATION

This section summarizes the Project location, features, site information, and site impacts.

2.1 Location

The Project is located along Interstate 80 (I-80) in Solano County from post miles (PM) 13.3 to 15.7 and State Route 12 (SR 12) from PM L1.8 to L2.0. Figure 1 is the Project Location Map, and Figure 2 is the Project Vicinity Map.

2.2 Major Engineering Features

The improvements for the relocated truck scales and associated mainline, ramp, and connector generally consist of the following:

- Construction of a new Class B facility that includes five sets of scales, room for seven covered inspection bays, and parking for tractor semi-trailers.

- Widening of I-80 by approximately 10 feet following completion of the I-80 High Occupancy Vehicle (HOV) Lanes project to provide standard shoulder and lane widths on I-80 through the Project corridor.

- A significantly longer off-ramp to the truck scale facility utilizing the existing off-ramp location. The ramp would continue as a two-lane facility and widen to four lanes to the east of Suisun Creek.

- Truck screening and sorting by means of weigh-in-motion (WIM) scales and signal bridges.

- A new eastbound ramp that would split and provide connections to both eastbound I-80 and the eastbound SR 12 connector. A new two-lane off-ramp from eastbound I-80 to the eastbound SR 12 connector would be constructed. This two-lane connector would cross over the top of the truck scale ramp to eastbound I-80 and would receive the incoming truck scale ramp to eastbound SR 12.

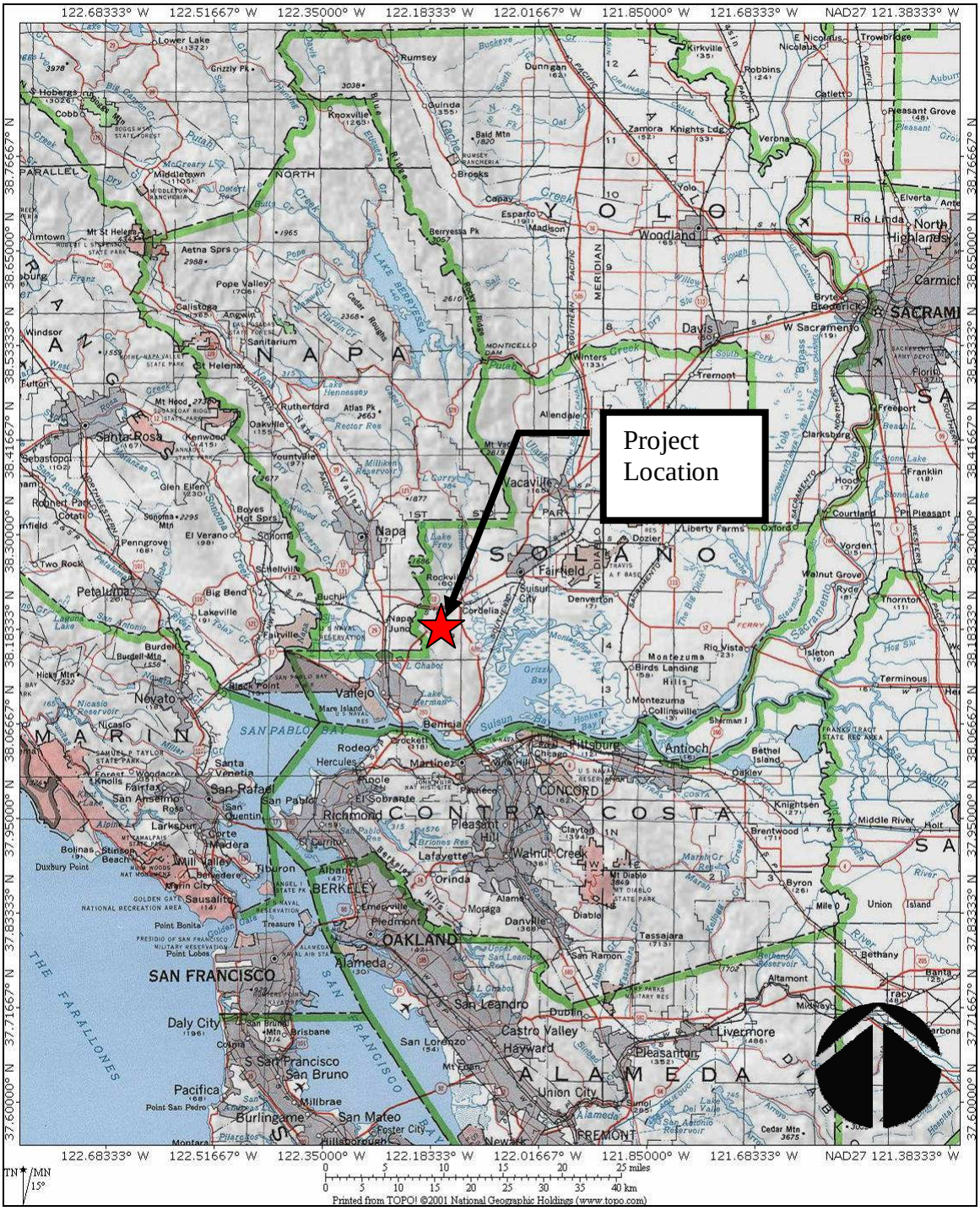


Figure 1. Location Map

Source: United States Geological Survey (USGS)

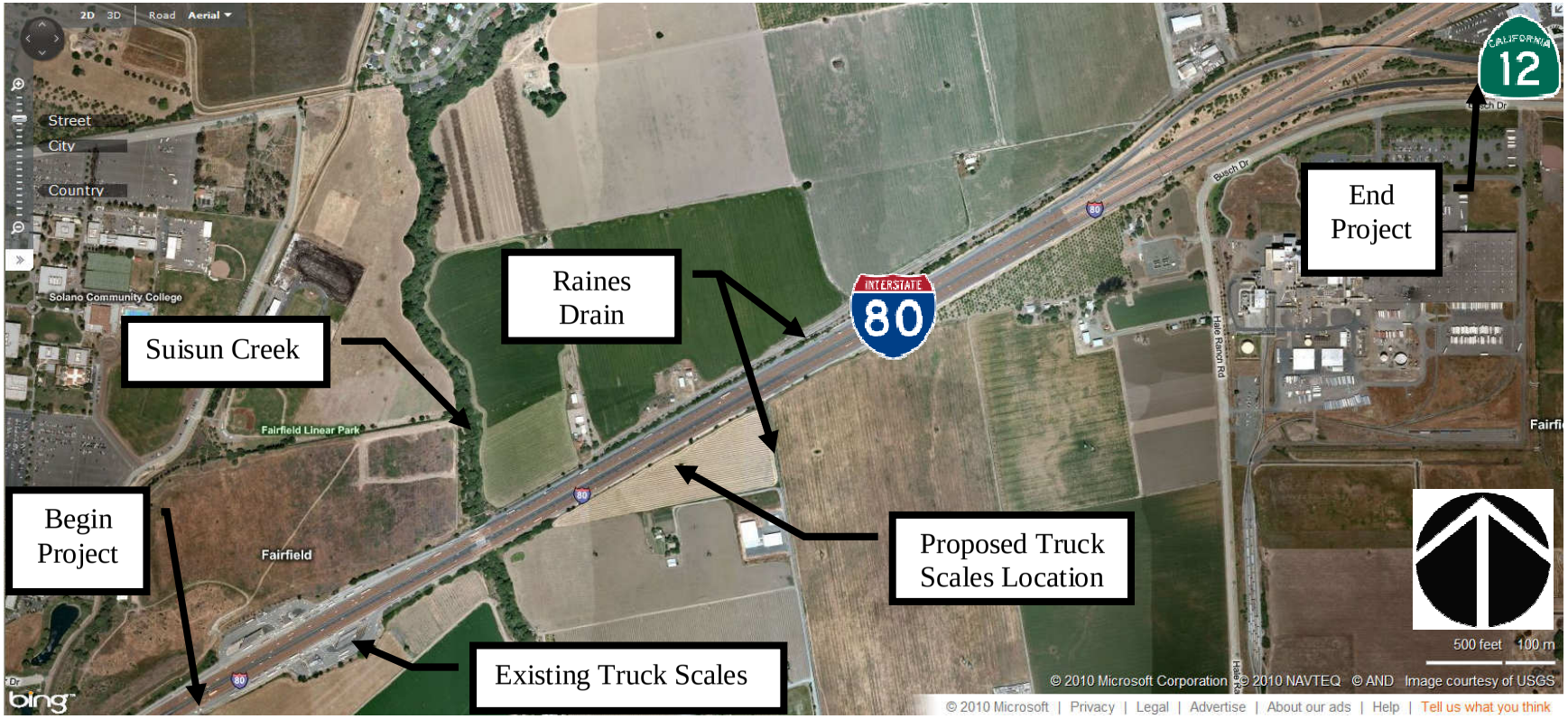


Figure 2. Vicinity Map

Source Microsoft Bing

2.3 Receiving Water Bodies

The direct receiving water body for the Project site is Raines Drain. Little to no storm water is discharged directly from the Project site to Suisun Creek. Raines Drain reaches Boynton Slough approximately 6 miles south of the Project site. Boynton Slough meanders east and eventually joins Suisun Slough. The sloughs in this area contribute to the overall Suisun Marsh Wetlands. Based on various maps prepared by the California Department of Water Resources and Department of Fish and Game, the limits of the Suisun Marsh Wetlands as a whole extend within a mile of the Project limits.

The Suisun Marsh Wetlands is on the Clean Water Act Section 303(d) List of Water Quality Limited Segments for metals, nutrients, organic enrichment/low dissolved oxygen and salinity/ total dissolved solids (TDS)/Chlorides; the proposed TMDL completion date for all these pollutants is 2019.

The January 2007 *Water Quality Control Plan* for the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) lists the following beneficial uses for the Suisun Slough:

- Fish spawning (SPWN)
- Warm freshwater habitat (WARM)
- Wildlife habitat (WILD)
- Water contact recreation (REC-1)
- Noncontact water recreation (REC-2)

The SFBRWQCB does not list any beneficial uses for any other Project water bodies.

2.4 Creek Crossings

The only bridge within the Project limits is the I-80 crossing over Suisun Creek (Bridge Number 23 0007 at PM 14.5). Raines Drain approaches I-80 from the north at PM 15.5 as a concrete-lined trapezoidal ditch. When it reaches I-80, it turns to the southwest and travels parallel to the roadway for about 0.3 mi. It then crosses I-80 at PM 15.2. The entrance of this crossing is a 60-inch culvert, which transitions to a 66-inch culvert under the traveled way, then outfalls to a lined trapezoidal ditch south of I-80.

2.5 Climate and Rainfall

The climate ranges from a warm, Mediterranean climate in the summer and fall to cooler temperatures in the winter. The temperature ranges from 55°F to 88°F in the summer and 39°F to 58°F in the winter. (Parikh, 2009)

A National Oceanic and Atmospheric Administration (NOAA) weather station located in Fairfield, approximately 3 miles northeast of the Project site, was used to obtain precipitation data (Figure 3). The Project area has an average of 41.6 rainy days per year and an average of 15.6 days per year when the precipitation is 0.5 inches or greater.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

Climatography of the United States No. 20 1971-2000

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: FAIRFIELD, CA **COOP ID: 042934**

Climate Division: CA 2 **NWS Call Sign:** **Elevation: 40 Feet** **Lat: 38°16N** **Lon: 122°04W**

Precipitation (inches)

	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount									
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution									
Month	Mean	Median	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	5.04	4.42	3.65	1979	11	12.47	1995	.30	1984	11.4	8.0	3.2	1.6	.41	.75	1.41	2.11	2.88	3.76	4.81	6.13	7.97	11.04	14.06
Feb	4.57	3.97	3.81	1998	3	14.71	1998	.14	1995	10.3	6.7	3.2	1.4	.24	.49	1.03	1.64	2.34	3.17	4.19	5.50	7.35	10.50	13.66
Mar	3.59	2.86	2.83	1983	13	10.89	1983	.14	1994	9.8	7.2	2.5	.8	.32	.57	1.06	1.55	2.10	2.72	3.45	4.37	5.64	7.75	9.83
Apr	1.12	.94	2.38	1982	11	5.05	1982	.06	1985	5.5	3.0	.5	.1	.07	.14	.28	.43	.60	.80	1.05	1.35	1.79	2.51	3.24
May	.64	.17	2.17	1996	16	3.29	1998	.00+	1992	3.2	1.6	.3	.1	.00	.00	.01	.05	.13	.25	.42	.67	1.06	1.80	2.58
Jun	.16	.01	1.63	1995	16	1.83	1995	.00+	1999	.7	.4	.1	@	.00	.00	.00	.00	.00	.00	.03	.10	.23	.51	.84
Jul	.03	.00	.49	1974	9	.60	1974	.00+	2000	.1	.1	.0	.0	**	**	**	**	**	**	**	**	**	**	**
Aug	.05	.00	1.01	1968	22	.66	1976	.00+	2000	.3	.2	.0	.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10	.31
Sep	.30	.09	2.49	1959	18	1.37	1989	.00+	1997	1.8	1.0	.1	.0	.00	.00	.00	.00	.02	.09	.19	.33	.53	.88	1.24
Oct	1.24	.76	4.50	1962	13	4.60	1972	.00+	1995	3.4	2.4	1.0	.3	.00	.06	.24	.42	.63	.87	1.15	1.51	2.02	2.88	3.73
Nov	3.08	2.78	3.95	1977	22	7.20	1973	.08+	1995	7.7	5.3	2.3	.7	.13	.28	.62	1.03	1.50	2.07	2.77	3.68	4.98	7.21	9.46
Dec	3.64	2.59	4.41	1995	12	11.67	1996	.00	1989	9.0	5.7	2.4	.9	.20	.54	1.09	1.63	2.20	2.83	3.57	4.49	5.74	7.80	9.80
Ann	23.46	21.52	4.50	Oct 1962	13	14.71	Feb 1998	.00+	Aug 2000	63.2	41.6	15.6	5.9	10.47	12.55	15.45	17.80	20.00	22.21	24.58	27.29	30.71	35.90	40.59

\+ Also occurred on an earlier date(s)
\# Denotes amounts of a trace
@ Denotes mean number of days greater than 0 but less than .05
** Statistics not computed because less than six years out of thirty had measurable precipitation

(1) From the 1971-2000 Monthly Normals
(2) Derived from station's available digital record: 1950-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

Figure 3. NOAA Precipitation Data

Source: NOAA

2.6 Topography

The geotechnical report states that, "The topography of the Project site is generally flat…The ground elevation is slightly increased from the west towards the east. There is a hillock on the west side of the existing truck scales near the beginning of the Project," (Parikh, 2009).

2.7 Soils and Geology

Multiple sub-surface borings were conducted, and the results and log of test borings are included in the geotechnical report prepared by Parikh Consultants Inc. The geotechnical report provides the following description of the soils within Project area,

> "The subsurface soil condition at the Project site consist of medium dense sands, underlain by stiff to very stiff lean clays with pockets/lenses of medium to dense sands, underlain by very stiff to hard lean clays/medium dense to dense sands in general." (Parikh, 2009)

The hydrologic soil group (HSG) data was obtained from the Natural Resources Conservation Service (NRCS) "Web Soil Survey." A small amount of soil belonging to HSG D is present in the vicinity of the western end of the Project. From approximately 1,000 ft west of Suisun Creek to approximately 700 ft east of this creek, the soils are in HSG B. Soils in HSG B also occur at the I-80/SR 12 Interchange. The rest of the soils at the site are in HSG C.

The geotechnical report identifies the geology of the Project area to be composed mainly of alluvial fan deposits (Holocene) (Parikh, 2009).

2.8 Hazardous Waste

Soil samples have shown the presence of aerially deposited lead (ADL). ADL soils encountered within Caltrans right-of-way (R/W) would be reused in accordance with the Department of Toxic Substances Variance. ADL soils encountered from those acquired private parcels would be transported off-site to a proper hazardous waste disposal facility. The locations and details of ADL reuse is provided in the contract plans and specifications.

2.9 Existing (Pre-Construction) Control Practices

There are no existing treatments BMPs within the Project limits prior to undertaking this Project.

3 CONSTRUCTION GENERAL PERMIT

To minimize the potential effects of construction runoff on the quality of the receiving water bodies, any construction activity affecting one acre or more must obtain coverage under the CGP. Permit applicants are required to prepare a SWPPP and implement BMPs to reduce construction effects on receiving water quality.

3.1 Risk Assessment

The new CGP requirements include a risk assessment to determine the Project's impact risk to receiving water bodies. The risk assessment uses measurements of the Project's potential sediment risk and the sensitivity of the receiving water bodies to sediment to determine the risk level of the Project. This Project has a Medium Sediment Risk Factor (see Figure 8) and a Low Receiving Water Risk Factor (Figure 9); the combined risk is Level 2 (Figure 10). The risk factors are detailed in the following sections.

3.1.1 Sediment Risk

The sediment risk value is 32; because this value is between 15 and 75, the Project is classified as having a medium sediment risk. This value is calculated from the following equation:

Equation 1. Sediment Risk Equation
A = (R)(K)(LS)(C)(P)

Where:

R = Runoff erosivity factor
K = Soil erodibility factor
LS = Length-slope
C = Cover
P = Management operations and support practices
A = Rate of sheet and rill erosion (tons per acre)

The rainfall runoff erosivity factor (R) of 91.44 was determined from the United States Environmental Protection Agency (EPA) "Rainfall Erosivity Factor Calculator for Small Construction Sites" (see Figure 4).

The soil erodibility factor (K) of 0.55 was determined from the NRCS "Web Soil Survey" (see Figure 6).

The length-slope factor (LS) of 0.64 was determined by examining electronic MicroStation cross sections of the existing grade (see Figure 7).

The cover factor (C) and management operations and support practices (P) are given values of 1.0 by CGP to simulate bare ground conditions.

Based on these factors, the rate of sheet and rill erosion (A) is 32 tons per acre (see Figure 8).

Rainfall Erosivity Factor Calculator for Small Construction Sites

Facility Information

Facility Name: EA 04-0A5351 EB Cordelia Truck Scales Relocation
Start Date: 09/01/2011
End Date: 09/15/2013
Latitude: 38.2311
Longitutde: -122.1112

Erosivity Index Calculator Results

AN EROSIVITY INDEX VALUE OF **91.44** HAS BEEN DETERMINED FOR THE CONSTRUCTION PERIOD OF **09/01/2011** - **09/15/2013**.

A rainfall erosivity factor of 5.0 or greater has been calculated for your site and period of construction. **You do not qualify for a waiver from NPDES permitting requirements**.

Figure 4. Runoff Erosivity Factor (R)

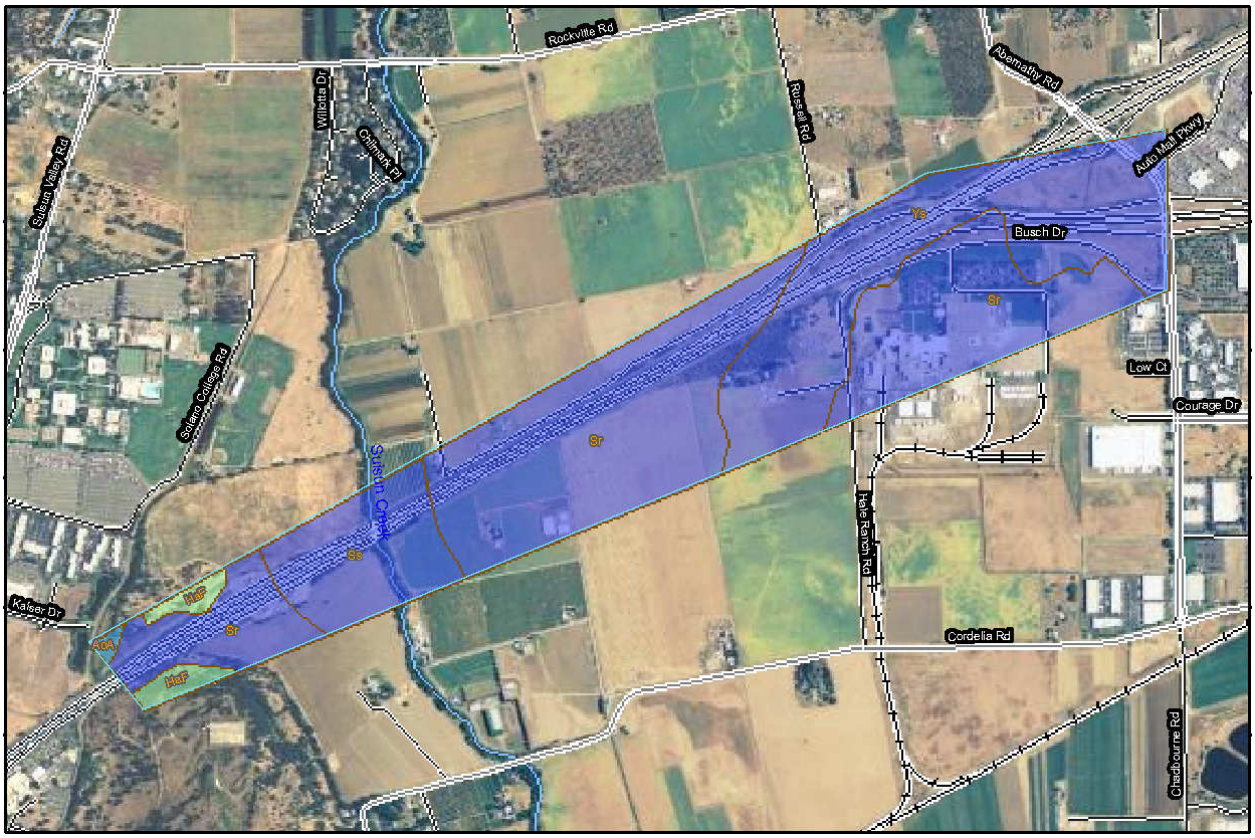


Figure 5. Soil Map

K Factor, Rock Free— Summary by Map Unit — Solano County, California				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
AoA	Antioch-San Ysidro complex, 0 to 2 percent slopes	.43	1.5	0.4%
HaF	Hambright loam, 15 to 40 percent slopes	.28	9.6	2.4%
Sr	Sycamore silty clay loam	.55	226.9	55.5%
Ss	Sycamore silty clay loam, drained	.55	47.7	11.7%
Ys	Yolo silty clay loam	.55	123.3	30.1%
Totals for Area of Interest			**409.0**	**100.0%**

Figure 6. Soil Erodibility Factor (K) based on Soil Map

	Average Watershed Slope (%)						
Sheet Flow Length (ft)	**0.2**	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**
100	0.05	0.09	0.15	0.28	0.41	0.55	0.68
150	0.05	0.09	0.17	0.33	0.50	0.68	0.86
200	0.06	0.10	0.18	0.37	0.57	0.79	1.02
250	0.06	0.10	0.19	0.40	0.64	0.89	1.16
300	0.06	0.10	0.20	0.43	0.69	0.98	1.28
400	0.06	0.11	0.22	0.48	0.80	1.14	1.51
L	213.03						
S	3.23%						
Sheet Flow	3%	3.23%	4%				
200	0.57		0.79				
213.03	0.59	**0.64**	0.82				
250	0.64		0.89				
LS =	**0.64**						

Figure 7. Length-Slope (LS) Factor

	A	B	C
1	**Sediment Risk Factor Worksheet**		**Entry**
2	**A) R Factor**		
3	Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.		
4	http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm		
5	**R Factor Value**		91.44
6	**B) K Factor (weighted average, by area, for all site soils)**		
7	The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.		
8	Site-specific K factor guidance		
9	**K Factor Value**		0.55
10	**C) LS Factor (weighted average, by area, for all slopes)**		
11	The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.		
12	LS Table		
13	**LS Factor Value**		0.64
14			
15	**Watershed Erosion Estimate (=RxKxLS) in tons/acre**		32.21
16	**Site Sediment Risk Factor**		**Medium**
17	Low Sediment Risk: < 15 tons/acre		
18	Medium Sediment Risk: >=15 and <75 tons/acre		
19	High Sediment Risk: >= 75 tons/acre		
20			

Figure 8. Sediment Risk Assessment

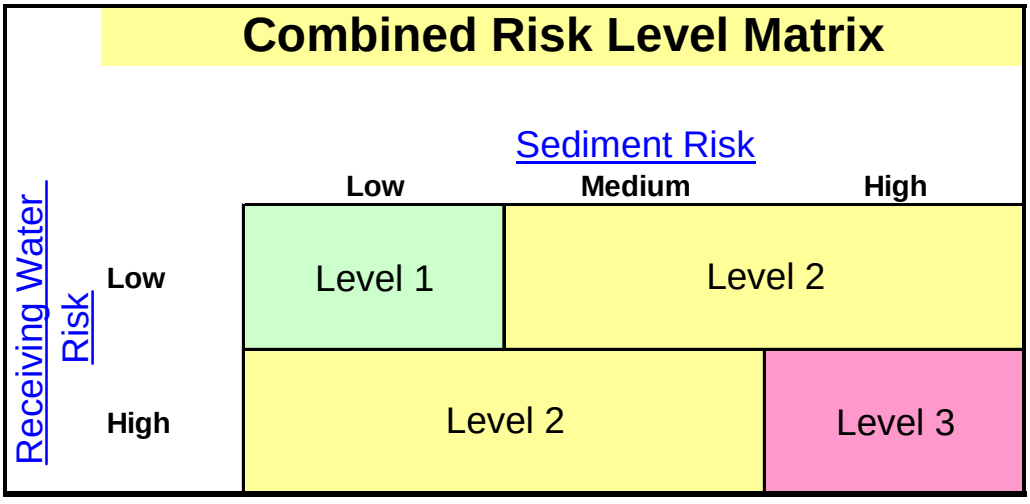
3.1.2 Receiving Water Body Risk

A receiving water body can be classified as either low or high risk. The receiving water body is classified as high if it is on the 303(d) List as impaired for sediment or has the beneficial uses of SPWN, Cold Freshwater Habitat (COLD) and Migration (MIGR). As presented in Section 2.3, none of the Project receiving water bodies is impaired for sediment or has the beneficial uses of SPWN, COLD and MIGR. Therefore the receiving water body risk for this Project is low (See Figure 9).

Receiving Water (RW) Risk Factor Worksheet	**Entry**	**Score**
A. Watershed Characteristics	**yes/no**	
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment**? For help with impaired waterbodies please check the attached worksheet or visit the link below: 2006 Approved Sediment-impared WBs Worksheet http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml **OR** A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? http://www.ice.ucdavis.edu/geowbs/asp/wbquse.asp	**NO**	**Low**

Figure 9. Receiving Water Body Risk Assessment

Figure 10 shows the combined risk level matrix for sediment and receiving water risks.



Project Sediment Risk: Medium
Project RW Risk: Low
Project Combined Risk: Level 2

Figure 10. Combined Risk Level Matrix

3.2 Notice of Termination (NOT)

The CGP provides both revised and new requirements for completion and approval of the NOT. The NOT requirements are presented in Section II.D of the new CGP permit "Order." These requirements include demonstrating through photos, computational proof or other "custom methods," such as results of testing and analysis, that the terms of the NOT have been satisfied.

While these methods of demonstrating compliance are at the option of the contractor, should the RWQCB determine that the visual photos do not adequately show compliance, further computational efforts may be required. This computational proof is obtained through the use of the Revised Universal Soil Loss Equation 2 (RUSLE2) program.

4 RUN-ON DISCHARGES

Run-on discharges are off-site storm water flows that can potentially run onto the site. The only run-on to the Project is from a small hill located from approximately the start of the Project at "L" 171+90 to the off-ramp to the existing truck scale exit from I-80 at "D1" 75+60 (Figure 11). Throughout the remainder of the Project, all areas of work are in fill, so no other run-on discharges are expected.

The calculations for run-on at this location use a watershed delineation created with AutoCAD software. The watershed of the run-on discharge area is shown in Figure 11. The Rational Method (Equation 2) was used to calculate the discharge from this area. The discharge value is used to design storm water BMPs at this location during construction.

Equation 2. Run-on Discharge Equation
$Q = CiA$

Where:

C = Area runoff coefficient = 0.58 (from HDM Figure 819.2 A)
i = 2-year, 5 minute rainfall intensity (inches/hour) = 1.94 (from WinIDF)
A = Drainage Area (acre) = 1.03

Q = discharge (cubic feet/second) = 1.16

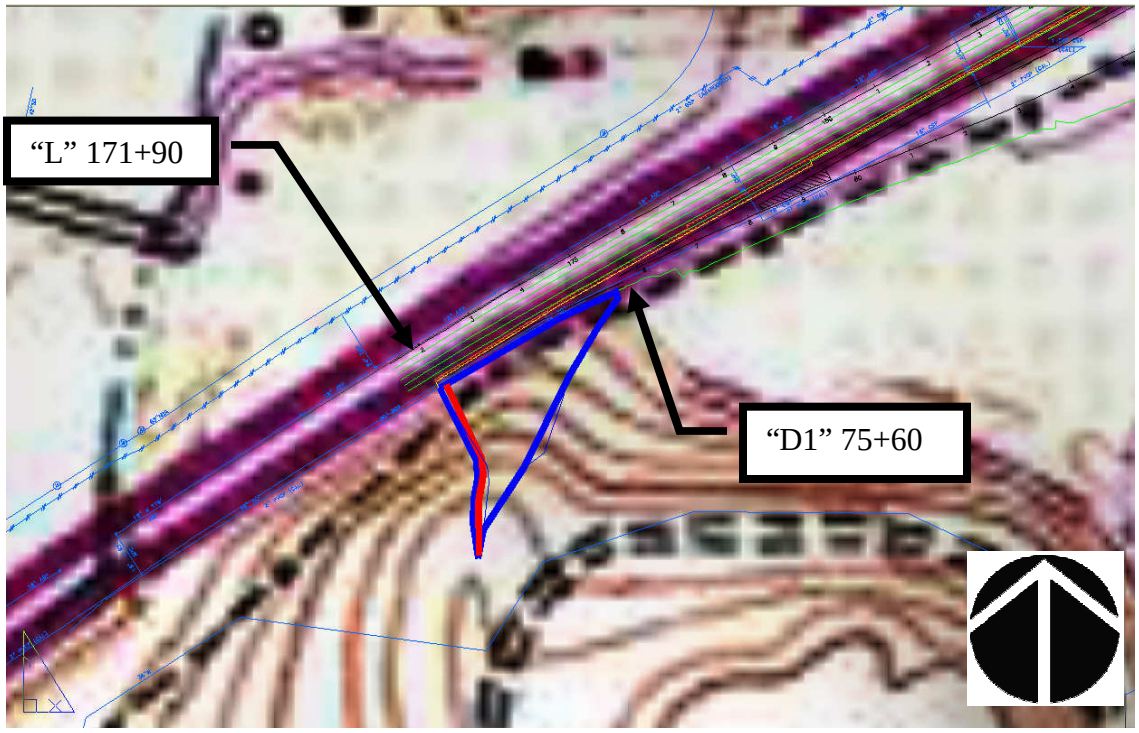


Figure 11. Run-on discharge watershed

5 PROJECT REGISTRATION DOCUMENTS

To obtain permit coverage under the CGP, all dischargers must electronically file PRDs, NOTs, changes of information, sampling and monitoring information, annual reporting, and other compliance documents required by this CGP through the SWRCB's SMARTS. The contractor will have to coordinate these submittals with Caltrans within the timeframe allotted in the contract special provisions and as specified in the permit. SMARTS is found under the following website:

https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp

PRDs include the following information:

1. Notice of Intent (NOI)
2. Site Map(s) Includes:
    a. The project's surrounding area (vicinity)
    b. Site layout
    c. Construction site boundaries
    d. Drainage areas
    e. Discharge locations
    f. Sampling locations
    g. Areas of soil disturbance (temporary or permanent)
    h. Active areas of soil disturbance (cut or fill)
    i. Locations of all runoff BMPs
    j. Locations of all erosion control BMPs
    k. Locations of all sediment control BMPs
    l. Active Treatment System (ATS) location (if applicable)
    m. Locations of sensitive habitats, watercourses, or other features which are not to be disturbed
    n. Locations of all post-construction BMPs
    o. Locations of storage areas for waste, vehicles, service, loading/unloading of materials, access (entrance/exits) points to construction site, fueling and water storage, water transfer for dust control and compaction practices

3. SWPPPs

4. Risk Assessment

a. The Standard Risk Assessment includes utilization of the following:
    i. Receiving water Risk Assessment interactive map
    ii. EPA Rainfall Erosivity Factor Calculator Website
    iii. Sediment Risk interactive map
    iv. Sediment sensitive water bodies list

b. The Site-Specific Risk Assessment includes the completion of the hand calculated R value Risk Calculator

5. **Post-Construction Water Balance Calculator (if applicable)**
The post-construction requirements of the CGP are not applicable because the Project area is currently within the Solano County Phase II Municipal Separate Storm Sewer System (MS4) and all work within the Project limits is within Caltrans' Phase I MS4. Dischargers that are subject to this requirement or chose to comply with this requirement shall complete the Water Balance Calculator in accordance with the instructions in Appendix 2 of the CGP.

6. **ATS Design Document and Certification (if applicable)**
Currently the design does not include the use of an ATS. If the contractor decides to utilize an ATS, then it must be approved by the Engineer. Furthermore, all dischargers using ATS must submit electronically to SMARTS their system design (as well as any supporting documentation) and proof that the system was designed by a qualified ATS design professional, see Attachment F of the CGP.

5.1 General Information Included

The following is a list of information included in this Storm Water Information Handout that can be used for the PRDs:

- Vicinity Map
- Risk Assessment

5.2 Storm Water Pollution Prevention Plan

The contractor for the Project is required to prepare a SWPPP because the Project involves disturbing more than 1 ac of soil. The SWPPP must include the following information:

- Active areas of cut and fill
- Areas of soil disturbance (temporary and permanent)
- Locations of storage areas for waste, vehicles, access, etc.
- Locations of all runoff BMPs
- Locations of all erosion control BMPs
- Locations of all sediment control BMPs

The SWPPP should be submitted with the PRDs and will be forthcoming from the Contractor.

5.3 Notice of Intent (NOI)

The NOI must be submitted once the contractor submits the SWPPP. A draft of the NOI is included in Appendix A. The NOI must be updated with the Project contractor's information, once a contractor has been selected for this Project.

5.4 Site Maps

Registration requirements can be met by the inclusion of the following plans, which can be found in the appendices.

- Layout Plans (Appendix B)
  - Site layout with construction boundaries
  - ESA locations

- Drainage Plans (Appendix C)
  - Drainage areas

- Sampling Plan (Appendix D)
  - Discharge Locations (Subject to changes by the Contractor and approved by the Engineer)
  - Sampling locations (Subject to changes by the Contractor and approved by the Engineer)

- Off-site Watershed Map (Appendix E)

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Appendix A Notice of Intent (NOI)

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State Water Resources Control Board

NOTICE OF INTENT

TO COMPLY WITH THE TERMS OF THE
GENERAL PERMIT TO DISCHARGE STORM WATER
ASSOCIATED WITH CONSTRUCTION ACTIVITY (WQ ORDER No. 99-08-DWQ)

I. NOI STATUS (SEE INSTRUCTIONS)

MARK ONLY ONE ITEM 1. ☒ New Construction 2. ☐ Change of Information for WDID#

II. PROPERTY OWNER

Name	Contact Person		
California Department of Transportation	Nicolas Endrawos		
Mailing Address	Title		
111 Grand Avenue	Project Manager		
City	State	Zip	Phone
Oakland	CA	94612	

Owner Type (*check one*) 1.[ ] Private Individual 2.[ ]Business 3.[ ]Municipal 4.[X]State 5.[ ]Federal 6.[ ]Other

III. DEVELOPER/CONTRACTOR INFORMATION

Developer/Contractor	Contact Person		
Mailing Address	Title		
City	State	Zip	Phone

IV. CONSTRUCTION PROJECT INFORMATION

Site/Project Name	Site Contact Person		
Eastbound I-80 Cordelia Truck Scales Relocation			
Physical Address/Location	Latitude	Longitude	County
	38.231 °	-122.11 °	Solano
City (or nearest City)	Zip	Site Phone Number	Emergency Phone Number
Fairfield			

A. Total size of construction site area: _____ Acres

B. Total area to be disturbed: 62.25 Acres (% of total _____)

C. Percent of site imperviousness (including rooftops):
Before Construction: _____%
After Construction: _____%

D. Tract Number(s): _____, _____

E. Mile Post Marker: 13.3/15.7

F. Is the construction site part of a larger common plan of development or sale?
☐ YES ☒ NO

G. Name of plan or development:

H. Construction commencement date: 09 / 01 / 2011

I. % of site to be mass graded: _____

J. Projected construction dates:
Complete grading: 09 / 15 / 2011 Complete project: 09 / 15 / 2011

K. Type of Construction (Check all that apply):

1. ☐ Residential 2. ☐ Commercial 3. ☐ Industrial 4. ☐ Reconstruction 5. ☒ Transportation
6. ☐ Utility Description: _____ 7. ☐ Other (Please List): _____

V. BILLING INFORMATION

SEND BILL TO:	Name	Contact Person	
☐ OWNER (as in II. above)	Solano Transportation Authority		
☐ DEVELOPER (as in III. above)	Mailing Address: One Harbor Center, Suite 130	Phone/Fax: (707) 424-6075	
☒ OTHER (enter information at right)	City: Suisun City	State: CA	Zip: 94585

VI. REGULATORY STATUS

A. Has a local agency approved a required erosion/sediment control plan? ☒ YES ☐ NO

Does the erosion/sediment control plan address construction activities such as infrastructure and structures? ☒ YES ☐ NO

Name of local agency: California Department of Transportation Phone: _____

B. Is this project or any part thereof, subject to conditions imposed under a CWA Section 404 permit of 401 Water Quality Certification? ☒ YES ☐ No

If yes, provide details: _____

VII. RECEIVING WATER INFORMATION

A. Does the storm water runoff from the construction site discharge to (Check all that apply):

1. ☐ **Indirectly to waters of the U.S.**
2. ☐ **Storm drain system - Enter owner's name:** _____
3. ☒ **Directly to waters of U.S. (e.g. , river, lake, creek, stream, bay, ocean, etc.)**

B. Name of receiving water: (river, lake, creek, stream, bay, ocean): Raines Drain, Suisun Marsh Wetlands

VIII. IMPLEMENTATION OF NPDES PERMIT REQUIREMENTS

A. STORM WATER POLLUTION PREVENTION PLAN (SWPPP) (check one)

☐ A SWPPP has been prepared for this facility and is available for review: Date Prepared: ____/____/____ Date Amended: ____/____/____

☒ A SWPPP will be prepared and ready for review by (enter date): ____/____/____

☐ A tentative schedule has been included in the SWPPP for activities such as grading, street construction, home construction, etc.

B. MONITORING PROGRAM

☒ A monitoring and maintenance schedule has been developed that includes inspection of the construction BMPs before anticipated storm events and after actual storm events and is available for review.

If checked above: A qualified person has been assigned responsibility for pre-storm and post-storm BMP inspections to identify effectiveness and necessary repairs or design changes ☐ YES ☒ NO

Name: _____ Phone: _____

C. PERMIT COMPLIANCE RESPONSIBILITY

A qualified person has been assigned responsibility to ensure full compliance with the Permit, and to implement all elements of the Storm Water Pollution Prevention Plan including:

1. Preparing an annual compliance evaluation ☐ YES ☒ NO

Name: _____ Phone: _____

2. Eliminating all unauthorized discharges ☐ YES ☒ NO

IX. VICINITY MAP AND FEE (must show site location in relation to nearest named streets, intersections, etc.)

Have you included a vicinity map with this submittal? ☒ YES ☐ NO

Have you included payment of the annual fee with this submittal? ☐ YES ☐ NO

X. CERTIFICATIONS

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. In addition, I certify that I have read the entire General Permit, including all attachments, and agree to comply with and be bound by all of the provisions, requirements, and prohibitions of the permit, including the development and implementation of a Storm Water Pollution Prevention Plan and a Monitoring Program Plan will be complied with."

Printed Name: _____

Signature: _____ **Date:** _____

Title: _____

Appendix B Layout Plans

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER — BRIAN M. STEWART — No. C73328 — Exp. 12-31-10 — CIVIL — STATE OF CALIFORNIA

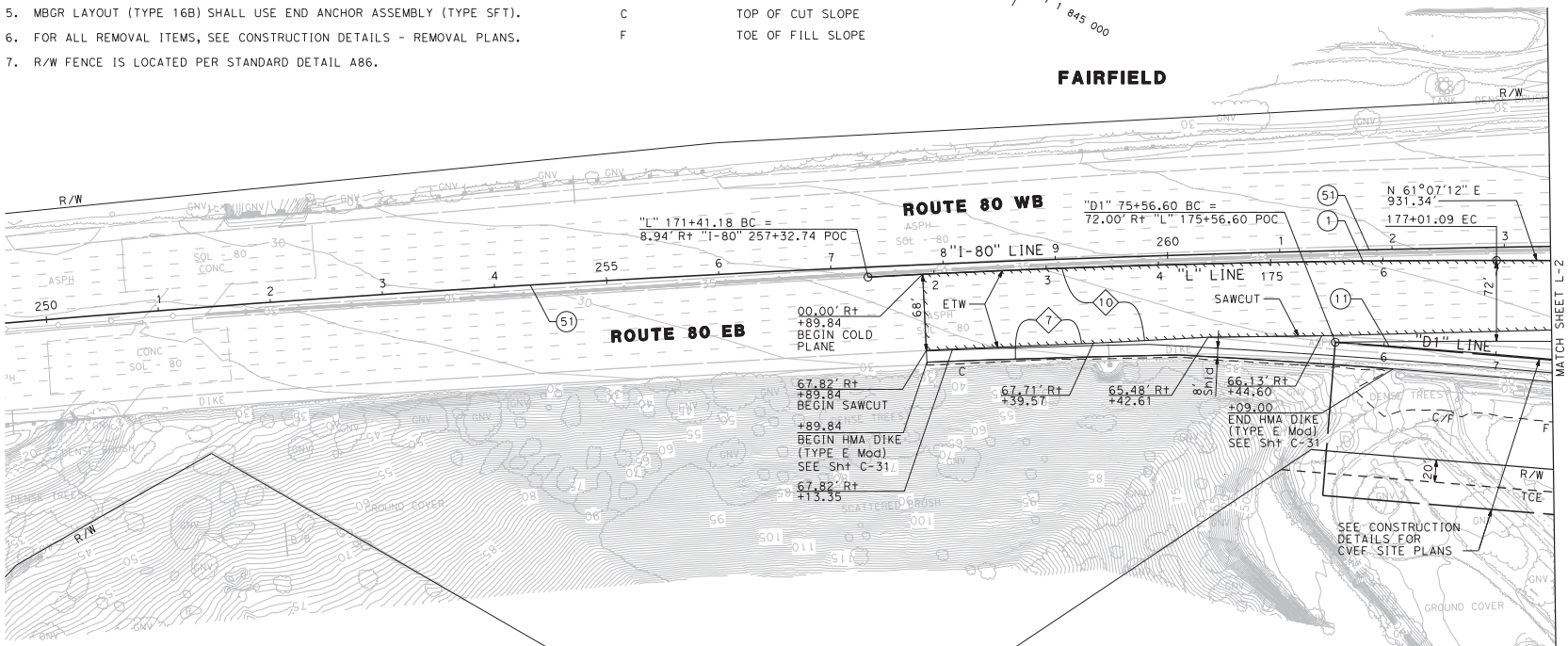
HDR ENGINEERING, INC 2121 N CALIFORNIA BLVD SUITE 475 WALNUT CREEK, CA 94596	SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585

NOTES:

1. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. DATUM. THE HORIZONTAL COORDINATE VALUES ARE IN THE CALIFORNIA COORDINATE SYSTEM (CCS 83) ZONE 2 AND BASED ON THE NORTH AMERICAN DATUM OF 1983 AS ADJUSTED TO THE CALIFORNIA HIGH PRECISION NETWORK (HPGN) 92 EPOCH 1991.35. THE VERTICAL CONTROL VALUES ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) PROVIDED BY NATIONAL GEODETIC SURVEY (NGS).
3. DISTANCES ARE IN U.S. SURVEY FEET UNLESS OTHERWISE NOTED. DISTANCES AND STATIONING ARE GRID DISTANCES. MULTIPLY DISTANCES BY 0.99999972 TO OBTAIN GROUND LEVEL DISTANCES.
4. MBGR LAYOUT (TYPE 12A, 12B AND 12C) SHALL USE END CAP (TYPE TC) FOR CONNECTION OF THE GUARD RAILING TO THE CONCRETE BARRIER.
5. MBGR LAYOUT (TYPE 16B) SHALL USE END ANCHOR ASSEMBLY (TYPE SFT).
6. FOR ALL REMOVAL ITEMS, SEE CONSTRUCTION DETAILS - REMOVAL PLANS.
7. R/W FENCE IS LOCATED PER STANDARD DETAIL A86.

ABBREVIATIONS:

AITS (XX)	ALTERNATIVE IN-LINE TERMINAL SYSTEM (TYPE XX LAYOUT)
AFTS (XX)	ALTERNATIVE FLARED TERMINAL SYSTEM (TYPE XX LAYOUT)
C/F	TOP OF CUT SLOPE / TOE OF FILL SLOPE
CVEF	COMMERCIAL VEHICLE ENFORCEMENT FACILITY
MVP	MAINTENANCE VEHICLE PULLOUT
TCE	TEMPORARY CONSTRUCTION EASEMENT
TR (TYPE WB)	TRANSITION RAILING (TYPE WB)
TS (TYPE CAT)	TERMINAL SYSTEM (TYPE CAT)
ESA	ENVIRONMENTALLY SENSITIVE AREA
TF	TEMPORARY FENCE
C	TOP OF CUT SLOPE
F	TOE OF FILL SLOPE



LEGEND:

- (1) CURVE NUMBER
- 1 PAVEMENT STRUCTURAL SECTION
- CONTRASTING SURFACE TREATMENT
- TFESA TEMPORARY FENCE (TYPE ESA)
- SIGN STRUCTURE POSTS SEE SIGN PLANS
- COLD PLANE ASPHALT CONCRETE PAVEMENT (0.10' OGAC)
- COLD PLANE ASPHALT CONCRETE PAVEMENT (0.20' AC)

CURVE DATA

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(11)	10,000'	3°23'26"	295.97'	591.78'	1835794.966	6531623.893
(51)	19,969'	12°14'30"	2141.41'	4266.52'	1827701.348	6537455.399

LAYOUT

SCALE: 1" = 50'

L-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY / DATE REVISED
Caltrans	CARLTON L. HAACK	SHEENA C. PATEL	BRIAN M. STEWART	RM 05/05/10 IK 08/20/10

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => lKukaneg
DGN FILE => 40a535ea001.dgn | CU 04264 | EA 0A5351

LAST REVISION 00-00-00 | DATE PLOTTED => 08\20\10
TIME PLOTTED => 11:45:42 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

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PLANS APPROVAL DATE

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2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

NOTE:

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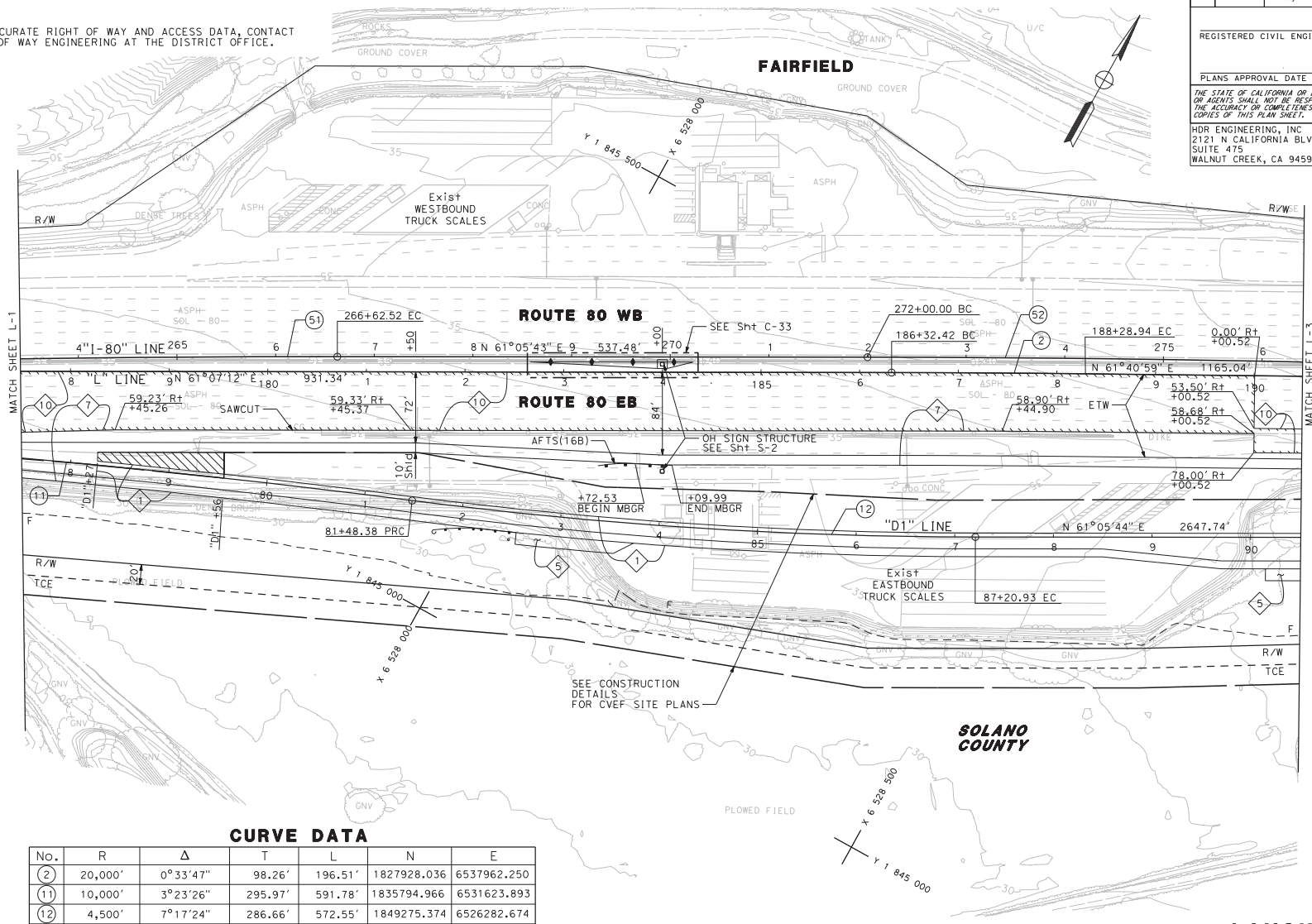

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(12)	4,500′	7°17′24"	286.66′	572.55′	1849275.374	6526282.674
(51)	19,969′	12°14′30"	2141.41′	4266.52′	1827701.348	6537455.399
(52)	21,800′	1°19′00"	250.49′	500.97′	1826358.239	6538810.945

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht L-1

LAYOUT

SCALE: 1" = 50′

L-2

REVISED BY	DATE REVISED
IK	08/20/10
RM	05/05/10

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

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DGN FILE => 40a533ea002.dgn

CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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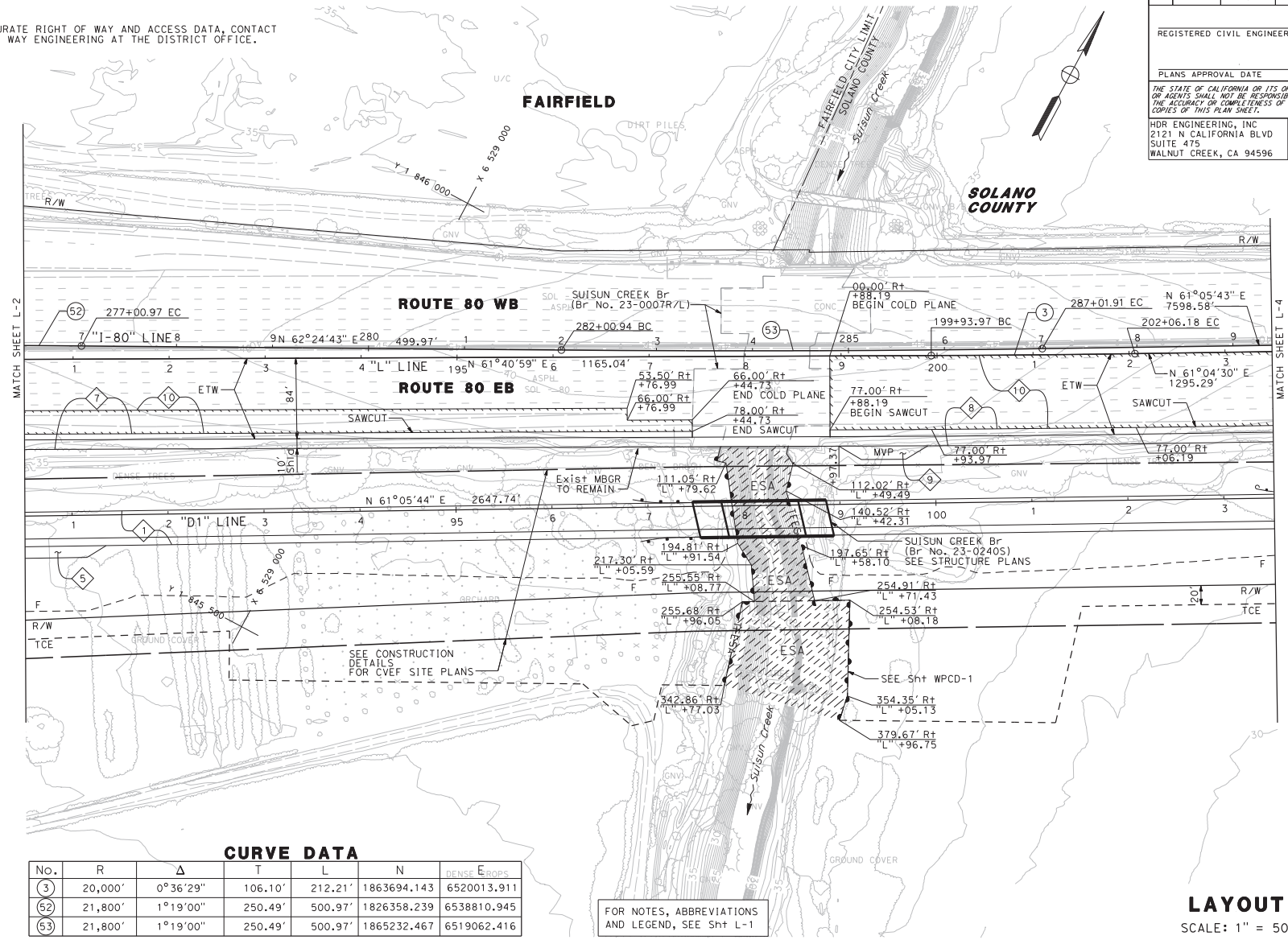

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(53)	21,800'	1°19'00"	250.49'	500.97'	1865232.467	6519062.416

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht L-1

LAYOUT

SCALE: 1" = 50'

L-3

REVISED BY	DATE REVISED
IK	08/20/10
RM	05/05/10

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DGN FILE => 40a535ea003.dgn

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EA 0A5351

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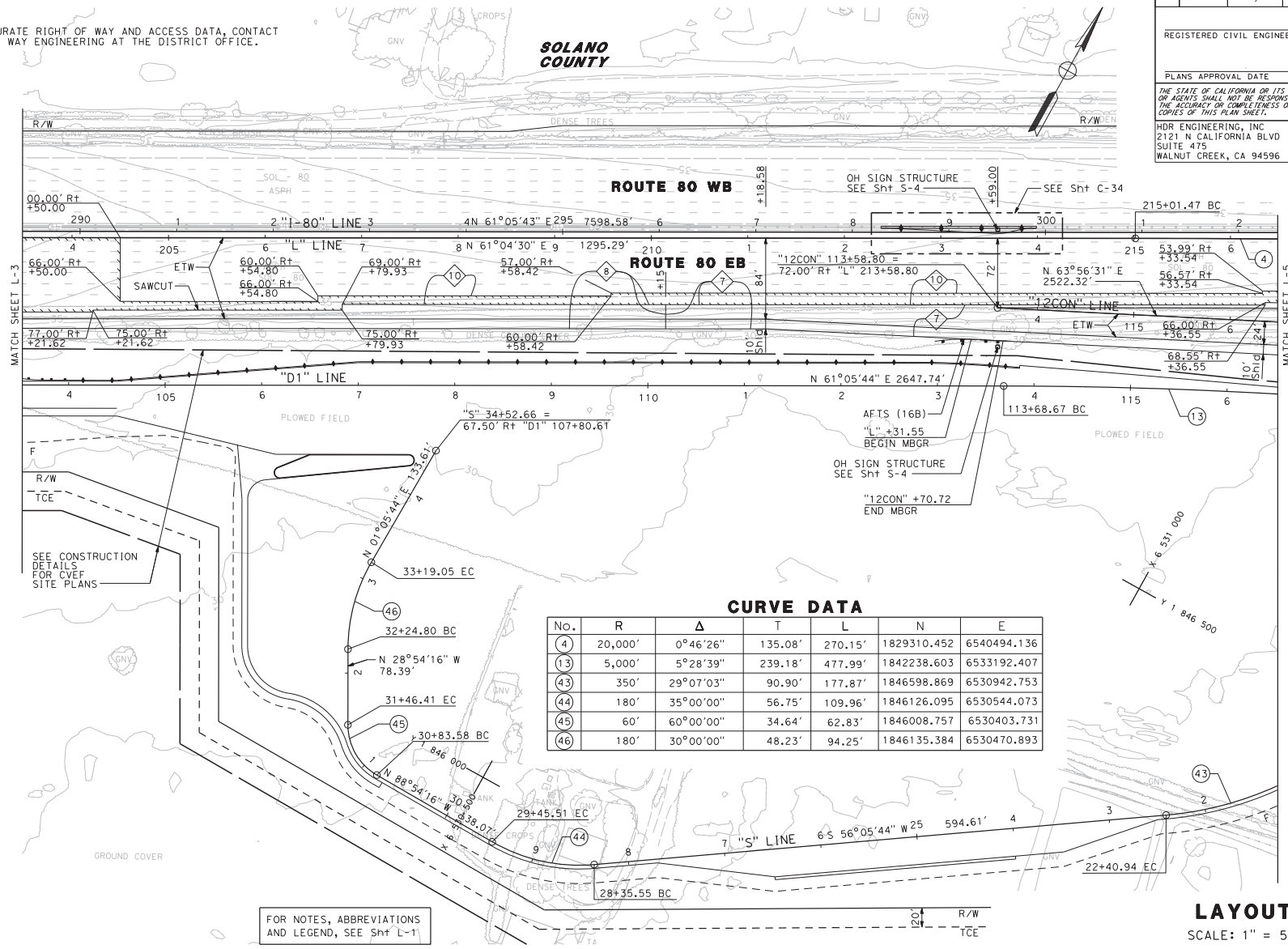

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(43)	350′	29°07′03″	90.90′	177.87′	1846598.869	6530942.753
(44)	180′	35°00′00″	56.75′	109.96′	1846126.095	6530544.073
(45)	60′	60°00′00″	34.64′	62.83′	1846008.757	6530403.731
(46)	180′	30°00′00″	48.23′	94.25′	1846135.384	6530470.893

LAYOUT

SCALE: 1" = 50′

L-4

REVISED BY	DATE REVISED
IK	08/20/10
RM	05/05/10

CALCULATED-DESIGNED BY: SHEENA C. PATEL
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CONSULTANT FUNCTIONAL SUPERVISOR: CARLTON L. HAACK

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

LAST REVISION 00-00-00
DATE PLOTTED => 08\20\10
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BORDER LAST REVISED 4/11/2008

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CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

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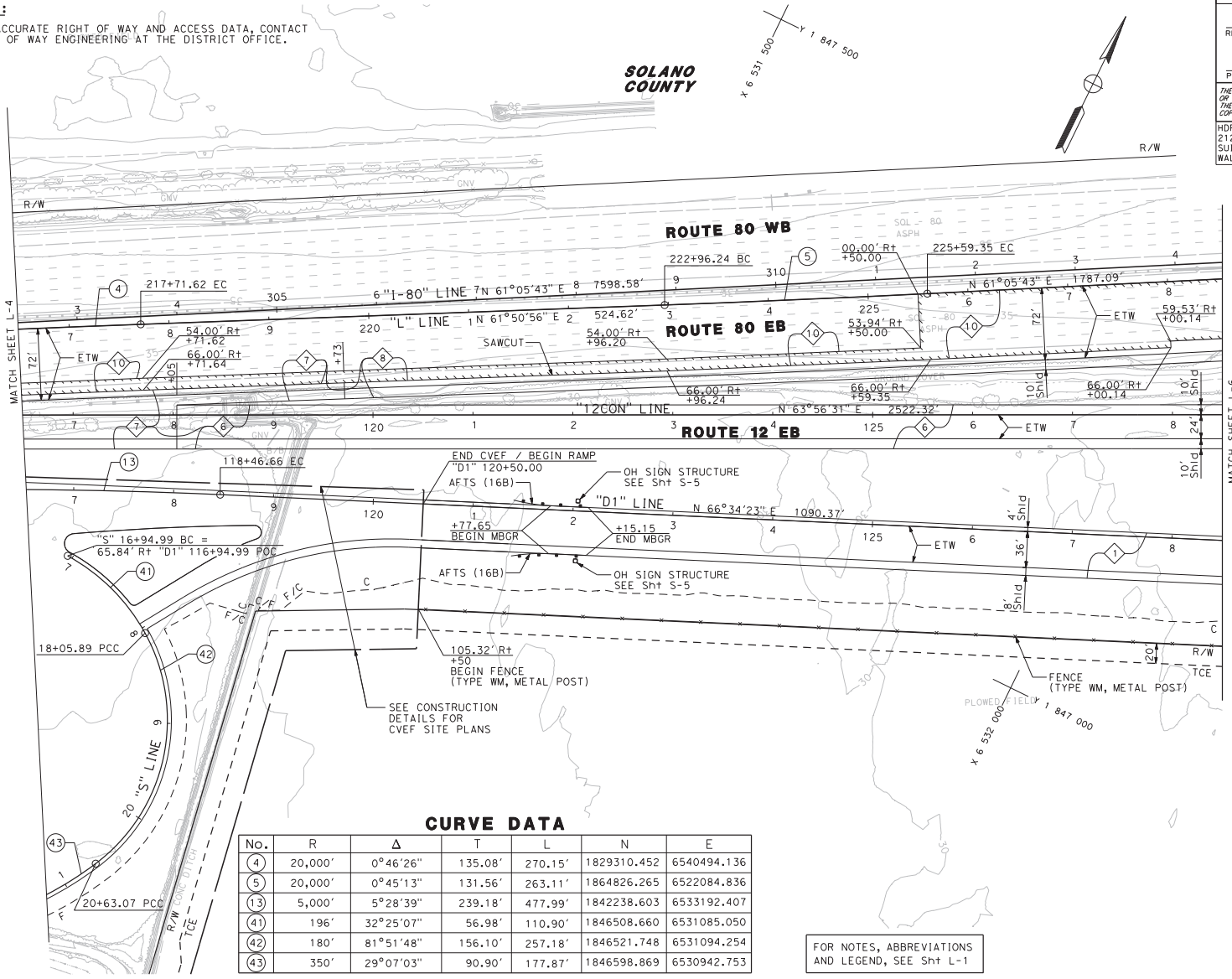
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



CURVE DATA

No.	R	Δ	T	L	N	E
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(5)	20,000'	0°45'13"	131.56'	263.11'	1864826.265	6522084.836
(13)	5,000'	5°28'39"	239.18'	477.99'	1842238.603	6533192.407
(41)	196'	32°25'07"	56.98'	110.90'	1846508.660	6531085.050
(42)	180'	81°51'48"	156.10'	257.18'	1846521.748	6531094.254
(43)	350'	29°07'03"	90.90'	177.87'	1846598.869	6530942.753

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht L-1

LAYOUT

SCALE: 1" = 50'

L-5

LAST REVISION 00-00-00
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NOTE:

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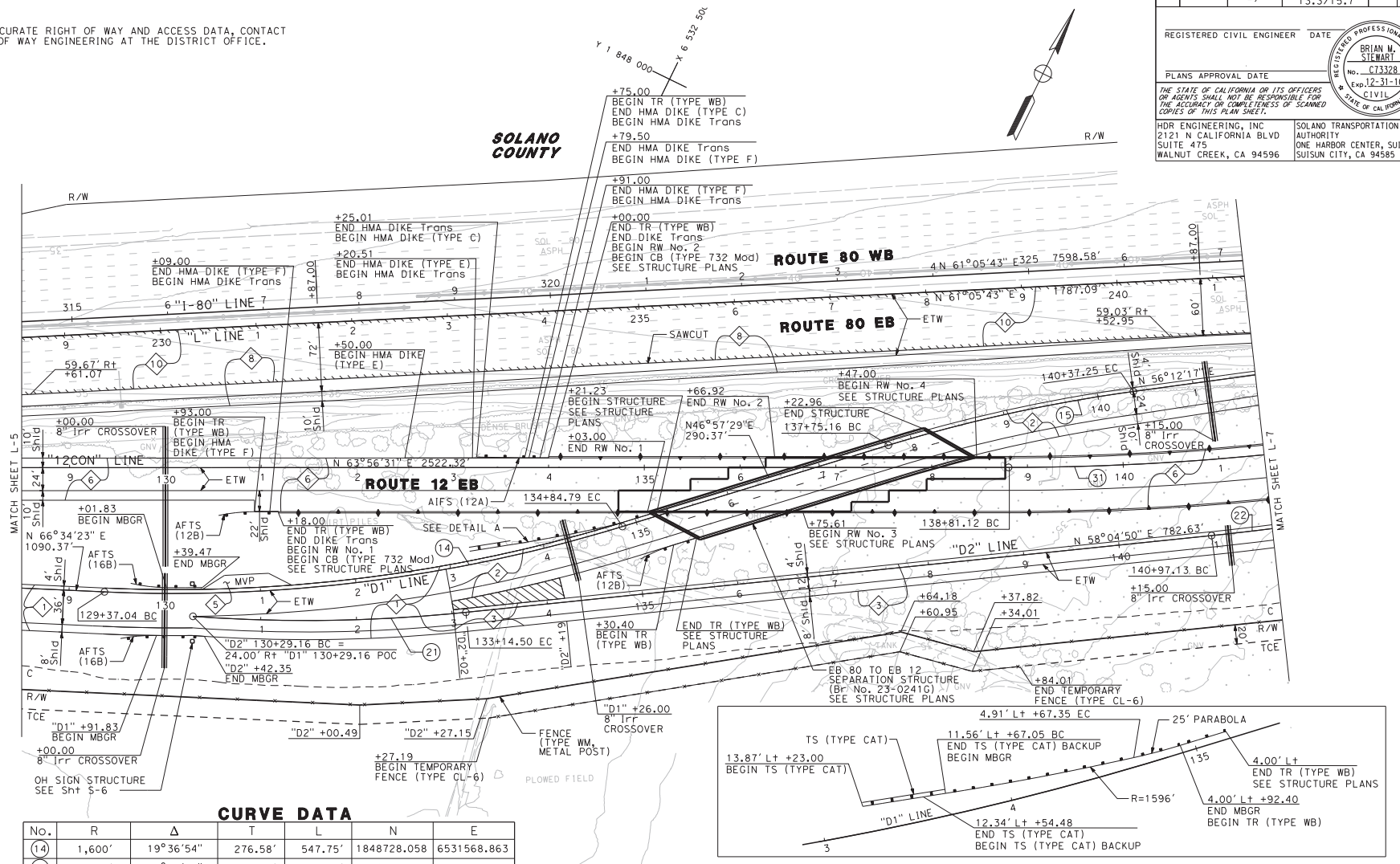

CURVE DATA

No.	R	Δ	T	L	N	E
(14)	1,600′	19°36′54"	276.58′	547.75′	1848728.058	6531568.863
(15)	1,624′	9°14′48"	131.33′	262.09′	1846569.972	6533981.570
(21)	1,624′	10°04′02"	143.04′	285.34′	1848784.864	6531694.739
(22)	2,700′	6°04′13"	143.16′	286.05′	1850111.962	6531790.122
(31)	2,700′	10°13′36"	241.60′	481.92′	1850217.066	6531810.692

DETAIL A

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht L-1

LAYOUT

SCALE: 1" = 50′

L-6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

BRIAN M. STEWART No. C73328 Exp.12-31-10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REVISED BY	DATE REVISED
RM	05/05/10
IK	08/20/10

CALCULATED-DESIGNED BY: SHEENA C. PATEL
CHECKED BY: BRIAN M. STEWART
CONSULTANT FUNCTIONAL SUPERVISOR: CARLTON L. HAACK
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

LAST REVISION 00-00-00
DATE PLOTTED => 08\20\10
TIME PLOTTED => 11:47:14 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER — BRIAN M. STEWART — No. C73328 — Exp. 12-31-10 — CIVIL — STATE OF CALIFORNIA

HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REVISED BY	DATE REVISED
IK	08/20/10
RM	05/05/10

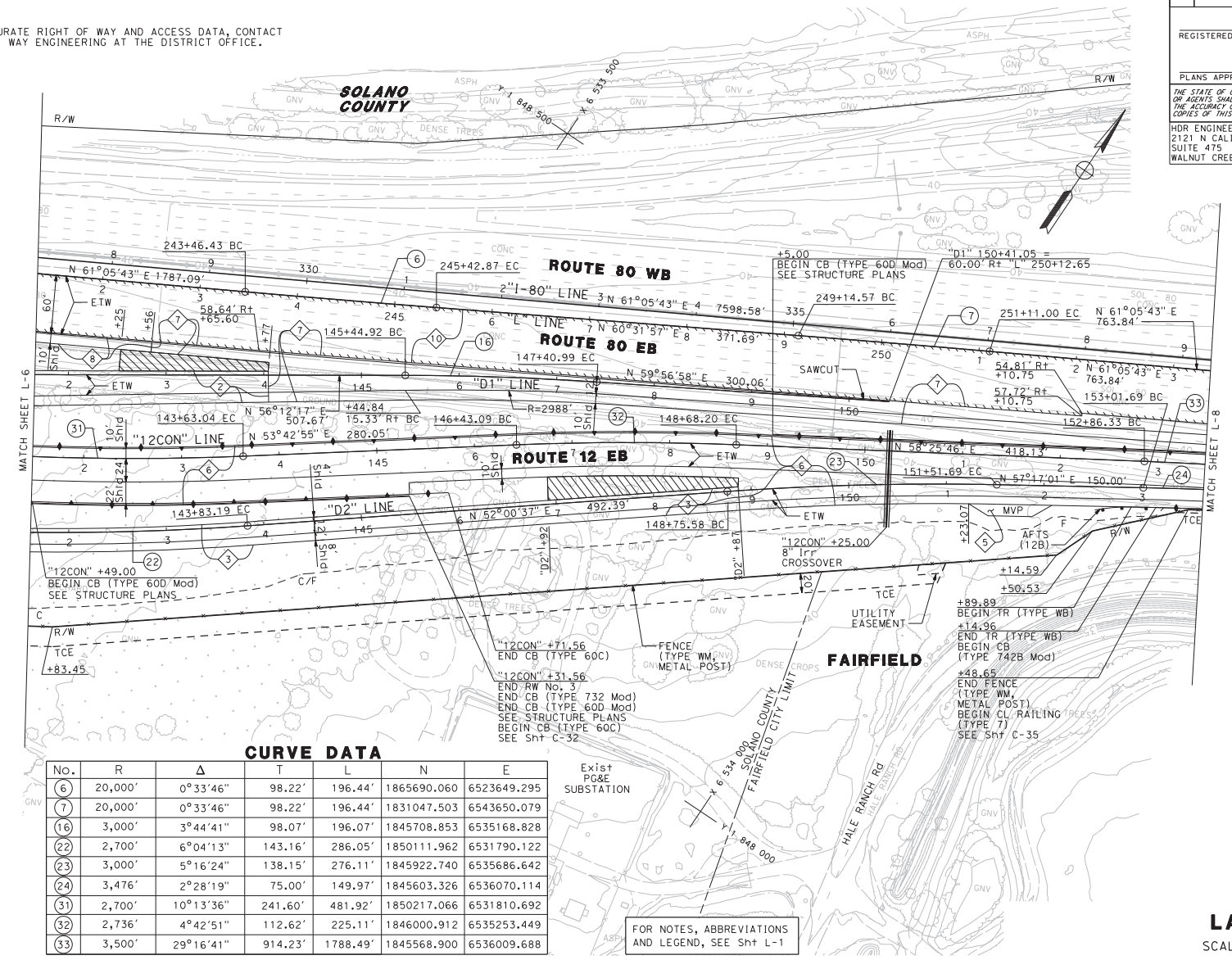
CALCULATED-DESIGNED BY: SHEENA C. PATEL
CHECKED BY: BRIAN M. STEWART
CONSULTANT FUNCTIONAL SUPERVISOR: CARLTON L. HAACK

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



CURVE DATA

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7	20,000′	0°33′46"	98.22′	196.44′	1831047.503	6543650.079
16	3,000′	3°44′41"	98.07′	196.07′	1845708.853	6535168.828
22	2,700′	6°04′13"	143.16′	286.05′	1850111.962	6531790.122
23	3,000′	5°16′24"	138.15′	276.11′	1845922.740	6535686.642
24	3,476′	2°28′19"	75.00′	149.97′	1845603.326	6536070.114
31	2,700′	10°13′36"	241.60′	481.92′	1850217.066	6531810.692
32	2,736′	4°42′51"	112.62′	225.11′	1846000.912	6535253.449
33	3,500′	29°16′41"	914.23′	1788.49′	1845568.900	6536009.688

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht L-1

LAYOUT

SCALE: 1" = 50′

L-7

LAST REVISION 00-00-00
DATE PLOTTED => 08\20\10
TIME PLOTTED => 11:47:31 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => lKukaneg
DGN FILE => 40a533ea007.dgn

CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

BRIAN M. STEWART No. C73328 Exp. 12-31-10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

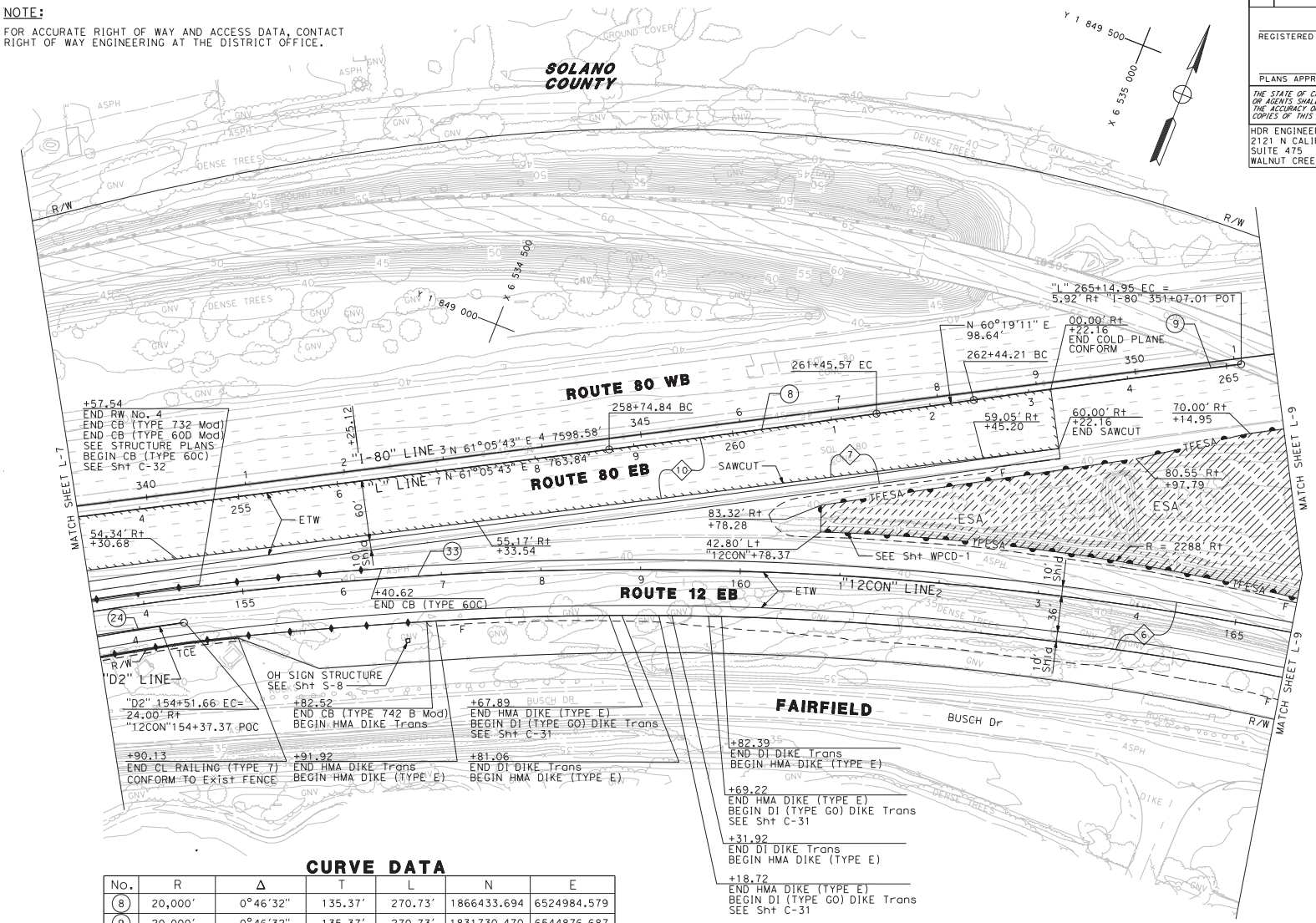
IK	08/20/10				
RM	05/05/10				
REVISED BY	DATE REVISED				
SHEENA C. PATEL	BRIAN M. STEWART				
CALCULATED-DESIGNED BY	CHECKED BY				
CONSULTANT FUNCTIONAL SUPERVISOR					
CARLTON L. HAACK					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



CURVE DATA

No.	R	Δ	T	L	N	E
(8)	20,000'	0°46'32"	135.37'	270.73'	1866433.694	6524984.579
(9)	20,000'	0°46'32"	135.37'	270.73'	1831730.470	6544876.687
(24)	3,476'	2°28'19"	75.00'	149.97'	1845603.326	6536070.114
(33)	3,500'	29°16'41"	914.23'	1788.49'	1845568.900	6536009.688

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht L-1

LAYOUT

SCALE: 1" = 50'

L-8

LAST REVISION 00-00-00
DATE PLOTTED => 08\20\10
TIME PLOTTED => 11:47:53 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => lKukaneg
DGN FILE => 40a535ea008.dgn

CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

BRIAN M. STEWART No. C73328 Exp. 12-31-10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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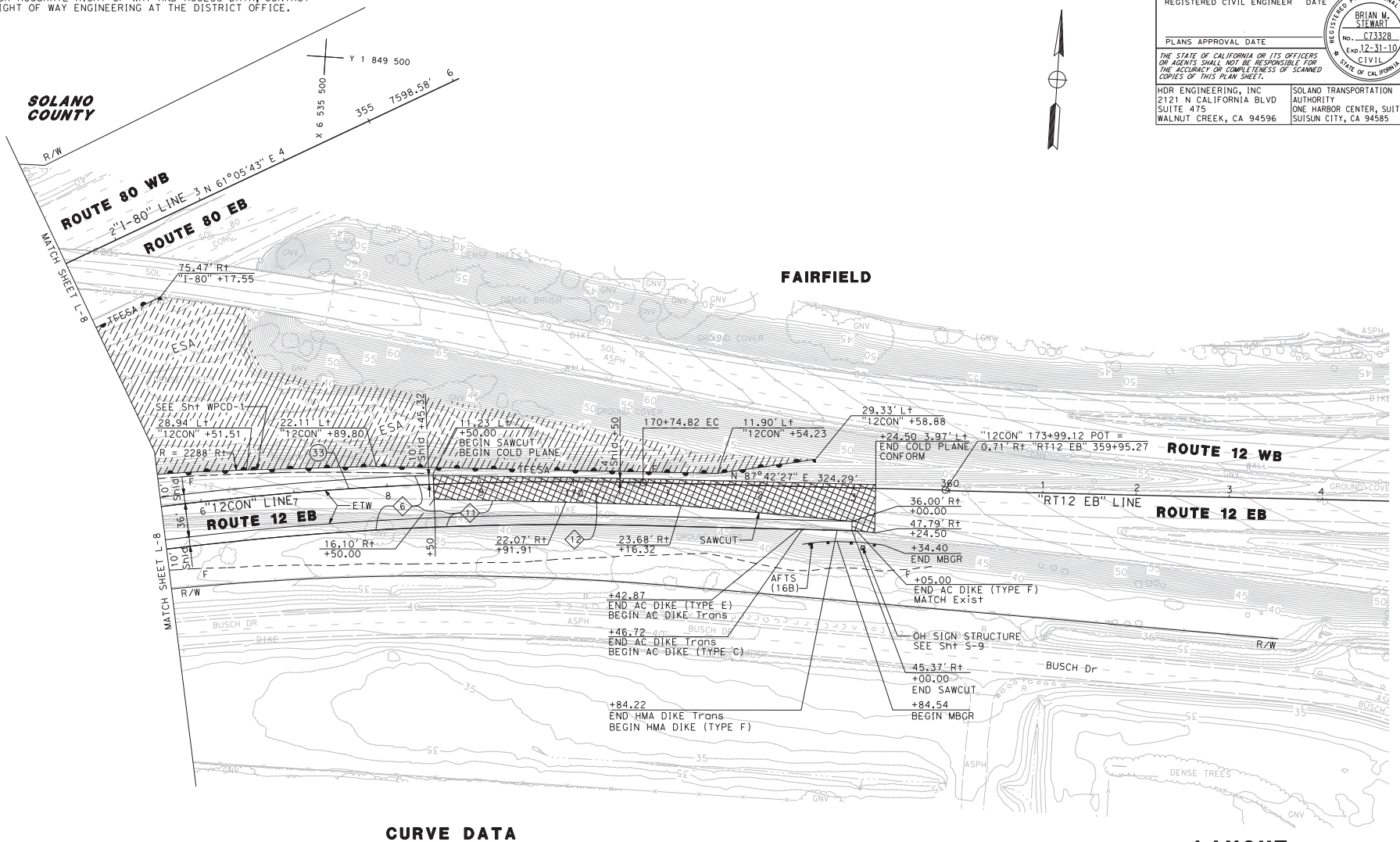
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



CURVE DATA

No.	R	Δ	T	L	N	E
(33)	3,500'	29°16'41"	914.23'	1788.49'	1845568.900	6536009.688

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht L-1

LAYOUT

SCALE: 1" = 50'

L-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISED BY	DATE REVISED
IK				08/20/10
RM				05/05/10
SHEENA C. PATEL	CARLTON L. HAACK	BRIAN M. STEWART		

LAST REVISION 00-00-00 DATE PLOTTED => 08\20\10 TIME PLOTTED => 11:48:17 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => IKukaneg
DGN FILE => 40a535ea009.dgn

CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

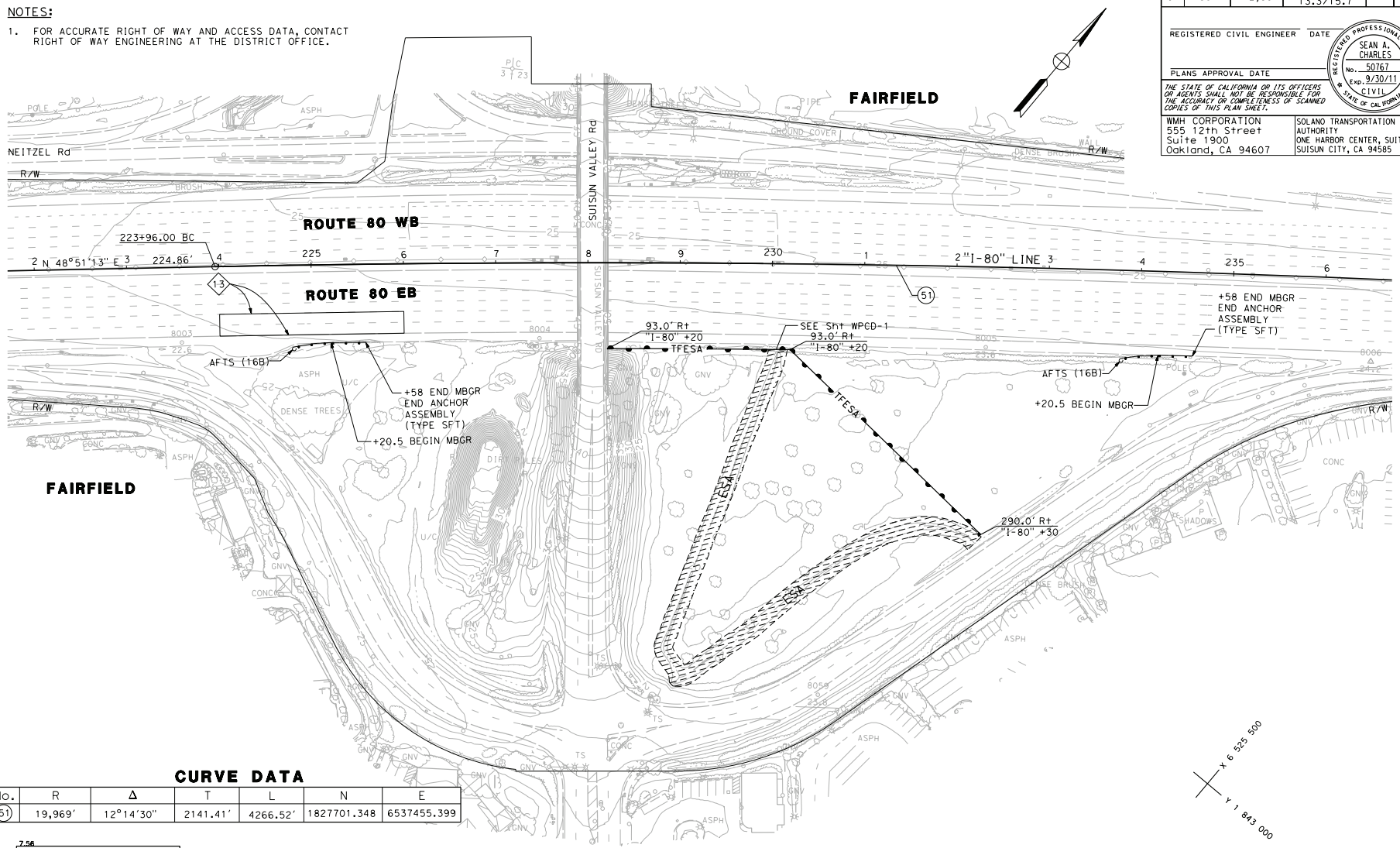
REGISTERED PROFESSIONAL ENGINEER
SEAN A. CHARLES
No. 50767
Exp. 9/30/11
CIVIL
STATE OF CALIFORNIA

WMH CORPORATION
555 12th Street
Suite 1900
Oakland, CA 94607

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

NOTES:

1. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



CURVE DATA

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7.56
FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht L-1

X 6 525 500
Y 1 843 000

LAYOUT

SCALE: 1" = 50'

L-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
Caltrans	SEAN A. CHARLES	SHAWN VOGTMAN	HEATHER CHARLES	SAC	08/13/10

LAST REVISION 00-00-00
DATE PLOTTED => 8/18/2010
TIME PLOTTED => 6:48:04 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => svogtman
DGN FILE => 40a535ea010.dgn

CU 04264

EA 0A5351

Appendix C Drainage Plans

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

BRIAN M. STEWART No. C73328 Exp. 12-31-10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

NOTES:

1. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. SEE LAYOUT PLANS FOR LIMITS OF CONCRETE BARRIERS, RETAINING WALLS, GUARDRAILS AND HMA DIKE.
3. ALL EXISTING DRAINAGE FACILITIES ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATION, AND SLOPE BEFORE MODIFYING ANY EXISTING FACILITIES. ANY DISCREPANCIES NOT SHOWN ON PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

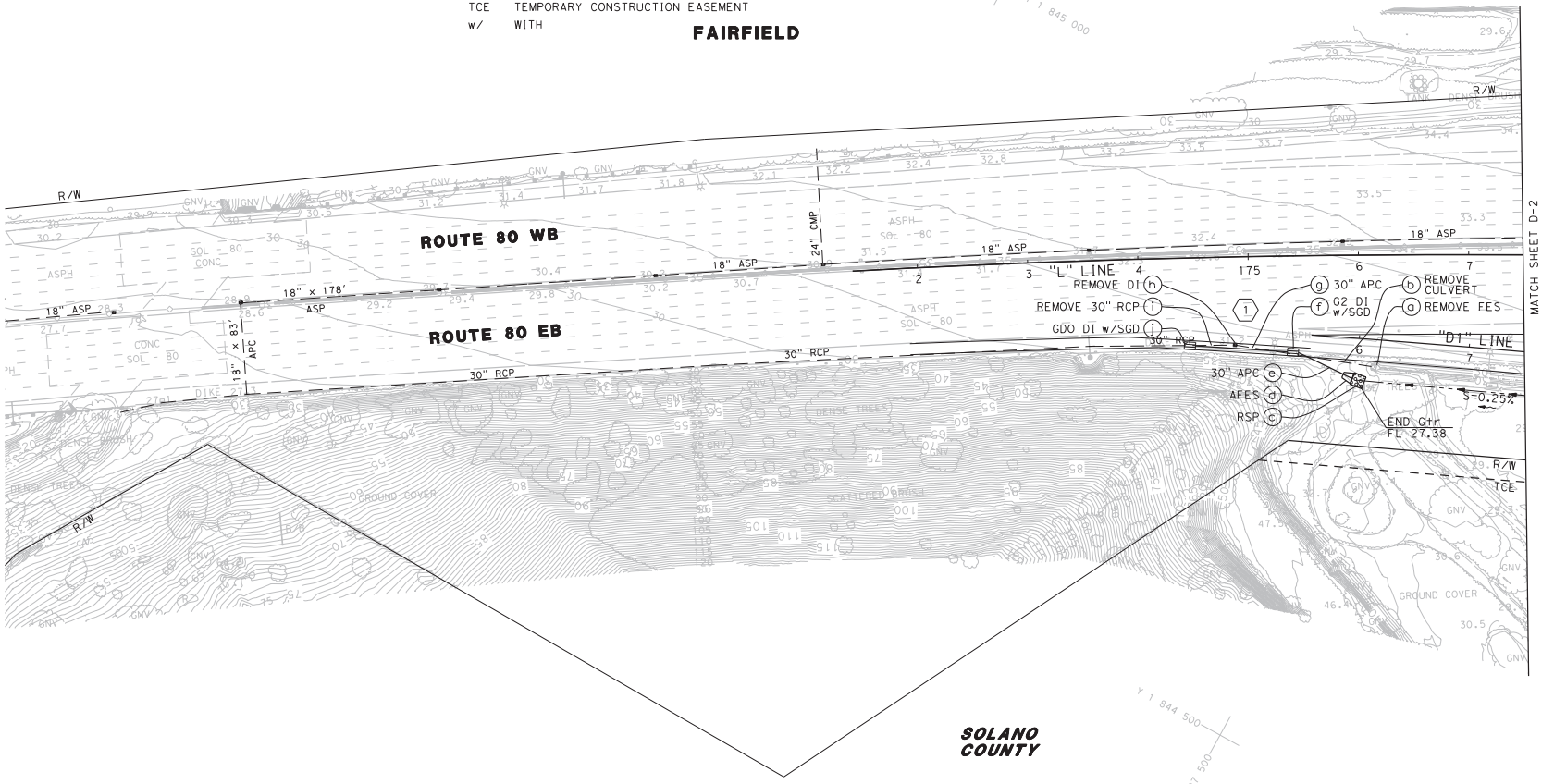
ABBREVIATIONS:

Abn	PREVIOUSLY ABANDONED CULVERT
ASP	ALTERNATIVE SLOTTED PIPE
CPP	CORRUGATED PLASTIC PIPE
CSP	CORRUGATED STEEL PIPE
CVEF	COMMERCIAL VEHICLE ENFORCEMENT FACILITY
DA	DEPRESSION APRON
ED	EDGE DRAIN
ESA	ENVIRONMENTALLY SENSITIVE AREA
GB	GRADE BREAK
GLD	GRATED LINE DRAIN
SGD	STANDARD GUTTER DEPRESSION
TCE	TEMPORARY CONSTRUCTION EASEMENT
w/	WITH

LEGEND:

- (xx) DRAINAGE SYSTEM No.
- (x) DRAINAGE UNIT No.
- Gtr FLOWLINE
- Exist STORM DRAIN
- TFESA — TEMPORARY FENCE (TYPE ESA)

FAIRFIELD



SOLANO COUNTY

DRAINAGE PLAN

SCALE: 1" = 50'

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY

D-1

REVISED BY	AP		
DATE REVISED	08/18/10		
CALCULATED-DESIGNED BY	ROSALYNN CHONGCHAIKIT		
CHECKED BY	BRIAN M. STEWART		
CONSULTANT FUNCTIONAL SUPERVISOR	CARLTON L. HAACK		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 08\18\10
TIME PLOTTED => 6151110 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => apaez
DGN FILE => 40a535ia001.dgn

CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

BRIAN M. STEWART No. C73328 Exp.12-31-10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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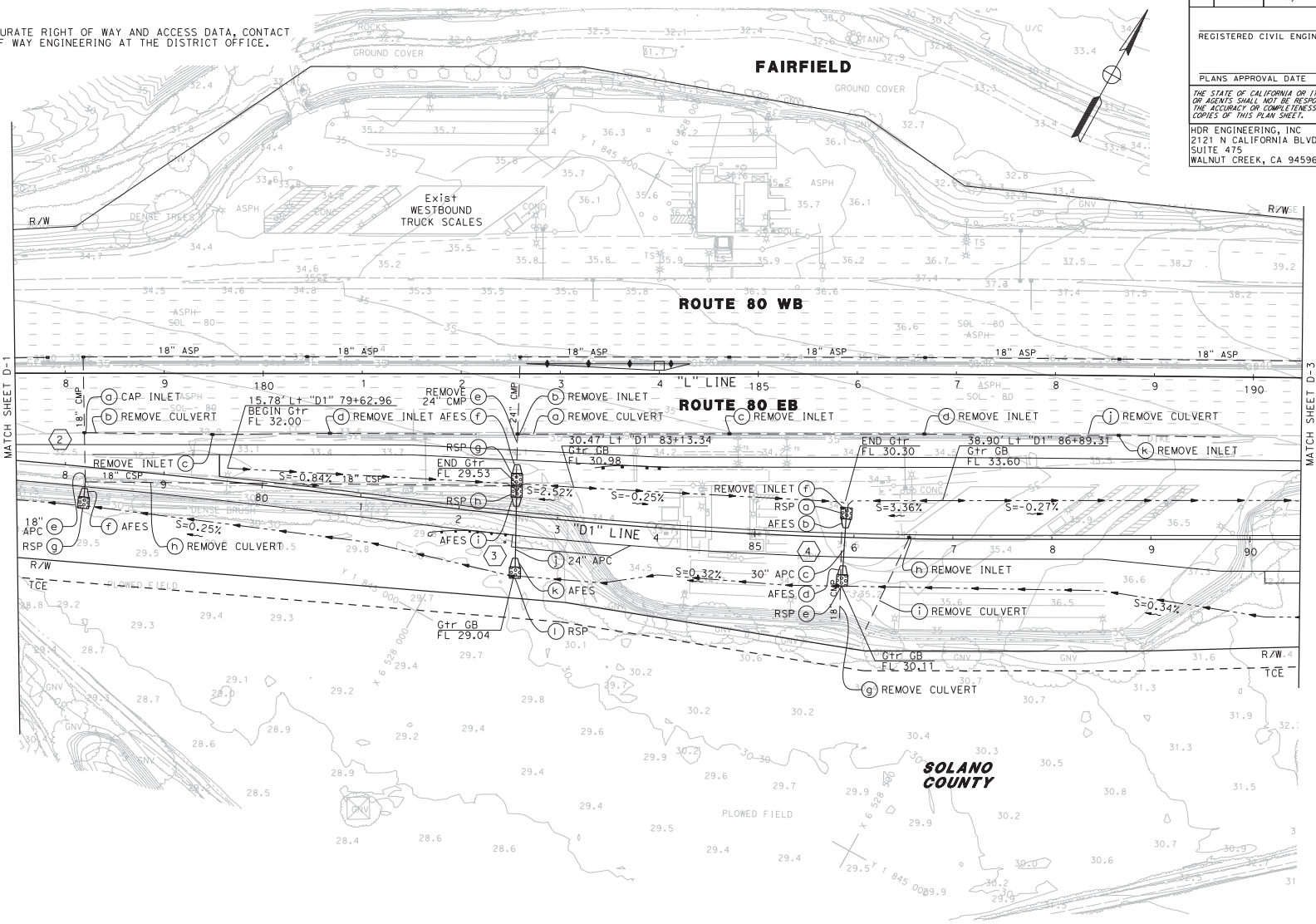
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY

DRAINAGE PLAN

SCALE: 1" = 50'

D-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | CONSULTANT FUNCTIONAL SUPERVISOR: CARLTON L. HAACK | CALCULATED-DESIGNED BY: ROSALYNN CHONGCHAIKIT | CHECKED BY: BRIAN M. STEWART

REVISED BY	DATE REVISED
IK	05/06/10
AP	08/19/10

LAST REVISION 00-00-00 | DATE PLOTTED => 08\19\10 | TIME PLOTTED => 2112:59 PM

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => apaez | DGN FILE => 40a535ia002.dgn | CU 04264 | EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

BRIAN M. STEWART No. C73328 Exp. 12-31-10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

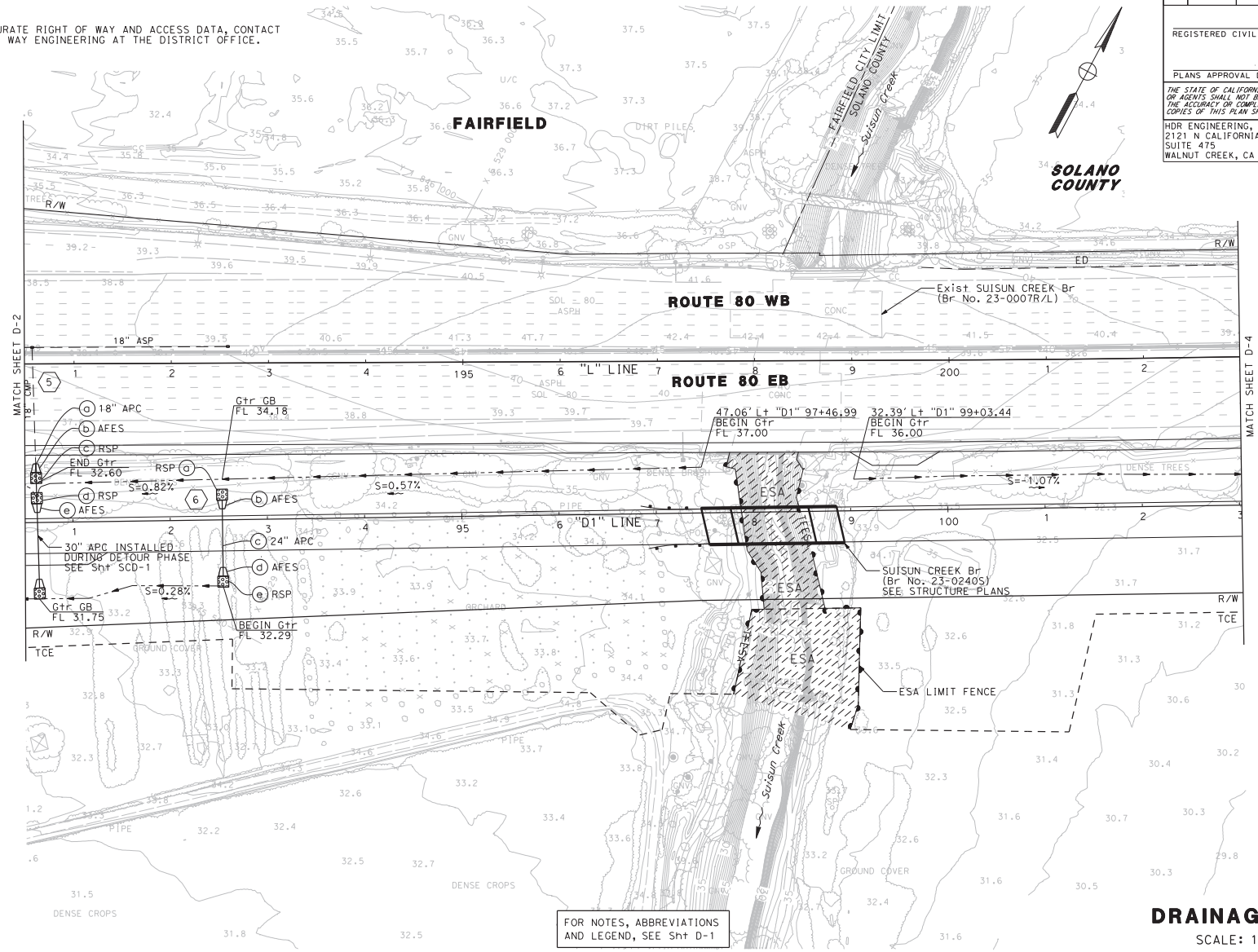
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY

DRAINAGE PLAN

SCALE: 1" = 50'

D-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR: CARLTON L. HAACK

CALCULATED-DESIGNED BY: ROSALYNN CHONGCHAIKIT

CHECKED BY: BRIAN M. STEWART

REVISED BY	DATE REVISED
AP	08/18/10
IK	05/06/10

LAST REVISION 00-00-00
DATE PLOTTED => 08\18\10
TIME PLOTTED => 3:03:45 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => apaez
DGN FILE => 40a535ia003.dgn

CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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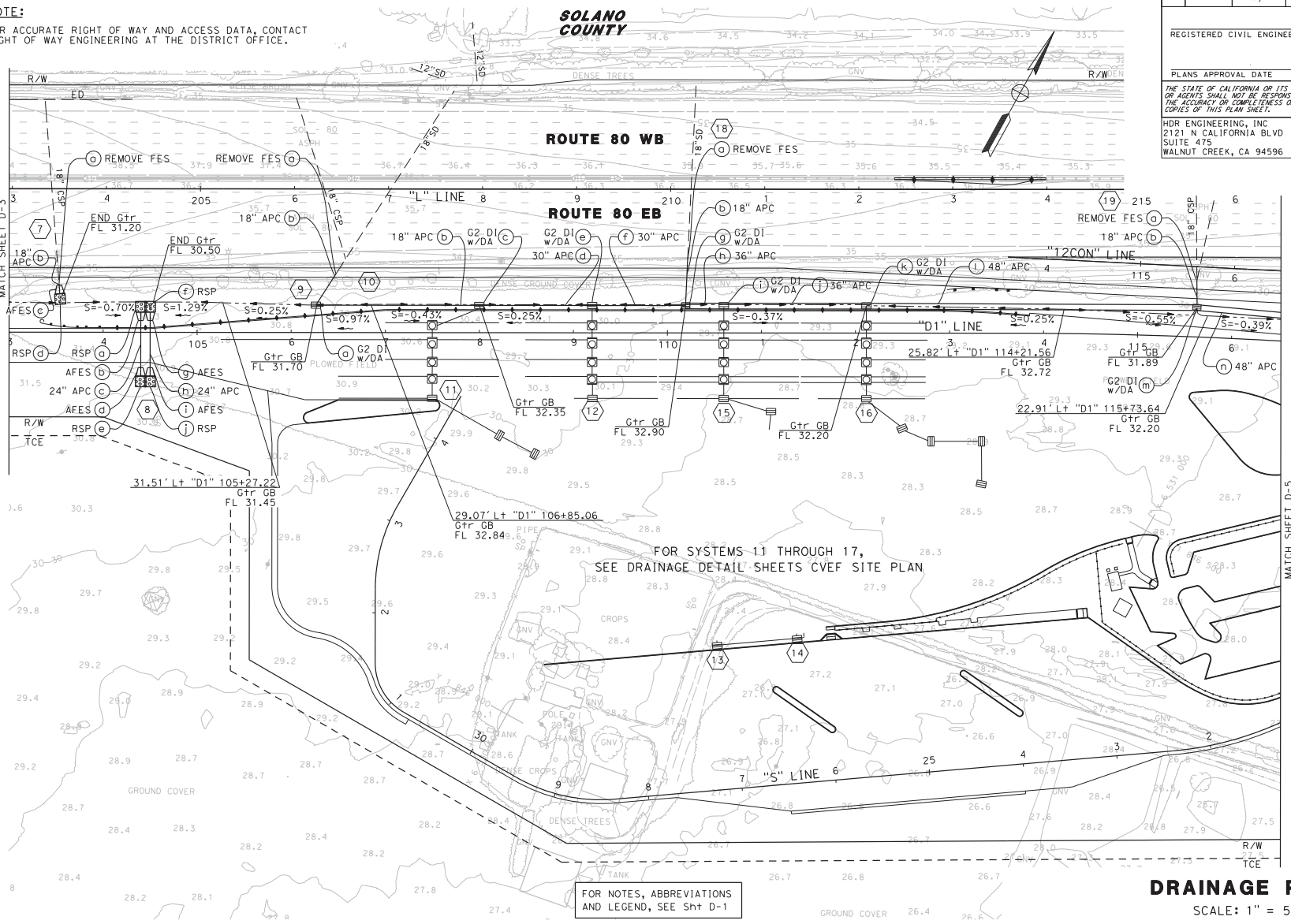
REGISTERED PROFESSIONAL ENGINEER — BRIAN M. STEWART — No. C73328 — Exp. 12-31-10 — CIVIL — STATE OF CALIFORNIA

HDR ENGINEERING, INC 2121 N CALIFORNIA BLVD SUITE 475 WALNUT CREEK, CA 94596	SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY

DRAINAGE PLAN

SCALE: 1" = 50'

D-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
CARLTON L. HAACK	ROSALYNN CHONGCHAIKIT	BRIAN M. STEWART	IK	05/06/10
			AP	08/18/10

LAST REVISION 00-00-00 DATE PLOTTED => 08\18\10 TIME PLOTTED => 3:09:26 PM

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => apaez DGN FILE => 40a535ia004.dgn | CU 04264 | EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER — BRIAN M. STEWART — No. C73328 — Exp. 12-31-10 — CIVIL — STATE OF CALIFORNIA

HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REVISED BY	DATE REVISED
AP	08/18/10
IK	05/06/10

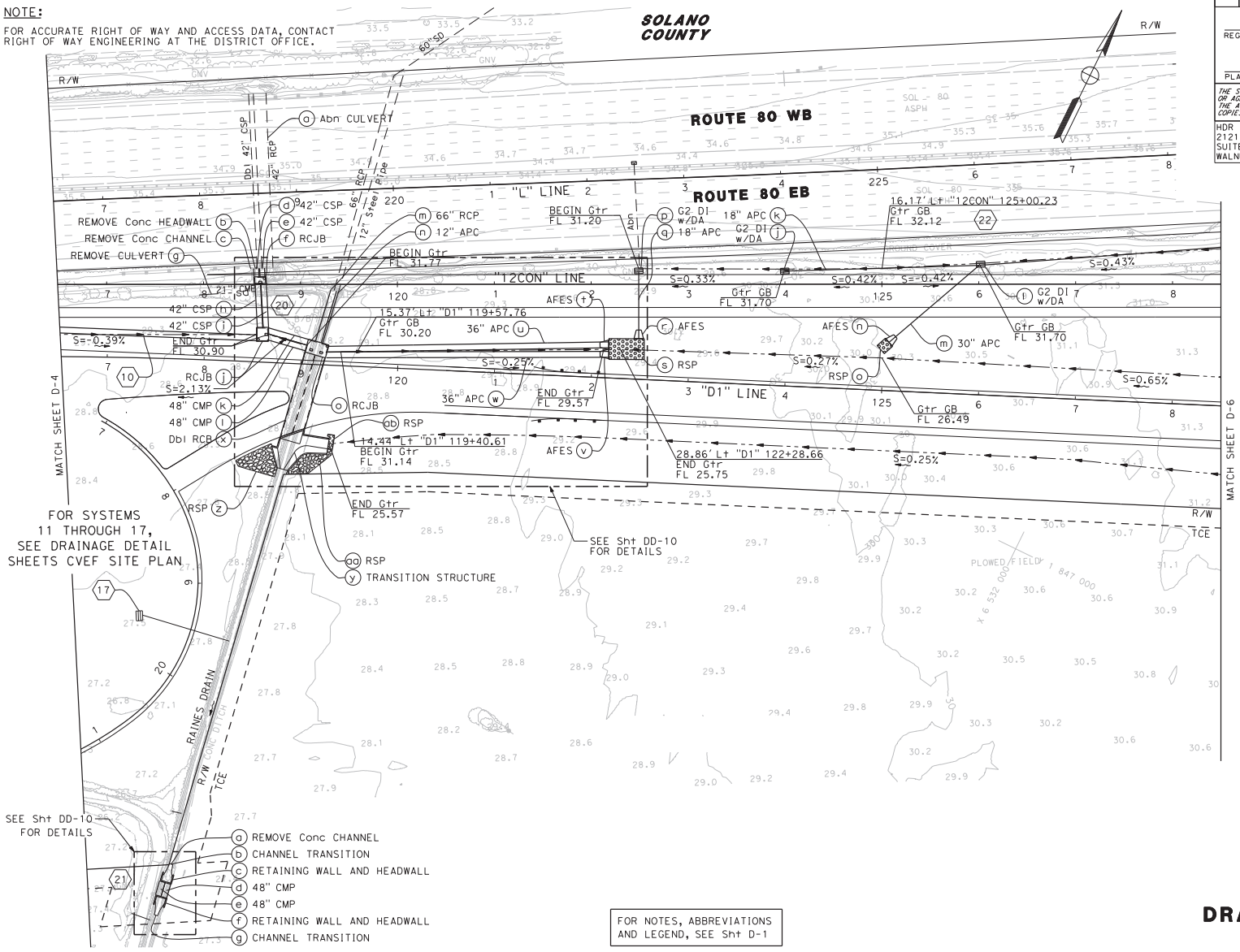
ROSALYNN CHONGCHAIKIT — BRIAN M. STEWART — CALCULATED-DESIGNED BY — CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR — CARLTON L. HAACK

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY

DRAINAGE PLAN

SCALE: 1" = 50'

D-5

LAST REVISION 00-00-00 — DATE PLOTTED => 08\20\10 — TIME PLOTTED => 11:08:46 AM

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => apaez | DGN FILE => 40a535ia005.dgn | CU 04264 | EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

BRIAN M. STEWART No. C73328 Exp. 12-31-10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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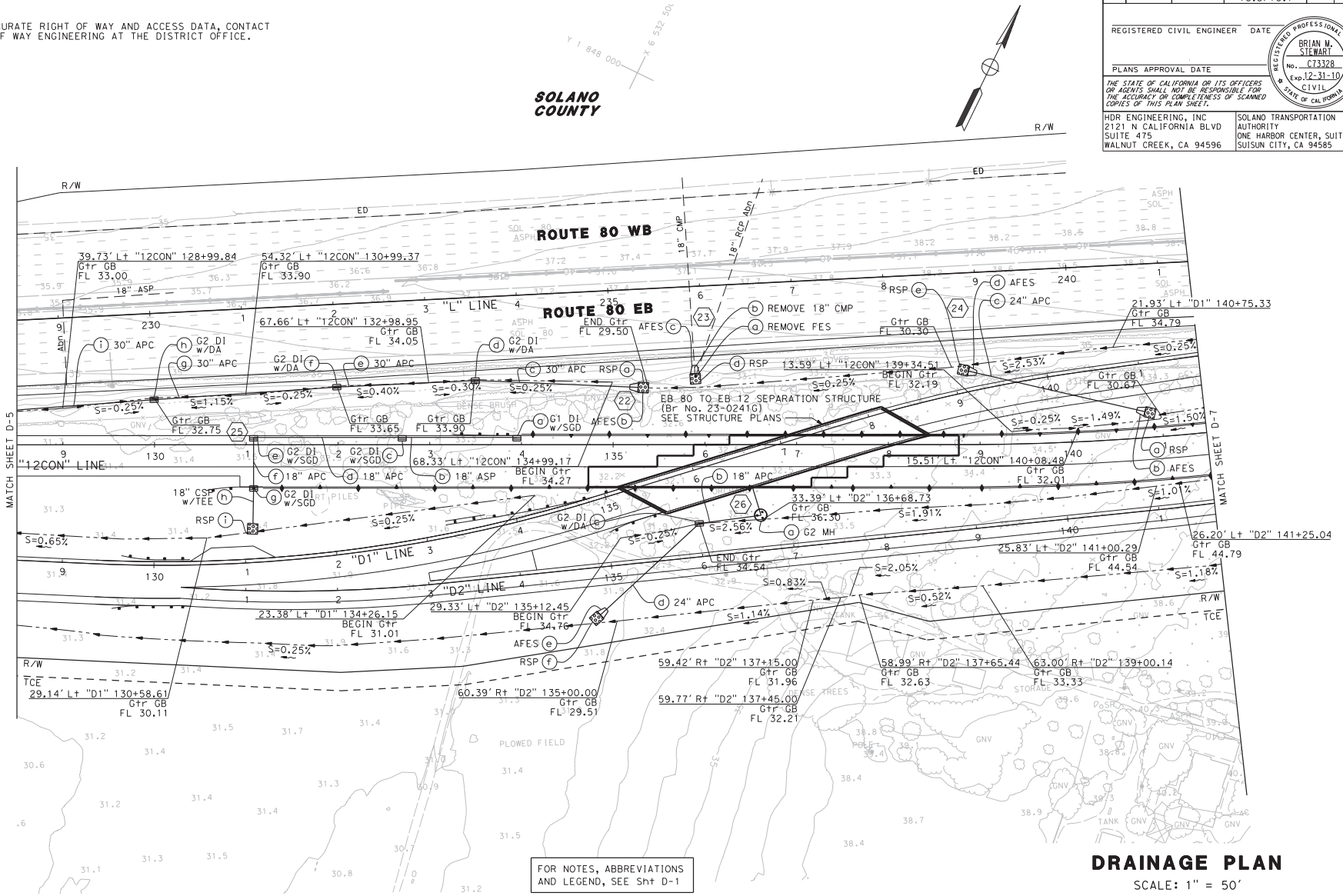
HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

SOLANO COUNTY



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY

DRAINAGE PLAN

SCALE: 1" = 50'

D-6

REVISED BY	DATE REVISED
IK	05/06/10
AP	08/18/10

CALCULATED-DESIGNED BY: ROSALYNN CHONGCHAIKIT
CHECKED BY: BRIAN M. STEWART

CONSULTANT FUNCTIONAL SUPERVISOR: CARLTON L. HAACK

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 08\18\10
TIME PLOTTED => 7:08:54 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

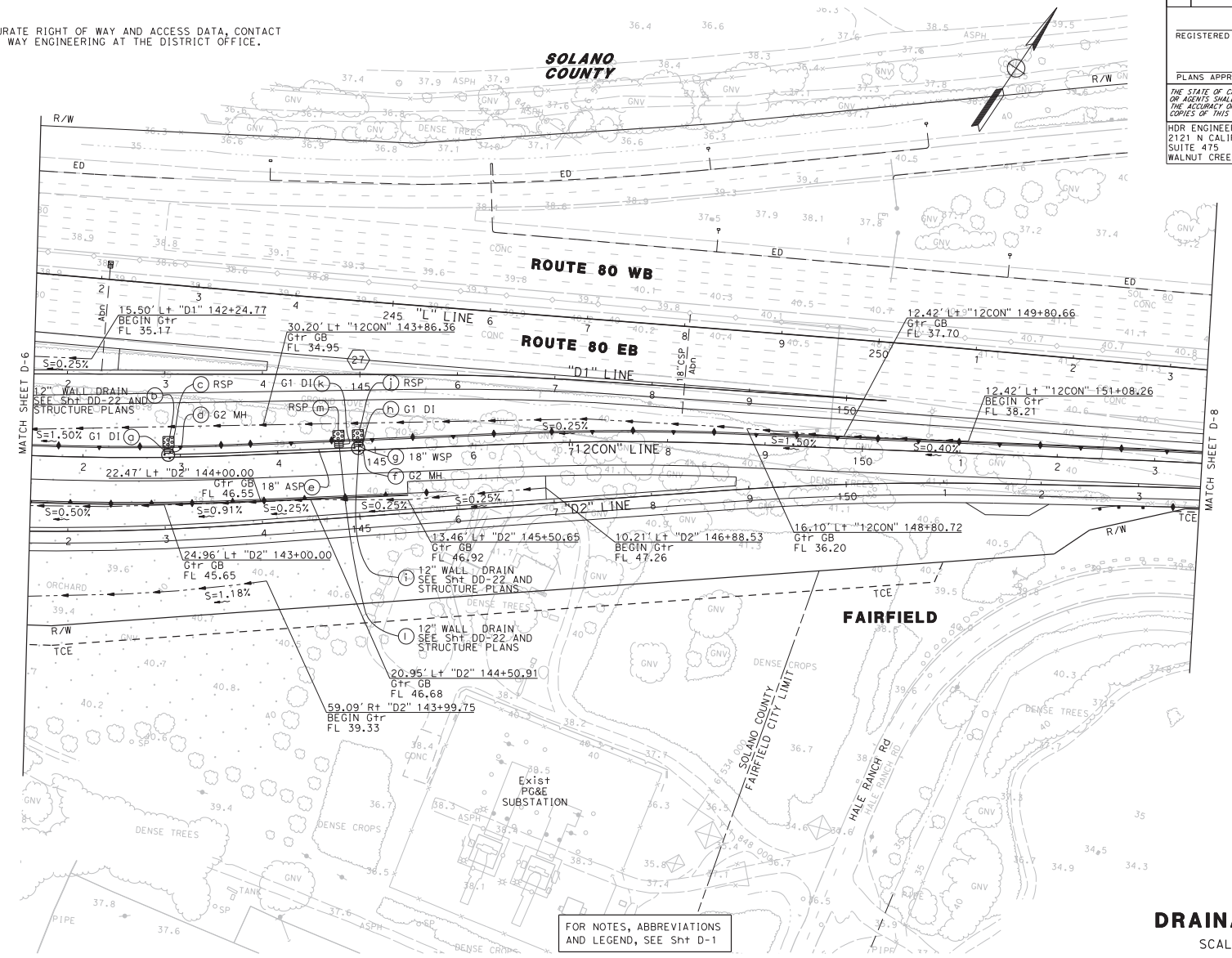
USERNAME => apaez
DGN FILE => 40a535i0006.dgn

CU 04264

EA 0A5351

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY

DRAINAGE PLAN

SCALE: 1" = 50'

D-7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

BRIAN M. STEWART
No. C73328
Exp. 12-31-10
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

HDR ENGINEERING, INC
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REVISED BY	DATE REVISED
AP	08/19/10
IK	05/06/10

CALCULATED-DESIGNED BY: ROSALYNN CHONGCHAIKIT
CHECKED BY: BRIAN M. STEWART

CONSULTANT FUNCTIONAL SUPERVISOR: CARLTON L. HAACK

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 08\19\10
TIME PLOTTED => 2:46:24 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 40a535ia007.dgn

CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

BRIAN M. STEWART No. C73328 Exp.12-31-10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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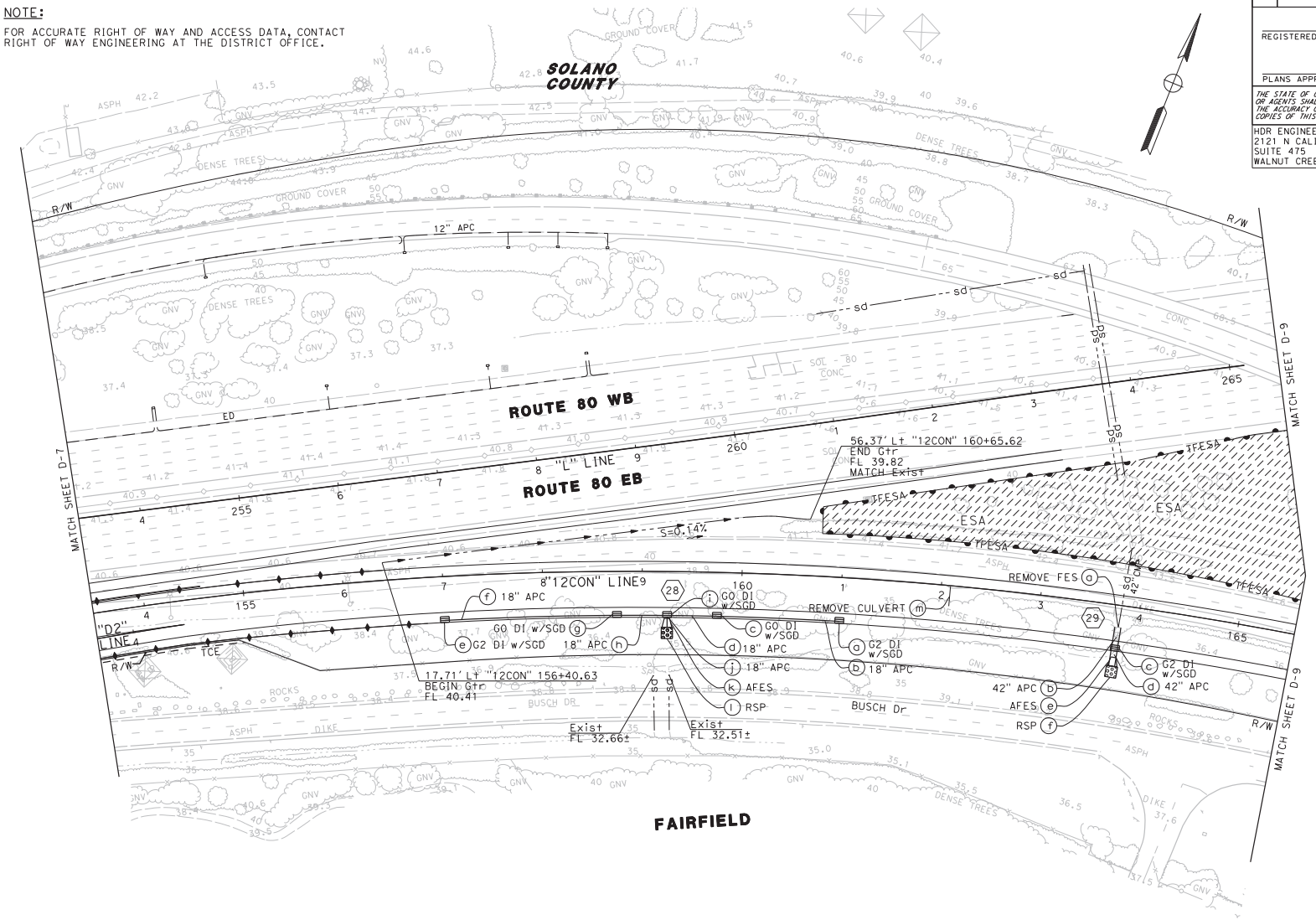
2121 N CALIFORNIA BLVD
SUITE 475
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY

DRAINAGE PLAN

SCALE: 1" = 50'

D-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR: CARLTON L. HAACK

CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
ROSALYNN CHONGCHAIKIT	BRIAN M. STEWART	IK	05/06/10
		AP	08/18/10

LAST REVISION 00-00-00
DATE PLOTTED => 08\20\10
TIME PLOTTED => 11:05:46 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => apaez
DGN FILE => 40a535ia008.dgn

CU 04264

EA 0A5351

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — BRIAN M. STEWART — No. C73328 — Exp. 12-31-10 — CIVIL — STATE OF CALIFORNIA

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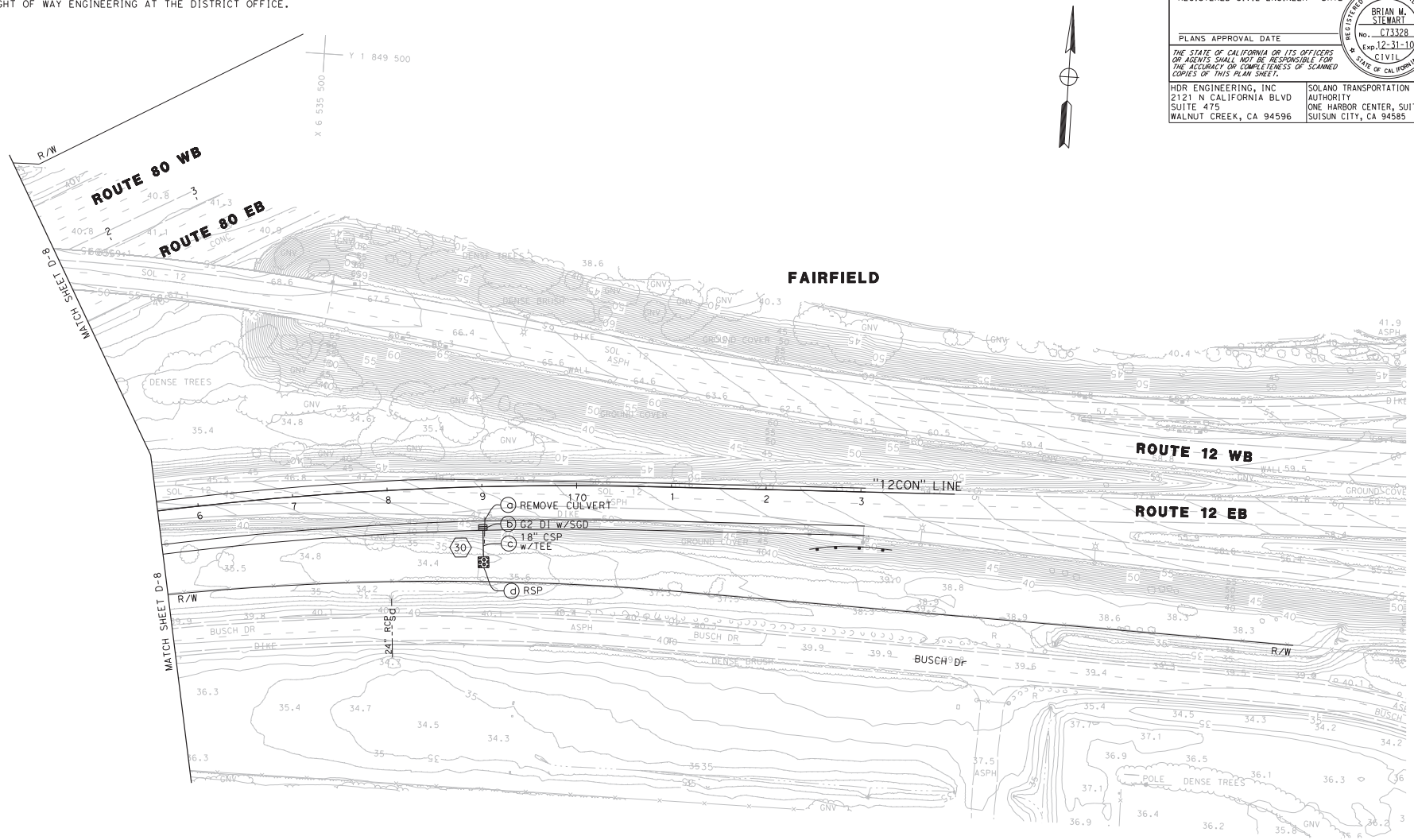
HDR ENGINEERING, INC 2121 N CALIFORNIA BLVD SUITE 475 WALNUT CREEK, CA 94596	SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY

DRAINAGE PLAN

SCALE: 1" = 50'

D-9

REVISED BY	DATE REVISED
IK	05/06/10
AP	08/19/10

CALCULATED-DESIGNED BY: ROSALYNN CHONGCHAIKIT
CHECKED BY: BRIAN M. STEWART

CONSULTANT FUNCTIONAL SUPERVISOR: CARLTON L. HAACK

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 08\19\10
TIME PLOTTED => 3:54:41 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => apaez
DGN FILE => 40a535ia009.dgn

CU 04264

EA 0A5351

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER SEWELL — No. C 64087 — Exp. 6/30/11 — CIVIL — STATE OF CALIFORNIA

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SUITE 108
WALNUT CREEC, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

LEGEND:

WATERSHED ID / AREA (ac)

WATERSHED ID
AREA
TIME OF CONCENTRATION
25 YR PEAK FLOW

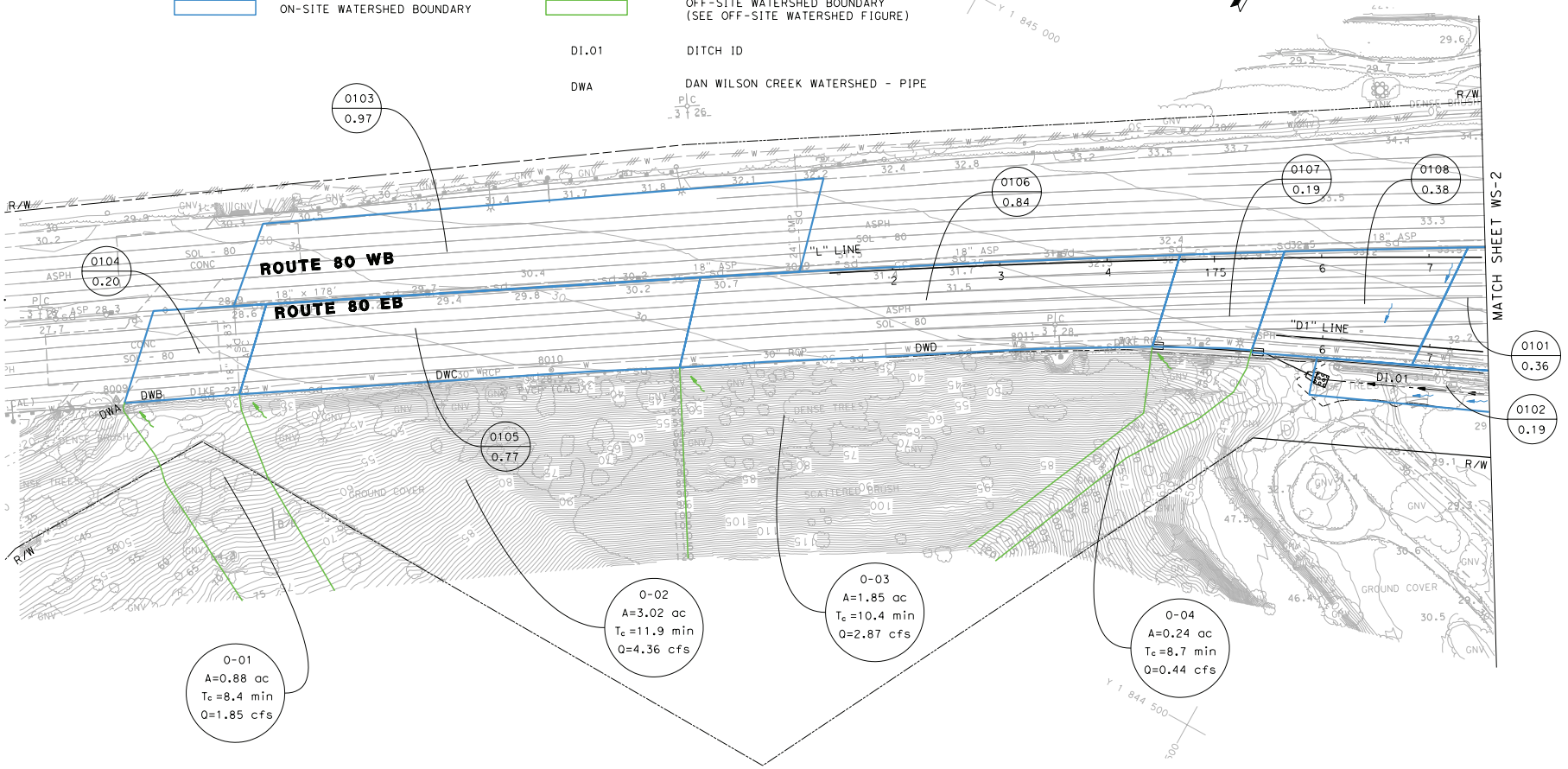
OFF-SITE WATERSHEDS (SEE OFF-SITE WATERSHED FIGURE)

ON-SITE WATERSHED BOUNDARY

OFF-SITE WATERSHED BOUNDARY (SEE OFF-SITE WATERSHED FIGURE)

DI.01 DITCH ID

DWA DAN WILSON CREEK WATERSHED - PIPE



WATERSHED MAP
DRAINAGE
SCALE 1"=50'

WS-1

THIS PLAN ACCURATE FOR DRAINAGE WATERSHEDS ONLY.

REVISED BY	DATE REVISED

JENNIFER ABRAMS — CHRIS SEWELL — CALCULATED-DESIGNED BY — CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 8/27/2010
TIME PLOTTED => 4:40:34 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => ...\Dwg\ws-dr\WS-01.dgn

CU 04264

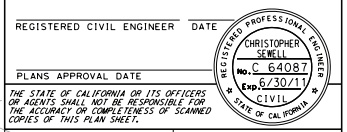
EA 0A5351

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

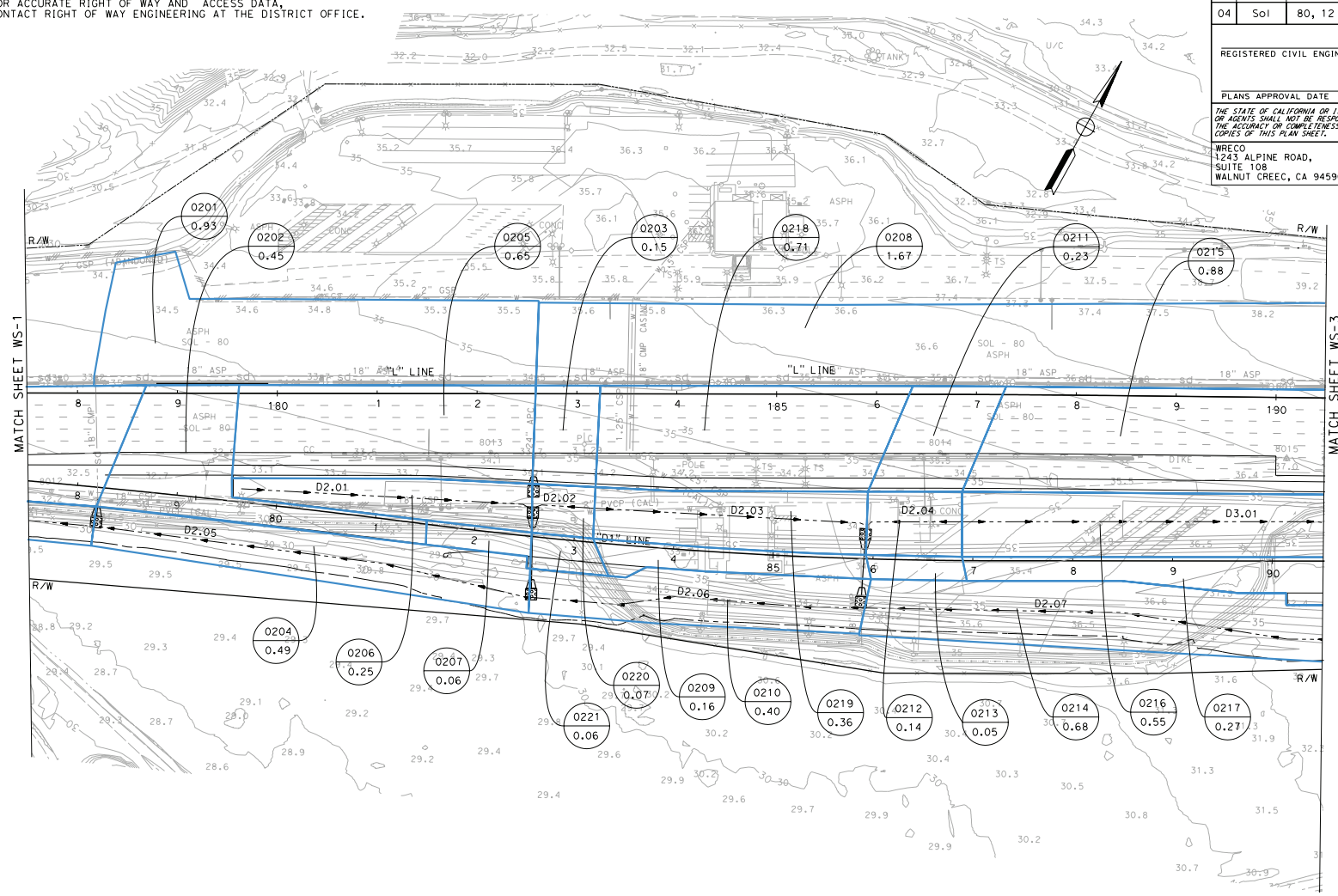
PLANS APPROVAL DATE



THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD,
SUITE 108
WALNUT CREEC, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585



FOR LEGEND, SEE SHEET WS-1

THIS PLAN ACCURATE FOR DRAINAGE WATERSHEDS ONLY.

WATERSHED MAP
DRAINAGE
SCALE 1"=50'

WS-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

REVISED BY	DATE REVISED

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

CALCULATED-DESIGNED BY	CHECKED BY
JENNIFER ABRAMS	CHRIS SEWELL

LAST REVISION 00-00-00 | DATE PLOTTED => 8/27/2010 | TIME PLOTTED => 4:52:12 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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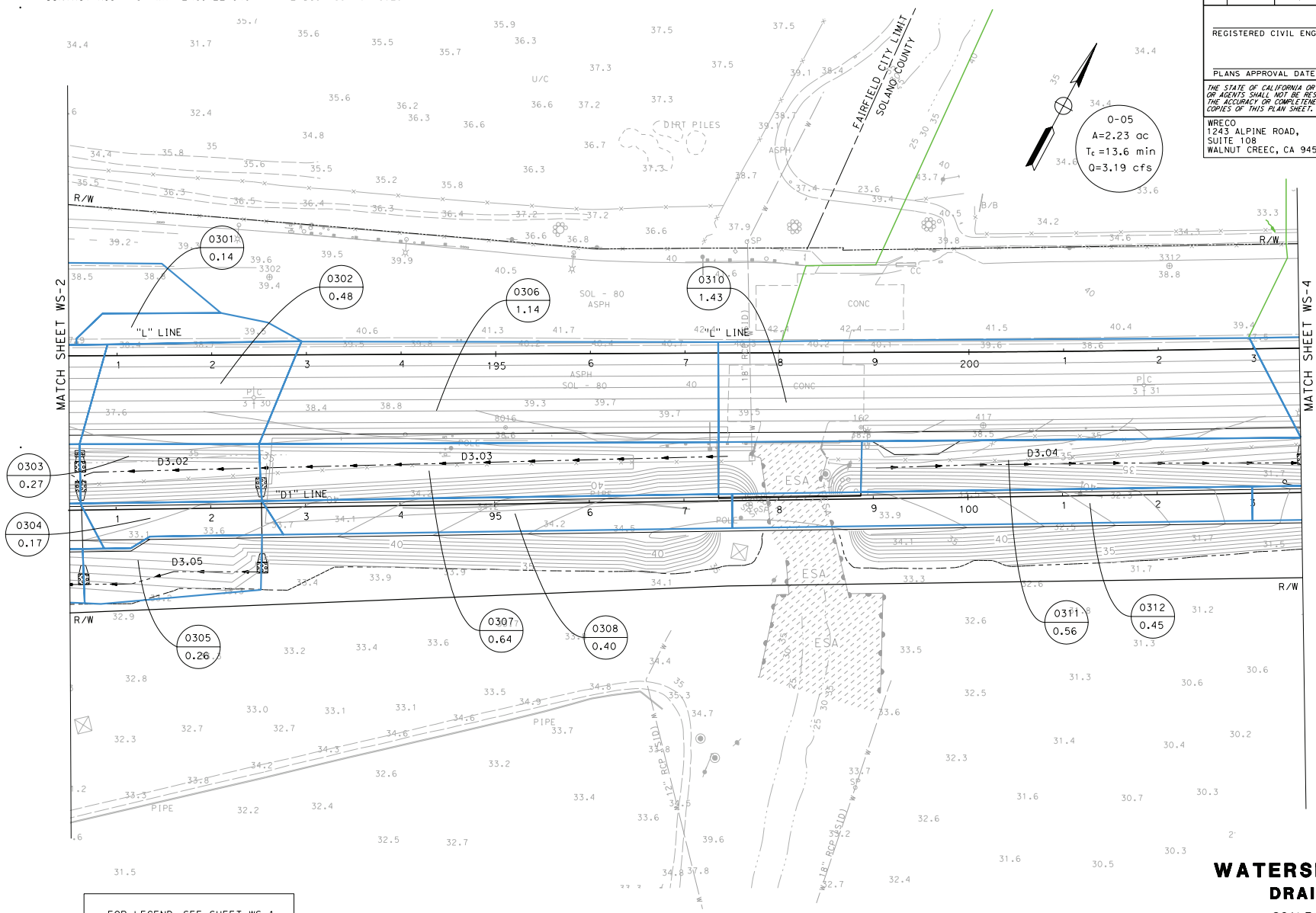
DGN FILE => ...\Dwg\ws-dr\WS-02.dgn

CU 04264

EA 0A5351

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR LEGEND, SEE SHEET WS-1

THIS PLAN ACCURATE FOR DRAINAGE WATERSHEDS ONLY.

WATERSHED MAP
DRAINAGE
SCALE 1"=50'

WS-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER SEWELL — No. C 64087 — Exp. 6/30/11 — CIVIL — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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SUITE 108
WALNUT CREEC, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REVISED BY	DATE REVISED
JENNIFER ABRAMS	CHRIS SEWELL

CALCULATED-DESIGNED BY	CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR	
HAN-BIN LIANG	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 8/27/2010
TIME PLOTTED => 4:41:51 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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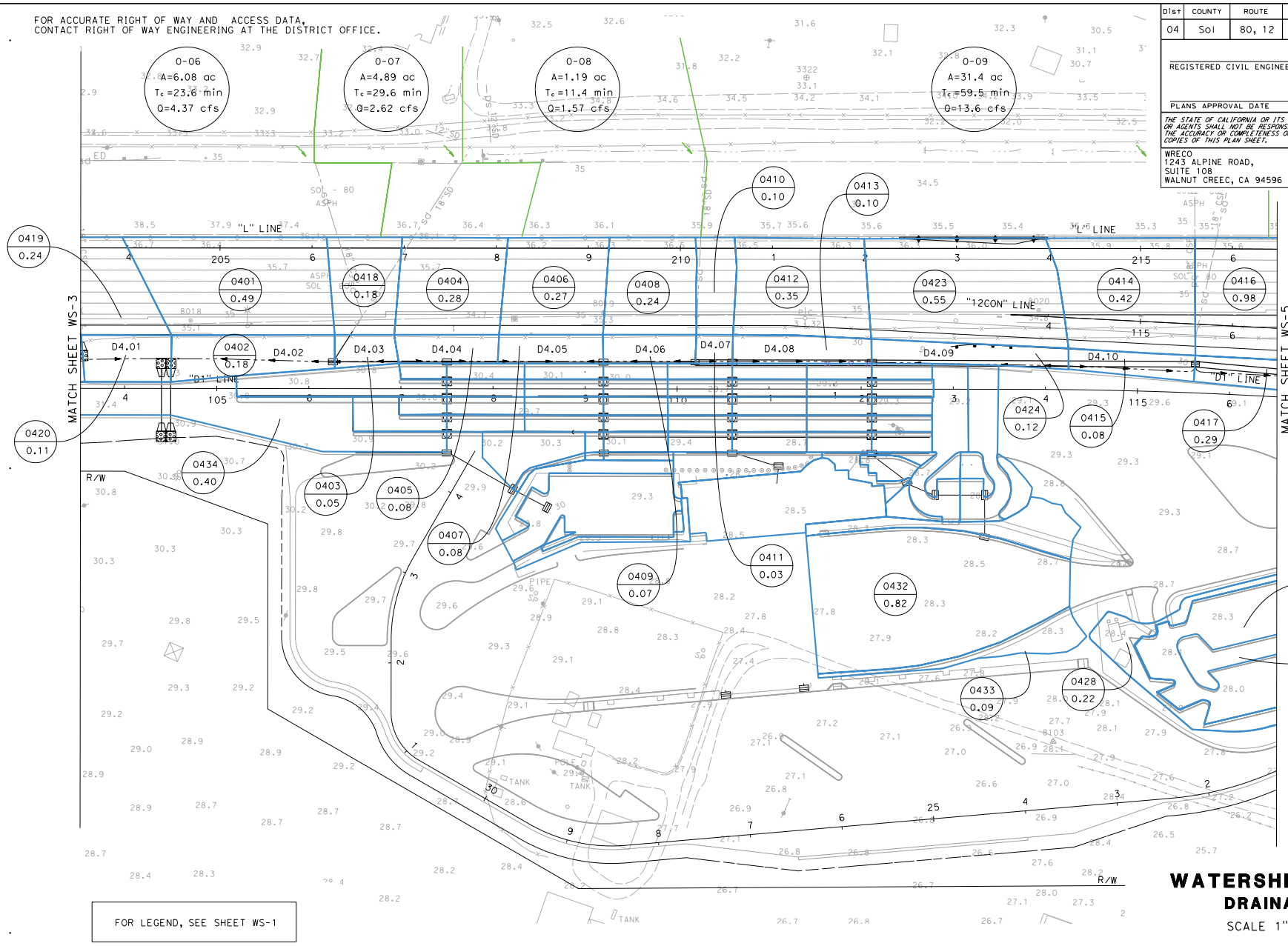
CU 04264

EA 0A5351



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

CHRISTOPHER SEWELL No. C 64087 Exp. 6/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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SUITE 108
WALNUT CREEC, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

WATERSHED MAP
DRAINAGE
SCALE 1"=50'

WS-4

THIS PLAN ACCURATE FOR DRAINAGE WATERSHEDS ONLY.

REVISED BY	DATE REVISED
JENNIFER ABRAMS	CHRIS SEWELL
CALCULATED-DESIGNED BY	CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR	HAN-BIN LIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

LAST REVISION 00-00-00
DATE PLOTTED => 8/27/2010
TIME PLOTTED => 4:42:49 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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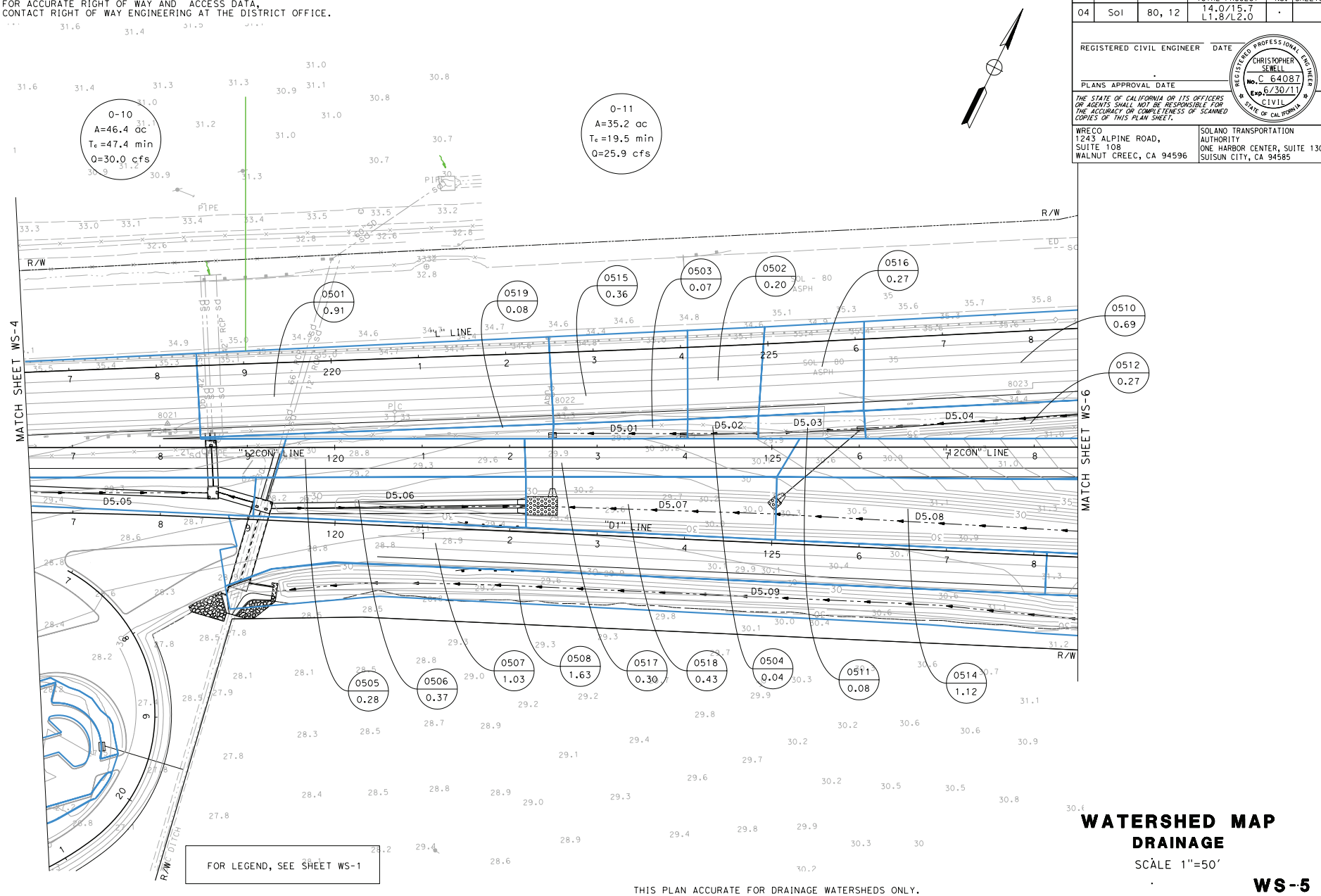
CU 04264

EA 0A5351



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0	·	

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

CHRISTOPHER SEWELL No. C 64087 Exp. 6/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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SUITE 108
WALNUT CREEC, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REVISED BY	DATE REVISED
JENNIFER ABRAMS	CHRIS SEWELL

CALCULATED-DESIGNED BY

CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR
HAN-BIN LIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

WATERSHED MAP
DRAINAGE

SCALE 1"=50'

THIS PLAN ACCURATE FOR DRAINAGE WATERSHEDS ONLY.

WS-5

LAST REVISION 00-00-00
DATE PLOTTED => 8/27/2010
TIME PLOTTED => 4:43:22 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => ...\D#g\ws-dr\WS-05.dgn

CU 04264

EA 0A5351

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

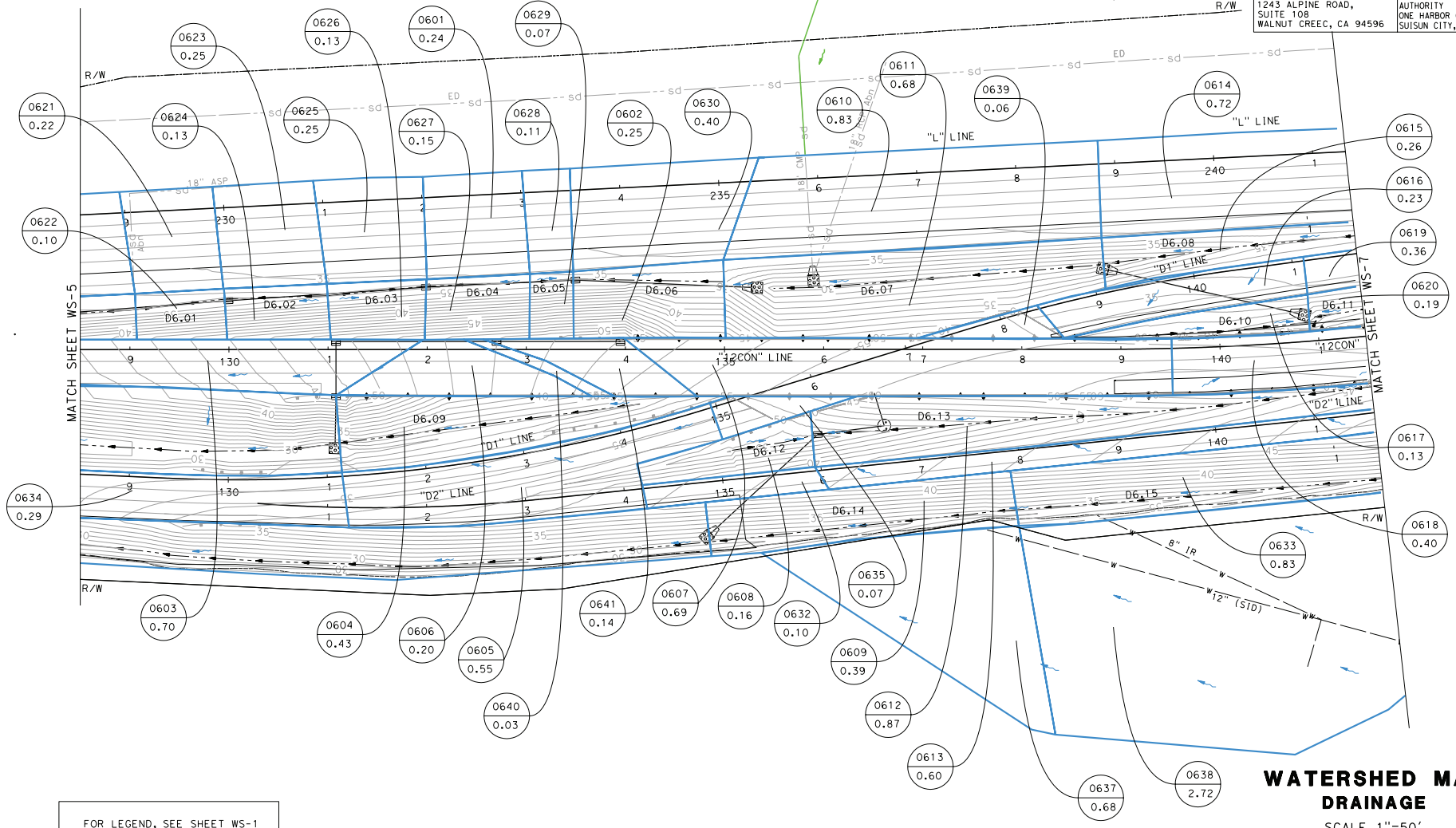
REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER SEWELL — No. C 64087 — Exp. 6/30/11 — CIVIL — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD,
SUITE 108
WALNUT CREEC, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

0-12
A=38.6 ac
T_c =46.2 min
Q=25.0 cfs



FOR LEGEND, SEE SHEET WS-1

THIS PLAN ACCURATE FOR DRAINAGE WATERSHEDS ONLY.

WATERSHED MAP
DRAINAGE
SCALE 1"=50'

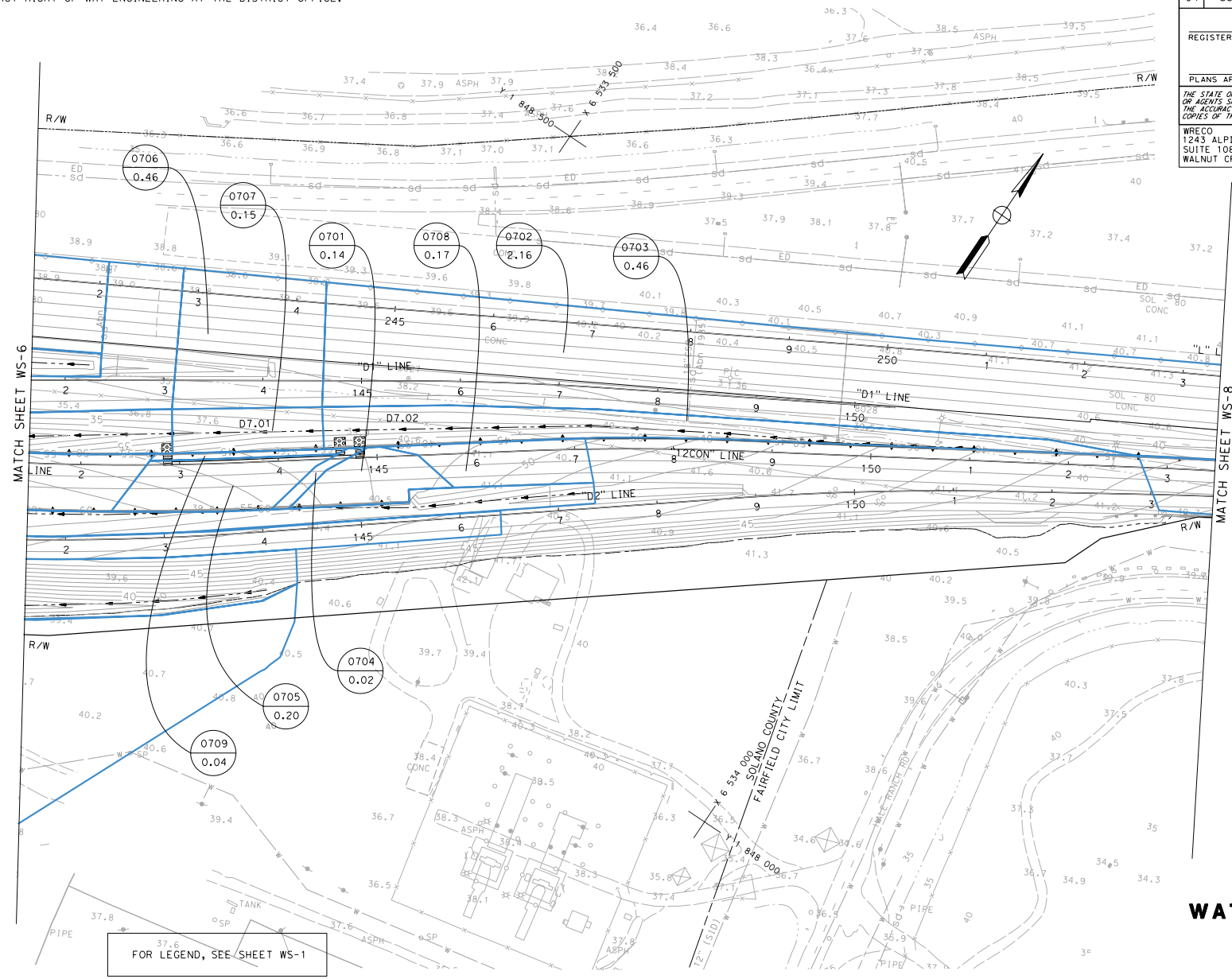
WS-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
	HAN-BIN LIANG	JENNIFER ABRAMS	CHRIS SEWELL		

LAST REVISION 00-00-00
DATE PLOTTED => 8/27/2010
TIME PLOTTED => 4:43:57 PM

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => mei_du
DGN FILE => ...\D#g\ws-dr\WS-06.dgn | CU 04264 | EA 0A5351

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR LEGEND, SEE SHEET WS-1

THIS PLAN ACCURATE FOR DRAINAGE WATERSHEDS ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

CHRISTOPHER SEWELL No. C 64087 Exp. 6/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD,
SUITE 108
WALNUT CREEC, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

WATERSHED MAP
DRAINAGE
SCALE 1"=50'

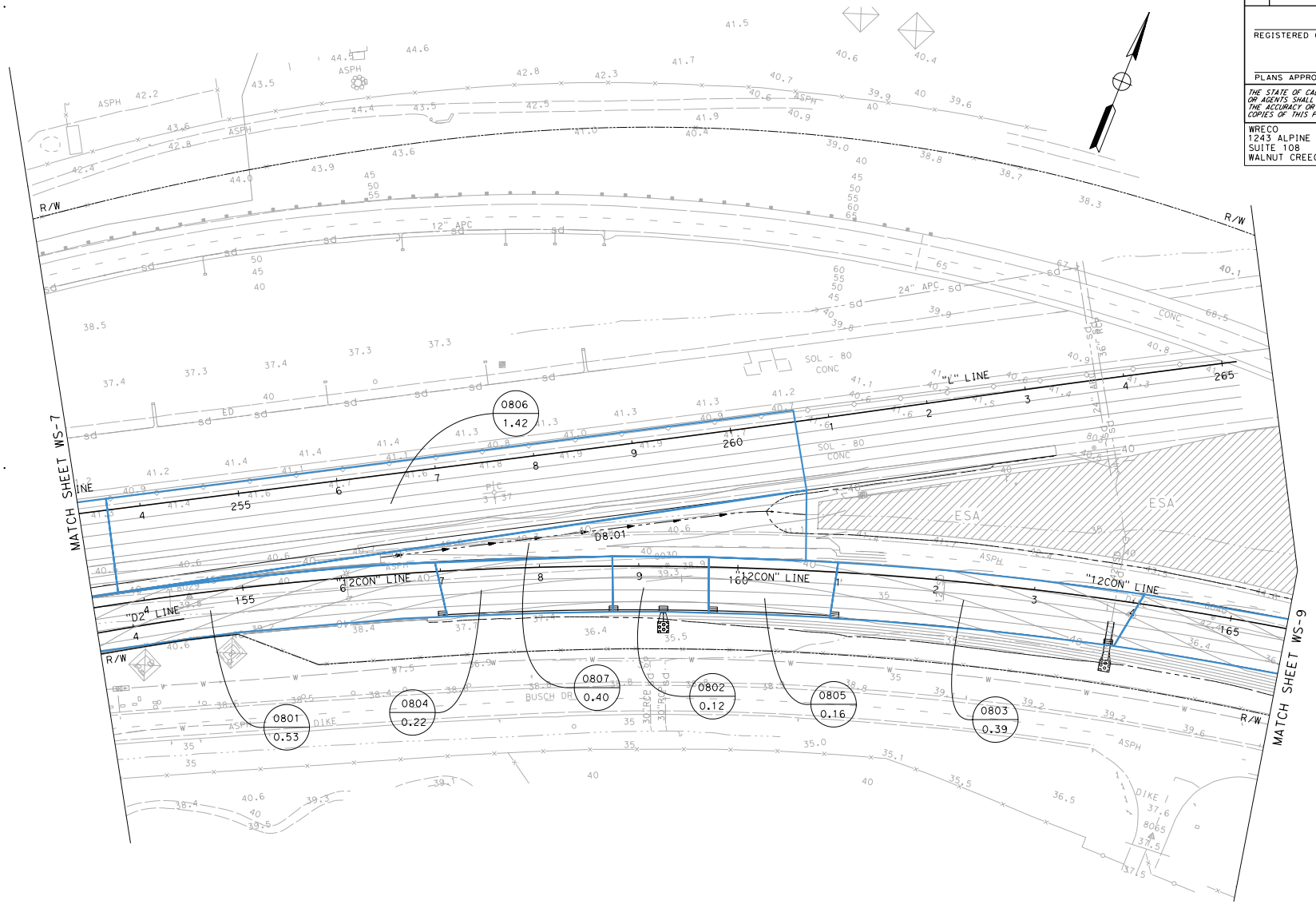
WS-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
Caltrans	HAN-BIN LIANG	JENNIFER ABRAMS	CHRIS SEWELL		

LAST REVISION 00-00-00
DATE PLOTTED => 8/27/2010
TIME PLOTTED => 4:44:31 PM

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => mei_du DGN FILE => ...\D#g\ws-dr\WS-07.dgn | CU 04264 | EA 0A5351

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR LEGEND, SEE SHEET WS-1

THIS PLAN ACCURATE FOR DRAINAGE WATERSHEDS ONLY.

WATERSHED MAP
DRAINAGE
SCALE 1"=50'

WS-8

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

CHRISTOPHER SEWELL No. C 64087 Exp. 6/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD,
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WALNUT CREEC, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REVISED BY	DATE REVISED
JENNIFER ABRAMS	CHRIS SEWELL

CALCULATED-DESIGNED BY | CHECKED BY

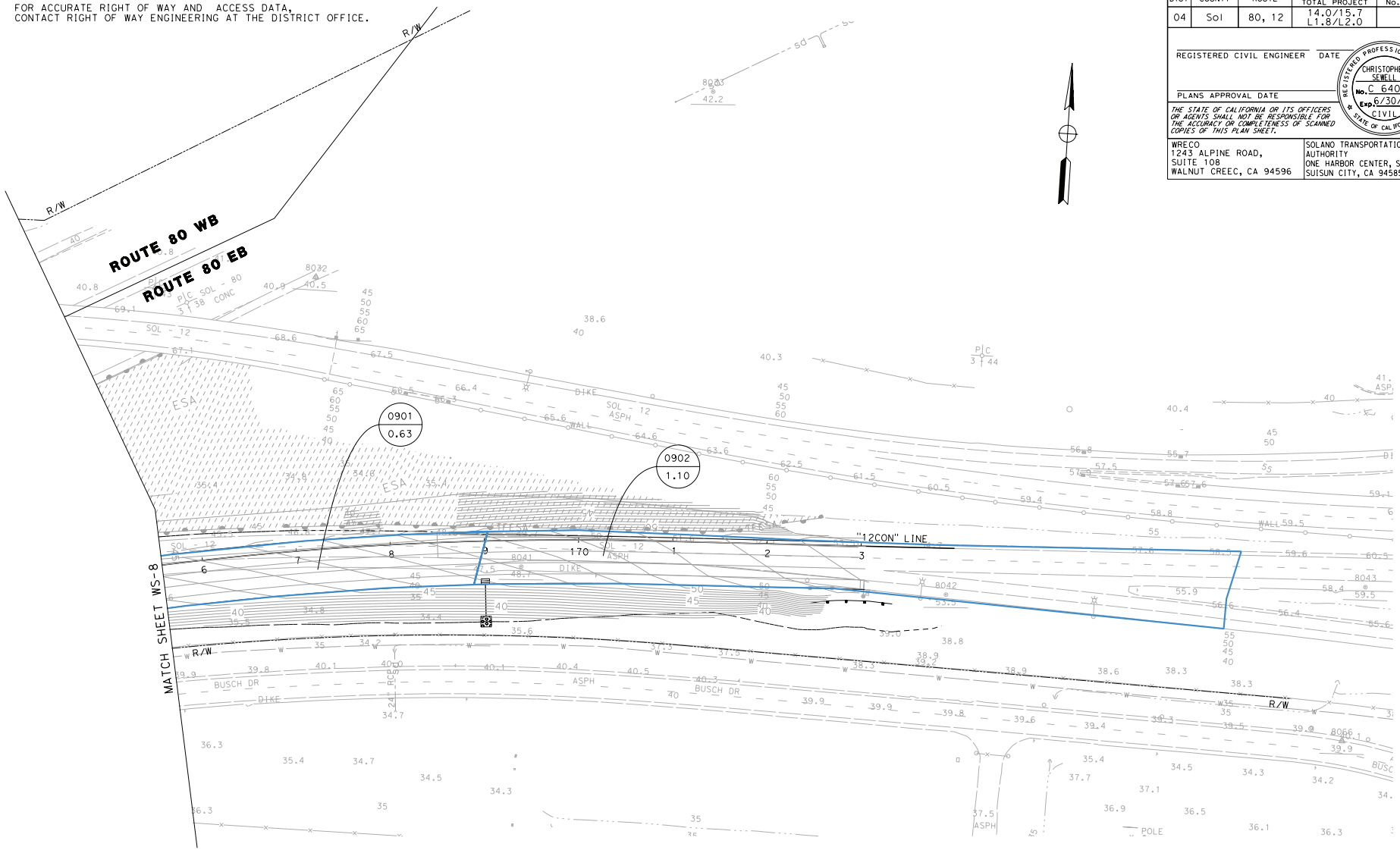
CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 8/27/2010
TIME PLOTTED => 4:45:06 PM

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => mei_du | DGN FILE => ...\D#g\ws-dr\WS-08.dgn | CU 04264 | EA 0A5351

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR LEGEND, SEE SHEET WS-1

THIS PLAN ACCURATE FOR DRAINAGE WATERSHEDS ONLY.

WATERSHED MAP
DRAINAGE
SCALE 1"=50'

WS-9

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER SEWELL — No. C 64087 — Exp. 6/30/11 — CIVIL — STATE OF CALIFORNIA

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1243 ALPINE ROAD,
SUITE 108
WALNUT CREEC, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
JENNIFER ABRAMS	CHRIS SEWELL		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

LAST REVISION 00-00-00
DATE PLOTTED => 8/27/2010
TIME PLOTTED => 14:45:38 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => ...\D#g\ws-dr\WS-09.dgn

CU 04264

EA 0A5351

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80, 12	14.0/15.7 L1.8/L2.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER SEWELL
No. C 64087
Exp. 6/30/11
CIVIL
STATE OF CALIFORNIA

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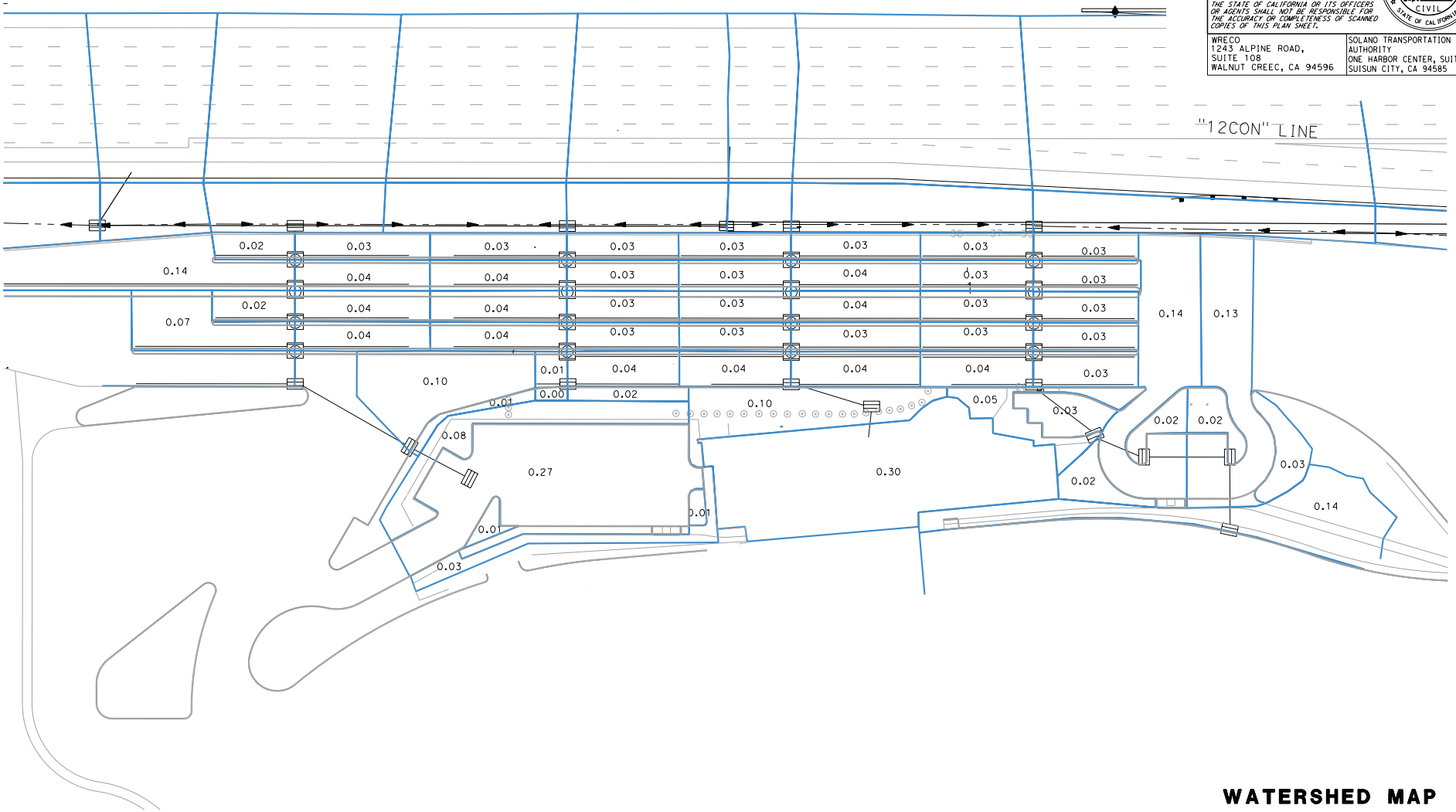
SUISUN CITY, CA 94585



FOR LEGEND, SEE SHEET WS-1

THIS PLAN ACCURATE FOR DRAINAGE WATERSHEDS ONLY.

WATERSHED MAP
DRAINAGE
SCALE 1"=30'

WS-10

REVISED BY | DATE REVISED
JENNIFER ABRAMS | CHRIS SEWELL
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CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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LAST REVISION 00-00-00 | DATE PLOTTED => 8/27/2010 | TIME PLOTTED => 11:46:13 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => ...\D#g\ws-dr\WS-10.dgn

CU 04264

EA 0A5351

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Appendix D Sampling Plan

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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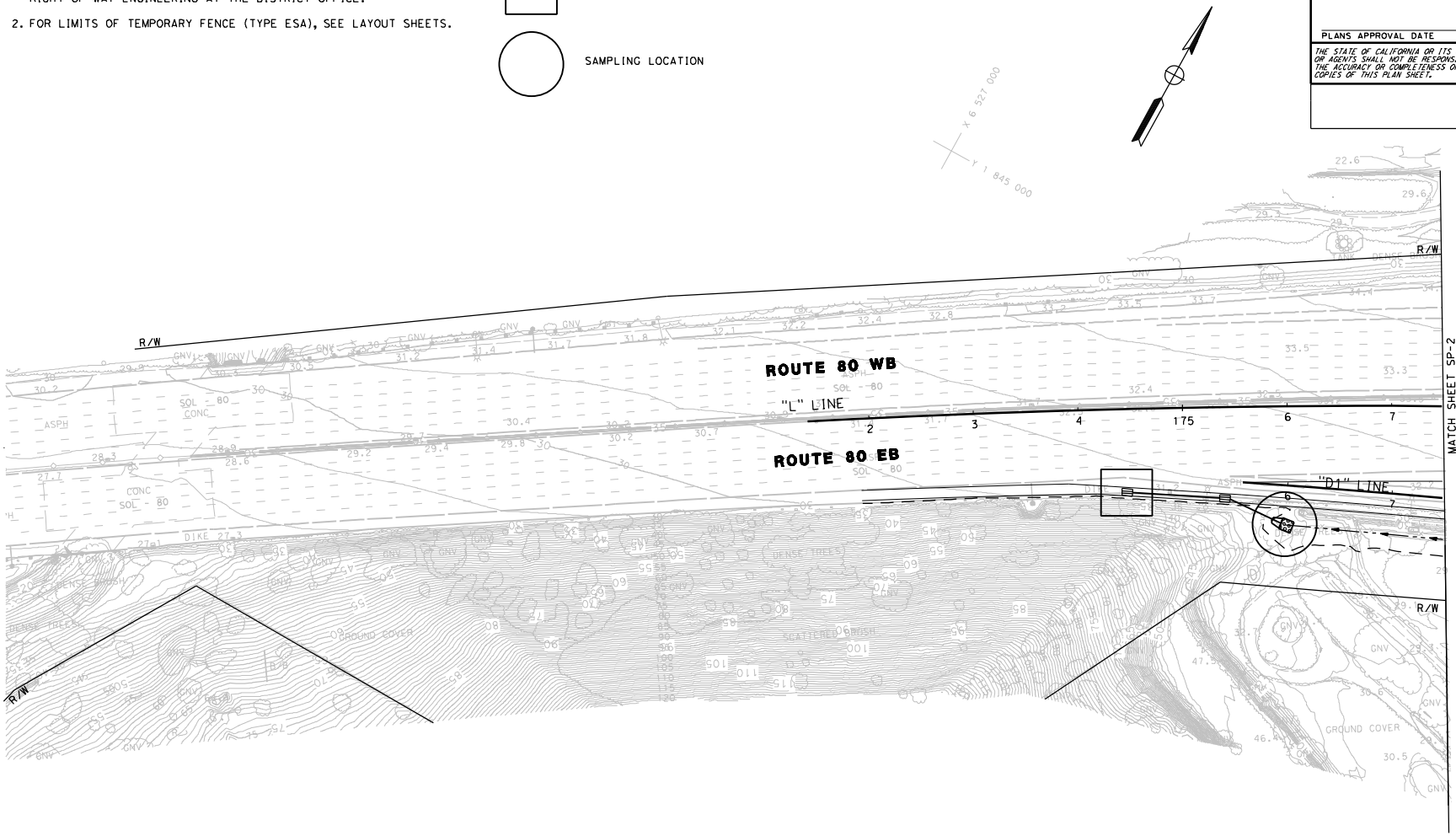
NOTES:

1. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR LIMITS OF TEMPORARY FENCE (TYPE ESA), SEE LAYOUT SHEETS.

LEGEND:

DISCHARGE LOCATION

SAMPLING LOCATION



FOR REFERENCE ONLY

THIS PLAN ACCURATE FOR SAMPLING WORK ONLY

SAMPLING PLAN

SCALE: 1" = 50'

SP-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

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DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 8/30/2010
TIME PLOTTED => 3:30:04 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 40a535ge001.dgn

CU 04264

EA 0A5351

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

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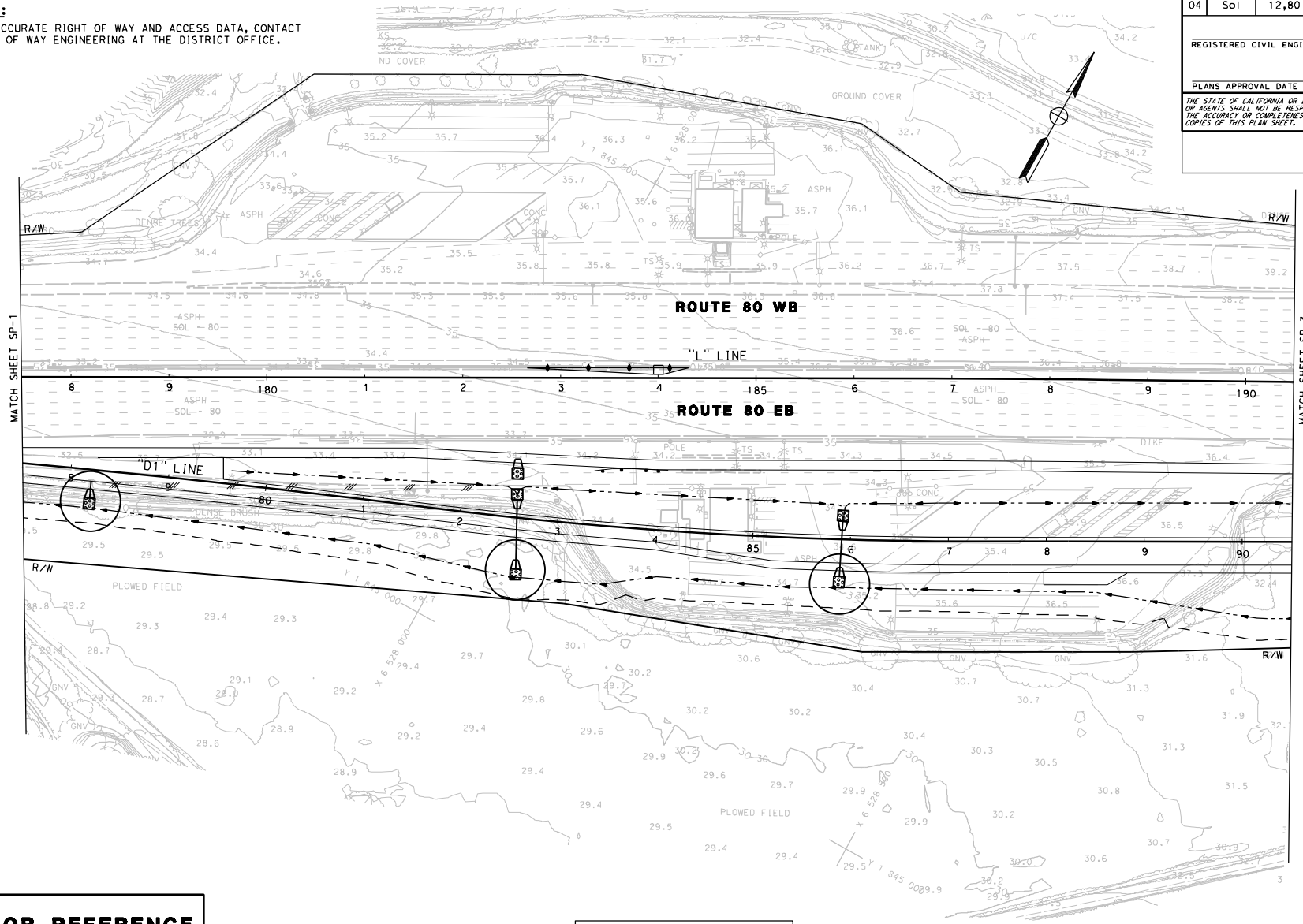

FOR REFERENCE ONLY

FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET SP-1

THIS PLAN ACCURATE FOR SAMPLING WORK ONLY

SAMPLING PLAN

SCALE: 1" = 50'

SP-2

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY

CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 DATE PLOTTED => 8/30/2010 TIME PLOTTED => 3:30:54 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 40a535ge002.dgn

CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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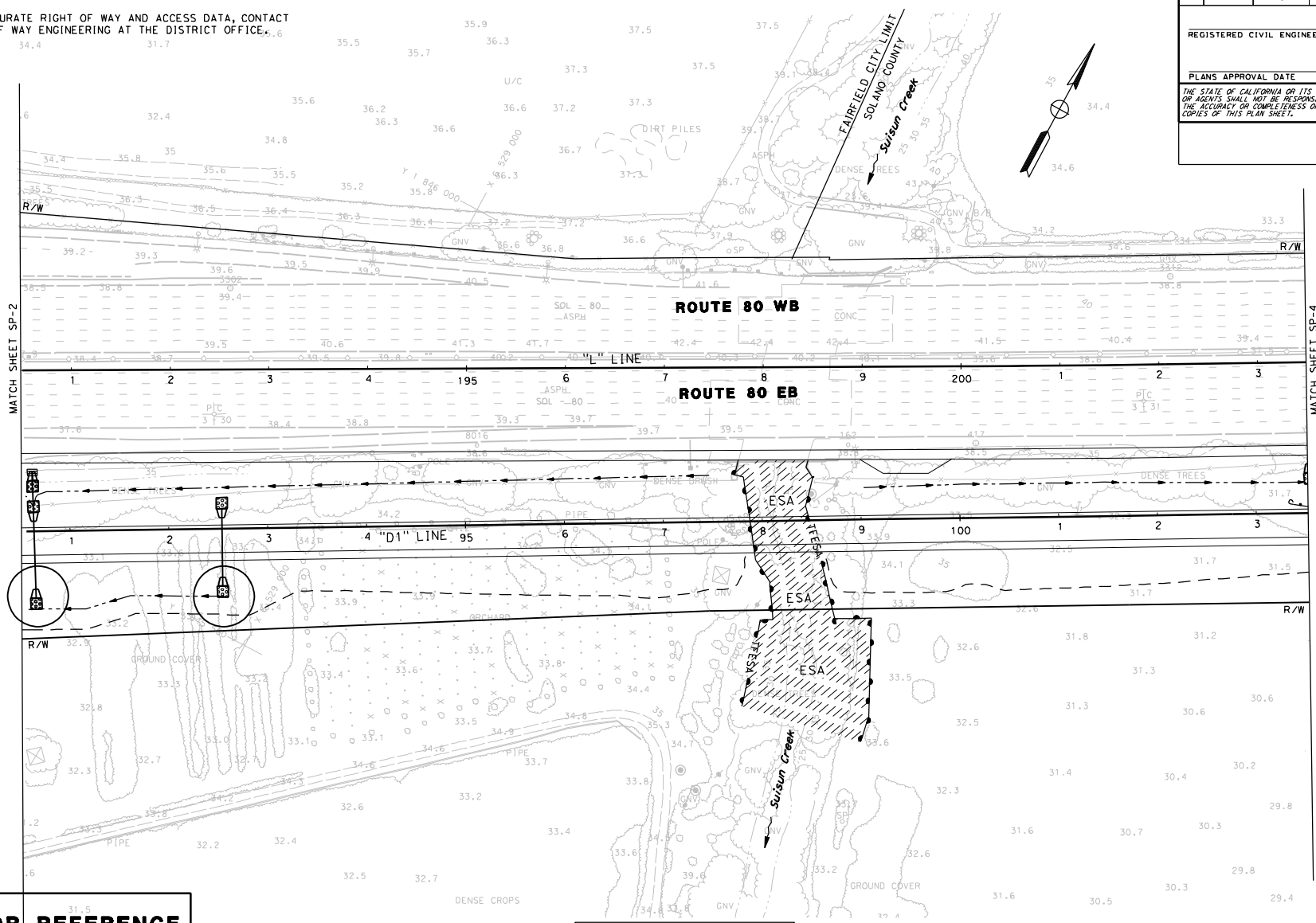
NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR REFERENCE ONLY

FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET SP-1

THIS PLAN ACCURATE FOR SAMPLING WORK ONLY

SAMPLING PLAN

SCALE: 1" = 50'

SP-3

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 8/30/2010 | TIME PLOTTED => 3:51:52 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 40a535ge003.dgn

CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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NOTE:

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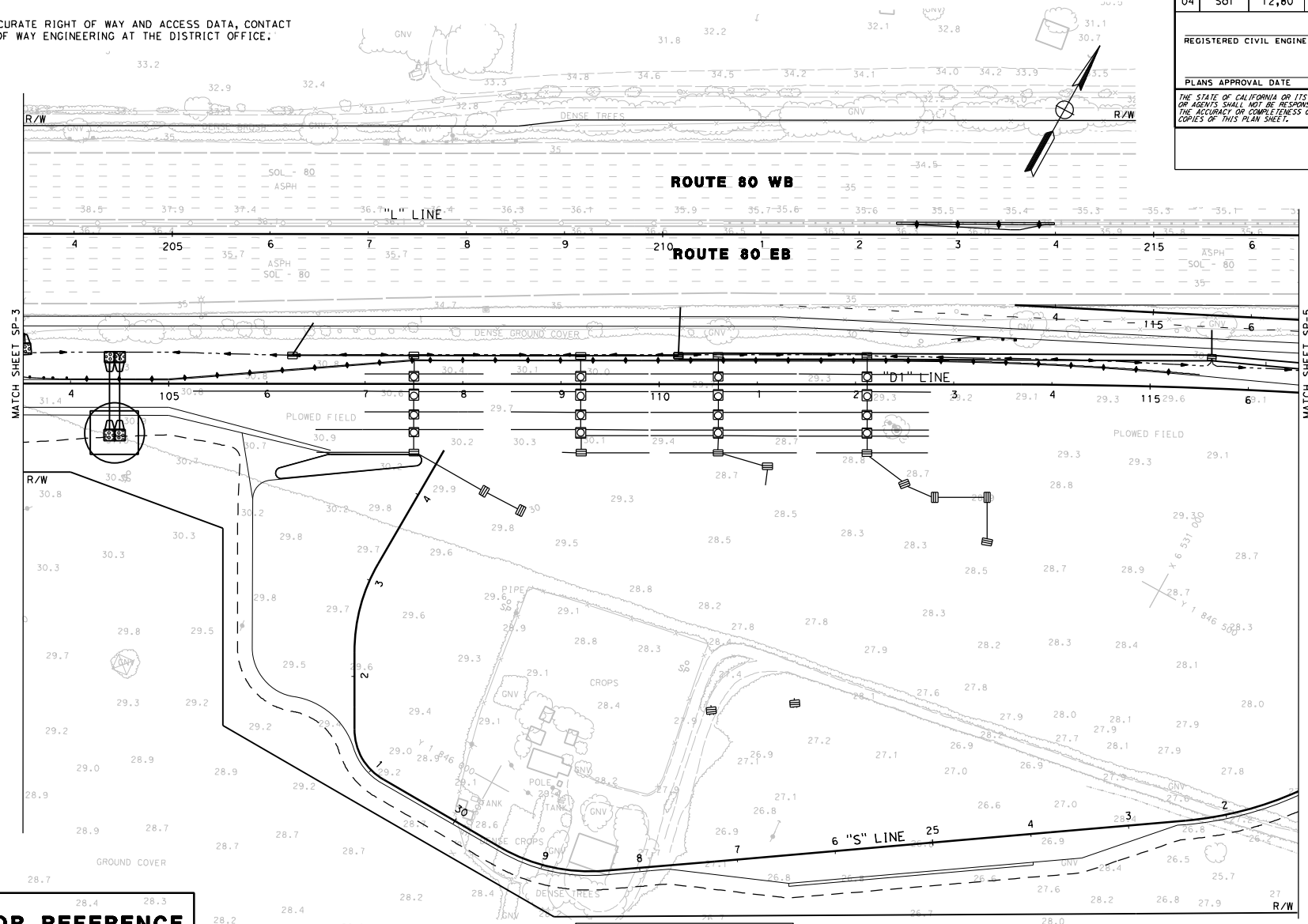

FOR REFERENCE ONLY

FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET SP-1

THIS PLAN ACCURATE FOR SAMPLING WORK ONLY

SAMPLING PLAN

SCALE: 1" = 50'

SP-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 8/30/2010
TIME PLOTTED => 3:32:13 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 40a535ge004.dgn

CU 04264

EA 0A5351

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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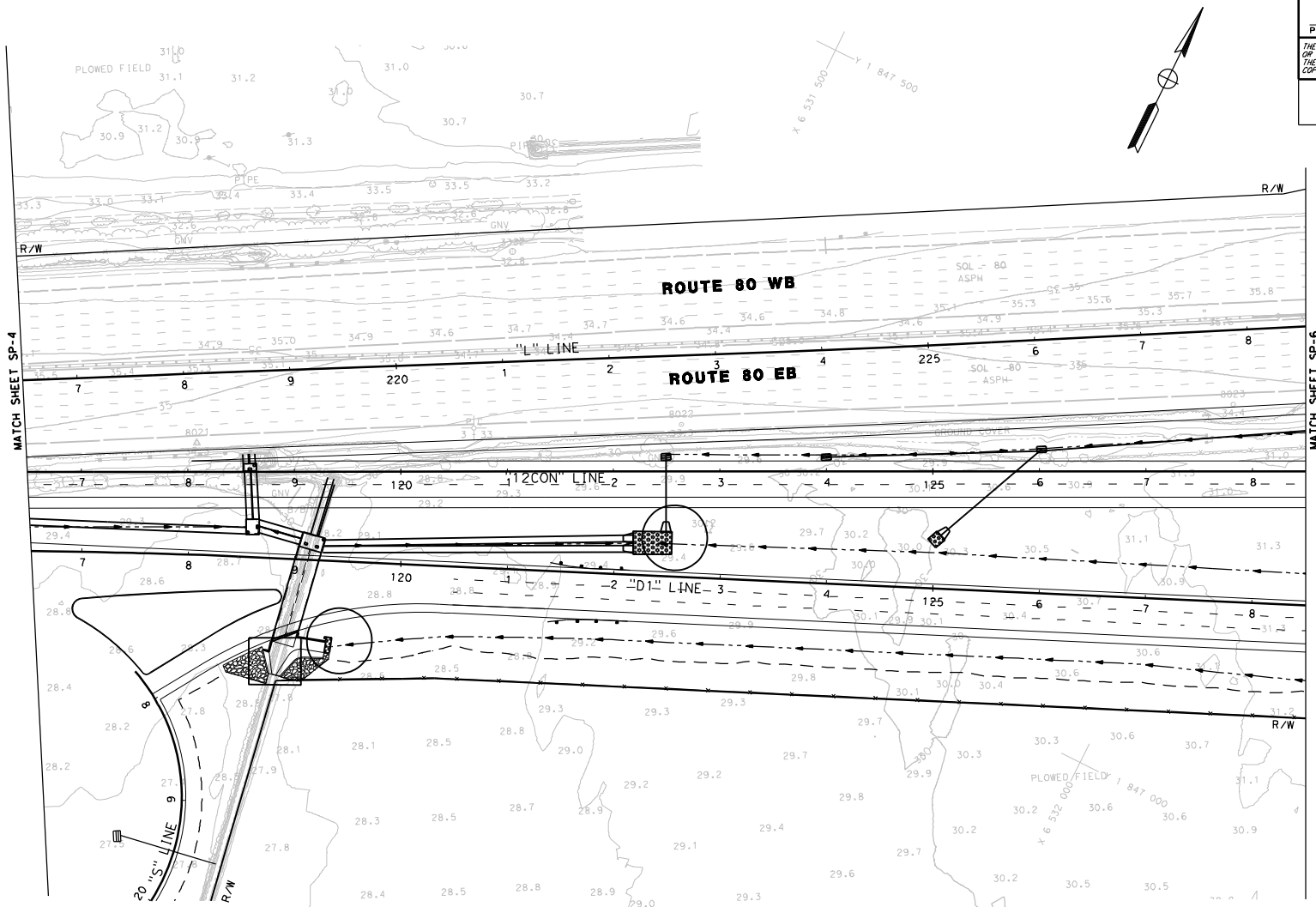

FOR REFERENCE ONLY

FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET SP-1

THIS PLAN ACCURATE FOR SAMPLING WORK ONLY

SAMPLING PLAN

SCALE: 1" = 50'

SP-5

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 40a535ge005.dgn

CU 04264

EA 0A5351

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

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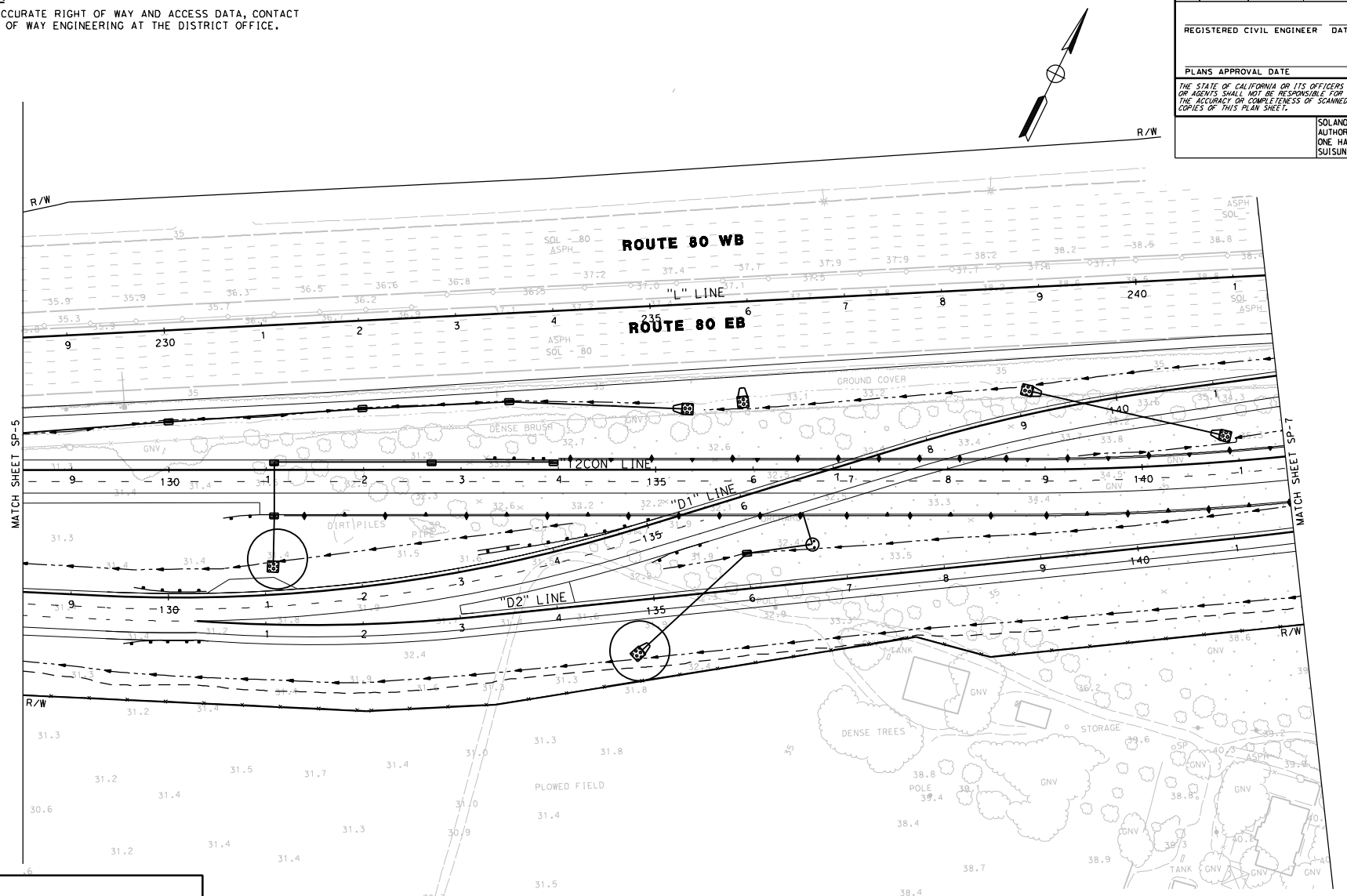

FOR REFERENCE ONLY

FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET SP-1

THIS PLAN ACCURATE FOR SAMPLING WORK ONLY

SAMPLING PLAN

SCALE: 1" = 50'

SP-6

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CALCULATED-DESIGNED BY

CHECKED BY

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BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => andrew_chin
DGN FILE => 40a535ge006.dgn

CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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NOTE:

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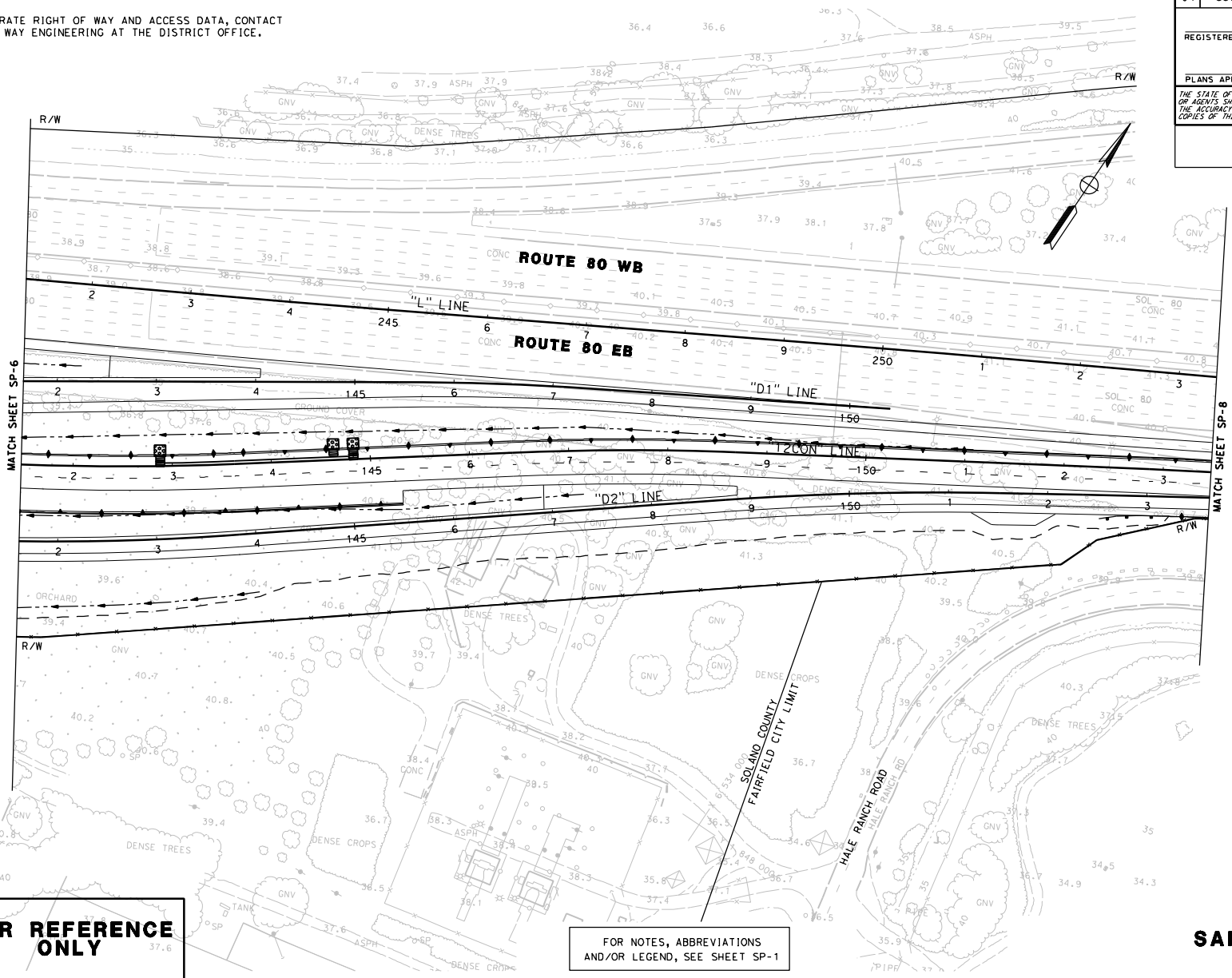

FOR REFERENCE ONLY

FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET SP-1

THIS PLAN ACCURATE FOR SAMPLING WORK ONLY

SAMPLING PLAN

SCALE: 1" = 50'

SP-7

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY

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CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 8/30/2010
TIME PLOTTED => 3:42:45 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 40a535ge007.dgn

CU 04264

EA 0A5351

NOTE:

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

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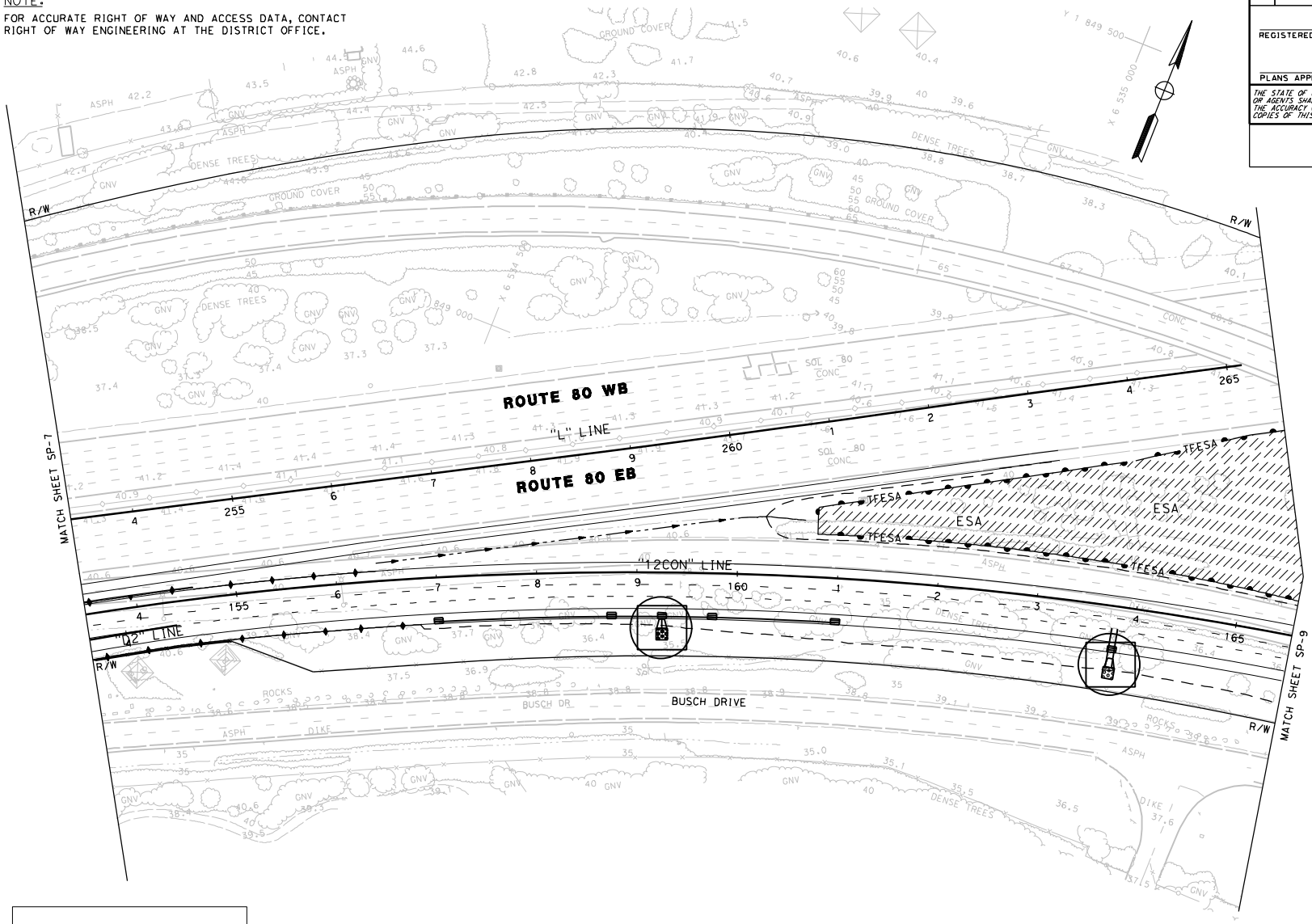

FOR REFERENCE ONLY

FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET SP-1

THIS PLAN ACCURATE FOR SAMPLING WORK ONLY

SAMPLING PLAN

SCALE: 1" = 50'

SP-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 8/30/2010
TIME PLOTTED => 3:46:27 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 40a535ge008.dgn

CU 04264

EA 0A5351

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0 13.3/15.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

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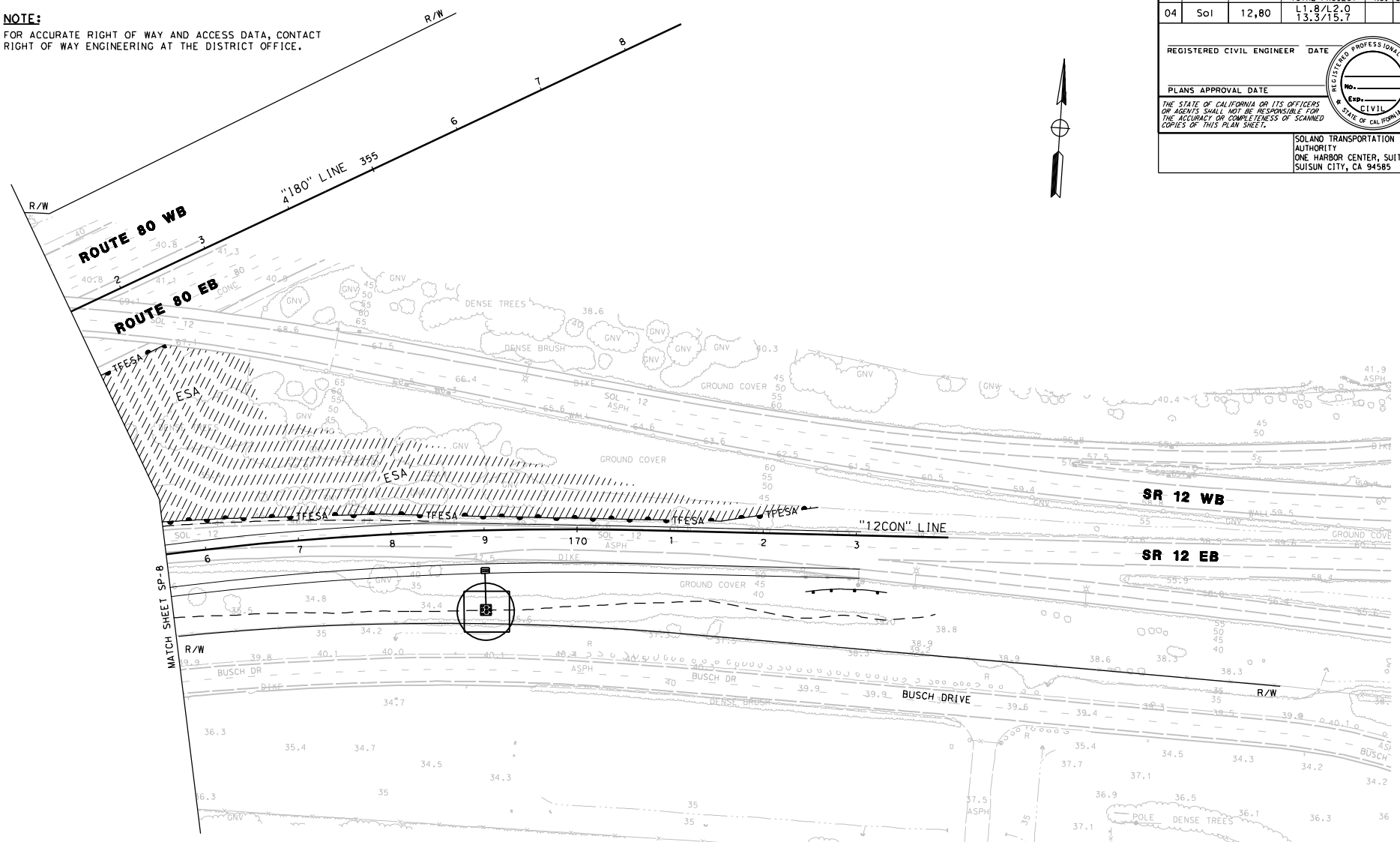
SUISUN CITY, CA 94585

NOTE:
FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR REFERENCE ONLY

FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET SP-1

THIS PLAN ACCURATE FOR SAMPLING WORK ONLY

SAMPLING PLAN

SCALE: 1" = 50'

SP-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CONSULTANT FUNCTIONAL SUPERVISOR
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 8/30/2010
TIME PLOTTED => 3:49:05 PM

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CU 04264
EA 0A5351

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Appendix E Off-Site Watershed Map

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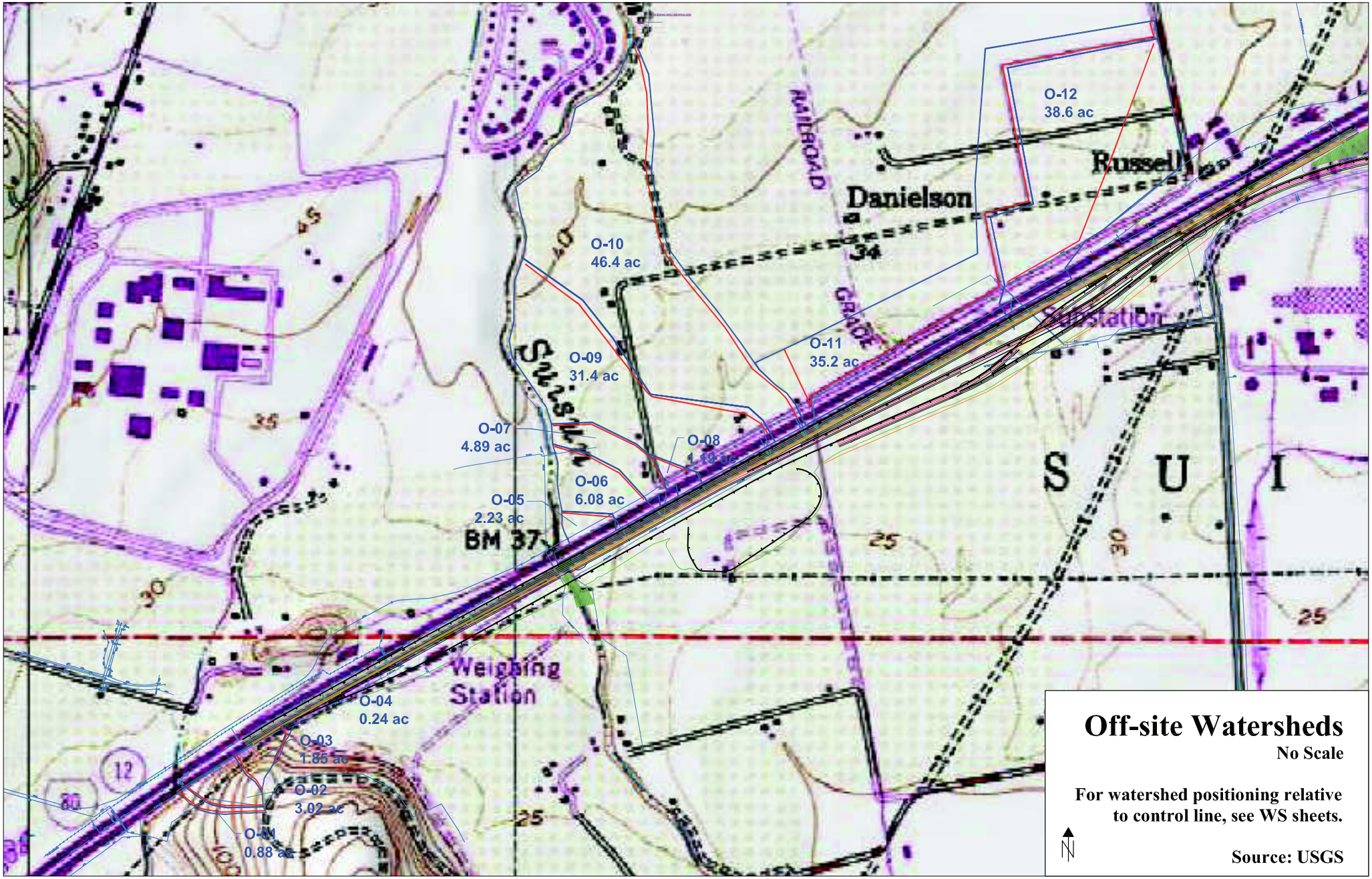

O-12
38.6 ac
Danielson
Russell
RAILROAD
O-10
46.4 ac
34
GRADE
Substation
O-11
35.2 ac
O-09
31.4 ac
O-07
4.89 ac
O-08
1.19 ac
O-06
6.08 ac
O-05
2.23 ac
BM 37
S U I
Weighing
Station
O-04
0.24 ac
O-03
1.85 ac
O-02
3.02 ac
O-01
0.88 ac
Off-site Watersheds
No Scale
For watershed positioning relative
to control line, see WS sheets.
N
Source: USGS

ASCII SPEED FILE FORMAT

FIELD	LENGTH	STARTS IN COLUMN
Lane	2	1
Hour	2	4
Count, 0-35 MPH	4	7
Count, 36-40 MPH	4	12
Count, 41-45 MPH	4	17
Count, 46-50 MPH	4	22
Count, 51-55 MPH	4	27
Count, 56-60 MPH	4	32
Count, 61-65 MPH	4	37
Count, 66-70 MPH	4	42
Count, 71-75 MPH	4	47
Count, 76-80 MPH	4	52
Count, 81-85 MPH	4	57
Count, > 86 MPH	4	62

ASCII CLASSIFICATION FILE FORMAT

FIELD	LENGTH	STARTS IN COLUMN
Lane	2	1
Hour	2	4
Count, Class 1	4	7
Count, Class 2	4	12
Count, Class 3	4	17
Count, Class 4	4	22
Count, Class 5	4	27
Count, Class 6	4	32
Count, Class 7	4	37
Count, Class 8	4	42
Count, Class 9	4	47
Count, Class 10	4	52
Count, Class 11	4	57
Count, Class 12	4	62
Count, Class 13	4	67
Count, Class 14	4	72
Count, Class 15	4	77

For the above two files:

Each field shall be comma delimited.
For each day's file there is one record
for each lane for each hourly period.

WEIGHT VIOLATION TABLE

==========

(All weights in pounds)

AXLE WEIGHT

Axle No. 1----------	12500
All other axles----------	20000

TANDEM AXLE WEIGHT

Two consecutive axles with an axle spacing not exceeding 8.4 feet----------	34000

GROSS VEHICLE WEIGHT

All vehicles----------	80000

BRIDGE WEIGHT

See page following----------

BRIDGE WEIGHT

Distance in nearest whole foot between the extremes of any group of 2 or more consecutive axles	2 axles	3 axles	4 axles	5 axles	6 axles	7 axles	8 axles	9 axles
<8	34,000	34,000	34,000	34,000	34,000	_____	_____	_____
8	34,000	34,000	34,000	34,000	34,000	_____	_____	_____
9	39,000	42,500	42,500	42,500	42,500	_____	_____	_____
10	40,000	43,500	43,500	43,500	43,500	_____	_____	_____
11	40,000	44,000	44,000	44,000	44,000	_____	_____	_____
12	40,000	45,000	50,000	50,000	50,000	_____	_____	_____
13	40,000	45,500	50,500	50,500	50,500	_____	_____	_____
14	40,000	46,500	51,500	51,500	51,500	_____	_____	_____
15	40,000	47,000	52,000	52,000	52,000	_____	_____	_____
16	40,000	48,000	52,500	52,500	52,500	_____	_____	_____
17	40,000	48,500	53,500	53,500	53,500	_____	_____	_____
18	40,000	49,500	54,000	54,000	54,000	_____	_____	_____
19	40,000	50,000	54,500	54,500	54,500	_____	_____	_____
20	40,000	51,000	55,500	55,500	55,500	_____	_____	_____
21	40,000	51,500	56,000	56,000	56,000	_____	_____	_____
22	40,000	52,500	56,500	56,500	56,500	_____	_____	_____
23	40,000	53,000	57,500	57,500	57,500	_____	_____	_____
24	40,000	54,000	58,000	58,000	58,000	74,000	_____	_____
25	40,000	54,500	58,500	58,500	58,500	74,500	80,000	_____
26	40,000	55,500	59,500	59,500	59,500	75,000	80,000	_____
27	40,000	56,000	60,000	60,000	60,000	76,000	80,000	80,000
28	40,000	57,000	60,500	60,500	60,500	76,500	80,000	80,000
29	40,000	57,500	61,500	61,500	61,500	77,000	80,000	80,000
30	40,000	58,500	62,000	62,000	62,000	77,500	80,000	80,000
31	40,000	59,000	62,500	62,500	62,500	78,000	80,000	80,000
32	40,000	60,000	63,500	63,500	63,500	78,500	80,000	80,000
33	40,000	60,000	64,000	64,000	64,000	79,500	80000	80,000
34	40,000	60,000	64,500	64,500	64,500	80,000	80,000	80,000
35	40,000	60,000	65,500	65,500	65,500	80,000	80,000	80,000
36	40,000	60,000	68,000	66,000	66,000	80,000	80,000	80,000
37	40,000	60,000	68,000	66,500	66,500	80,000	80,000	80,000
38	40,000	60,000	68,000	67,500	67,500	80,000	80,000	80,000
39	40,000	60,000	68,000	68,000	68,000	80,000	80,000	80,000
40	40,000	60,000	68,500	70,000	70,000	80,000	80,000	80,000
41	40,000	60,000	69,500	72,000	72,000	80,000	80,000	80,000
42	40,000	60,000	70,000	73,280	73,280	80,000	80,000	80,000
43	40,000	60,000	70,500	73,280	73,280	80,000	80,000	80,000
44	40,000	60,000	71,500	73,280	73,280	80,000	80,000	80,000
45	40,000	60,000	72,000	76,000	80,000	80,000	80,000	80,000
46	40,000	60,000	72,500	76,500	80,000	80,000	80,000	80,000
47	40,000	60,000	73,500	77,500	80,000	80,000	80,000	80,000
48	40,000	60,000	74,000	78,000	80,000	80,000	80,000	80,000
49	40,000	60,000	74,500	78,500	80,000	80,000	80,000	80,000
50	40,000	60,000	75,500	79,000	80,000	80,000	80,000	80,000
51	40,000	60,000	76,000	80,000	80,000	80,000	80,000	80,000
52	40,000	60,000	76,500	80,000	80,000	80,000	80,000	80,000
53	40,000	60,000	77,500	80,000	80,000	80,000	80,000	80,000
54	40,000	60,000	78,000	80,000	80,000	80,000	80,000	80,000
55	40,000	60,000	78,500	80,000	80,000	80,000	80,000	80,000
56	40,000	60,000	79,500	80,000	80,000	80,000	80,000	80,000
57	40,000	60,000	80,000	80,000	80,000	80,000	80,000	80,000
58	40,000	60,000	80,000	80,000	80,000	80,000	80,000	80,000
>58	40,000	60,000	80,000	80,000	80,000	80,000	80,000	80,000

REAL TIME VIEW

****

Veh No.: _____ Class: _____ Lane:_____ Speed:_____

Time: _____ Date: _____ Vehicle Length:_____

Invalid Measurements Code: _____ Weight Violation (s):_____

		AXLE NO.							
TOTALS	1	2	3	4	5	6	7	8	9
Axle Wt.76.1 (kip)	10.9	15.0	16.2	17.2	16.8				
Axle. Space (feet)	56.9	11.8	4.5	36.4	4.2				

****

Note: Entries following Axle Wt. and Axle Space are for example purpose only.

TRUCK RECORD BATCH PRINT
==========

Site Designation: _____ Lane: _____ Time: _____ Date: _____ Speed:_____

Vehicle No.: _____ Class: ____ Invalid Code: _____ Veh. Wheelbase: _____ Veh. Length: _____

Gross Wt. (kip): _____Weight Violation(s) : _____

Axle No.	1	2	3	4	5	6	7	8	9
Rt. Wheel Wt. (kip)	5.4	7.3	8.0	8.5	8.3				
Lt. Wheel Wt. (kip)	5.5	7.7	8.2	8.7	8.5				
Axle Wt.(kips)	10.9	15.0	16.2	17.2	16.8				
Axle Space (Feet)		11.8	4.5	36.4	4.2				

****

Note: Entries following Axle Wt. and Axle Space are for example purposes only.

DISTRIBUTION OF CLASS AND SPEED COUNTS BY LANE

SITE DESIGNATION:
DATE:

LANE NUMBER <number of lanes varies with contract requirements>

	1		2		3		4		5		6		ALL LANES	
	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%
CLASS														
1	0	0.0	0	0.0					0	0.0	6	0.0	6	0.0
2	22521	82.4	24464	82.7					28540	90.6	23974	87.6	99499	85.9
3	2687	9.8	2395	8.1					2324	7.4	1919	7.0	9325	8.1
4	14	0.1	21	0.1					16	0.1	13	0.0	64	0.1
5	1152	4.2	1297	4.4	"COUNT"entries for				486	1.5	56	0.2	2991	2.6
6	82	0.3	101	0.3	example only				9	0.0	917	3.3	1109	1.0
7	1	0.0	3	0.0					0	0.0	24	0.1	28	0.0
8	280	1.0	402	1.4					3	0.0	32	0.1	717	0.6
9	340	1.2	544	1.8					4	0.0	0	0.0	888	0.8
10	10	0.0	1	0.0					0	0.0	1	0.0	4	0.0
11	84	0.3	104	0.4					0	0.0	0	0.0	188	0.2
12	3	0.0	5	0.0					0	0.0	0	0.0	8	0.0
13	1	0.0	0	0.0					0	0.0	0	0.0	1	0.0
14	28	0.1	46	0.2					0	0.0	0	0.	74	0.1
15	142	0.5	206	0.7					127	0.4	434	1.6	909	0.8
TOT.	27337	100.0	29589	100.0					31509	100.0	27376	100.0	115811	100.0
SPEED (MPH)														
1 - 5	2	0.0	6	0.0					2	0.0	4	0.0	14	0.0
6-10	0	0.0	0	0.0					4	0.0	10	0.0	14	0.0
11-15	10	0.0	5	0.0					32	0.1	28	0.1	75	0.1
16-20	48	0.2	33	0.1					75	0.2	88	0.3	244	0.2
21-25	271	1.0	280	0.9					269	0.9	179	0.7	999	0.9
26-30	641	2.3	615	2.1					480	1.5	349	1.3	2085	1.8
31-35	1047	3.8	838	2.8					731	2.3	606	2.2	3222	2.8
36-40	1165	4.3	1073	3.6					1077	3.4	891	3.3	4206	3.6
41-45	1645	6.0	913	3.1					927	2.9	997	3.6	4482	3.9
46-50	5140	18.8	2063	7.0					1027	3.3	89	3.3	9123	7.9
51-55	9487	34.7	5641	19.1					2508	8.0	1147	4.2	18783	16.2
56-60	5613	20.5	13537	45.8					14134	44.9	3243	11.8	36527	31.5
61-65	1872	6.8	3284	11.1					7211	22.9	9701	35.4	22068	19.1
66-70	277	1.0	1170	4.0					2749	8.7	6614	24.2	10810	9.3
71-75	79	0.3	90	0.3					234	0.7	2240	8.2	2643	2.3
76-80	24	0.1	34	0.1					45	0.1	327	1.2	430	0.4
81-85	13	0.0	7	0.0					4	0.0	51	0.2	75	0.1
86-90	3	0.0	0	0.0					0	0.0	8	0.0	11	0.0
91-95	0	0.0	0	0.0					0	0.0	0	0.0	0	0.0
96-100	0	0.0	0	0.0					0	0.0	0	0.0	0	0.0
> 100	0	0.0	0	0.0					0	0.0	0	0.0	0	0.0
TOT.	27337	100.0	29589	100.0					31509	100.0	27376	100.0	115811	100.0
AVG. SPEED	51		55						57		61		56	

DISTRIBUTION OF VEHICLE COUNTS BY HOUR OF DAY BY LANE

SITE DESIGNATION:
DATE:

HOURLY SUMMARY — LANE NUMBER <number of lanes varies with contract requirements>

HOUR	1	2	3	4	5	6	HOURLY TOTALS
00-01							
01-02							
02-03							
03-04							
04-05							
05-06							
QTR TOTALS							
06-07							
07-08							
08-09							
09-10							
10-11							
11-12							
QTR TOTALS							
12-13							
13-14							
14-15							
15-16							
16-17							
17-18							
QTR TOTALS							
18-19							
19-20							
20-21							
21-22							
22-23							
23-24							
QTR TOTALS							

DAILY SUMMARY — DAILY COUNTS BY LANE

1	2	3	4	5	6	DAILY TOTALS

DISTRIBUTION OF VEHICLE CLASSIFICATIONS BY HOUR OF DAY

SITE DESIGNATION: LANE NO's <display user's entry as to selected lane(s)>
DATE:

HOURLY SUMMARY VEHICLE COUNTS

HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	HOURLY TOTALS
00-01																
01-02																
02-03																
03-04																
04-05																
05-06																
QTR TOTALS																
06-07																
07-08																
08-09																
09-10																
10-11																
11-12																
QTR TOTALS																
12-13																
13-14																
14-15																
15-16																
16-17																
17-18																
QTR TOTALS																
18-19																
19-20																
20-21																
21-22																
22-23																
23-24																
QTR TOTALS																

DAILY SUMMARY VEHICLE COUNTS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL TEHICLES
COUNT																
PERCENT																

DISTRIBUTION OF VEHICLE CLASSIFICATIONS BY DAY OF MONTH

SITE DESIGNATION: LANE NO's <display user's entry as to selected lane(s)>
DATE: 01/92

VEHICLE COUNTS

DAILY SUMMARY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTALS
1 WED																
2 THU																
3 FRI																
4 SAT																
DAILY AVG																
5 SUN																
6 MON																
7 TUE																
8 WED																
9 THU																
10 FRI																
11 SAT																
DAILY AVG																
12 SUN																
13 MON																
14 TUE																
15 WED																
16 THU																
17 FRI																
18 SAT																
DAILY AVG																
19 SUN																
20 MON																
21 TUE																
22 WED																
23 THU																
24 FRI																
25 SAT																
DAILY AVG																
26 SUN																
27 MON																
28 TUE																
29 WED																
30 THU																
31 FRI																
DAILY AVG																

VEHICLE COUNTS

MONTHLY SUMMARY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTALS
TOTALS																
PERCENT																
DAILY AVG																

DISTRIBUTION OF VEHICLES BY SPEED BY HOUR

SITE DESIGNATION: LANE NO's <display user's entry as to selected lane(s)>
DATE:

SPEED RANGE, MPH

HOUR RANGE	00-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	> 80
00 - 01												
01 - 02												
02 - 03												
03 - 04												
04 - 05												
05 - 06												
QTR TOTALS												
06 - 07												
07 - 08												
08 - 09												
09 - 10												
10 - 11												
11 - 12												
QTR TOTALS												
12 - 13												
13 - 14												
14 - 15												
15 - 16												
16 - 17												
17 - 18												
QTR TOTALS												
18 - 19												
19 - 20												
20 - 21												
21 - 22												
22 - 23												
23 - 24												
QTR TOTALS												

DAILY SPEED SUMMARY

Total Vehicles :	Total Vehicles > 55 MPH :	Percentage Vehicles > 55 MPH :
Average Speed :	Total Vehicles > 60 MPH :	Percentage Vehicles > 60 MPH :
Median Speed :	Total Vehicles > 65 MPH :	Percentage Vehicles > 65 MPH :
85th Percentile:	Total Vehicles > 70 MPH :	Percentage Vehicles > 70 MPH :

DISTRIBUTION OF TRUCK RECORD DATA BY LANE <report to cover all records contained in truck records file>

SITE DESIGNATION:
DATE:

LANE NUMBER <number of lanes varies with contract requirements>

	1		2		3		4		5		6		ALL LANES	
CLASS	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%
1	0	0.0	0	0.0					0	0.0	6	0.0	6	0.0
2	0	0.0	0	0.0					0	0.0	0	0.0	0	
3	152	3.7	342	14.7					87	4.0	74	1.9	655	5.2
4	18	0.4	13	0.6					3	0.1	5	0.1	39	0.3
5	560	13.6	354	15.2		"COUNT" entries for			306	14.2	574	14.7	1794	14.3
6	129	3.1	67	2.9		example only			66	3.1	104	2.7	366	2.9
7	3	0.1	0	0.0					0	0.0	27	0.7	30	0.2
8	350	8.5	134	8.8					278	12.9	357	9.1	1119	8.9
9	1775	43.1	918	39.4					961	44.4	1698	43.5	5352	42.7
10	3	0.1	1	0.0					4	0.2	4	0.1	12	0.1
11	783	19.0	332	14.2					302	14.0	754	19.3	2171	17.3
12	56	1.4	30	1.3					32	1.5	68	1.7	186	1.5
13	5	0.1	2	0.1					0	0.0	7	0.2	14	0.1
14	122	3.0	34	1.5					37	1.7	104	2.7	297	2.4
15	158	3.8	66	2.8					78	3.6	128	3.3	430	3.4
TOTAL	4121	100.0	2330	100.0					2161	100.0	3907	100.0	12520	100.0

LANE NUMBER

	1		2		3		4		5		6		ALL LANES	
STATUS	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%
LEGAL	3353	81.4	1866	80.1					1976	91.4	3076	78.7	10271	82.0
OVR'WT	662	16.0	384	16.5					127	5.9	715	18.3	2249	18.0
INVALID	106	2.6	80	3.4					59	2.7	116	3.0	361	2.9
TOTAL	4121	100.0	2330	100.0					2162	100.0	3907	100.0	12520	100.0

Note:
The line items under "STATUS" are to be based upon the Contractor's coding scheme for weight violation and invalid measurements. If the coding system identifies invalid measurements other than imbalance (such as "out-of-range" values, system errors, etc.), each unique type of invalid measurement should be broken down as a "STATUS" line item.

DISTRIBUTION OF TRUCK RECORD DATA BY LANE <report to cover all records contained in truck records file>

SITE DESIGNATION:
DATE:

LANE NUMBER <number of lanes varies with contract requirements>

	1		2		3		4		5		6		ALL LANES	
CLASS	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%
1	0	0.0	0	0.0					0	0.0	6	0.0	6	0.0
2	0	0.0	0	0.0					0	0.0	0	0.0	0	
3	152	3.7	342	14.7					87	4.0	74	1.9	655	5.2
4	18	0.4	13	0.6					3	0.1	5	0.1	39	0.3
5	560	13.6	354	15.2		"COUNT" entries for			306	14.2	574	14.7	1794	14.3
6	129	3.1	67	2.9		example only			66	3.1	104	2.7	366	2.9
7	3	0.1	0	0.0					0	0.0	27	0.7	30	0.2
8	350	8.5	134	8.8					278	12.9	357	9.1	1119	8.9
9	1775	43.1	918	39.4					961	44.4	1698	43.5	5352	42.7
10	3	0.1	1	0.0					4	0.2	4	0.1	12	0.1
11	783	19.0	332	14.2					302	14.0	754	19.3	2171	17.3
12	56	1.4	30	1.3					32	1.5	68	1.7	186	1.5
13	5	0.1	2	0.1					0	0.0	7	0.2	14	0.1
14	122	3.0	34	1.5					37	1.7	104	2.7	297	2.4
15	158	3.8	66	2.8					78	3.6	128	3.3	430	3.4
TOTAL	4121	100.0	2330	100.0					2161	100.0	3907	100.0	12520	100.0

LANE NUMBER

	1		2		3		4		5		6		ALL LANES	
STATUS	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%
LEGAL	3353	81.4	1866	80.1					1976	91.4	3076	78.7	10271	82.0
OVR'WT	662	16.0	384	16.5					127	5.9	715	18.3	2249	18.0
INVALID	106	2.6	80	3.4					59	2.7	116	3.0	361	2.9
TOTAL	4121	100.0	2330	100.0					2162	100.0	3907	100.0	12520	100.0

Note:
The line items under "STATUS" are to be based upon the Contractor's coding scheme for weight violation and invalid measurements. If the coding system identifies invalid measurements other than imbalance (such as "out-of-range" values, system errors, etc.), each unique type of invalid measurement should be broken down as a "STATUS" line item.

DISTRIBUTION OF WEIGHT VIOLATIONS AND INVALID MEASUREMENTS FOR VEHICLE CLASSIFICATIONS 4 THROUGH 15

SITE DESIGNATION: LANE NO's <display user's entry as to selected lane(s)>
DATE:

CLASS	TOTAL VEHICLES COUNTED	VEHICLES WITH INVALID MEASUREMENTS	TOTAL VEHICLES WEIGHED	TOTAL VEHICLES OVERWEIGHT	PERCENT VEHICLES OVERWEIGHT	*********NUMBER OF********** *****WEIGHT VIOLATIONS ******* AXLE	TANDEM	GROSS	BRIDGE
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
TOTALS									

PERCENT VEHICLES NOT CLASSIFIED (CLASS 15) : _____

PERCENT VEHICLES WITH INVALID MEASUREMENTS: _____

Notes:

"Percent Vehicles Not Classified" = Class 15 Total Vehicle Count / Total Vehicles Counted
"Percent Vehicles With Invalid Measurements" = Total Vehicles With Invalid Measurements / Total Vehicles Counted
"Vehicles Counted" - "Vehicles With Invalid Measurements" = "Vehicles Weighed"

All weight and weight violation reporting and calculations based on data for "weighed vehicles"

DISTRIBUTION OF WEIGHT VIOLATIONS BY HOUR OF DAY FOR VEHICLE CLASSIFICATIONS 4 THROUGH 14

SITE DESIGNATION: LANE NO's <display user's entry as to selected lane(s)>
DATE:

HOURLY SUMMARY

HOUR	TOTAL VEHICLES WEIGHED	TOTAL VEHICLES OVERWEIGHT	PERCENT VEHICLES OVERWEIGHT	NUMBER OF WEIGHT VIOLATIONS: AXLE	TANDEM	GROSS	BRIDGE
00-01							
01-02							
02-03							
03-04							
04-05							
05-06							
QTR TOTALS							
07-08							
08-09							
09-10							
10-11							
11-12							
QTR TOTALS							
12-13							
13-14							
14-15							
15-16							
16-17							
17-18							
QTR TOTALS							
18-19							
19-20							
20-2							
21-22							
22-23							
23-24							
QTR TOTALS							

DAILY SUMMARY

TOTAL VEHICLES WEIGHED	TOTAL VEHICLES OVERWEIGHT	PERCENT VEHICLES OVERWEIGHT	NUMBER OF WEIGHT VIOLATIONS: AXLE	TANDEM	GROSS	BRIDGE

DISTRIBUTION OF OVERWEIGHT VEHICLES BY HOUR OF DAY FOR VEHICLE CLASSIFICATIONS 4 THROUGH 14

SITE DESIGNATION: LANE NO's <display user's entry as to selected lane(s)>

DATE: 01/92

HOURLY SUMMARY — NUMBER OVERWEIGHT VEHICLES

HOUR	TOTAL VEH'S WEIGHED	TOTAL VEH'S OVERWT	PERCENT VEH'S OVERWT	4	5	6	7	8	9	10	11	12	13	14
00-01														
01-02														
02-03														
03-04														
04-05														
05-06														
QTR TOTALS														
06-07														
07-08														
08-09														
09-10														
10-11														
11-12														
QTR TOTALS														
12-13														
13-14														
14-15														
15-16														
16-17														
17-18														
QTRTOTALS														
18-19														
19-20														
20-21														
21-22														
22-23														
23-24														
QTR TOTALS														

DAILY SUMMARY — NUMBER OVERWEIGHT VEHICLES

TOTAL VEH'S WEIGHED	TOTAL VEH'S OVERWT	PERCENT VEH'S OVERWT	4	5	6	7	8	9	10	11	12	13	14

DISTRIBUTION OF GROSS WEIGHTS FOR VEHICLE CLASSIFICATIONS 4 THROUGH 14

SITE DESIGNATION: LANE NO's <display user's entry as to selected lane(s)>
DATE:

VEHICLE COUNTS

GROSS WT KIPS	4	5	6	7	8	9	10	11	12	13	14	TOTALS
0 - 5												
5 - 10												
10 - 15												
15 - 20												
20 - 25												
25 - 30												
30 - 35												
35 - 40												
40 - 45												
45 - 50												
50 - 55												
55 - 60												
60 - 65												
65 - 70												
70 - 75												
75 - 80												
80 - 85												
85 - 90												
90 - 95												
95-100												
100-105												
105-110												
110-115												
115-120												
>120												
TOTALS												

DISTRIBUTION OF 18 KIP ESALS BY HOUR OF DAY FOR VEHICLE CLASSIFICATIONS 4 THROUGH 14
FOR _____ <display user's entries as to pavement type and str. no. or slab thickness>

SITE DESIGNATION: LANE NO's <display user's entry as to selected lane(s)>
DATE: VEH STATUS <display user's entry as to "LEGAL ONLY", "OVWT ONLY" or "ALL" (default)

HOURLY SUMMARY

			ESALS BY HOUR BY CLASS											
HOUR	TOTAL VEH'S WEIGHED	TOTAL ESALS	4	5	6	7	8	9	10	11	12	13	14
00-01													
01-02													
02-03													
03-04													
04-05													
05-06													
QTR TOTALS													
06-07													
07-08													
08-09													
09-10													
10-11													
11-12													
QTR TOTALS													
12-13													
13-14													
14-15													
15-16													
16-17													
17-18													
QTR TOTALS													
18-19													
19-20													
20-21													
21-22													
22-23													
23-24													
QTR TOTALS													

DAILY SUMMARY

	TOTALS	4	5	6	7	8	9	10	11	12	13	14
VEH'S WEIGHED :												
18 KIP ESALS :												
AVERAGE ESAL :												

DISTRIBUTION OF TRUCKS BY DAY OF MONTH FOR CLASSIFICATIONS 4 THROUGH 15

SITE DESIGNATION: LANE NO's <display user's entry as to selected lane(s)>

DATE: 01/92

DAILY SUMMARY

DAY	TOTAL VEHS CNTD	TOTAL VEHS WGHD	TOTAL VEHS OVWT	PCT VEHS OVWT	COUNTED VEHICLES 4	5	6	7	8	9	10	11	12	13	14	15
1 WED																
2 THU																
3 FRI																
4 SAT																
5 SUN																
6 MON																
7 TUE																
8 WED																
9 THU																
10 FRI																
11 SAT																
12 SUN																
13 MON																
14 TUE																
15 WED																
16 THU																
17 FRI																
18 SAT																
19 SUN																
20 MON																
21 TUE																
22 WED																
23 THU																
24 FRI																
25 SAT																
26 SUN																
27 MON																
28 TUE																
29 WED																
30 THU																
31 FRI																

MONTHLY SUMMARY

	TOTAL VEHS CNTD	TOTAL VEHS WGHD	TOTAL VEHS OVWT	PCT VEHS OVWT	COUNTED VEHICLES 4	5	6	7	8	9	10	11	12	13	14	15
TOTALS																
PERCENT																

Table D.4. Axle load equivalency factors for flexible pavements, single axles and p 2.5

Axle Load (kips)	Pavement Structural Number (SN) 1	2	3	4	5	6
2	.0004	.0004	.0003	.0002	.0002	.0002
4	.003	.004	.004	.003	.002	.002
6	.011	.017	.017	.013	.010	.009
8	.032	.047	.051	.041	.034	.031
10	.078	.102	.118	.102	.088	.080
12	.168	.198	.229	.213	.189	.176
14	.328	.358	.399	.388	.360	.342
16	.591	.613	.646	.645	.623	.606
18	1.00	1.00	1.00	1.00	1.00	1.00
20	1.61	1.57	1.49	1.47	1.51	1.55
22	2.48	2.38	2.17	2.09	2.18	2.30
24	3.69	3.49	3.09	2.89	3.03	3.27
26	5.33	4.99	4.31	3.91	4.09	4.48
28	7.49	6.98	5.90	5.21	5.39	5.98
30	10.3	9.5	7.9	6.8	7.0	7.8
32	13.9	12.8	10.5	8.8	8.9	10.0
34	18.4	16.9	13.7	11.3	11.2	12.5
36	24.0	22.0	17.7	14.4	13.9	15.5
38	30.9	28.3	22.6	18.1	17.2	19.0
40	39.3	35.9	28.5	22.5	21.1	23.0
42	49.3	45.0	35.6	27.8	25.6	27.7
44	61.3	55.9	44.0	34.0	31.0	33.1
46	75.5	68.8	54.0	41.4	37.2	39.3
48	92.2	83.9	65.7	50.1	44.5	46.5
50	112.	102.	79.	60.	53.	55.

Table D.5. Axle load equivalency factors for flexible pavements, tandem axles and p 2.5

Axle Load (kips)	Pavement Structural Number (SN)					
	1	2	3	4	5	6
2	.0001	.0001	.0001	.0000	.0000	.0000
4	.0005	.0005	.0004	.0003	.0003	.0002
6	.002	.002	.002	.001	.001	.001
8	.004	.006	.005	.004	.003	.003
10	.008	.013	.011	.009	.007	.006
12	.015	.024	.023	.018	.014	.013
14	.026	.041	.042	.033	.027	.024
16	.044	.065	.070	.057	.047	.043
18	.070	.097	.109	.092	.077	.070
20	.107	.141	.162	.141	.121	.110
22	.160	.198	.229	.207	.180	.166
24	.231	.273	.315	.292	.260	.242
26	.327	.370	.420	.401	.364	.342
28	.451	.493	.548	.534	.495	.470
30	.611	.648	.703	.695	.658	.633
32	.813	.843	.889	.887	.857	.834
34	1.06	1.08	1.11	1.11	1.09	1.08
36	1.38	1.38	1.38	1.38	1.38	1.38
38	1.75	1.73	1.69	1.68	1.70	1.73
40	2.21	2.16	2.06	2.03	2.08	2.14
42	2.76	2.67	2.49	2.43	2.51	2.61
44	3.41	3.27	2.99	2.88	3.00	3.16
46	4.18	3.98	3.58	3.40	3.55	3.79
48	5.08	4.80	4.25	3.98	4.17	4.49
50	6.12	5.76	5.03	4.64	4.86	5.28
52	7.33	6.87	5.93	5.38	5.63	6.17
54	8.72	8.14	6.95	6.22	6.47	7.15
56	10.3	9.6	8.1	7.2	7.4	8.2
58	12.1	11.3	9.4	8.2	8.4	9.4
60	14.2	13.1	10.9	9.4	9.6	10.7
62	16.5	15.3	12.6	10.7	10.8	12.1
64	19.1	17.6	14.5	12.2	12.2	13.7
66	22.1	20.3	16.6	13.8	13.7	15.4
68	25.3	23.3	18.9	15.6	15.4	17.2
70	29.0	26.6	21.5	17.6	17.2	19.2
72	33.0	30.3	24.4	19.8	19.2	21.3
74	37.5	34.4	27.6	22.2	21.3	23.6
76	42.5	38.9	31.1	24.8	23.7	26.1
78	48.0	43.9	35.0	27.8	26.2	28.8
80	54.0	49.4	39.2	30.9	29.0	31.7
82	60.6	55.4	43.9	34.4	32.0	34.8
84	67.8	61.9	49.0	38.2	35.3	38.1
86	75.7	69.1	54.5	42.3	38.8	41.7
88	84.3	76.9	60.6	46.8	42.6	45.6
90	93.7	85.4	67.1	51.7	46.8	49.7

Table D.6. Axle load equivalency factors for flexible pavements, triple axles and p 2.5

Axle Load (kips)	Pavement Structural Number (SN)					
	1	2	3	4	5	6
2	.0000	.0000	.0000	.0000	.0000	.0000
4	.0002	.0002	.0002	.0001	.0001	.0001
6	.0006	.0007	.0005	.0004	.0003	.0003
8	.001	.002	.001	.001	.001	.001
10	.003	.004	.003	.002	.002	.002
12	.005	.007	.006	.004	.003	.003
14	.008	.012	.010	.008	.006	.006
16	.012	.019	.018	.013	.011	.010
18	.018	.029	.028	.021	.017	.016
20	.027	.042	.042	.032	.027	.024
22	.038	.058	.060	.048	.040	.036
24	.053	.078	.084	.068	.057	.051
26	.072	.103	.114	.095	.080	.072
28	.098	.133	.151	.128	.109	.099
30	.129	.169	.195	.170	.145	.133
32	.169	.213	.247	.220	.191	.175
34	.219	.266	.308	.281	.246	.228
36	.279	.329	.379	.352	.313	.292
38	.352	.403	.461	.436	.393	.368
40	.439	.491	.554	.533	.487	.459
42	.543	.594	.661	.644	.597	.567
44	.666	.714	.781	.769	.723	.692
46	.811	.854	.918	.911	.868	.838
48	.979	1.015	1.072	1.069	1.033	1.005
50	1.17	1.20	1.24	1.25	1.22	1.20
52	1.40	1.41	1.44	1.44	1.43	1.41
54	1.66	1.66	1.66	1.66	1.66	1.66
56	1.95	1.93	1.90	1.90	1.91	1.93
58	2.29	2.25	2.17	2.16	2.20	2.24
60	2.67	2.60	2.48	2.44	2.51	2.58
62	3.09	3.00	2.82	2.76	2.85	2.95
64	3.57	3.44	3.19	3.10	3.22	3.36
66	4.11	3.94	3.61	3.47	3.62	3.81
68	4.71	4.49	4.06	3.88	4.05	4.30
70	5.38	5.11	4.57	4.32	4.52	4.84
72	6.12	5.79	5.13	4.80	5.03	5.41
74	6.93	6.54	5.74	5.32	5.57	6.04
76	7.84	7.37	6.41	5.88	6.15	6.71
78	8.83	8.28	7.14	6.49	6.78	7.43
80	9.92	9.28	7.95	7.15	7.45	8.21
82	11.1	10.4	8.8	7.9	8.2	9.0
84	12.4	11.6	9.8	8.6	8.9	9.9
86	13.8	12.9	10.8	9.5	9.8	10.9
88	15.4	14.3	11.9	10.4	10.6	11.9
90	17.1	15.8	13.2	11.3	11.6	12.9

Table D.13. Axle load equivalency factors for rigid pavements, single axles and p of 2.5.

Axle (Load (kips)6	Slab Thickness, D (inches) 7	8	9	10	11	12	13	14	
2	.0002	.0002	.0002	.0002	.0002	.0002	.0002	.0002	.0002
4	.003	.002	.002	.002	.002	.002	.002	.002	.002
6	.012	.011	.010	.010	.010	.010	.010	.010	.010
8	.039	.035	.033	.032	.032	.032	.032	.032	.032
10	.097	.089	.084	.082	.081	.080	.080	.080	.080
12	.203	.189	.181	.176	.175	.174	.174	.173	.173
14	.376	.360	.347	.341	.338	.337	.336	.336	.336
16	.634	.623	.610	.604	.601	.599	.599	.599	.599
18	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
20	1.51	1.52	1.55	1.57	1.58	1.58	1.59	1.59	1.59
22	2.21	2.20	2.28	2.34	2.38	2.40	2.41	2.41	2.41
24	3.16	3.10	3.22	3.36	3.45	3.50	3.53	3.54	3.55
26	4.41	4.26	4.42	4.67	4.85	4.95	5.01	5.04	5.05
28	6.05	5.76	5.92	6.29	6.61	6.81	6.92	6.98	7.01
30	8.16	7.67	7.79	8.28	8.79	9.14	9.35	9.46	9.52
32	10.8	10.1	10.1	10.7	11.4	12.0	12.3	12.6	12.7
34	14.1	13.0	12.9	13.6	14.6	15.4	16.0	16.4	16.5
36	18.2	16.7	16.4	17.1	18.3	19.5	20.4	21.0	21.3
38	23.1	21.1	20.6	21.3	22.7	24.3	25.6	26.4	27.0
40	29.1	26.5	25.7	26.3	27.9	29.9	31.6	32.9	33.7
42	36.2	32.9	31.7	32.2	34.0	36.3	38.7	40.4	41.6
44	44.6	40.4	38.8	39.2	41.0	43.8	46.7	49.1	50.8
46	54.5	49.3	47.1	47.3	49.2	52.3	55.9	59.0	61.4
48	66.1	59.7	56.9	56.8	58.7	62.1	66.3	70.3	73.4
50	79.4	71.7	68.2	67.8	69.6	73.3	78.1	83.0	87.1

Table D.14. Axle load equivalency factors for rigid pavements, tandem axles and p of 2.5.

Axle Load (kips)6	Slab Thickness, D (inches)								
	7	8	9	10	11	12	13	14	
2	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
4	.0006	.0006	.0005	.0005	.0005	.0005	.0005	.0005	.0005
6	.002	.002	.002	.002	.002	.002	.002	.002	.002
8	.007	.006	.006	.005	.005	.005	.005	.005	.005
10	.015	.014	.013	.013	.012	.012	.012	.012	.012
12	.031	.028	.026	.026	.025	.025	.025	.025	.025
14	.057	.052	.049	.048	.047	.047	.047	.047	.047
16	.097	.089	.084	.082	.081	.081	.080	.080	.080
18	.155	.143	.136	.133	.132	.131	.131	.131	.131
20	.234	.220	.211	.206	.204	.203	.203	.203	.203
22	.340	.325	.313	.308	.305	.304	.303	.303	.303
24	.475	.462	.450	.444	.441	.440	.439	.439	.439
26	.644	.637	.627	.622	.620	.619	.618	.618	.618
28	.855	.854	.852	.850	.850	.850	.849	.849	.849
30	1.11	1.12	1.13	1.14	1.14	1.14	1.14	1.14	1.14
32	1.43	1.44	1.47	1.49	1.50	1.51	1.51	1.51	1.51
34	1.82	1.82	1.87	1.92	1.95	1.96	1.97	1.97	1.97
36	2.29	2.27	2.35	2.43	2.48	2.51	2.52	2.52	2.53
38	2.85	2.80	2.91	3.03	3.12	3.16	3.18	3.20	3.20
40	3.52	3.42	3.55	3.74	3.87	3.94	3.98	4.00	4.01
42	4.32	4.16	4.30	4.55	4.74	4.86	4.91	4.95	4.96
44	5.26	5.01	5.16	5.48	5.75	5.92	6.01	6.06	6.09
46	6.36	6.01	6.14	6.53	6.90	7.14	7.28	7.36	7.40
48	7.64	7.16	7.27	7.73	8.21	8.55	8.75	8.86	8.92
50	9.11	8.50	8.55	9.07	9.68	10.14	10.42	10.58	10.66
52	10.8	10.0	10.0	10.6	11.3	11.9	12.3	12.5	12.7
54	12.8	11.8	11.7	12.3	13.2	13.9	14.5	14.8	14.9
56	15.0	13.8	13.6	14.2	15.2	16.2	16.8	17.3	17.5
58	17.5	16.0	15.7	16.3	17.5	18.6	19.5	20.1	20.4
60	20.3	18.5	18.1	18.7	20.0	21.4	22.5	23.2	23.6
62	23.5	21.4	20.8	21.4	22.8	24.4	25.7	26.7	27.3
64	27.0	24.6	23.8	24.4	25.8	27.7	29.3	30.5	31.3
66	31.0	28.1	27.1	27.6	29.2	31.3	33.2	34.7	35.7
68	35.4	32.1	30.9	31.3	32.9	35.2	37.5	39.3	40.5
70	40.3	36.5	35.0	35.3	37.0	39.5	42.1	44.3	45.9
72	45.7	41.4	39.6	39.8	41.5	44.2	47.2	49.8	51.7
74	51.7	46.7	44.6	44.7	46.4	49.3	52.7	55.7	58.0
76	58.3	52.6	50.2	50.1	51.8	54.9	58.6	62.1	64.8
78	65.5	59.1	56.3	56.1	57.7	60.9	65.0	69.0	72.3
80	73.4	66.2	62.9	62.5	64.2	67.5	71.9	76.4	80.2
82	82.0	73.9	70.2	69.6	71.2	74.7	79.4	84.4	88.8
84	91.4	82.4	78.1	77.3	78.9	82.4	87.4	93.0	98.1
86	102.	92.	87.	86.	87.	91.	96.	102.	108.
88	113.	102.	96.	95.	96.	100.	105.	112.	119.
90	125.	112.	106.	105.	106.	110.	115.	123.	130.

Table D.15. Axle load equivalency factors for rigid pavements, triple axles and p of 2.5

Axle Load (kips)	Slab Thickness D (inches)								
	6	7	8	9	10	11	12	13	14
2	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
4	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003
6	.001	.001	.001	.001	.001	.001	.001	.001	.001
8	.003	.002	.002	.002	.002	.002	.002	.002	.002
10	.006	.005	.005	.005	.005	.005	.005	.005	.005
12	.011	.010	.010	.009	.009	.009	.009	.009	.009
14	.020	.018	.017	.017	.016	.016	.016	.016	.016
16	.033	.030	.029	.028	.027	.027	.027	.027	.027
18	.053	.048	.045	.044	.044	.043	.043	.043	.043
20	.080	.073	.069	.067	.066	.066	.066	.066	.066
22	.116	.107	.101	.099	.098	.097	.097	.097	.097
24	.163	.151	.144	.141	.139	.139	.138	.138	.138
26	.222	.209	.200	.195	.194	.193	.192	.192	.192
28	.295	.281	.271	.265	.263	.262	.262	.262	.262
30	.384	.371	.359	.354	.351	.350	.349	.349	.349
32	.490	.480	.468	.463	.460	.459	.458	.458	.458
34	.616	.609	.601	.596	.594	.593	.592	.592	.592
36	.765	.762	.759	.757	.756	.755	.755	.755	.755
38	.939	.941	.946	.948	.950	.951	.951	.951	.951
40	1.14	1.15	1.16	1.17	1.18	1.18	1.18	1.18	1.18
42	1.38	1.38	1.41	1.44	1.45	1.46	1.46	1.46	1.46
44	1.65	1.65	1.70	1.74	1.77	1.78	1.78	1.78	1.79
46	1.97	1.96	2.03	2.09	2.13	2.15	2.16	2.16	2.16
48	2.34	2.31	2.40	2.49	2.55	2.58	2.59	2.60	2.60
50	2.76	2.71	2.81	2.94	3.02	3.07	3.09	3.10	3.11
52	3.24	3.15	3.27	3.44	3.56	3.62	3.66	3.68	3.68
54	3.79	3.66	3.79	4.00	4.16	4.26	4.30	4.33	4.34
56	4.41	4.23	4.37	4.63	4.84	4.97	5.03	5.07	5.09
58	5.12	4.87	5.00	5.32	5.59	5.76	5.85	5.90	5.93
60	5.91	5.59	5.71	6.08	6.42	6.64	6.77	6.84	6.87
62	6.80	6.39	6.50	6.91	7.33	7.62	7.79	7.88	7.93
64	7.79	7.29	7.37	7.82	8.33	8.70	8.92	9.04	9.11
66	8.90	8.28	8.33	8.83	9.42	9.88	10.17	10.33	10.42
68	10.1	9.4	9.4	9.9	10.6	11.2	11.5	11.7	11.9
70	11.5	10.6	10.6	11.1	11.9	12.6	13.0	13.3	13.5
72	13.0	12.0	11.8	12.4	13.3	14.1	14.7	15.0	15.2
74	14.6	13.5	13.2	13.8	14.8	15.8	16.5	16.9	17.1
76	16.5	15.1	14.8	15.4	16.5	17.6	18.4	18.9	19.2
78	18.5	16.9	16.5	17.1	18.2	19.5	20.5	21.1	21.5
80	20.6	18.8	18.3	18.9	20.2	21.6	22.7	23.5	24.0
82	23.0	21.0	20.3	20.9	22.2	23.8	25.2	26.1	26.7
84	25.6	23.3	22.5	23.1	24.5	26.2	27.8	28.9	29.6
86	28.4	25.8	24.9	25.4	26.9	28.8	30.5	31.9	32.8
88	31.5	28.6	27.5	27.9	29.4	31.5	33.5	35.1	36.1
90	34.8	31.5	30.3	30.7	32.2	34.4	36.7	38.5	39.8

DIST.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
7	CALIF.	1080-2(11)43	1	239

SUB	COUNTY	ROUTE	SECTION	POST
X	Sol		I	134

New X-Sol-80,21

SOL-80,21-11.9/16.2

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

PLANS FOR CONSTRUCTION ON
STATE HIGHWAY

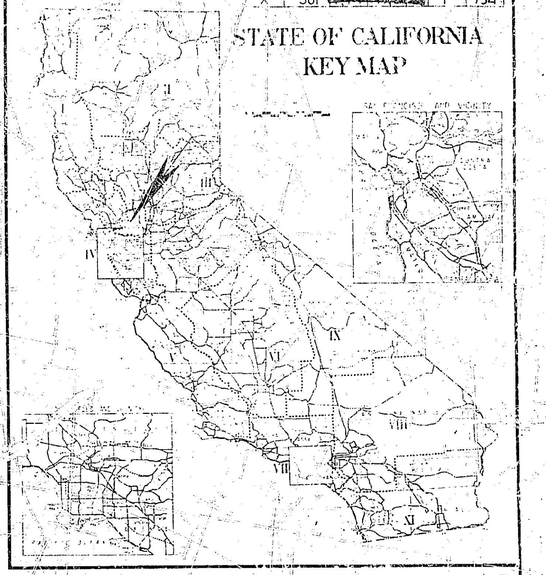
In Solano County, between Route 8 near Cordelia and 0.3 mile east of Chadbourne Road with connection to Route 74 at Cordelia

being the detail plans of a portion of the route for the State highway adopted by the California Highway Commission December 10, 1947, May 22, 1957 and declared a

FREEWAY

by resolution of the California Highway Commission December 10, 1947 and May 22, 1957

STATE OF CALIFORNIA
KEY MAP

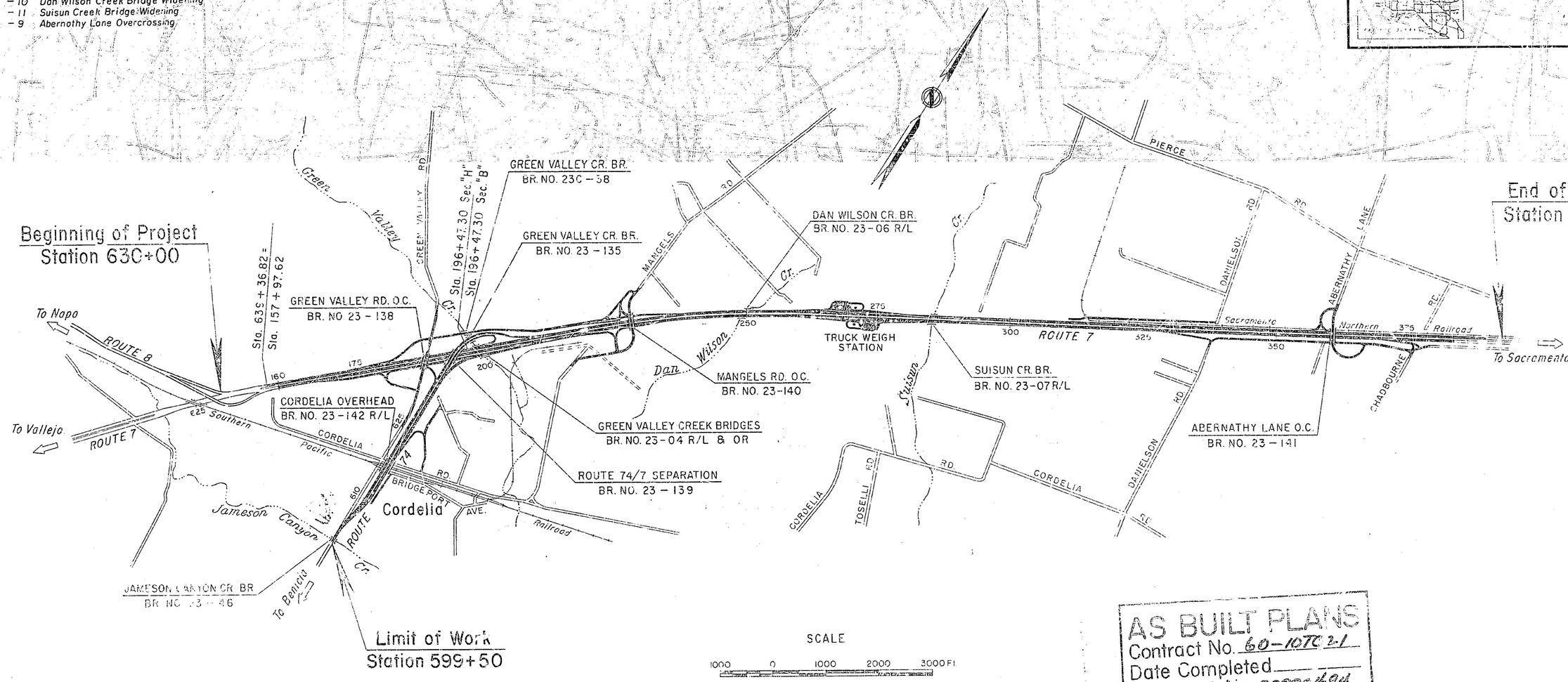


INDEX OF SHEETS

Sheet No.	1		Title Sheet
"	2	– 4	Typical Sections
"	5		Paving Details
"	6	– 29	Plan And Profile
"	30	– 36	Profile & Roadway Exc & Emb Quantities
"	37	– 38	Truck Weigh Station Layout
"	39	– 41	Channel Change & Drainage Details
"	42	– 46	Culvert & Drainage Structure List
"	47		Construction Notes & Quantities
"	48	– 59	Standard Structures
"	60	– 68	Scale House Plans
"	69	– 71	Scale Pit, Sewage Disposal & Electrical Details
"	72	– 74	Scale House Changeable Message Sign Plans
"	75	– 94	Highway Lighting & Illuminated Sign System
"	95	–100	Bridge Lighting & Electrical Details
"	101	– 122	Overhead & Structure Mounted Signs
"	123	– 134	Roadside Signs
134-A-B&C			
"	1	– 129	Cross Sections

Bridge Plans

Sheet No.	1	– 6	Jameson Canyon Creek Bridge Widening
"	1	– 10	Cordelia Overhead
"	1	– 10	Green Valley Road Overcrossing
"	1	– 16	Route 74/7 Separation
"	1	– 5	Green Valley Creek Bridge No. 23C–38
"	1	– 6	Green Valley Creek Bridge No. 23–135
"	1	– 12	Green Valley Creek Bridges
"	1	– 10	Mangels Road Overcrossing
"	1	– 10	Dan Wilson Creek Bridge Widening
"	1	– 11	Suisun Creek Bridge Widening
"	1	– 9	Abernathy Lane Overcrossing



SCALE
1000 0 1000 2000 3000 Ft

Length of Project 23,173.91 Feet = 4.389 Miles

AS BUILT PLANS
Contract No. 60-107221
Date Completed
Document No. 20004494

60-107221

K. J. Meyer
District Engineer
Engineer of Design
Approved January 13, 1960
State Highway Engineer
Civil Engineer License 5945
Director of Public Works

J-080-2 (11) 43 18 239

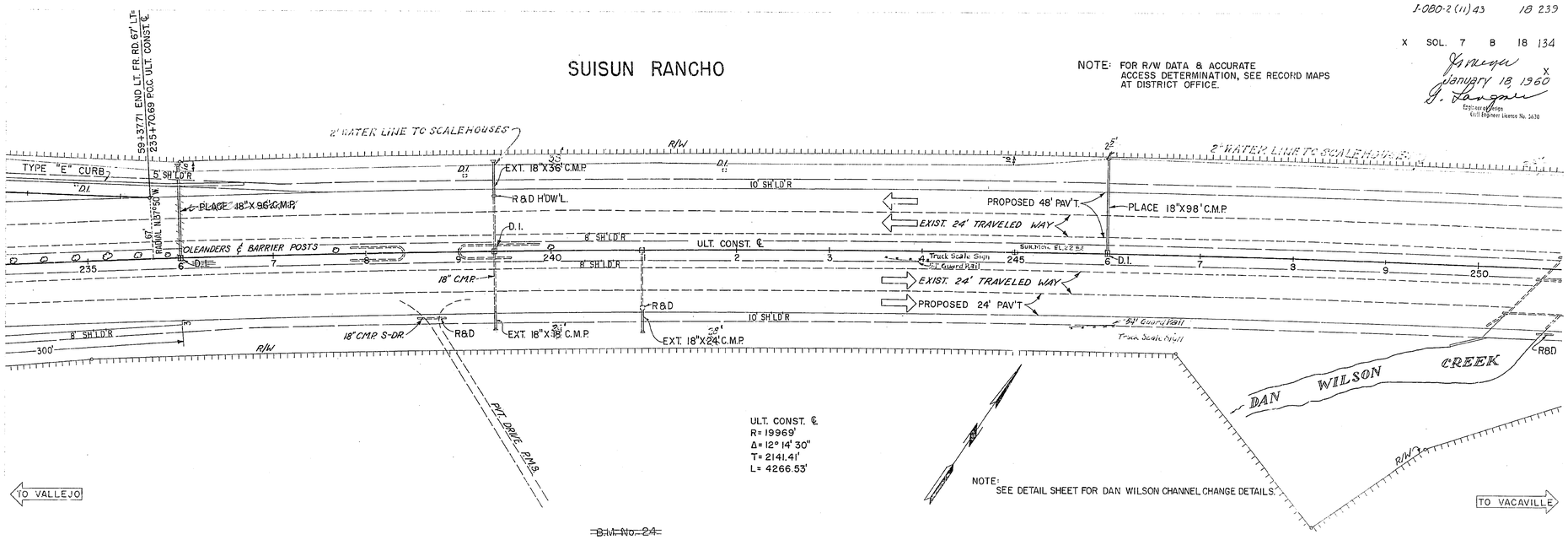
X SOL. 7 B 18 134

January 18, 1960

Engineer of Work
Civil Engineer License No. 5630

SUISUN RANCHO

NOTE: FOR R/W DATA & ACCURATE ACCESS DETERMINATION, SEE RECORD MAPS AT DISTRICT OFFICE.



ULT. CONST. ℄
R = 19969'
Δ = 12° 14' 30"
T = 2141.41'
L = 4266.53'

NOTE: SEE DETAIL SHEET FOR DAN WILSON CHANNEL CHANGE DETAILS.

~~B.M. No. 24~~
~~S.E. COR. C.I. IN MEDIAN~~
~~STA. 241+00=~~
~~EL. 21.15'~~

AS BUILT PLANS
Contract No. 60-10TC21
Date Completed
Document No. D0020149H

235 6 7 8 9 240 1 2 3 4 245 6 7 8 9 250

I-080-2(11)43 19 239

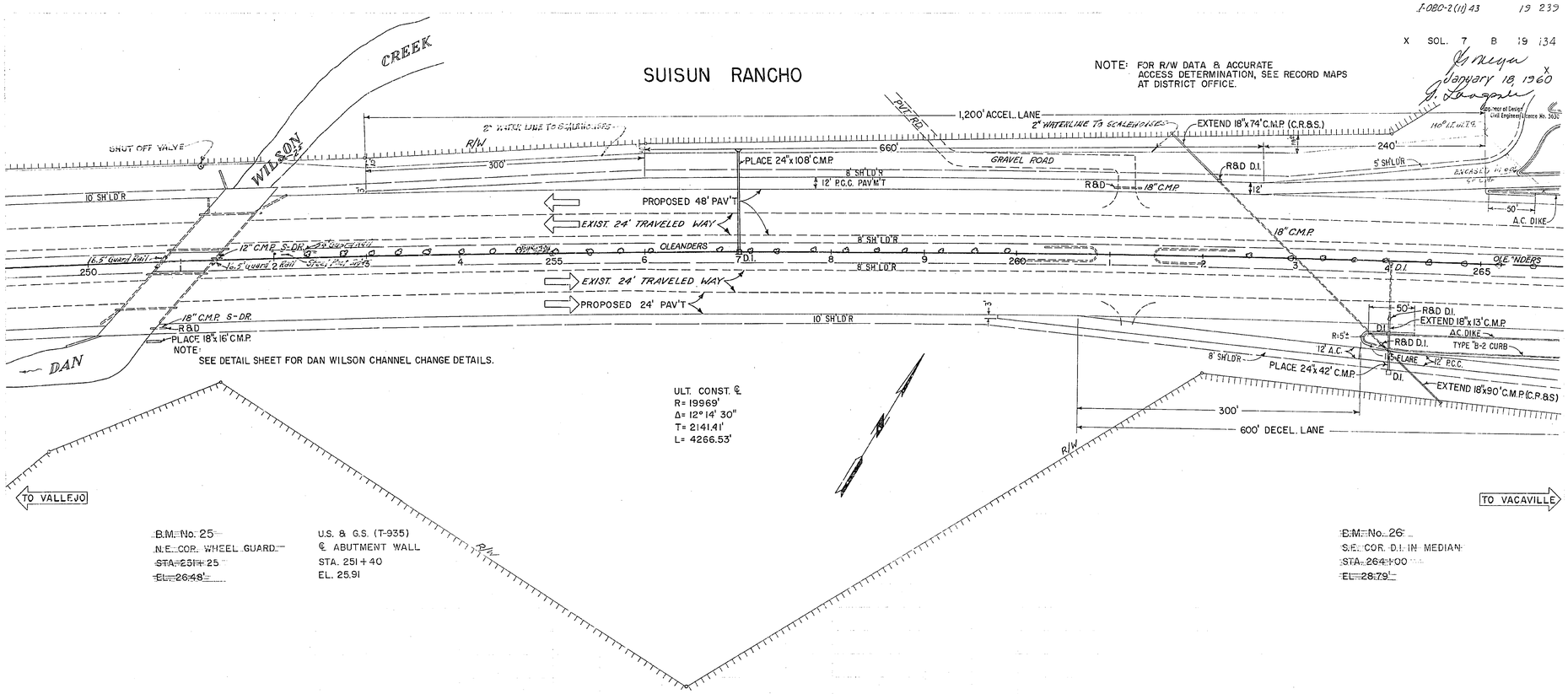
X SOL. 7 B 19 134

January 18, 1960

Engineer of Design
Civil Engineering Licence No. 3630

SUISUN RANCHO

NOTE: FOR R/W DATA & ACCURATE ACCESS DETERMINATION, SEE RECORD MAPS AT DISTRICT OFFICE.



B.M. No. 25
N.E. COR. WHEEL GUARD
STA. 251+25
EL. 26.48'

U.S. & G.S. (T-935)
℄ ABUTMENT WALL
STA. 251+40
EL. 25.91

B.M. No. 26
S.E. COR. D.I. IN MEDIAN
STA. 264+00
EL. 28.79'

AS BUILT PLANS
Contract No. 60-107021
Date Completed _____
Document No. D0020496

I-080-2(11)43 20 239

X SOL 7 B 20 134

January 18, 1960

SUISUN RANCHO

TRUCK WEIGH STATION

PLACE 18"X86' C.M.P.

PLACE 18"X74' C.M.P.

SEE CONSTRUCTION DETAIL SHEET

WEIGHING STATION NO. 1 FIN. FL. ELEV. 33.73

D.I. ELEV. 33.73

5' SH'LD'R.

8' SH'LD'R.

12' P.C.C. PAV'T.

A.C. DIKE

2" WATER LINE. SCALEHOUSE

SEE CONST DETAILS FOR UTILITIES

TYPE "B-2" CURB

PROPOSED 48' PAV'T.

EXIST. 24' TRAVELED WAY

PROPOSED 24' PAV'T.

OK IN PLACE (WATER LINE CONDUIT)

N.61° 01' 30" E.

537.48'

OLEANDERS

ULT. CONST. ℄

EXT. 18"X7'C.M.P.

CONC. BOX W/IRRIG. VALVE

PLACE 24"X 62'C.M.P

EXT. 18"X-52'-C.M.P.

EXT. 18"X 58'C.M.P (C.R.B.S.)

IRRIG. VALVE IN CONC. BOX

DIRT ROAD

R&D

18" C.M.P.

12' A.C. PAV'T.

3'-4' CONC. BOX W/IRRIG. VALVE

EXT. 18"X 74'C.M.P (C.R.B.S.)

N.62° 20' 30" E.

499.97'

TO VALLEJO

TO VACAVILLE

POWER TOWER

WEIGHING STATION NO. 2 FIN. FL. ELEV. 33.13

PLACE 18"X68'C.M.P

PLACE 18"X78' C.M.P.

PLACE 18"X74' C.M.P.

TRUCK WEIGH STATION

ULT. CONST. ℄
R = 19969'
Δ = 12° 14' 30"
T = 2141.41'
L = 4266.53'

266+58.04 E.C. ULT. CONST. ℄, BK. = CONST. ℄ AHD.
266+62.52 P.O.T. ULT. CONST. ℄ AHD.

272+00.00 B.C. ULT. CONST. ℄

277+00.97 E.C. ULT CONST. ℄

ULT. CONST. ℄
R = 21800
Δ = 1° 19' 00"
T = 250.49'
L = 500.97'

B.M. No. 27
S.E. COR. D.I. IN MEDIAN
STA. 276+50
EL. 33.28'

NOTE: FOR R/W DATA & ACCURATE ACCESS DETERMINATION, SEE RECORD MAPS AT DISTRICT OFFICE.

AS BUILT PLANS
Contract No. 60-107021
Date Completed
Document No. 00000494

33.27 B.V.C.
33.46
33.65 E.V.C.
36.45

CONFORM TO EXIST. RIGHT E.P.

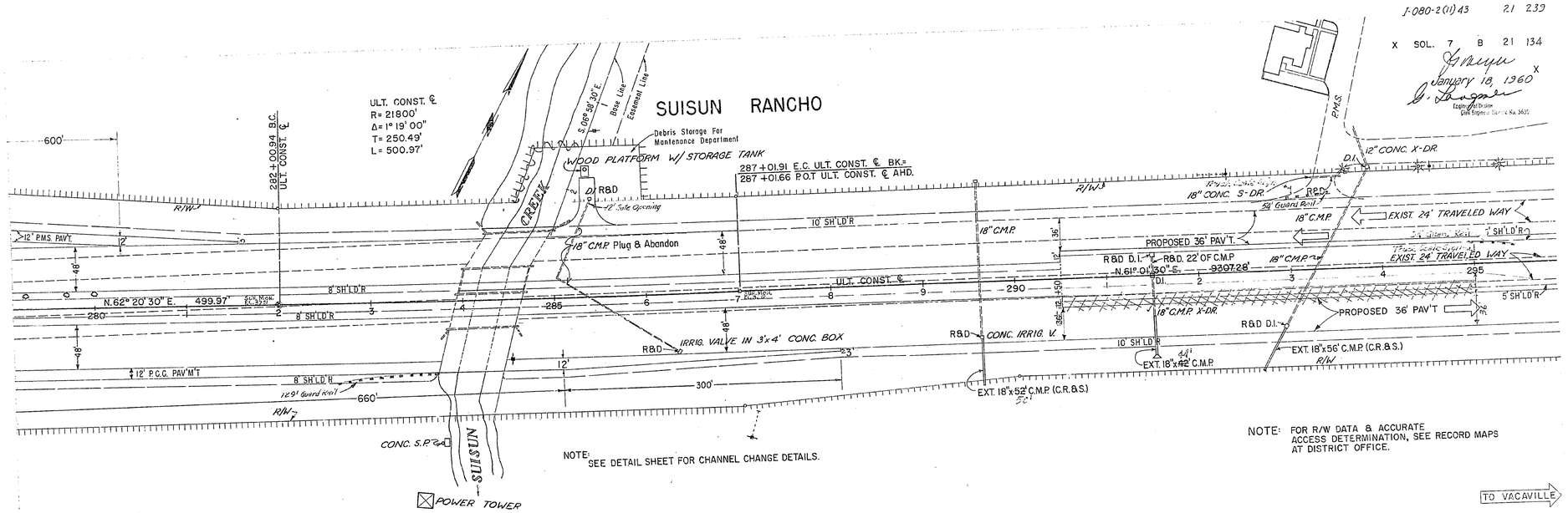
PROFILE GRADE OF EASTBOUND LANES 18' RIGHT OF ULT. ℄

+0.40%

100' V.C.

40
30
20

270 1 2 3 4 5 6 7 8 9 280



I-080-2(11)43 21 239

X SOL. 7 B 21 134

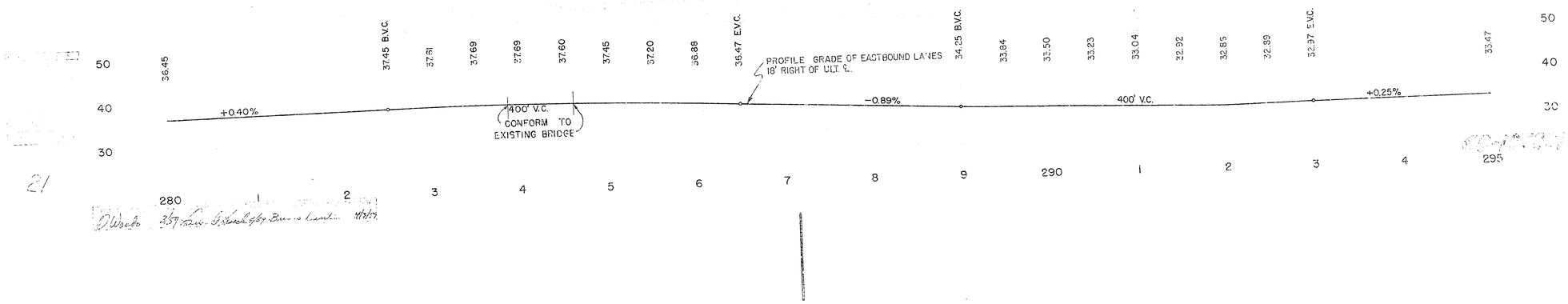
January 18, 1960

Engineer of Work
Civil Engineer License No. 3635

U.S.C. & G.S. (H-129)
BRASS DISC S.W. WING WALL
STA. 283+83 75' R.T.
EL. ~~37.55'~~ 37.05'

B.M. No. 29
S.E. COR. D.I. IN MEDIAN
STA. 291+50
EL. ~~31.54'~~

AS BUILT PLANS
Contract No. 60-107221
Date Completed
Document No. 00000494



21

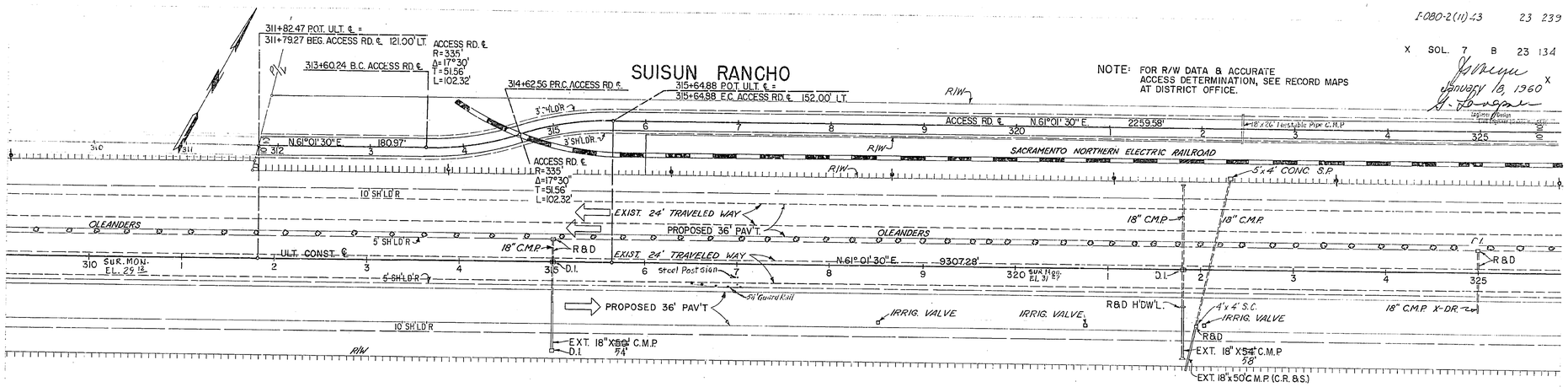
I-080-2(11)43 23 239

X SOL. 7 B 23 134

January 18, 1960 X

SUISUN RANCHO

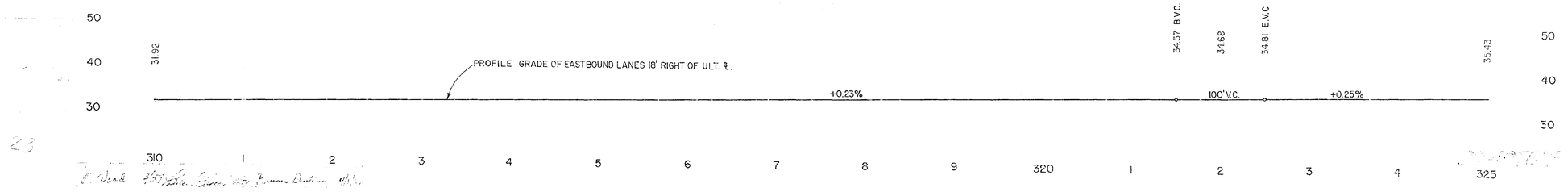
NOTE: FOR R/W DATA & ACCURATE ACCESS DETERMINATION, SEE RECORD MAPS AT DISTRICT OFFICE.



B.M. No. 31
S.E. COR. D.I. IN MEDIAN
STA. 315+00
EL. 29.58'

B.M. No. 32
S.E. COR. D.I. IN MEDIAN
STA. 325+00
EL. 32.34'

AS BUILT PLANS
Contract No. 60-107021
Date Completed
Document No. 00000494

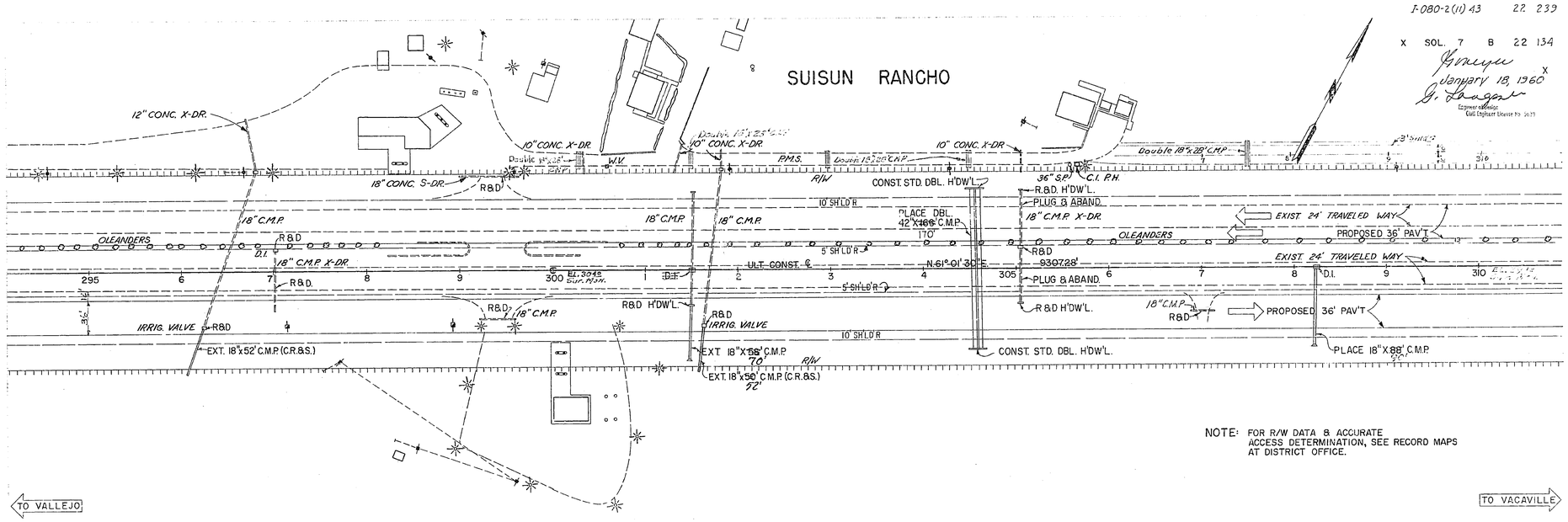


I-080-2(11) 43 22 239

X SOL. 7 B 22 134 X

January 18, 1960

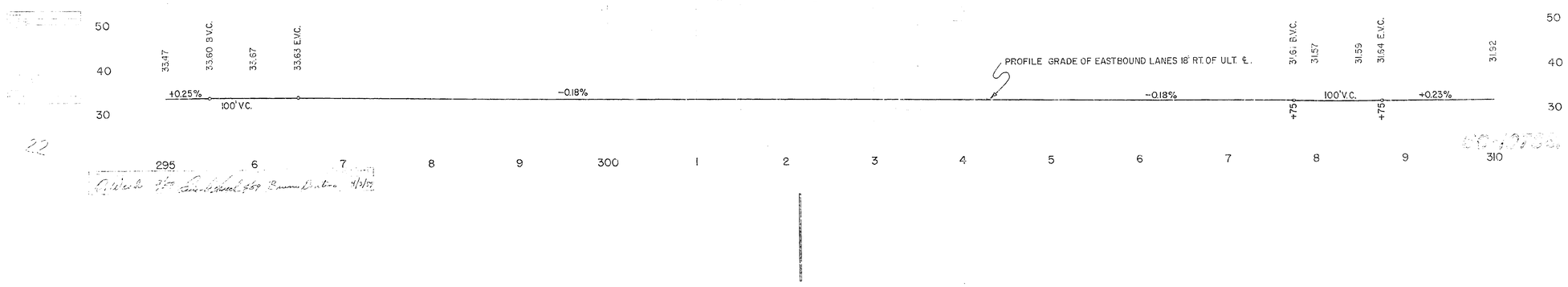
Engineer in charge
Civil Engineer License No. 26179



NOTE: FOR R/W DATA & ACCURATE ACCESS DETERMINATION, SEE RECORD MAPS AT DISTRICT OFFICE.

B.M. No. 30
S.E. COR. D.I. IN MEDIAN
STA. 305+05
EL. 28.37

AS BUILT PLANS
Contract No. 60-107021
Date Completed
Document No. 00000494



22

Check for Conformance to Record Data 4/5/07

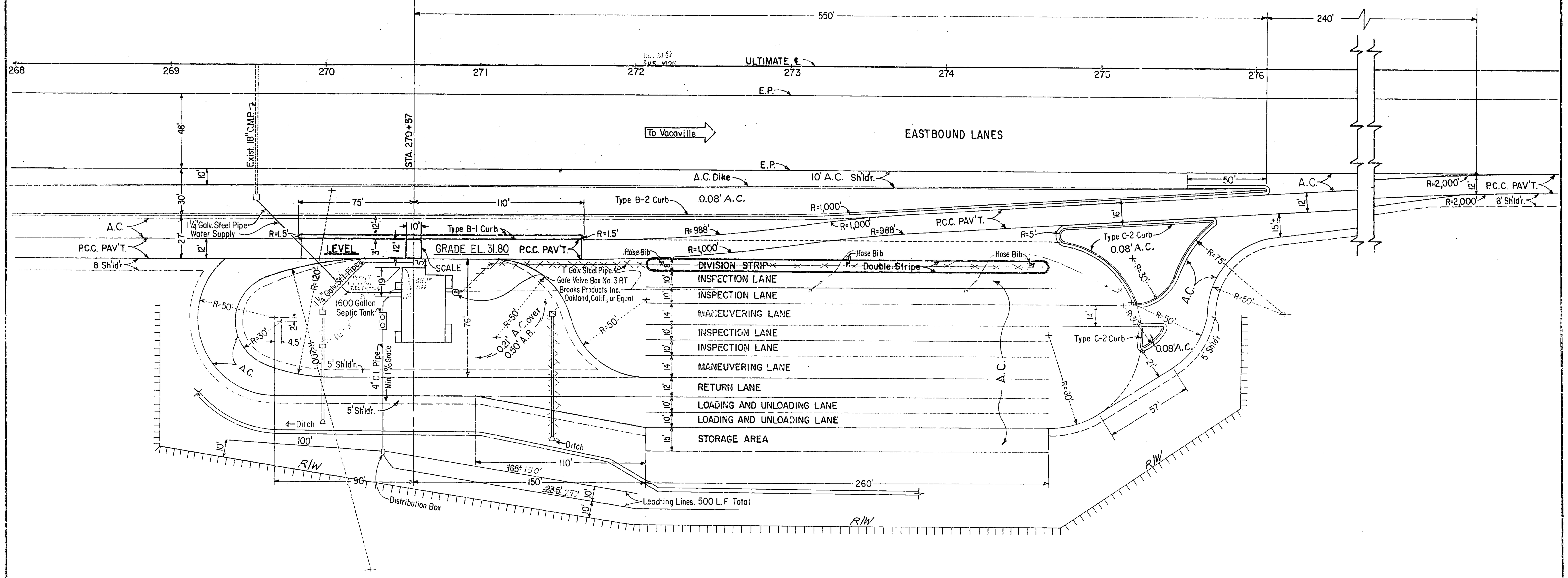
B.P.R. DIV. No.	STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
	CALIF.	I-080-2(11) 43		33	239

DIST.	COUNTY	ROUTE	SECTION	SHEET No.	TOTAL SHEETS
X	SOL	7	B	38	134

DISTRICT ENGINEER DISTRICT X

APPROVED January 18, 1960

Engineer of Design
Civil Engineer License No. 5630



NOTE:
(1) ALL CURB NOSE RADII ARE 1' UNLESS OTHERWISE SHOWN.
(2) SEE LAYOUT FOR ACCEL. AND DECEL. LANES.
(3) P.C.C. PAV'T TO BE 0.75' P.C.C. OVER 0.33' C.T.B. *Class "A"* OVER 0.17' A.B. OVER 0.75' A.S.B.
(4) A.C. AREA TO BE 0.33' A.C. OVER 0.83' C.T.B. (CLASS "B") OVER 1.00' A.S.B. EXCEPT AS NOTED.

AS BUILT PLANS
Contract No. 60-10TC21
Date Completed
Document No. 00000494

EASTBOUND
TRUCK WEIGH STATION
SCALE: 1" = 30'

38

STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
CALIF.	I-080-2(11)43		44	239

STATION	DESCRIPTION OF WORK	C.M.P. 12" Down Drain 16 Ga. L.F.	C.M.P. 18" Down Drain 16 Ga. L.F.	C.M.P. 18" 16 Ga. L.F.	C.M.P. 18" Close Riveted and Soldered 16 Ga. L.F.	C.M.P. 24" 14 Ga. L.F.	C.M.P. 42" 12 Ga. L.F.	C.M.P. Arch 50"x31" 12 Ga. L.F.	C.M.P. Arch 65"x40" 10 Ga. L.F.	Metal Flared End Sections 12" 16 Ga. EA.	Metal Flared End Sections 18" 16 Ga. EA.	Metal Flared End Sections 24" 14 Ga. EA.	Metal Flared End Sections 50"x31" 12 Ga. EA.	Metal Flared End Sections 65"x40" 12 Ga. EA.	Structure Excavation C.Y.	Structure Backfill C.Y.	Ditch Excavation C.Y.	Class "A" Concrete Structures C.Y.	Bar Reinforcing Steel LBS.	Miscellaneous Iron and Steel LBS.	Class "A" Concrete (Minor Structures) ** C.Y.	Tapered Inlets EA.	C.M. Flume Downdrain L.F.	Downdrain Anchors EA.	Flapgate for 18" C.M.P. EA.	End Rods EA.	Culvert Markers EA.
	SOL-7-B																										
29+15 Lt. Fr. Rd. ℄	Const. 8'x4'-A-VIII x 42' R.C.B. Const. Type "D" H'dw'l 20' Lt. & 22' Rt. Ditch Inlet & Outlet.														71	22	18	32.24	4998								2
205+23	R&D Exist. H'dw'ls. Extend 8'x4'-A-VIII R.C.B. 33' Lt. & 22' Rt. Const. Type "D" H'dw'ls 96' Lt. &																										
	137' Rt. Ditch Inlet & Outlet. Const. Drop Inlet into R.C.B. 79' Rt. with Plate Cover & Two																										
	Sides Open. Place 4 Ladder Rungs.														53	41	30	41.60	6530	130							2
	R&D Drop Inlet 52' Rt.																										
207+65	R&D 30" C.M.P. Side Drain 112' Lt.																										
208+60	R&D 30" C.M.P. Side Drain 180' Lt.																										
214+00	Extend 18" C.M.P. X-Dr. 24' Rt. with Flared End Section. Ditch Outlet.			24							1				7	5	1										1
219+90	R&D 18" Conc. Pipe 45' Lt. R&D Drop Inlet 45' Lt.																										
222+16	R&D Exist. H'dw'l 74' Rt. Extend 5'x3'-A-VIII R.C.B. 58' Rt. (Skew 52°36' Rt.) Provide																										
	Inlet for 18" C.M.P. Curb Drain Sta. 3+06 Ramp "F". Const. Type "D" H'dw'l 117' Rt.																										
	Ditch Outlet.														76	22	10	24.12	2674								1
223+76	R&D Exist. H'dw'l 60' Lt. Extend 5'x3'-A-VIII R.C.B. 42' Lt. Const. Type "D" H'dw'l 84' Lt. Ditch Inlet.														30	17	1	18.20	1986								1
47+75 Lt. Fr. Rd. ℄	Place 50"x31"x120' C.M.P.A. Ditch Inlet & Outlet.							120							83	45	6										1
	Const. Special H'dw'l for 50"x31" C.M.P.A. 28' Rt. See Detail Sheet.														*	*			*		2.11						
	Const. Special H'dw'l for 50"x31" C.M.P.A. 90' Lt. (Skewed 29° Lt.) See Detail Sheet.														*	*			*		2.11						
49+45 Lt. Fr. Rd. ℄	Const. "B-2" Curb Drain 20' Lt. with Type 18-9 Frame & Grate. V=3.21'														*	*			*	295	0.91						
	Place 18"x36' C.M.P. X-Dr. with Flared End Section 18' Rt.			36							1				10	7											1
51+00 Lt. Fr. Rd. ℄	Place 18"x50' C.M.P. X-Dr. with Flared End Sections Lt. & Rt. Ditch Inlet & Outlet.			50							2				13	10	20										2
52+20 Lt. Fr. Rd. ℄	Place 24"x48' C.M.P. X-Dr. with Flared End Sections Lt. & Rt. Ditch Inlet					48						2			18	13	2										2
54+00 Lt. Fr. Rd. ℄	Const. "E" Curb Drain 12' Lt. with Type 18-9 Frame & Grate. V=2.87'														*	*			*	295	0.80						
	Place 12"x12' C.M.P. Dn. Dr. 14' Lt.	12																									
0+85 Ramp "J" ℄	Const. "E" Curb Drain 15' Rt. with Type 18-9 Frame & Grate. V=2.87'														*	*			*	295	0.80						1
	Place 12"x12' C.M.P. Dn. Dr. 17' Rt.	12																									
3+06 Ramp "F" ℄	Const. "B-2" Curb Drain 17' Lt. with Type 18-9 Frame & Grate. V=3.00'														*	*			*	295	0.87						
	Place 18"x10' C.M.P. Connecting Drain to 5'x3' R.C.B. Extension.			10											3	2											
4+30 Mangels Rd. ℄	Place 65"x40"x40' C.M.P.A. with Flared End Sections Lt. & Rt. Ditch Inlet & Outlet.								40					2	42	21	6										2
6+00 Mangels Rd. ℄	Place 24"x40' C.M.P. Side Drain 26' Rt.					40									15	11										2	
12+50 Mangels Rd. ℄	Place 18"x62' C.M.P. X-Dr. with Flared End Sections Lt. & Rt. Ditch Inlet & Outlet.			62							2				17	13	2										2
13+50 Mangels Rd. ℄	Const. Paved Inlet Basin. Place Tapered Inlet with 14' C.M. Flume Dn. Dr. Lt.																					1	14	2			
15+50 Mangels Rd. ℄	Const. Paved Inlet Basin. Place Tapered Inlet with 28' C.M. Flume Dn. Dr. Rt.																					1	28	6			
21+00 Mangels Rd. ℄	Const. Paved Inlet Basin. Place Tapered Inlet with 20' C.M. Flume Dn. Dr. Lt.																					1	20	4			
22+00 Mangels Rd. ℄	Const. Paved Inlet Basin. Place Tapered Inlet with 12' C.M. Flume Dn. Dr. Rt.																					1	12	2			
24+75 Mangels Rd. ℄	Place 50"x31"x38' C.M.P.A. with Flared End Sections Lt. & Rt. Ditch Inlet & Outlet.							38					2		27	15	2										2
224+50	R&D Double 30" C.M.P. Side Drain 120' Lt.																										
224+85	Place 24"x140' C.M.P. Side Drain 88' Lt. Place Flared End Section at Inlet.					140						1			70	54										1	
230+00	R&D Exist. H'dw'l 61' Rt. Extend 18" C.M.P. X-Dr. 30' Rt. Place F.E.S. Rt. Ditch Outlet.			30							1				8	6	2										1
231+82	R&D 30" Conc. Pipe Side Drain 66' Lt.																										
236+00	Const. Drop Inlet on ℄ with Plate Cover & Two Sides Open. V=2.50'														*	*			*	106	0.61						
	Place 18"x96' C.M.P. X-Dr. Lt. Place Flared End Section 97' Lt. Ditch Outlet.			96							1				31	25	1										2
238+70	R&D 18" C.M.P. Side Drain 70' Rt.																										
239+40	Const. Drop Inlet on ℄ with Plate Cover & Two Sides Open. V=2.90'														*	*			*	106	0.64						1
	R&D Exist. H'dw'l 60' Lt. Extend 18" C.M.P. X-Dr. 36' Lt. & 18' Rt. Place Flared End																										
	Sections Lt. & Rt. Ditch Inlet & Outlet.			54							2				14	11	2										1
240+98	R&D Exist. D.I. 63' Rt. Extend 18" C.M.P. X-Dr. 24' Rt. Place F.E.S. Rt. Ditch Outlet.			24							1				7	5	1										1
246+00	Const. Drop Inlet 1' Rt. with Plate Cover & Two Sides Open. V=3.30'														*	*			*	106	0.78						1
	Place 18"x98' C.M.P. X-Dr. Lt. Place Flared End Section 98' Lt. Ditch Outlet.			98							1				37	31	1										1
250+60	Place 18"x16' C.M.P. Side Drain 83' Rt.			16											5	4										2	1
250+74	R&D 18" C.M.P. Side Drain 70' Rt.																										
257+00	Const. Drop Inlet on ℄ with Plate Cover & Two Sides Open. V=3.50'														*	*			*	106	0.80						1
	Place 24"x108' C.M.P. X-Dr. Lt. Place Flared End Section 109' Lt.					108						1			52	39											1

DIST	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	SOL	7	B	44	134

DISTRICT X

APPROVED January 18, 1960

Engineer of Design
Civil Engineer License No. 5630

NOTES:

1. All Drop Inlet heights are outside dimensions and all openings are 10".
2. All Stations are on the Ultimate ℄ unless otherwise noted.

LEGEND

* Payment included in Class "A" Concrete. (Minor Structures)

** Final Pay Quantity.

AS BUILT PLANS
Contract No. 60-10TC2..
Date Completed
Document No. 00000...

44

CULVERT AND STRUCTURE LIST

B.P.R. DIV. No.	STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
	CALIF.	I-080-2 (11) 43		45	239

STATION	DESCRIPTION OF WORK	C.M.P. 12" Down Drain 16 Ga.	C.M.P. 18" Down Drain 16 Ga.	C.M.P. 18" 16 Ga.	C.M.P. 18" Close Riveted and Soldered 16 Ga.	C.M.P. 24" 14 Ga.	C.M.P. 42" 12 Ga.	C.M.P. Arch 50"x31" 12 Ga.	C.M.P. Arch 65"x40" 10 Ga.	Metal Flared End Sections 12" 16 Ga.	Metal Flared End Sections 18" 16 Ga.	Metal Flared End Sections 24" 14 Ga.	Metal Flared End Sections 50"x31" 12 Ga.	Metal Flared End Sections 65"x40" 12 Ga.	Structure Excavation	Structure Backfill	Ditch Excavation	Class "A" Concrete Structures	Bar Reinforcing Steel	Miscellaneous Iron and Steel	Class "A" Concrete ** (Minor Structures)		Tapered Inlets	C.M. Flume Downdrain	Downdrain Anchors				Flapgate for 18" C.M.P.	End Rods	Culvert Markers
	SOL-7-B (CONT'D)	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	EA.	EA.	EA.	EA.	EA.	C.Y.	C.Y.	C.Y.	C.Y.	LBS.	LBS.	C.Y.		EA.	L.F.	EA.				EA.	EA.	EA.
261+05	R&D 18" C.M.P. Side Drain 72' Lt.																														
263+00	R&D Exist. Irrigation Drop Inlets 117' Lt. & 130' Rt. Extend 18" C.M.P. (C.R.&S.) 90' Rt.																														
	Extend 18" C.M.P. (C.R.&S.) 74' Lt.				164										97	92															
264+00	R&D Exist. D.I. 62' Rt. Extend 18" C.M.P. X-Dr. 13' Rt. Place 24"x42' C.M.P. X-Dr. from																														
	77' Rt. to 119' Rt.			13		42									20	15															1
	Const. D.I. 76' Rt. with Type 24-12 Frame & Grate. V= 4.67'. Place Ladder Rungs.														*	*			*	382	1.09										
	Const. D.I. 120' Rt. with Plate Cover & End Opening. V= 3.20'														*	*			*	101	0.74										
268+50	Extend 18" C.M.P. X-Dr. 7' Rt. Place 24"x62' C.M.P. X-Dr. from 77' Rt. to 139' Rt.			7		62									24	17															
	Const. D.I. 76' Rt. with Type 24-12 Frame & Grate. V= 5.53'. Place One Ladder Rung.														*	*			*	382	1.27										
	Const. D.I. 140' Rt. with Plate Cover & End Opening. V= 3.80'														*	*			*	101	0.87										
269+68	Const. D.I. 160' Lt. with Type 24-12 Frame & Grate. V= 2.67'														*	*			*	376	0.72										
	Place 18"x 86' C.M.P. X-Dr. from 161' Lt. to 247' Lt. Place Flared End Section. 247' Lt.			86							1				23	17															
269+99	Const. D.I. 160' Rt. with Type 24-12 Frame & Grate. V= 2.67'														*	*			*	376	0.72										
	Place 18"x68' C.M.P. X-Dr. from 161' Rt. to 229' Rt. Place Flared End Section 229' Rt.			68							1				18	14															
271+15	Const. D.I. 160' Lt. with Type 24-12 Frame & Grate. V= 2.67'														*	*			*	376	0.72										
	Place 18"x 74' C.M.P. X-Dr. from 161' Lt. to 235' Lt. Place Flared End Section 235' Lt.			74							1				20	15															
271+46	Const. D.I. 160' Rt. with Type 24-12 Frame & Grate. V= 2.49'														*	*			*	376	0.68										
	Place 18"x 78' C.M.P. X-Dr. from 161' Rt. to 239' Rt. Place Flared End Section 239' Rt.			78							1				21	16															
276+50	Extend 18" C.M.P. X-Dr. 52' Rt. Place Flared End Section. 115' Rt.			52							1				14	11															2
277+47	R&D Exist. Irrigation D.I.s 90' Lt. & 77' Rt. Extend 18" C.M.P. (C.R.&S.) 74' Rt. Extend																														
	18" C.M.P. (C.R.&S.) 58' Lt.				132										52	47															
278+24	R&D 18" C.M.P. Side Drain 80' Lt.																														
285+38	R&D Exist. Irrigation D.I. 115' Rt. & 106' Lt. Plug & Abandon. exist. 18" C.M.P.																														
289+61	R&D Exist. Irrigation D.I. 60' Rt. Extend 18" C.M.P. (C.R.&S.) 52' Rt.				52										18	16															
291+50	R&D Drop Inlet 22' Lt. R&D 22' of 18" C.M.P. (21' Lt. & 1' Rt.) Extend 18" C.M.P. X-Dr. 42' Rt.																														
	Place Flared End Section Rt. Ditch Outlet.			42							1				13	12	1														1
	Const. D.I. on ℄ with Plate Cover & Two Sides Open. V= 3.70'														*	*			*	106	0.87										
293+25	R&D 18" Conc. Pipe Side Drain 100' Lt.																														
293+27	R&D Exist. Irrigation D.I. 70' Rt. Extend 18" C.M.P. (C.R.&S.) 56' Rt.				56										19	17															
296+45	R&D Exist. Irrigation D.I. 64' Rt. Extend 18" C.M.P. (C.R.&S.) 52' Rt.				52										18	16															
297+00	R&D Drop Inlet 22' Lt. R&D 18" C.M.P. X-Dr.																														
299+00	R&D 18" Conc. Pipe Side Drain 102' Lt.																														
299+20	R&D 18" C.M.P. Side Drain 52' Rt.																														
301+50	R&D Exist. H'dw'l 37' Rt. Extend 18" C.M.P. X-Dr. 58' Rt. Place Flared End Section Rt.																														
	Ditch Outlet.			58							1				15	12	2														1
	Const. D.I. on ℄ with Plate Cover & Two Sides Open. V= 4.60'. Place One Ladder Rung.														*	*			*	112	1.02										
301+70	R&D Exist. D.I. 60' Rt. Extend 18" C.M.P. (C.R.&S.) 50' Rt.				50										19	18															
304+50	Place Double 42"x166' C.M.P. X-Dr. Ditch Inlet & Outlet.						332								206	143	10														2
	Const. Standard Double H'dw'l 79' Lt.														*	*			*		3.03										
	Const. Standard Double H'dw'l 85' Rt.														*	*			*		3.03										
305+05	R&D Exist. D.I. 22' Lt. R&D Exist. H'dw'ls 86' Lt. & 37' Rt. Plug & Abandon Exist.																														
	18" C.M.P. X-Dr.																														
306+90	R&D 18" C.M.P. Side Drain 45' Rt.																														
308+25	Place 18"x88' C.M.P. X-Dr. Place Flared End Section 89' Rt. Ditch Outlet.			88							1				23	18	1														2
	Const. D.I. on ℄ with Plate Cover & Two Sides Open. V= 3.50'														*	*			*	106	0.83										
315+00	R&D Exist. D.I. 22' Lt. R&D 22' of 18" C.M.P. (21' Lt. & 1' Rt.) X-Dr. Extend 18" C.M.P. X-Dr. 50' Rt.			50											15	13															2
	Const. D.I. on ℄ with Plate Cover & Two Sides Open. V= 4.70'. Place One Ladder Rung.														*	*			*	112	1.07										
	Const. D.I. 95' Rt. with Plate Cover & One Side Open. V= 4.20'. Place One Ladder Rung.														*	*			*	106	1.00										
321+80	R&D Exist. H'dw'l 37' Rt. Extend 18" C.M.P. X-Dr. 54' Rt. Place Flared End Section Rt.																														
	Ditch Outlet.			54							1				14	11	2														2
	Const. D.I. on ℄ with Plate Cover & Two Sides Open. V= 3.50'														*	*			*	106	0.78										

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	SOL	7	B	45	134

DISTRICT X
APPROVED January 18, 1960
G. Langner
Engineer of Design
Civil Engineer License No. 5630

NOTES:
1. All Drop Inlet heights are outside dimensions and all openings are 10".
2. All Stations are on the Ultimate ℄ unless otherwise noted.

LEGEND
* Payment included in Class "A" Concrete. (Minor Structures)
** Final Pay Quantity.

AS BUILT PLANS
Contract No. 60-10TC21
Date Completed
Document No. 00004494

45

CULVERT AND STRUCTURE LIST

B.P.R. DIV. No.	STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
	CALIF.	I-080-2(11)43		47	239

CLEARING AND GRUBBING

SOL-7-H
STA. 160+00 TO STA. 196+47.30

SOL-7-B
STA. 196+47.30 TO STA. 389+85

SOL-74-C
STA. 604+00 TO STA. 663+96.02

COMPACTING ORIGINAL GROUND

LOCATION	SQ. YDS.
SOL-7-H	NONE
SOL-7-B	
RT. FRONTAGE RD.	6,037
ACCESS RD.	5,305
SCALE HOUSES	408
SOL-74-C	
RT. FRONTAGE RD.	5,004

PAVED MEDIAN GUTTER

SOL-74-C
STA. 612+50 TO STA. 616±
STA. 619+50 TO STA. 634+00

SHATTERING CONCRETE PAVEMENT
(WESTBOUND LANES)

SOL-7-B	SQ. YDS.
STA. 200+00± TO STA. 217+00±	3,778
STA. 285+00± TO STA. 310+00±	5,556
STA. 338+00± TO STA. 353+00±	3,333

ELIM BY CCO #3

REMOVING CONCRETE PAVEMENT
(EASTBOUND LANES)

	SQ. YDS.
SOL-7-H	
STA. 158+00 TO STA. 164+00	800
STA. 168+00 TO STA. 170+00	267
SOL-7-B	
STA. 249+00 TO STA. 251+00	267
STA. 266+50	20
STA. 272+00 TO STA. 384+00	29,616

ASPHALT CONCRETE DIKES

STATION TO STATION		SIDE	L. FT.
SOL-7-H			
GR. VALLEY RD.	634+50 - 636+90	LT.	240
GR. VALLEY RD.	634+50 - 636+90	RT.	240
GR. VALLEY RD.	639+90 - 642+60	LT.	270
GR. VALLEY RD.	640+00 - 643+00	RT.	300
SOL-7-B			
ULT. ℄	198+10 - 200+70	LT.	260
ULT. ℄	201+75 - 207+50	LT.	575
ULT. ℄	264+30 - 275+55	RT.	1125
ULT. ℄	265+50 - 276+75	LT.	1125
ULT. ℄	285+15 - 289+50	LT.	435
ULT. ℄	292+50 - 307+50	RT.	1500
ULT. ℄	345+50 - 355+50	RT.	1000
LT. FRONT. RD.	19+85 - 23+00	LT.	315
LT. FRONT. RD.	20+00 - 28+50	RT.	850
MANGELS RD.	13+50 - 16+70	LT.	320
MANGELS RD.	15+50 - 16+70	RT.	120
MANGELS RD.	19+75 - 21+00	LT.	125
MANGELS RD.	19+75 - 22+00	RT.	225
RAMP "L"	5+50 - 8+25	LT.	275
RAMP "L"	5+50 - 8+50	RT.	300
ABERNATHY LN.	5+50 - 8+80	RT.	330
ABERNATHY LN.	12+30 - 13+00	LT.	70
ABERNATHY LN.	12+30 - 15+90	RT.	360
SOL-74-C			
TEMP. CONN.	6+75 - 12+00	LT.	525
TEMP. CONN.	13+50 - 15+30	RT.	180
ULT. ℄	612+00 - 615+80	LT.	380
ULT. ℄	615+40 - 616+05	RT.	65
ULT. ℄	619+00 - 628+50	LT.	950
ULT. ℄	619+15 - 620+90	RT.	175
ULT. ℄	625+20 - 628+50	RT.	330
LT. ℄	636+80 - 639+80	LT.	300
LT. ℄	654+00 - 656+00	LT.	200
RT. ℄	634+50 - 645+40	RT.	1090
RT. ℄	646+20 - 654+50	RT.	830
RAMP "D"	638+90 - 640+30	RT.	140
RAMP "D"	644+30 - 645+15	RT.	85

FREEWAY FENCE
(TYPE "W M")

LOCATION	SIDE	L.F.
SOL-7-H		
STA. 160+00 - STA. 196+47.30	LT	3500
STA. 160+00 - STA. 196+47.30	RT	4130
SOL-7-B		
STA. 196+47.30 - STA. 380+08.94	LT.	19240
STA 211+16.47 - STA 376+00	RT.	16900
STA 312+00± - STA. 338+00± ACCESS RD.	LT & RT	4802
SOL-74-C		
STA. 608+00 - STA. 636+00	LT.	2750
STA. 600+00 - STA. 658+15.39	RT.	5780
SOL-7-B [illegible]	RT. LT.	7,900

RAISED TRAFFIC BARS
TYPE "A"

LOCATION	L. FT.
SOL-7-B	
TRAFFIC FIN RT. FR. RD.	95
SOL-74-C	
STA. 609+00 TO STA. 612+70	250

ASPHALT CONCRETE SPILLWAYS

STATION		SIDE	SQ. YDS.
SOL-7-H			
634+50	GR. VALLEY RD.	LT.	4
634+50	GR. VALLEY RD.	RT.	4
642+25	GR. VALLEY RD.	LT.	5
642+85	GR. VALLEY RD.	RT.	3
SOL-7-B			
200+74	ULT. ℄	LT.	6
204+50	ULT. ℄	LT.	6
207+50	ULT. ℄	LT.	5
289+50	ULT. ℄	LT.	5
292+50	ULT. ℄	RT.	5
299+50	ULT. ℄	RT.	5
303+50	ULT. ℄	RT.	6
307+50	ULT. ℄	RT.	5
352+00	ULT. ℄	RT.	5
23+00	LT. FR. RD.	LT.	4
24+00	LT. FR. RD.	RT.	6
28+50	LT. FR. RD.	RT.	4
5+50	RAMP "L"	LT.	3
5+50	RAMP "L"	RT.	4
8+00	RAMP "L"	RT.	4
16+80	ABERNATHY LN.	LT.	3
SOL-74-C			
7+25	TEMP. CONN.	LT.	4
628+50	ULT. ℄	RT.	5
623+50	ULT. ℄	LT.	3
656+00	LT. ℄	LT.	5
634+50	RT. ℄	RT.	4
645+40	RT. ℄	RT.	6
650+00	RT. ℄	RT.	6
654+50	RT. ℄	RT.	6

METAL BEAM GUARD RAILING

	L.F.
SOL-7-H	160
SOL-7-B	320
SOL-74-C	895

SURVEY MONUMENTS (TYPE "A")

	Ea.
SOL-7-H	4
SOL-7-B	22
SOL-74-C	14

PRIVATE DRIVES
0.17' A.C. OVER 0.33' A.B.

LOCATION	STATION	SIDE	WIDTH
SOL-7-H			
LT. FR. RD.	5+80	LT.	20'
LT. FR. RD.	11+00	LT.	12'
LT. FR. RD.	14+50	RT.	12'
LT. FR. RD.	16+00	RT.	12'
GREEN VALLEY RD.	643+75	LT.	12'
GREEN VALLEY RD.	644+15	RT.	10'
GREEN VALLEY RD.	644+45	LT.	12'
GREEN VALLEY RD.	644+85	RT.	10'
GREEN VALLEY RD.	645+70	RT.	10'
GREEN VALLEY RD.	647+00	RT.	30'
SOL-7-B			
MANGELS RD.	2+00	LT.	12'
MANGELS RD.	3+05	LT.	12'
MANGELS RD.	8+00	RT.	10
MANGELS RD.	25+00	LT.	12'
RT. FR. RD.	358+85	RT.	12'
SOL-74-C			
RT. FR. RD.	611+50	RT.	12'
RT. FR. RD.	615+00	RT.	12'

CLASS B CONCRETE CURBS

STATION TO STATION	LIN. FT. A-2	B-1	B-2	C-2	E
SOL-7-H					
168+58 - 178+35 COLL. RD					1063
173+15 - 196+47 COLL. RD.	2392				
179+15 COLL. RD. ISLAND			625		
182+00 - 185+82 COLL. RD.					382
0+00 - 2+50 RAMP "A"					250
0+00 - 3+04 RAMP "B"					454
4+58 - 6+83 LT. FR. RD.			282		
0+00 - 8+50 RAMP "C"					850
1+96 - 6+18 RAMP "C"			522		
SOL-7-B					
222+15 ULT. ℄ ISLAND			1020		
196+47 - 198+07 COLL. RD.	160				
198+90 - 203+69 COLL. RD.	479				
46+80 LT. FR. RD. ISLAND			810		
47+60 LT. FR. RD. ISLAND			255		
49+30 - 56+10 LT. FR. RD.			735		
49+40 LT. FR. RD. ISLAND			320		
51+05 - 59+38 LT. FR. RD.					918
0+50 - 7+00 RAMP "F"					664
1+55 - 5+10 RAMP "G"					355
0+00 - 3+51 RAMP "J"					351
46+40 - 49+14 RAMP "K"			295		
2+60 - MANGELS RD. ISLAND		170			
TRUCK SCALES			2680		
TRUCK SCALES		740			
TRUCK SCALES				635	
0+00 RAMP "N" - 6+90 RT. FR. RD.					760
3+00 - 6+60 RAMP "N"			460		
6+25 - RAMP "N" ISLAND			65		
0+00 - 2+85 RAMP "L"					270
0+50 - 1+05 RAMP "L"			55		
1+40 - 1+85 RAMP "L"			95		
2+85 RAMP "L" - 1+08 RAMP "M"					145
1+25 - 4+35 RAMP "M"			310		
1+70 - 3+90 RAMP "M"			220		
3+90 - 7+35 RAMP "M"					425
8+15 - RAMP "L" ISLAND			25		
367+15 RT. FR. RD. ISLAND			25		
370+82 RAMP "O" - 375+25 RT. FR. RD.					560
376+00 RAMP "O" ISLAND			225		
374+55 - 376+90 RAMP "O"			360		
356+85 - 361+30 ULT. ℄			445		
SOL-74-C					
0+00 - 6+48.21 RAMP "E"					805
2+70 - 5+95 RAMP "E"			418		
5+75 - RAMP "E" ISLAND			80		
637+00 - 638+90 RAMP "D"			190		
637+00 - 645+10 RT. CONST. ℄			930		
639+00 - 640+05 LT. CONST. ℄			105		
639+00 - 640+15 RAMP "D"			115		
643+90 - 645+20 LT. CONST. ℄			130		
644+00 - 645+15 RAMP "D"			115		
646+65 - 659+00 LT. CONST. ℄			1285		
646+60 - 652+60 RAMP "D"			650		
646+65 - 652+95 RAMP "D"					645
650+68 - 653+25 RT. CONST. ℄	307				

ELIM BY CCO #2

R/W MONUMENTS

SOL-7-H	54 Ea.
SOL-7-B	124 Ea.
SOL-74-C	27 Ea.

AS BUILT PLANS
Contract No. 60-107C21
Date Completed
Document No. 00000494

DIST.	COUNTY	ROUTE	SECTION	SHEET No.	TOTAL SHEETS
X	SOL	7,74	H,B,C	47	134

DISTRICT ENGINEER DISTRICT X
APPROVED January 18, 1960

GUIDE MARKERS, CULVERT MARKERS, SURVEY MONUMENT MARKERS, AND HORIZONTAL REFLECTOR MARKERS.

	EA.
SOL-7-H	
CULVERT MARKERS	13
SURVEY MONUMENT MARKERS	4
GUIDE MARKERS & HORIZONTAL REFLECTOR MARKERS.	
TYPE	
A	18
E	9
F	27
G	79
H	2
K	11
L	2
SOL-7-B	
CULVERT MARKERS	60
SURVEY MONUMENT MARKERS	22
GUIDE MARKERS & HORIZONTAL REFLECTOR MARKERS.	
TYPE	
A	27
B	14
C	17
E	52
F	150
G	147
H	5
J	1
K	23
L	10
M	4
SOL-74-C	
CULVERT MARKERS	13
SURVEY MONUMENT MARKERS	14
GUIDE MARKERS & HORIZONTAL REFLECTOR MARKERS.	
TYPE (STATE)	
A	18
B	11
C	46
D	9
E	17
W60R	2
W61R(Y)	8
W61R(R)	1
W63R	2
TYPE (INTERSTATE)	
C	2
G	71
K	1
L	5

NOTE:
All closed islands to be paved with 0.08' A.C.

CONSTRUCTION NOTES

[illegible] 3/57 [illegible] 4/57 [illegible] 4/3/57

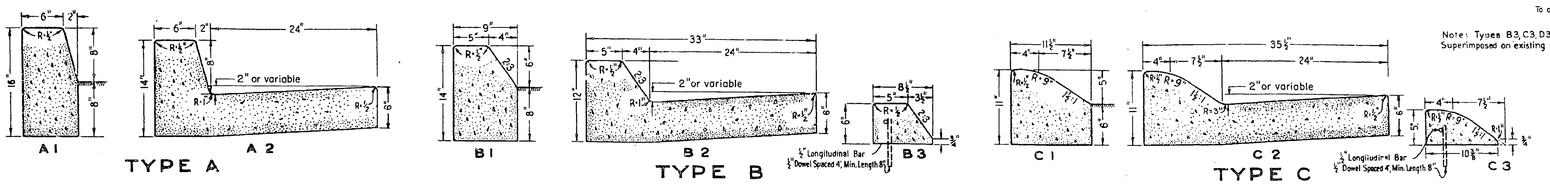
DIST.	STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
	CALIF.	I-080-2(11)43		48	232

To accompany Plans dated January 18, 1960

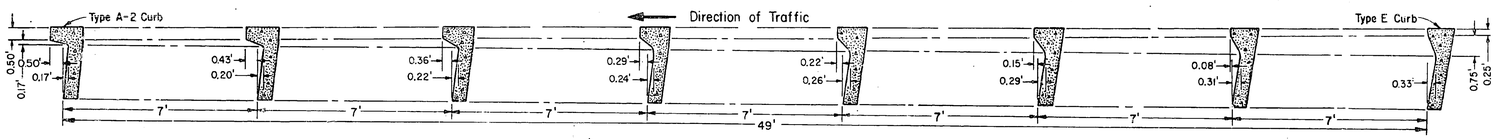
DISTRICT	COUNTY	ROUTE	SECTION	SHEET No.	TOTAL SHEETS
X	SOL	17-74	H.B.C	48	134

Approval Recommended G. Langner
Engineer of Design
Civil Engineer License No. 5630

Approved March 5, 1959
State Highway Engineer
Civil Engineer License No. 2084

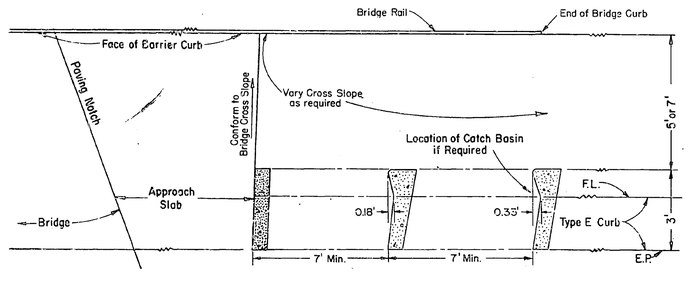


CURB QUANTITIES			
Type	C.Y. Per Lin. Ft.	Type	C.Y. Per Lin. Ft.
A1	0.03084	C2	0.06457
A2	0.06379	C3	0.00965
B1	0.02930	D1	0.03073
B2	0.06171	D2	0.06782
B3	0.01074	D3	0.01223
C1	0.02752	E	0.06661

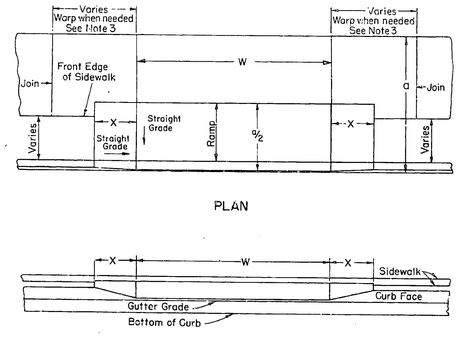


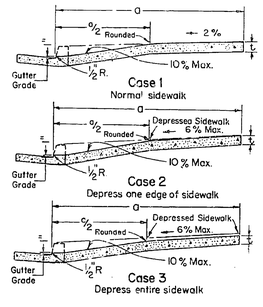
STANDARD CURB TRANSITION - TYPE E TO TYPE A-2

Note: Straight Line Transition in Flow Line and Top of Curb unless otherwise ordered by Engineer.



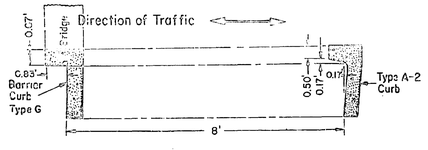
FLOW LINE TRANSITION - TYPE E AT STRUCTURE



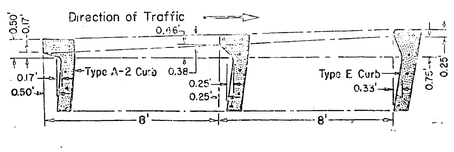


NOTES:

1. Case 1 normally applies
2. Use Case 2 when ramp slopes would exceed 10% in Case 1.
3. Use Case 3 when sidewalk slope would exceed 6% in Case 2. Longitudinal slope of warped area adjacent to driveway shall not vary more than 6% from the longitudinal grade line of the sidewalk.
4. X = 3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
5. Sidewalk and ramp thickness "t" at driveway shall be 4" for residential and 6" for commercial.
6. Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5 feet from the gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.



CURB TRANSITION - TYPE A-2 TO TYPE G



CURB TRANSITION - TYPE A-2 TO TYPE E
(See Note)

DRIVEWAYS

AS BUILT PLANS
Contract No. 60-107021
Date Completed
Document No. 00000494

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

60-107021 STANDARD CURBS AND DRIVEWAYS

N-3

48

DIST.	STATE	FEDERAL PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	CALIF	I-080-2(11)43		52	239

To accompany plans dated January 18, 1960

DISTRICT	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	SJ	77A	H.B.C.	52	139

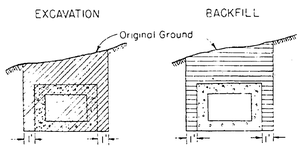
Approval Recommended

Assistant State Highway Engineer - Bridges

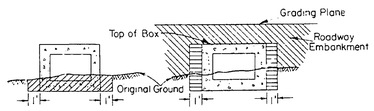
Assistant State Highway Engineer - Operations

Approved August 20, 1959

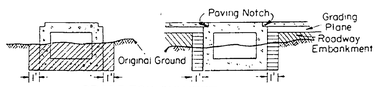
State Highway Engineer
Civil Engineer License No. 2084



CULVERT IN TRENCH

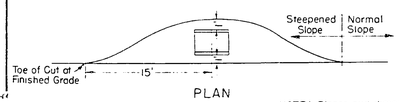


CULVERT IN EMBANKMENT



GRADE TOP CULVERT

BOX CULVERTS



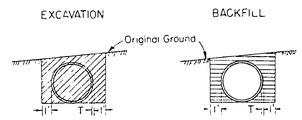
PLAN

NOTE: Slopes and dimensions may vary to fit field conditions

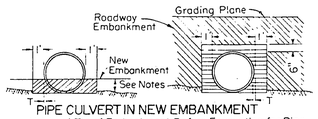
SECTION

RECESSES AT CULVERT INLETS

* When concrete is being paid for as Class A Concrete (Minor Structure) the cost of Excavation and Backfill is included in the price paid for Class A Concrete (Minor Structure)



PIPE CULVERT IN TRENCH



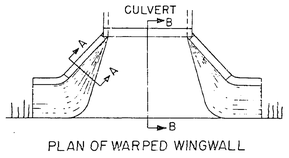
PIPE CULVERT IN NEW EMBANKMENT

Height of Top of Embankment Before Excavating for Pipe Shall Be As Follows

For pipe 24"dia or less: 6" above top of pipe, or 30" max.
For C.M.P over 24" to 90" dia.: 30" above bottom of pipe
For C.M.P over 90" dia.: ⅓ point of dia. above bottom of pipe.
For R.C.P over 24" dia.: 30" above bottom of pipe.
For field assembled plate culvert: ⅓ point of dia. above bottom of pipe. Structure Backfill 6" above top of pipe.
For payment quantities excavation and backfill concrete pipe T = min wall thickness as shown in A.A.S.H.O. M170 for Class III Pipe, Wall A
For C.M.P T = 0.00

PIPE CULVERTS, RODS & DEADMEN

Except Underdrains & Overside Drains

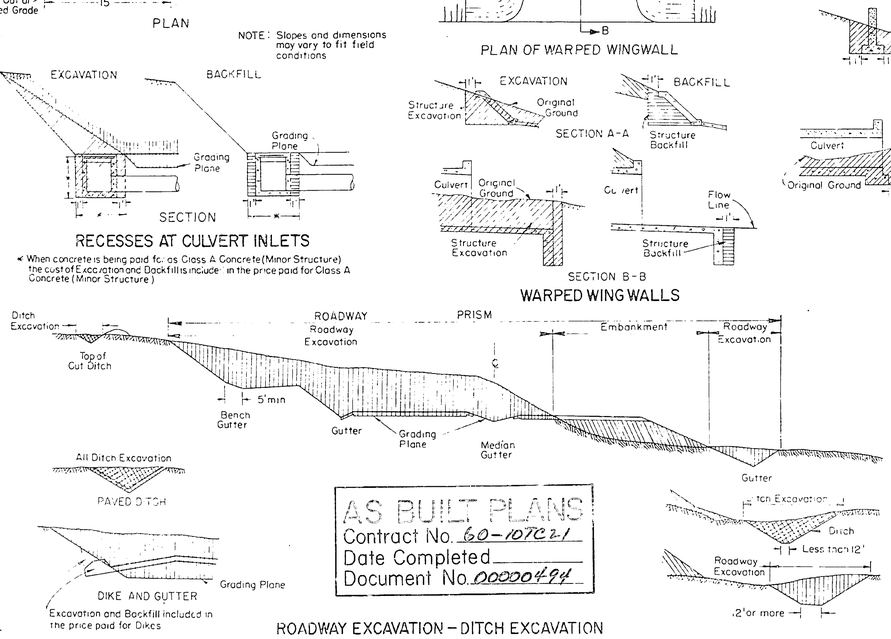


PLAN OF WARPED WINGWALL

SECTION A-A

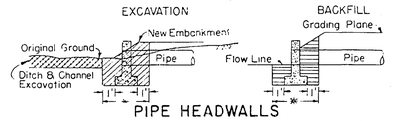
SECTION B-B

WARPED WING WALLS



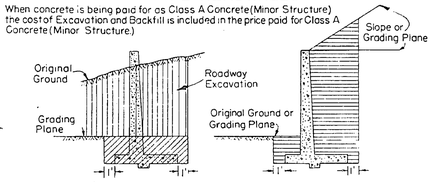
AS BUILT PLANS
Contract No. 60-107221
Date Completed
Document No. 000004494

ROADWAY EXCAVATION - DITCH EXCAVATION



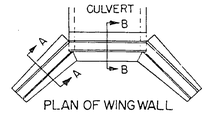
PIPE HEADWALLS

* When concrete is being paid for as Class A Concrete (Minor Structure) the cost of Excavation and Backfill is included in the price paid for Class A Concrete (Minor Structure)

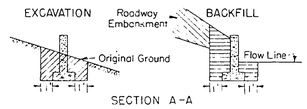


RETAINING WALLS

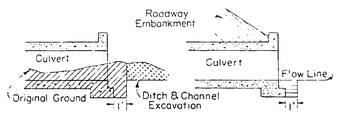
Note: If no roadway excavation is involved at the wall Structure excavation will be measured from the original ground



PLAN OF WING WALL

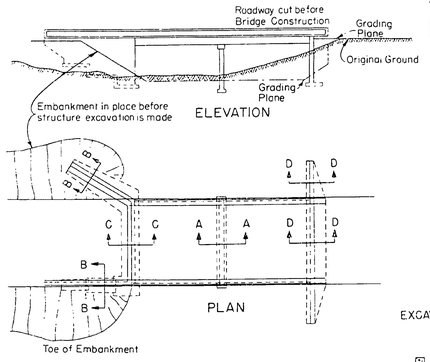


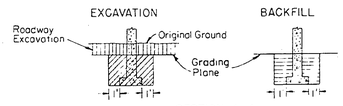
SECTION A-A



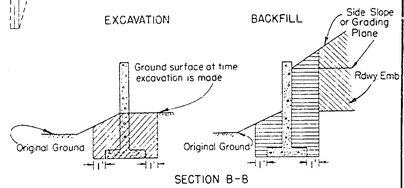
SECTION B-B

WING WALLS

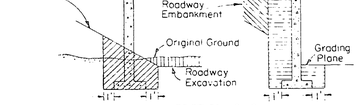




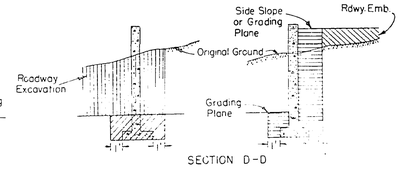
SECTION A-A



SECTION B-B



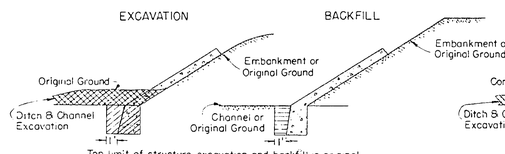
SECTION C-C



SECTION D-D

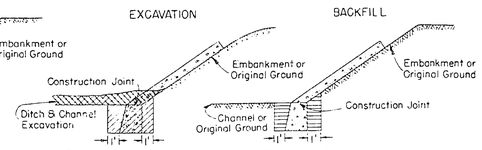
BRIDGE ABUTMENTS & ADJOINING WING WALLS

Note: If no roadway excavation is involved at the bridge Structure excavation will be measured from the original ground



Top limit of structure excavation and backfill is original ground if channel is not excavated.

MONOLITHIC CONCRETE SLOPE PROTECTION



Top limit of structure excavation and backfill is original ground if channel is not excavated.

CONCRETE SLOPE PROTECTION

LEGEND

- Structure Excavation
- Structure Backfill
- Ditch Excavation
- Roadway Excavation
- Roadway Embankment
- Original Ground

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

EXCAVATION AND BACKFILL A 62-1

52

PRA DIV. NO.	STATE	FEDERAL PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	CALIF.	I-080-2(11)43		53	239

To Accompany Plans Dated January 18, 1960

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	501	77A	W.R.C.	53	134

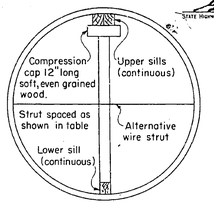
APPROVAL RECOMMENDED

ENGINEER OF DESIGN

APPROVED July 10, 1957

STATE HIGHWAY ENGINEER

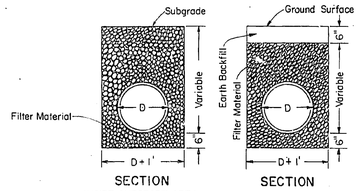
Note: Compression caps and sills to be same dimension timber as struts. Timber for struts and sills shall be Douglas Fir common



STRUT DETAILS

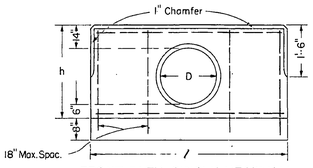
SPACING IN FEET OF TIMBER STRUTS FOR CORR. METAL AND FIELD ASSEMBLED PLATE PIPE

PIPE DIA.	STRUT SIZE	HEIGHT OF FILL IN FEET 0-20	30	40	50	60	70	80	100
48"	4" x 4"		5.0	3.5					
	4 x 6		6.0	5.0	4.0	3.5	3.0		
	6 x 6				6.0	5.0	4.5	4.0	3.5
	6 x 8							6.0	5.0
60	4 x 4	6.0	4.0	3.0					
	4 x 6		6.0	4.5	3.5	3.0			
	6 x 6				5.5	4.5	4.0	3.5	3.0
	6 x 8						5.5	4.5	4.0
72	4 x 4	5.0	3.0						
	4 x 6	6.0	5.0	3.5	3.0				
	6 x 6			6.0	4.5	4.0	3.5	3.0	3.0
	6 x 8					5.0	4.5	4.0	3.5
84	6 x 6	6.0	6.0	5.0	4.0	3.5	3.0		
	6 x 8				5.0	4.5	4.0	3.5	3.0
	8 x 8							4.5	3.5
96	6 x 6	6.0	5.5	4.5	3.5	3.0			
	6 x 8			5.5	4.5	4.0	3.5	3.0	
	8 x 8						4.5	4.0	3.0
108	6 x 6	6.0	5.0	3.5	3.0				
	6 x 8		6.0	5.0	4.0	3.5	3.0		
	8 x 8					4.5	4.0	3.5	
120	6 x 6	6.0	4.0	3.0					
	6 x 8	6.0	5.5	4.0	3.5	3.0			
	8 x 8				5.0	4.0	3.5	3.0	
132	6 x 6	5.0	3.5						
	6 x 8	6.0	4.5	3.5	3.0				
	8 x 8			5.5	4.5	4.0	3.5	3.0	
144	6 x 6	4.5	3.0						
	6 x 8	5.5	4.0	3.0					
	8 x 8			5.0	4.0	3.5	3.0		
156	6 x 8	4.5	3.0						
	8 x 8		6.0	4.5	3.5	3.0			
168	6 x 8	3.5							
	8 x 8	6.0	5.0	4.0	3.0				
180	6 x 8	3.0							
	8 x 8	6.0	4.5	3.5					

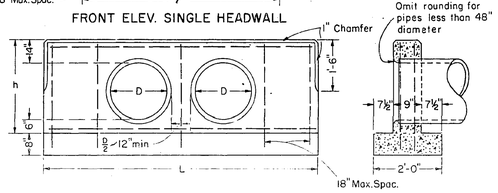


SECTION INSIDE SUBGRADE AREA — SECTION OUTSIDE SUBGRADE AREA

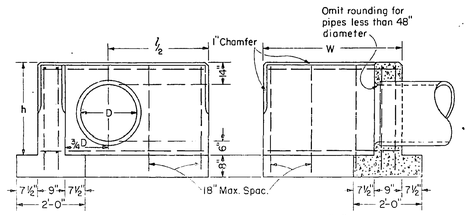
UNDERDRAIN



FRONT ELEV. SINGLE HEADWALL



FRONT ELEV. DOUBLE HEADWALL — SECTION, SINGLE & DOUBLE HEADWALLS



FRONT ELEV. "L" HEADWALL — SECTION "L" HEADWALL

D in.	h ft.-in.	l ft.-in.	Single Vert. bars	Single Steel lbs.	Single Conc. C.Y.	Double L ft.-in.	Double Vert. bars	Double Steel lbs.	Double Conc. C.Y.
12	2-8	5-0	8	28	0.60	7-0	10	38	0.82
15	2-11	6-0	12	41	0.75	8-6	14	52	1.04
18	3-2	7-0	12	46	0.91	9-6	14	57	1.21
21	3-5	7-6	12	49	1.02	10-6	14	62	1.38
24	3-8	8-6	12	54	1.20	11-6	14	67	1.57
27	3-11	9-6	16	70	1.39	13-0	18	85	1.84
30	4-2	10-0	16	74	1.52	14-0	18	91	2.04
33	4-5	11-0	16	79	1.73	15-0	18	96	2.25
36	4-8	12-0	16	85	1.95	15-6	18	103	2.56
39	4-11	12-6	16	89	2.09	17-6	20	116	2.79
42	5-2	13-6	16	94	2.34	18-6	20	122	3.03
45	5-5	14-6	20	115	2.60	20-0	26	153	3.38
48	5-8	15-0	20	119	2.75	21-0	26	160	3.64
51	5-11	16-0	20	125	3.03	22-6	26	168	4.02
54	6-2	17-0	20	131	3.31	23-6	26	175	4.30

Use headwall tables for concrete pipe and for C.M.P.
No deduction made in quantities for variations in thickness of pipe walls.
All reinforcing steel #4 bars.

STRAIGHT HEADWALLS

D in.	h ft.-in.	l/2 ft.-in.	Length of W 2'-0" to 3'-4"	3'-5" to 4'-10"	4'-11" to 6'-4"	6'-5" to 7'-10"	7'-11" to 9'-4"	Conc. C.Y.
			Number of Vertical Bars 6	8	10	12	14	
			Steel lbs.					
12	2-8	2-6	28+3W	32+3W				0.38+0.12W
15	2-11	3-0	36+3W	41+3W				0.48+0.13W
18	3-2	3-6	40+3W	45+3W				0.59+0.14W
21	3-5	3-9	43+3W	48+3W				0.66+0.14W
24	3-8	4-3	47+3W	52+3W	58+3W			0.78+0.15W
27	3-11	4-9	57+3W	62+3W	68+3W			0.91+0.16W
30	4-2	5-0	60+3W	66+3W	73+3W	78+3W		1.00+0.17W
33	4-5	5-6	64+3W	71+3W	77+3W	83+3W		1.13+0.17W
36	4-8	6-0	68+3W	75+3W	82+3W	88+3W	95+3W	1.28+0.18W
39	4-11	6-3		79+3W	86+3W	93+3W	100+3W	1.39+0.19W
42	5-2	6-9		83+3W	91+3W	98+3W	106+3W	1.54+0.19W
45	5-5	7-3			103+3W	111+3W	119+3W	1.71+0.20W
48	5-8	7-6			108+3W	116+3W	124+3W	1.82+0.21W
51	5-11	8-0				121+3W	130+3W	2.00+0.21W
54	6-2	8-6				127+3W	136+3W	2.18+0.22W

"L" HEADWALLS

PIPE CULVERT HEADWALLS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

PIPE CULVERTS AND HEADWALLS

AS BUILT PLANS
Contract No. 60-107021
Date Completed
Document No. 00001494

Rev. 11-22-57 Round to inside of pipe

A-69

53

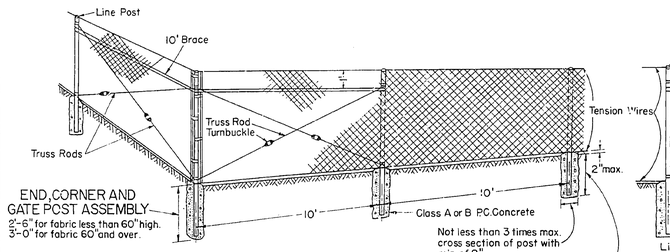
DIST	COUNTY	ROUTE	SECTION	SHEET NO	TOTAL SHEETS
X	Sol	7,71	4,B,C	59	134

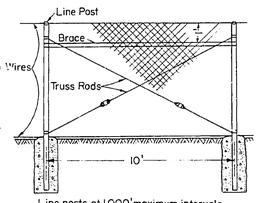
APPROVAL RECOMMENDED: D. Langsdale
ENGINEER OF DESIGN
CIVIL ENGINEER LICENSE NO. 5630

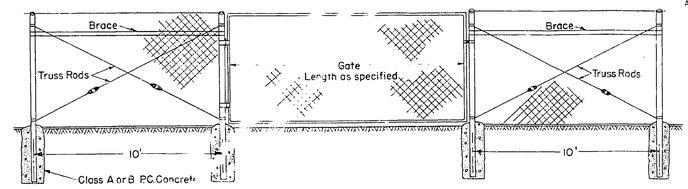
APPROVED August 7, 1959
STATE HIGHWAY ENGINEER
CIVIL ENGINEER LICENSE NO. 2084

DIST	STATE	FEDERAL PROJECT NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	CALIF	I-080-2(11)43		59	239

To accompany plans dated January 18, 1960



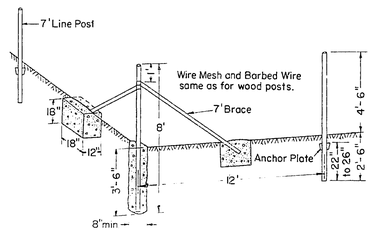




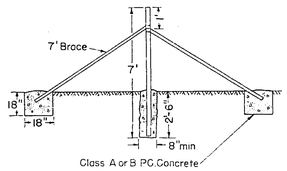
Type CL-4 = 48" fabric
Type CL-6 = 72" fabric

CHAIN LINK FENCE

FREEWAY OR PROPERTY

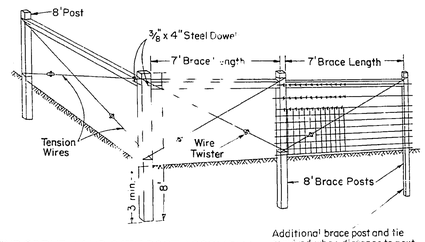


END, CORNER AND GATE POST ASSEMBLY



PULL POST ASSEMBLY
at 500' maximum intervals

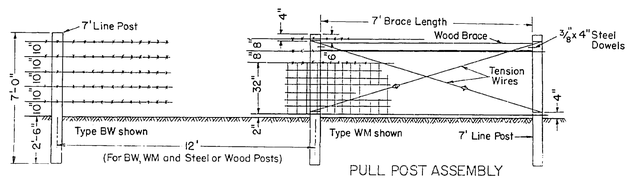
METAL POST INSTALLATION



END, CORNER AND GATE POST ASSEMBLY

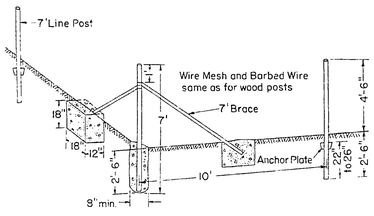
Type BW = 5 lines of barbed wire
Type WM = Wire mesh and 3 lines of barbed wire

FREEWAY FENCE

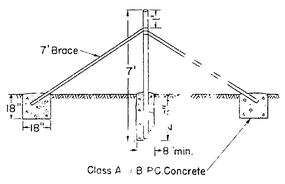


PULL POST ASSEMBLY
at 500' maximum intervals
(for both BW and WM)

WOOD POST INSTALLATION

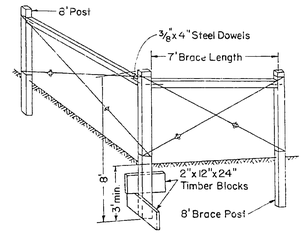


END, CORNER AND GATE POST ASSEMBLY



PULL POST ASSEMBLY
at 500' maximum intervals

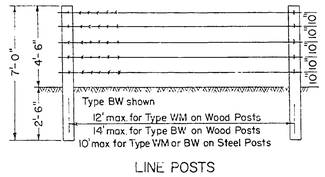
METAL POST INSTALLATION



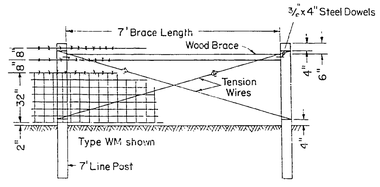
END, CORNER AND GATE POST ASSEMBLY

Type BW = 5 lines of barbed wire
Type WM = Wire mesh and 3 lines of barbed wire

PROPERTY FENCE

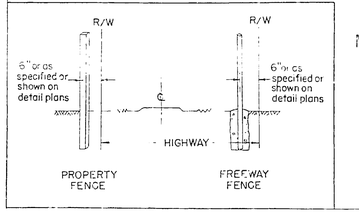


LINE POSTS



PULL POST ASSEMBLY
at 1000' maximum intervals
(for both BW and WM)

WOOD POST INSTALLATION



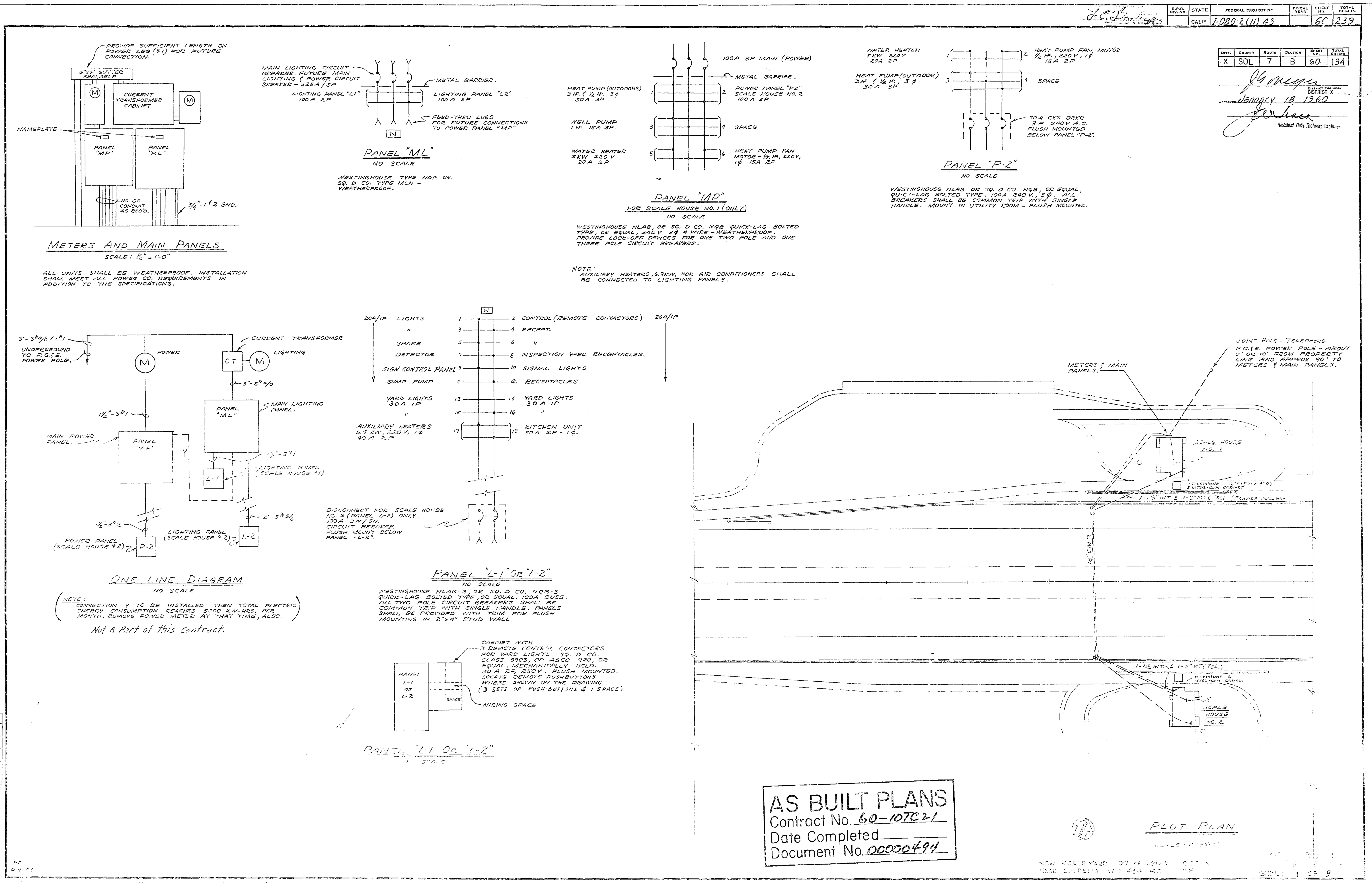
AS BUILT PLANS
Contract No. 60-107221
Date Completed
Document No. D00004494

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

STANDARD FENCES

59

A78



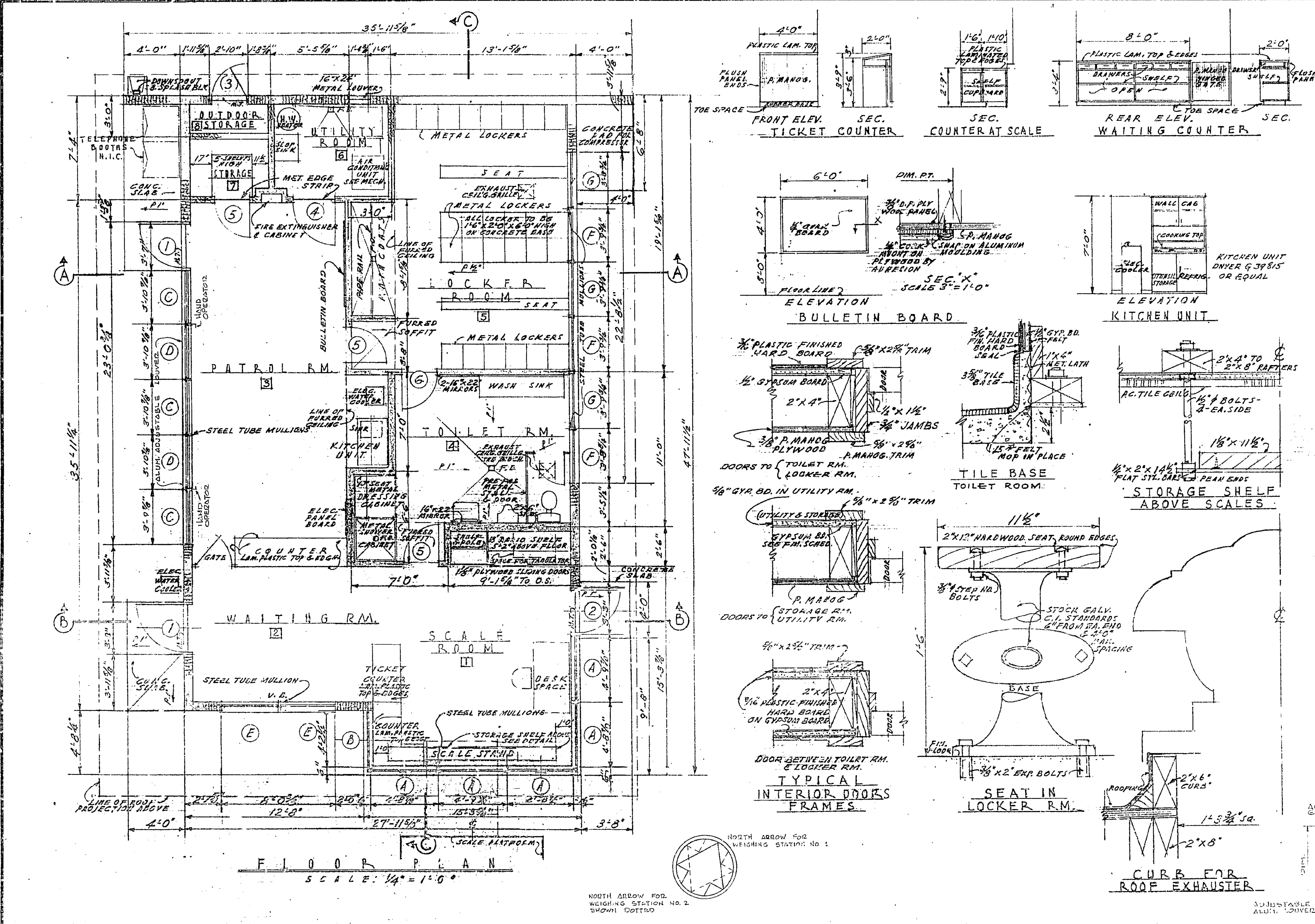
STATE: CALIF.
FEDERAL PROJECT No. I-080-2 (11) 43
SHEET No. 6C TOTAL SHEETS 239
DIST. X COUNTY SOL ROUTE 7 SECTION B SHEET No. 60 TOTAL SHEETS 134
DISTRICT ENGINEER DISTRICT X
APPROVED January 18 1960
Assistant State Highway Engineer
PROVIDE SUFFICIENT LENGTH ON POWER LEG (#1) FOR FUTURE CONNECTION.
6"x6" GUTTER SEALABLE
CURRENT TRANSFORMER CABINET
NAMEPLATE
PANEL "MP"
PANEL "ML"
NO. OF CONDUIT AS REQ'D.
3/4"-1 #2 GND.
METERS AND MAIN PANELS
SCALE: 1/2" = 1'-0"
ALL UNITS SHALL BE WEATHERPROOF. INSTALLATION SHALL MEET ALL POWER CO. REQUIREMENTS IN ADDITION TO THE SPECIFICATIONS.
MAIN LIGHTING CIRCUIT BREAKER. FUTURE MAIN LIGHTING & POWER CIRCUIT BREAKER - 225A/3P
METAL BARRIER.
LIGHTING PANEL "L1" 100 A 2P
LIGHTING PANEL "L2" 100 A 2P
FEED-THRU LUGS FOR FUTURE CONNECTIONS TO POWER PANEL "MP"
PANEL "ML"
NO SCALE
WESTINGHOUSE TYPE NDP OR. SQ. D CO. TYPE MLN - WEATHERPROOF.
100A 3P MAIN (POWER)
METAL BARRIER.
HEAT PUMP (OUTDOORS) 3 HP. & 1/2 HP. 3φ 30A 3P
POWER PANEL "P2" SCALE HOUSE NO. 2 100 A 3P
WELL PUMP 1 HP. 15A 3P
SPACE
WATER HEATER 3KW 220 V 20A 2P
HEAT PUMP FAN MOTOR - 1/2 HP., 220V, 1φ 15A 2P
PANEL "MP"
FOR SCALE HOUSE NO. 1 (ONLY)
NO SCALE
WESTINGHOUSE NLAB, OR SQ. D CO. NQB QUICK-LAG BOLTED TYPE, OR EQUAL, 240 V 3φ 4 WIRE - WEATHERPROOF. PROVIDE LOCK-OFF DEVICES FOR ONE TWO POLE AND ONE THREE POLE CIRCUIT BREAKERS.
NOTE:
AUXILIARY HEATERS, 6.9KW, FOR AIR CONDITIONERS SHALL BE CONNECTED TO LIGHTING PANELS.
WATER HEATER 3KW 220V 20A 2P
HEAT PUMP FAN MOTOR 1/2 HP., 220V, 1φ 15A 2P
HEAT PUMP (OUTDOOR) 3 HP. & 1/2 HP., 3φ 30A 3P
SPACE
70A CKT. BRKR. 3P 240V A.C. FLUSH MOUNTED BELOW PANEL "P-2".
PANEL "P-2"
NO SCALE
WESTINGHOUSE NLAB OR SQ. D CO. NQB, OR EQUAL, QUICK-LAG BOLTED TYPE, 100A 240V., 3φ. ALL BREAKERS SHALL BE COMMON TRIP WITH SINGLE HANDLE. MOUNT IN UTILITY ROOM - FLUSH MOUNTED.
3"-3#4/0 & 1#1
UNDERGROUND TO P.G.&E. POWER POLE.
POWER
CURRENT TRANSFORMER
LIGHTING
3"-3#4/0
1 1/2"-3#1
MAIN LIGHTING PANEL.
MAIN POWER PANEL.
PANEL "MP"
PANEL "ML"
1 1/2"-3#1
LIGHTING PANEL (SCALE HOUSE #1)
1 1/2"-3#2
2"-3#2/0
POWER PANEL (SCALE HOUSE #2)
LIGHTING PANEL (SCALE HOUSE #2)
ONE LINE DIAGRAM
NO SCALE
NOTE:
CONNECTION Y TO BE INSTALLED WHEN TOTAL ELECTRIC ENERGY CONSUMPTION REACHES 5000 KW-HRS. PER MONTH. REMOVE POWER METER AT THAT TIME, ALSO.
Not A Part of this Contract.
20A/1P LIGHTS
CONTROL (REMOTE CONTACTORS) 20A/1P
RECEPT.
SPARE
DETECTOR
INSPECTION YARD RECEPTACLES.
SIGN CONTROL PANEL
SIGNAL LIGHTS
SUMP PUMP
RECEPTACLES
YARD LIGHTS 30A 1P
YARD LIGHTS 30 A 1P
AUXILIARY HEATERS 6.9 KW, 220V, 1φ 40 A 2P
KITCHEN UNIT 30A 2P - 1φ.
DISCONNECT FOR SCALE HOUSE NO. 2 (PANEL L-2) ONLY. 100A 3W/SN. CIRCUIT BREAKER. FLUSH MOUNT BELOW PANEL "L-2".
PANEL "L-1" OR "L-2"
NO SCALE
WESTINGHOUSE NLAB-3, OR SQ. D CO. NQB-3 QUICK-LAG BOLTED TYPE, OR EQUAL, 100A BUSS. ALL TWO POLE CIRCUIT BREAKERS SHALL BE COMMON TRIP WITH SINGLE HANDLE. PANELS SHALL BE PROVIDED WITH TRIM FOR FLUSH MOUNTING IN 2"x4" STUD WALL.
CABINET WITH 3 REMOTE CONTROL CONTACTORS FOR YARD LIGHTS. SQ. D CO. CLASS 8903, OR ASCO 920, OR EQUAL, MECHANICALLY HELD. 30 A 2P, 250V. FLUSH MOUNTED. LOCATE REMOTE PUSHBUTTONS WHERE SHOWN ON THE DRAWING. (3 SETS OF PUSH-BUTTONS & 1 SPACE)
PANEL L-1 OR L-2
SPACE
WIRING SPACE
PANEL "L-1" OR "L-2"
JOINT POLE - TELEPHONE P.G.&E. POWER POLE - ABOUT 5' OR 10' FROM PROPERTY LINE AND APPROX. 90' TO METERS & MAIN PANELS.
METERS & MAIN PANELS.
SCALE HOUSE NO. 1
1-1 1/2" MT. & 1-2" MT. (TEL.)
18" CMP
1-1 1/2 MT. & 1-2" MT. (TEL.)
TELEPHONE & INTER-COM CABINET
SCALE HOUSE NO. 2
AS BUILT PLANS
Contract No. 60-107C21
Date Completed
Document No. 00000494
PLOT PLAN
SHEET 1 OF 9

60

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	SOL	7	B	61	134

DISTRICT ENGINEER
DISTRICT X

APPROVED January 18, 1960



FINISH SCHEDULE

NO	ROOM	FLOOR	BASE	WAINS'CT.	WALLS	CEIL'G.	FURR'G	DETAIL	REMARKS
1	SCALE ROOM	V. ASB. TILE	RUBBER	—	P. MAHOG. & H.C.B.	AC. TILE	—		
2	WAITING ROOM	V. ASB. TILE	RUBBER	—	P. MAHOG. & H.C.B.	AC. TILE	—		
3	PATROL ROOM	V. ASB. TILE	RUBBER	—	P. MAHOG. & H.C.B.	AC. TILE	7'-0" @ KITCHEN UNIT		
4	TOILET ROOM	CERAMIC TILE	CERAMIC TILE	PLAS. HD. BD.	GYP. BD. & H.C.B.	AC. TILE	7'-0" AT SHOWER & DOOR SOFFIT		WAINSCOT 7'-0" HIGH
5	LOCKER RM.	COLOR CEM.	COL. CEM.	PLAS. HD. BD.	GYP. BD. & H.C.B.	AC. TILE	7'-0" AT TRAIN COAT ALCOVE		WAINSCOT 7'-0" HIGH
6	UTILITY RM.	CEMENT	WOOD	—	GYP. BD. & H.C.B.	GYP. BOARD	—		
7	STORAGE	CEMENT	WOOD	—	GYP. BD. & H.C.B.	GYP. BOARD	—		
8	OUTDOOR STORAGE	CEMENT	WOOD	—	GYP. BD. & H.C.B.	GYP. BOARD	—		

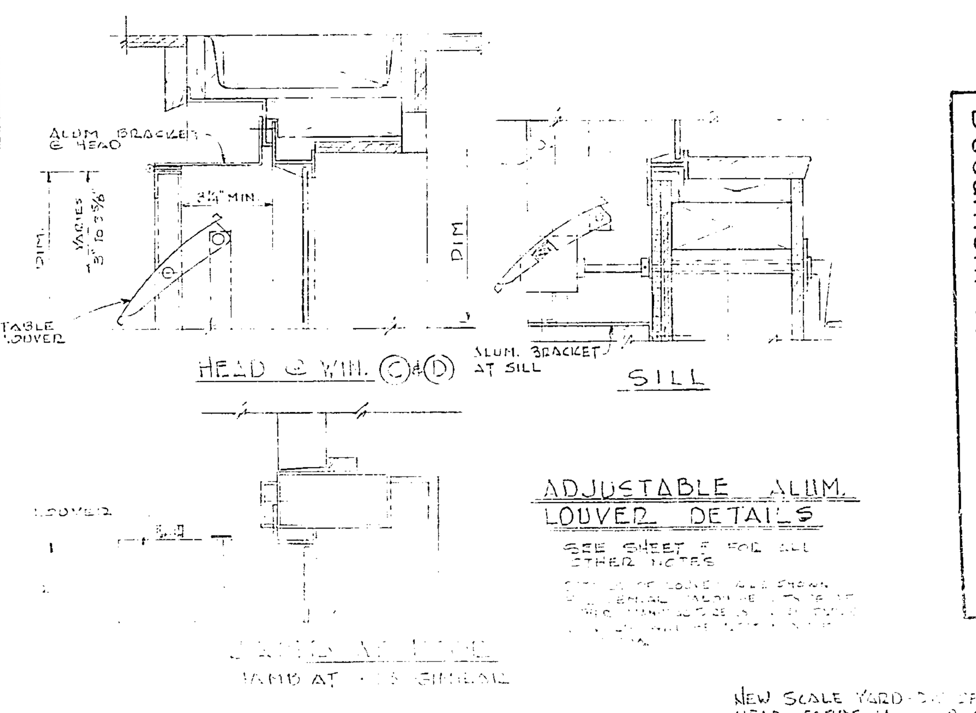
GENERAL NOTES

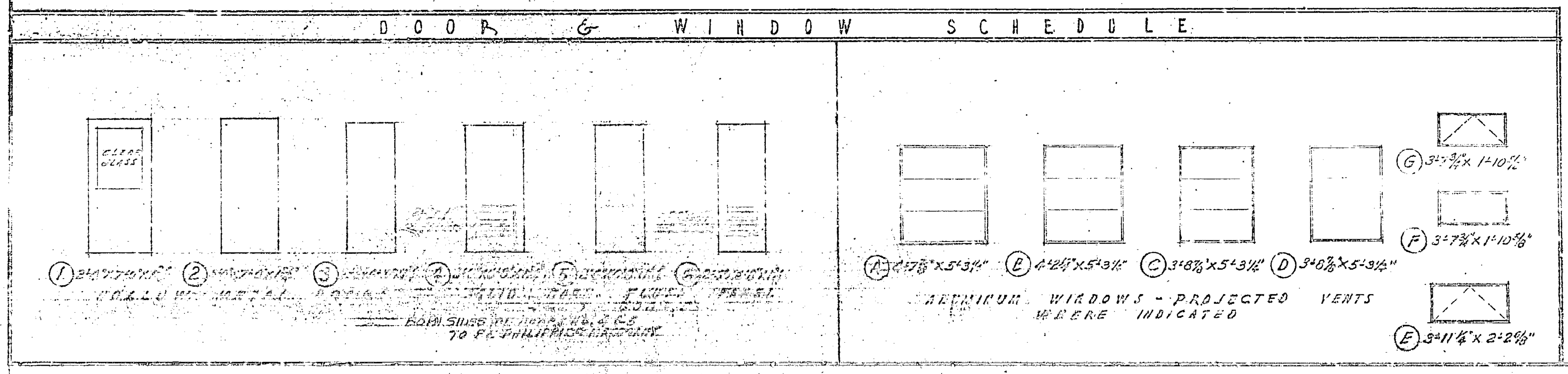
OUTSIDE DIMENSIONS ON PLAN ARE GIVEN TO FACES OF CONCRETE & HOLLOW CONCRETE BLOCK WALLS. OTHER EXTERIOR DIMENSIONS ARE TO MASONRY OPENINGS & CENTER LINES OF DOORS & WINDOWS. INTERIOR DIMENSIONS ARE TO CENTER LINES OF PARTITIONS. GYPSUM BOARD FOR WALLS SHALL BE 1/2" THICK EXCEPT UTILITY ROOM. WALLS OF UTILITY ROOM AND ALL CEILINGS SHALL RECEIVE 5/8" GYPSUM BD. INTERIOR PARTITIONS SHALL BE FRAMED 2"x4" AT 16" O.C. EXCEPT AS OTHERWISE INDICATED. WINDOWS IN SCALE ROOM SHALL RECEIVE ROLLER SHADES ON ALL THREE SIDES OF ROOM. WALL FINISHED WITH PLASTIC HARD BOARD AS NOTED ON SCHEDULE SHALL BE BONDED TO GYPSUM BOARD BY ADHESION WITH ALL JOINTS SEALED BY AN APPROVED SEALER COMPOUND.

LEGENDS AND ABBREVIATIONS

AC. = ACOUSTICAL
@ = AT
BD. = BOARD
CAB. = CABINET
CEIL'G. = CEILING
CEM. = CEMENT
C.I. = CAST IRON
CONC. = CONCRETE
COL. = COLUMN
D.F. = DOUGLAS FIR
DIM = DIMENSION
ALUM. = ALUMINUM
N.I.C. = NOT IN CONTRACT
DRWG. = DRAWING
EA. = EACH
EL. OR ELEV. = ELEVATION
ELEC. = ELECTRIC
EXP. = EXPANSION
F.D. = FLOOR DRAIN
FIN = FINISH
FL. = FLOOR
FURR'G = FURRING
GALV. = GALVANIZED
GYP. = GYPSUM
H.C.B. = HOLLOW CONCRETE BLOCK
HD. = HARD
INSUL. = INSULATION
LAM. = LAMINATED
MECH. = MECHANICAL
O.C. = ON CENTERS
P. MAHOG = PHILIPPINE MAHOGANY
REFRIG. = REFRIGERATOR
REINF. = REINFORCE
SCHED. = SCHEDULE
STL. = STEEL
STRUCT. = STRUCTURAL
V. ASB. = VINYL ASBESTOS
V.B. = VENETIAN BLINDS
WAINS'CT. = WAINSCOT
PLAS. = PLASTIC

WOOD STUDS
WOOD IN SECTION
WOOD FRAMING & BLOCKING
PLYWOOD
GYPSUM BOARD
CEMENT ASBESTOS BOARD
HOLLOW CONCRETE BLOCK
CEMENT
CONCRETE
METAL



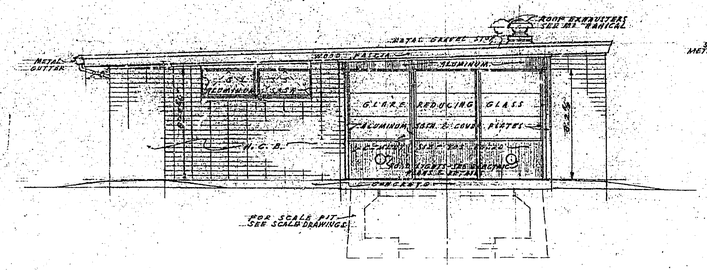


AS BUILT PLANS
Contract No. 60-10TC21
Date Completed
Document No. 00000496

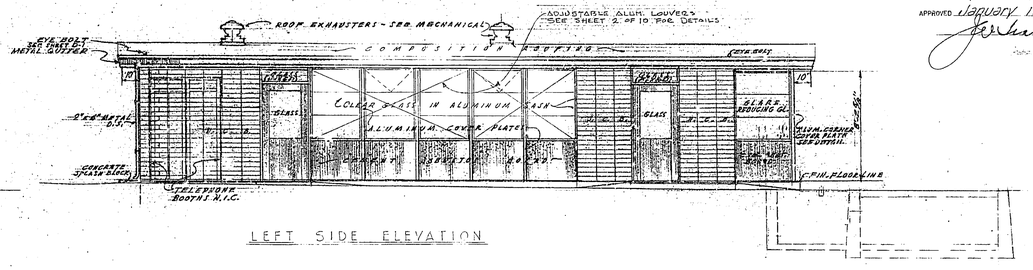
SHEET 2 OF 9

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	SOL	7	B	62	134

DISTRICT ENGINEER
APPROVED January 18 1960

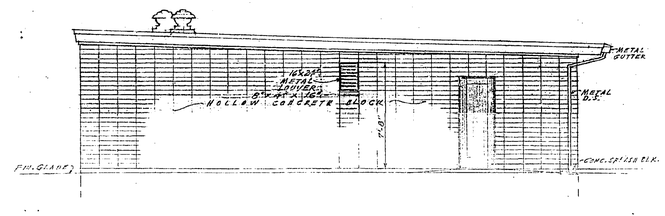


FRONT ELEVATION

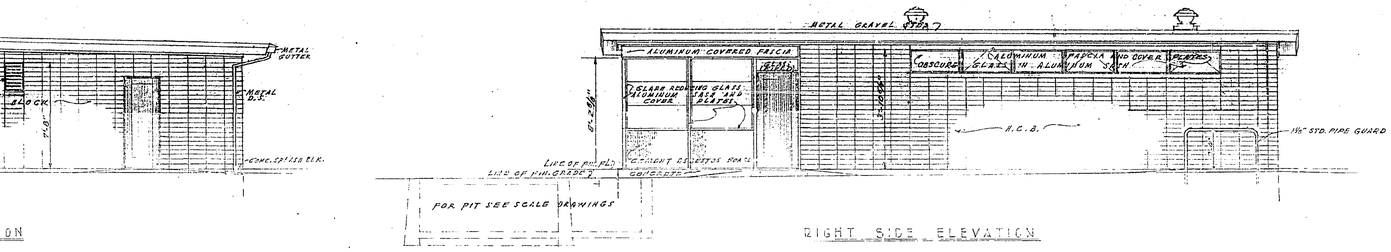


LEFT SIDE ELEVATION

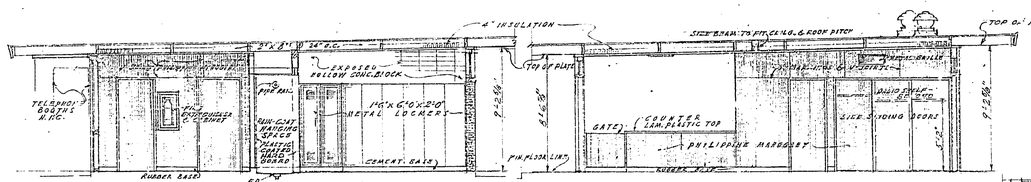
SCALE: 1/4" = 1'-0"



REAR ELEVATION



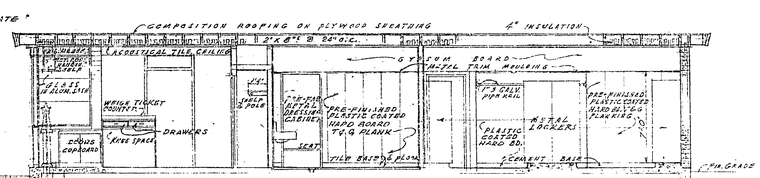
RIGHT SIDE ELEVATION



SECTION "A-A"

SECTION "B-B"

SCALE: 1/4" = 1'-0"



SECTION "C-C"

FOR SCALE & PIT SEE SCALE DRAWINGS

AS BUILT PLANS
Contract No. 60-107221
Date Completed
Document No. D0C301491

62

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	SOL	7	B	63	134

APPROVED January 18, 1960
DISTRICT ENGINEER DISTRICT X

HEAD WDW. (A)(B)(E)

ELEV. OF FRAMING AT MULL. & HEAD SCALE 1"=1'-0"

EAVE AT GUTTER

CORNER PLAN AT COL. WDW. (A)(B)

MULLION AT WINDOWS TYPICAL

MULLION AT TRANSOM

MULLION BELOW WINDOWS WINDOWS (A)(B)(C)(D)

SILL WDW. (A)(B)(C)(D)

SILL AT WDW. (A)(B)(E)(D)

HEAD WDW. (C)(D)(F)(C)

TRANSOM BAR

MULL. BET. DOORS & WINDOWS (A) & (C)

DOOR JAMB BELOW WINDOW (A)(C)

SILL AT DOOR

LOCKER BASE

TRANSOM HEAD - DOOR (2)

TRANSOM HEAD - DOOR (1)

JAMB AT WINDOWS (B)(E)(F)(G)

DOOR JAMB AT H.C.B.

JAMB BELOW WINDOW AT H.C.B. WINDOWS (B)(E)(F)(G)

RAKE AT HEAD

HEAD-JAMB SIMILAR

SILL METAL LOUVER

SECTION

PLAN CONC. SPLASH BLOCK

EYE BOLT ANCHORS

DEPRESSED FLOOR RAINCOAT STORAGE

AS BUILT PLANS
Contract No. 60-107021
Date Completed
Document No. 00000494

63

SHEET 4 OF 9

B.P.R. DIV. NO.	STATE	FEDERAL PROJECT NO.	SHEET NO.	TOTAL SHEETS
	CALIF	I-080-2(11)43	64	239

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	SOL	7	B	64	134

APPROVED January 18, 1960

DISTRICT ENGINEER
DISTRICT X

This corner detail to be used when bars are at or near center of wall

SINGLE LAYER - BARS ONE FACE OR CENTER

DOUBLE LAYER

TYPICAL REINFORCING BAR SPLICES

TYPICAL BEND

TYPICAL HOOK

Slab Reinf (Every third bar thru joint for heavy fill)

SECTION

METHOD OF POURING SLABS ON GROUND

Pour slabs in rectangles as shown. Maximum side of rectangle shall not be over 25 Ft. or as may be indicated on other plans.

DETAILS OF PIPES AT CONCRETE FOOTINGS

See foundation Plans. Dimension "n" not less than "d" in soils having a unit bearing value of 4000# or more, not less than "2d" in soils of lesser value.

TYPICAL STEPS IN WALL FOOTINGS

TYPICAL CONCRETE DETAILS

Typical details on this sheet shall apply unless shown otherwise on plans
The following notes shall apply unless otherwise noted

1. Structural concrete shall be Class "A" or Class "B". See Specifications
2. Concrete shall not be dropped through reinforcing steel (as in walls) so as to cause segregation of aggregates; in such cases, hoppers and vertical chutes or trunks shall be used. Chutes or trunks shall be of variable lengths so that the free unconfined fall of concrete shall not exceed six feet and a sufficient number shall be used to insure the concrete being kept level at all times.
3. All dimensions shown for location of reinforcing are to face of main bars & denote clear coverage. For beams and tied columns, dimensions are to main bars. Unless specifically noted concrete coverage shall be as follows:
   - 3" where concrete is deposited directly against ground (except slabs).
   - 2" where concrete is exposed to ground but placed in forms.
   - 2" for main bars of tied columns
     - For main bars of beams.
     - 1" for concrete joists
     - ¾" to face of spiral reinforcement in columns with spirals.
     - For wall bars unless otherwise shown.
   - ¾" For bars in slabs on forms, 1¼" for bars in slabs on ground.
4. Splice in continuous reinforcement as in walls, wall footings etc., shall have a lap of 24 diameters and the splices in adjacent bars shall not be less than 50" apart. Vertical wall bars shall be spliced at or near floor lines. Bars may be wired together at splices or laps except for top reinforcing of beams and slabs or where definitely detailed to be separated. See beam details or schedules for separation of beam or girder bars over supports. Continuous bars in spandrels, wall beams etc. shall lap as follows:
   - Top bars at ¼ span.
   - Bottom bars at ¼ supports.
5. Two #4 continuous bars shall be placed at the top of walls, and in all walls at 6'-max below floor line and as detailed.
6. All walls shall be doweled to footings, walls, beams or slabs with bars of the same size and spacing as the wall bars.
7. See Architectural or Mechanical drawings for size and location of wall openings wall offsets, stair details, pips, vent, duct and other openings and details not shown on structural drawings.

1. The sheets upon which a section has been cut or taken and the sheet upon which it has been detailed have been cross-referenced as follows:
   Example: Assume Sect A-A taken on sheet 13 and shown thus:
   This indicates that Section A is detailed on Sheet 56. The hills of the detail on Sheet 56 is similar, with an added reference to Sheet 55 from which the Section was taken thus: SECTION #3
2. Bearing soil is classified as "silty clay" with an estimated allowable soil pressure of 1500 p.s.f.
3. Elevations indicated on plan are to bottom of footing and are intended for estimating purposes only.
4. Soil pressure used for Foundation Design
   - For Dead & Live Load ..... 1800 p.s.f.
   - For Dead & Live Load + Seismic ..... 2500 p.s.f.
   - For Gravity & Lateral Load ..... 3500 p.s.f.
5. The subgrade fill under floor slabs shall be placed as soon as possible after foundation walls are completed.
6. The letters S-3 on foundation plan indicate a step in the footing.
7. All anchor bolts, reglets, dowels and other miscellaneous items to be cast in concrete shall be secured in place in the forms before pouring.

Roof or Floor line

LINTEL

WIDTH OF OPENING	BOTTOM BARS IN EACH WALL	TOP BARS IN EACH WALL
UP TO 4'-0"	2-#5's	2-#4's
4'-0" TO 6'-0"	2-#5's	2-#5's
6'-0" TO 10'-0"	2-#5's	2-#5's
10'-0" TO 15'-0"	2-#5's	2-#7's

Unless otherwise noted or detailed

At windows see plans

1-2" Stud, up to 6'-0" wide opening
1-2"x8" stud over 6'-0" wide opening.
2"x8" trimmer studs unless noted otherwise

Herringbone blocking at 6'-0" max spacing, or 3" horiz. blocking. See

Sill plate - see notes.

Sill bolts to be placed to miss studs. See notes and

TYPICAL WALL AND OPENING FRAMING

Top plates or sill plate

¾" ø holes For #4 = 1¼" S.H.W.S.
16'-0" x 2"x4" strap - one side when notch is greater than ½ the width of plates. Two sides, when notch is greater than ⅔ the width of plates.

NON-BEARING PLATE SPLICE

Where plates are notched more than ½ width

Sill plates to be pressure treated Douglas Fir, or Fdn. Grade Rwd.
2" nom. sills of diag. sheathed walls.
2" nom. sills elsewhere

9" Max. 4'-0" max. c.c. of bolts 9" Max. Max. (M.I. or Steel Pl. washer) Pc - 2"pl. with 4-16d nails Counterbore

⅝" ø x 12" bolts min. Typical where stud occurs at sill bolt

½" grout except as noted

Joint or notch greater than ½ Pl. width.

TYP. BOLT SPACING SILL PLATES ON CONCRETE BEARING & SHEAR WALLS

⅝"ø x 10" bolts
3½" or 5½"
4 cent'rs

WITH CURB

5/8"x 6" bolts

NOTE: Drive-It 320, MP4 powder-driven fasteners @ 3'-0" c.c. (or equal) may be used in lieu of ⅝"ø x 6" bolts.

SILL PLATE ANCHORAGE AT NON BEARING PARTITIONS

Outside face of stud

Trip-L-Grip Type SR

Trip-L-Grip Type SR

Trip-L-Grip Type 2R

Trip-L-Grip Type LL

JOIST TO HEADER DET.-L

CONNECTION FOR TOP AND BOTTOM OF STUDS

SUPPORT FOR HEADER BEAMS

16ga galv. metal clip fill all holes with nails

TIE DOWN FOR RAFTERS

Nails "D" each side

Joists "B" each side

Beam or Truss

18ga Galv. 12ga for 8" + over

18ga for 2" Joists

Nominal width

Straps for "A" to be 8d x 1½" long except nails "a" shall be 10d for joist 8" or greater in depth. Clip nails to depth of penetrated piece

Joist Dimensions (Nominal)	A	B	H	a
2"x6"	1"	2"	2½"	3
2"x8"	1"	2"	2½"	3
2"x10"	1"	2"	2½"	3
2"x12"	1"	2"	2½"	3
3"x6"	1½"	3"	3"	3
3"x8"	1½"	3"	3"	3
3"x10"	1½"	3"	3"	3
3"x12"	1½"	3"	3"	3
4"x6"	2"	4"	3½"	4
4"x8"	2"	4"	3½"	4
4"x10"	2"	4"	3½"	4
4"x12"	2"	4"	3½"	4

JOIST HANGERS

TYPICAL METHODS OF APPLYING FRAMING CLIPS

NAILING SCHEDULE

Unless otherwise noted on plan

All nails for structural work shall be common wire nails. Holes shall be suitably drilled where necessary to prevent splitting of wood. Nailing not noted below or on plans shall be a min. of 2 nails, at each contact, 8d for 1" material & 4d for 2" mat'l

1. Joists or Rafters to sides of studs, 6" Joists or less 3-16d
   for each additional 4" in depth of Joists 1-16d
2. Joists or Rafters at all bearings, toe nails each side 2-10d
3. Joists or Rafters at contin. bearing, toe nails, stud face side only ..... Each end
4. Studs to bearings, toe nails each side 2-8d, 2-10d, 2-6, 3-10d, 2-16, 3-16
5. Blocking between Joists, Studs or rafters
   - To Joist, Stud or Rafter, toe nails each side, each end 2-10d
   - In place of toe nails one end- Joist, Stud or Rafter to end of blocking 2-16d
   - To Joist or Rafter, bearings (plates) toe nails each side 2-10d
   - Vertical blocking to side of horizontal blocking 2-16d
6. Sheathing at all bearings (including ..... ½ sheathing 2-8d; 2-1¼" T&G shtg. 3-10d
   - blocking and herringbone bridging ..... ½ sheathing 3-8d
   - ½ sheathing ..... 1-16 sheathing 3-10d; 2-1¼" T&G shtg. 3-10d
   - ½ sheathing 4-8d
7. Diagonal sheathing, and nailing ..... 1-6 sheathing 3-8d; 2-1¼" T&G shtg. 3-10d
   - 1-6 sheathing 4-8d
8. Ribbons or ledgers to studs ..... 1" Ribbon 3-8d ..... 2" Ribbon 2-16d
9. Double top plates: Lower plate to top of stud 2-8, 2-10d, 3-6, 3-10d; 2-6, 3-10d
   - Upper plate to lower plate, staggered ..... 16d @ 16" o.c.
   - Upper plate to lower plate, at splice 6-16d
10. Multiple studs (stagger for widths more than 4") ..... 16d @ 12" o.c.
11. Built up Beams:
    - Over window & door openings & multiple Roof Joists each side, staggered ..... 16d @ 10" o.c.
    - Other Beams, 10" or less in depth, each side, staggered ..... 16d @ 12" o.c.
    - Other Beams, more than 10" deep ..... ¾" ø bolts @ 24" o.c. staggered
12. Structural Plywood Nailing:
    - Use casing nails only where Plywood is exposed. Use common nails at sill plates, at roof slates and at all other covered surfaces.
    - All edges ..... ½" plywood ..... 10d @ 6" o.c.
    - Intermediate (field nailing) ..... 10d @ 12" o.c.
13. Ceiling stripping ..... 1" Thick, 8-8d (1-slant); 2" Thick, 2-16d (1-slant)
    - Holes shall be pre-drilled for nails at ends of stripping boards.
    - Where ceiling has plaster or ⅝" Firestop wall board, use annular wire nails.
14. Finish Plywood nailing (Non-Structural)
    - All edges ..... 6d Finish nails @ 6" o.c.
    - Intermediate (field nailing) ..... 6d Finish nails @ 12" o.c.
15. Herringbone blocking or cross bridging, toe nails each end 2-10d

2"x 4'-0" o.c. c. Floor or Roof

2-20d Joists Top plate 4" wider than stud. Blocking 4" wider than studs Ceiling 2"x 4 Contin. 2"x 6" stud - Blocking @ ceiling level

PARALLEL TO JOISTS

ACROSS JOISTS SLOPING RAFTERS SIMILAR

To occur in spans over 6'-0" and spaced not over 8'-0" between lines of bridging or between bridging & bearing.

2-8d toenails ea. end

TYPICAL CROSS BRIDGING

Omit at roof & ceiling joists 8" & under in depth.

NON-BEARING PARTITION

For splices where necessary — 3-16d for 8" joists, or less. Add 1-16d for each additional 4" depth of joist.

60" to 72" max. Stud walls where noted. 48" to 54" max.

splice piece 2" thick

2" blocking @ 4'-0" o.c., 2-20d ea end

1" O.S. or P.W. sheathing

Met. Clips @ 80" 16d toenail ea end

2-20d 2-16d

NON-SHEATHED ACROSS JOISTS

SHEATHED ACROSS JOISTS

SHEATHED PARALLEL TO JOIST

BEARING OR SHEAR WALLS

TOP OF INTERIOR STUD WALL AND PARTITIONS

Studs to be blocked, apart bottom, midheight, and top.

Plywood or Diag. Shtg. Intersecting Wall

Intersecting wall not diagonally sheathed

Outside face 3" nom. stud

See Nailing Sched. for stud & shtg. nailing

STUD FRAMING AT CORNERS & INTERSECTIONS

Unless otherwise shown

NOTCHING JOISTS

Typical joist hanger. See Det

Tail joists

L-3-3x16x joist depth 3-¾"ø H.W.S. for opngs. 6'-0" or over unless shown otherwise.

TYP FRAMING OF JOISTS AT OPNGS.

Rafters similar

STRUCTURAL PLYWOOD SPLICE

For pitch over 3/12: use notched rafters within limits shown or use sloped top PL.

Notch not more than ⅛ depth of rafter. Roof shtg. 2" Blkg. Slope top for pitch over 3/12

Min bearing joist on plate

	Size	Nails
X	3"x8"	6
	2"- 2x4	2
	3"- 2x6	3
	4"- 2x8	4

SLOPED RAFTER BEARING

Typical Continuous members - Notch or [illegible] Blocking or Section as shown - End of member

Blkg —Blocking	Bd —Board	DS —Diagonal Sheathing	Max —Maximum		
Cont —Continuous	Ct —Cleat	SS —Straight Sheathing	Min —Minimum		
Diag. —Diagonal	Ht —Hole	HB —Herringbone Bridging	T&I —Top Nail		
Horiz —Horizontal	D.F. —Douglas Fir	M.I.W —Malleable Iron Washers	J.H —Joist Hanger		
F.S —Face of studs	Rwd —Redwood	T.L.G —Tap-Lock Grip Anchor	W.N.F —Welded wire fabric		

Studs to be graded in accordance with West Coast Lumbermens Association Grading Rules No 15. Redwood shall be graded in accordance with California Redwood Association Grading Rules

1. Sill plates shall be Pressure Treated Douglas Fir or Foundation Grade Rwd. See Specs.
2. All Sill Plates shall be bedded on a minimum of ½" cement grout
3. Sill Plates shall be bolted to concrete with ⅝"ø x 12" bolts @ 4'-0" o.c. maximum. See Detail in this sheet
4. See Specifications for grading of all framing lumber.
5. Bearing walls and partitions shall have double top plates lapped at wall and partition intersections. Joints in the upper and lower members of the top plate shall be staggered not less than 4'-0"
6. Provide Herringbone Bridging (Type 3/4"B) between studs at mid-height and not over 110" o.c. or from ends of studs. Omit where straight blocking is required for plywood nailing.
7. Provide solid blocking between rafters at all supports.
8. Cross-bridge all joists where spans exceed 8'-0". The distance between lines of bridging or between bridging and bearing shall not exceed 8'-0". Cross Bridging shall be 2"x 3 nominal minimum. Bridging may be omitted on Joists 6" and under in depth unless otherwise noted.
9. Provide blocking at all changes in ceiling level
10. Cutting of Wood Joists shall be limited to cuts and bored holes not deeper than one-fifth the joist depth from the top, and located not farther from the end than three times the joist depth.
11. Unless fully detailed on the structural drawings, pipes exceeding one third of the plate width shall not be placed in partitions used as bearing or shear walls. Where allowed pipes shall be placed in the center of plates. Using a hard hole. Notching of studs or plates will not be allowed.
12. Holes for bolts in wood shall be bored with a bit of the same nominal diameter as the bolt. Holes in steel plates and angles shall be bolt diameter + 1/16".
13. Holes in wood for lag screws shall at first bored to the same diameter and depth as the shank. Holes for the threaded portion shall be bored no larger than the root diameter of the thread.
14. Lag Screws and Wood Screws shall be screwed and not driven into place.
15. All bolts and Lag Screws shall be provided with metal washers under heads and nuts which bear on wood. See specifications for sizes.
16. All bolts & Lag Screws shall be tightened on installation and retightened before closing in, or at completion of job.
17. Where Joists or Studs run parallel to and in contact with concrete, bolt to concrete with ⅝"ø bolts at not over 4'-0" o.c. and within 9" of ends of piece
18. Diagonal sheathing shall be laid at 45° and shall be as long as practicable. Splices in sheathing shall be as shown on this sheet

See plans & specifications for nail size & spacing

8" min 8 Horiz Stkg

Place chalk lines to set nails ⅜" min ¾" min

Place stud so that plywood splice is exactly at the center of stud or joist.

GENERAL NOTES FOR BEARING WALLS

Typical details and notes on this sheet shall apply unless otherwise shown or noted

1. Reinforce all walls with #4 @ 16" each way except at corners or openings bars may be placed @ 24" to avoid placing them in adjacent cells.
2. All cells and voids shall be filled with grout
3. Horizontal reinforcement shall not be placed in the mortar joints.
4. Vertical reinforcement shall extend the full height of wall without a splice and shall be accurately placed and held in position in the center of wall.
5. All walls shall be doweled to footings, walls, beams or slabs with #4 @ 16" extended 24" minimum into the block wall.
6. There shall be a minimum of 8" return at any jamb adjacent to a corner or intersection.
7. Shoring for block lintels shall remain in place a minimum of 15 days after the wall has been completed.
8. See Architectural and Mechanical drawings for wall openings and offsets and size and location of ducts, vents and other details not shown on Structural drawings.
9. Pipes shall not be embedded in any masonry wall.
10. Lintels over openings shall be not less than 15" deep.
11. All anchors, bolts, reglets, dowels and other miscellaneous items to be cast in the wall shall be firmly secured in place before grout is poured.
12. Electrical conduits or fixtures may be placed in unreinforced cells with the following restrictions:
    - a. The conduit or fixtures shall not interfere with or displace the horizontal reinforcing steel.
    - b. Conduits shall not be placed in such a congested manner as to prevent the complete filling of the cells with grout.
    - c. Recesses for electrical panels or fixtures shall be framed as run door or window openings. All cells adjacent to the recess shall be solidly filled with grout.
    - d. A horizontal run of 1" maximum size conduit may be placed in a bed joint block course that does not have horizontal reinforcing steel.
13. Use open end blocks throughout.

stack bond

TYP OPNG DETAIL

Dbl where necessary

40d

8in more above

EVEN COURSES

TYP JAMB

Typical bond pattern shown. Other bond patterns may be used if necessary

TYPICAL PLAN DETAILS OF BEARING WALLS

I L H . . DETAILS

AS BUILT PLANS
Contract No. 60-107C2-1
Date Completed
Document No. 00004494

SHEET 5 OF [illegible]

NEW SCALE YARD DIV. OF HIGHWAYS DIST. X
NEAR CORDELIA W.O. 4341-SC P.C.

64

Note: 4/13 Plan Sheets - Bureau Deletions 11/1/67

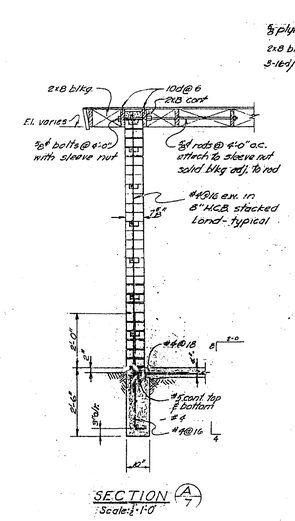
B.F.P. REV. NO.	STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	CALIF.	I-080-2(11)43		66	239

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	SOL	7	B	66	134

DISTRICT ENGINEER DISTRICT X

APPROVED January 18, 1960

AS BUILT PLANS
Contract No. 60-107321
Date Completed
Document No. 00000494



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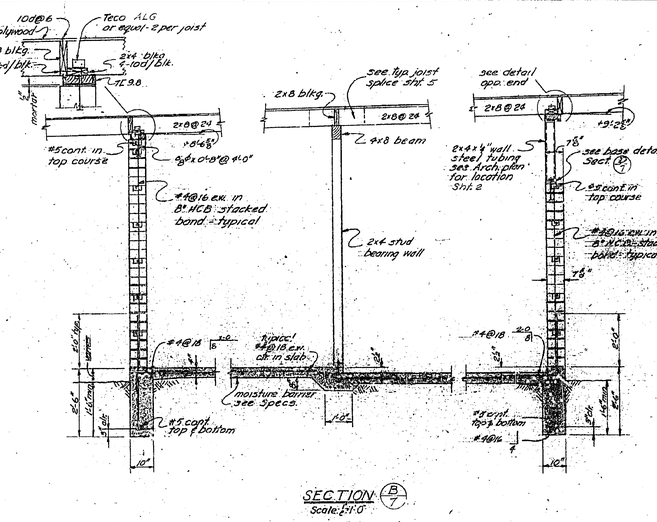

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SECTION (C/7)
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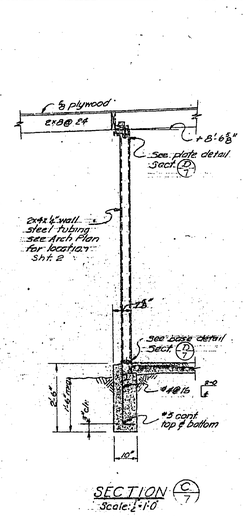

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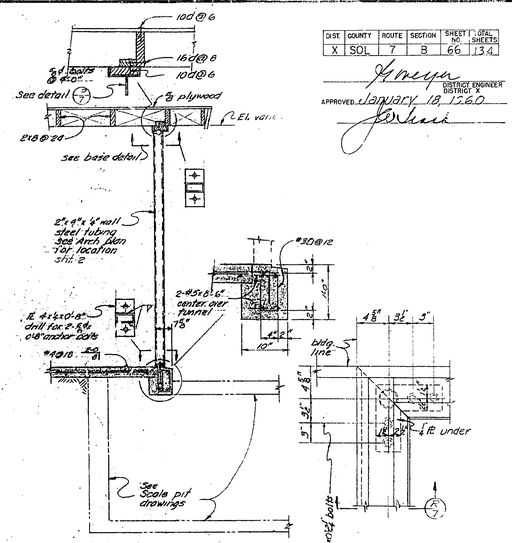
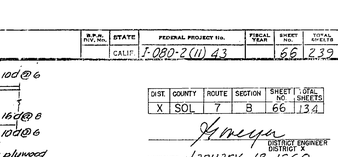


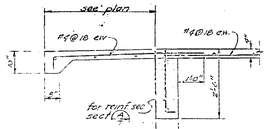
DETAIL (P/7)
Scale: 1½"=1'-0"

SECTION (R/7)
Scale: 1½"=1'-0"



DETAIL (S/7)
Scale: 1½"=1'-0"

SHEET 7 OF 9



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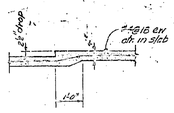

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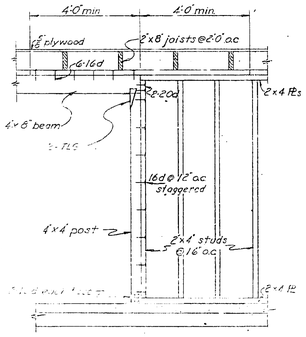
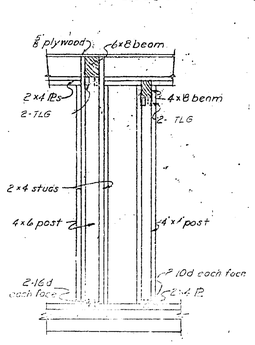


SECTION (G/7)
Scale: ½"=1'-0"
Opposite end similar



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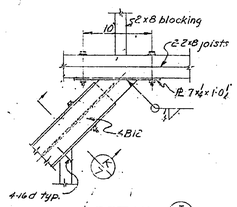

DETAIL (J/7)
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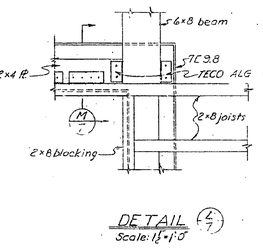

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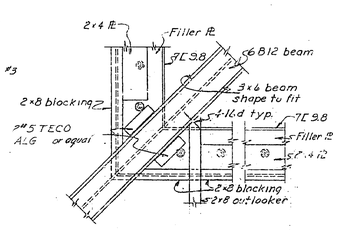

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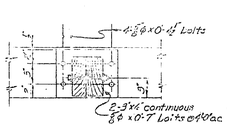

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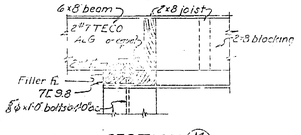


SECTION (M/7)
Scale: 1½"=1'-0"

NEW SCALE YARD DIV. OF HIGHWAYS DIST. X
NEAR CORDELIA M.O. #341 SHT. 2 OF 2

DESIGN DEPT.	INITIAL	DATE
Designed		
Traced		
Checked		
Supervised by		

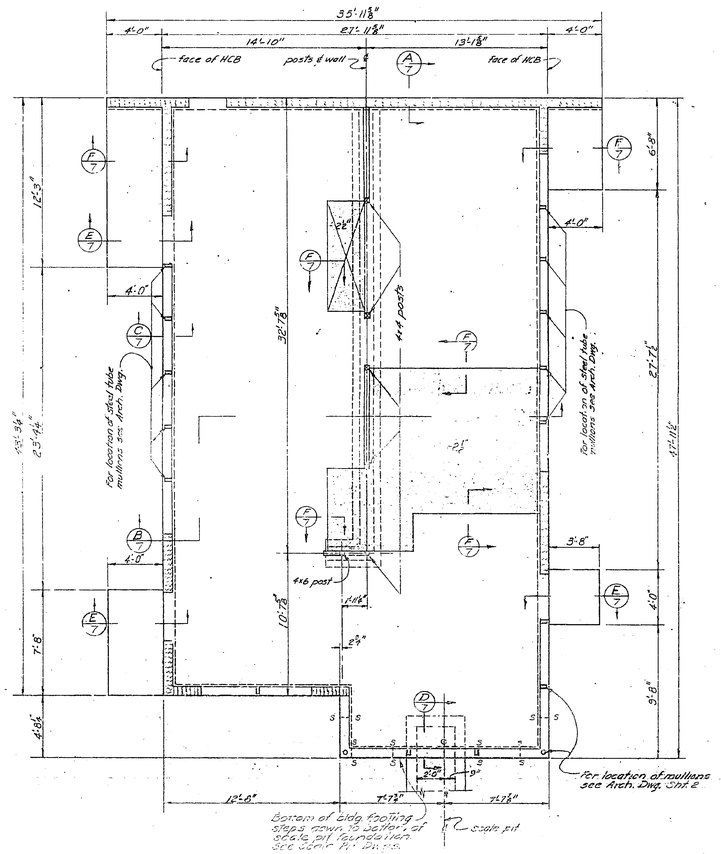
66

D.P.W. DIV. NO.	STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
	CALIF.	J-080-2(11) 43		65	232

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	SOL	7	B	65	134

DISTRICT ENGINEER
DISTRICT 3

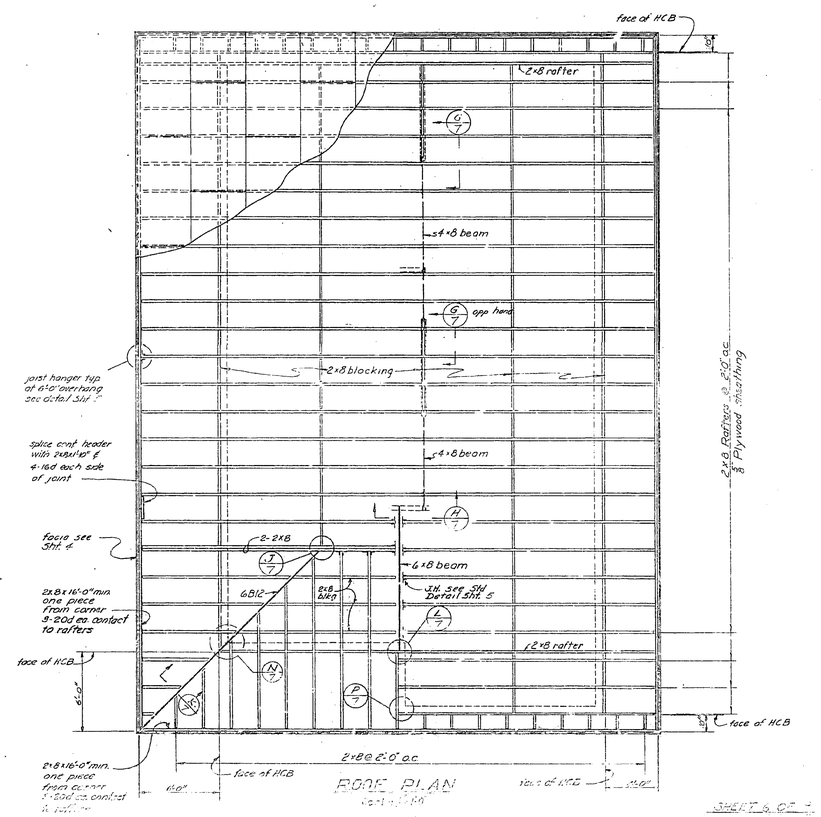
APPROVED January 18, 1960



FOUNDATION AND FLOOR PLAN

Scale: ¼" = 1'-0"

For Fin. Floor Elev. See Layout Sheets



ROOF PLAN

SHEET 6 OF 7

DESIGN DEPT.	INITIAL	DATE
Designed		
Traced		
Checked		
Approved		

65

AS BUILT PLANS
Contract No. 60-107021
Date Completed
Document No. 000004941

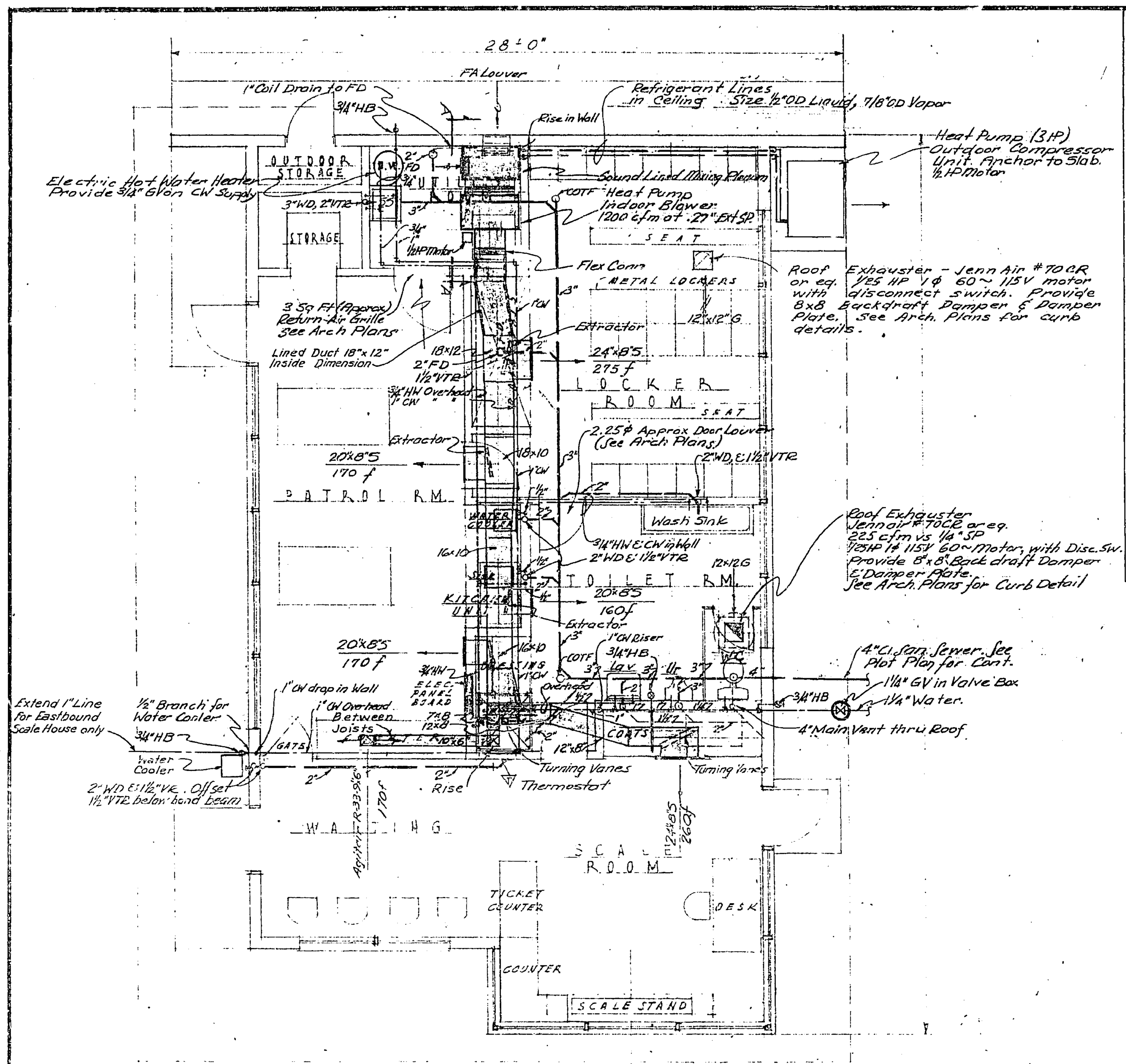
NEW SCALE YARD DIV. OF HIGHWAYS DIST. X
NEAR CORDELIA WO 4541-5C D.C.

Traced 4-7-60 Corrections Incorporated Drafting 4/18/60

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	SOL	7	B	67	134

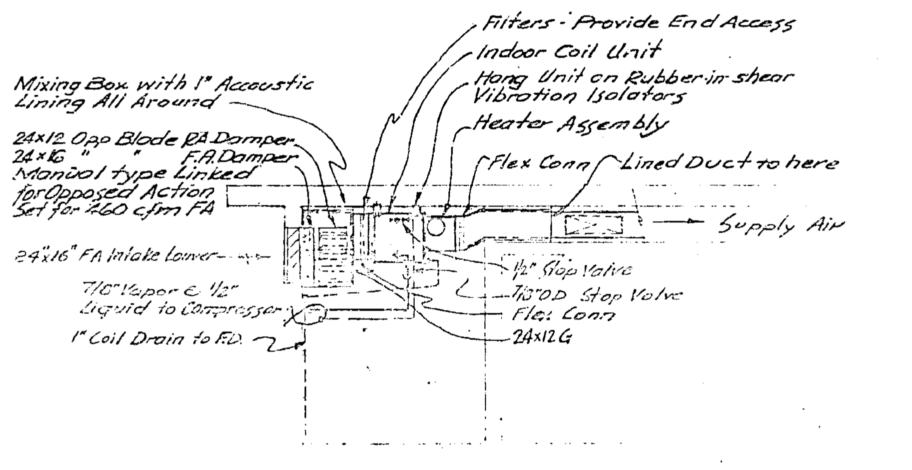
DISTRICT ENGINEER DISTRICT X

APPROVED January 18, 1960



F L O O R   P L A N

S C A L E : 1/4" = 1'-0"



SECTION A-A

Scale: 1/4" = 1'-0"

HEATING LEGEND

S ------ Supply Register (double deflecting)

R ------ Register (single deflecting)

Cfm or f -- Cubic Feet of Air per Min.

FA ---- Fresh Air

RA ---- Return Air

G ---- Grille

PLUMBING LEGEND

——— ———	Soil or Waste
———— - ———	CW(R)(D) Cold Water (Rise) (Drop)
———— — — ———	HW(R)(D) Hot Water (Rise) (Drop)
— — — — — —	Vent

FD	Floor Drain	VC	Vitrified Clay
HB	Hose Bibb	CI	Cast Iron
SS	Slop Sink	COTF	Cleanout to Floor
Ur	Urinal	COTG	Cleanout to Grade
WC	Water Closet	VR	Vent Riser
Lav	Lavatory	VTR	Vent thru Roof
GV	Gate Valve	WD	Waste Drop

AS BUILT PLANS
Contract No. 60-107C21
Date Completed
Document No. 00000494

NEW SCALE YARD DIV. OF HIGHWAYS DIST. X
NEAR CORDELIA

SHEET 8 OF 9

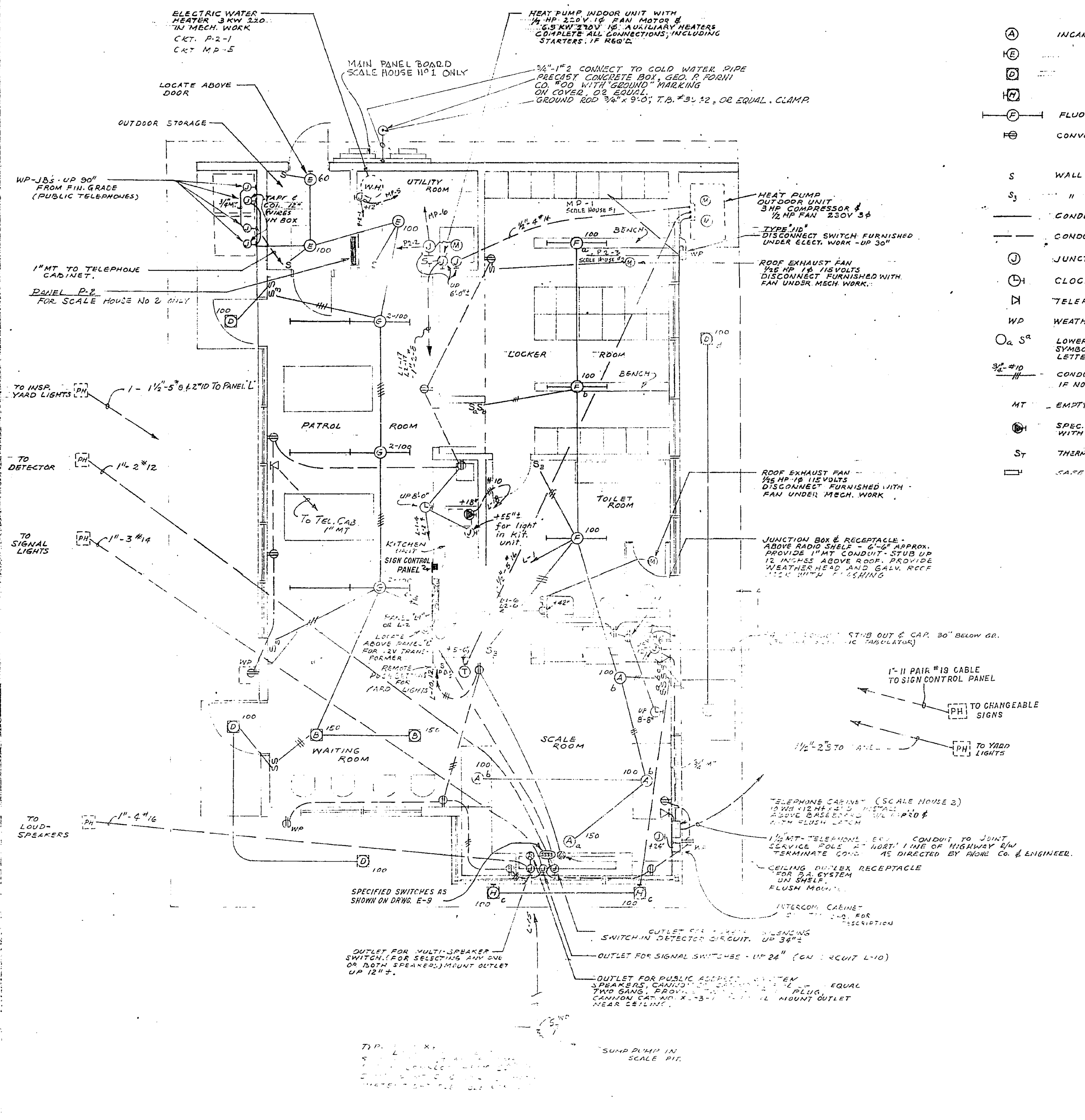
67

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	SOL	7	B	68	134

DISTRICT ENGINEER DISTRICT X

APPROVED January 18, 1960

Assistant State Highway Engineer



PLAN FOR SCALE HOUSE No 1

SCALE 1/8" = 1'-0"

OUTSIDE YARD LIGHTS

SYMBOL LIST

Symbol	Description
(A)	INCANDESCENT CEILING LIGHT OUTLET WITH FIXTURE DESIGN INDICATED
(E)	" WALL " " " " " "
[D]	" RECESSED " " " " " "
[H]	" RECESSED & WALL MOUNTED LIGHT OUTLET WITH FIXTURE DESIGN INDICATED
(F)	FLUORESCENT LIGHT OUTLET WITH FIXTURE DESIGN INDICATED
⊖	CONVENIENCE OUTLET, DUPLEX
S	WALL SWITCH, SINGLE POLE
S_3	" " , THREE WAY
———	CONDUIT AND WIRE CONCEALED IN WALL OR CEILING
— —	CONDUIT AND WIRE, IN OR UNDERFLOOR, OR BELOW GRADE.
(J)	JUNCTION BOX (FOR 1"C - USE 4 11/16 BOXES)
(clock)	CLOCK OUTLET BRYANT #2828, OR EQUAL.
▷	TELEPHONE OUTLET - UP 12"
WP	WEATHER PROOF
O_a S^a	LOWER CASE LETTER BY FIXTURE OR DEVICE SYMBOL INDICATES CONTROL BY SIMILARLY LETTERED SWITCH.
3/4"-#10	CONDUIT SIZE, WIRE SIZE, AND NUMBER OF CONDUCTORS. IF NOT NOTED, CONDUIT IS 1/2" WITH 2 #12 WIRES.
MT	EMPTY CONDUIT WITH PULL WIRE ONLY.
(special outlet)	SPEC. OUTLET-KITCHEN UNIT - HUBBELL CAT. NO. 9340, OR EQUAL, 30A 250V, WITH HUBBELL NO. 7114 PLATE & NO. 9339 CORD SET.
S_T	THERMAL OVERLOAD SWITCH, WESTINGHOUSE CLASS 10-073, OR EQUAL, UP 5'-6"
(box)	SAFETY DISCONNECT SWITCH

FIXTURE LIST

A	PRESCOLITE, CAT. NO. AX-44, OR EQUAL, PENDANT MT'D., UP 7'-0".
B	PRESCOLITE, CAT. NO. 1015-6715, OR EQUAL, RECESSED.
D	PRESCOLITE, CAT. NO. 488-6700, OR EQUAL, RECESSED, ALUMINUM FINISH FOR EXTERIOR INSTALLATION.
E	BRYANT CAT. 5228, OR EQUAL, PORCELAIN BOX RECEPTACLE.
F	SMOOT-HOLMAN, CAT. NO. A-24, OR EQUAL, 2-F40T12 RS, STRIP LIGHT.
G	SMOOT-HOLMAN, CAT. NO. SL 24 RLL, OR EQUAL, CEILING TYPE SHALLOLITE WITH LEAD-LAG HP BALLAST, (2 UNIT IN A ROW) 2-F40 T12 RS 430 MA.
H	PRESCOLITE, CAT. NO. 90L, OR EQUAL, RECESSED IN WALL, PREWIRED UNIT, FRESNEL LENS & DIE CAST FRAME ALUMINUM FINISH FOR EXTERIOR INSTALLATION. MOUNTING HEIGHT AS SHOWN ON ARCHITECTURAL FRONT ELEVATION. 100W.

AS BUILT PLANS
Contract No. 60-10TC21
Date Completed
Document No. 00000494

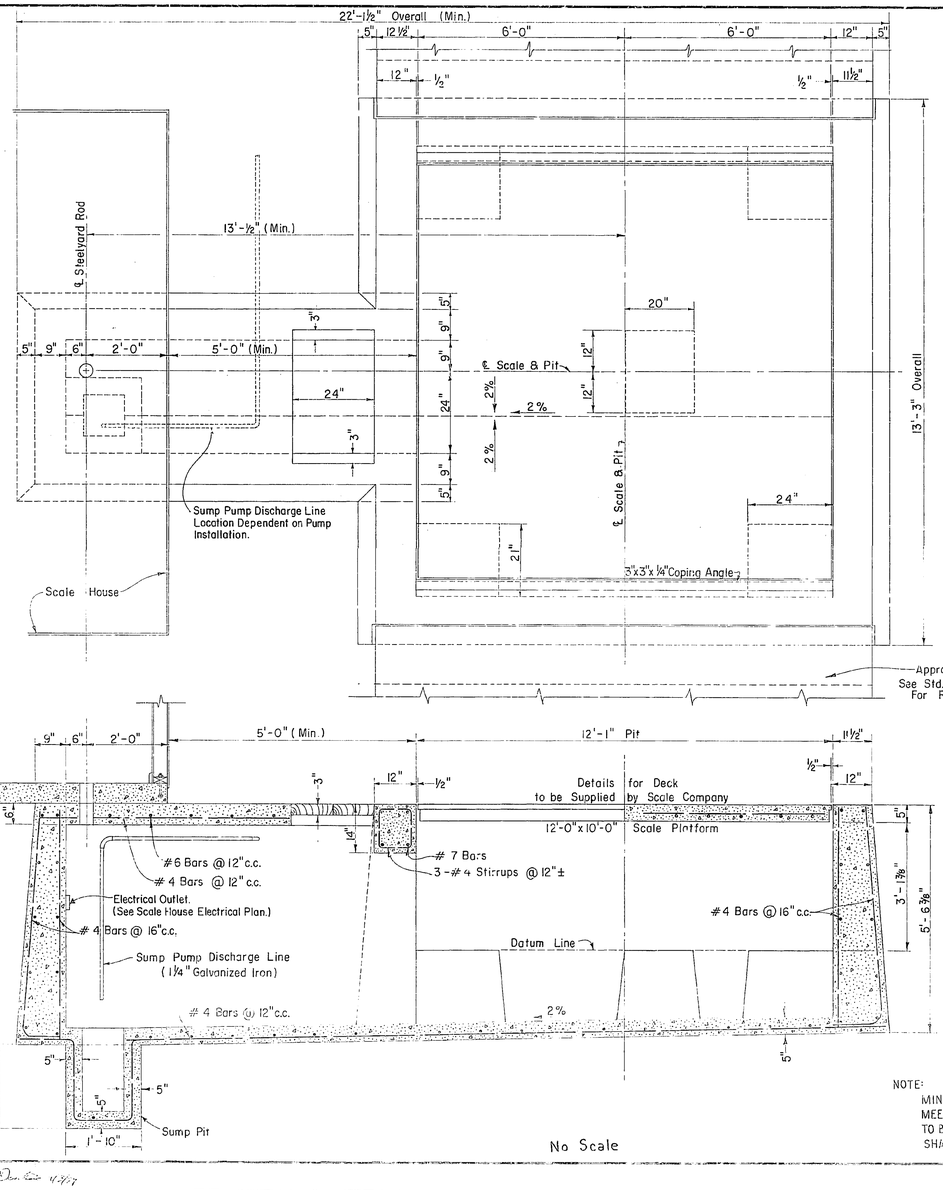
68

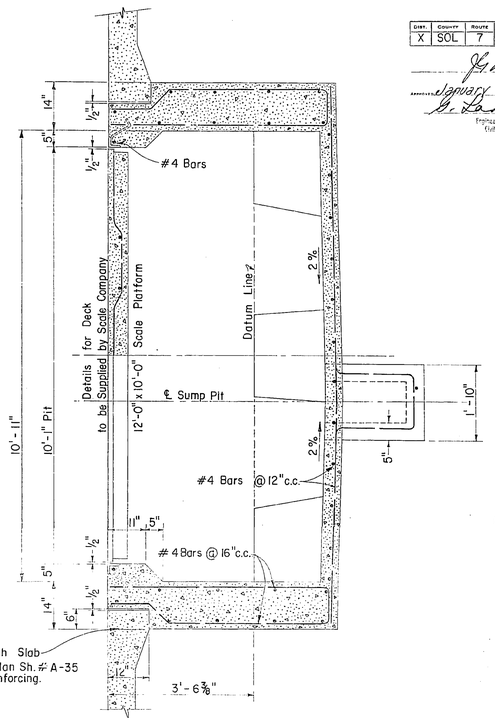
APPROVAL RECOMMENDED BY DATE 7/3/57

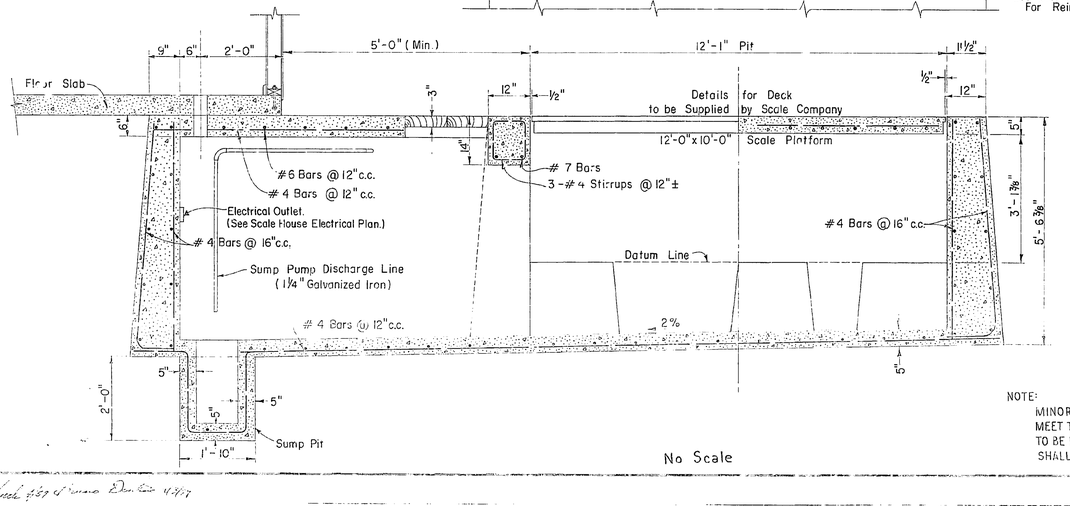
U.P.R. or V. No.	STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
	CALIF.	I-080-2(11)43		69	239

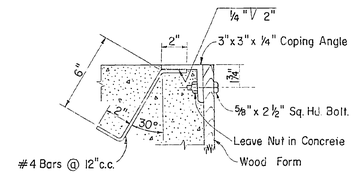
DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	SOL	7	B	69	134

DISTRICT X
January 18, 1960
Engineer in Charge
Civil Engineer License No. 5430









METHOD OF ATTACHING
COPING ANGLES TO WOOD FORMS
(NOT TO SCALE)

NOTE :
SCALE PIT TO BE CLASS "A" P.C.C.

NOTE:
MINOR VARIATIONS IN DIMENSIONS TO MEET THE REQUIREMENTS OF THE SCALE TO BE INSTALLED MAY BE NECESSARY AND SHALL BE APPROVED BY THE ENGINEER.

No Scale

DETAILS OF 30 TON 12' x 10' PLATFORM SCALE PIT

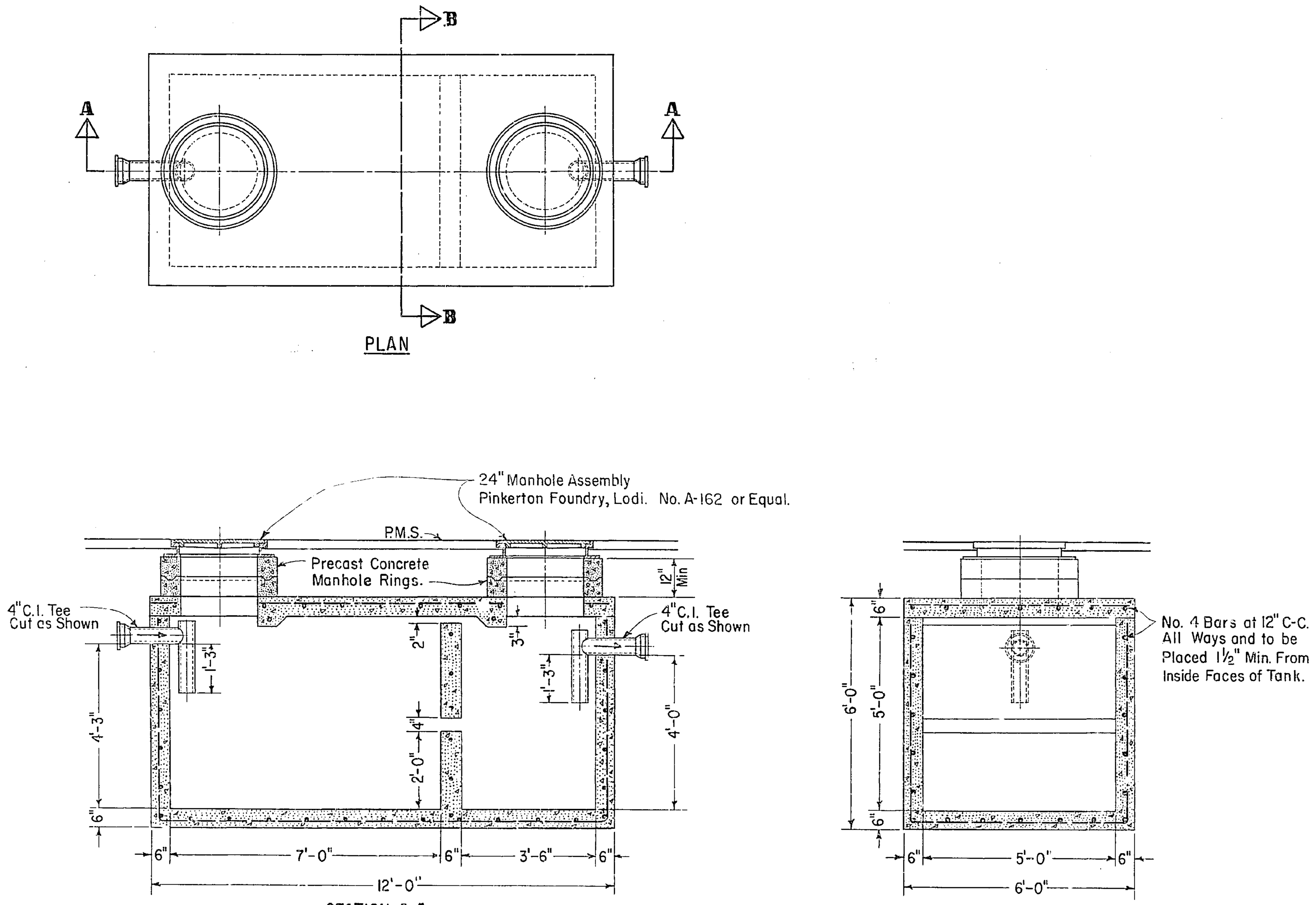
AS BUILT PLANS
Contract No. 80-107221
Date Completed
Document No. 20000494

Wiebe 369 Br. Branch 487 Marina Division 4-4-7

F.P.L. DIV. No.	STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
	CALIF.	I-080-2(11) 43		70	239

DIST.	COUNTY	ROUTE	SECTION	SHEET No.	TOTAL SHEETS
X	SOL	7	B	70	134

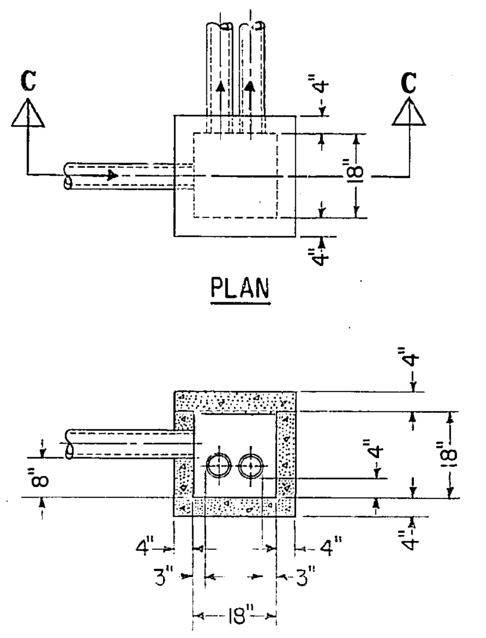
January 18, 1960



1,600 GALLON CAPACITY SEPTIC TANK

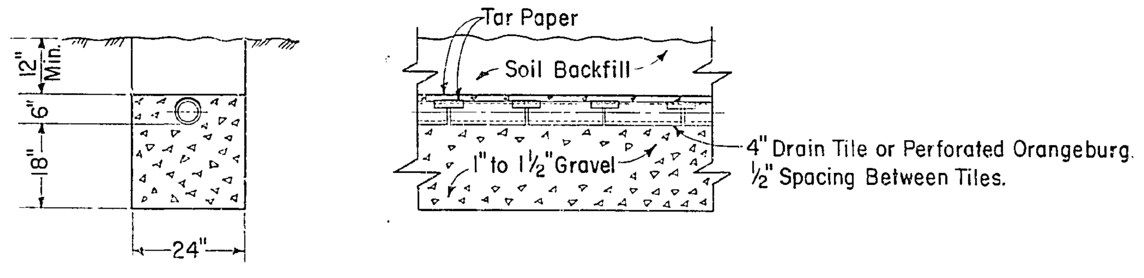
Or Equivalent Precast Concrete Type. Constructed by Approved Manufacturing Firms.

SCALE: ½" = 1'-0"



DISTRIBUTION BOX

SCALE: ½" = 1'-0"



NOTE: Grade of trench bottom shall not exceed 4" in 100'.

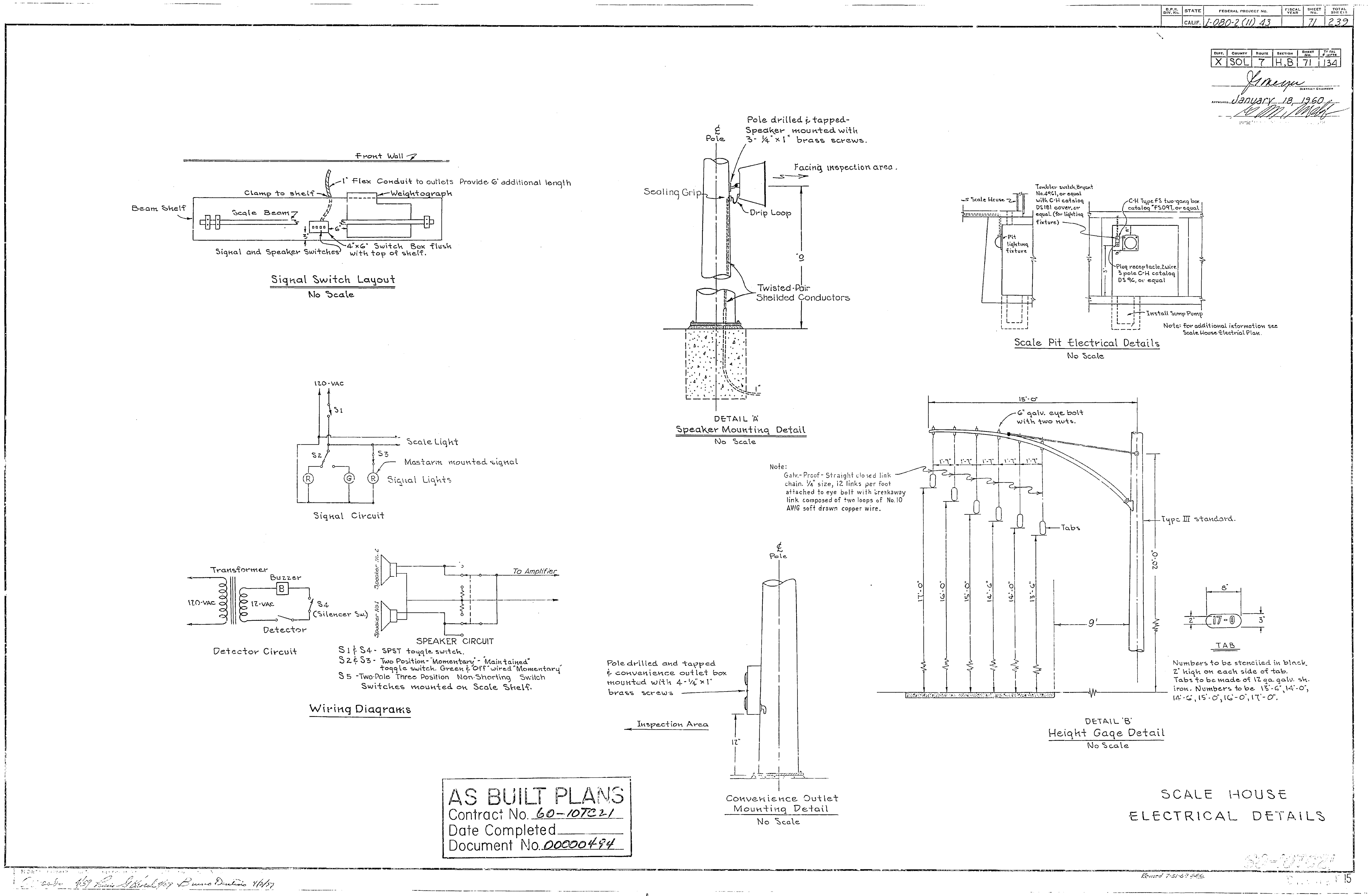
LEACHING TRENCH DETAIL

SCALE: ½" = 1'-0"

AS BUILT PLANS
Contract No. 60-10TC21
Date Completed
Document No. 00000494

SCALE HOUSE SEWAGE DISPOSAL SYSTEM

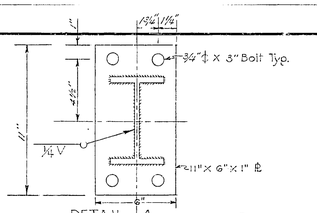
SCALE: AS NOTED

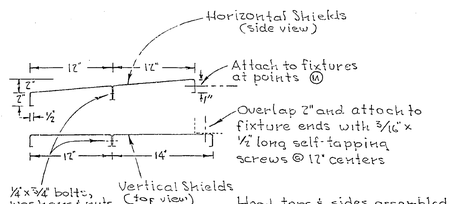

CALIF. I-080-2 (11) 43 71 239
X SOL 7 H.B 71 134
January 18, 1960
Front Wall
1" Flex Conduit to outlets Provide 6' additional length
Clamp to shelf
Weightograph
Beam Shelf
Scale Beam
4"x6" Switch Box flush with top of shelf.
Signal and Speaker Switches
Signal Switch Layout
No Scale
Pole drilled & tapped-Speaker mounted with 3- ¼"×1" brass screws.
Pole
Facing inspection area.
Sealing Grip
Drip Loop
Twisted-Pair Sheilded Conductors
DETAIL 'A'
Speaker Mounting Detail
No Scale
Scale Pit Electrical Details
No Scale
Install Sump Pump
Note: for additional information see Scale House Electrical Plan.
120-VAC
Scale Light
Mastarm mounted signal
Signal Lights
Signal Circuit
Transformer
Buzzer
12-VAC
S4 (Silencer Sw)
Detector
Detector Circuit
To Amplifier
SPEAKER CIRCUIT
S1 & S4- SPST toggle switch.
S2 & S3- Two Position-"Momentary"-"Maintained" toggle switch. Green & Off wired "Momentary"
S5 -Two Pole Three Position Non-Shorting Switch
Switches mounted on Scale Shelf.
Wiring Diagrams
15'-0"
6" galv. eye bolt with two nuts.
Note:
Galv.-Proof-Straight closed link chain. ⅛" size, 12 links per foot attached to eye bolt with breakaway link composed of two loops of No.10 AWG soft drawn copper wire.
Tabs
Type III standard.
20'-0"
9'
17'-0" 16'-0" 15'-0" 14'-6" 14'-0" 13'-6"
TAB
Numbers to be stenciled in black, 2" high on each side of tab. Tabs to be made of 12 ga. galv. sh. iron. Numbers to be 13'-6", 14'-0", 14'-6", 15'-0", 16'-0", 17'-0".
DETAIL 'B'
Height Gage Detail
No Scale
Pole drilled and tapped & convenience outlet box mounted with 4-¼"×1" brass screws
Inspection Area
12"
Convenience Outlet Mounting Detail
No Scale
AS BUILT PLANS
Contract No. 60-10TC21
Date Completed
Document No. 00000494
SCALE HOUSE
ELECTRICAL DETAILS

DIST.	COUNTY	ROUTE	POST/MILE	SHEET NO.	TOTAL SHEETS
X	SOL	7	B	72	134

E. Hensby
ASST. DISTRICT ENGINEER
January 13, 1960
Assistant State Highway Engineer

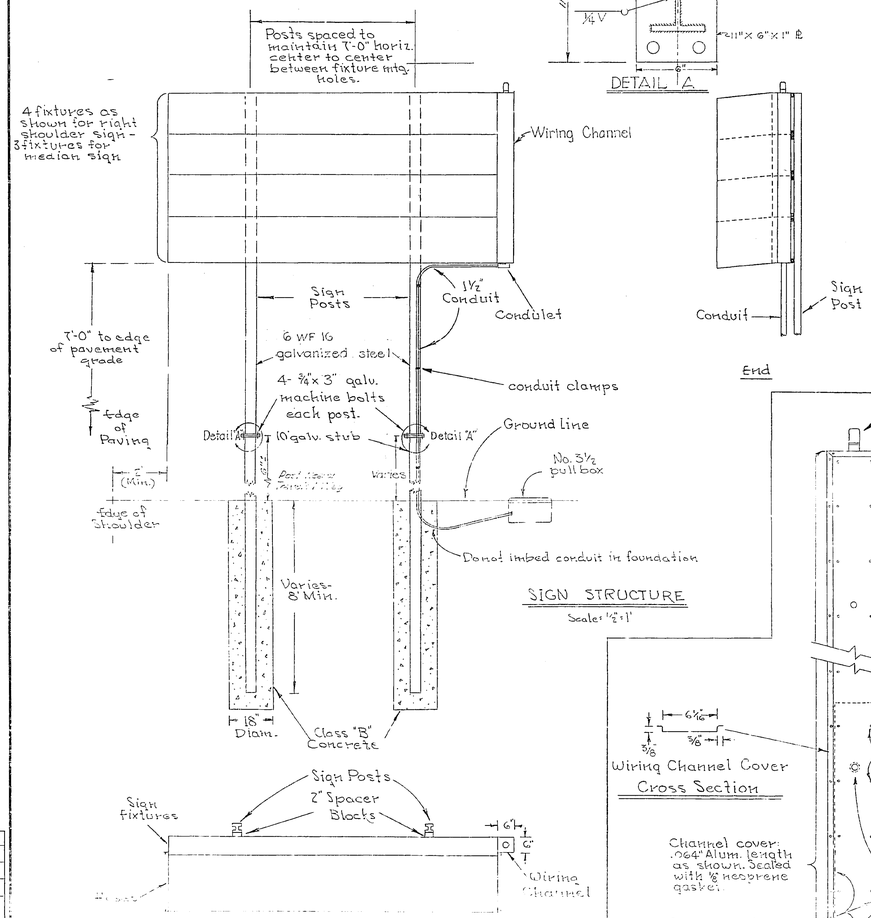
M.P.S. DIV. NO.	STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	CALIF.	I-080-2(11)43		72	239



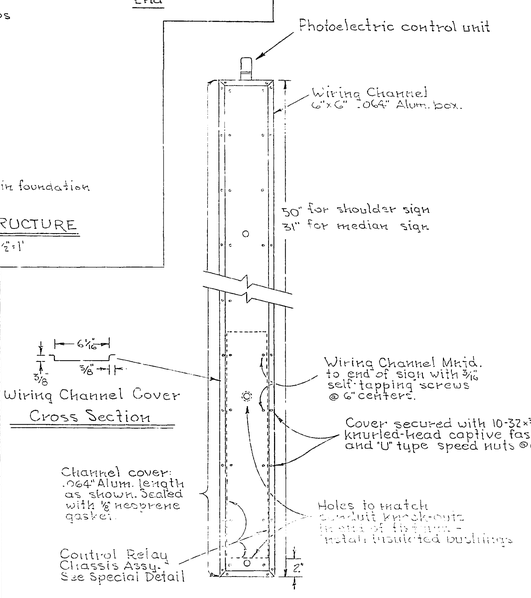


Sign Fixture Hoods - .064" Aluminum

No Scale



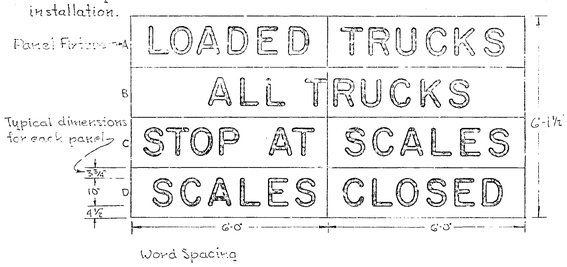
End



Wiring Channel Detail

No Scale

NOTE: Omit panel fixture D on median sign installation.



SIGN MESSAGE FORMAT

See Sheet #3 for additional notes.

AS BUILT PLANS
Contract No. 60-107241
Date Completed
Document No. 00001494

Sheet 1 Of 3
Changeable Message Sign Plans

DESIGN DEPT.	INITIAL	DATE
Designed		
Traced		
Checked		
Supervised by		

PROJECT ENGINEER	DATE	TRAFFIC ENGINEER	DATE	APPROVAL RECOMMENDED BY	DATE
William L. Shaw	10/1/59	D. Clark	10/1/59		

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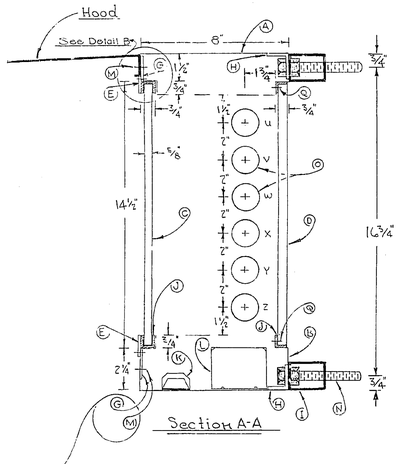
DWG. E-16A

B.P.R. DIV NO.	STATE	FEDERAL PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	CALIF.	I-080-2(11) 43		73	239

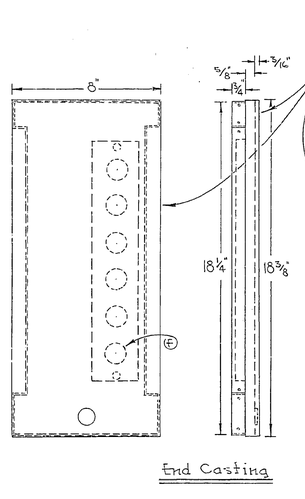
DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	SOL	7	B	73	134

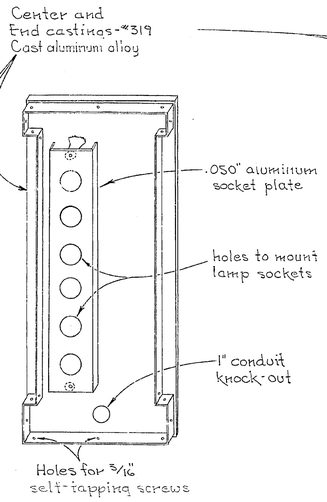
Assistant State Highway Engineer

January 18, 1960

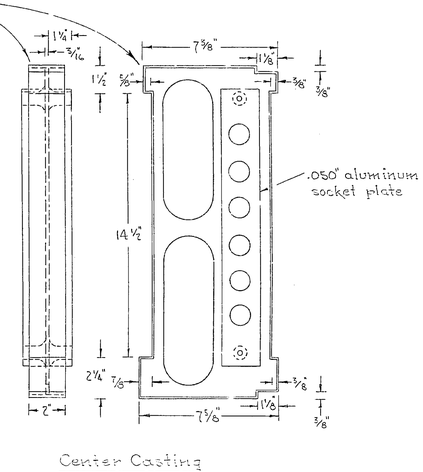


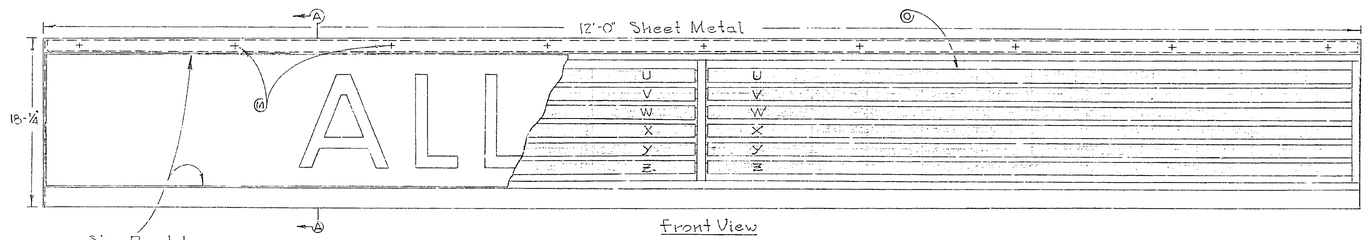
NOTE: Mounting bolts & backing plate for mounting hood bottom piece to be provided on bottom fixture of each sign only.

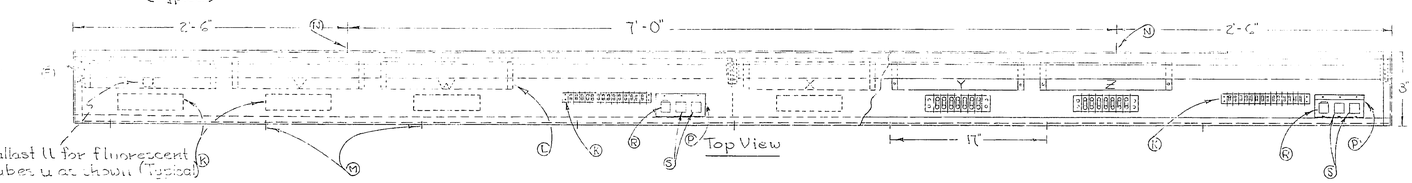




See Sheet No. 3 for Additional Notes







DESIGN DEPT.	INITIAL	DATE
Designed		
Traced		
Checked		
Supervised by		

PROJECT ENGINEER	DATE	DRAFTING ENGINEER	DATE	APPROVAL RECOMMENDED BY	DATE
Thomas Wood			1/60		

A.S BUILT PLANS
Contract No. 60-107021
Date Completed
Document No. 00004494

Sheet 2 of 3
Changeable Message Sign Plans

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DWG. E-16B

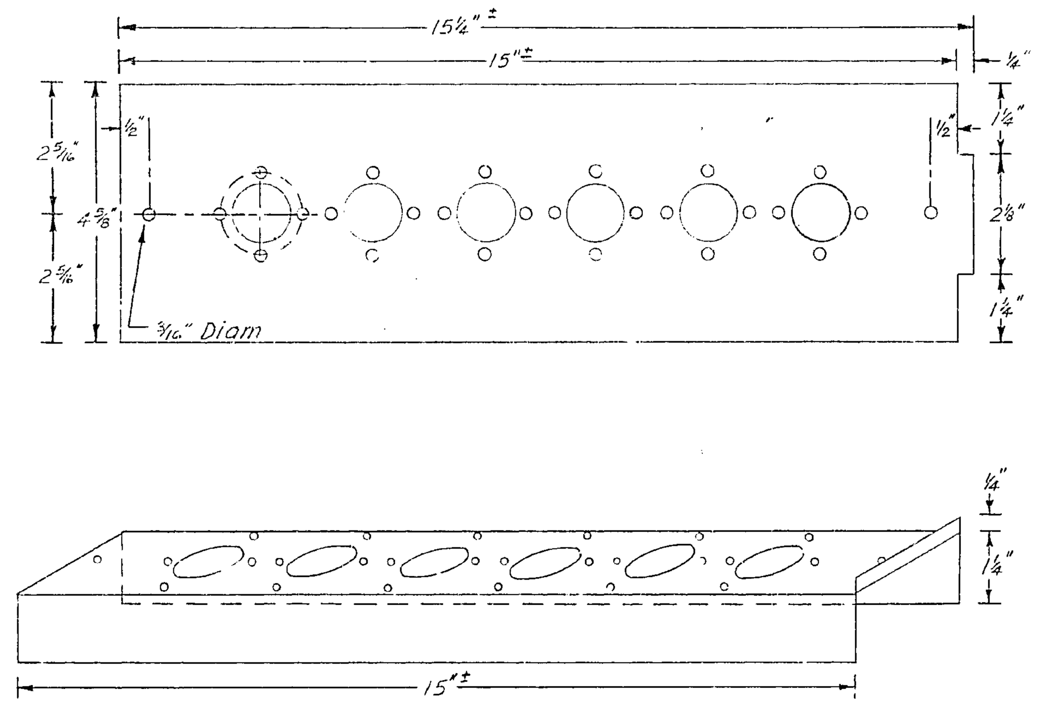
B.P.R. DIV No.	STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
	CALIF.	I-080-2 (11) 43		74	232

DIST.	COUNTY	ROUTE	SECTION	SHEET No.	TOTAL SHEETS
X	SOL.	7	B	74	134

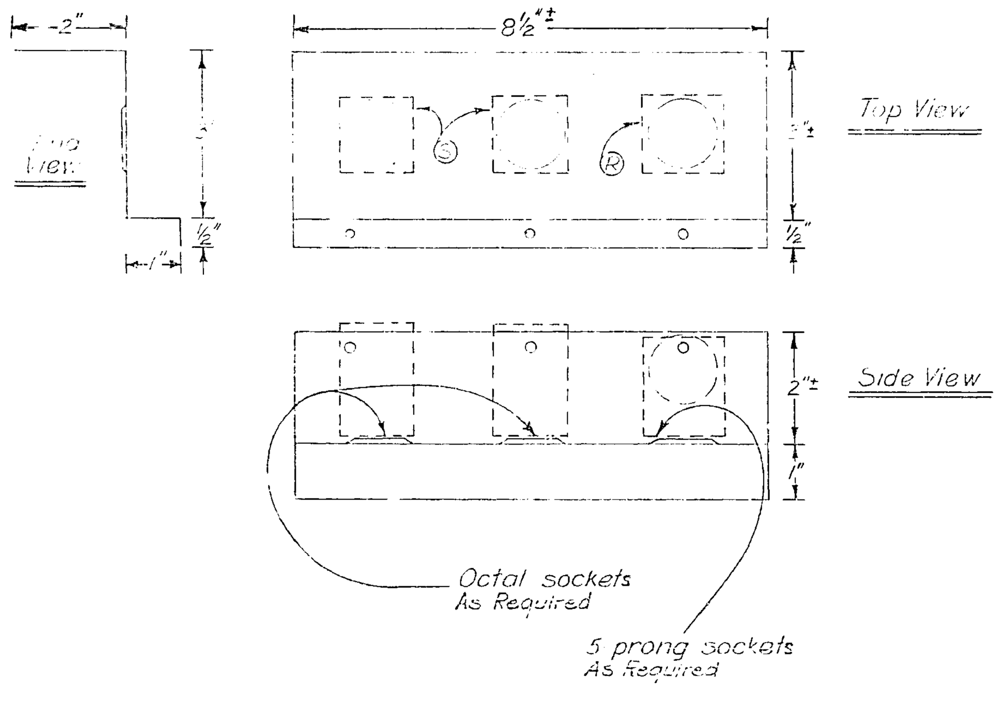
Asst. District Engineer

Approved January 18, 1960

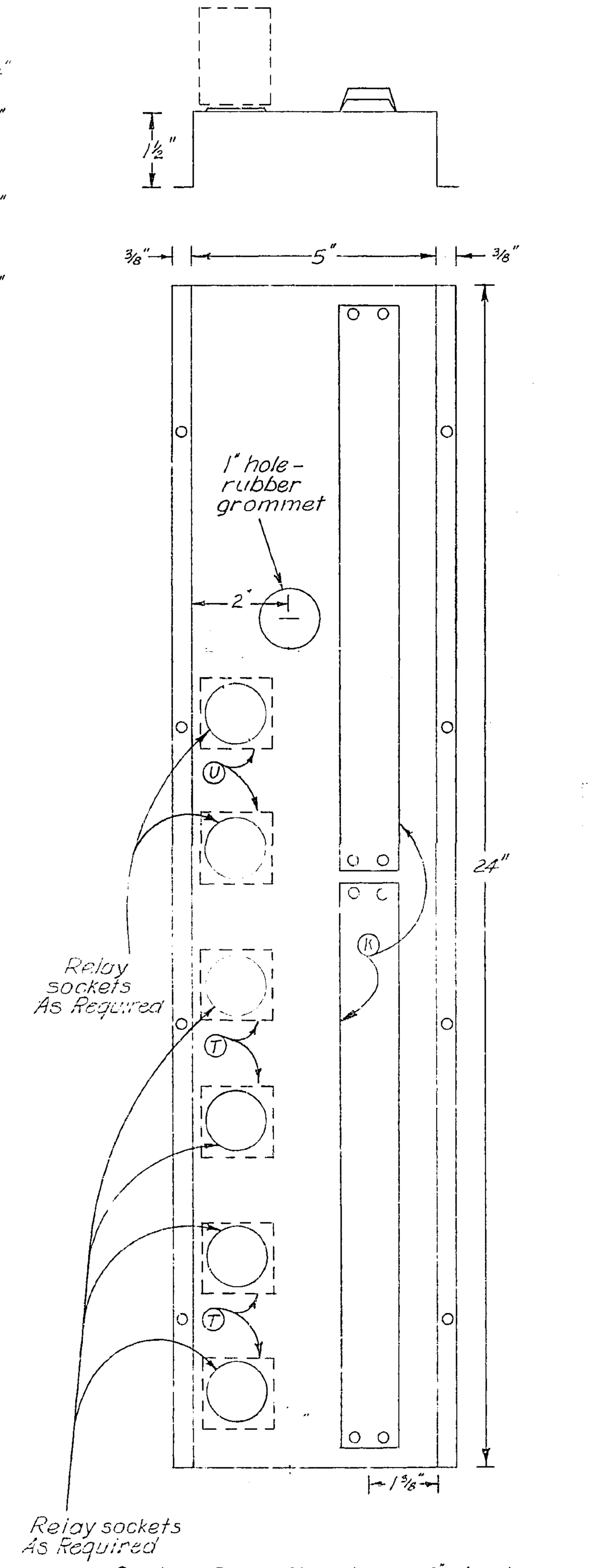
Assistant State Highway Engineer



Socket Plate – .050" aluminum



Control Relay Chassis – .050" aluminum



Control Relay Chassis – .050" aluminum

A. TOP CHANNEL: .064" ALUMINUM.

B. BOTTOM CHANNEL: .064" ALUMINUM.

C. SIGN PANEL LENS: TWO PIECES 5'-11-7/8" x 14-1/4" x 5/8" SEE NOTE A, THIS SHEET

D. BACK COVER PAN: TWO PIECES 5'-11-7/8" x 14-1/4" x .064" ALUMINUM.

E. SIGN PANEL LENS SECURED AS SHOWN WITH .064" ALUMINUM STRIP ALL AROUND. STRIP ATTACHED TO FIXTURE HOUSING WITH SHEET METAL OR SELF-TAPPING SCREWS ON 10" CENTERS

F. LAMP SOCKETS

G. REINFORCING BAR: 11'-8" x 1-1/4" x 1/8" ALUMINUM BAR STOCK.

H. REINFORCING ANGLE: 1-1/4" x 1-1/4" x 1/8" x 9'-0" ALUMINUM ANGLE.

I. SPACER BLOCK: 2" x 1-1/2" EXTRUDED STEEL TUBING, 2" LONG, 1/8" WALL THICKNESS.

J. GASKET: 1/8"x1 3/8" AND 1/8"x3/4" FLEXIBLE FOAM POLYURETHANE. CEMENT TO CHASSIS AND ALUMINUM STRIP.

K. BARRIER TYPE TERMINAL STRIP

L. BALLAST WITH .064" ALUMINUM HEAT RADIATOR.

M. 1/4" x 3/4" LONG BOLT WITH TWO 3/4" WASHERS, LOCKWASHER AND NUT, ON 17" CENTERS.

N. 1/2" x 4" LONG BOLT, 1-1/2" WASHER, LOCKWASHER AND 2 NUTS.

O. FLUORESCENT LAMPS #F72-T12-CW/HO.

P. FIXTURE LIGHT RELAY CHASSIS ASS'Y.: FABRICATED OF .050" ALUMINUM, ATTACHED TO SIDE AND BOTTOM OF BOTTOM CHANNEL WITH SHEET METAL SCREWS. SEE SPECIAL DETAIL.

Q. BACK COVER PAN SECURED WITH 10/32 x 1/2" KNURLED HEAD, CAPTIVE FASTENERS AND "U" TYPE SPEED NUTS ON 10" CENTERS HORIZ. AND 4" CENTERS VERT.

R & S. CONTROL RELAYS

T. SIGN CONTROL RELAYS

U. DIMMING RELAYS

ALL .050" AND .064" ALUMINUM SHALL BE #3003H14 OR #5005H14 ALUMINUM ALLOY.

FIXTURE CASTINGS SHALL BE OF #319 CAST ALUMINUM ALLOY.

ALL SCREWS, BOLTS, NUTS, WASHERS AND OTHER MISC. HARDWARE SHALL BE OF STAINLESS STEEL.

ALUMINUM IMPREGNATED CAULKING COMPOUND SHALL BE PLACED ON ALL JOINTS OF CONTACT BETWEEN ALUMINUM AND STEEL.

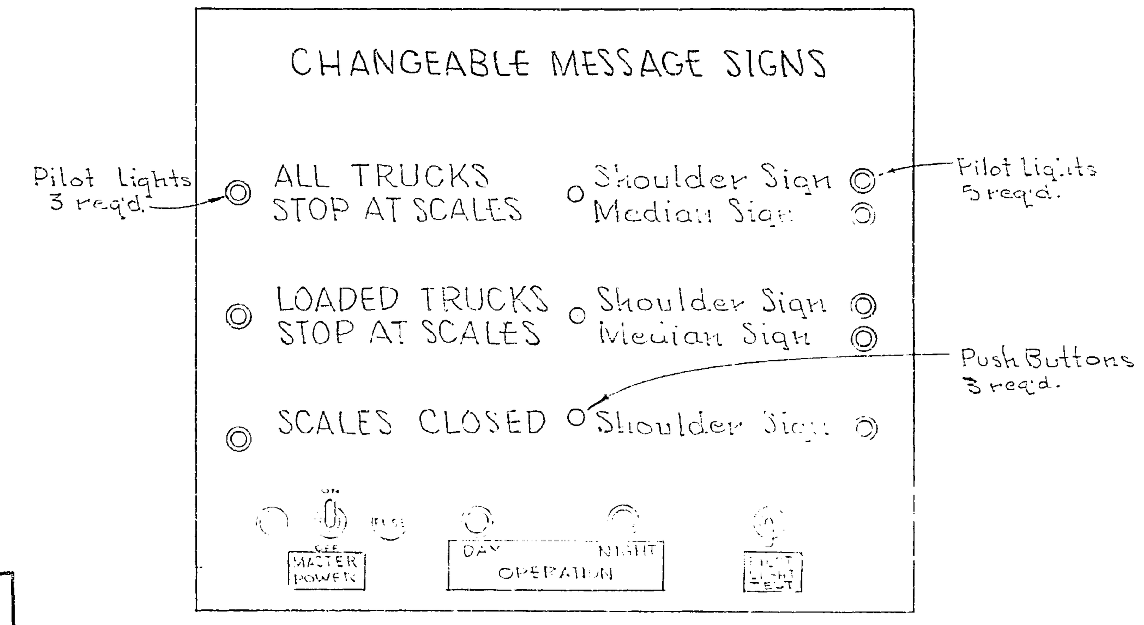
JOINTS OF SIGN FIXTURES SHALL BE SEALED WITH WATERPROOF CAULKING COMPOUND OF A NON-PERMANENT SETTING TYPE.

FIXTURES SHALL BE WIRED USING SUITABLE GAUGE STRANDED CONDUCTOR WITH THERMOPLASTIC INSULATION RATED AT 600-V, TO 105° CENTIGRADE.

OUTER SURFACES OF SIGN, HOODS AND POSTS SHALL BE FINISHED WITH TWO COATS OF FLAT BLACK, OUTDOOR TYPE, SYNTHETIC ENAMEL. BEFORE PAINTING, SURFACES SHALL BE DEGREASED AND PRIMED WITH PRE-TREATMENT PRIMER.

INTERIOR SURFACE OF BACK COVER PANS SHALL BE FINISHED WITH WHITE BAKED ENAMEL.

SERVICE CONDUCTORS SHALL BE NO. 8 AWG.



CONTROL PANEL FACE
No Scale
Face Dimensions Approx. 17"x 17"

Note A:
Allow 0.5% of sign panel length and depth for thermal expansion.

DESIGN DEPT.	INITIAL	DATE
Designed		
Traced		
Checked		
Supervising		

AS BUILT PLANS
Contract No. 60-10TC21
Date Completed
Document No. 00000494

Sheet 3 of 3
Changeable Message Sign Plans

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PROJECT ENGINEER	DATE	TRAFFIC ENGINEER	DATE	APPROVAL RECOMMENDED BY	DATE

DWG. E 16C

B.P.R. DIV. No.	STATE	FEDERAL PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	CALIF	I-080-2(11)43		82	239

Sheet 8 of 20 Lighting Plans

DIST	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
X	SOL	T	B	82	134

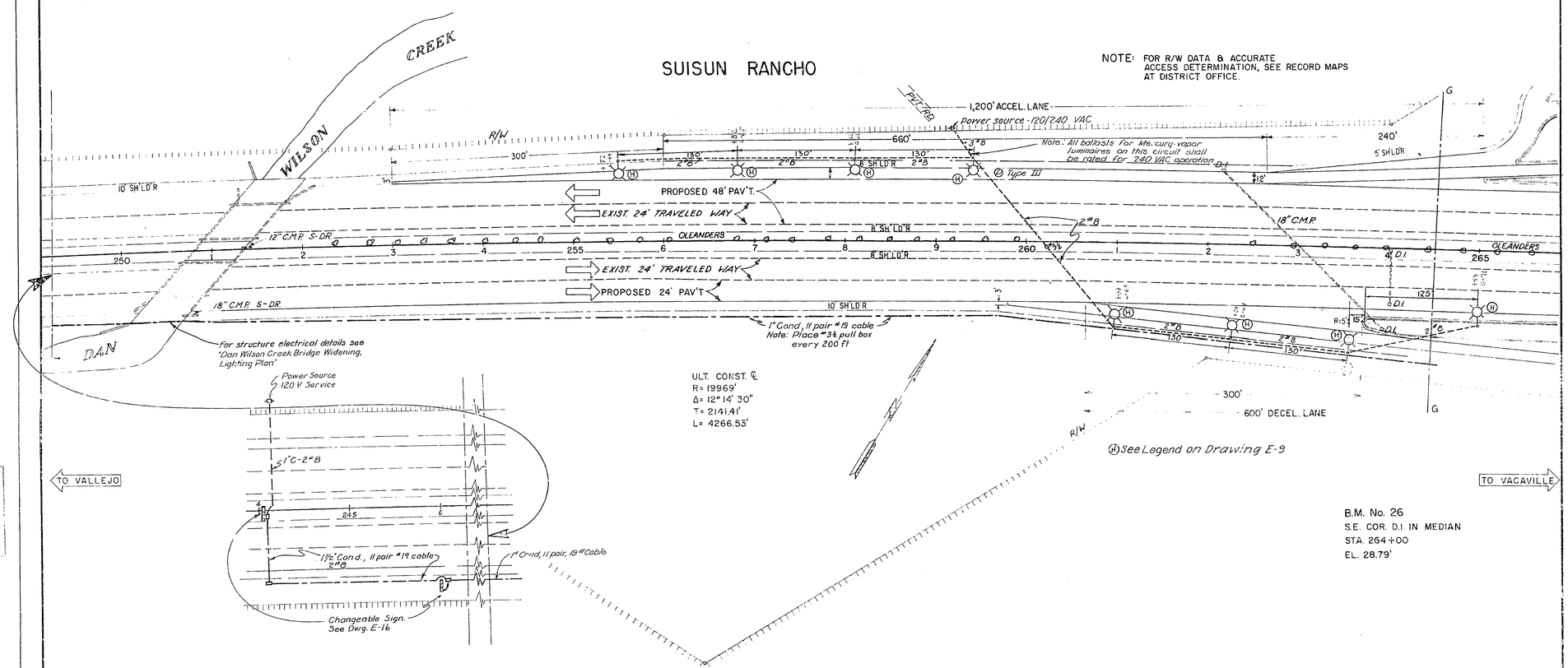
DISTRICT ENGINEER DISTRICT X

Approved January 18, 1960

Traffic Engineer Civil Engineer License No. 5479

SUISUN RANCHO

NOTE: FOR R/W DATA & ACCURATE ACCESS DETERMINATION, SEE RECORD MAPS AT DISTRICT OFFICE.



(H) See Legend on Drawing E-9

B.M. No. 26
S.E. COR. D.I. IN MEDIAN
STA. 264+00
EL. 28.79'

AS BUILT PLANS
Contract No. 60-107C21
Date Completed
Document No. 000004-94

Note: This plan accurate for electrical work only.

HIGHWAY LIGHTING AND ILLUMINATED SIGN SYSTEMS

Scale: 1"=50'

Rev. 8-12-97 - SEL

82

B.P.R. DIV. No.	STATE	FEDERAL PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	CALIF.	I-080-2 (11) 43		83	239

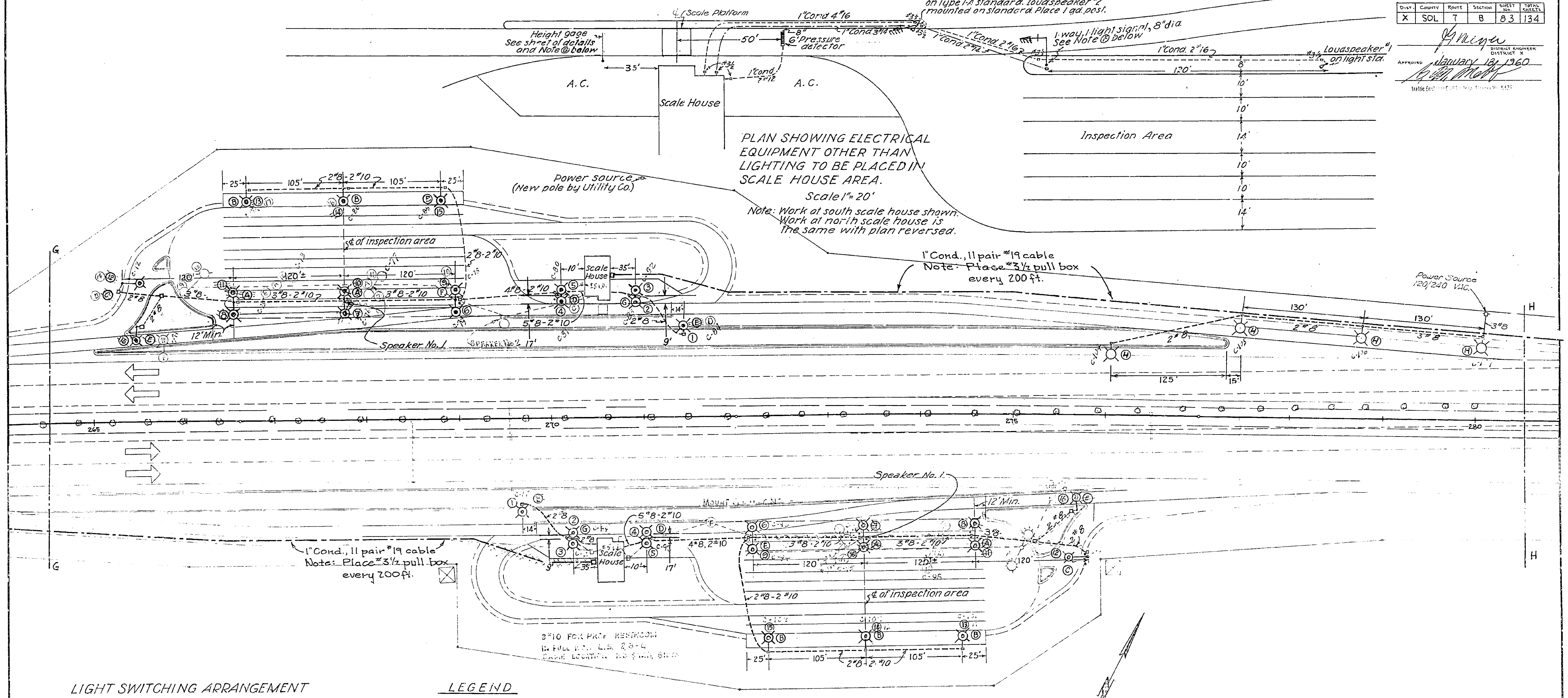
Sheet 9 of 20 Lighting Plans

DIST.	COUNTY	ROUTE	SECTION	SHEET No.	TOTAL SHEETS
X	SOL	7	B	83	134

DISTRICT ENGINEER DISTRICT X

APPROVED January 18, 1960

Traffic Engineer



LIGHT SWITCHING ARRANGEMENT

Lights numbered 1,2,3,4,5,6,7,8 & 16 to be switched together
Lights " 9,10,11, & 12 " " " "
Lights " 13,14, & 15 " " " "
Schedule is the same for both scale houses.

Ⓗ = Same as Ⓑ, except with 20,500 Lumen ASA Type H33-1CD lamp shielded luminaire, and less convenience outlet.

LEGEND

Ⓐ - Double luminaires, on 12 ft. mast arms on 30 ft. Type X standards. No. 5 pull box and 3 standard guard posts at each standard. Lamps to be ASA type H1GL/S "Silver White" producing 25000 lumens. Luminaires to have Type III light distribution.

Ⓑ - Single luminaire same as at Ⓐ on 12 ft. mast arm on 30 ft. Type X standard. No guard posts.

Ⓒ - Same as Ⓑ with 2 standard guard posts.

Ⓓ - Double luminaire same as at Ⓐ except scale-side mastarm shall be 6-ft, and with 3 standard guard posts.

Ⓔ - Same as Ⓑ with 6 ft mast arm

Ⓕ - Same as Ⓒ except that standard shall be Type III and shall be furnished with 15 ft. mast arm carrying 1-way, 1-section red signal 17 ft. above pavement.

Ⓖ - Same as Ⓓ except that standard shall be Type II, and shall be furnished with 15 ft. mast arm carrying height indicator. See detail on Drawing E-15.

Notes: Each standard marked Ⓐ, Ⓑ and Ⓕ shall be furnished with a convenience outlet. See Drawing E-15
A #5 pull box with extension shall be installed at each light standard
Conduit to be 1½" in size. Number and sizes of wire as shown.

For electrical equipment other than lighting to be placed in scale house area see 1"=20' plan above.

AS BUILT PLANS
Contract No. 60-10TC21
Date Completed
Document No. 00000494

electrical work only.

HIGHWAY LIGHTING AND ILLUMINATED SIGN SYSTEMS

Scale: 1"=50'

REVISED 8-13-59 GEL.

83

DIST	COUNTY	ROUTE	SECTION	SHEET NO	TOTAL SHEETS
X	Sol	7,74,WB,C	89	134	

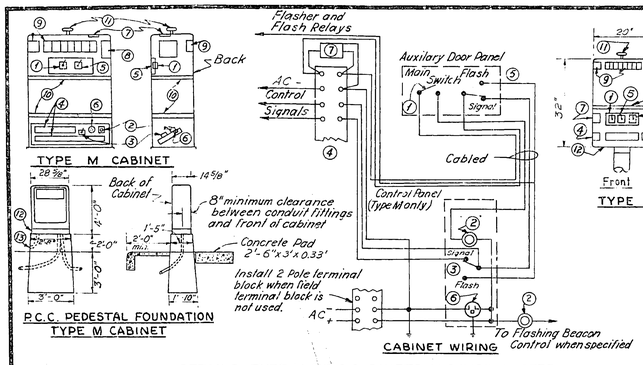
Sheet 15 of 20 Sheets Lighting Plans

EDMUND G. BROWN JR. GOVERNOR

January 9, 1959

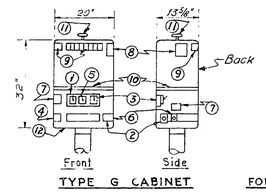
TRAFFIC ENGINEER, CHIEF, ENGINEER LICENSE NO 5429

TO ACCOMPANY PLANS DATED January 18, 1960.

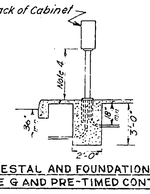


DETAILS - TYPE M AND G CABINETS AND WIRING NOTES

1. Main Switch
2. Plug Fuse Receptacle
3. Controller-Flash-Signal-Switch
4. Field Wire Terminal Blocks
5. Auxiliary Door Flash Switch
6. N.E.M.A. Standard Plug receptacle with grounding contact.
7. Radio Interference Suppressor.
8. Flasher
9. External Light Relays
10. Shelf
11. Cabinet Rainlight Vent
12. 8-1/2" Screened Vent Holes
13. 1" Drain



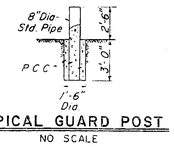
TYPE G CABINET



PEDESTAL AND FOUNDATION DETAILS FOR TYPE G AND PRE-TIMED CONTROLLER CABINETS

NOTES:

1. Pedestal, Base, and Foundation details similar to Type I—A Standard. (Unless otherwise specified.)
2. Cabinets shall be provided with Slip Fitter to permit mounting on 4 1/2" O.D. pedestal.
3. Upper end of pedestal shall be 4 1/2" O.D.
4. The distance between the bottom of the controller cabinet and top of the foundation shall be:
   3'-7" for pre-timed controllers.
   3'-0" for traffic actuated controllers.

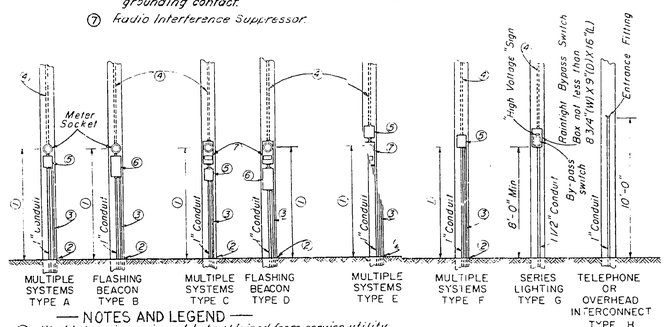


TYPICAL GUARD POST
NO SCALE

GENERAL INSTALLATION NOTES - ALL CABINETS

1. Foundations shall be located to provide 2'-0" minimum clearance between face of curb and back of cabinet.
2. One anchor bolt shall be bonded to conduit.
3. If telephone interconnect is specified a minimum of 5 inches clear vertical space shall be left beneath all other equipment inside cabinet.
4. For details not shown see Special Provisions.
5. For telephone interconnect a 3/4" conduit shall be installed inside the steel or P.C.C. pedestal to a point 1 inch above the floor of the cabinet or finished surface of the P.C.C. pedestal. Conduit shall terminate in a No. 3 1/2 pull box adjacent to the foundation.
6. In unpaved areas, a raised Pad of 2'-6"x 3'-0"x 0.33' of P.C.C. surfacing shall be placed in front of each controller cabinet.

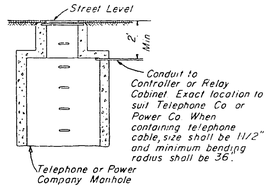
DETAILS OF CONTROLLER CABINETS
NO SCALE



— NOTES AND LEGEND —

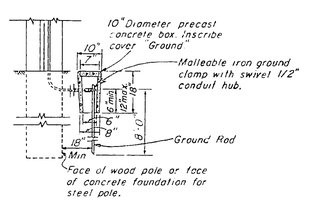
(1) Hieght of service equipment to be obtained from service utility.
(2) See grounding details at right for Types A, B, C, D, E, & F.
(3) Grounding conductor raceway shall be 1/2" conduit or hardwood moulding.
(4) If service pole is utility owned, service conductors, raceway and entrance fittings shall be furnished by contractor and installed by serving utility. On state owned poles contractor shall also install the service conductors, raceway, and entrance fittings. Service riser conduit shall be terminated with a service cap or shall be sealed to prevent the entrance of water, as approved by serving utility.
(5) Switch as specified in raintight cabinet.
(6) Switch as specified, Flasher Mechanism in 13"x13"x 4 1/2" raintight b..
(7) Meter Socket Box as approved by serving utility, with either manual circuit closing device or space for test block, as specified.

ELECTRICAL AND TELEPHONE SERVICE DETAILS
NO SCALE

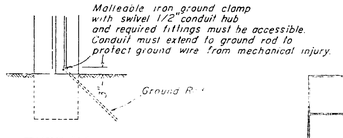


UNDERGROUND

Notes:
When water pipe is used for ground, wire shall be enclosed in galvanized rigid conduit, or equivalent mechanical protection
Ground rod of the following minimum requirements shall be used, both below ground surface:
8'-0" Diameter of rod: 3/4" if solid horizontal rod or pipe 1/2" if solid rod of brass, copper or copper covered steel



TYPE "B" (Install only when indicated on plans)



TYPE "A"

SERVICE GROUNDING DETAILS
NO SCALE

AS BUILT PLANS
Contract No. 60-107621
Date Completed
Document No. 00000494

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

STANDARD DETAILS NO. 1
TRAFFIC SIGNAL AND HIGHWAY LIGHTING INSTALLATIONS

SCALE AS NOTED | REV DATE 6-1-62- GEL | DRAWING NO. E

ES-1

89

B.P.R. DIV No.	STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
	CALIF.	I-080-2(11)43		94	239

Sheet 20 of 20 Lighting Plans

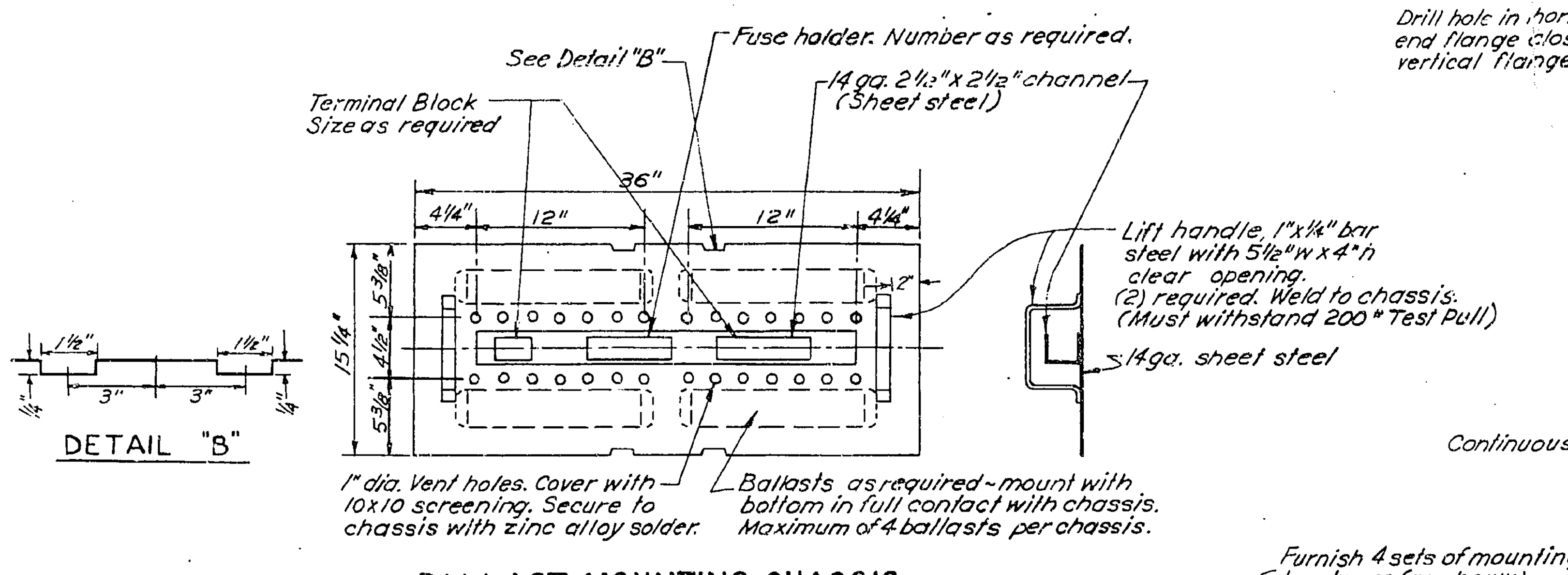
DIST.	COUNTY	ROUTE	SECTION	SHEET No.	TOTAL SHEETS
X	Sol	7,74	H,B,C	94	134

94

APPROVED August 1, 1959

TRAFFIC ENGINEER, CIVIL ENGR LIC. NO. 5428

TO ACCOMPANY PLANS DATED January 18, 1960



BALLAST MOUNTING CHASSIS

No Scale

BALLAST NOTES

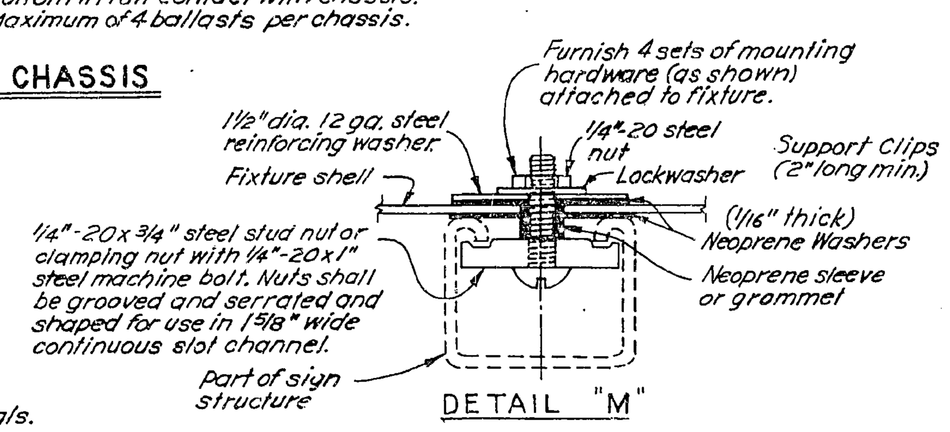
Each ballast shall be fused with a 1¼" x ¼" slow-blow glass tube fuse - 2½ amp for 2-lamp ballast and 1 amp for 1-lamp ballast.

Ballasts shall be rated at 300 ma.

Ballasts shall be secured by 8-32 machine screw studs (Welded or brazed to chassis) with nuts and lockwashers.

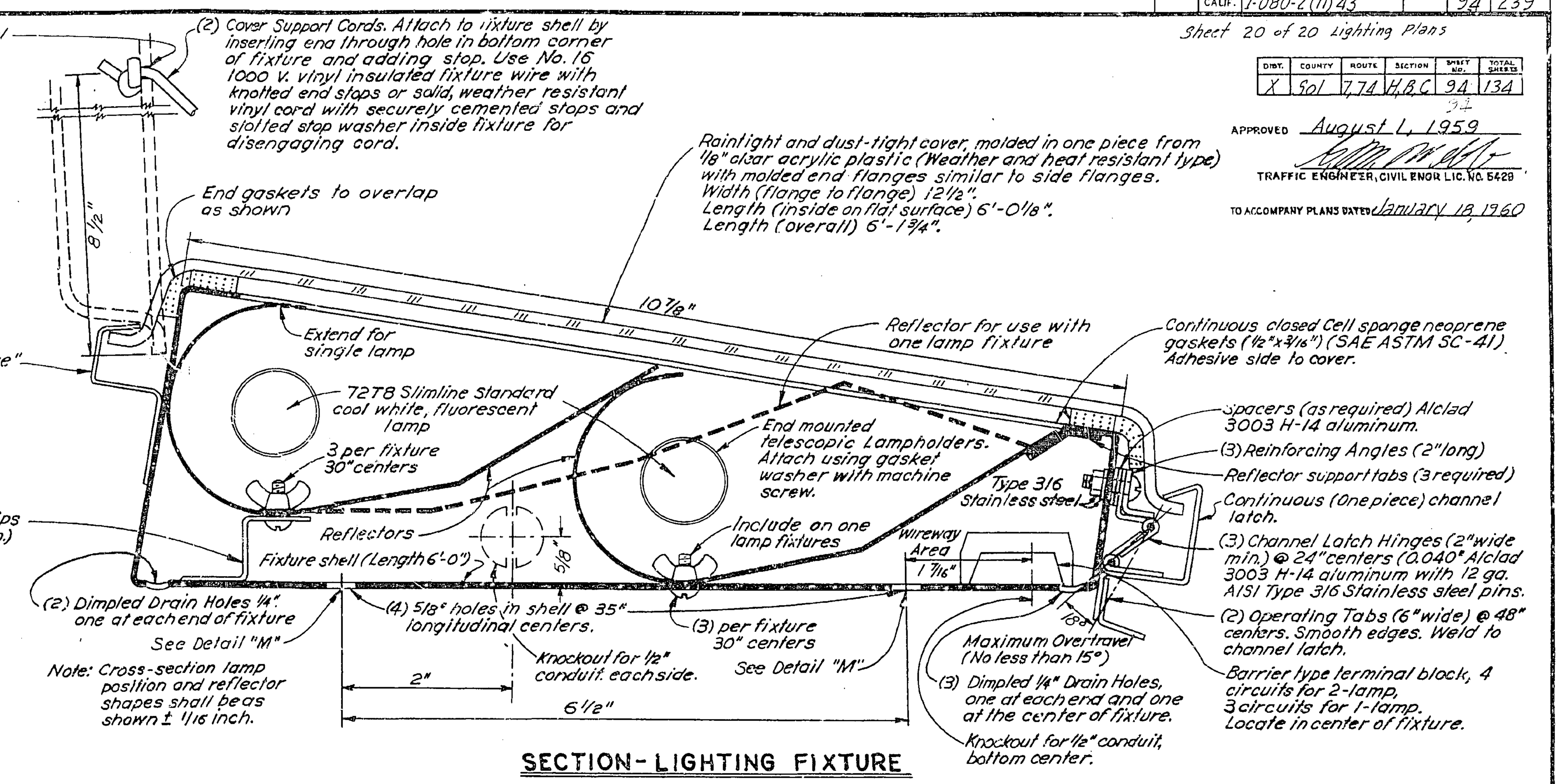
Fuseholders shall have insulating base and screw terminals.

For number and location of ballast boxes see sign structure plan titled "Walkway Mounted Ballast Box".



FIXTURE MOUNTING ON CONTINUOUS SLOT CHANNEL

Full Scale



SECTION - LIGHTING FIXTURE

Full Scale

FIXTURE NOTES

Two lamp fixtures shall be used for signs over 70" in vertical dimension. One lamp fixtures for 70" signs and smaller.

Lighting fixtures shall be fabricated of 0.064" Alclad 3003 H-14 aluminum, unless otherwise indicated. Machine screw parts and lockwashers for fixture shall be aluminum, unless otherwise indicated.

Reflectors shall be made of 0.020" (min.) thickness aluminum with specular finish, and shall be 69" long. The finish shall be at least equivalent to that of Alcoa Alzak Type 2 Lighting Sheet in degree of specularity, corrosion and abrasion resistance and ease of clea[illegible]. Reflectors shall be easily removable for cleaning without need f[illegible] permanently distorting the reflector shape. Acceptable reflecto[illegible] materials will be ① Alcoa Alzak Type 1 Lighting Sheet, or equal, ② Alcoa Alzak Type 2 Lighting Sheet, or equal, ③ "Mylar" plastic film with specular metallized backing bonded to sheet aluminum (Dynasyl or equal).

Machine screws shall be 8-32 with nuts and lockwashers (except as noted).

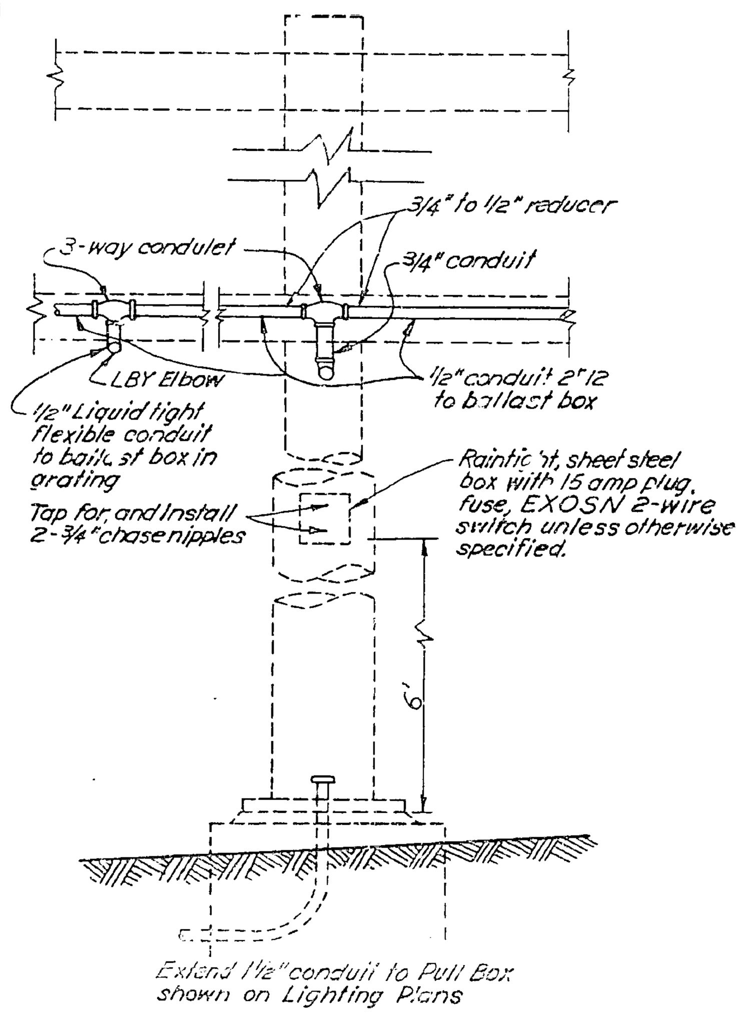
Manufacturer shall submit five copies of shop drawings to the Engineer for approval prior to fabrication if fixtures have not previously been approved.

For method of mounting fluorescent fixtures see Walkways plan titled "Walkway Details No. 2".

GENERAL NOTE - METALS

Where steel is indicated part, shall be hot-dip galvanized after fabrication.

Where sheet steel is indicated, part shall be hot-dip galvanized. After fabrication edges and flaws in galvanizing shall be zinc coated. Other metal parts shall be made of bronze, phosphor bronze, brass, copper beryllium, or AISI Type 316 stainless steel unless otherwise noted.



TYPICAL WIRING AND SIGN SWITCH INSTALLATION DETAILS

No Scale

LIGHTING FIXTURE DATA

LENGTH OF PANEL (FEET)	HEIGHT OF PANEL (INCHES)	NUMBER OF FIXTURES	NUMBER OF LAMPS	CONSECUTIVE SPACING FROM LEFT EDGE OF PANEL TO CENTER OF FIXTURE (INCHES)
10	40 - 70 80 - 120	1	1 2	60
12	40 - 70 80 - 120	2	2 4	36.5,74
14	40 - 70 80 - 120	2	2 4	42, 84
16	40 - 70 80 - 120	2	2 4	47.5, 77
18	40 - 70 80 - 120	3	3 6	36.5, 74, 74
20	40 - 70 80 - 120	3	3 6	40,80,80
22	40 - 70 80 - 120	3	3 6	44,88,88
24	40 - 70 80 - 120	4	4 8	36.5, 74,74,74
26	40 - 70 80 - 120	4	4 8	39, 78,78,78
28	40 - 70 80 - 120	4	4 8	42,84,84,84
30	40 - 70 80 - 120	4	4 8	45, 90,90,90
32	40 - 70 80 - 120	5	5 10	38, 77,77,77,77
34	40 - 70 80 - 120	5	5 10	42,81,81,81,81
36	40 - 70 80 - 120	5	5 10	44,86,86,86,86
38	40 - 70 80 - 120	6	6 12	38,76,76,76,76,76
40	40 - 70 80 - 120	6	6 12	40,80,80,80,80,80

TRANSFORMER AND LOAD DATA

TOTAL NUMBER OF LAMPS	SM TRANSFORMER SIZE (VA)	SIGN * LOAD (WATTS)
1	75	70
2	150	131
3	225	201
4	300	262
5	375	332
6	450	393
7	525	463
8	600	524
9	750	594
10	750	655
11	900	725
12	900	785
13	1050	856
14	1050	917
15	1200	987
16	1200	1048
17	1350	1118
18	1350	1179
19	1500	1249
20	1500	1310

Notes

For sign structure with 21 or more lamps the load shall be split into two ballast box groups with separate switching supplied independently from two SM transformers in separate pull boxes.

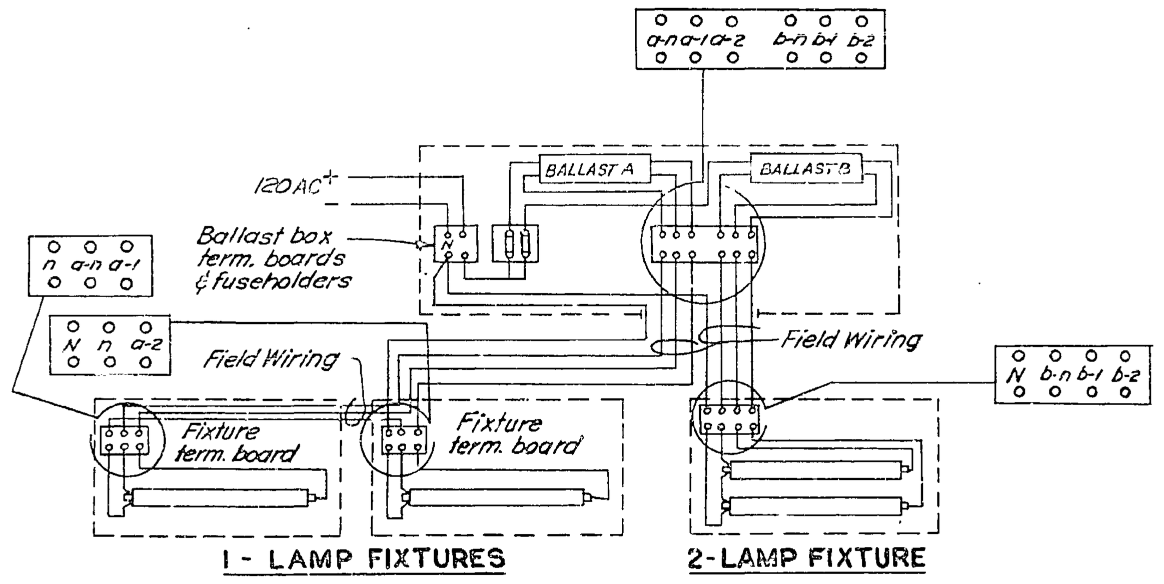
See Sign Format Sheet for size of panels.

Use one SM transformer for each sign structure unless otherwise indicated or required.

Use two 2-lamp ballasts wherever possible.

Input to ballasts (90% pf) average 75 VA per lamp.

* Does not include SM transformer losses which are approximately 10% of load.



TYPICAL FIXTURE WIRING DIAGRAM

WIRING NOTES

Place ½" conduit from LBY elbow for sign switch to ballast box and between ballast boxes by securing neatly to structure above lowest brackets at not more than 6 foot intervals.

Wiring between ballast box and nearest fixture shall be run in ½" liquid-tight flexible conduit.

Flexible conduit shall be secured to nearest walkway structural member bracket using copper bonding strap and brass machine screws.

Wiring between fixtures shall be run in Aluminum EMT secured to fixtures with 2 piece connectors. Appleton No. TW-92T100, or equal.

Ballasts and terminal boards shall be marked with legible symbols, conductors shall be tagged and their identification marked on the corresponding terminal on the terminal board as shown on the Typical Fixture Wiring-Wiring Diagram.

See Special Provisions for additional specifications.

94

AS BUILT PLANS
Contract No. 60-10TC21
Date Completed________
Document No. 00000494

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

FLUORESCENT SIGN LIGHTING EQUIPMENT

Scale as Noted

REVISED:

DRAWING NO.

BRM DIST NO	STATE	FEDERAL PROJECT NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	CALIF	I-080-2(11)43		92	239

Sheet 18 of 20 Lighting Plans

DIST	COUNTY	ROUTE	SECTION	SHEET NO	TOTAL SHEETS
X	Sol	7,74	H,B,C	92	134

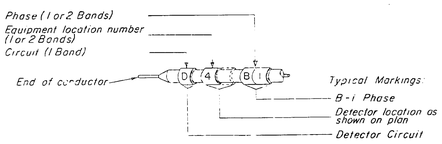
APPROVED January 9, 1959

TRAFFIC ENGINEER, CIVIL ENGINEER, LICENSE NO 5429

TO ACCOMPANY PLANS DATED January 18, 1960

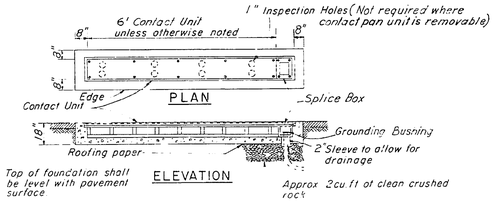
SYMBOLS

PROPOSED	EXISTING	
———	———	Signal conduit
— — —	— — —	Lighting conduit
▭	▭	Pull box
PPD	PPD	Non-directional pressure detector
MD	MD	Non-directional magnetic detector
▭	▭	Directional pressure detector
⊠	⊠	Controller
		Traffic signal, each arrow one-way three color (on Type 1-A standard unless otherwise specified)
		Traffic signal one way three-color with backplate (on Type 1-A standard unless otherwise specified)
		Traffic signal one way three-color with green arrow (on 7' Type I standard unless otherwise specified) (Red and yellow louvered)
		Walk-Wait pedestrian signal (7' Type I standard unless otherwise specified)
		Pedestrian signal, 2-color head (on 7' Type I unless otherwise specified)
		Mast arm traffic signal (with backplate) (on Type II standard)
		Electrolier, mast arm type with mast arm traffic signal with backplate (Type III standard)
		Electrolier, mast arm type (Type IX standard)
		Electrolier, upright type
PPB PPS	ppb	Pedestrian push button on post
PPS	ppb	Power pole " "
		Telephone pole
		Fire hydrant
		Flashing beacon, one-way
		Traffic signal with all colors louvered
———	———	Overhead conductor



TYPICAL BANDING OF CONDUCTOR ENDS

NO SCALE



PRESSURE DETECTOR

NO SCALE

INSTALLATION NOTES

CONDUIT

1. Unless otherwise indicated, service and detector runs and conduit into sign structure foundations shall be 1 inch and all other conduit shall be 1½ inch.
2. Conduit shall be installed 18" minimum below curb grade in sidewalk areas and 36" minimum below grade or finished surface in all other areas, except that conduit installed within curbed dividing strips constructed on existing pavement may be laid on and secured to the pavement.
3. Conduit runs parallel to curbs shall be placed adjacent to back of curb, except where in conflict with existing facilities.
4. Existing underground conduit to be incorporated into new systems shall be cleaned with a mandrel and blown out with compressed air.
5. Conduit terminating in standards and pedestals shall extend 2" max. above finished top of foundation and shall slope toward the handhole.
6. Conduit entering controller cabinets shall be sealed with paraffin or other approved sealing compound.
7. Service risers shall be terminated with a service head or shall be sealed to prevent the entrance of water, as approved by the serving utility.

PULL BOXES

1. Pull boxes shall be No.5 except as indicated.
2. Pull boxes shown in the vicinity of curbs shall be placed adjacent to back of curb, except when in conflict with existing facilities.
3. Top of pull boxes shall be level with curb or sidewalk grade or 1" above surrounding ground when no finished grade is established.
4. Pull boxes shown adjacent to standards shall be installed against but not on roadway side of foundation.

CONDUCTORS AND WIRING

1. Signal neutral shall be a separate #10 AWG conductor
2. Conductors between ballasts or transformers and luminaires shall be #10 AWG, 600 volt
3. Conductors between series-to-multiple transformers and sign fixture ballasts shall be #10 AWG, 600 volt.
4. Number of conductors indicated in signal system conduit includes three #14 AWG spares.
5. Conductors shall be identified with bands.
6. Underground conductors to signals shall be run without splice, except that where existing signals are being modified, signal conductors may be spliced where indicated.
7. Neutral conductors may be spliced in pull boxes.
8. Two feet of slack shall be provided in each conductor in each pull box.
9. A separate conductor, other than neutral, shall be run from each detector to controller cabinet.
10. Connection to each terminal of a pedestrian push button shall be by a single conductor. Splices shall be made in nearest pull box.
11. Color coding for wiring to pedestrian signals shall be as specified for corresponding vehicular green and red indications.
12. One side of secondary circuit of series-to-multiple transformers shall be grounded. On structures the grounding electrode shall be the conduit system. On structures, it shall be a 1/2" x 8' ground rod installed through bottom of pull box.

SIGNAL EQUIPMENT

1. Pressure detectors shall be 6 feet long, non-directional, unless otherwise indicated.
2. Detector position dimensions refer to contact unit.
3. Top of detector foundation shall be level with pavement surface.
4. Detector contact unit surface shall be level with rim of frame or no more than 1/8-inch higher. If low, unit shall be raised using one-piece, galvanized, sheet metal shims with dimensions the same as the bottom surface of the contact unit.
5. Vehicular and pedestrian signal mountings shall be oriented so as to provide maximum horizontal clearance to adjacent roadway.

ELECTROLIERS

1. A Mercury-vapor lamp ballast shall be installed in a pull box adjacent to each electrolier, except as indicated.

FOUNDATIONS

1. Top of foundations for standards (before grouting) shall be level with top of curb in curbed areas or 6 inches above surrounding grade in other areas.
2. Except as indicated, standards shall be installed with 2 foot clearance to face of curb, edge of shoulder back of dikes, and back of ditches.

AS BUILT PLANS
Contract No. 60-107321
Date Completed
Document No. 0000054994

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

STANDARD DETAILS NO. 4
TRAFFIC SIGNAL AND HIGHWAY LIGHTING INSTALLATIONS

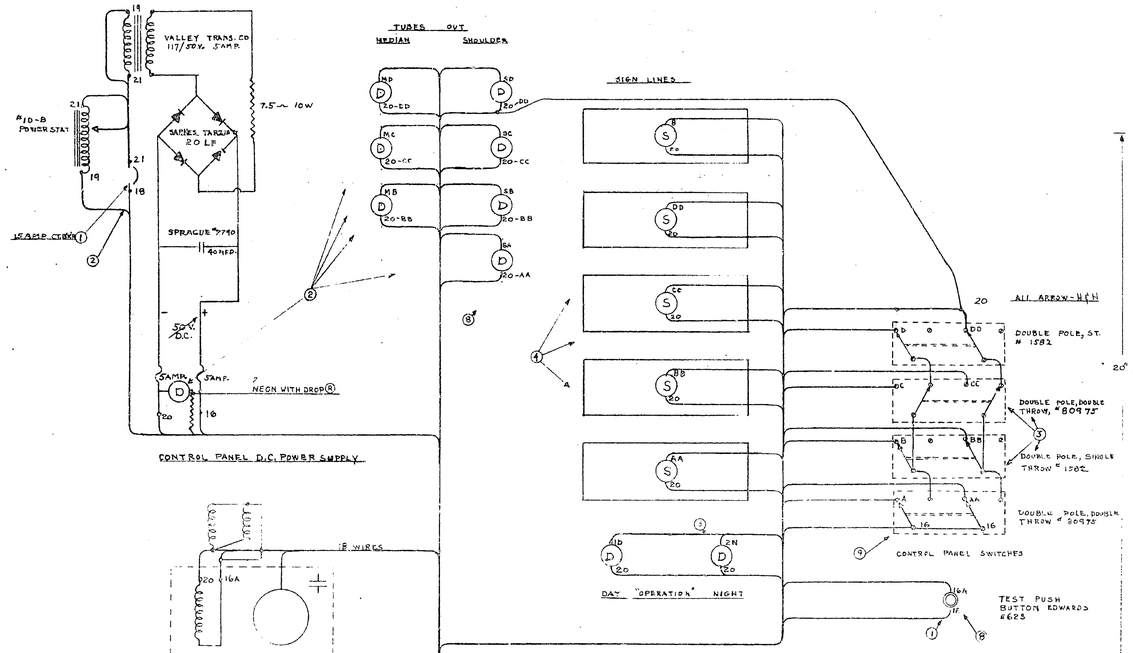
SCALE AS NOTED | REV. DATE 7-15-59 GRL | DRAWING NO. E

ES-4

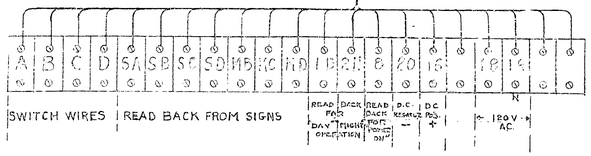
92 3

1. CIRCUIT BREAKER, 15 AMP. 1 POLE CONTROL PANEL DISCONNECT.
2. PILOT LIGHTS, DIALCO WITH D.C. BAYONET BASE, S.6-1, 6 WATT LAMPS.
3. SIGN LINE CONTROL SWITCH, ARROW-H&H.
4. SIGN LINE INDICATOR, WHITE TRANSLUCENT PLEXIGLASS WITH BLACK FILLED ENGRAVED LETTERS
5. DOOR RETAINS SCREWS
6. PIANO HINGE, FULL LENGTH OF DOOR
7. OPERATION NAME PLATE BLACK BACKGROUND WHITE LETTERS
8. PILOT LIGHT TEST PUSH BUTTON.

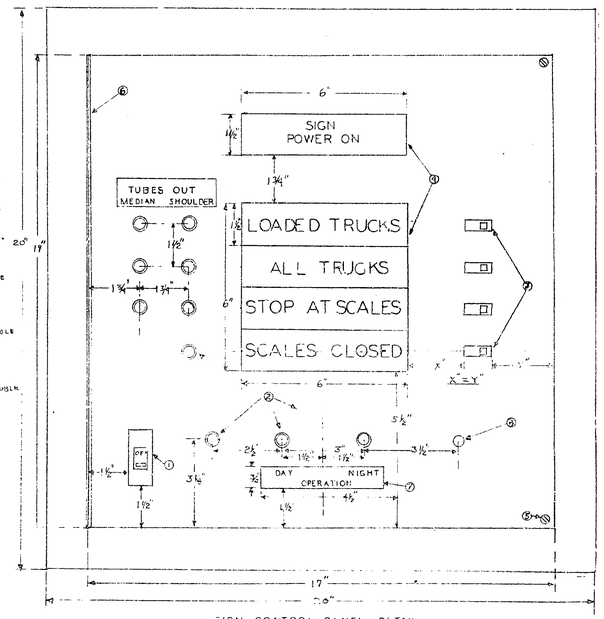
134-A



"D" DIALCO PILOT LIGHT # 80901-511, W/56 LAMP, D.C. BASE
"S" " SOCKET # 12-227, W/36 LAMP, D.C. BASE



WIRING & COMPONENTS SCHEMATIC OF CHANGEABLE MESSAGE SIGN CONTROL PANEL



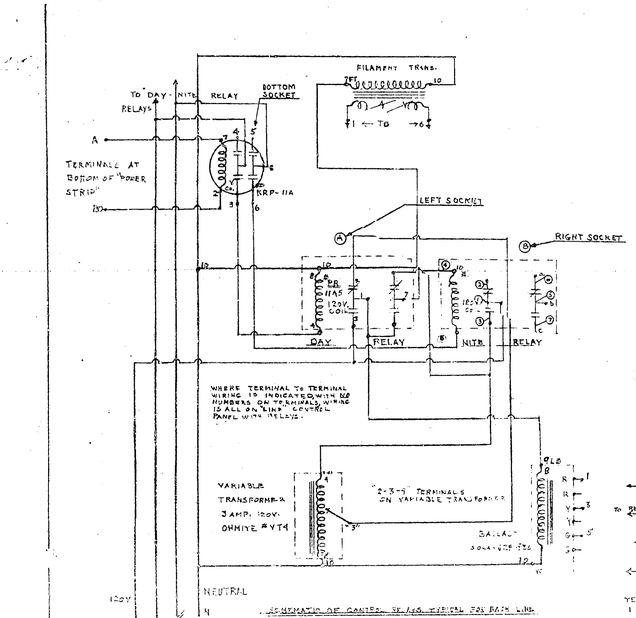
SIGN CONTROL PANEL DETAIL
SCALE - 1½" = 1'

AS BUILT PLANS
Contract No. 60-107221
Date Completed
Document No. 00000494

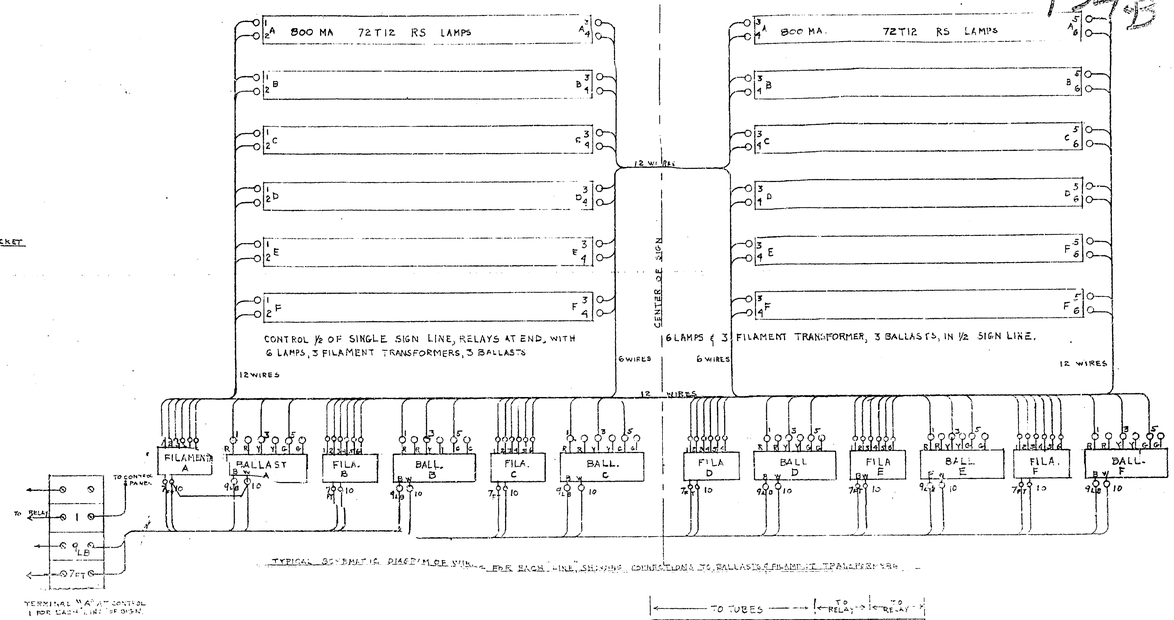
As Built
60-10TC21-F1
6L-2981

ELECTRIC LIGHTING INC.
STOCKTON CALIFORNIA
SCALE: AS SHOWN | CONTROL PANEL DETAILS | DRAWN BY
DATE: OCT. 1964 | REVISED
ELECTRO CONTROL CO. INC.
P.O. BOX 167 STOCKTON CALIF.
CHANGEABLE MESSAGE SIGN FOR TRUCK WEIGHING STATIONS

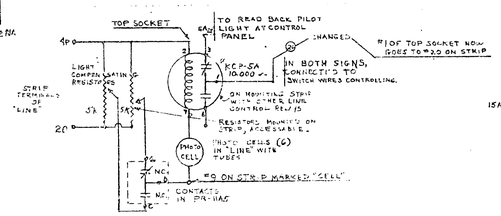
134/B



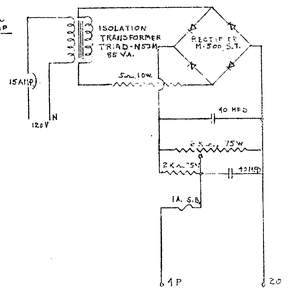
SCHEMATIC OF CONTROL SCHEME TYPICAL FOR EACH LINE



TYPICAL CONNECTION DIAGRAM FOR ONE LINE, SHOWING CONNECTIONS TO BALLASTS & FILAMENT TRANSFORMERS

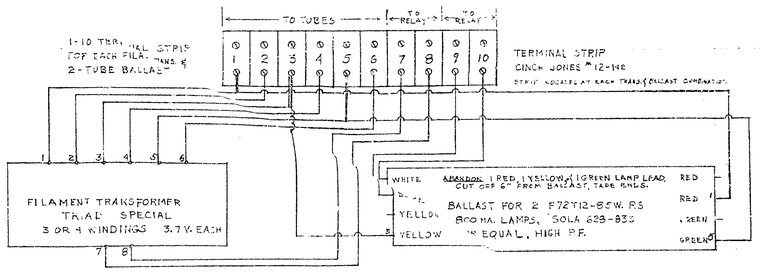


LIGHT MONITOR FOR EACH LINE



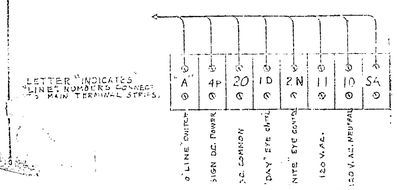
D.C. POWER SUPPLY FOR SHOULDER & MEDIAN

ALL CAPACITORS THROUGHOUT CONTROL PANEL WINDING, 150 VOLT, ELECTROLYTIC, EXCEPT RECTIFIERS, RESISTORS, RELAYS, AS SHOWN. ALL RELAYS POTTER-BROMFIELD.



SCHEMATIC WIRING DIAGRAM OF SINGLE BALLAST & FILAMENT TRANSFORMER, FOR 2 TUBES

6 OF ABOVE TRANSFORMER-BALLASTS REQUIRED PER LINE



AS BUILT PLANS
Contract No. 60-10TC21
Date Completed
Document No. 20000404

As-Built
60-10TC21-F1
GL-2961

SOL-7,77-H,B,C

134-C

CELL

MEDIAN TOP

MEDIAN 2ND

MEDIAN 1ST

TERMINAL STRIP TOP LINE OF SIGN

TERMINAL STRIP 3RD LINE OF SIGN

TERMINAL STRIP 2ND LINE OF SIGN

TERMINAL STRIP 1ST LINE OF SIGN

SIGN LEGEND

"LOADED TRUCKS"

"ALL TRUCKS"

"STOP AT SCALES"

"SCALES CLOSED"

FAN

D.C. POWER

TO FAN

ALL #10

240 V.

120 V.

SWITCH WIRES

DAY & NIGHT CONTROL WIRES FROM SHOULDER SIGN

D.C. FOR MONITORING CELLS

MONITOR READ BACK

D.C. NEGATIVE OR COMMON FROM CIRCUIT BREAKER

A.C. 120V. NEUTRAL

CIRCUIT BREAKER ARRANGEMENT IN SHOULDER CONTROL STRIP

CIRCUIT BREAKER ARRANGEMENT IN MEDIAN CONTROL STRIP

MEDIAN SIGN TERMINAL STRIP

READ BACK TO SHOULDER SIGN

SWITCH WIRES IN PARALLEL WITH OTHER SIGN

D. C. NEG.

POWER ON READ BACK

DAY & NITE FROM SHOULDER SIGN

WIRES BETWEEN SIGNS

11 PAIR #19, #20 WIRE & SHEATH 1" HAVIS #12-3-19

NO A.C. POWER WIRES TO SIGNS SHOWN

PROVIDE NOT LESS THAN 3 SPARE WIRES BETWEEN SIGNS & BETWEEN SIGNS & CONTROL PANEL.

SHOULDER SIGN TERMINAL STRIP

NO COMM.

READ BACK TERMINALS TO CONTROL PANEL

POWER ON READ BACK

READ BACK TERM. FROM MEDIAN TO CONTROL PANEL

SWITCH WIRES FROM CONTROL PANEL

D.C. NEG.

DAY OR NITE READ BACK FUSION & CONTROL PNL

POWER ON TO CONTROL PANEL

11-PR-#M. SHEATH 1" #19 & #20 WIRE 3 #6 & #18 WIRE

CONTROL PANEL TERMINAL STRIP

"DAY-NIGHT" LIGHT CELL CONTROL SYSTEM LIGHT CELL MOUNTED ON SHOULDER SIGN AT 4 AND "ON TOP" OF SIGN CONTROL STRIP

LIGHT CELL IN W.R. HOUSING

PSB, "SHR-11

"POWER ON" MONITORING CONTROL SYSTEM.

MEDIAN SIGN

SHOULDER SIGN

TO SHOULDER

TO CONTROL PANEL AT SCALE HOUSE

AS BUILT PLANS
Contract No. 60-10TC21
Date Completed
Document No. 0020494

As Built
60-10TC21-F1
SL-COST

ELECTRIC LIGHTING INC.
STOCKTON CALIFORNIA

SCALE - NO NE | TERMINAL STRIP & CONNECTION DATA | DRAWN BY
DATE

ELECTRO CONTROL CO. INC
STOCKTON

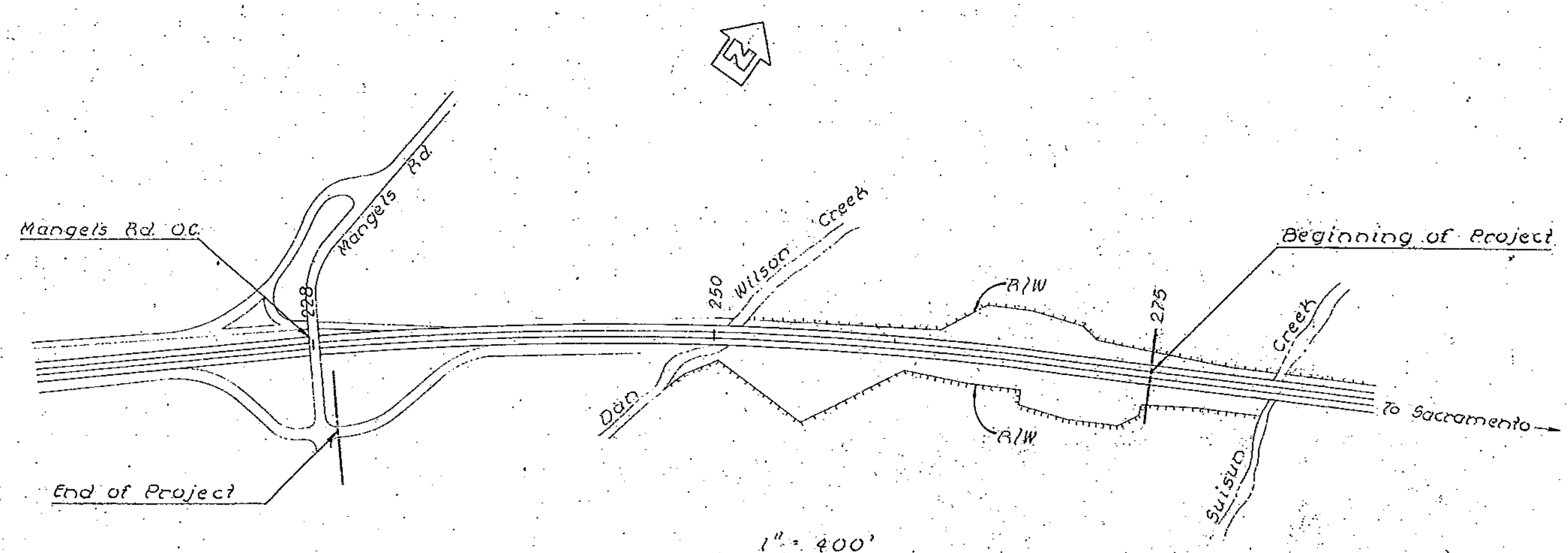
P.O. BOX 107 STOCKTON

CHANGEABLE MESSAGE SIGN FOR TRUCK WEIGHING STATIONS | DRAWING NO.

1981 As Built Plans

DIST.	COUNTY	ROUTE	POST MILES—TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	Sol	80	13.4/14.4		

CHIEF, OFFICE OF STRUCTURES DESIGN
REGISTERED CIVIL ENGINEER NUMBER
DATE APPROVED



INCOMPLETE PLAN FOR DESIGN STUDY
PRINTED
SEP 27 1979
Div. of Structures
STATE OF CALIFORNIA

TO DISTRICT

HANG FILE

SS-69

DESIGN ENGINEER 11488
Approval Recommended By
DESIGN — By H. Phan
DETAILS — By Z. Kazerooni, Checked H. Phan
QUANTITIES — By H. Phan
LOAD FACTOR DESIGN
LAYOUT
SPECIFICATIONS
LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD

State of
CALIFORNIA
DEPARTMENT OF TRANSPORTATION

[redacted]

PROJECT ENGINEER

BRIDGE NO.
POST MILE

CORDELIA TRUCK WEIGH STATION
SEWAGE PUMP STATIONS
GENERAL PLAN

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

CU 10202
WO 272201

Disregard prints bearing earlier revision dates

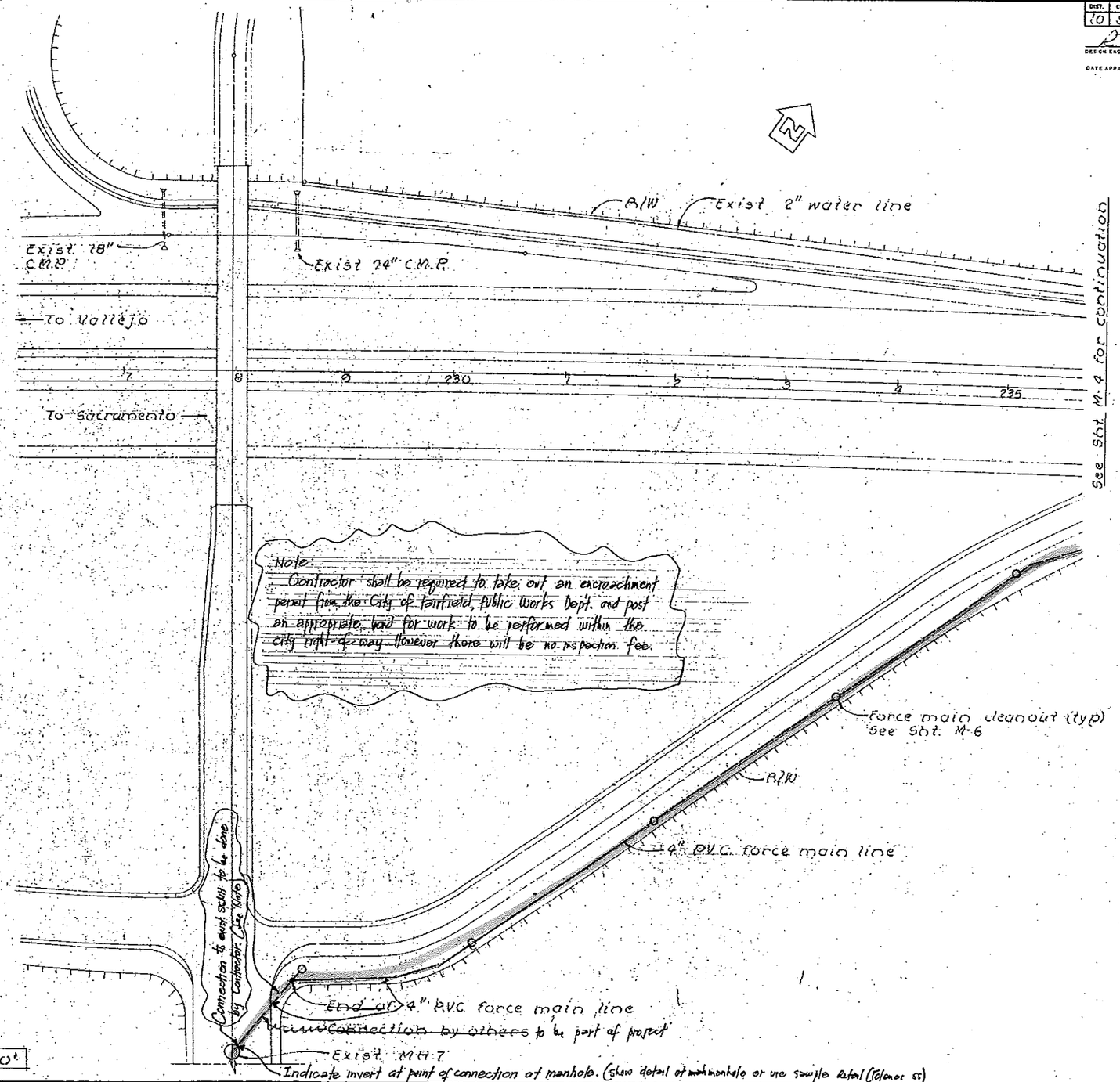
REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET M-1

DIST.	COUNTY	ROUTE	POST MILES—TOTAL PROJECT	REV'D PS	TOTAL SHEETS
10	SOL	80	19.1/19.5		

R. T. Sellers — 11488
DESIGN ENGINEER — REGISTERED MECHANICAL ENGINEER NUMBER

DATE APPROVED



SS-69

DESIGN	By H. Phan	Checked D. Fu	State of CALIFORNIA DEPARTMENT OF TRANSPORTATION	STRUCTURES MECHANICAL-ELECTRICAL	BRIDGE NO.	CORDELIA TRUCK WEIGH STATION SEWAGE PUMP STATIONS	SHEET M-5
DETAILS	By T. Taniguchi	Checked H. Phan		D. Fu PROJECT ENGINEER	POST MILE	SEWER AND WATER LINE LAYOUT IV	
QUANTITIES	By H. Phan	Checked D. Fu					

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 10204
WO 27-201

Disregard prints bearing earlier revision dates →

REVISION DATES (PRELIMINARY STAGE ONLY) — SHEET OF

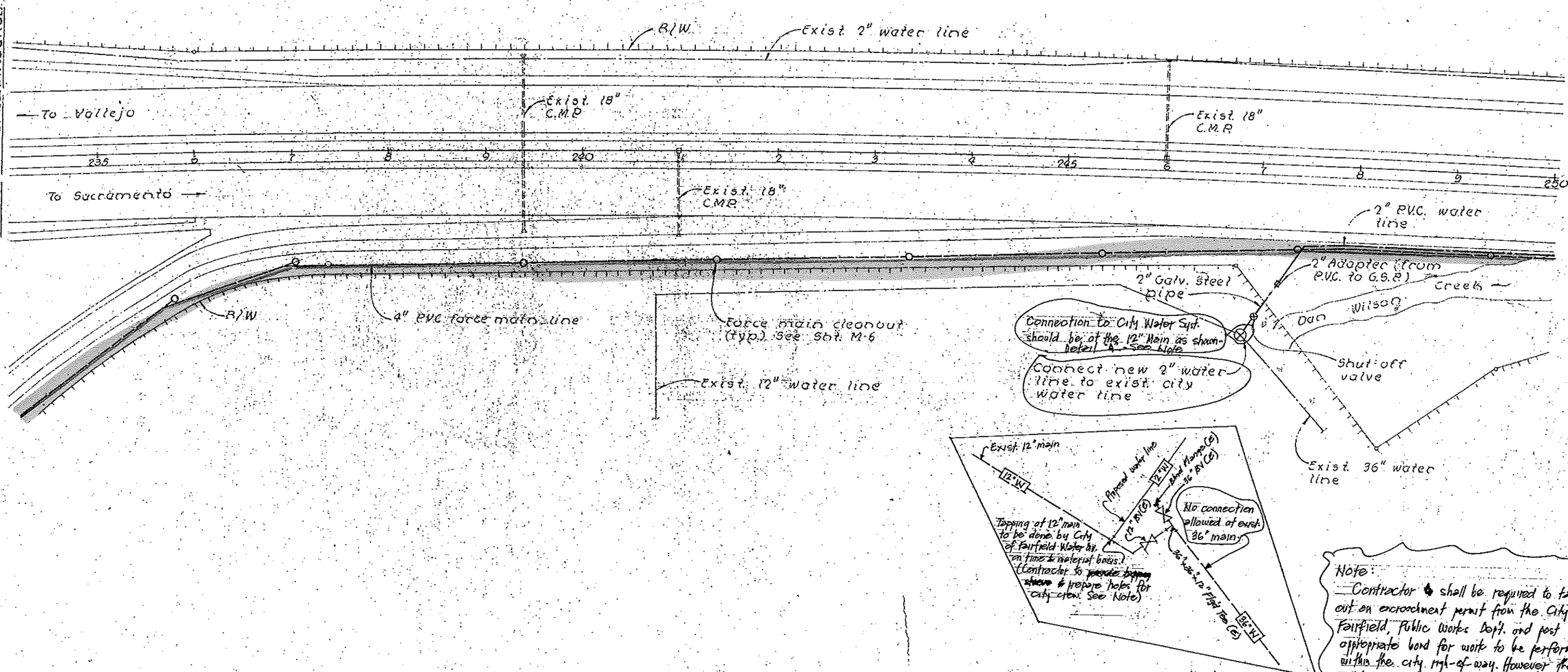
05 0121

DEPT 30116

DIST.	COUNTY	ROUTE	POST MILES—TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SOL	80	19.7/14.5		

DESIGN ENGINEER — REGISTERED MECHANICAL ENGINEER NUMBER 11988

DATE APPROVED



DETAIL "A"

Note:
Contractor ⊕ shall be required to take out an encroachment permit from the City of Fairfield, Public Works Dept. and post an appropriate bond for work to be performed within the city right-of-way. However there will be no inspection fee.

1" = 50'

SS-69

	By	Checked
DESIGN	H. Phan	J. Fa
DETAILS	K. Sallomon	H. Phan
QUANTITIES	H. Phan	D. Fa

State of CALIFORNIA
DEPARTMENT OF TRANSPORTATION

STRUCTURES MECHANICAL-ELECTRICAL
A. Fa
PROJECT ENGINEER

BRIDGE NO.
POST MILE

CORDELIA TRUCK WEIGH STATION
SEWAGE PUMP STATIONS
SEWER AND WATER LINE LAYOUT III

SHEET M-4

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 0202
WO 5222-(5)

Disregard prints bearing earlier revision dates →

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

DIST.	COUNTY	ROUTE	POST MILES-UNIT PROJECT	SHEET NO.	SHEETS
10	SOL	80	13.4/14.4		

DESIGN ENGINEER — REGISTERED MECHANICAL ENGINEER REGISTRATION

DATE APPROVED

3" Adaptor from P.V.C. to C.I.

Exist 2" shut-off valve

Wilson Creek

R/W

Force main cleanout (typ) See Sht M-6

3" P.V.C. force main line

Exist. 2" water line

ABANDONED $\frac{1}{2} \times (100 \times 64) = 3200$ SF

2" C.I. force main below roadway to be supported @ 10'-0"

Exist 24" C.M.P.

Exist 18" C.M.P.

Exist 18" C.M.P.

Exist 24" C.M.P.

250 255 260 265

Exist. 10' shoulder

Force main cleanout (typ) See Sht M-6

3" P.V.C. force main line

2" P.V.C. water line

See Sht M-2 for continuation

See Sht M-4 for continuation

Dan

4" P.V.C. force main line

R/W

4" C.I. pipe

Pipe support @ 10'-0"

2" G.S.P.

2" Adaptor from P.V.C. to G.S.P.

Automatic air vent valve at high point (force main)

Roadway

Elev. 12.0

4 x 3 Increaser

Elev. 6.3

2" P.V.C. water pipe

3" C.I. pipes

3" P.V.C. force main line

4" P.V.C. force main line

3'0" Min

3'0" Min

3" Adaptor from P.V.C. to C.I. pipe

Bottom of Dan Wilson Creek

4" Adaptor from P.V.C. to C.I. pipe

2" Adaptor from P.V.C. to G.S.P.

SECTION A-A

1" = 10'

1" = 50'

SS-69

DESIGN	H. Phan		State of CALIFORNIA DEPARTMENT OF TRANSPORTATION	STRUCTURES MECHANICAL-ELECTRICAL	BRIDGE NO.	CORDELIA TRUCK WEIGH STATION SEWAGE PUMP STATIONS SEWER AND WATER LINE LAYOUT II
DETAILS	K. Yasugawa	CHECKED H. Phan			POST MILE	SHEET M-3
QUANTITIES	H. Phan	CHECKED				

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

CU 10004 WO 273101

Disregard prints bearing earlier revision dates

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

DIST.	COUNTY	ROUTE	POST MILES - TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SOL	80	13.4/14.4		

DESIGN ENGINEER — REGISTERED MECHANICAL ENGINEER NUMBER 11288

DATE APPROVED

Area North Scale

$A_T = A_1 + A_2 + A_3 + A_4 + A_5$

$= [140 \times (\frac{60+140}{2})] + [345 \times (\frac{140+80}{2})] + [87 \times (\frac{80+73}{2})] + [\frac{1}{2} \times (100+73)] + [\frac{1}{2} \times (100+64)]$

$= (140 \times 101) + (287 \times 178) + (87 \times 105) + (0.5 \times 800) + (0.5 \times 6400)$

$= 91,625$ SF

Area South Scale

$A_S = A_1 + A_2 + A_3$

$= [305 \times (\frac{201+13}{2})] + (278 \times 137) + [117 \times (\frac{13+60}{2})]$

$= (305 \times 114) + (278 \times 137) + (117 \times 99)$

$= 84,439$ SF

Total Area $= A_T + A_S$

$= 91,625 + 84,439$ SF

$= 176,064$ SF

$= 4.04$ Ac

Edge of pavement

3" P.V.C. force main

Exist. 18" C.M.P.

Exist. storage area R/W

Exist. ditch

Connect to existing 4" C.I. pipe, plug and abandon remainder of line

Exist. P.G.&E. power pole

Pump station and valve box. See Sht. M-6

Force main clean-out (typ.) See Sht. M-6

Emergency shower at column

Exist. truck shelter

Exist. 2" water line to be abandoned when new water line is installed.

Exist. 1600 gallon septic tank

Exist. restroom

Cap end

Exist. meters, main panels

Exist. scale house

To Vallejo

Exist. 1¼" galv. steel water and electrical conduits inside 18" C.M.P.

265 6 7 8 9 270 1 2 3 4 275 6

To Sacramento

See Sht. M-3 for continuation

Exist. 18" C.M.P.

Exist. restroom

Exist. 8' shoulder

2" P.V.C. water line

10'-0" Typ.

Exist. 24" C.M.P.

Connect new PVC water pipe to exist. water pipe here

Existing truck shelter

Exist. scale house

Emergency shower at column

Exist. 1600 gallon septic tank

Exist. storage area

3" P.V.C. force main line

Force main cleanout (typ.). See Sht. M-6

Separate min 10' in horizontal plane

Pump station and valve box. See Sht. M-6

Connect to exist 4" C.I. pipe, plug and abandon remainder

Exist. 18" C.M.P.

Exist. ditch

R/W

Location of 1 water meter shall be accessible to city crew. Exact location to be determined in the field.

Connect to existing 1" C.W. overhead

Existing column

¼" intergral stud expansion anchor w/ hex steel plug and nut

SECTION A-A
No Scale

NOTE:
Exist. water system shall be disconnected or capped & abandoned when new water line is in operation.

L E G E N D

- WATER LINE
- FORCE MAIN
- E — ELECTRICAL CONDUIT
- GATE VALVE
- CHECK VALVE
- CI — CAST IRON
- DIP — DUCTILE IRON PIPE
- CW — COLD WATER
- GSP — GALVANIZED STEEL PIPE
- MH — MANHOLE
- PVC — POLYVINYL CHLORIDE
- RCP — REINFORCED CONCRETE PIPE
- R/W — RIGHT OF WAY

1" = 50'

DESIGN	H. Phan	W. Fan	State of CALIFORNIA DEPARTMENT OF TRANSPORTATION	STRUCTURES MECHANICAL ELECTRICAL	BRIDGE NO.
DETAILS	H. Phan	H. Phan			POST MILE
QUANTITIES	J. Velazquez	W. Fan		CU. 10208 WO. 279202	

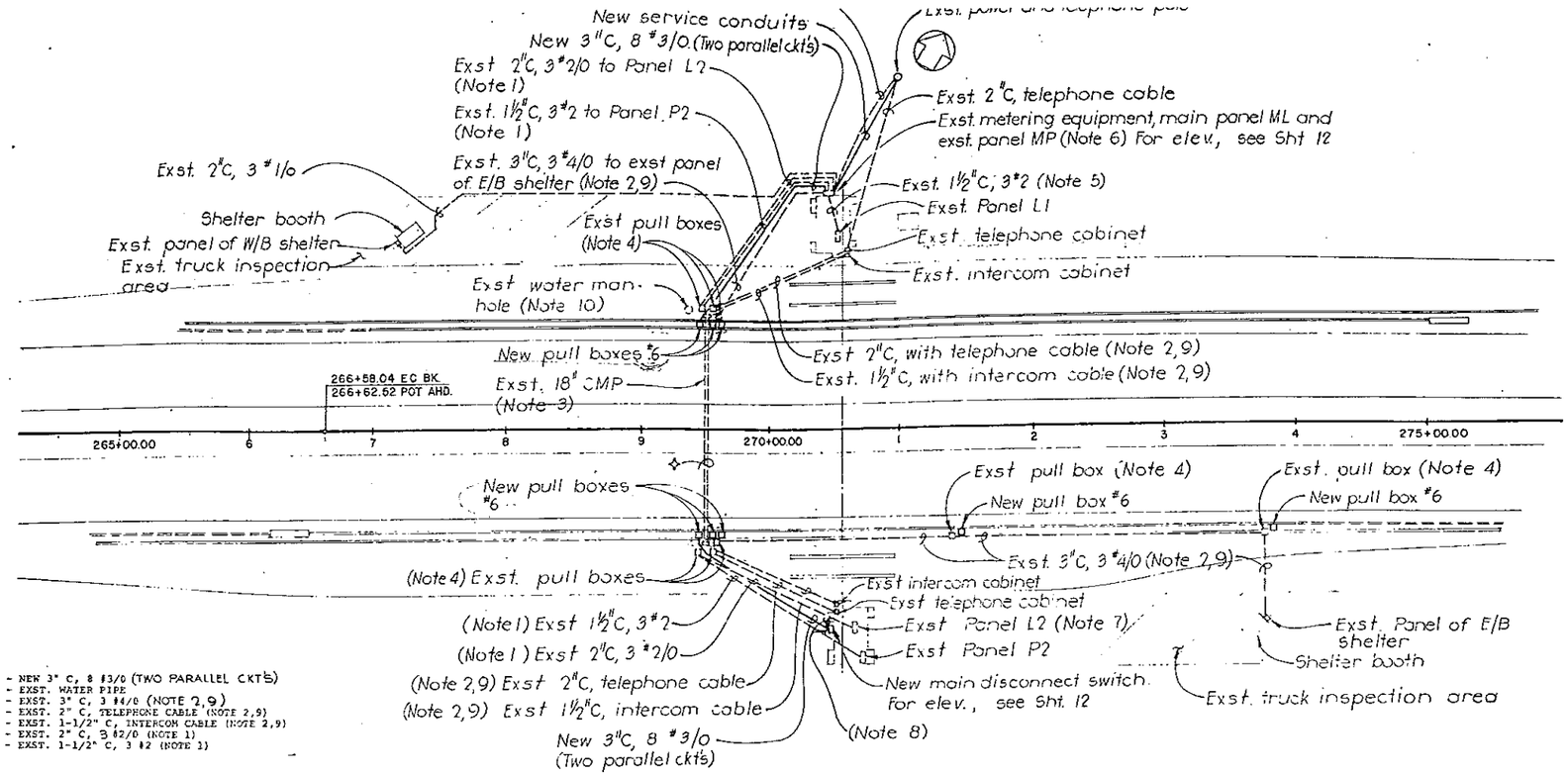
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

CORDELIA TRUCK WEIGH STATION SEWAGE PUMP STATIONS

SEWER AND WATER LINE LAYOUT

SHEET M-2

SS-69



PLAN
1" = 50'

◇ 1 - NEW 3" C, 8 #3/0 (TWO PARALLEL CKTS)
1 - EXST. WATER PIPE
1 - EXST. 3" C, 3 #4/0 (NOTE 2,9)
1 - EXST. 2" C, TELEPHONE CABLE (NOTE 2,9)
1 - EXST. 1-1/2" C, INTERCOM CABLE (NOTE 2,9)
1 - EXST. 2" C, 3 #2/0 (NOTE 1)
1 - EXST. 1-1/2" C, 3 #2 (NOTE 1)

NOTES:

1. REMOVE AND DISPOSE OF EXISTING CONDUCTORS AND ABANDON CONDUIT EXCEPT CONDUIT NOTED IN NOTE 8.
2. REMOVE EXISTING CONDUCTORS AND CABLES. SAVE CABLES FOR REINSTALLATION AND DISPOSE OF INDIVIDUAL CONDUCTORS.
3. CUT APPROPRIATE LENGTH FROM THE ENDS OF EXISTING 18" CMP AND EXTEND EXISTING CONDUITS TO THE NEW PULL BOXES.
4. REMOVE AND DISPOSE OF EXISTING PULL BOXES AND EXTEND EXISTING CONDUITS TO THE NEW PULL BOXES.
5. REMOVE AND DISPOSE OF CONDUCTORS FED FROM EXISTING MAIN PANEL TO TRANSFER PANEL, FROM TRANSFER PANEL TO THE ENCLOSED CIRCUIT BREAKER AND FROM THE ENCLOSED CIRCUIT BREAKER TO EXISTING PANEL L1. INSTALL NEW 3 #2/0 IN EXISTING CONDUIT FROM THE NEW MAIN PANEL TO EXISTING PANEL L1.
6. REMOVE AND SALVAGE EXISTING MAIN PANEL "ML" AND INSTALL THE NEW MAIN PANEL AT THE SAME LOCATION.
7. REPLACE EXISTING 2-POLE , 100-AMPERE MAIN CIRCUIT BREAKER OF EXISTING PANEL L2 BY THE NEW 2-POLE , 175-AMPERE CIRCUIT BREAKER IN THE SAME ENCLOSURE.
8. EXTEND EXISTING CONDUITS OF EXISTING PANELS L2 AND P2 FROM OUTSIDE THE SCALE HOUSE TO THE NEW GUTTER.
9. REINSTALL AND RECONNECT THE REMOVED CABLES MENTIONED IN NOTE 2 THRU THE EXISTING CONDUITS, EXTENDED CONDUITS AND NEW PULL BOXES. INSTALL NEW 6 #3/0 (TWO PARALLEL CIRCUITS) FROM NEW MAIN PANELBOARD TO THE EXISTING PANEL OF E/B SHELTER THRU THE EXISTING CONDUITS, EXTENDED CONDUITS AND THE NEW PULL BOXES.
10. REMOVE AND DISPOSE OF EXISTING 24" CMP AND ABANDON WATER VALVE IN PLACE.

DESIGN ENGINEER — REGISTERED MECHANICAL ENGINEER NUMBER 11488
DATE APPROVED August 21, 1981

L E G E N D

SYMBOL	DESCRIPTION
◇◇□	NEW PULL BOX #5½ UNLESS OTHERWISE NOTED
□	EXISTING PULL BOX
———	NEW UNDERGROUND CONDUIT
- - - -	EXISTING UNDERGROUND CONDUIT
(n)	CONDUIT RUN, n = CONDUIT RUN NUMBER
	CONTACT NORMALLY CLOSED, TIME OPENING ON ENERGIZING
	SINGLE POLE SWITCH
	SINGLE POLE, DOUBLE THROW SWITCH
	PUSHBUTTON SWITCH NORMALLY OPEN
	PUSHBUTTON SWITCH NORMALLY CLOSED
	CONTACT NORMALLY OPEN
	CONTACT NORMALLY CLOSED
	LIMIT SWITCH, SINGLE POLE, DOUBLE THROW
(R)	PILOT LIGHT (A=AMBER, G=GREEN, R=RED)
(M)	CHANGEABLE MESSAGE SIGN MOTOR
	OPERATING COIL
	TRANSFORMER WINDING
	LOUDSPEAKER
	FUSE
	SEPARABLE CONSECTOR
	CIRCUIT BREAKER
O	SIGNAL HEAD
	NEW EXPOSED CONDUIT

◇◇ FOR DETAILS, SEE PULL BOX DETAILS SHEET ES-8 OF THE STANDARD PLANS, DATED JANUARY, 1981.

REDUCED PLAN
USE SCALE BELOW
0 1 2 3
3 INCHES ON ORIGINAL PLAN

	By	Checked
DESIGN	H. Abdelnour 3/81	Ken S. Chan
DETAILS	[illegible]	H. Abdelnour 3/81
QUANTITIES	H. Abdelnour 3/81	Ken S. Chan

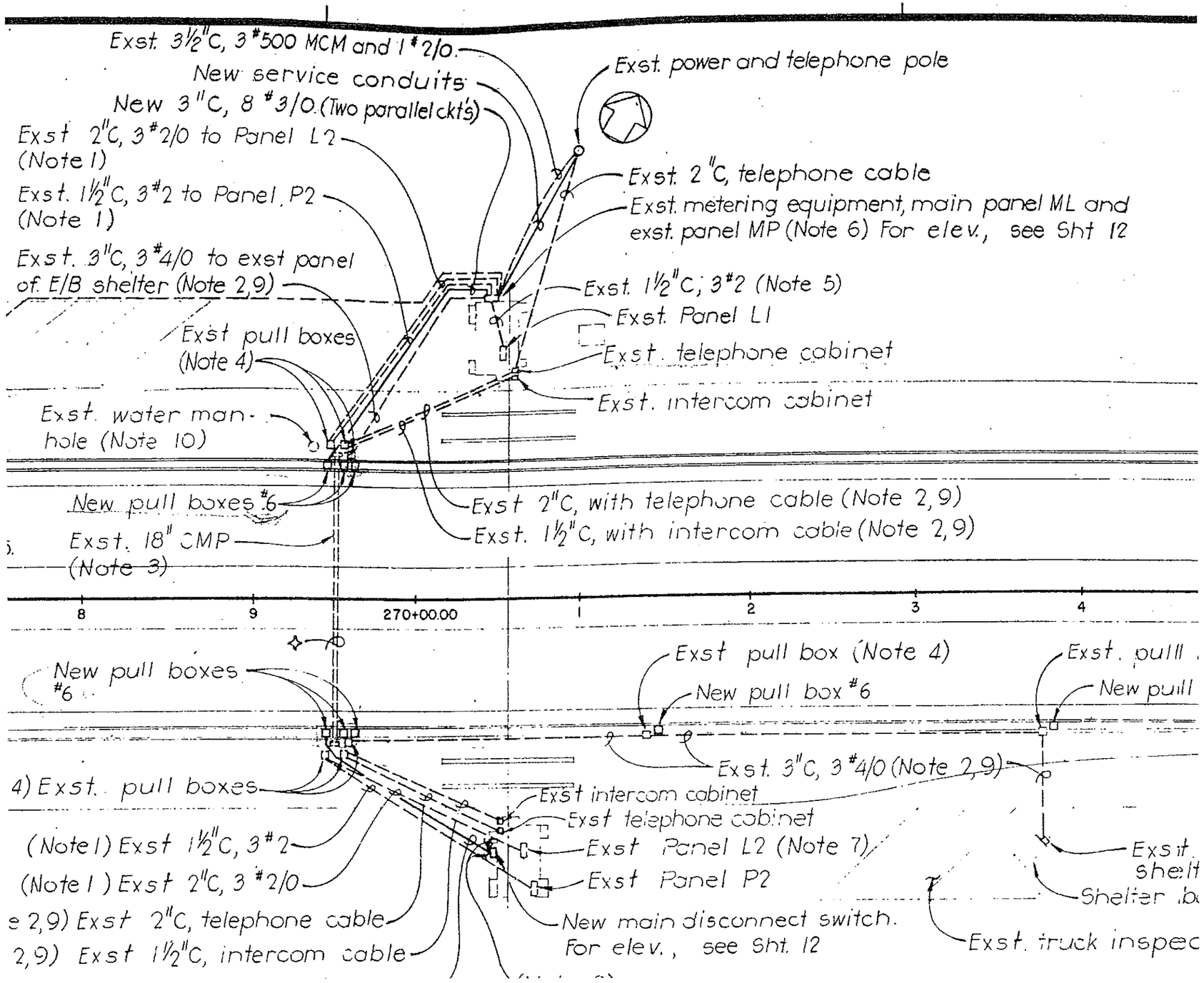
State of CALIFORNIA
DEPARTMENT OF TRANSPORTATION

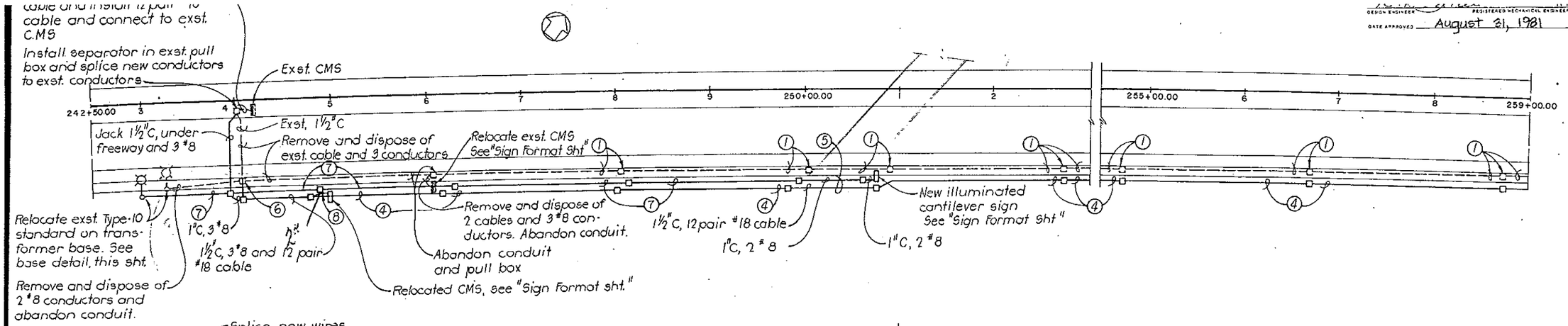
STRUCTURES MECHANICAL-ELECTRICAL
Dennis L. Schrock 11700
PROJECT ENGINEER

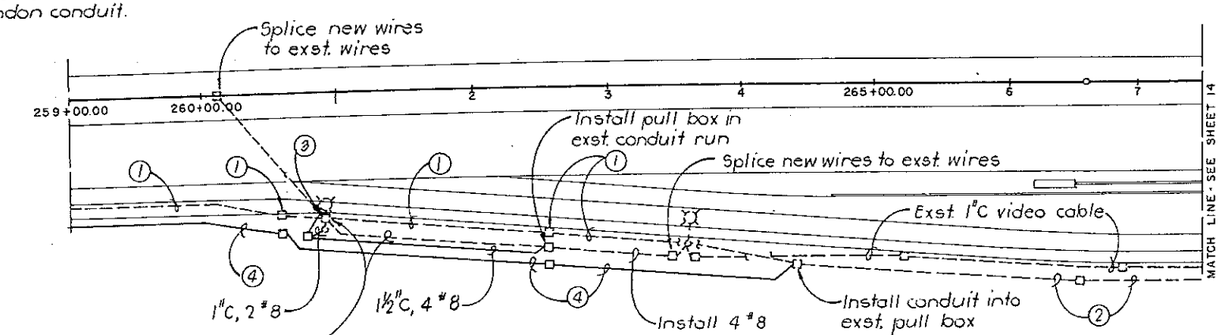
BRIDGE NO. 23-W0001R/L
POST MILE

CORDELIA INSPECTION FACILITY
SERVICE DISTRIBUTION MODIFICATION

SHEET


Exst. 3½"C, 3 #500 MCM and 1 #2/0.
New service conduits
New 3"C, 8 #3/0. (Two parallel ckt's)
Exst 2"C, 3 #2/0 to Panel L2 (Note 1)
Exst. 1½"C, 3 #2 to Panel P2 (Note 1)
Exst. 3"C, 3 #4/0 to exst panel of E/B shelter (Note 2,9)
Exst pull boxes (Note 4)
Exst. water manhole (Note 10)
New pull boxes #6
Exst. 18" CMP (Note 3)
Exst. power and telephone pole
Exst. 2"C, telephone cable
Exst. metering equipment, main panel ML and exst. panel MP (Note 6) For elev., see Sht 12
Exst. 1½"C; 3 #2 (Note 5)
Exst. Panel L1
Exst. telephone cabinet
Exst. intercom cabinet
Exst 2"C, with telephone cable (Note 2,9)
Exst. 1½"C, with intercom cable (Note 2,9)
8
9
270+00.00
1
2
3
4
New pull boxes #6
Exst pull box (Note 4)
New pull box #6
Exst. 3"C, 3 #4/0 (Note 2,9)
Exst intercom cabinet
Exst telephone cabinet
Exst Panel L2 (Note 7)
Exst Panel P2
New main disconnect switch. For elev., see Sht 12
Exst. truck inspec

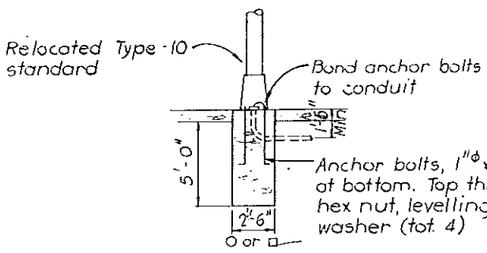




Scale: 1" = 50'

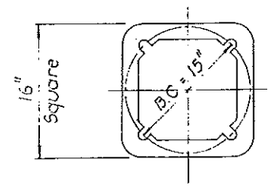
NOTES:

1. REMOVE AND DISPOSE OF 11 PAIR #19 CABLE. ABANDON CONDUIT AND PULL BOX.
2. REMOVE AND DISPOSE OF 11 PAIR #19 CABLE AND INSTALL 12 PAIR #18 CABLE.
3. REMOVE AND DISPOSE OF 4 #8 CONDUCTORS. EXTEND CONDUIT TO NEW PULL BOX AND INSTALL 4 #8 CONDUCTORS.
4. INSTALL 1-1/2"C, 12 PAIR #18 CABLE.
5. FOR ELECTRICAL CONDUIT DETAILS "SEE DAN WILSON CREEK BRIDGE WIDENING ROAD PLANS". FOR CONDUIT TERMINATIONS SEE DETAIL I ON STANDARD PLANS DATED JANUARY, 1981, SHEET ES-7B.
6. REMOVE AND DISPOSE OF PULL BOX, EXTEND CONDUIT TO NEW PULL BOX AND INSTALL 12 PAIR #18 CABLE.
7. INSTALL 1"C AND 2 #8 CONDUCTORS.
8. INSTALL 2"C, TWO 12 PAIR #18 CABLE, 3 #8 CONDUCTORS AND CONNECT TO TERMINAL BLOCKS OF THE RELOCATED CMS.



TRANSFORMER BASE FOUNDATION DETAILS

No Scale



PLAN

EXST. TRANSFORMER BOTTOM PLATE

1½" = 1'-0"

REDUCED PLAN
USE SCALE BELOW
0 1 2 3
3 INCHES ON ORIGINAL PLAN

DESIGN ENGINEER _____ REGISTERED MECHANICAL ENGINEER NUMBER _____

DATE APPROVED August 31, 1981

DESIGN	By: Mike S. Clarke	Checked: H. Abdelmeguid 4/81	State of CALIFORNIA DEPARTMENT OF TRANSPORTATION
DETAILS	By: L Zaragoza	Checked: Mike S. Clarke	STRUCTURES MECHANICAL-ELECTRICAL
QUANTITIES	By: Mike S. Clarke	Checked: H. Abdelmeguid 4/81	Dennis L. Schrock 41707 PROJECT ENGINEER

BRIDGE NO. 23-W0001R/L

POST MILE

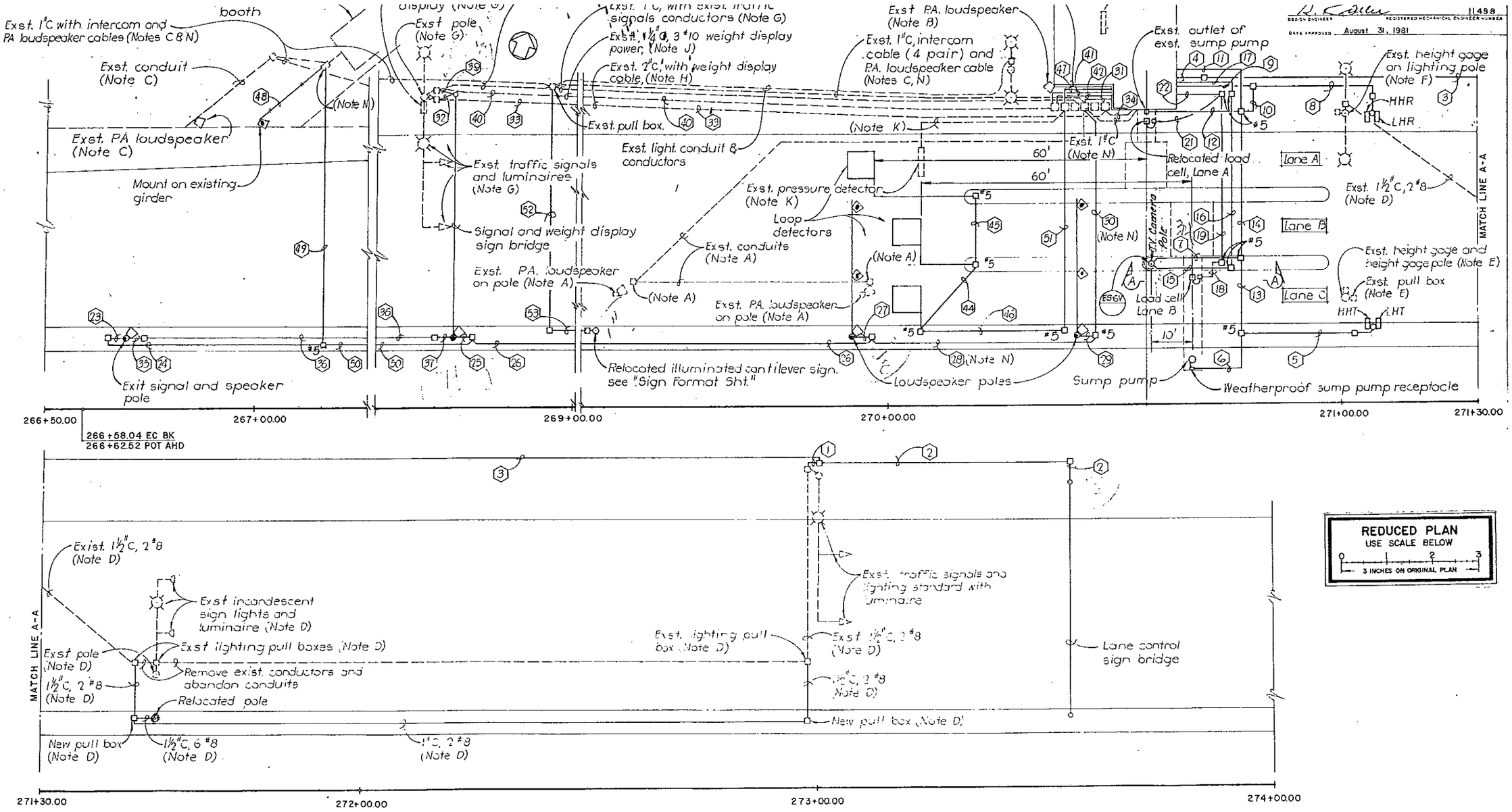
CORDELIA INSPECTION FACILITY EASTBOUND

ELECTRICAL LAYOUT NO. 1

SHEET

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF



REDUCED PLAN
USE SCALE BELOW
0 1 2 3
3 INCHES ON ORIGINAL PLAN

Scale: 1" = 10'

Note:
For notes, conduit and conductor schedule and View A-A, see Sht. 17

W. K. Allen — DESIGN ENGINEER — REGISTERED MECHANICAL ENGINEER NUMBER 11488
DATE APPROVED August 31, 1981

Standard Plan Sheet No.
Detail No.

DESIGN	By H. Abdelmajeed 3/81	Checked Mohan S. Chhabra
DETAILS	By [illegible]	Checked H. Abdelmajeed 3/81
QUANTITIES	By H. Abdelmajeed 3/81	Checked Mohan S. Chhabra

State of CALIFORNIA
DEPARTMENT OF TRANSPORTATION

STRUCTURES
MECHANICAL-ELECTRICAL
Dennis L. Sherrock 41707
PROJECT ENGINEER

BRIDGE NO. 23-W0001 R/L
POST MILE

CORDELIA INSPECTION FACILITY
WESTBOUND
ELECTRICAL LAYOUT

SHEET

CAB CABINET
COMM COMMUNICATION
PNL PANEL
TEL TELEPHONE

DIRT

R/W

SEE SHEET L-1.

EXIST CMS CKT

PNL 'M1', CKT #3 - CMS

TEL CAB

EXIST POWER AND TELEPHONE POLE (ELECTRIC AND TELEPHONE SERVICE POINTS)

EXIST fdc

2#10

TYPE 15 C87

TYPE 15 C86

TYPE 15 C85

CKT #19.

(C87) TYPE 10

(C86) TYPE 10

(C85) TYPE 15

(C76)

(C77)

6(T)

RECONNECT EXIST CMS ASSOCIATED CIRCUITS.

INSTALL PULLBOX HOLD-DOWN BOLTS.

PG&E DISTRIBUTION POLE AND OVERHEAD LINE TO BE RELOCATED BY OTHERS.

TO EXIST CCTV CONTROLLER IN SCALE HOUSE

EXIST MAIN SWITCHBOARD

EXIST SCALE HOUSE

TO EXIST PANEL 'L2' AND 'P2' IN EASTBOUND SCALE HOUSE.

EXIST PNL 'L1'

EXIST PNL 'M1'

PNL 'L1' CKT #19

EXIST CCTV CONTROLLER

EXIST 53C, 2#6,

(C78)

(C80)

EXIST TEL CAB AND COMM CAB

TO EXIST TEL CAB AND COMM CAB IN EASTBOUND SCALE HOUSE.

CONTINUED ON EASTBOUND WEIGH STATION

CGHC

CORDELIA WEIGH STATION WESTBOUND

KEY PLAN
NOT TO SCALE

NOTES:
1. EXACT LOCATION OF EQUIPMENT WILL BE DETERMINED BY ENGINEER.
2. THIS PLAN SHEET IS ACCURATE FOR ELECTRICAL WORK ONLY.

ALL DIMENTIONS ARE IN METERS UNLESS OTHERWISE SHOWN.

CORDELIA WEIGH STATION WESTBOUND LIGHTING (AREA)

SCALE 1:200

E-1

Caltrans Metric

04	SOL	80	23.2

REGISTERED ELECTRICAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER — JESSE CHEN — No. E 16735 — EXP. 09/30/06 ELECTRICAL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

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DATE	REVISED BY	DATE REVISED

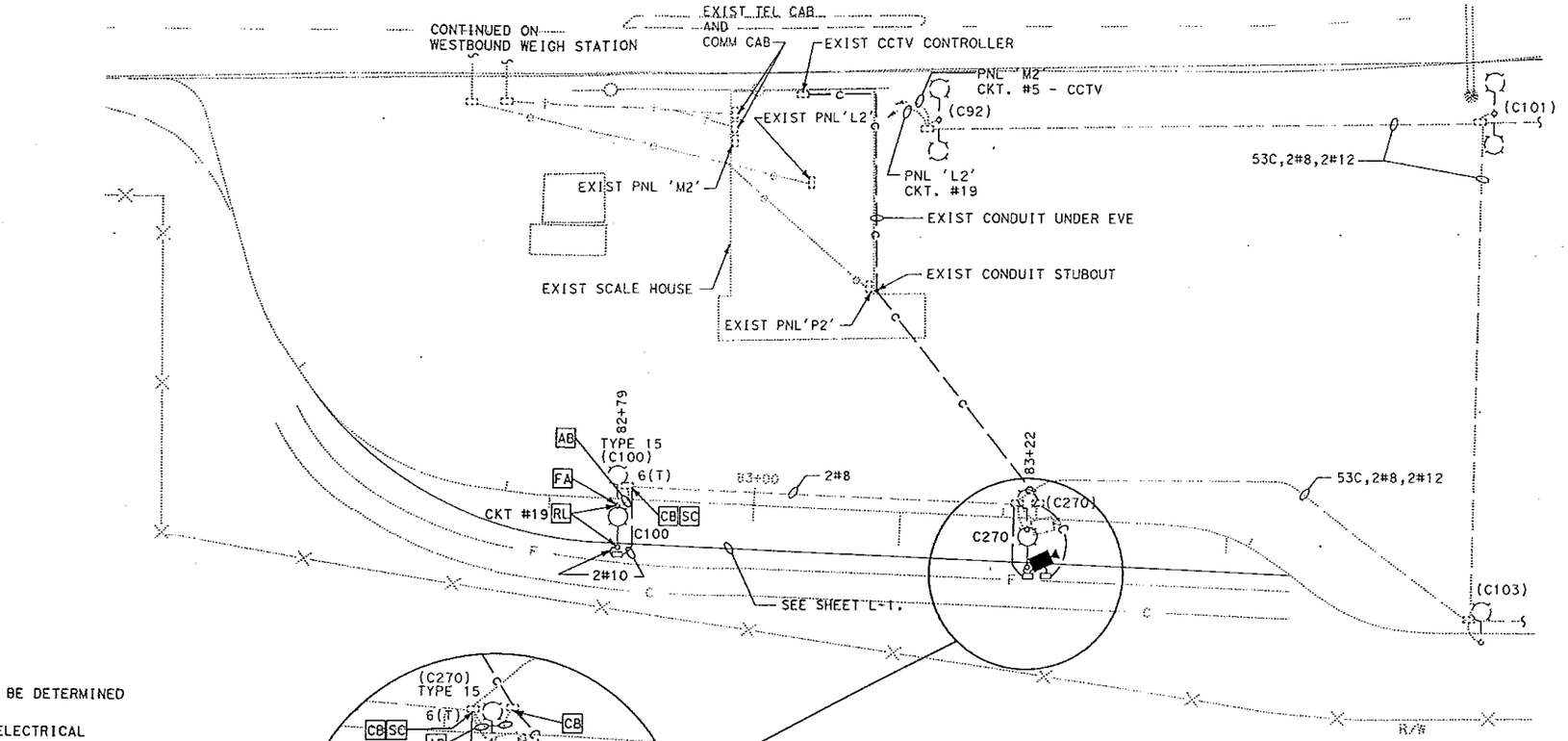
CALCULATED/DESIGNED BY: JESSE CHEN
CHECKED BY: NELSON LEE
PROJECT ENGINEER: JOHN HOLZHAUSER

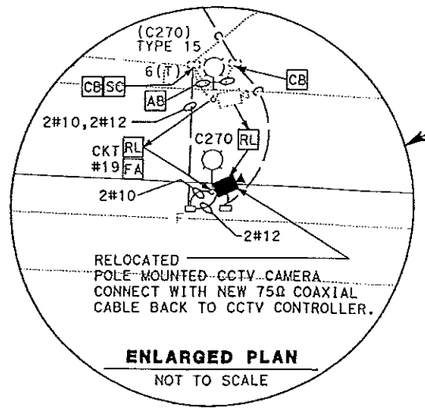
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION
DATE PLOTTED => 18-NOV-2002
TIME PLOTTED => 14:08

FOR REDUCED PLANS ORIGINAL 0 20 40 60 80

CAB CABINET
COMM COMMUNICATION
PNL PANEL
TEL TELEPHONE

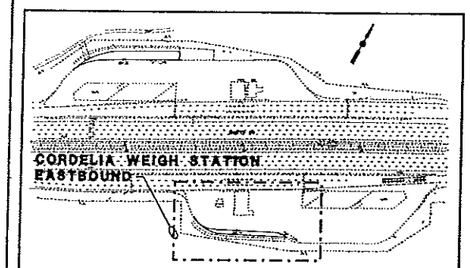




ENLARGED PLAN
NOT TO SCALE

NOTES:

1. EXACT LOCATION OF EQUIPMENT WILL BE DETERMINED BY ENGINEER.
2. THIS PLAN SHEET IS ACCURATE FOR ELECTRICAL WORK ONLY.



KEY PLAN
NOT TO SCALE

ALL DIMENTIONS ARE IN METERS UNLESS OTHERWISE SHOWN.

CORDELIA WEIGH STATION EASTBOUND LIGHTING (AREA)

SCALE 1:200

E-2

REGISTERED ELECTRICAL ENGINEER

JESSE CHEN
E 16735
09/30/06
ELECTRICAL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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	DATE	REVISED BY
	DATE REVISED	

CALCULATED/DESIGNED BY: JESSE CHEN
CHECKED BY: NELSON LEE

PROJECT ENGINEER: JOHN HOLZHAUSER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DATE PLOTTED => 18-NOV-2002
TIME PLOTTED => 14:08

LAST REVISION

FOR REDUCED PLANS ORIGINAL 0 20 40 60 80

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
GP	GENERAL PLAN
ELECTRICAL	
EE0-1	LEGEND
WESTBOUND FACILITY	
EE1-1	PARTIAL SITE PLAN AND DETAILS
EE1-2	GENERATOR DETAILS
EASTBOUND FACILITY	
EE2-1	PARTIAL SITE PLAN AND DETAILS

INDEX OF SHEETS (Continued)

SHEET NO.	DESCRIPTION
ELECTRICAL (Cont.)	
WESTBOUND & EASTBOUND FACILITIES	
EE3-1	EXISTING SIGNAL & WEIGHT DISPLAY SIGN BRIDGE
EE3-2	EXISTING LANE CONTROL SIGN BRIDGE
EE3-3	CONTROL CONSOLE DETAIL
EE3-4	CONTROL CONSOLE WIRING DIAGRAM
EE3-5	SCHEMATIC DIAGRAM

INDEX OF SHEETS (Continued)

SHEET NO.	DESCRIPTION
MECHANICAL	
M-1	GENERATOR
STRUCTURAL	
ST-0A	LEGEND
ST-0B	CONCRETE STANDARD
ST-0C	CONCRETE MASONRY UNIT STANDARD
ST-1	FOUNDATION PLAN
ST-2	FOOTING/SLAB DETAILS
ST-3	SITE PLAN
ST-4	SCALE PIT REMOVAL PLAN

INDEX OF SHEETS (Continued)

SHEET NO.	DESCRIPTION
STRUCTURAL (Cont.)	
ST-5	SCALE PIT PLAN
ST-6	MISCELLANEOUS DETAILS
ST-7	RESTRAINER ASSEMBLY PLAN AND DETAILS
ST-8	GATE DETAILS
ST-9	GATE DETAILS

Caltrans Metric

DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80			

REGISTERED ENGINEER-ELECTRICAL — 3-29-06 DATE

REGISTERED PROFESSIONAL ENGINEER — CHI WU — No. 10773 — Exp. 6-30-07 — ELEC — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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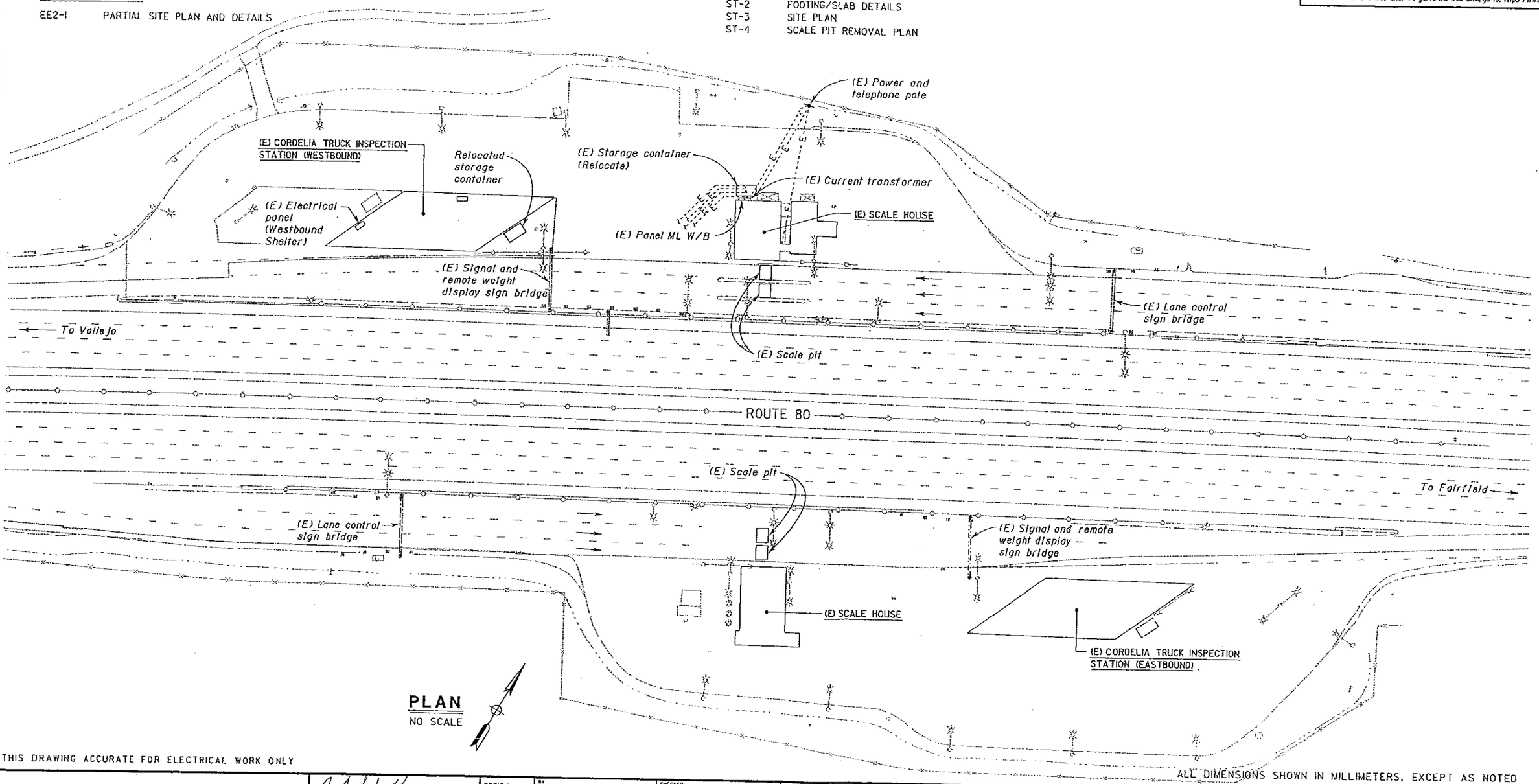

PLAN
NO SCALE

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY

ALL DIMENSIONS SHOWN IN MILLIMETERS, EXCEPT AS NOTED

DESIGN SUPERVISOR	DESIGN	BY Johnny Wu	CHECKED Beatrice Bindu
DESIGN ENGINEER	DETAILS	BY Linda Monson	CHECKED Johnny Wu
	QUANTITIES	BY Johnny Wu	CHECKED Beatrice Bindu

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

CU 04351
EA 1A1101

BRIDGE NO. 23W0001 R/L
KM POST

CORDELIA INSPECTION FACILITY STANDBY GENERATOR

GENERAL PLAN

SHEET **GP**

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET | OF

DOS ELEC (10/98)

FILE => ee_gp.dgn
DATE PLOTTED => 29-MAR-2006
TIME PLOTTED => 09:51

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FOR REDUCED PLANS
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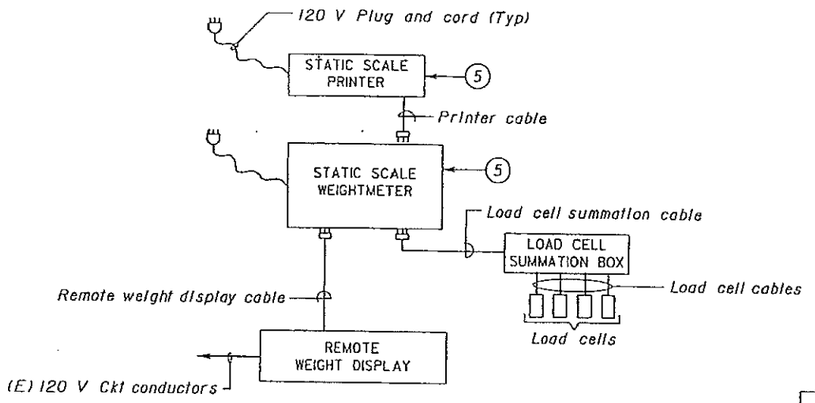
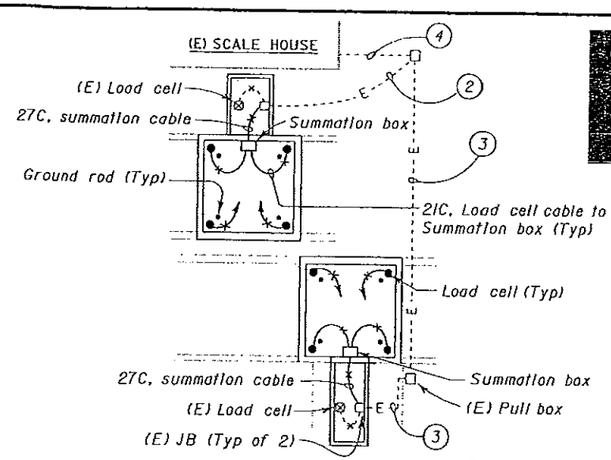
USERNAME => kondreos DATE PLOTTED => 29-MAR-2006 TIME PLOTTED => 09:51



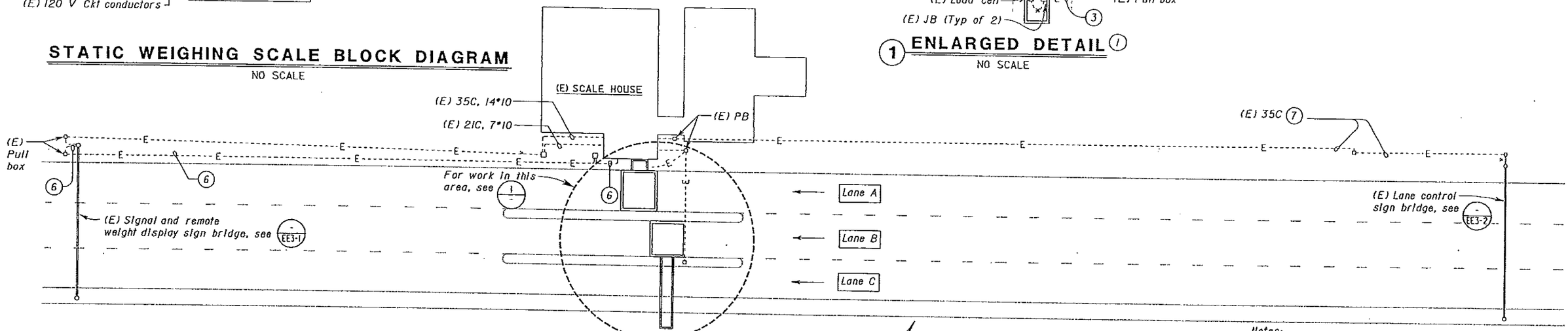
STATIC WEIGHING SCALE BLOCK DIAGRAM

NO SCALE



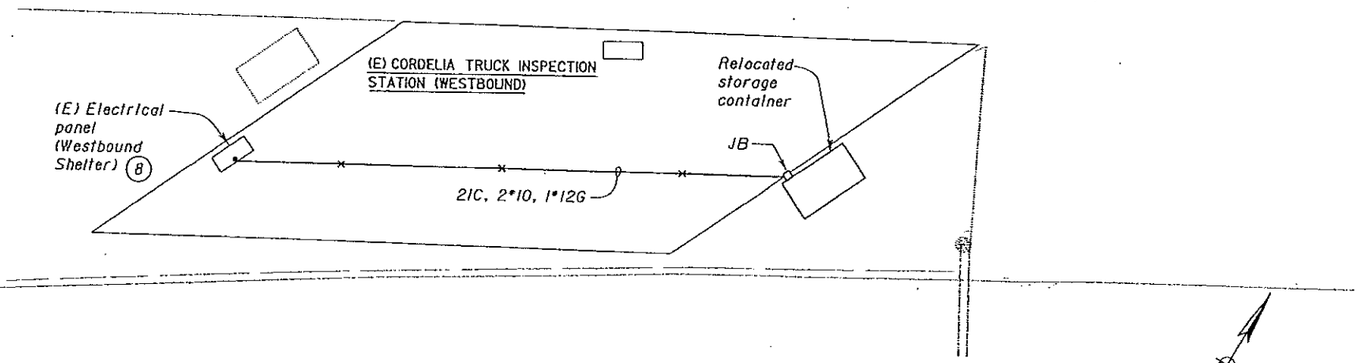
1 ENLARGED DETAIL (1)

NO SCALE



A PARTIAL SITE PLAN

SCALE 1:200



B PARTIAL SITE PLAN

SCALE 1:200

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY

Notes:

(1) Remove existing load cell and install new static weighing scale. See Structural plans.

(2) 27C, remove existing cable and install summation cable for Lane A.

(3) 53C, remove existing cable and install summation cable for Lane B.

(4) 27C, remove existing cables and install summation cables for Lanes A and B, to static scale weightmeter.

(5) Install in Scale House, see EE3-3.

(6) Existing 53C, remove existing cables and install new cables per requirements of manufacturer of new remote weight displays.

(7) Remove existing conductors (9*10 AWG) for the scale lane controls. Install three (3) new cables. The new cable shall meet the requirements of the "Three-Conductor Cable" (3CSC) specified in the Standard Specification, except the conductor size shall be *10 AWG instead of *14 AWG.

(8) Install 20 ampere, single-pole circuit breaker in spare space and connect to the storage container.

ALL DIMENSIONS SHOWN IN MILLIMETERS, EXCEPT AS NOTED

DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80			

Caltrans Metric

REGISTERED ENGINEER-ELECTRICAL — 3-29-06 DATE

REGISTERED PROFESSIONAL ENGINEER — CHI WU — No. 10773 — Exp. 6-30-07 ELEC — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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DESIGN	Johnny Wu	Beatrice Bindu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN
DETAILS	Andreasen/Monson	Johnny Wu		
QUANTITIES	Johnny Wu	Beatrice Bindu		

Design Supervisor: Mark Chaya — Design Engineer: Jack Schroff

BRIDGE NO.	CORDELIA INSPECTION FACILITY STANDBY GENERATOR	SHEET
23W0001L	WESTBOUND FACILITY — PARTIAL SITE PLAN AND DETAILS	EE1-1
KM POST		

CU 04351
EA 1A1101

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY) 12/23/05 12/27/05 12/29/05 1/3/06 1/23/06 2/23/06 2/24/06 3/3/06 — SHEET — OF

DOS ELEC (10/98) — FILE => ee1_01.dgn — DATE PLOTTED => 29-MAR-2006 — TIME PLOTTED => 10:29

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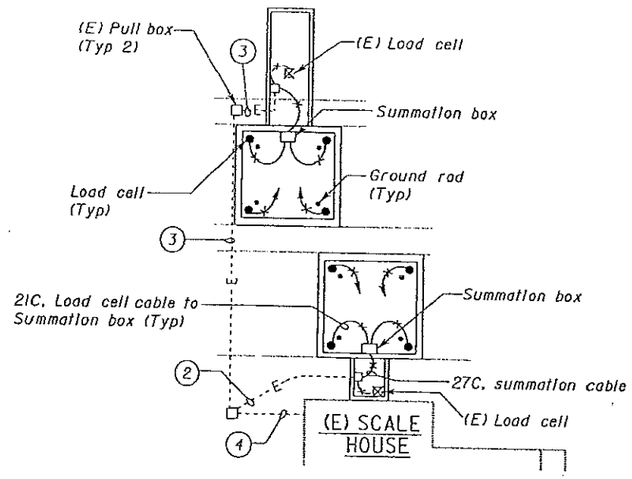
DATE PLOTTED => 29-MAR-2006 TIME PLOTTED => 10:29 — USERNAME => kondross



1 ENLARGED DETAIL (1)

NO SCALE

Notes:

(1) Remove existing load cell and install static weighing scale as shown. See Structure Plans.

(2) 27C, remove existing cable and install summation cable for Lane A.

(3) 53C, remove existing cable and install summation cable for Lane B.

(4) 27C, remove existing cables and install summation cables for Lanes A and B, to static scale weight meter.

(5) Install in Scale House, see sheet EE3-3.

(6) Existing 53C, remove existing cables and install new cables per requirements of manufacturer of new weight displays.

(7) Remove existing conductors (9*10 AWG) for the scale lane controls. Install three new cables. The new cable shall meet the requirements of the "Three Conductor Cable" (3CSC) specified in the Standard Specification, except the conductor size shall be *10 AWG instead of *14 AWG.

Caltrans Metric

DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80			

REGISTERED ENGINEER-ELECTRICAL — 3-29-06 DATE

REGISTERED PROFESSIONAL ENGINEER — CHI WU — No. 10773 — Exp. 6-30-07 — ELEC — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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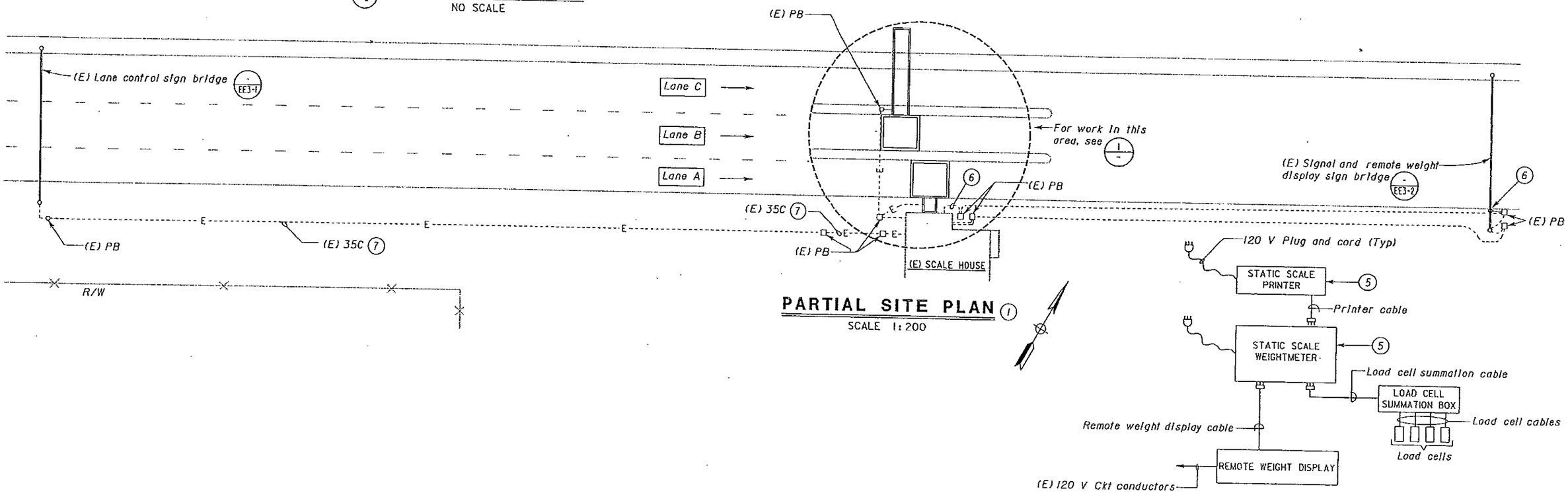

PARTIAL SITE PLAN (1)

SCALE 1:200

STATIC WEIGHING BLOCK DIAGRAM

NO SCALE

ALL DIMENSIONS SHOWN IN MILLIMETERS, EXCEPT AS NOTED

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY
THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY

DESIGN	BY Johnny Wu	CHECKED Beatrice Bindu	
DETAILS	BY Monson/Andreasen	CHECKED Johnny Wu	
QUANTITIES	BY Johnny Wu	CHECKED Beatrice Bindu	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

CU 04351
EA 1A1101

BRIDGE NO.	CORDELIA INSPECTION FACILITY STANDBY GENERATOR	SHEET
23W0001R	EASTBOUND FACILITY — PARTIAL SITE PLAN AND DETAILS	EE2-1
XM POST		

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET | OF

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DATE PLOTTED => 29-MAR-2006
TIME PLOTTED => 09:51

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FOR REDUCED PLANS
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TIME PLOTTED => 09:51
DATE PLOTTED => 29-MAR-2006
TIMEPLOTTED => kondreas

ABBREVIATIONS

CAB CABINET
COMM COMMUNICATION
PNL PANEL
TEL TELEPHONE

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	80	23.2		

REGISTERED ELECTRICAL ENGINEER
07/30/03

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
JESSE CHEN
No. E 16735
Exp. 09/30/06
ELECTRICAL
STATE OF CALIFORNIA

DIRT
R/W
CONC
SEE SHEET L-1.
EXIST CMS CKT
PNL 'M1', CKT #3 - CMS
TEL CAB
EXIST POWER AND TELEPHONE POLE (ELECTRIC AND TELEPHONE SERVICE POINTS)
EXIST tdc
2#10
TYPE 15 C87
TYPE 15 C86
C85
CKT #19.
(C76)
(C87) TYPE 10
(C86) TYPE 10
(C85) TYPE 15
6(T)
(C77)
TO EXIST CCTV CONTROLLER IN SCALE HOUSE
RECONNECT EXIST CMS ASSOCIATED CIRCUITS.
INSTALL PULLBOX HOLD-DOWN BOLTS.
PG&E DISTRIBUTION POLE AND OVERHEAD LINE TO BE RELOCATED BY OTHERS.
EXIST MAIN SWITCHBOARD
EXIST SCALE HOUSE
TO EXIST PANEL 'L2' AND 'P2' IN EASTBOUND SCALE HOUSE.
EXIST PNL 'L1'
EXIST PNL 'M1'
PNL 'L1' CKT #19
EXIST CCTV CONTROLLER
EXIST 53C, 2#6,
(C78)
(C80)
EXIST TEL CAB AND COMM CAB
TO EXIST TEL CAB AND COMM CAB IN EASTBOUND SCALE HOUSE.
CONTINUED ON EASTBOUND WEIGH STATION

CORDELIA WEIGH STATION WESTBOUND

KEY PLAN
NOT TO SCALE

Preliminary Plan
Subject to Revision

NOTES:
1. EXACT LOCATION OF EQUIPMENT WILL BE DETERMINED BY ENGINEER.
2. THIS PLAN SHEET IS ACCURATE FOR ELECTRICAL WORK ONLY.

ALL DIMENTIONS ARE IN METERS UNLESS OTHERWISE SHOWN.

CORDELIA WEIGH STATION WESTBOUND LIGHTING (AREA)

SCALE 1:200

E-1

LAST REVISION

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL DESIGN BRANCH
SACRAMENTO

DATE	REVISED BY	DATE REVISED
CALCULATED/ DESIGNED BY	JESSE CHEN	
CHECKED BY	NELSON LEE	
PROJECT ENGINEER	JESSE CHEN	

LEGEND

CAB CABINET
COMM COMMUNICATION
PNL PANEL
TEL TELEPHONE

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SOL	80	23.2		

REGISTERED ELECTRICAL ENGINEER
07/30/03

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — JESSE CHEN — No. E 16735 — EXP. 09/30/06 — ELECTRICAL — STATE OF CALIFORNIA

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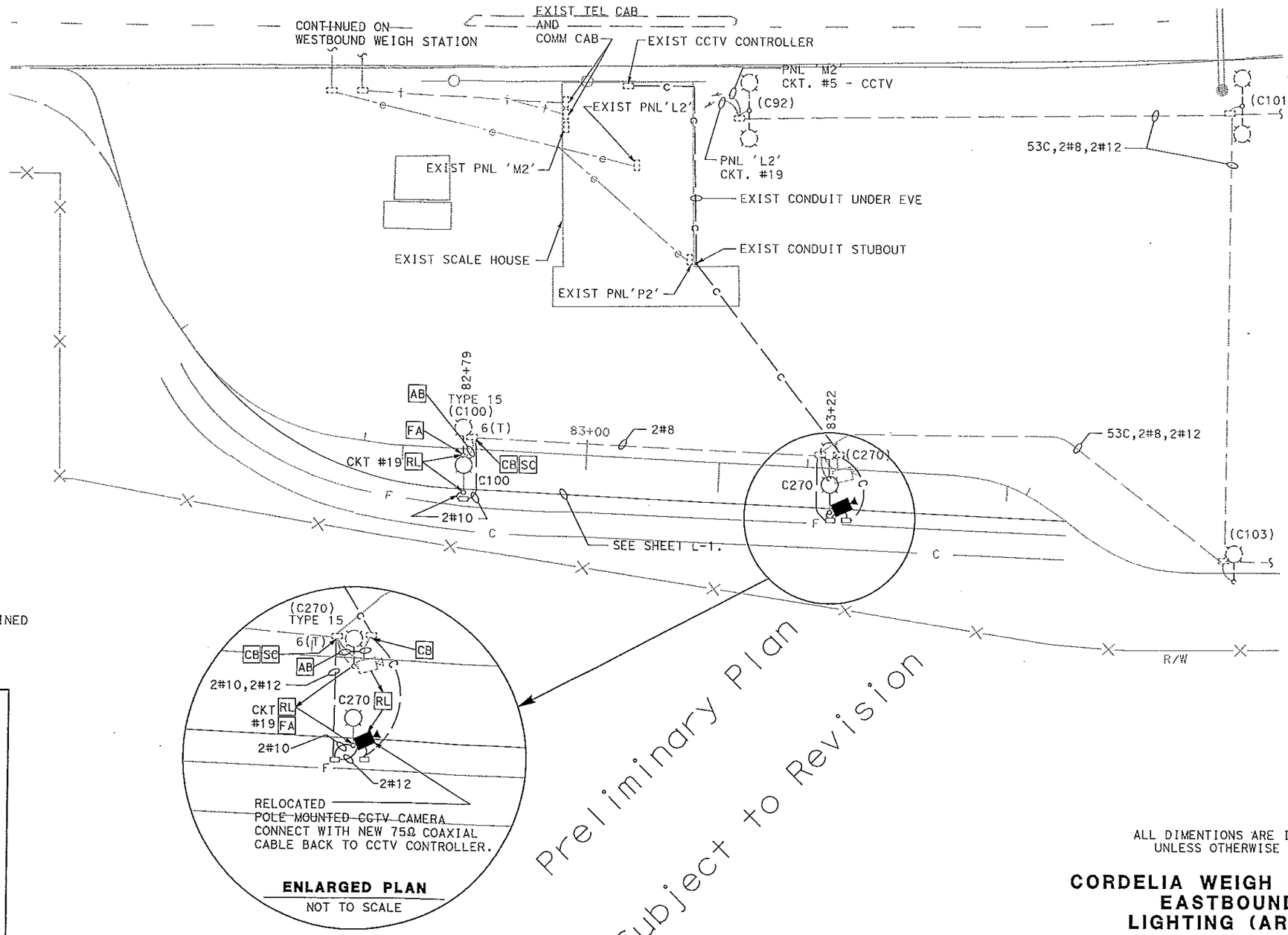

ENLARGED PLAN
NOT TO SCALE

NOTES:

1. EXACT LOCATION OF EQUIPMENT WILL BE DETERMINED BY ENGINEER.
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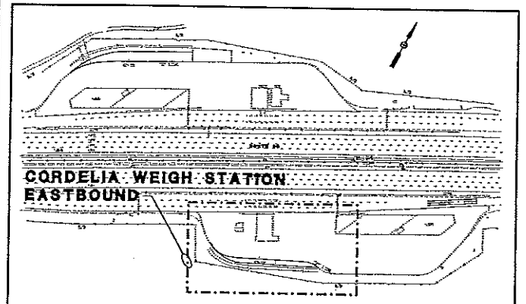

KEY PLAN
NOT TO SCALE

Preliminary Plan
Subject to Revision

ALL DIMENTIONS ARE IN METERS UNLESS OTHERWISE SHOWN.

CORDELIA WEIGH STATION EASTBOUND LIGHTING (AREA)

SCALE 1:200

E-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL DESIGN BRANCH
SACRAMENTO
PROJECT ENGINEER: JESSE CHEN

DATE	REVISED BY	DATE REVISED

CALCULATED/DESIGNED BY: JESSE CHEN
CHECKED BY: NELSON LEE

LAST REVISION

ACIM-080-2(342)N

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	20.7/24.8	1	289

INDEX OF SHEETS

Sheet No.	Description
1	Title and Location Map
2-9	Typical Cross Sections
10	Key Map and Line Key
11-23	Layout Sheets
24-25	Profile and Superelevation Diagrams
26-33	Construction Details
34-40	Temporary Water Pollution Control Details (Temporary Cover)
41-54	Erosion Control Plans
55-59	Erosion Control Details
60-75	Drainage Plans and Edge Drain Plans
76-81	Drainage Profiles
82-87	Drainage Details
88-93	Drainage Quantities
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159-164	Pavement Delineation Quantities
165-182	Summary of Quantities
183-190	Sign Plans
191-205	Lighting and Sign Illumination
206-213	Traffic Operations Systems
214-225	Electrical Systems and Details
226-238	Lighting, Sign Illumination and Traffic Operations Stage Construction
239-251	Weight Station Bypass System
252-270	Revised Standard Plans

STRUCTURE PLANS

271-280	Dan Wilson Creek Bridge
281-283	Suisun Creek Bridge
284-289	Suisun Valley Rd OC

THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO CONTRACTORS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN SOLANO COUNTY
IN FAIRFIELD
FROM ROUTE 680/80 SEPARATION TO 0.7 KM WEST OF ROUTE 12/80 CONNECTOR OVERCROSSING

To be supplemented by Standard Plans dated July, 1999

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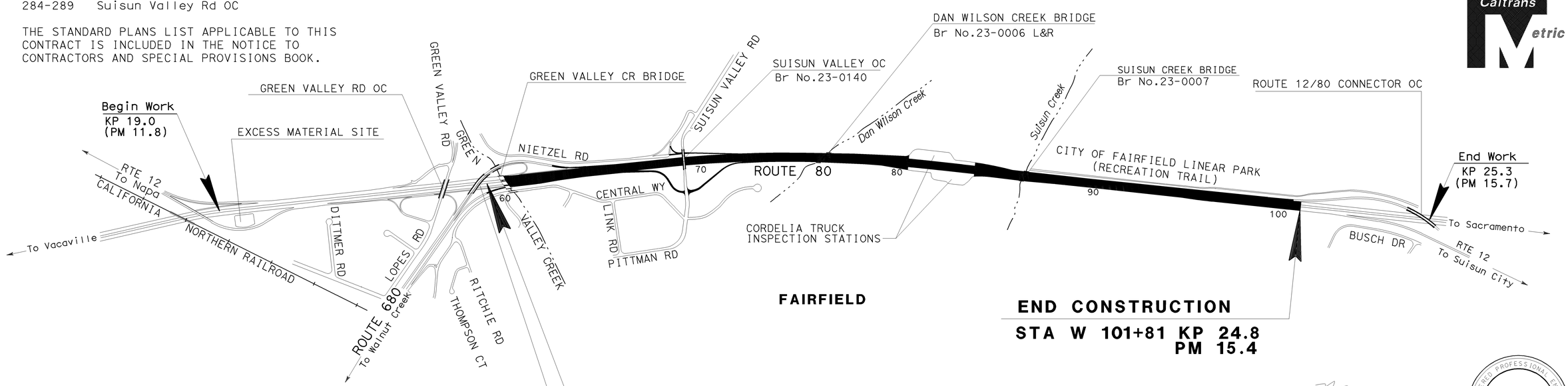

02-19-03
Project Engineer Date
Registered Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
FJ ELENBAAS
No. 43905
Exp. 6/30/05
CIVIL
STATE OF CALIFORNIA

June 16, 2003
Plans Approval Date

The Contractor shall possess the Class (or classes) of license as specified in the ''Notice to Contractors''.

NO SCALE

Contract No. 04-0T16U4

PROJECT ENGINEER	DATE	PROJECT MANAGER	DATE
FREDERIC ELENBAAS		KATIE YIM	

LAST REVISION 02-08-03

DATE PLOTTED => 17-JUL-2003 16:01

FORM DC-OE-93-PF (REV. 3/88)

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CU 04-279

EA 0T16U1

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	20.7/24.8	101	289

F.J. Elenbaas 02-19-03
REGISTERED CIVIL ENGINEER

6-16-03
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
F.J. Elenbaas
NO. 43905
EXP. 6-30-05
CIVIL
STATE OF CALIFORNIA

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Caltrans Metric

FAIRFIELD

CORDELIA TRUCK INSPECTION STATION, WESTBOUND

CORDELIA TRUCK INSPECTION STATION, EASTBOUND

ROUTE 80

SEE SHEET U-7

SEE SHEET U-9

R/W

W LINE

B LINE

E LINE

ES1 LINE

12 KV OVERHEAD

UNDERGROUND

76 mm PVCP (CAL)

51 mm PVCP (CAL)

51 mm GSP (ABANDONED)

31 mm CSP W/ 457 mm CMP CASING

31 mm CSP (CAL)

P|C 2A+14

14030

10.93

13030

10.40

SSV27

SSV29

10.27

SSV30

10.67

CONC

DIKE

DIRT

JP

UC

CALCULATED/ DESIGNED BY

CHECKED BY

DATE	REVISED BY
9/01	DATE REVISED
HN	
FJE	

PROJECT ENGINEER
FJ ELENBAAS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans PROJECT DEVELOPMENT

FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET U-1

THIS PLAN ACCURATE FOR UTILITIES ONLY

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

UTILITY PLAN

SCALE 1:500

U-8

LAST REVISION 02-09-03

DATE PLOTTED => 18-JUL-2003
TIME PLOTTED => 06:51

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DGN FILE => 40t16uk008.dgn

CU 04279

EA 0T16U1

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	20.7/24.8	102	289

REGISTERED CIVIL ENGINEER 02-19-03

REGISTERED PROFESSIONAL ENGINEER
F.J. Elenbaas
No. 43905
Exp. 6-30-05
CIVIL
STATE OF CALIFORNIA

6-16-03
PLANS APPROVAL DATE

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Caltrans Metric

FAIRFIELD

Y 562,600

X 1,990,100

R/W

CORDELIA TRUCK INSPECTION STATION, WESTBOUND

12 KV E JP OVERHEAD

WS2 LINE

15030

15040

14040

ROUTE 80

12 KV E 11.29 OVERHEAD

Suisun Creek

R/W

See Sheet U-8

See Sheet U-10

458 mm RCP W/ 1762 mm RCP CASING

458 mm RCP (SID)

ES2 LINE

SSV31

SSV32

12 KV OVERHEAD E

R/W PP

CORDELIA TRUCK INSPECTION STATION, EASTBOUND

R/W

Suisun Creek

All Dimensions are in Meters unless otherwise shown

UTILITY PLAN

SCALE 1:500

This Plan accurate for Utilities Only

U-9

FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET U-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans PROJECT DEVELOPMENT

PROJECT ENGINEER: FJ ELENBAAS

CALCULATED/ DESIGNED BY
CHECKED BY

DATE	REVISED BY
9/01	HN
9/01	FJE

DATE REVISED

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80 100

USERNAME => trienard
DGN FILE => 40t16uk009.dgn

CU 04279

EA 0T16U1

LAST REVISION 02-08-03

DATE PLOTTED => 18-JUL-2003
TIME PLOTTED => 06:51

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	20.7/24.8	243	289

6-05-03
REGISTERED ELECTRICAL ENGINEER

NELSON LEE
No. E8838
Exp.3/30/04
ELECTRICAL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-16-03
PLANS APPROVAL DATE

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Caltrans Metric

DATE REVISED BY

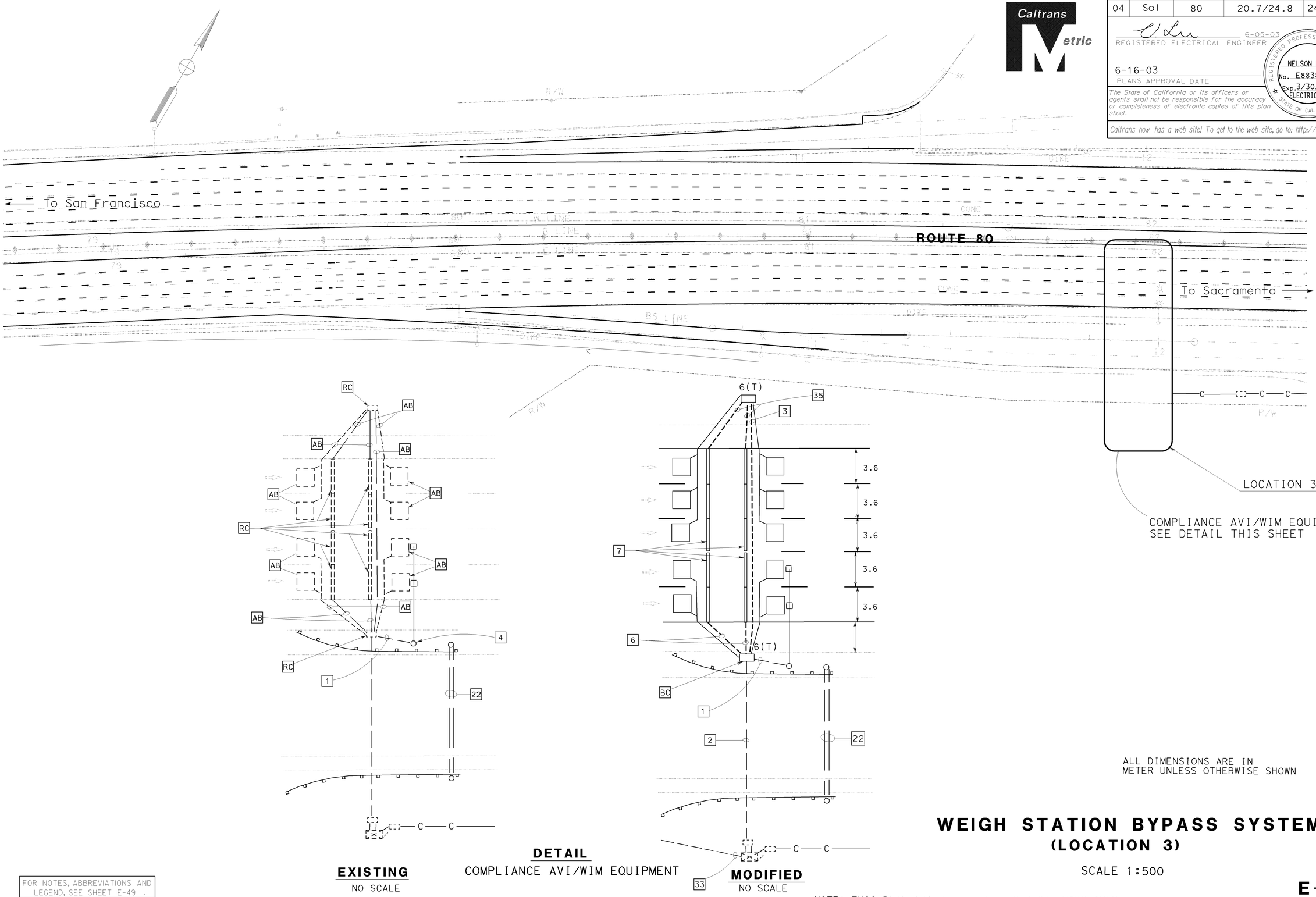
DATE REVISED

CALCULATED/DESIGNED BY BRIAN CHOW

CHECKED BY NELSON LEE

PROJECT ENGINEER NELSON LEE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL DESIGN SACRAMENTO



EXISTING
NO SCALE

DETAIL
COMPLIANCE AVI/WIM EQUIPMENT

MODIFIED
NO SCALE

ALL DIMENSIONS ARE IN METER UNLESS OTHERWISE SHOWN

WEIGH STATION BYPASS SYSTEM
(LOCATION 3)

SCALE 1:500

E-53

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET E-49 .

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trcarol
DGN FILE => 40t16uu053.dgn

CU 03391

EA 0T1601

LAST REVISION 06-05-03
DATE PLOTTED => 18-JUL-2003
TIME PLOTTED => 10:46

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	20.7/24.8	244	289

6-05-03
REGISTERED ELECTRICAL ENGINEER

6-16-03
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NELSON LEE
No. E8838
Exp. 3/30/04
ELECTRICAL
STATE OF CALIFORNIA

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LOCATION 4

COMPLIANCE AVI/WIM EQUIPMENT
SEE DETAIL THIS SHEET

TYPE "A" SERVICE
(120/240 V) POST MOUNTED

EXIST. SERVICE
POST

WESTBOUND FACILITY

EXISTING SCALE HOUSE

R/W

(C)

WS1 LINE

WS2 LINE

14491

14511

To San Francisco

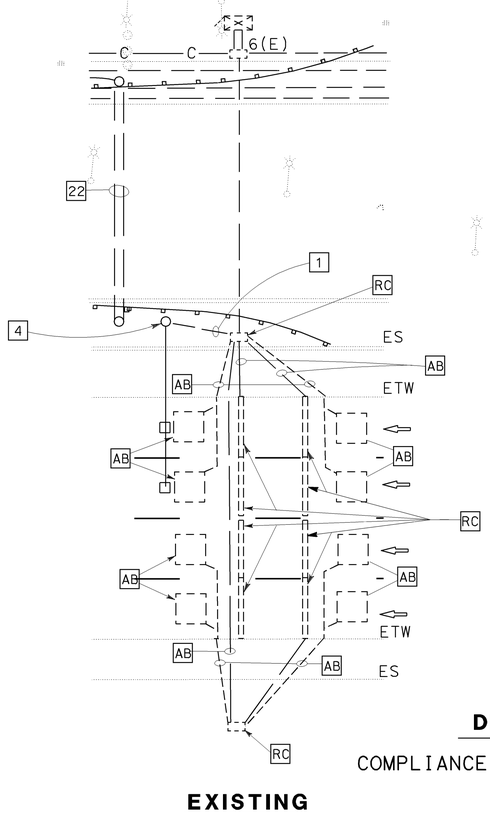
APPROXIMATE LOCATION
OF CONDUIT TERMINATION

ROUTE 80

DIKE

SCS LINE

To Sacramento



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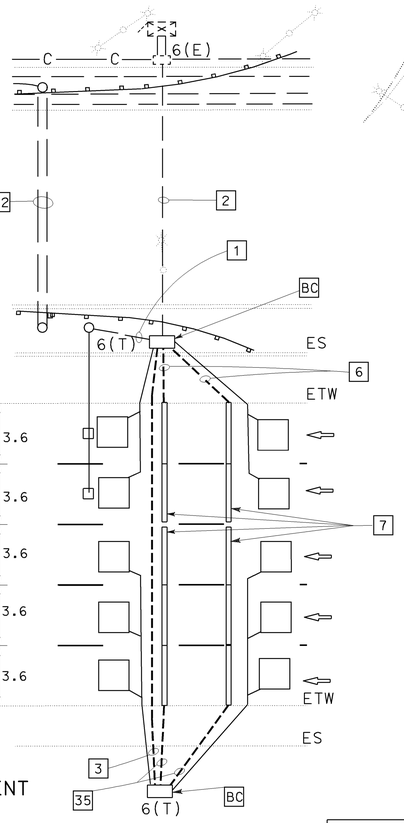

MODIFIED
NO SCALE

DETAIL

COMPLIANCE AVI/WIM EQUIPMENT

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET E-49

ALL DIMENSIONS ARE IN
METER UNLESS OTHERWISE SHOWN

WEIGH STATION BYPASS SYSTEM
(LOCATION 4)

SCALE: 1:500

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.

E-54

DATE	REVISED BY	DATE REVISED
CALCULATED/ DESIGNED BY	BRIAN CHOW	
CHECKED BY	NELSON LEE	
PROJECT ENGINEER	NELSON LEE	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL DESIGN SACRAMENTO

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trcarol
DGN FILE => 40t16uu054.dgn

CU 03391

EA 0T1601

LAST REVISION 06-05-03
DATE PLOTTED => 18-JUL-2003
TIME PLOTTED => 10:47

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	20.7/24.8	245	289

REGISTERED ELECTRICAL ENGINEER 4-29-03

6-16-03
PLANS APPROVAL DATE

NELSON LEE No. E8838 Exp.3/30/04 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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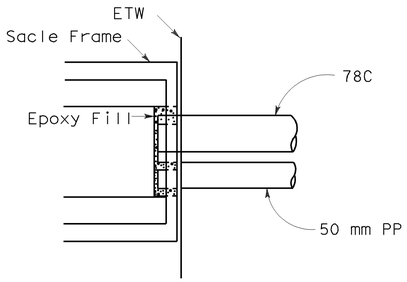
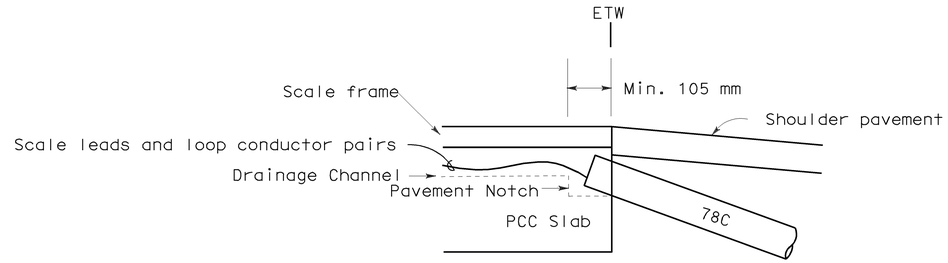


PLAN VIEW

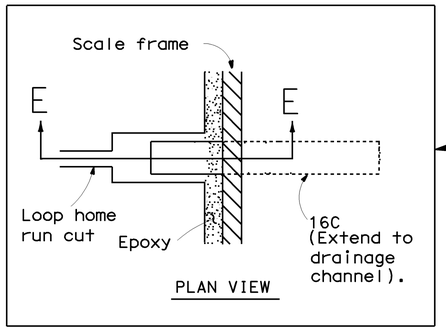


CROSS SECTION

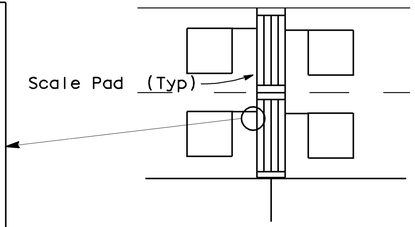
CONDUIT AND 50 mm PP TERMINATION DETAILS

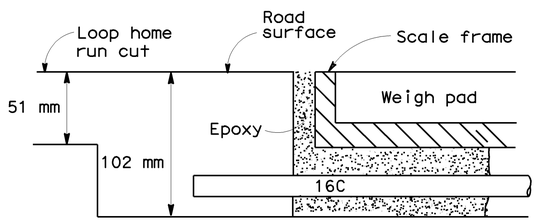
NOTES

1. Non-metallic bushing shall be used at roadway end of conduit.
2. Tape wire 76 mm each side of roadway bushing.
3. Install duct seal compound to each end of roadway conduit before installing epoxy, or other approved materials.
4. End of 78C and 50 mm PP rests on bottom of pavement notch; 78C bottom must be above 50 mm PP bottom.

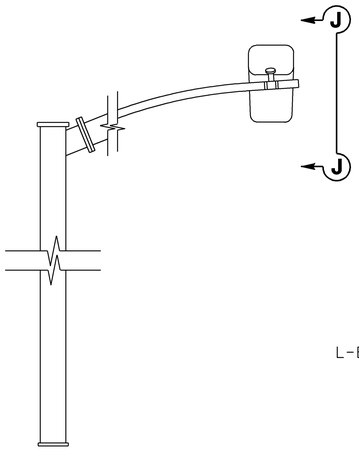


PLAN VIEW

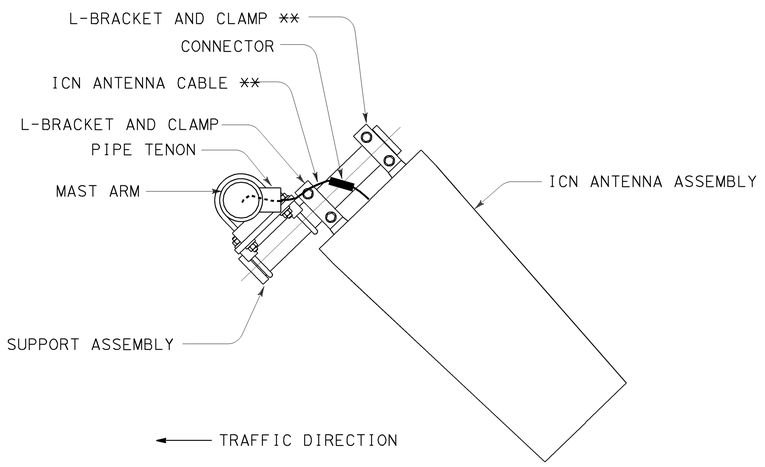




SECTION E-E

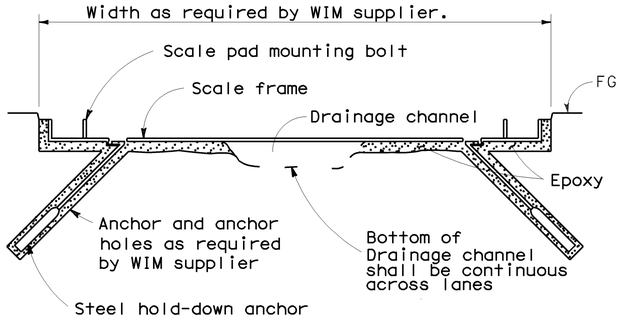


ANTENNA STANDARD



SECTION J-J

LOOP HOME RUN DETAILS



SCALE FRAME INSTALLATION DETAIL
(TYPICAL)

ICN ANTENNA INSTALLATION

** PART OF ICN ANTENNA HARDWARE

WEIGH STATION BYPASS SYSTEM DETAILS

NO SCALE

E-55

BRIAN CHOW	CALCULATED/ DESIGNED BY	DATE	REVISED BY
NELSON LEE	CHECKED BY		DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ELECTRICAL DESIGN SACRAMENTO
PROJECT ENGINEER NELSON LEE

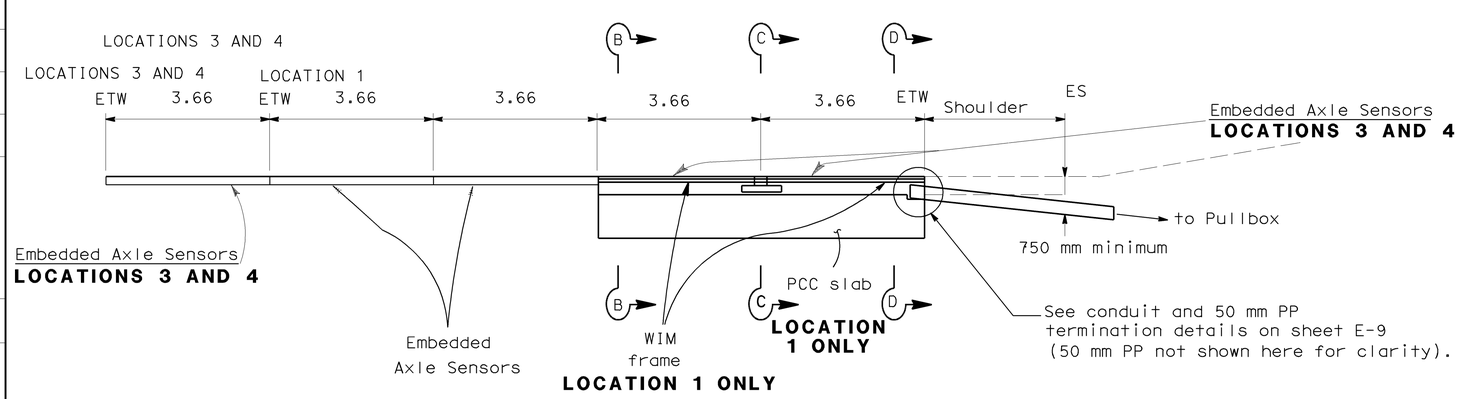
LAST REVISION 12-04-02
DATE PLOTTED => 18-JUL-2003
TIME PLOTTED => 10:47

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trcarol
DGN FILE => 40t16uu055.dgn

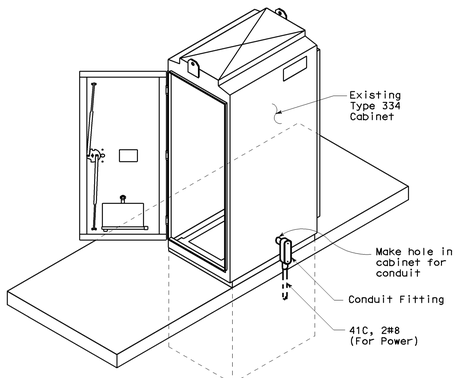
CU 03391

EA 0T1601

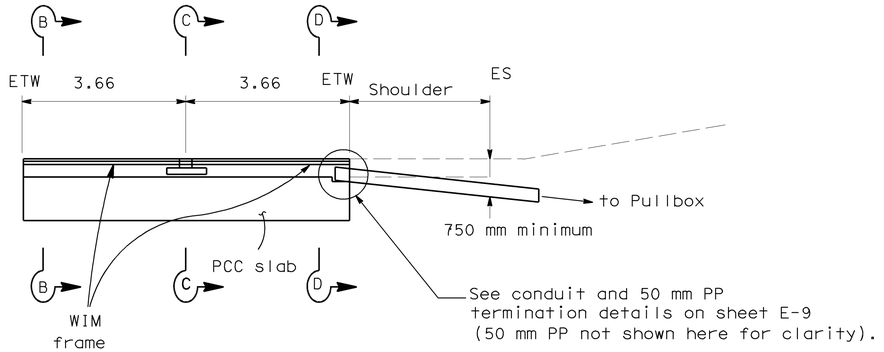


SECTION X-X

LOCATIONS 1, 3 AND 4

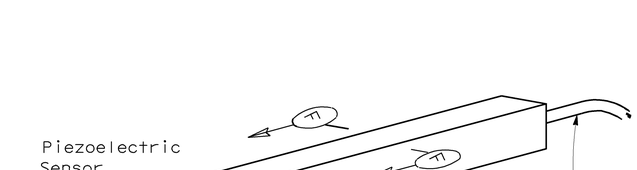


DETAIL "F"
No scale

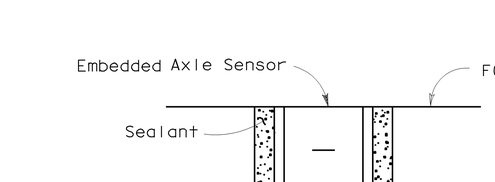


SECTION Y-Y

LOCATION 2



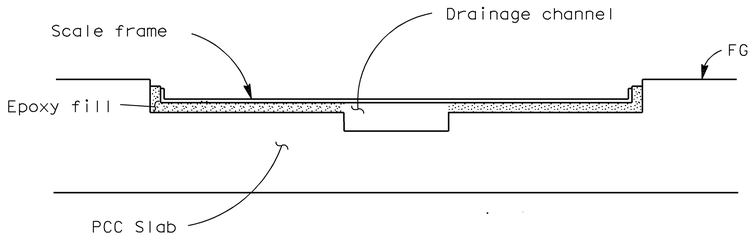
TYPICAL EMBEDDED AXLE SENSOR



SECTION F-F

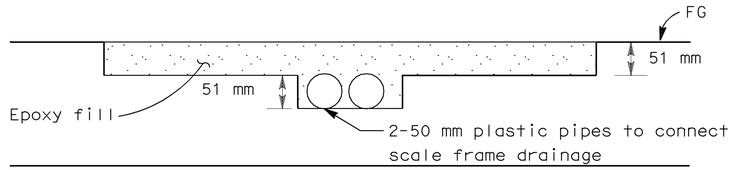
NOTES:

1. The exact location of the WIM Scales to be determined by the Engineer. The Engineer shall verify the final location of the WIM Scales prior to the Contractor performing any work in the travelled way or shoulders
2. Edge Drain outlet shall conform to Type C outlet with outlet cover as shown on Standard Plan D99B except that pipe shall be 50 mm.
3. WIM scale shall match existing roadway profile and cross-slope.
4. Exact configuration and installation procedures of scale frame and loop detectors shall conform to the requirements of the WIM supplier.



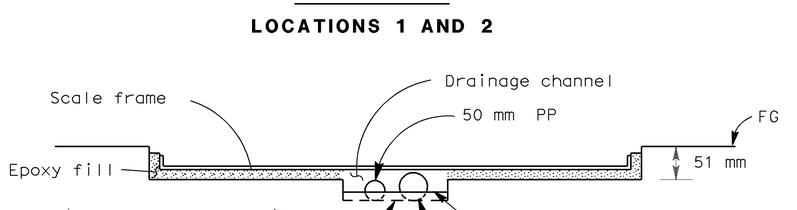
SECTION B-B

LOCATIONS 1 AND 2



SECTION C-C

LOCATIONS 1 AND 2



SECTION D-D

LOCATIONS 1 AND 2

WEIGH STATION BYPASS SYSTEM DETAILS

NO SCALE

E-56

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	20.7/24.8	246	289

REGISTERED ELECTRICAL ENGINEER
4-29-03
6-16-03
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NELSON LEE
No. E8838
Exp.3/30/04
ELECTRICAL
STATE OF CALIFORNIA

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Caltrans Metric

DATE	REVISED BY	DATE REVISED

CALCULATED/DESIGNED BY: BRIAN CHOW
CHECKED BY: NELSON LEE
PROJECT ENGINEER: NELSON LEE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ELECTRICAL DESIGN SACRAMENTO

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trcarol
DGN FILE => 40t16uu056.dgn

CU 03391

EA 0T1601

LAST REVISION 12-04-02
DATE PLOTTED => 22-JUL-2003
TIME PLOTTED => 10:01

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	20.7/24.8	247	289

REGISTERED ELECTRICAL ENGINEER
4-29-03

6-16-03
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NELSON LEE
No. E8838
Exp.3/30/04
ELECTRICAL
STATE OF CALIFORNIA

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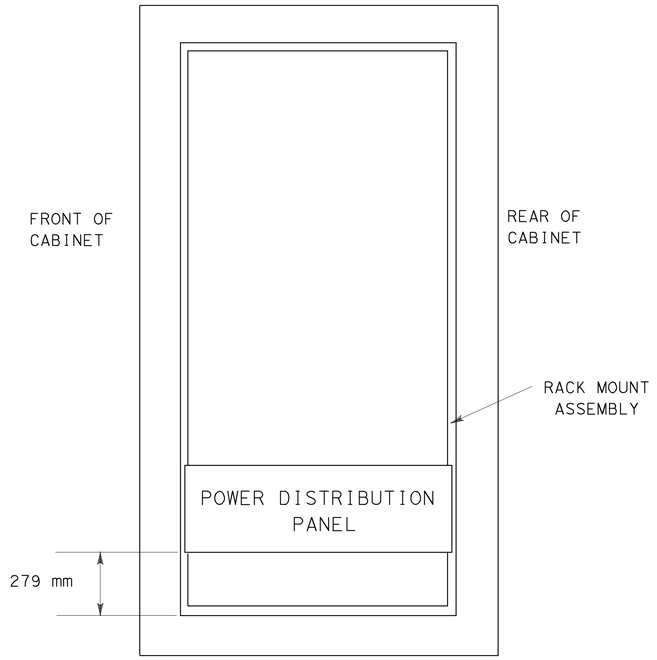
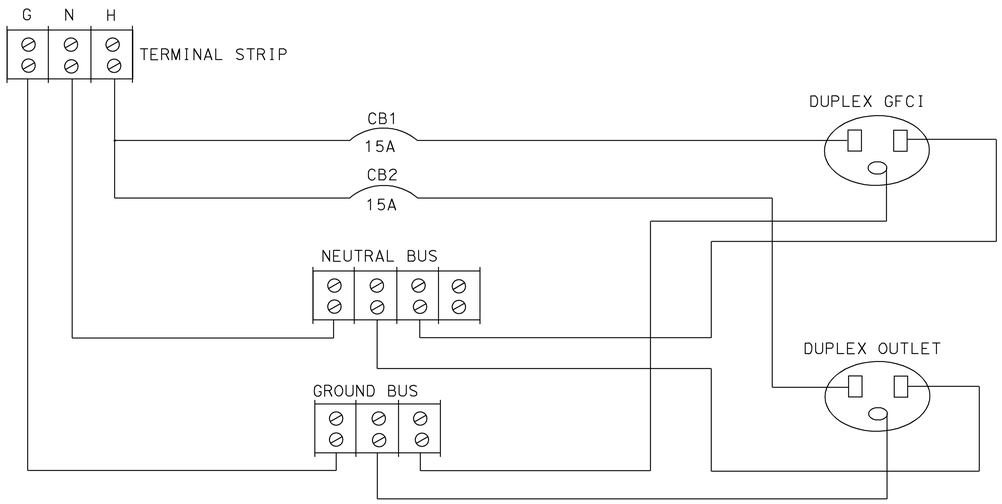
NOTE: FOR CABINET FOUNDATION DETAILS, SEE STANDARD PLAN ES-3C



WIM CONTROLLER CABINET

SIDE VIEW



POWER PANEL WIRING DIAGRAM

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

WEIGH STATION BYPASS SYSTEM DETAILS

NO SCALE

E-57

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	NELSON LEE	CALCULATED/DESIGNED BY	BRIAN CHOW
Caltrans	ELECTRICAL DESIGN SACRAMENTO		CHECKED BY	NELSON LEE

DATE	REVISED BY
	DATE REVISED

LAST REVISION 12-04-02 | DATE PLOTTED => 18-JUL-2003 | TIME PLOTTED => 10:47

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trcarol
DGN FILE => 40t16uu057.dgn

CU 03391

EA 0T1601

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	20.7/24.8	248	289

REGISTERED CIVIL ENGINEER 4-29-03

6-16-03
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — JOHN SATTER No. 42892 Exp. 3-31-04 CIVIL — STATE OF CALIFORNIA

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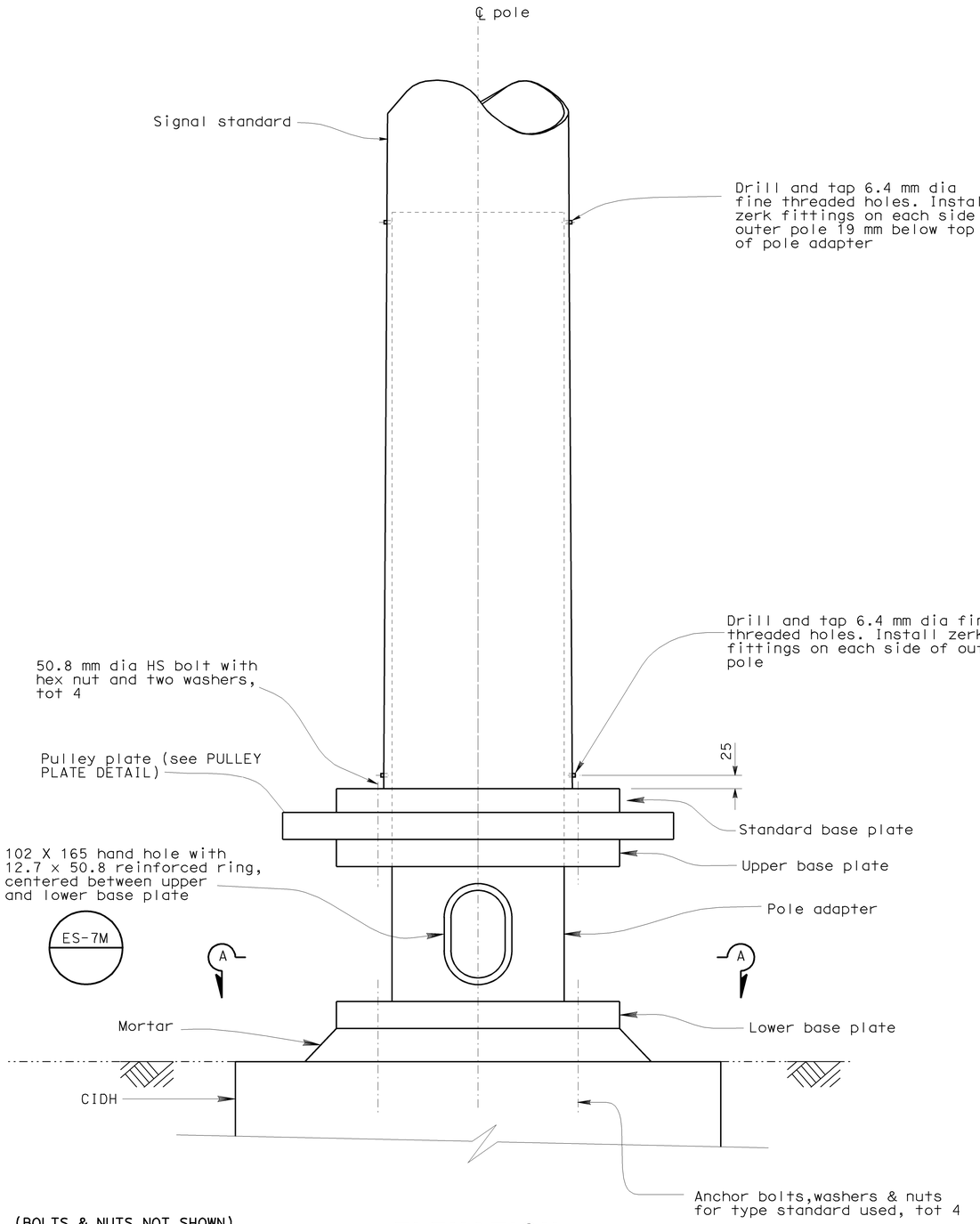
DATE REVISED | DATE | REVISED BY | CALCULATED/ DESIGNED BY | CHECKED BY

PROJECT ENGINEER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

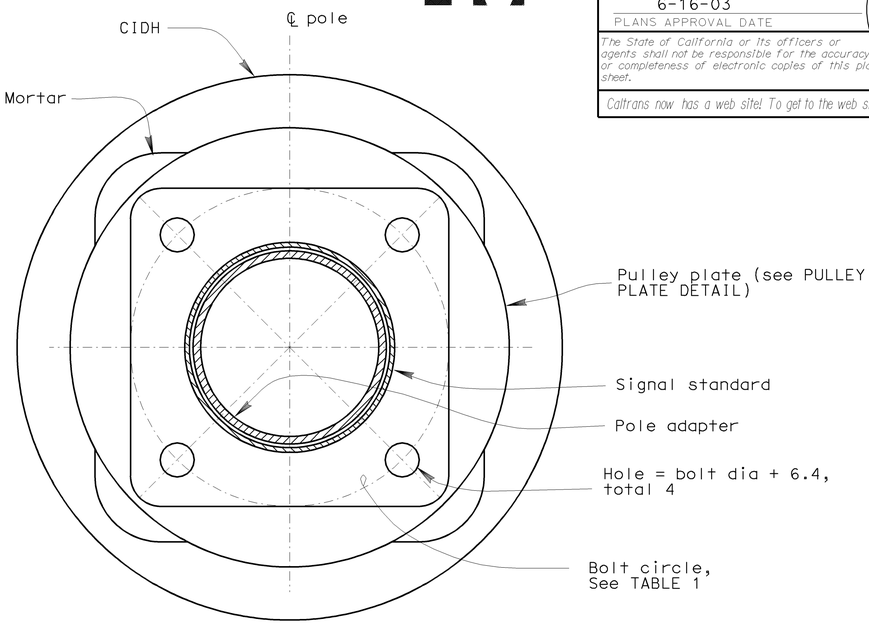
Caltrans



(BOLTS & NUTS NOT SHOWN)

ELEVATION

NO SCALE



(BOLTS & NUTS NOT SHOWN)

PLAN

NO SCALE

ES-7G ES-7N

DESIGN NOTE:

Type 28-5-129 (MOD) used as Rotating Pole with AVI antennna(Total 2 max)

DESIGN: AASHTO SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, DATED 1994

WIND LOADING: 129 KM/H AASHTO

GENERAL NOTES:

1. WASHER ASSEMBLY CONSIST OF TWO FIBER, TWO FLAT AND LOCK WASHERS.
2. ALL STEEL MINIMUM YIELD STRENGTH=331 MPa Except when noted otherwise.
3. For details not shown, see STANDARD PLANS.

HIGH SPEED WEIGH IN MOTION SYSTEM
WEIGH STATION BYPASS SYSTEM
ROTATING POLE
(GENERAL LAYOUT)

E-58

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

USERNAME => trphlls
DGN FILE => spec des br proj/03-0T1601 40t16uu058.dgn

CU 03391 | EA 0T1601

LAST REVISION 7-09-02 | DATE PLOTTED => 18-JUL-2003 | TIME PLOTTED => 10:23

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	20.7/24.8	249	289

REGISTERED CIVIL ENGINEER 4-29-03

6-16-03
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOHN SATTER
No. 42892
Exp. 3-31-04
CIVIL
STATE OF CALIFORNIA

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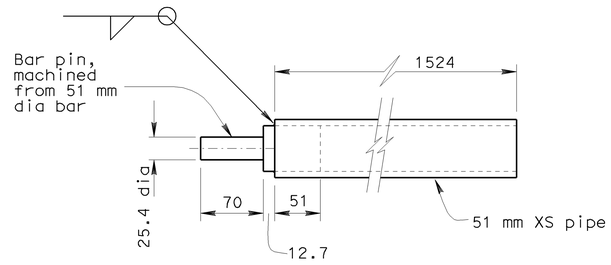
DATE REVISED BY | DATE REVISED
CALCULATED/DESIGNED BY | CHECKED BY
PROJECT ENGINEER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

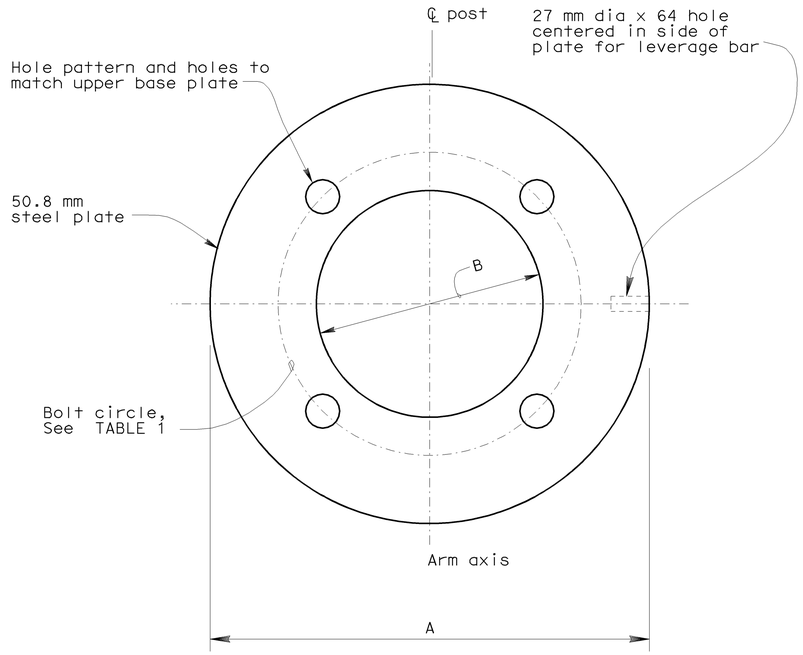


LEVERAGE BAR

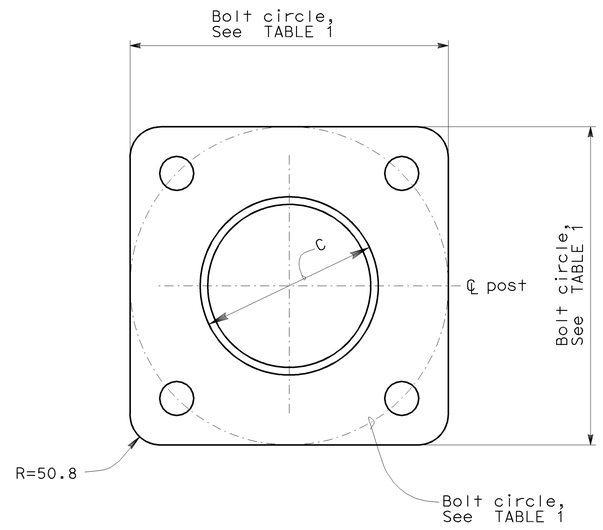
TABLE I

Type of Signal /Lighting Standard (mod)	Bolt Circle Diameter	A	B	C	D
28-5-129	533	762	381.0	323.9	298.5

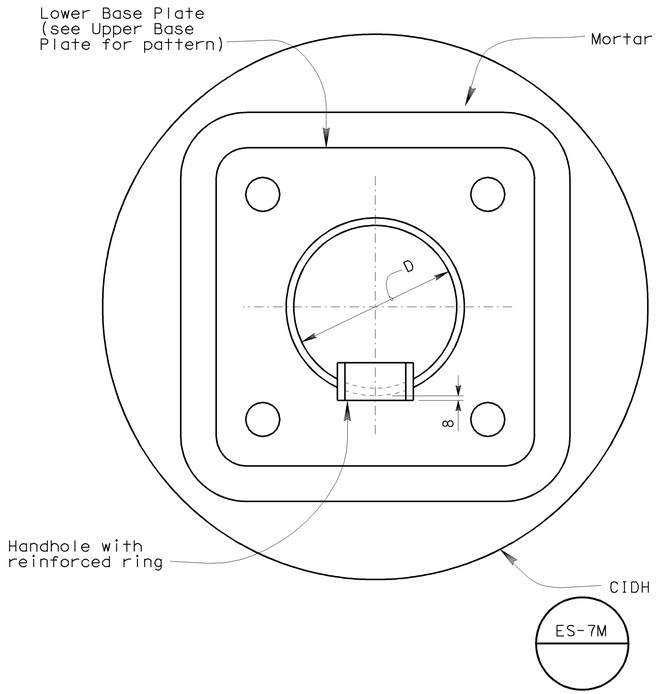
Direction of traffic



PLAN
PULLEY PLATE DETAILS



UPPER BASE PLATE
POLE ADAPTOR



SECTION A-A

HIGH SPEED WEIGH IN MOTION SYSTEM
WEIGH STATION BYPASS SYSTEM
ROTATING POLE
(TABLE AND PLATE DETAILS)

E-59

LAST REVISION 01-07-02 | DATE PLOTTED => 18-JUL-2003 | TIME PLOTTED => 10:23

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

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DGN FILE => spec des br proj/03-0T1601 40t16uu059.dgn

CU 03391 | EA 0T1601

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	20.7/24.8	250	289

REGISTERED CIVIL ENGINEER 4-29-03

6-16-03
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOHN SATTER
No. 42892
Exp. 3-31-04
CIVIL
STATE OF CALIFORNIA

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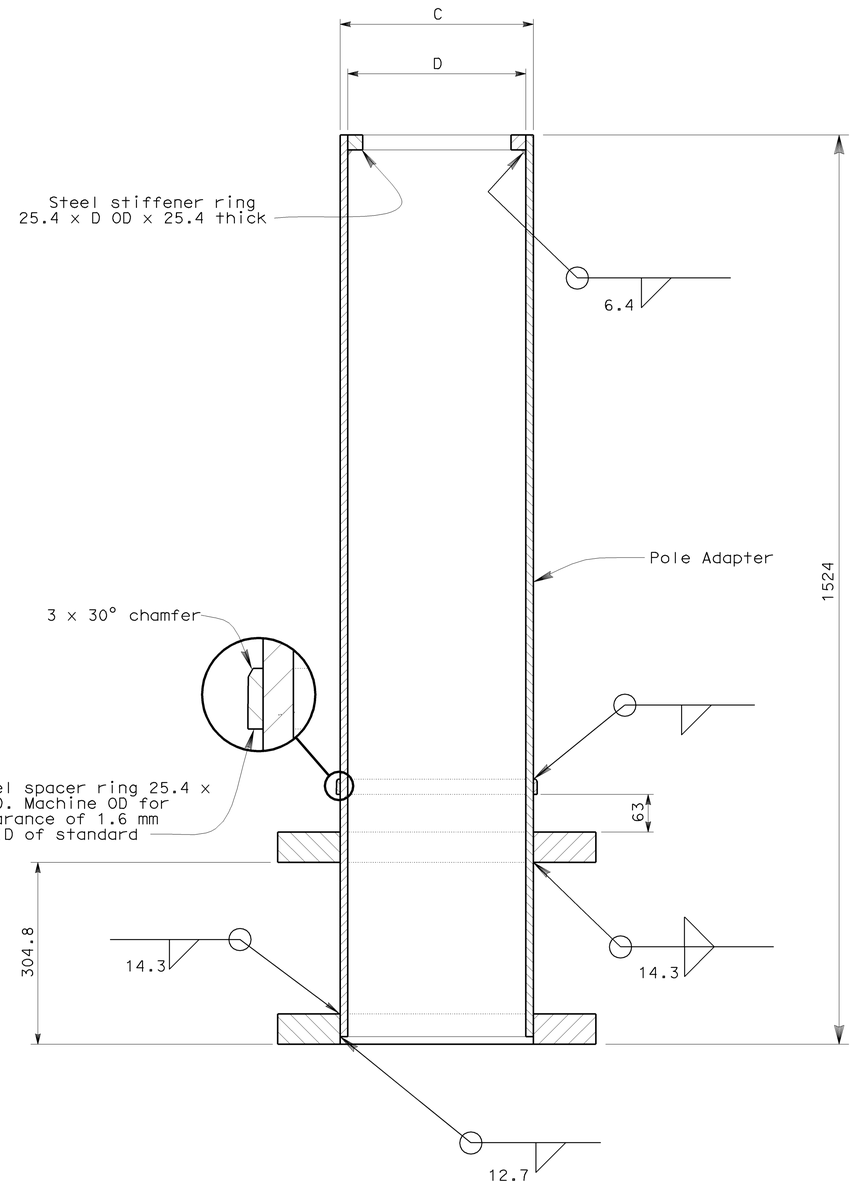
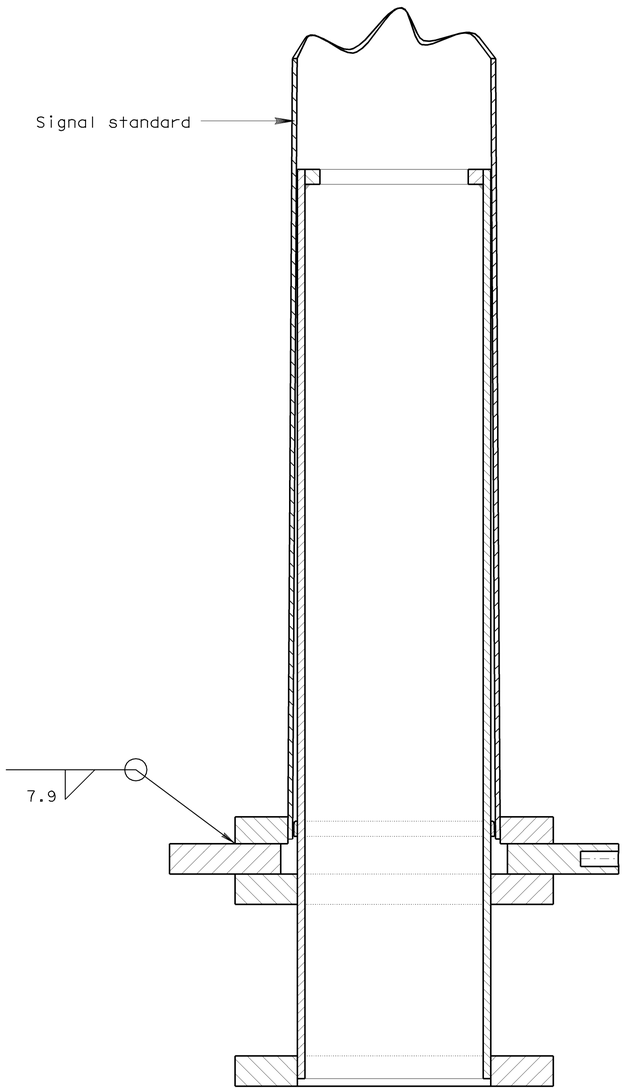


SECTIONAL VIEW
POLE ADAPTOR
NO SCALE



SECTION VIEW
STANDARD AND
POLE ADAPTOR ASSEMBLED
NO SCALE

HIGH SPEED WEIGH IN MOTION SYSTEM
WEIGH STATION BYPASS SYSTEM
ROTATING POLE
(SECTIONAL VIEWS)

E-60

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

PROJECT ENGINEER

CALCULATED/ DESIGNED BY

CHECKED BY

DATE	REVISED BY	DATE REVISED

LAST REVISION 01-07-02
DATE PLOTTED => 18-JUL-2003
TIME PLOTTED => 10:23

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

USERNAME => trphils
DGN FILE => spec des br proj/03-0T1601 40t16uu060.dgn

CU 03391

EA 0T1601

INDEX OF SHEETS

Sheet No.	Description
1	Title and Location Map
2	Typical Cross Sections
3	Layouts
4	Construction Details
5-6	Erosion Control Plan and Details
7-11	Drainage Plan, Profiles and Details
12	Construction Area Signs
13-15	Stage Construction and Traffic Handling Plan
16-21	Pavement Delineation and Sigh Plan
21	Summary of Quantities
22-25	Highway Planting Plans
26-27	Electrical Plans
28-29	Revised Standard Plans

THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO CONTRACTORS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY

IN SOLANO COUNTY
IN FAIRFIELD
AT THE CORDELIA TRUCK WEIGH STATIONS

To be supplemented by Standard Plans dated July, 2004

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	1	29

LOCATION MAP

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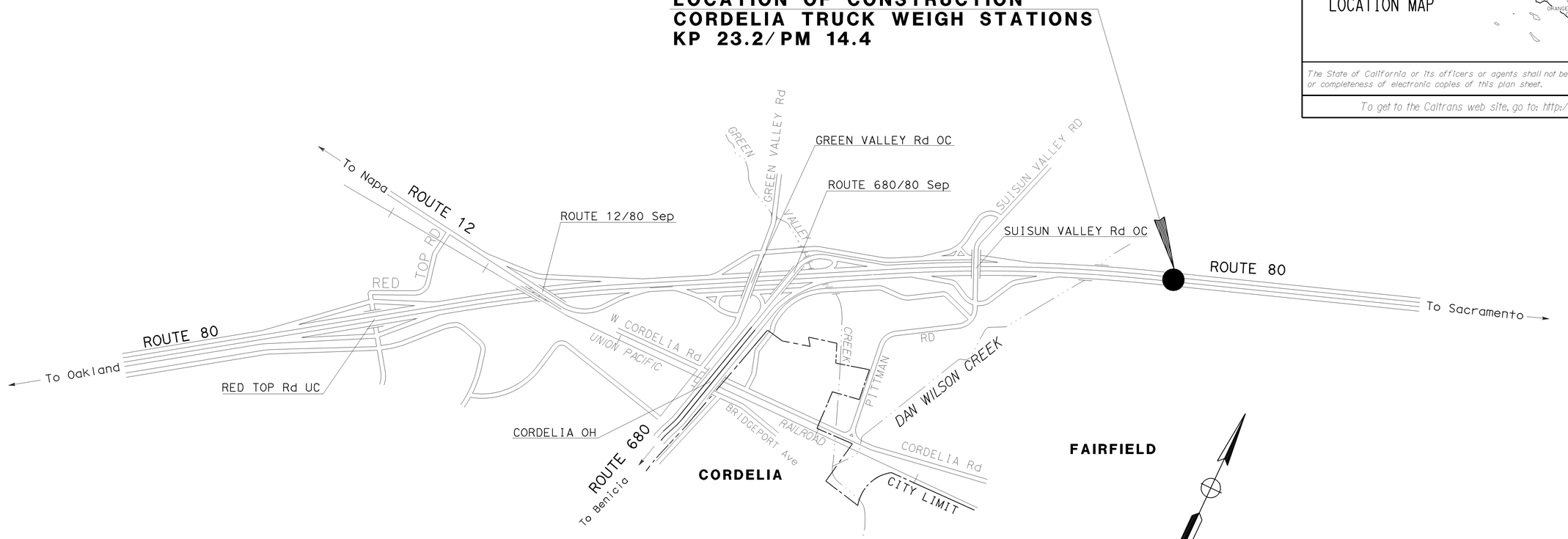
To get to the Caltrans web site, go to: http://www.dot.ca.gov

Caltrans Metric

LOCATION OF CONSTRUCTION
CORDELIA TRUCK WEIGH STATIONS
KP 23.2/PM 14.4



NO SCALE

The Contractor shall possess the Class (or Classes) of license as specified in the ''Notice to Contractors''.

John F. Holzhauser
Project Engineer Date 2-22-06
Registered Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
JOHN F. HOLZHAUSER
No. 50205
Exp. 6-30-07
CIVIL
STATE OF CALIFORNIA

June 5, 2006
Plans Approval Date

PROJECT ENGINEER	DATE	PROJECT MANAGER	DATE
JOHN F. HOLZHAUSER	05-05	R. AU-YEUNG	05-05

Contract No. **04-444704**

FORM DC-OE-93-PF (REV. 3/88)	RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80	USERNAME => trcarol DGN FILE => 444470ab001.dgn	CU 03380	EA 444701

LAST REVISION 00-00-00 DATE PLOTTED => 08-JUN-2006 13:36

v:\Project\Plans\PSEWorking\d4\04-444701-rdw\444470ab001.dgn

NOTE:

1. DIMENSIONS OF THE STRUCTURAL SECTION ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. FOR SECTION VIEW LOCATIONS SEE LAYOUTS.

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	2	29

Caltrans Metric

John F. Holzhauser
REGISTERED CIVIL ENGINEER
2-22-06

JOHN F. HOLZHAUSER No. 50205 Exp. 6-30-07 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-5-06
PLANS APPROVAL DATE

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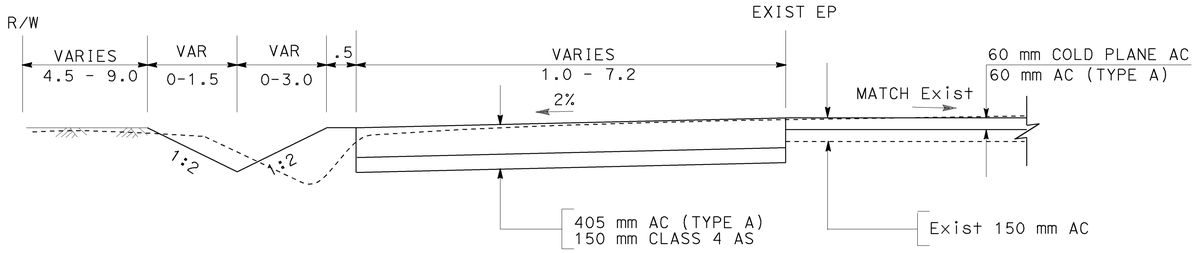
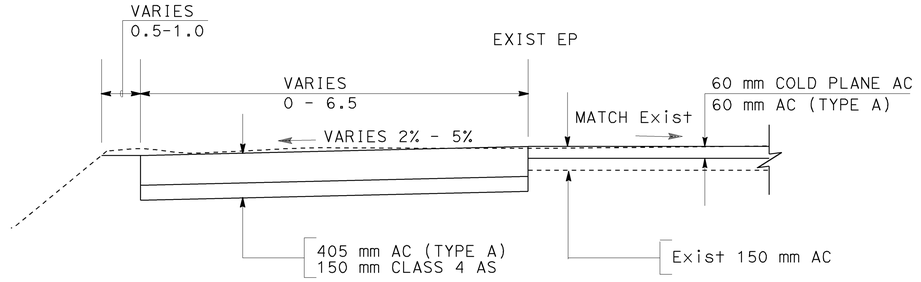


WESTBOUND STATION

SECTION A-A

"A" LINE

STA 81+62.0 TO STA 82+47.6

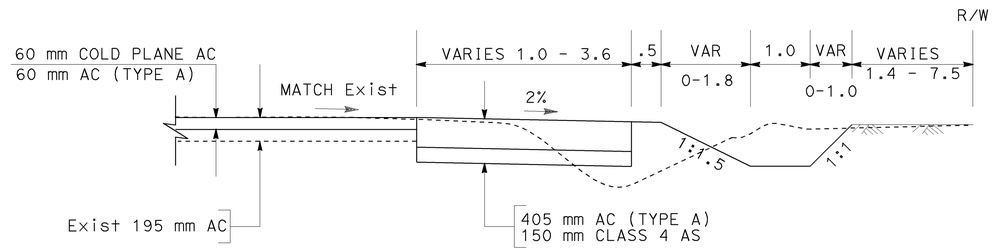


WESTBOUND STATION

SECTION B-B

"A" LINE

STA 82+77.0 TO STA 83+11.14



EASTBOUND STATION

SECTION C-C

"B" LINE

STA 82+72.2 TO STA 83+44.0

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

TYPICAL CROSS SECTIONS

NO SCALE

X-1

DATE REVISED BY

DATE REVISED

CALCULATED/ DESIGNED BY

CHECKED BY

PROJECT ENGINEER
JOHN F. HOLZHAUSER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN BRANCH
SACRAMENTO

08-JUN-2006 14:53 trrichf 444470ca001.dgn

LAST REVISION DATE PLOTTED => 08-JUN-2006
TIME PLOTTED => 14:53

00-00-00

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

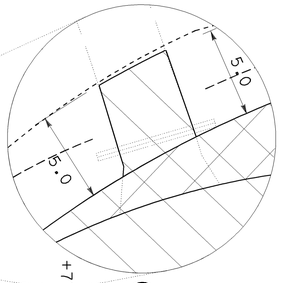
USERNAME => trrichf
DGN FILE => 444470ca001.dgn

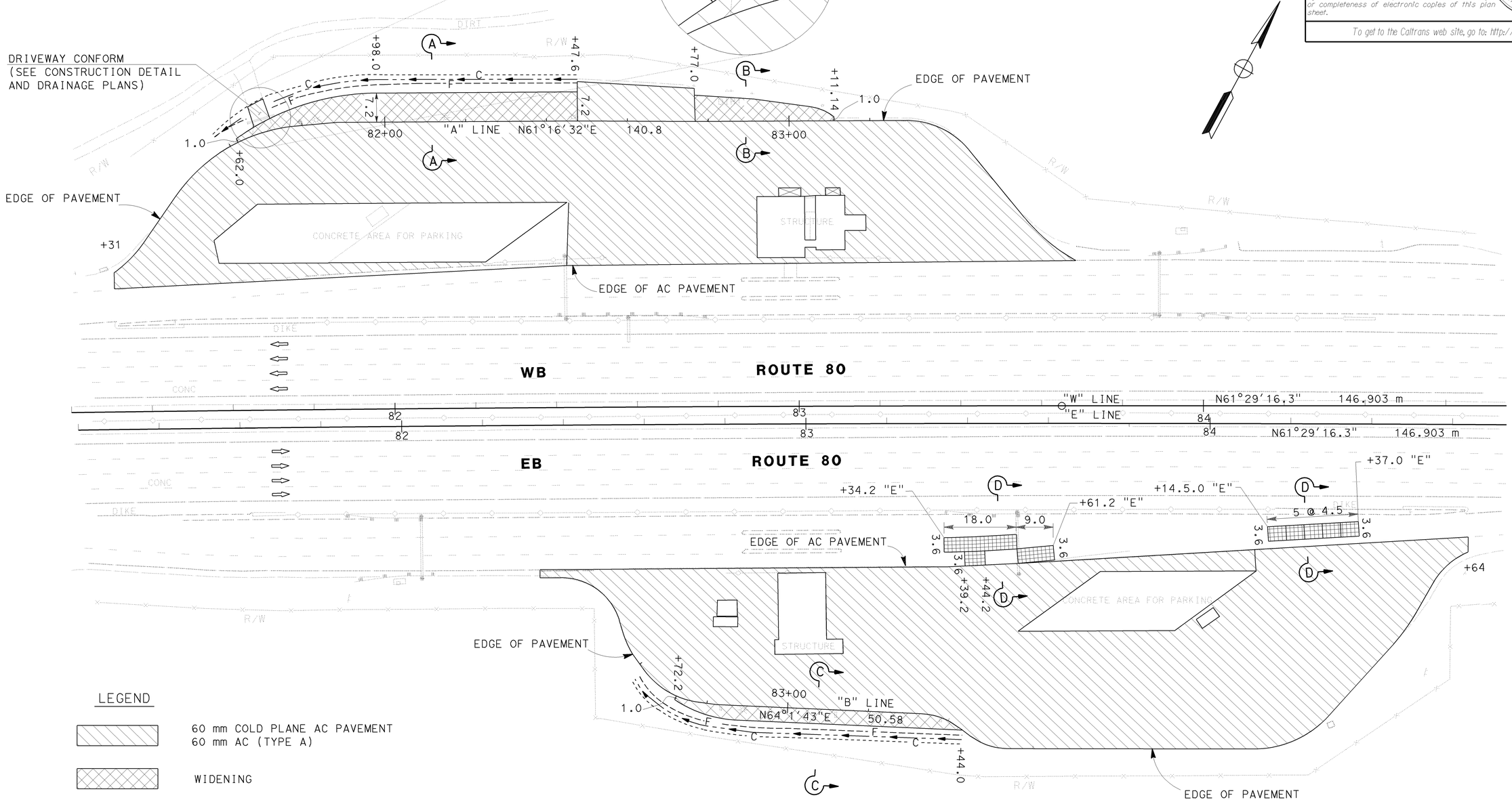
CU 03380

EA 444701

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
3. FOR SECTION VIEW, SEE TYPICAL CROSS SECTIONS AND CONSTRUCTION DETAILS.





LEGEND

- 60 mm COLD PLANE AC PAVEMENT
  60 mm AC (TYPE A)
- WIDENING
- REPLACE CONCRETE PAVEMENT
  (RAPID STRENGTH CONCRETE)
  (SEE CONSTRUCTION DETAILS)

CORDELIA WEIGH STATIONS

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

LAYOUT

SCALE 1:500

L-1

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	3	29

John F. Holzhauser
REGISTERED CIVIL ENGINEER
2-22-06

JOHN F. HOLZHAUSER
No. 50205
Exp. 6-30-07
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-5-06
PLANS APPROVAL DATE

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DATE	REVISED BY	DATE REVISED

CALCULATED/DESIGNED BY

CHECKED BY

PROJECT ENGINEER
JOHN F. HOLZHAUSER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN BRANCH
SACRAMENTO

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

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DGN FILE => 444470eq001.dgn

CU 03380

EA 444701

LAST REVISION 00-00-00
DATE PLOTTED => 13-JUN-2006
TIME PLOTTED => 06:12

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	4	29

Caltrans Metric

John F. Holzhauser
REGISTERED CIVIL ENGINEER
2-22-06

JOHN F. HOLZHAUSER No. 50205 Exp. 6-30-07 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-5-06
PLANS APPROVAL DATE

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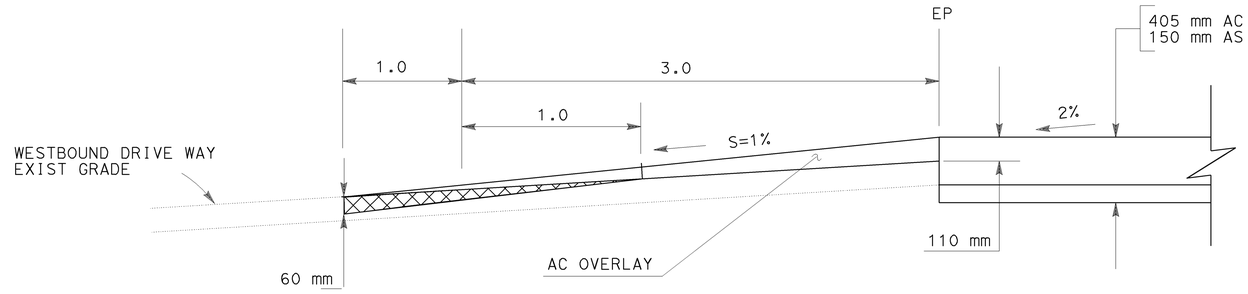
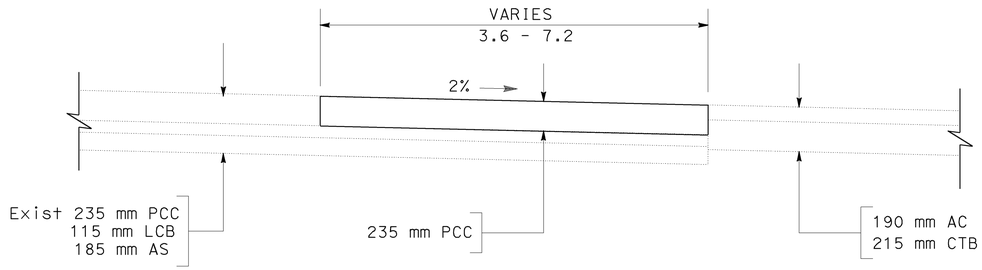
LEGEND

COLD PLANE ASPHALT CONCRETE PAVEMENT



DRIVEWAY CONFORM (WESTBOUND)



REPLACE CONCRETE PAVEMENT
(Rapid Strength Concrete)
EASTBOUND STATION

SECTION D-D (SEE LAYOUT)

"E" LINE

STA 83+34.2 TO STA 83+61.2
STA 84+14.5 TO STA 84+37.0

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

CONSTRUCTION DETAILS

NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN BRANCH
SACRAMENTO

PROJECT ENGINEER
JOHN F. HOLZHAUSER

CALCULATED/ DESIGNED BY
CHECKED BY

DATE	REVISED BY	DATE REVISED

08-JUN-2006 trrichf 444470ga001.dgn 14:53

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trrichf
DGN FILE => 444470ga001.dgn

CU 03380

EA 444701

LAST REVISION DATE PLOTTED => 08-JUN-2006
TIME PLOTTED => 14:53

00-00-00

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

2. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	5	29

LICENSED LANDSCAPE ARCHITECT

6-5-06
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT JEFF FERRARIO No. 4681 STATE OF CALIFORNIA
11-30-06 Renewal Date
09-17-05 Date

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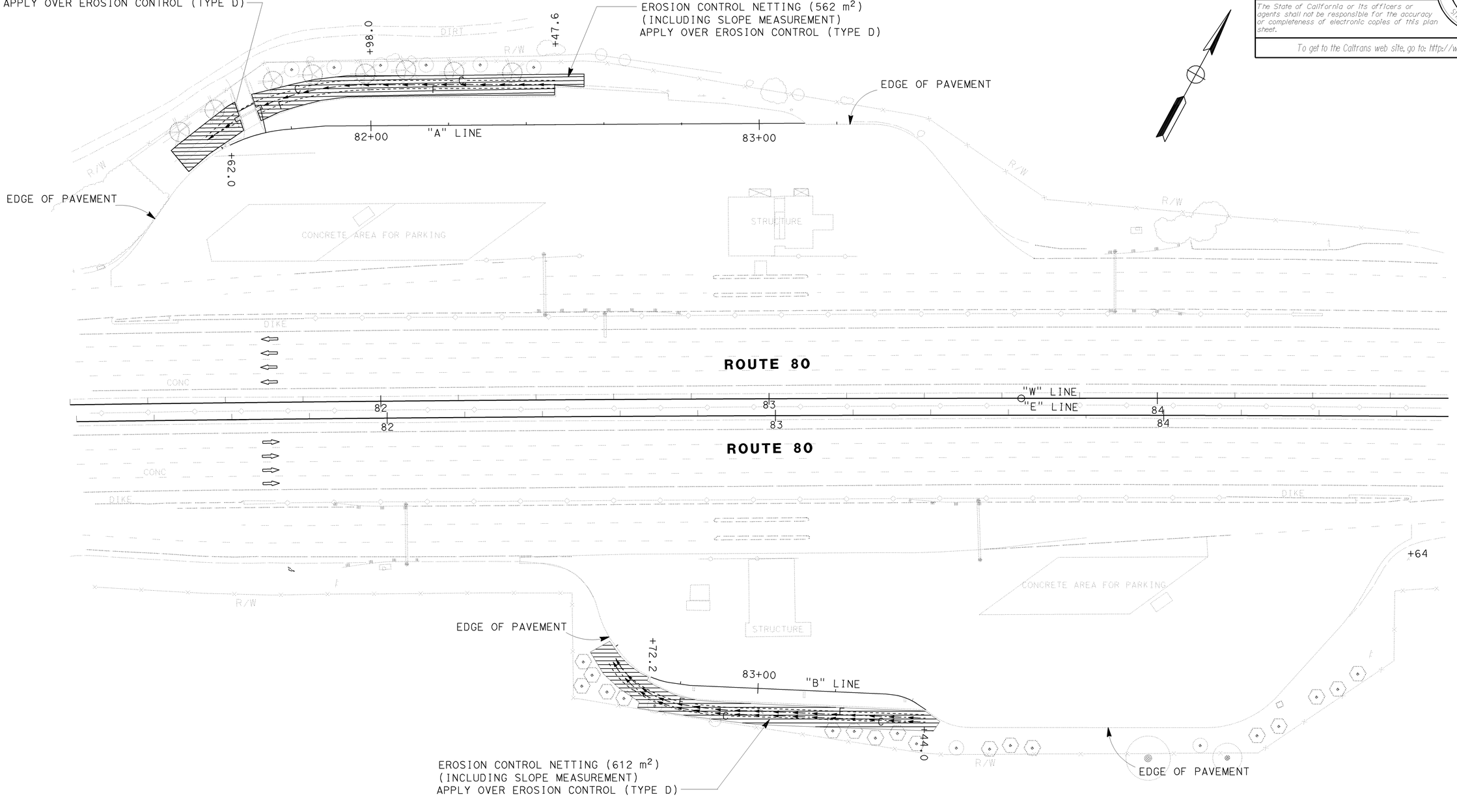
EROSION CONTROL NETTING (170 m^2)
(INCLUDING SLOPE MEASUREMENT)
APPLY OVER EROSION CONTROL (TYPE D)

EROSION CONTROL NETTING (562 m^2)
(INCLUDING SLOPE MEASUREMENT)
APPLY OVER EROSION CONTROL (TYPE D)



EROSION CONTROL NETTING (612 m^2)
(INCLUDING SLOPE MEASUREMENT)
APPLY OVER EROSION CONTROL (TYPE D)

CORDELIA WEIGH STATIONS

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN.

EROSION CONTROL PLAN NETTING

SCALE 1:500 **EC-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
PROJECT LANDSCAPE ARCHITECT JEFF FERRARIO
CALCULATED/DESIGNED BY
CHECKED BY
GWH
DATE 03/03
REVISED BY
DATE REVISED

LAST REVISION 09-15-05
DATE PLOTTED => 13-JUN-2006
TIME PLOTTED => 06:12

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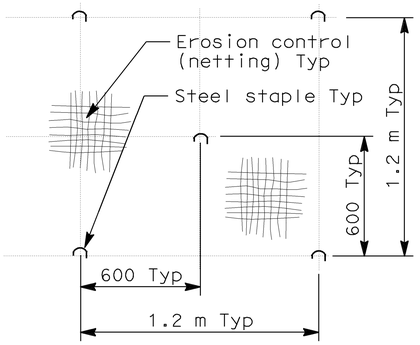
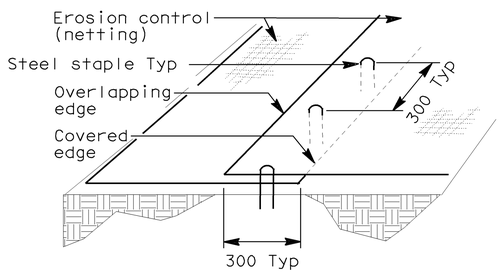
USERNAME => trmikesl
DGN FILE => 444470ge001.dgn

CU 03380

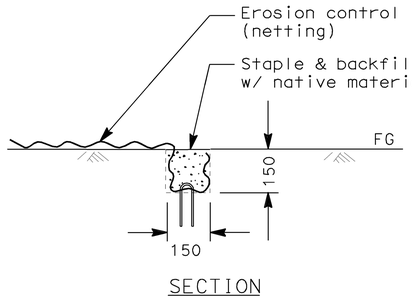
EA 444701



STAPLE PATTERN DETAIL

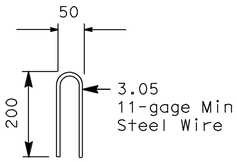


STAPLE PATTERN at OVERLAP DETAIL



SECTION

KEY TRENCH DETAIL



STAPLE DETAIL

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	23.2	6	29

LICENSED LANDSCAPE ARCHITECT

6-5-06

PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
JEFF FERRARIO
PSE No. 4681
1-30-06
Renewal Date
05-16-06
Date
STATE OF CALIFORNIA

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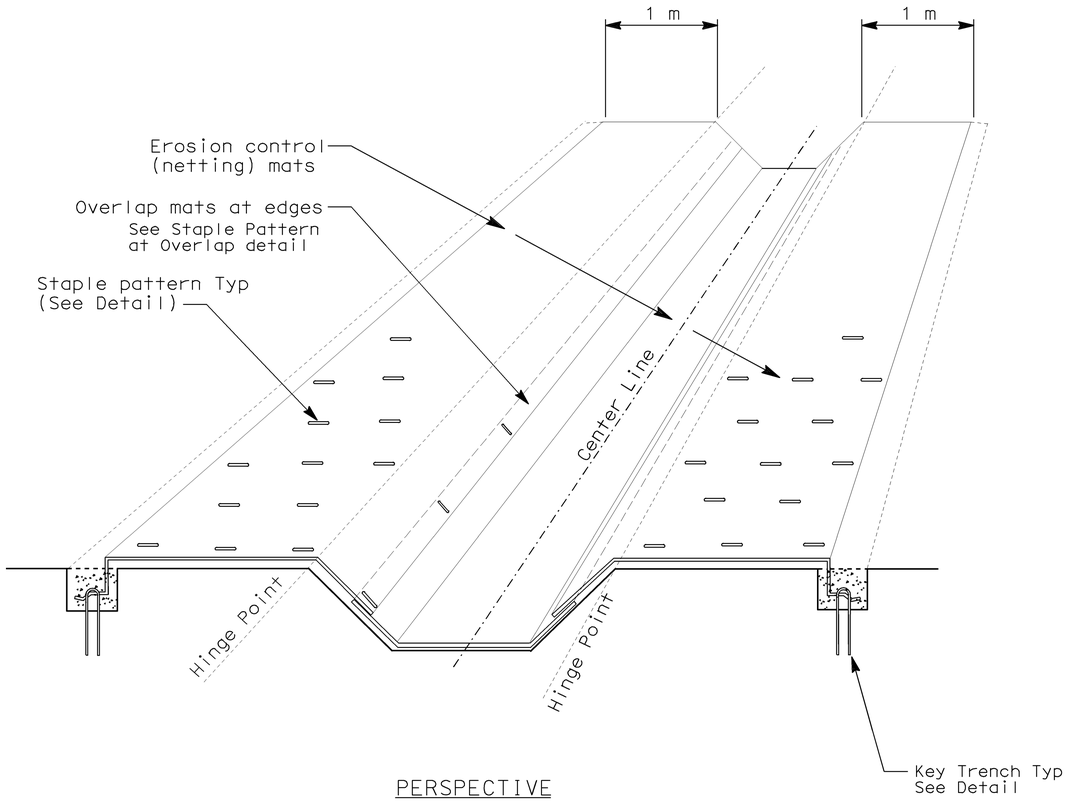
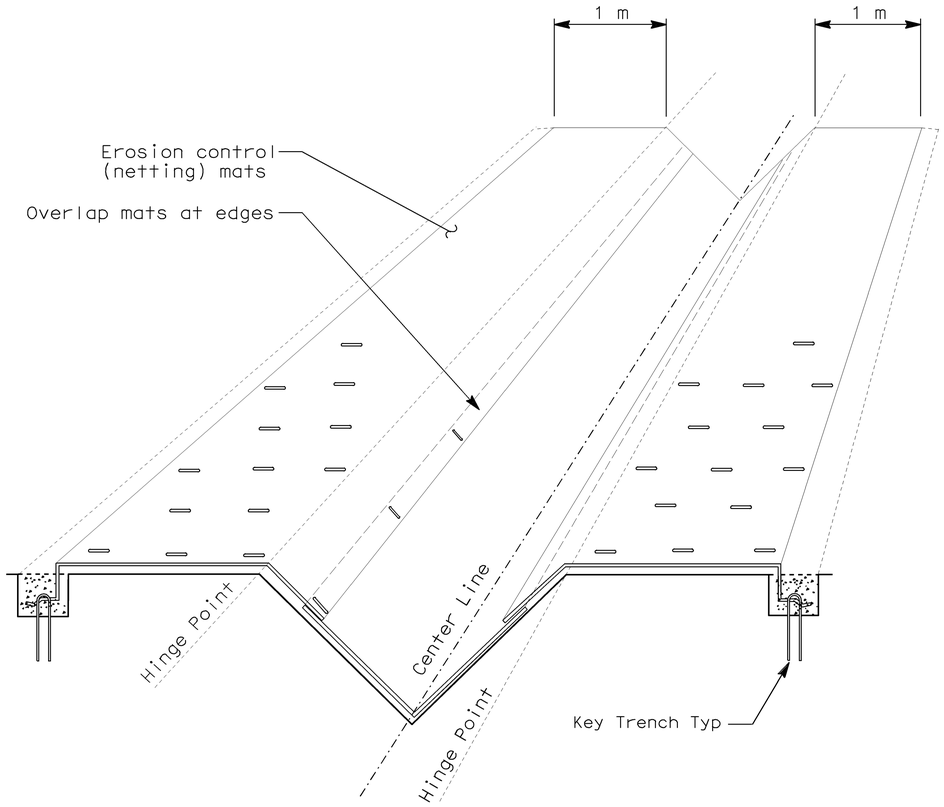


PERSPECTIVE



PERSPECTIVE

EROSION CONTROL NETTING
UNLINED DITCH/ GUTTER

ALL DIMENSIONS ARE IN
MILLIMETERS UNLESS OTHERWISE SHOWN.

EROSION CONTROL DETAILS

NO SCALE

ECD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE

PROJECT LANDSCAPE ARCHITECT
JEFF FERRARIO

CALCULATED/ DESIGNED BY
CHECKED BY

DATE REVISED BY

LAST REVISION 00-00-00
DATE PLOTTED => 13-JUN-2006
TIME PLOTTED => 06:13

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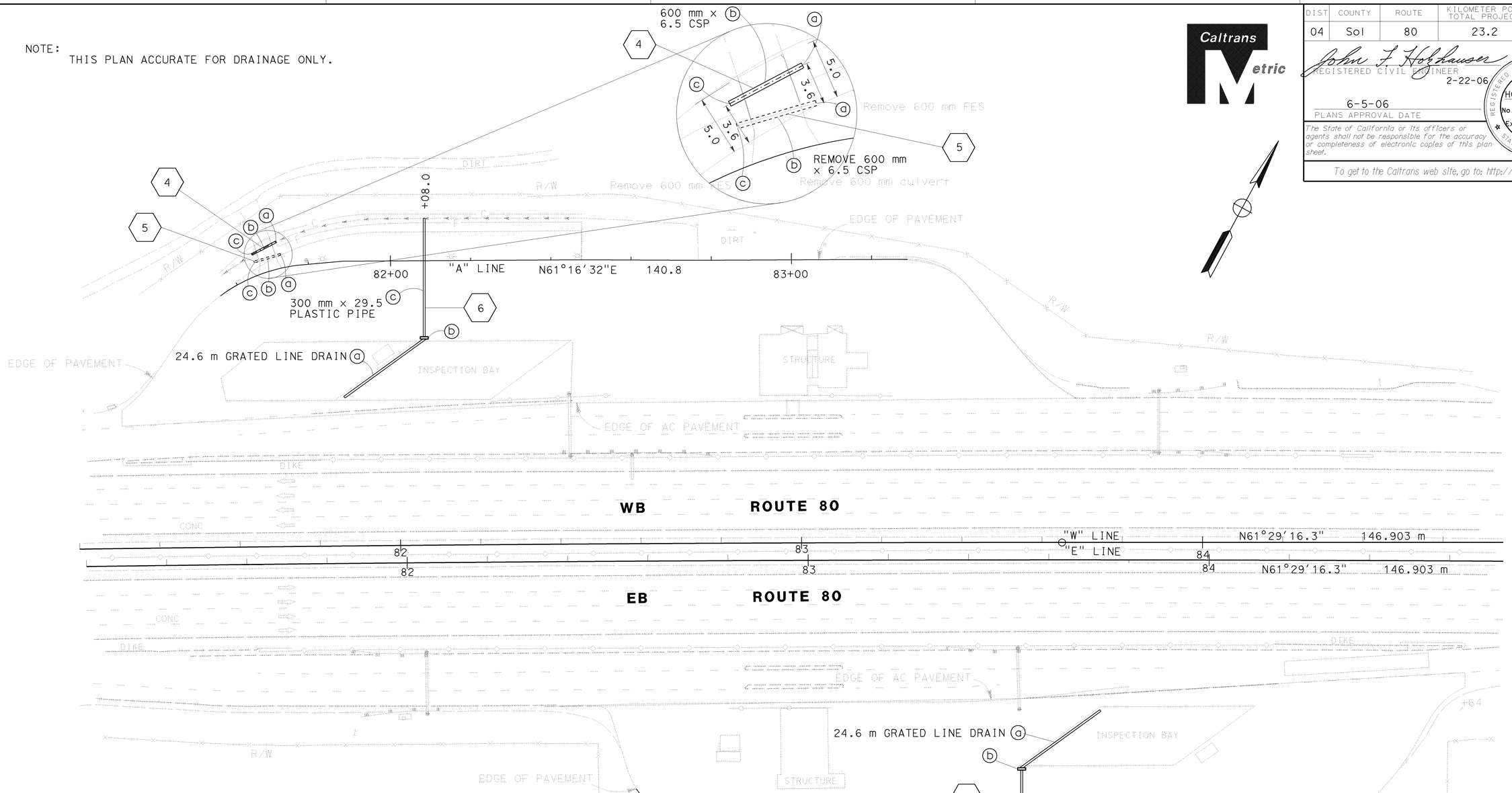
DGN FILE => 444470gf001.dgn

CU 03380

EA 444701

NOTE:
THIS PLAN ACCURATE FOR DRAINAGE ONLY.



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	7	29

John F. Holzhauser
REGISTERED CIVIL ENGINEER
2-22-06

JOHN F. HOLZHAUSER
No. 50205
Exp. 6-30-07
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-5-06
PLANS APPROVAL DATE

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DATE | REVISED BY | DATE REVISED

CALCULATED/ DESIGNED BY | CHECKED BY

PROJECT ENGINEER
JOHN F. HOLZHAUSER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN BRANCH
SACRAMENTO

CORDELIA WEIGH STATIONS

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

DRAINAGE PLAN

SCALE 1:500

D-1

LAST REVISION 00-00-00 | DATE PLOTTED => 08-JUN-2006 | TIME PLOTTED => 15:31

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

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DGN FILE => 444470ja001.dgn

CU 03380

EA 444701

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	8	29

Caltrans Metric

John F. Holzhauser
REGISTERED CIVIL ENGINEER
5-31-5

6-5-06
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOHN F. HOLZHAUSER
No. 50205
Exp. 6-30-07
CIVIL
STATE OF CALIFORNIA

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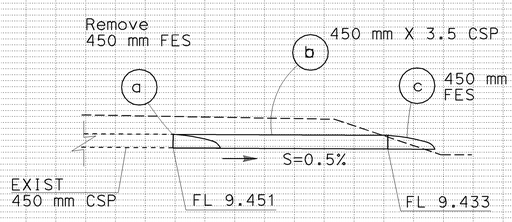
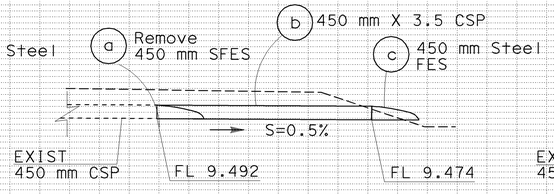


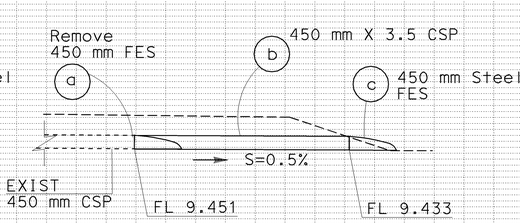
DRAINAGE SYSTEM NO. 1

STA 82+83.5 "B" LINE



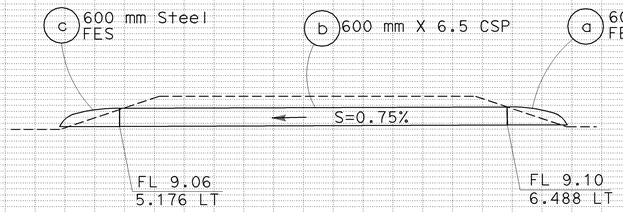
DRAINAGE SYSTEM NO. 2

STA 83+12 "B" LINE



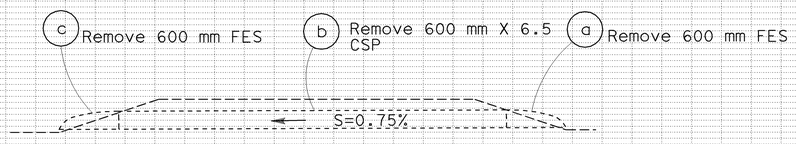
DRAINAGE SYSTEM NO. 3

STA 83+38 "B" LINE



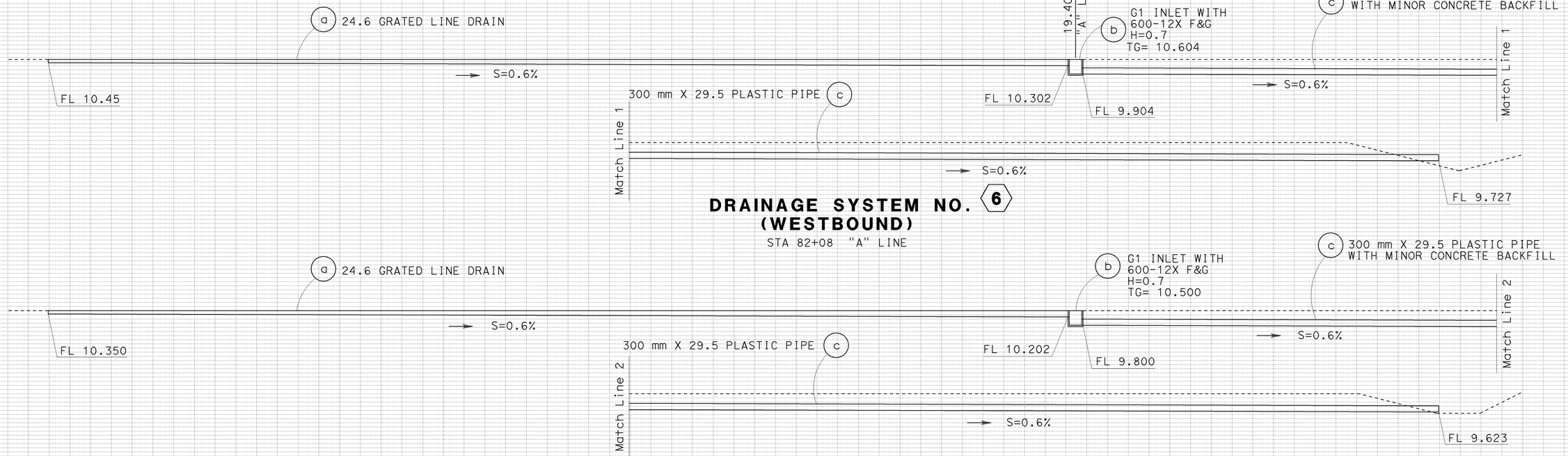
DRAINAGE SYSTEM NO. 4

STA 81+72 "A" LINE



DRAINAGE SYSTEM NO. 5

STA 81+72 "A" LINE



DRAINAGE SYSTEM NO. 6 (WESTBOUND)

STA 82+08 "A" LINE

DRAINAGE SYSTEM NO. 7 (EASTBOUND)

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

DRAINAGE PROFILES

SCALE: HORIZONTAL 1:50
VERTICAL 1:100

DP-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN BRANCH
SACRAMENTO
Caltrans

PROJECT ENGINEER
JOHN F. HOLZHAUSER

DATE REVISED | REVISED BY
CALCULATED/DESIGNED BY | CHECKED BY

Station
m³ Exc
Emb

RELATIVE BORDER SCALE IS IN MILLIMETERS
0 20 40 60 80

USERNAME => trlim
DGN FILE => 444470ib001.dgn

CU 03380

EA 444701

LAST REVISION DATE PLOTTED => 08-JUN-2006
TIME PLOTTED => 15:31

00-00-00

08-JUN-2006 trlim
444470ib001.dgn
15:31

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	9	29

Caltrans Metric

John F. Holzhauser
REGISTERED CIVIL ENGINEER
2-22-06

JOHN F. HOLZHAUSER No. 50205 Exp. 6-30-07 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-5-06
PLANS APPROVAL DATE

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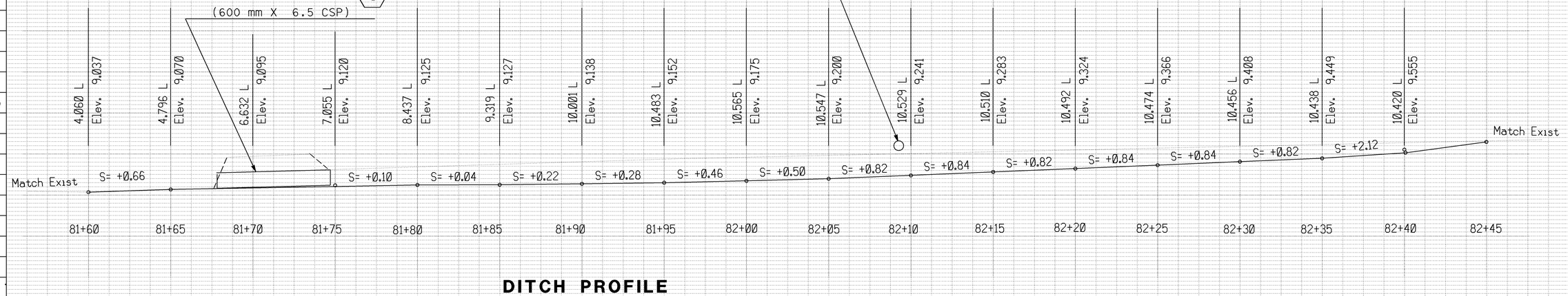
To get to the Caltrans web site, go to: http://www.dot.ca.gov

DRAINAGE SYSTEM No. 6

DRAINAGE SYSTEM No. 4
(600 mm X 6.5 CSP)



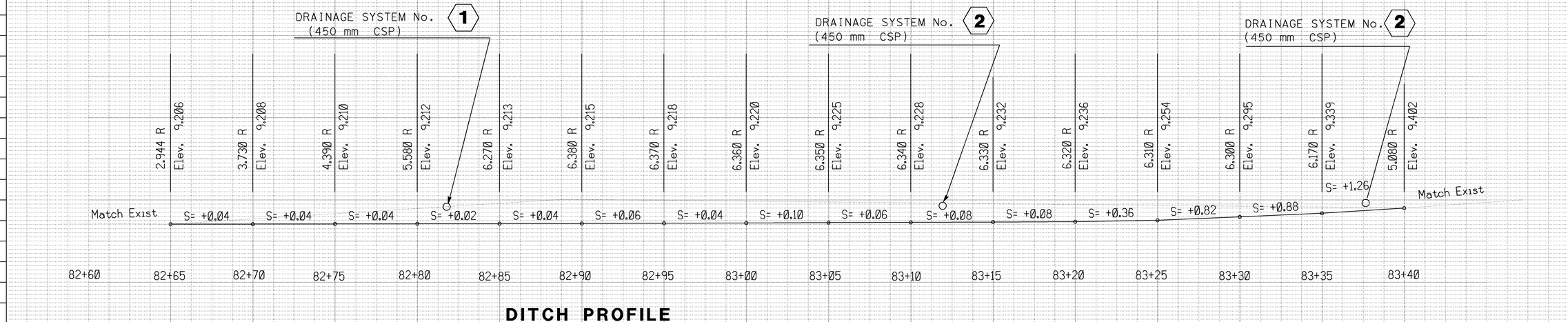
DITCH PROFILE (WESTBOUND)

STA 81+62 To 82+47.6 "A" LINE

DRAINAGE SYSTEM No. 1
(450 mm CSP)

DRAINAGE SYSTEM No. 2
(450 mm CSP)

DRAINAGE SYSTEM No. 2
(450 mm CSP)



DITCH PROFILE (EASTBOUND)

STA 82+72.2 To 83+44.0 "B" LINE

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

DRAINAGE PROFILES

SCALE: HORIZONTAL 1:50
VERTICAL 1:100

DP-2

DATE	REVISED BY	DATE REVISED
CALCULATED/ DESIGNED BY		
CHECKED BY		

PROJECT ENGINEER
JOHN F. HOLZHAUSER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN BRANCH
SACRAMENTO
Caltrans

Station	
m^3	Exc
	Emb

08-JUN-2006 trlim 444470ib002.dgn 15:31

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

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CU 03380

EA 444701

LAST REVISION DATE PLOTTED => 08-JUN-2006
TIME PLOTTED => 15:31

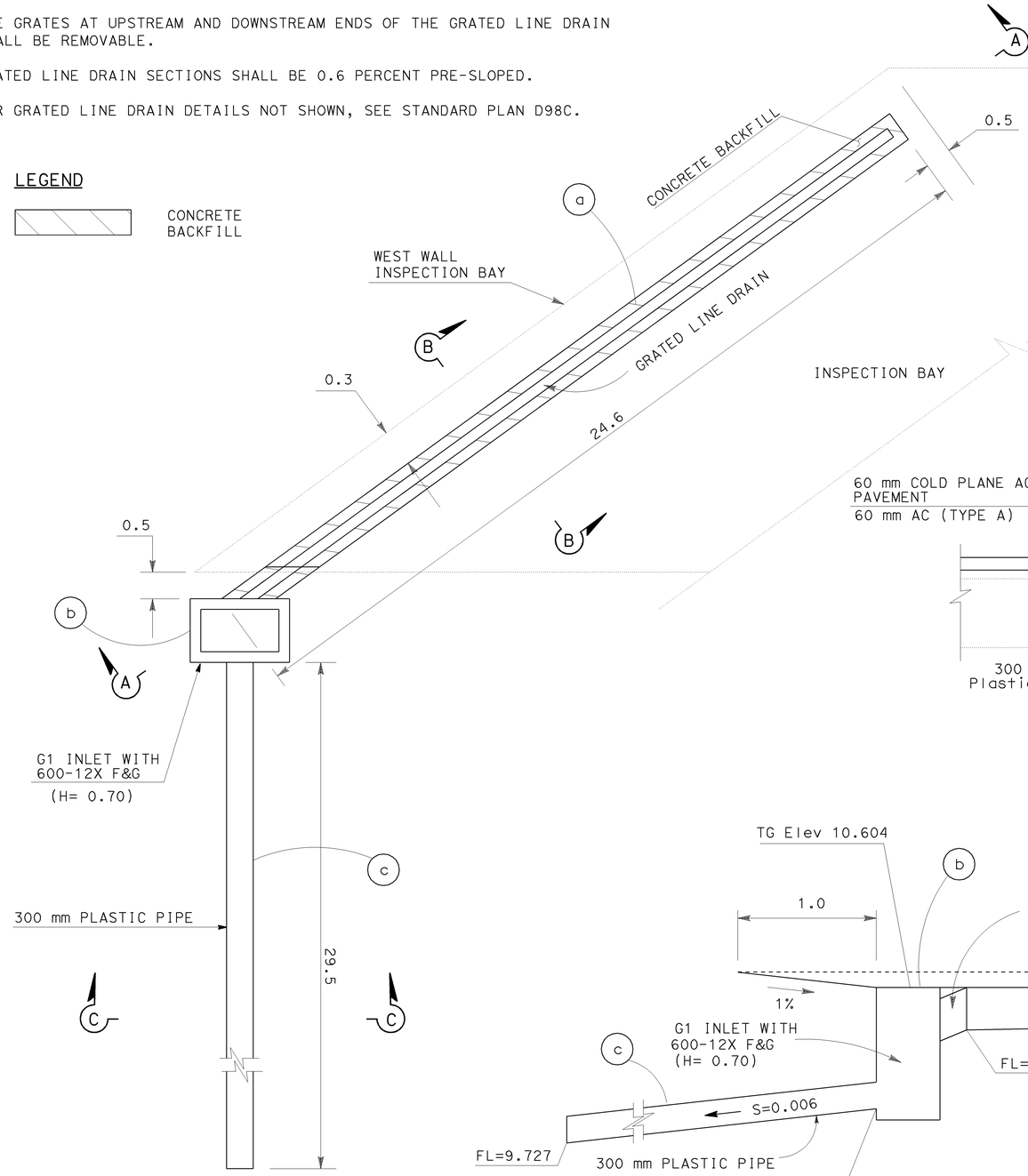
00-00-00

NOTES:

1. FOR G1 INLET AND GRATE DETAILS NOT SHOWN, SEE STANDARD PLANS D73 & D77B.
2. THE GRATES AT UPSTREAM AND DOWNSTREAM ENDS OF THE GRATED LINE DRAIN SHALL BE REMOVABLE.
3. GRATED LINE DRAIN SECTIONS SHALL BE 0.6 PERCENT PRE-SLOPED.
4. FOR GRATED LINE DRAIN DETAILS NOT SHOWN, SEE STANDARD PLAN D98C.

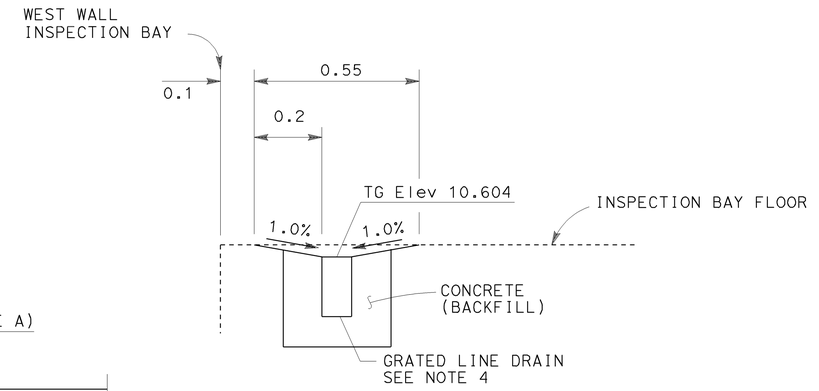
LEGEND

CONCRETE BACKFILL

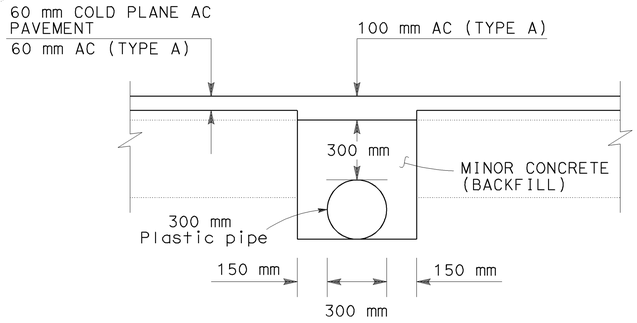


DRAINAGE SYSTEM NO. 6

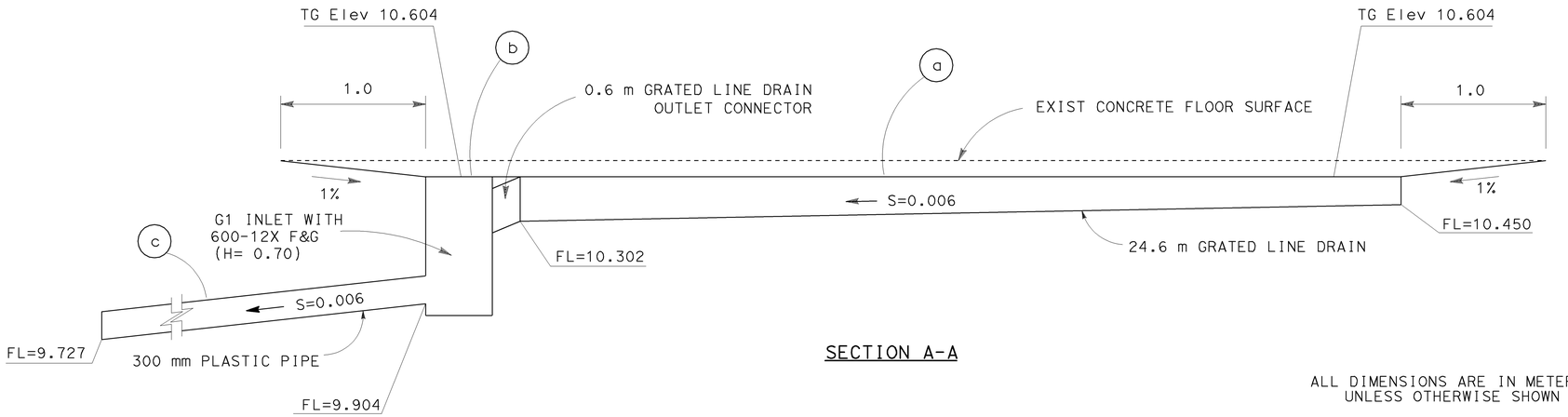
PLAN



SECTION B-B
(LOOKING SOUTH)



SECTION C-C



SECTION A-A

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

DRAINAGE DETAILS

NO SCALE

DD-1

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	23.2	10	29

REGISTERED CIVIL ENGINEER — DATE 2-22-06

JOHN F. HOLZHAUSER No. 50205 Exp. 6-30-07 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-5-06
PLANS APPROVAL DATE

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN BRANCH
SACRAMENTO

PROJECT ENGINEER
JOHN F. HOLZHAUSER

CALCULATED/ DESIGNED BY
CHECKED BY

DATE REVISED BY
DATE REVISED

DGN FILE => sv03s06/proj/x

For reduced plans original scale is in millimeters 0 20 40 60 80

USERNAME => trlim
DGN FILE => 444470ic001.dgn

CU 03380

EA 444701

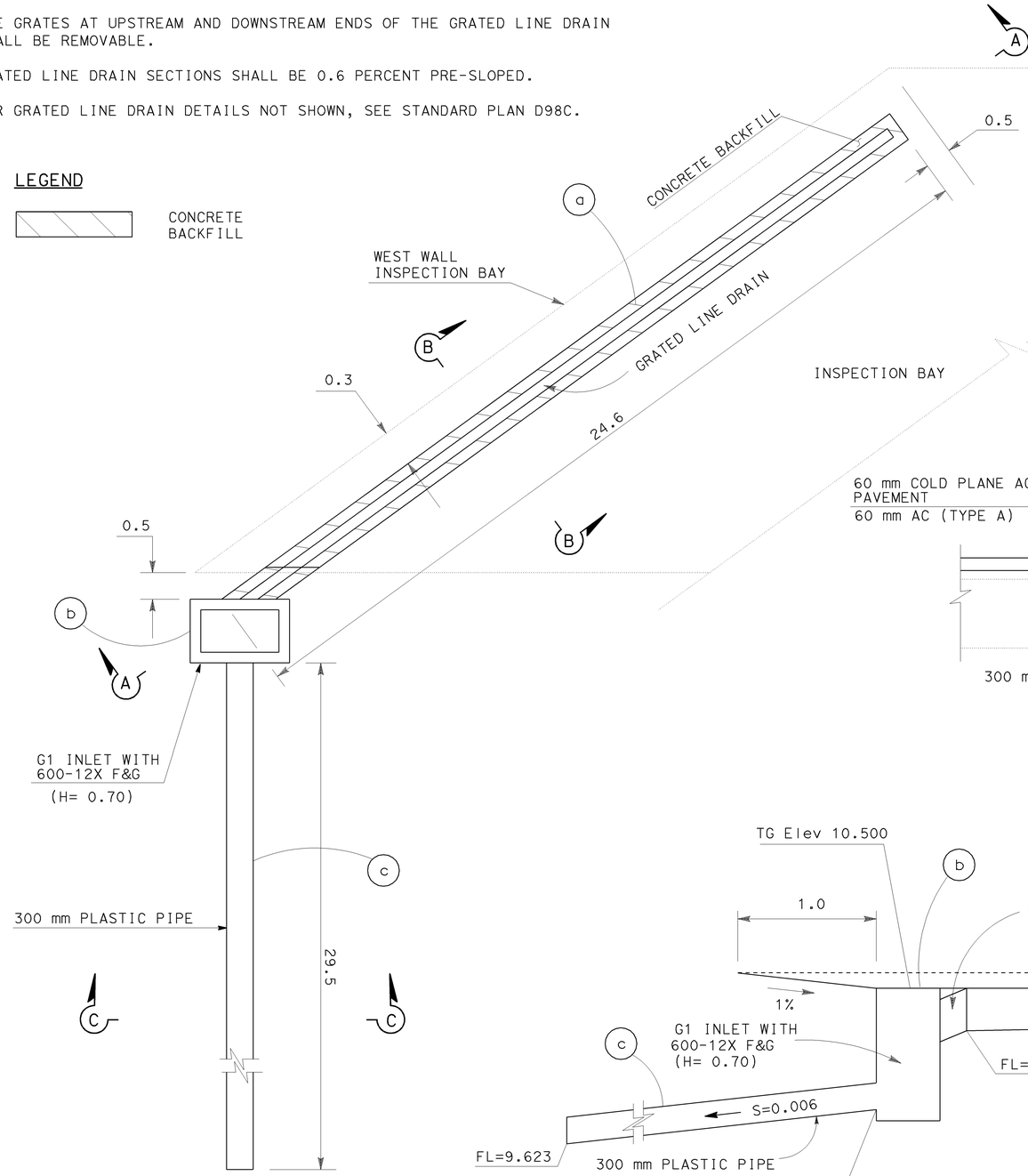
LAST REVISION DATE PLOTTED => 08-JUN-2006
TIME PLOTTED => 15:31

NOTES:

1. FOR G1 INLET AND GRATE DETAILS NOT SHOWN, SEE STANDARD PLANS D73 & D77B.
2. THE GRATES AT UPSTREAM AND DOWNSTREAM ENDS OF THE GRATED LINE DRAIN SHALL BE REMOVABLE.
3. GRATED LINE DRAIN SECTIONS SHALL BE 0.6 PERCENT PRE-SLOPED.
4. FOR GRATED LINE DRAIN DETAILS NOT SHOWN, SEE STANDARD PLAN D98C.

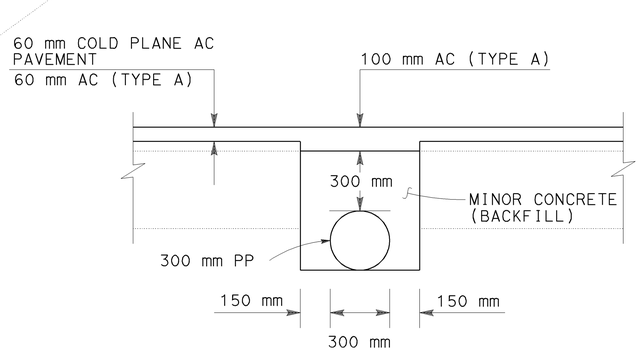
LEGEND

CONCRETE BACKFILL

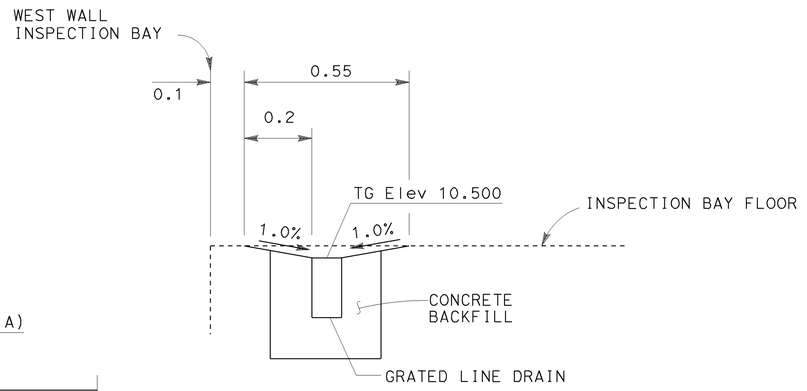


DRAINAGE SYSTEM NO. 7

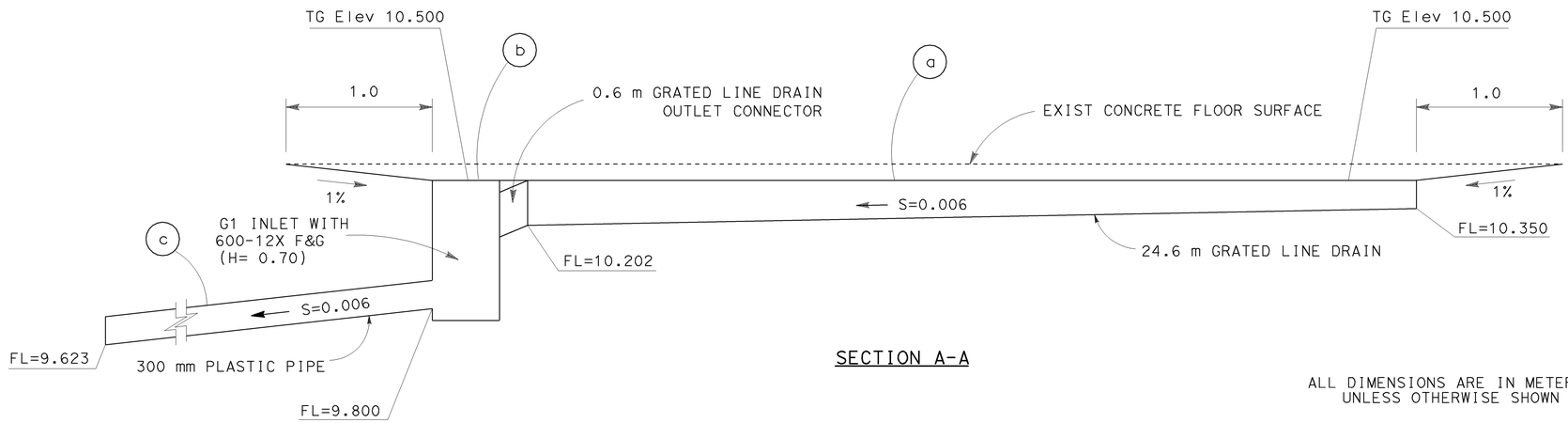
PLAN



SECTION C-C



SECTION B-B
(LOOKING NORTH)



SECTION A-A

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

DRAINAGE DETAILS

NO SCALE

DD-2

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	23.2	11	29

John F. Holzhauser
REGISTERED CIVIL ENGINEER DATE 2-22-06

6-5-06
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — JOHN F. HOLZHAUSER — No. 50205 — Exp. 6-30-07 — CIVIL — STATE OF CALIFORNIA

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN BRANCH
SACRAMENTO

PROJECT ENGINEER
JOHN F. HOLZHAUSER

CALCULATED/ DESIGNED BY
CHECKED BY

DATE REVISED BY
DATE REVISED

DGN FILE => sv03s06/proj/x

For reduced plans original scale is in millimeters 0 20 40 60 80

USERNAME => trlim
DGN FILE => 444470ic002.dgn

CU 03380

EA 444701

LAST REVISION DATE PLOTTED => 08-JUN-2006
TIME PLOTTED => 15:31

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
3. EXACT LOCATION AND POSITION OF CONSTRUCTION AREA SIGNS WILL BE DETERMINED BY THE ENGINEER.

LEGEND

- 60 mm COLD PLANE AC PAVEMENT 60 mm AC (TYPE A)
- WIDENING
- REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE)
- (No.) CONSTRUCTION AREA SIGN LETTER
- 1 SIGN - SINGLE POST

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	12	29

John F. Holzhauser
REGISTERED CIVIL ENGINEER
2-22-06

6-5-06
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — JOHN F. HOLZHAUSER — No. 50205 — Exp. 6-30-07 — CIVIL — STATE OF CALIFORNIA

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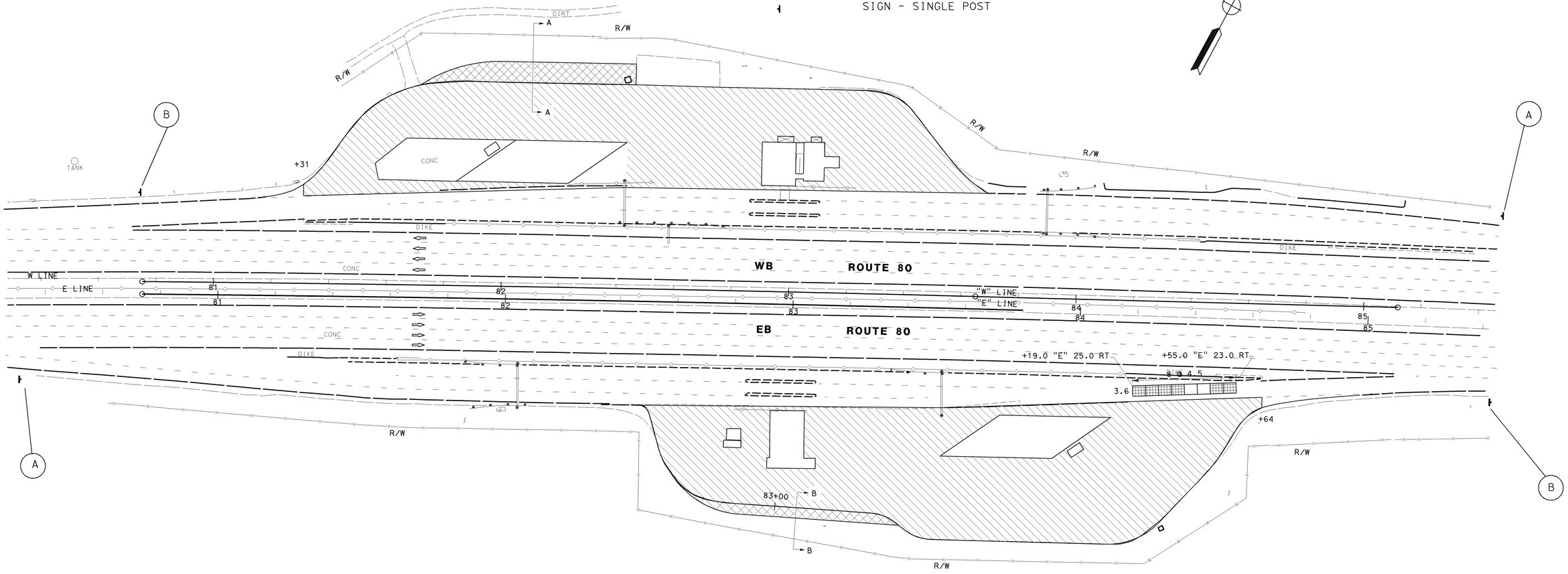

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN LETTER	SIGN CODE FEDERAL	SIGN CODE CALIFORNIA	PANEL SIZE	SIGN MESSAGE	NUMBER OF POST AND SIZE	NUMBER OF SIGNS
(A)	W20-1	C18	1219 x 1219	ROAD WORK AHEAD	1-89 x 140	2
(B)	G20-2	C13	1219 x 457	END ROAD WORK	1-89 x 89	2
		TOTAL				4

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

CONSTRUCTION AREA SIGNS

NO SCALE **CS-1**

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.

PROJECT ENGINEER: JOHN F. HOLZHAUSER
CALCULATED/DESIGNED BY
CHECKED BY
DATE REVISED BY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN BRANCH
SACRAMENTO

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trlim
DGN FILE => 4444701a001.dgn

CU 03380 | EA 444701

LAST REVISION 00-00-00 DATE PLOTTED => 08-JUN-2006 TIME PLOTTED => 15:31

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	23.2	13	29

John F. Holzhauser
REGISTERED CIVIL ENGINEER DATE
2-22-06

6-5-06
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOHN F. HOLZHAUSER
No. 50205
Exp. 6-30-07
CIVIL
STATE OF CALIFORNIA

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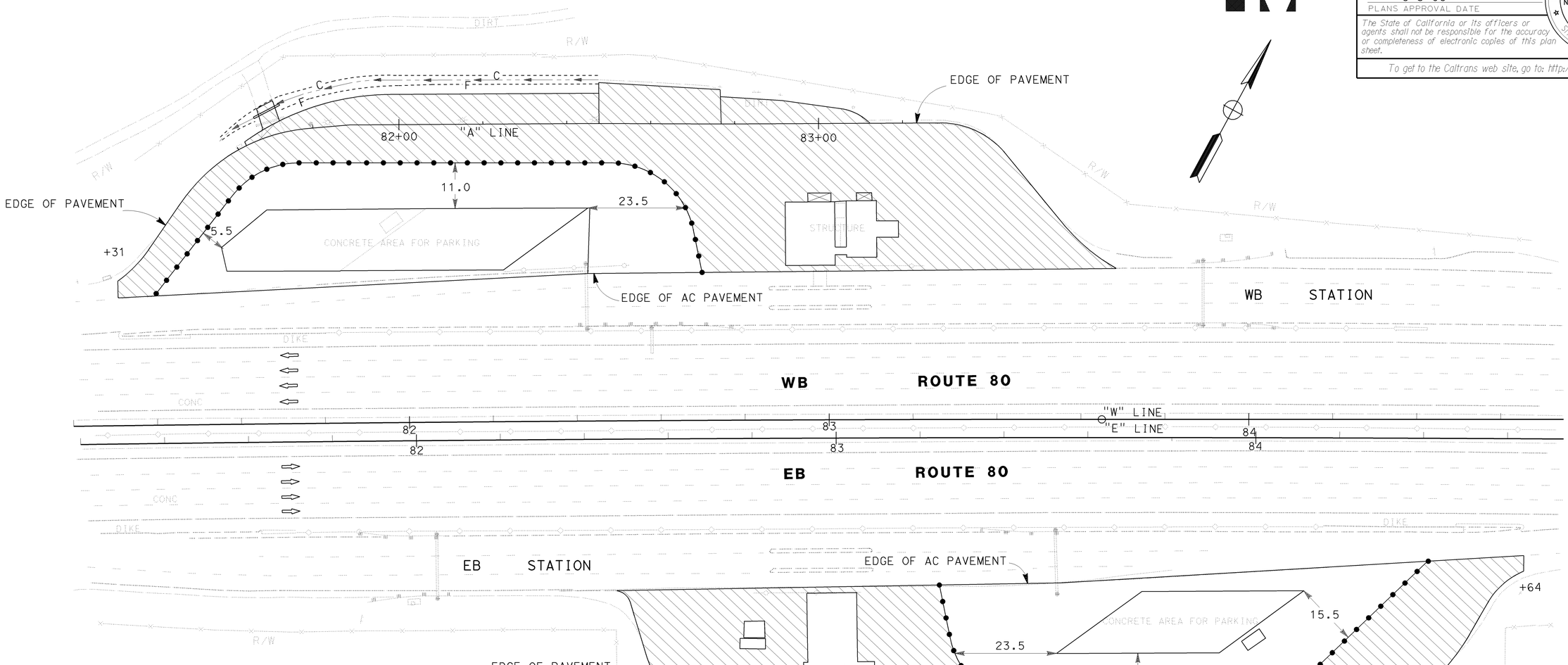
Caltrans Metric



LEGEND

⇦ DIRECTION OF TRAFFIC

• TRAFFIC PLASTIC CONE @ 4 m SPACING

CONSTRUCTION AREA

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

CORDELIA WEIGH STATIONS

STAGE 1

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

THIS PLAN ACCURATE FOR STAGE CONSTRUCTION ONLY.

SCALE 1:500

SC-1

DATE	REVISED BY	DATE REVISED
CALCULATED/ DESIGNED BY		
CHECKED BY		

PROJECT ENGINEER
JOHN F. HOLZHAUSER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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SACRAMENTO

DGN FILE => /project/x

LAST REVISION DATE PLOTTED => 13-JUN-2006
TIME PLOTTED => 06:13
02-25-02

For reduced plans original scale is in millimeters 0 20 40 60 80

USERNAME => trmikesl
DGN FILE => 444470ma001.dgn

CU 03380

EA 444701

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	23.2	14	29

John F. Holzhauser
REGISTERED CIVIL ENGINEER DATE 2-22-06

6-5-06
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOHN F. HOLZHAUSER
No. 50205
Exp. 6-30-07
CIVIL
STATE OF CALIFORNIA

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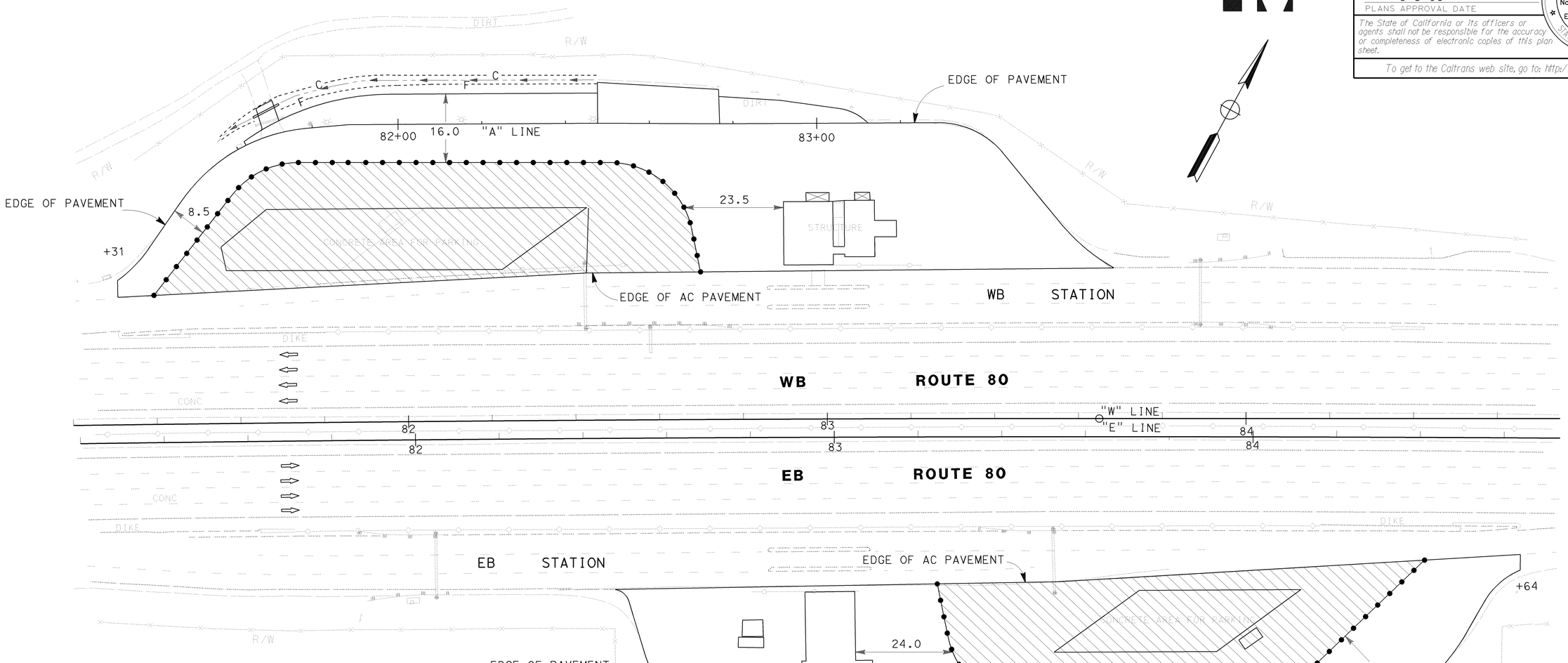
Caltrans Metric



ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

CORDELIA WEIGH STATIONS

STAGE 2

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

THIS PLAN ACCURATE FOR STAGE CONSTRUCTION ONLY.

FOR NOTES, ABBREVIATIONS AND / OR LEGENDS, SEE SHEET SC-1

SCALE 1:500

SC-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN BRANCH
SACRAMENTO

PROJECT ENGINEER
JOHN F. HOLZHAUSER

CALCULATED/ DESIGNED BY
CHECKED BY

DATE	REVISED BY	DATE REVISED

LAST REVISION 02-25-02
DATE PLOTTED => 08-JUN-2006
TIME PLOTTED => 15:46

DGN FILE => /project/x

For reduced plans original scale is in millimeters 0 20 40 60 80

USERNAME => trlim
DGN FILE => 444470ma002.dgn

CU 03380

EA 444701

NOTE:
REPLACE CONCRETE PAVEMENT THIS STAGE.
SCALE TO REMAIN OPERATIONAL.

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	15	29

John F. Holzhauser
REGISTERED CIVIL ENGINEER
2-22-06

JOHN F. HOLZHAUSER
No. 50205
Exp. 6-30-07
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-5-06
PLANS APPROVAL DATE

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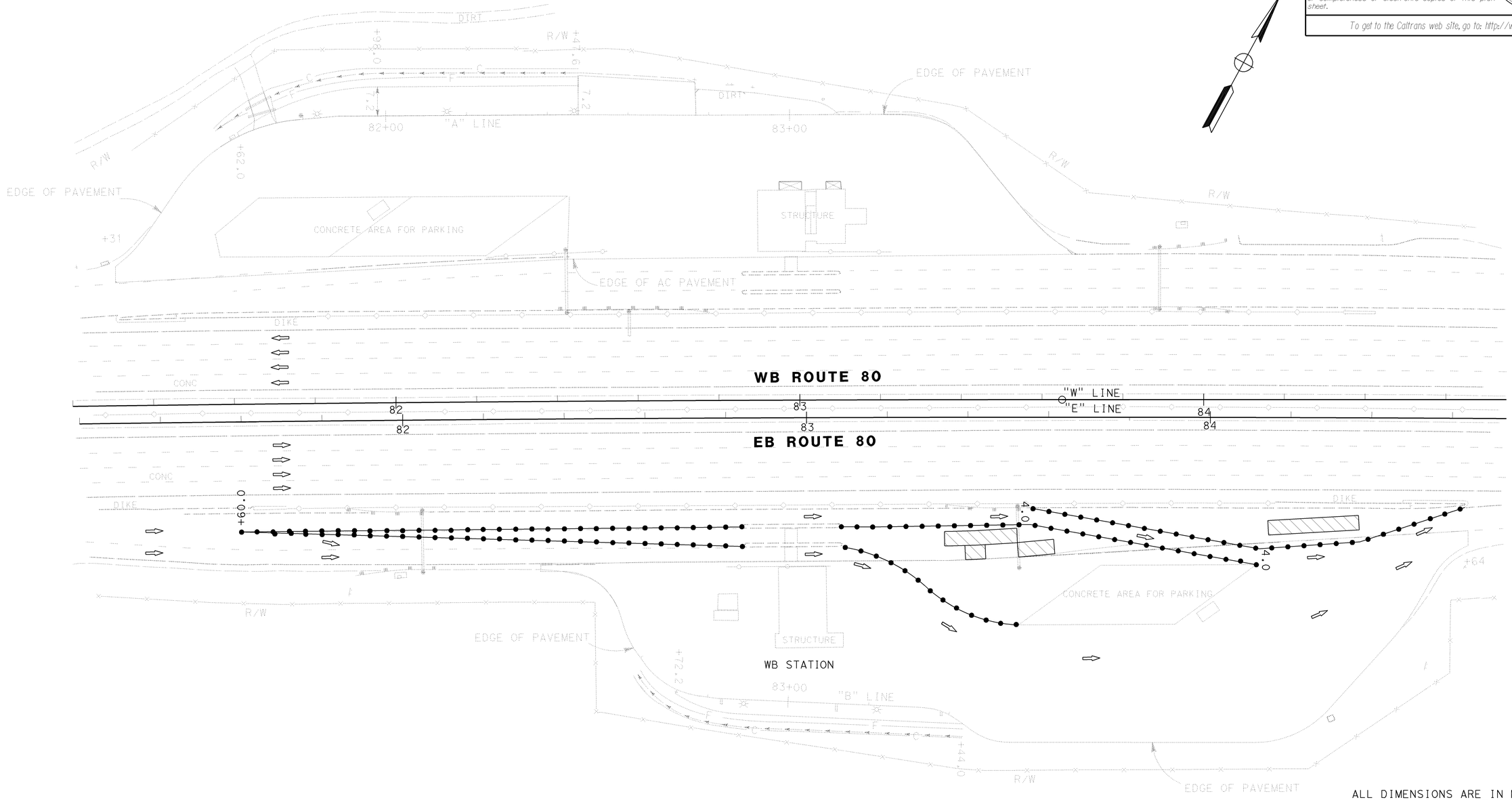

CORDELIA WEIGH STATIONS

FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET SC-1

THIS PLAN ACCURATE FOR STAGE CONSTRUCTION ONLY.

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

STAGE 3

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

SCALE 1:500

SC-3

DATE | REVISED BY | DATE REVISED

CALCULATED/ DESIGNED BY

CHECKED BY

PROJECT ENGINEER
JOHN F. HOLZHAUSER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN BRANCH
SACRAMENTO

LAST REVISION 00-00-00 | DATE PLOTTED => 08-JUN-2006 | TIME PLOTTED => 13:57

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS
0 20 40 60 80

USERNAME => trmnguye
DGN FILE => 444470ma003.dgn

CU 03380

EA 444701

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	16	29

Caltrans Metric

John F. Holzhauser
REGISTERED CIVIL ENGINEER
2-22-06

JOHN F. HOLZHAUSER
No. 50205
Exp. 6-30-07
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-5-06
PLANS APPROVAL DATE

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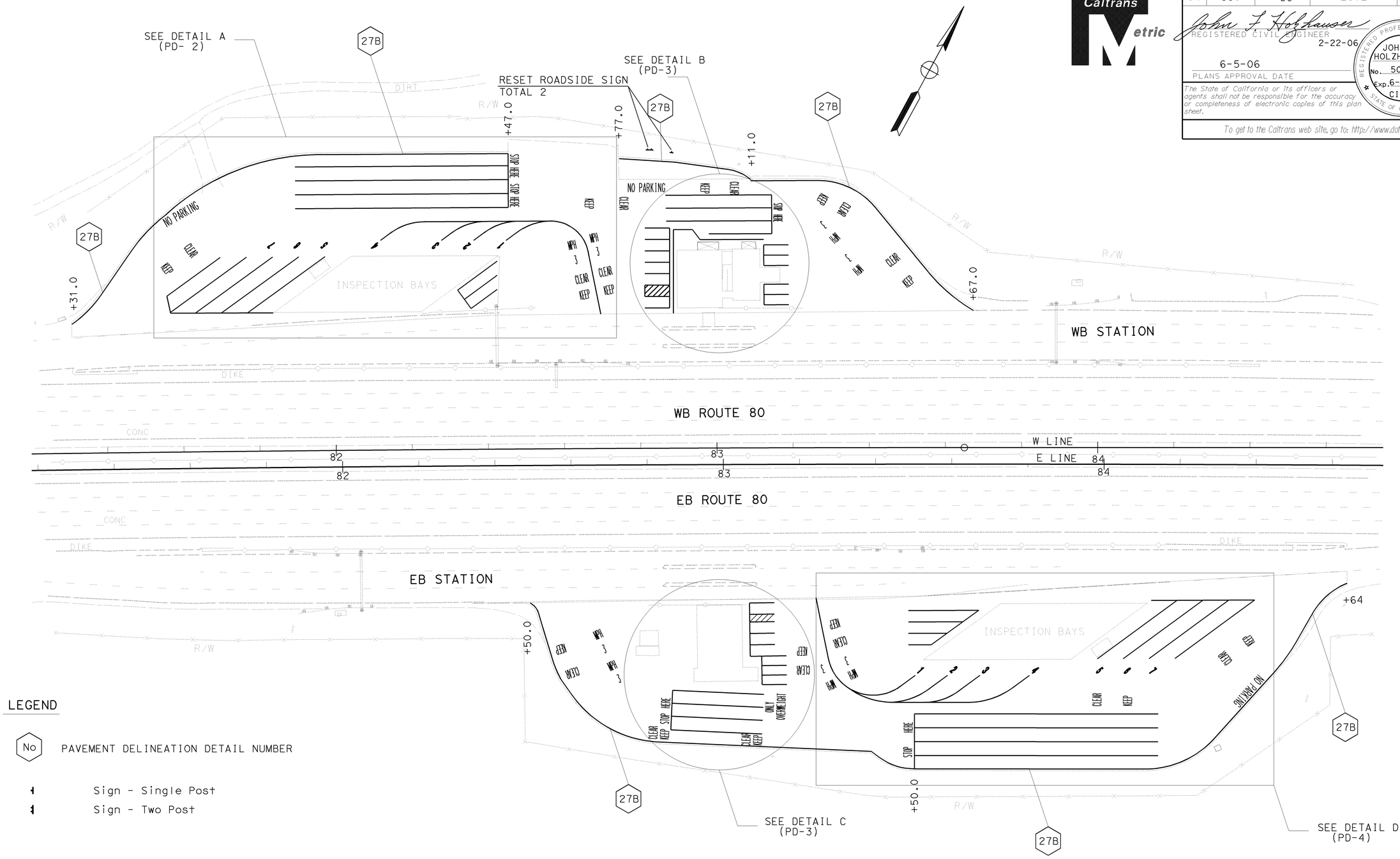
DATE	REVISED BY	DATE REVISED

CALCULATED/ DESIGNED BY

CHECKED BY

PROJECT ENGINEER
JONH F. HOLZHAUSER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN BRANCH
SACRAMENTO



LEGEND

No	PAVEMENT DELINEATION DETAIL NUMBER
⊣	Sign - Single Post
⊣⊣	Sign - Two Post

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

CORDELIA WEIGH STATIONS

PAVEMENT DELINEATION PLAN AND SIGN PLAN

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION AND SIGN WORK ONLY

NO SCALE

PD-1

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trmikesl
DGN FILE => 444470na001.dgn

CU 03380

EA 444701

LAST REVISION 00-00-00
DATE PLOTTED => 13-JUN-2006
TIME PLOTTED => 06:13

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	17	29

John F. Holzhauser
REGISTERED CIVIL ENGINEER
2-22-06

6-5-06
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOHN F. HOLZHAUSER
No. 50205
Exp. 6-30-07
CIVIL
STATE OF CALIFORNIA

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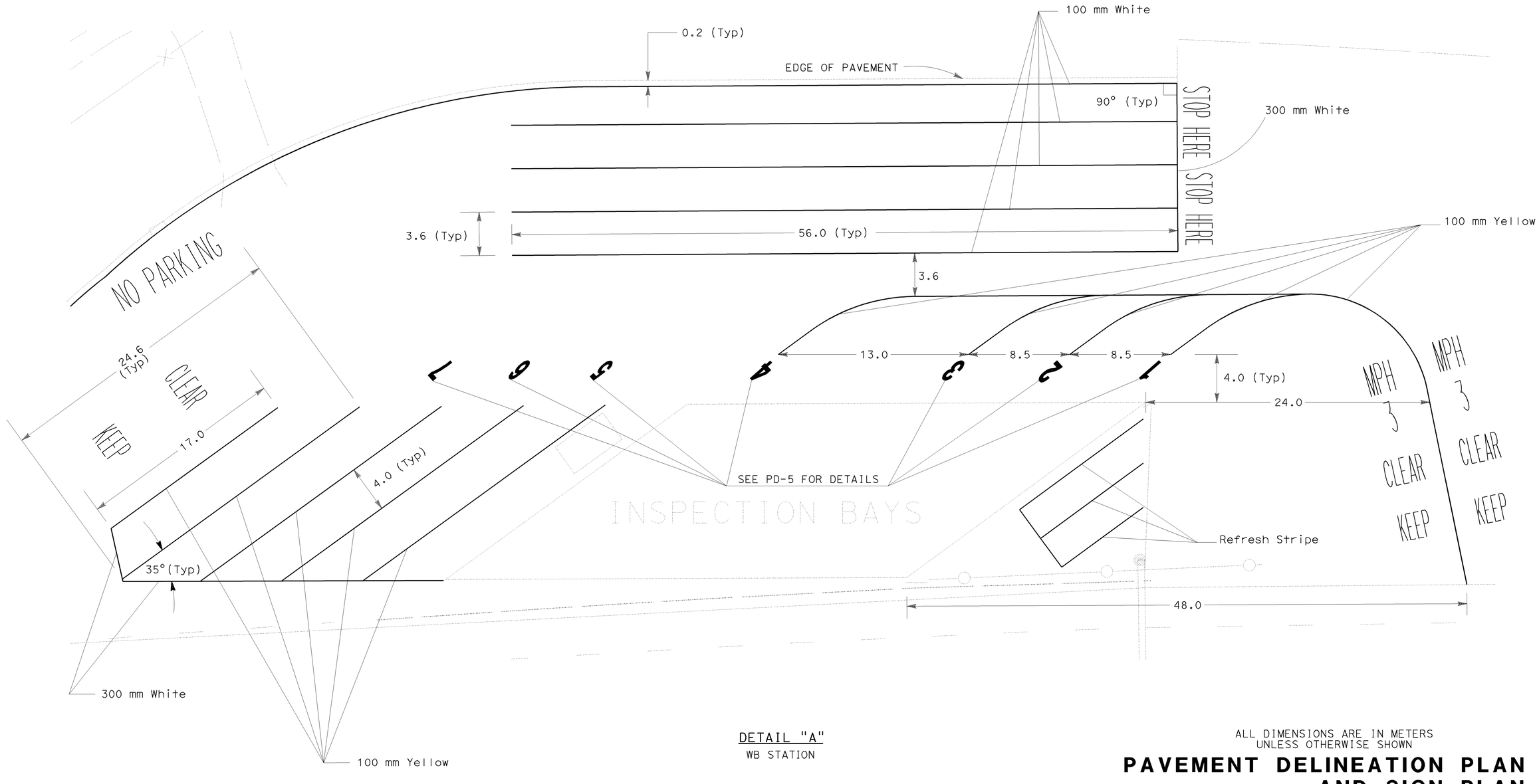

DETAIL "A"
WB STATION

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

PAVEMENT DELINEATION PLAN AND SIGN PLAN

NO SCALE

PD-2

NOTE: THIS PLAN ACCURATE FOR PAVEMENT DELINEATION WORK ONLY

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SACRAMENTO

PROJECT ENGINEER
JONH F. HOLZHAUSER

CALCULATED/ DESIGNED BY
CHECKED BY

DATE	REVISED BY	DATE REVISED

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS
0 20 40 60 80

USERNAME => trmnguye
DGN FILE => 444470na002.dgn

CU 03380

EA 444701

LAST REVISION 00-00-00
DATE PLOTTED => 08-JUN-2006
TIME PLOTTED => 13:57

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	18	29

Caltrans Metric

John F. Holzhauser
REGISTERED CIVIL ENGINEER
2-22-06

JOHN F. HOLZHAUSER No. 50205 Exp. 6-30-07 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-5-06
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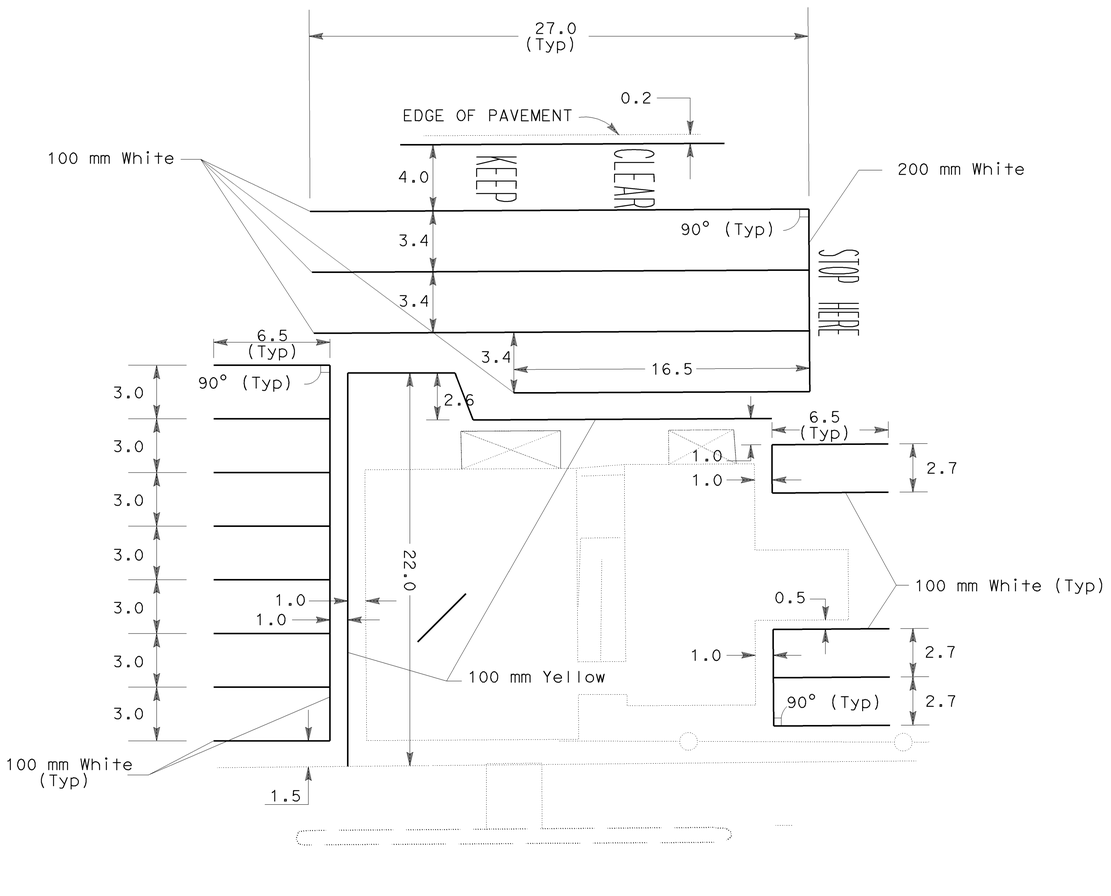
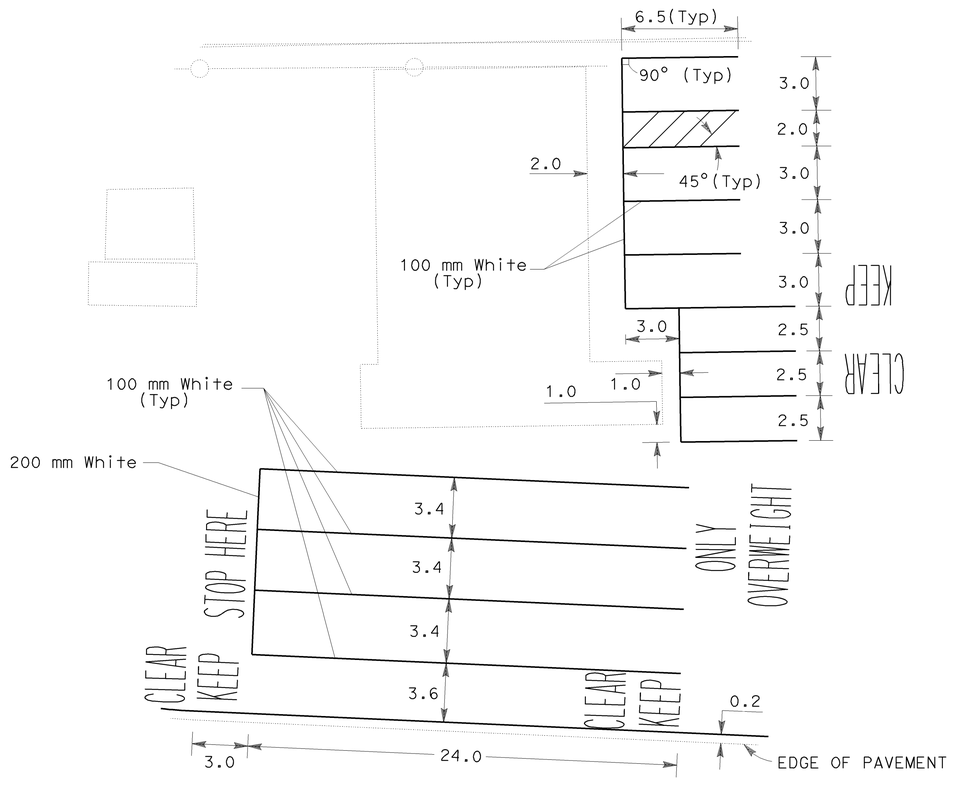


DETAIL "B"
WB STATION



DETAIL "C"
EB STATION

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

PAVEMENT DELINEATION PLAN AND SIGN PLAN

NO SCALE

PD-3

NOTE: THIS PLAN ACCURATE FOR PAVEMENT DELINEATION WORK ONLY

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Caltrans
TRAFFIC DESIGN BRANCH
SACRAMENTO

PROJECT ENGINEER
JONH F. HOLZHAUSER

CALCULATED/ DESIGNED BY
CHECKED BY

DATE	REVISED BY	DATE REVISED

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trmikesl
DGN FILE => 444470na003.dgn

CU 03380

EA 444701

LAST REVISION 00-00-00
DATE PLOTTED => 13-JUN-2006
TIME PLOTTED => 12:36

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	19	29

John F. Holzhauser
REGISTERED CIVIL ENGINEER
2-22-06

JOHN F. HOLZHAUSER No. 50205 Exp. 6-30-07 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-5-06
PLANS APPROVAL DATE

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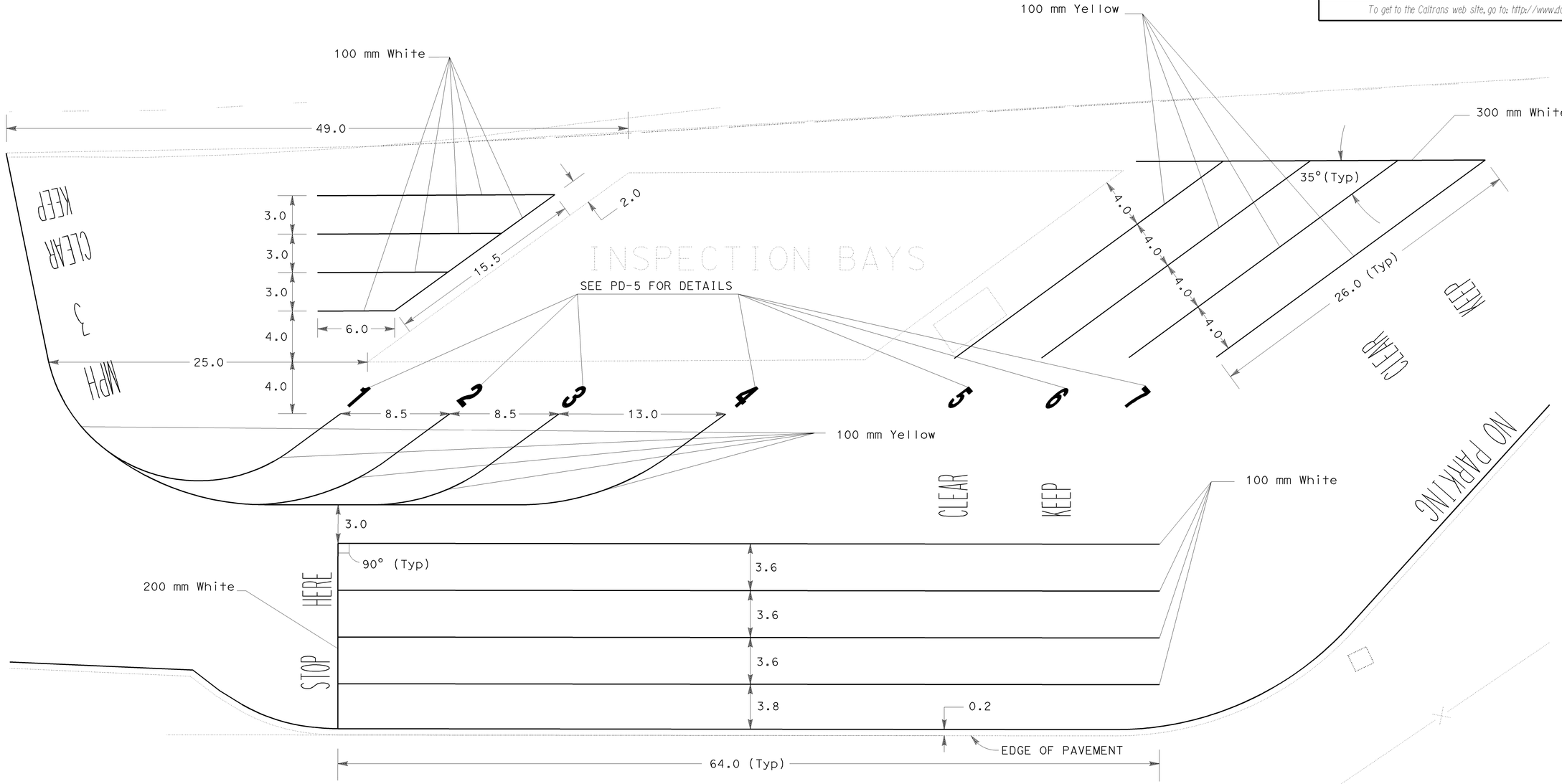
DATE	REVISED BY	DATE REVISED

CALCULATED/DESIGNED BY

CHECKED BY

PROJECT ENGINEER
JONH F. HOLZHAUSER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN BRANCH
SACRAMENTO



DETAIL "D"
EB STATION

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

PAVEMENT DELINEATION PLAN AND SIGN PLAN

NO SCALE

PD-4

NOTE: THIS PLAN ACCURATE FOR PAVEMENT DELINEATION WORK ONLY

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trmikesl
DGN FILE => 444470na004.dgn

CU 03380

EA 444701

LAST REVISION 00-00-00
DATE PLOTTED => 13-JUN-2006
TIME PLOTTED => 06:13

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	20	29

John F. Holzhauser
REGISTERED CIVIL ENGINEER
2-22-06

JOHN F. HOLZHAUSER No. 50205 Exp. 6-30-07 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-5-06
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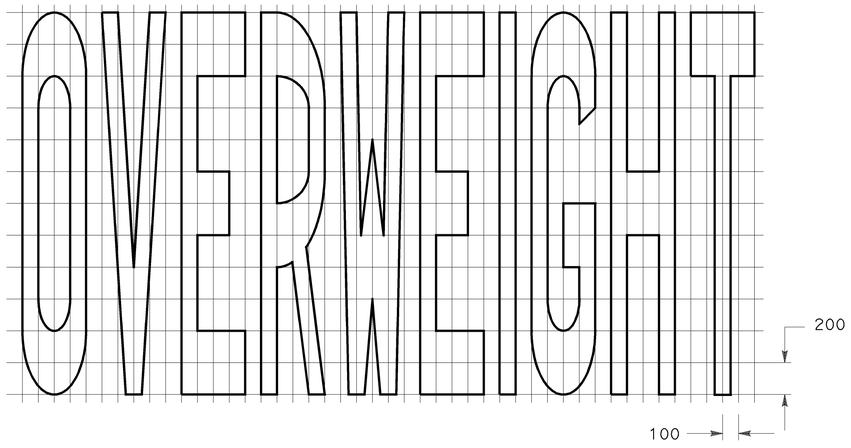

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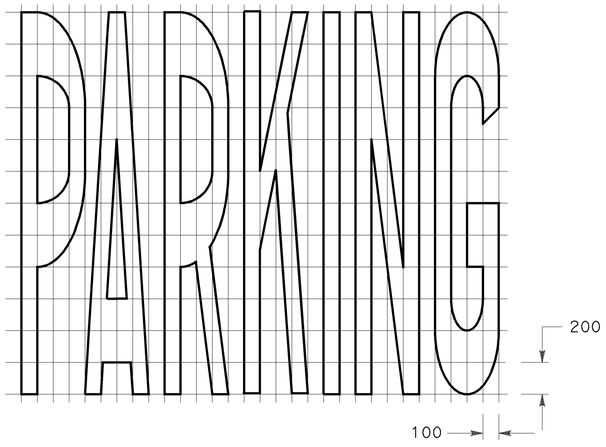

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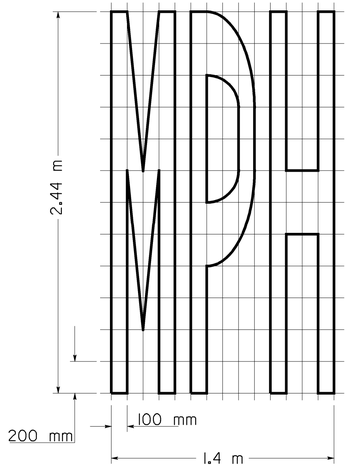

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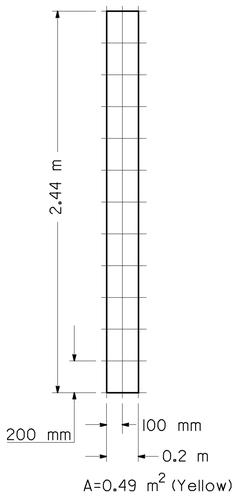

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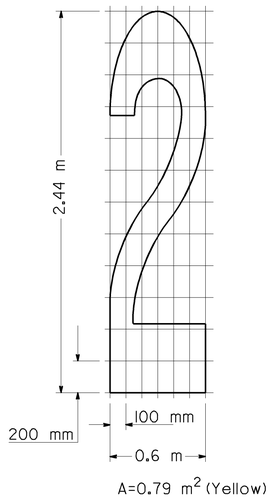

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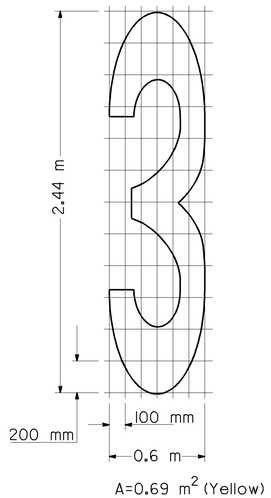

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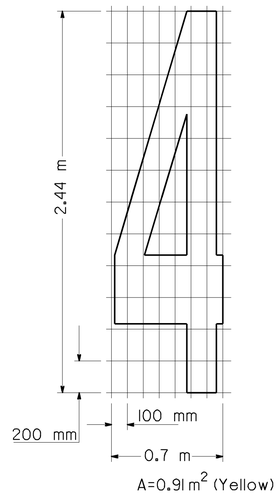

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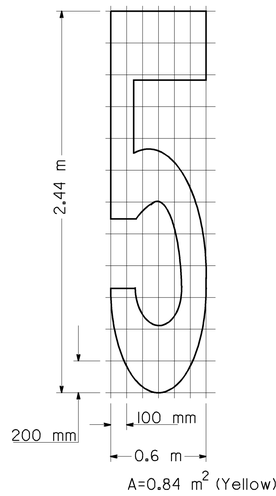

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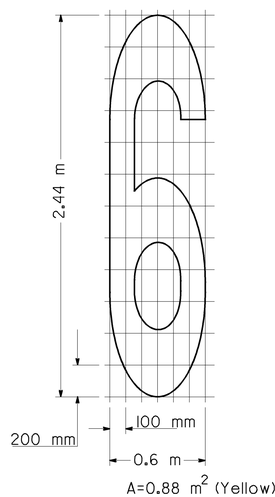

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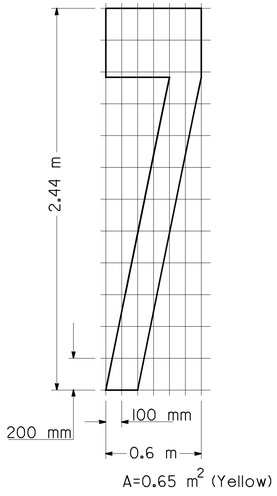

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PAVEMENT MARKINGS
NUMERALS

NOTE: THIS PLAN ACCURATE FOR PAVEMENT DELINEATION ONLY

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

PAVEMENT DELINEATION PLAN AND SIGN PLAN

NO SCALE

PD-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN BRANCH
SACRAMENTO

PROJECT ENGINEER
JONH F. HOLZHAUSER

CALCULATED/ DESIGNED BY
CHECKED BY

DATE	REVISED BY	DATE REVISED

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trmnguye
DGN FILE => 444470ng005.dgn

CU 03380

EA 444701

LAST REVISION 00-00-00
DATE PLOTTED => 08-JUN-2006
TIME PLOTTED => 13:57

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	21	29

Caltrans Metric

John F. Holzhauser
REGISTERED CIVIL ENGINEER
2-22-06

6-5-06
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — JOHN F. HOLZHAUSER — No. 50205 — Exp. 6-30-07 — CIVIL — STATE OF CALIFORNIA

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PAVEMENT DELINEATION QUANTITIES

LOCATION	100 mm THERMOPLASTIC TRAFFIC STRIPE			THERMOPLASTIC PAVEMENT MARKING												
DETAIL	DETAIL 27B	100 mm WHITE LINE	100 mm YELLOW LINE	300 mm WHITE LINE	TYPE VI (3.90 m2) ARROW	NUMERAL "1"	NUMERAL "2"	NUMERAL "3"	NUMERAL "4"	NUMERAL "5"	NUMERAL "6"	NUMERAL "7"	MPH	"STOP HERE"	"KEEP CLEAR"	"NO PARKING"	"ONLY OVERWEIGHT"
	m	m	m	m^2	m^2	m^2	m^2	m^2	m^2	m^2	m^2	m^2	m^2	m^2	m^2	m^2	m^2
WESTBOUND	239	482	279	16.8	11.7	0.49	0.79	3.45	0.91	0.84	0.88	0.65	6.96	13.38	33.2	9.76	-
EASTBOUND	258	482	205	16.8	11.7	0.49	0.79	3.45	0.91	0.84	0.88	0.65	6.96	8.92	33.2	4.88	7.16
SUBTOTAL	497	964	484	33.6	23.4	0.98	1.58	6.90	1.82	1.68	1.76	1.30	13.92	22.3	66.4	14.64	7.16
TOTAL	1945			197.44													

DRAINAGE QUANTITIES

(N) HEIGHT OF INLET (H)	CSP (3.51 mm THICK) 600 mm	CSP (3.51 mm THICK) 450 mm	STEEL FLARED END SECTION 600 mm	STEEL FLARED END SECTION 450 mm	300 mm PLASTIC PIPE	GRATED LINE DRAIN	MINOR CONCRETE (MINOR STRUCTURE)	REMOVE PIPE	REMOVE FLARED END SECTION 600 mm	REMOVE FLARED END SECTION 450 mm	MISC IRON AND STEEL	MINOR CONCRETE (BACKFILL)	DESCRIPTION	STATION	DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No. ⬡	DRAINAGE UNIT ◯
m	m	m	EA	EA	m	m		m	EA	EA	KG	m^3					
										1			REMOVE 450 mm FES	"B" 82+83.5	D-1	1	a
		3.5											450 mm CSP	"B" 82+83.5			b
				1									450 mm FES	"B" 82+83.5			c
										1			REMOVE 450 mm FES	"B" 83+12.0	D-1	2	a
		3.5											450 mm CSP	"B" 83+12.0			b
				1									450 mm FES	"B" 83+12.0			c
										1			REMOVE 450 mm FES				a
		3.5											450 mm CSP	"B" 83+38.0	D-1	3	b
				1									450 mm FES				c
			1										600 mm FES		D-1	4	a
	6.5												600 mm CULVERT				b
			1										600 mm FES				c
									1				REMOVE 600 mm FES		D-1	5	a
								6.5					REMOVE 600 mm CULVERT				b
									1				REMOVE 600 mm FES				c
						24.6							GRATED LINE DRAIN		D-1	6	a
0.70							0.58				148		G1 INLET WITH 600-12X F&G				b
					29.5							9.0	300 mm PLASTIC PIPE WITH MINOR CONCRETE (BACKFILL)				c
						24.6							GRATED LINE DRAIN		D-1	7	a
0.70							0.58				148		G1 INLET WITH 600-12X F&G				b
					29.5							9.0	300 mm PLASTIC PIPE WITH MINOR CONCRETE (BACKFILL)				c
	6.5	10.5	2	3	59	49.2	1.16	6.5	5		296	18.0	TOTAL				

(N) NOT A SEPATATE PAY ITEM, FOR INFORMATION ONLY.

ROADWAY QUANTITY SUMMARY

LOCATION	COLD PLANE ASPHALT CONCRETE	ASPHALT CONCRETE * (TYPE A)	ASPHALTIC EMULSION (PAINT BINDER)	CLASS 4 AGGREGATE SUBBASE	ROADWAY EXCAVATION	REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE)	PLACE ASPHALT CONCRETE (MISC. AREAS)	PLACE AND COMPACT EMBANKMENT	EROSION CONTROL NETTING
	m^2	TONNE	TONNE	TONNE	m^3	m^3	m^2	m^3	m^2
EASTBOUND	7,070.0	1265.0	2.1	77.0	120.0	28.0	13.5	255.0	612.0
WESTBOUND	5,865.0	1550.0	1.8	226.0	530.0	-	13.5	-	732.0
TOTAL	12,935.0	2815.0	3.9	298.0	650.0	28.0	27.0	255.0	1344.0

*QUANTITY INCLUDES AC TONNAGE FOR PLACE AC (MISC. AREA).

TRAFFIC HANDLING QUANTITIES

LOCATION	(N) TRAFFIC PLASTIC CONE (EA)
EASTBOUND	170
WESTBOUND	40
TOTAL	210

(N) NOT A SEPATATE PAY ITEM, FOR INFORMATION ONLY.

RESET ROADSIDE SIGN

LOCATION	SINGLE POST	TWO POST
STA 82+82 "A" LINE	1	1
TOTAL	2	

SUMMARY OF QUANTITIES

Q-1

DATE REVISED BY

DATE CALCULATED/DESIGNED BY

CHECKED BY

PROJECT ENGINEER
JOHN F. HOLZHAUSER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN BRANCH
SACRAMENTO
Caltrans

444470pa001.dgn
08-JUN-2006 trmartin
14:36

LAST REVISION DATE PLOTTED => 08-JUN-2006
TIME PLOTTED => 14:36
00-00-00

RELATIVE BORDER SCALE IS IN MILLIMETERS
0 20 40 60 80

USERNAME => trmartin
DGN FILE => 444470pa001.dgn

CU 03380

EA 444701

LICENSED LANDSCAPE ARCHITECT

6-5-06
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT JEFF FERRARIO No. 4687 11-30-06 Renewal Date 01-03-05 Date STATE OF CALIFORNIA

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ABBREVIATIONS

AMEND — amendment
B & B — balled and burlapped
Dia — diameter
EA — each
g — gram
kg — kilogram
m — meter
m^2 — square meter
m^3 — cubic meter
Max — maximum
Min — minimum
mm — millimeter
No. — number
Pkt — packet
PLT ESTB — plant establishment
Pvmt — pavement
R/W — right of way
SF — state-furnished
TRVD — traveled

PLANT LIST AND PLANTING SPECIFICATIONS

PLANT GROUP	PLANT No.	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY EACH	HOLE SIZE (mm) DIA	HOLE SIZE (mm) DEPTH	BASIN TYPE	IRON SULFATE	SOIL AMEND ①	COMMERCIAL FERTILIZER ① PLANTING	COMMERCIAL FERTILIZER ① PLT ESTB	BASIN MULCH	STAKING	PLANTING LIMITS MINIMUM DISTANCE (m) FROM TRVD WAY	PVMT	FENCE	WALL	PAVED DITCH	EARTH DITCH	ON CENTER (m)	REMARKS
A	1	⬡	QUERCUS AGRIFOLIA	COAST LIVE OAK	No. 1	18	457	1,000	1	--	0.06 m^3	2 PKt	0.10 kg	0.5 m^3	⑦	--	3.0	2.0	--	--	2.0	④	TREE
B	2	⊗	QUERCUS AGRIFOLIA	COAST LIVE OAK	No. 5	8	457	1,000	1	--	0.06 m^3	2 PKt	0.10 kg	1.0 m^3	⑦	--	5.0	2.0	--	--	2.0	④	TREE

APPLICABLE WHEN CIRCLED:

① - Quantities shown are "per plant" unless shown as m^2 application rates.
2 - Sufficient to receive root ball.
3 - Does not apply to mulch areas.
④ - As shown on plans.
5 - Unless otherwise shown on plans.
6 - See detail.
⑦ - See Special Provisions.

NOTE:

- UNDERLINED PORTIONS OF THE BOTANICAL NAME INDICATE ABBREVIATIONS USED ON THE PLANTING PLANS

Exist TREES, SHRUBS & GROUND COVER (DENSE VEGETATION) - LOCATIONS AND AREAS ARE APPROXIMATE. AREAS OF VEGETATION WILL CHANGE DURING CLEARING AND GRUBBING OPERATIONS.

Exist TREES AND SHRUBS (INDIVIDUAL PLANTS)

SPRINKLER SCHEDULE

SYMBOL	TYPE	DESCRIPTION	SPRAY PATTERN	OPERATING PRESSURE (KILOPASCAL) (kPa)	PRESSURE COMPENSATING	PLUS / MINUS 5% ② DISCHARGE LITERS PER SECOND L/s	DISCHARGE LITERS PER MINUTE L/min	DISCHARGE LITERS PER HOUR L/h	RADIUS (IN METERS)(m)	WIDTH x LENGTH (IN METERS)(m)	MATERIAL	NOZZLE SIZE IN MILLIMETERS (mm)	INLET CONNECTION (NPT) (DN IN MILLIMETERS)(mm)	POSITIVE-LOCKING ADJ ARC STOP	BACKSPLASH PREVENTER	DIFFUSER PIN	DISTANCE CONTROL FLAP	ADJ DISCHARGE	RISER TYPE	RISER MATERIAL PLASTIC	RISER MATERIAL GALVANIZED	RISER SIZE (IPS) (IN MILLIMETERS) (mm)	RISER HEIGHT (IN MILLIMETERS) (mm)	RISER FLOW SHUTOFF DEVICE	SWING JOINT (TYPE)	RISER SUPPORT	SPRINKLER PROTECTOR (TYPE)	REMARKS
O	C-2	BUBBLER	--	172	X	--	1.9	--	--	--	PL	--	15	--	--	--	--	--	V	X	--	15	--	--	--	--	--	SEE IRREGATION SYSTEM NOTES

X IN BOX DENOTES REQUIREMENT

APPLICABLE WHEN CIRCLED BELOW:

① - See Special Provisions.
② - If a pressure compensating device is specified, the discharge and radii shown reflect its use.
3 - Arc Stop shall be fitted with a nut and bolt.
4 - Vinyl-coated cast iron housing.
5 - Swing Joints required adjacent to shoulders, curbs, sidewalks, and dikes.
6 - Unless otherwise shown on plans.

ABBREVIATIONS

Adj — adjustable
B/B — brass/bronze
B/B/PL — brass/bronze/plastic
B/PL — brass/plastic
CST — center strip
DN — diameter nominal
EST — end strip
F — full circle
F/P — full/part circle
H — half circle
IPS — iron pipe size
kPa — kilopascal
L/h — liters per hour
L/min — liters per minute
L/s — liters per second
m — meters
mm — millimeters
NPT — national pipe thread
P — part circle
PL — plastic
Q — quarter circle
SST — side strip
T — third circle
TQ — three quarter circle
TT — two thirds circle

IRREGATION SYSTEM:

ON SLOPES THE TYPE C-2 SPRINKLERS ARE TO BE PLACED ON THE UPHILL SIDE OF THE PLANTS.

GROUP A PLANTS WILL BE TRUCK WATERED FOR THE LIFE OF THE CONTRACT

PLANT LIST AND SPRINKLER SCHEDULE

PL-1

REVISED BY | DATE REVISED | DATE 03/03 | GWH | CALCULATED/ DESIGNED BY | CHECKED BY

PROJECT LANDSCAPE ARCHITECT JEFF FERRARIO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trmikesl
DGN FILE => 444470te001.dgn

CU 03380

EA 444701

LAST REVISION 00-00-00 | DATE PLOTTED => 13-JUN-2006 | TIME PLOTTED => 06:13

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	23	29

LICENSED LANDSCAPE ARCHITECT

6-5-06
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT JEFF FERRARIO No. 4681 STATE OF CALIFORNIA Expiration Date 11-30-06 Renewal Date 01-03-05 Date

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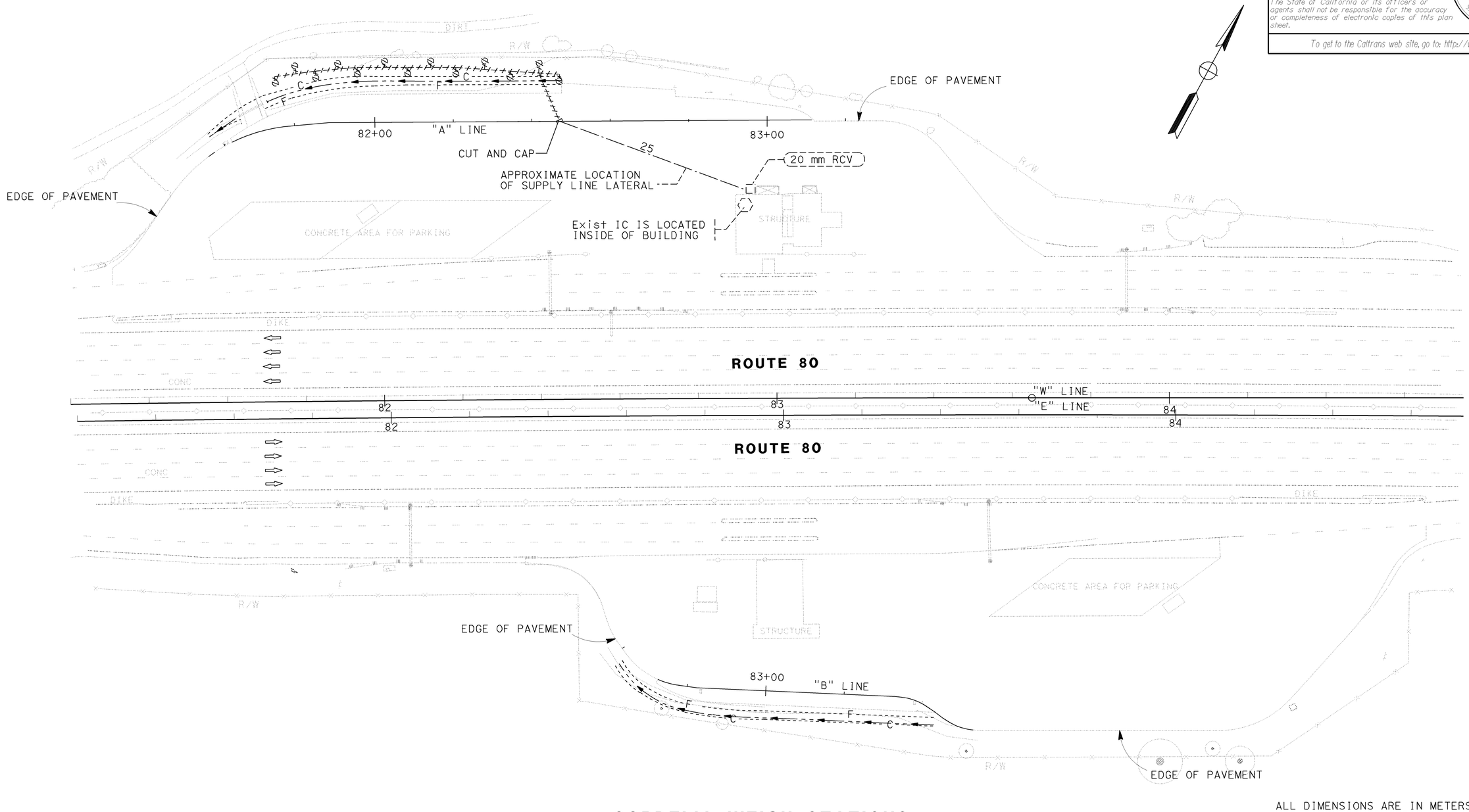


CORDELIA WEIGH STATIONS

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN.

IRRIGATION REMOVAL PLAN

SCALE 1:500

THIS PLAN ACCURATE FOR IRRIGATION REMOVAL WORK ONLY.

ALL IRRIGATION EQUIPMENT SIZES ARE SHOWN IN MILLIMETERS (DIAMETER NOMINAL) UNLESS OTHERWISE NOTED.

IR-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
PROJECT LANDSCAPE ARCHITECT JEFF FERRARIO
CALCULATED/DESIGNED BY
CHECKED BY
GWH
DATE 03/03
REVISED BY
DATE REVISED

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trmikesl
DGN FILE => 444470tk001.dgn

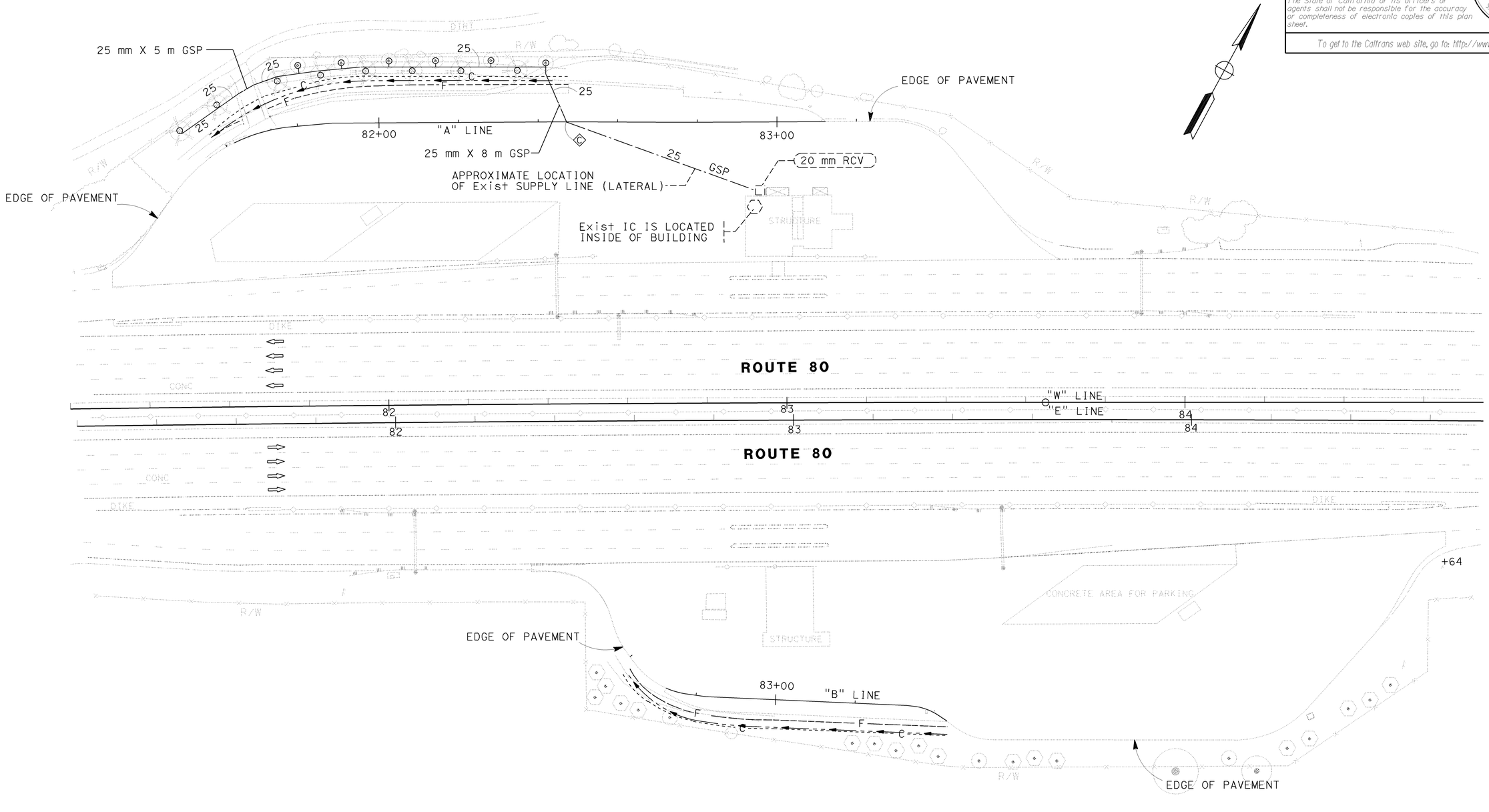
CU 03380

EA 444701

LAST REVISION 00-00-00
DATE PLOTTED => 13-JUN-2006
TIME PLOTTED => 06:13

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.



CORDELIA WEIGH STATIONS

ALL IRRIGATION EQUIPMENT STRESS ARE SHOWN IN MILLIMETTERS (DIAMETER NOMINAL) ULNESS OTHERWISE NOTED.

THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN.

IRRIGATION PLAN

SCALE 1:500 **IP-1**

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	24	29

LICENSED LANDSCAPE ARCHITECT

6-5-06
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT JEFF FERRARIO No. 4687 STATE OF CALIFORNIA
11-30-06 Renewal Date
01-03-05 Date

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Caltrans Metric

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
PROJECT LANDSCAPE ARCHITECT
JEFF FERRARIO
CALCULATED/ DESIGNED BY
CHECKED BY
DATE 03/03
GWH
REVISED BY
DATE REVISED

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trmikesl
DGN FILE => 444470t1001.dgn

CU 03380

EA 444701

LAST REVISION 00-00-00
DATE PLOTTED => 13-JUN-2006
TIME PLOTTED => 06:13

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.

Caltrans Metric

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	25	29

LICENSED LANDSCAPE ARCHITECT

6-5-06
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT JEFF FERRARIO No. 4687 Registered 11-30-06 Renewal Date 01-03-05 Date STATE OF CALIFORNIA

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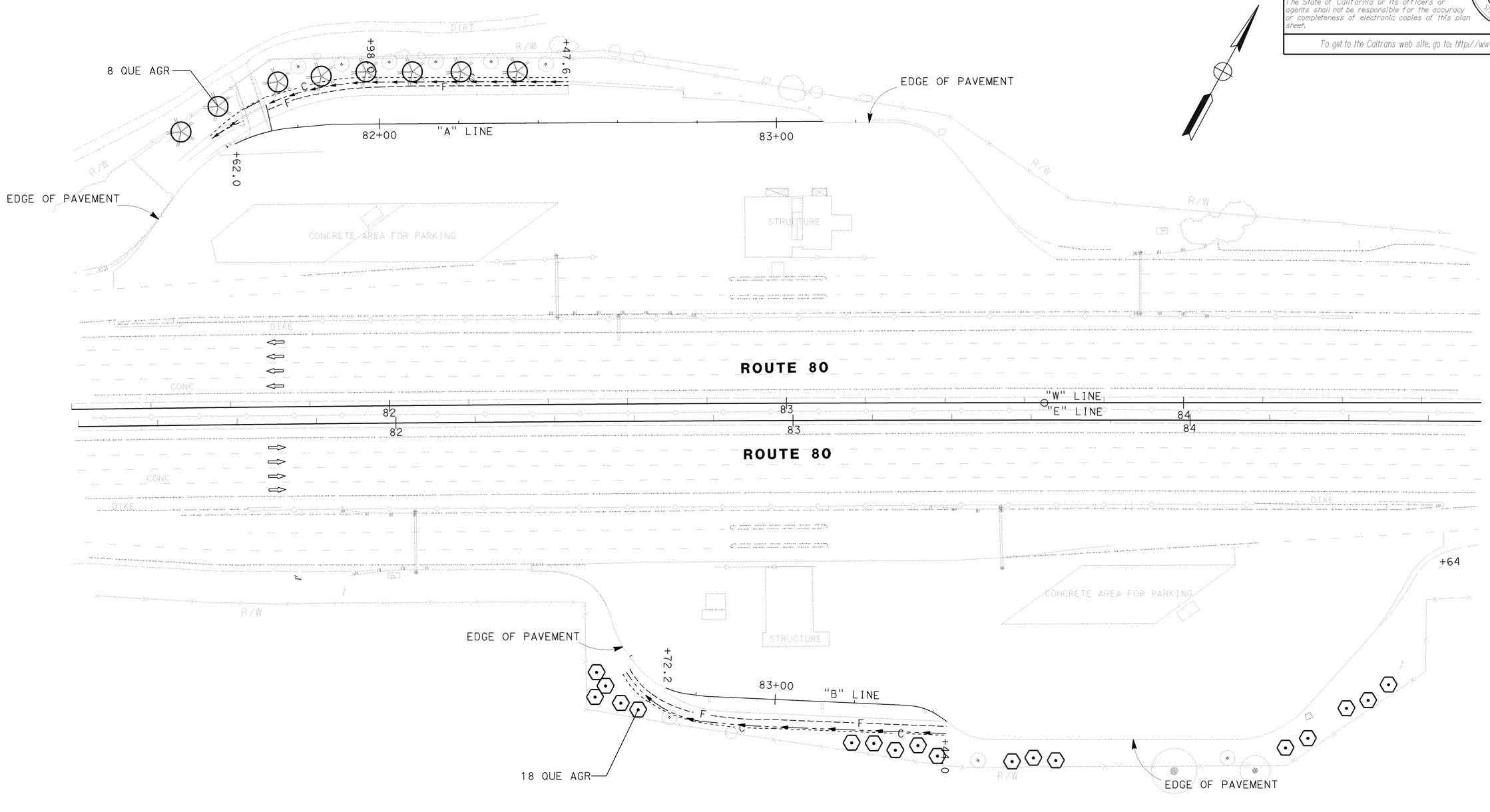

CORDELIA WEIGH STATIONS

THIS PLAN ACCURATE FOR PLANTING WORK ONLY.

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN.

PLANTING PLAN

SCALE 1:500 **PP-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
PROJECT LANDSCAPE ARCHITECT JEFF FERRARIO
CALCULATED/DESIGNED BY
CHECKED BY
GWH
DATE 03/03
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 13-JUN-2006
TIME PLOTTED => 06:13

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trmikesl
DGN FILE => 444470tm001.dgn

CU 03380

EA 444701

ABBREVIATIONS

CAB CABINET
COMM COMMUNICATION
PNL PANEL
TEL TELEPHONE

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	26	29

REGISTERED ELECTRICAL ENGINEER
07/30/03

6-5-06
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JESSE CHEN
No. E 16735
Exp. 09/30/06
ELECTRICAL
STATE OF CALIFORNIA

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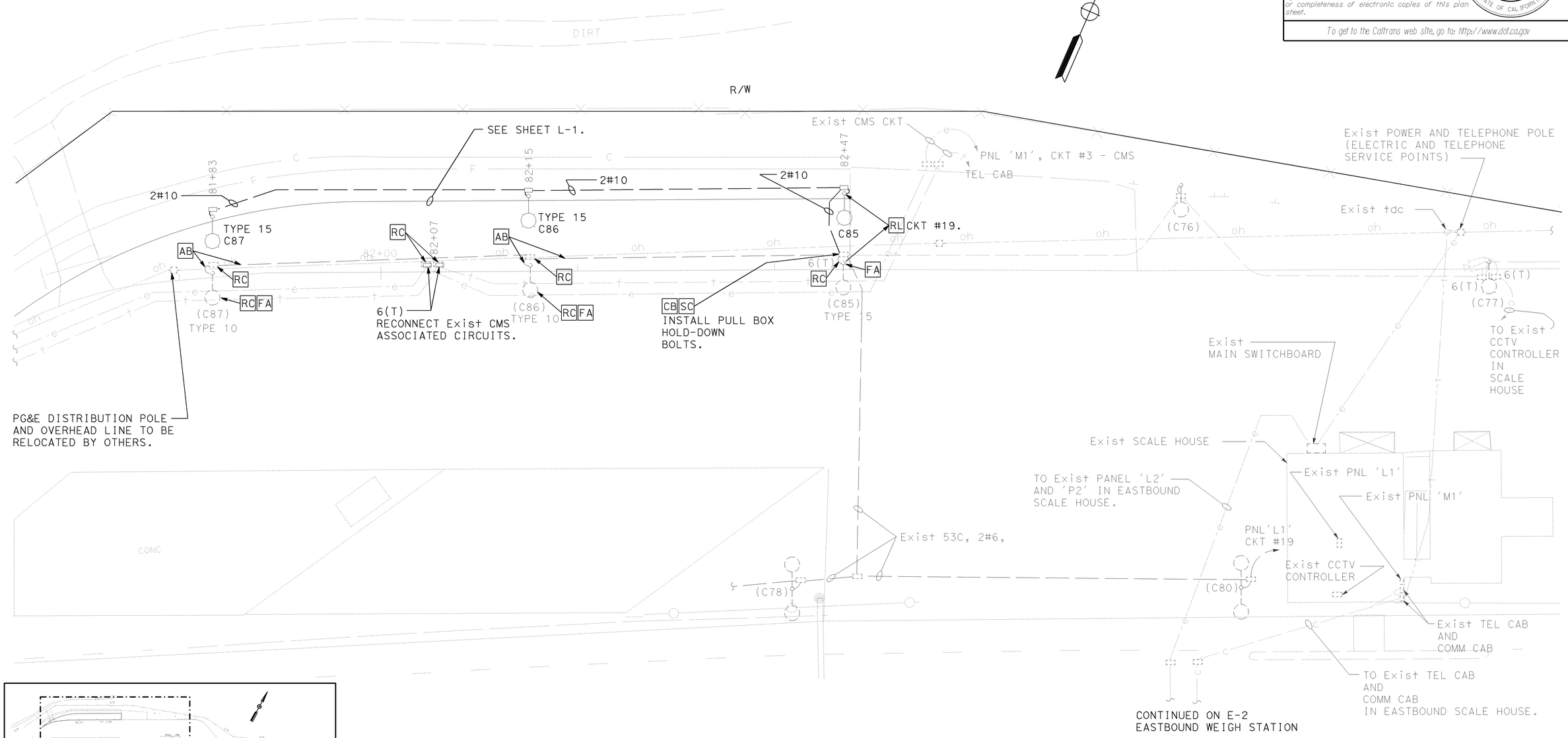

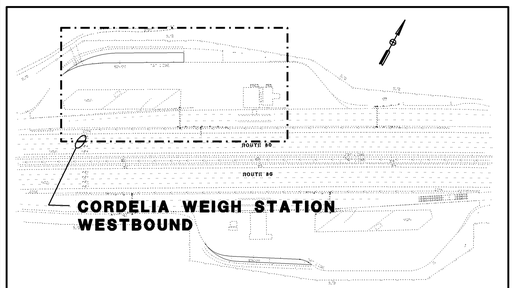

KEY PLAN
NOT TO SCALE

NOTES:
1. EXACT LOCATION OF EQUIPMENT WILL BE DETERMINED BY THE ENGINEER.
2. THIS PLAN SHEET IS ACCURATE FOR ELECTRICAL WORK ONLY.

ALL DIMENTIONS ARE IN METERS UNLESS OTHERWISE SHOWN.

LIGHTING
CORDELIA WEIGH STATION (WESTBOUND)

SCALE 1:200

E-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ELECTRICAL DESIGN BRANCH
SACRAMENTO
Caltrans

PROJECT ENGINEER
JESSE CHEN

CALCULATED/ DESIGNED BY: JESSE CHEN
CHECKED BY: NELSON LEE

DATE	REVISED BY
2/03	2/03 DATE REVISED

LAST REVISION
DATE PLOTTED => 12-JUN-2006
TIME PLOTTED => 16:00

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trmnguye
DGN FILE => 444470ua001.dgn

CU 03391

EA 444701

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Sol	80	23.2	27	29

REGISTERED ELECTRICAL ENGINEER
07/30/03

6-5-06
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JESSE CHEN
No. E 16735
Exp. 09/30/06
ELECTRICAL
STATE OF CALIFORNIA

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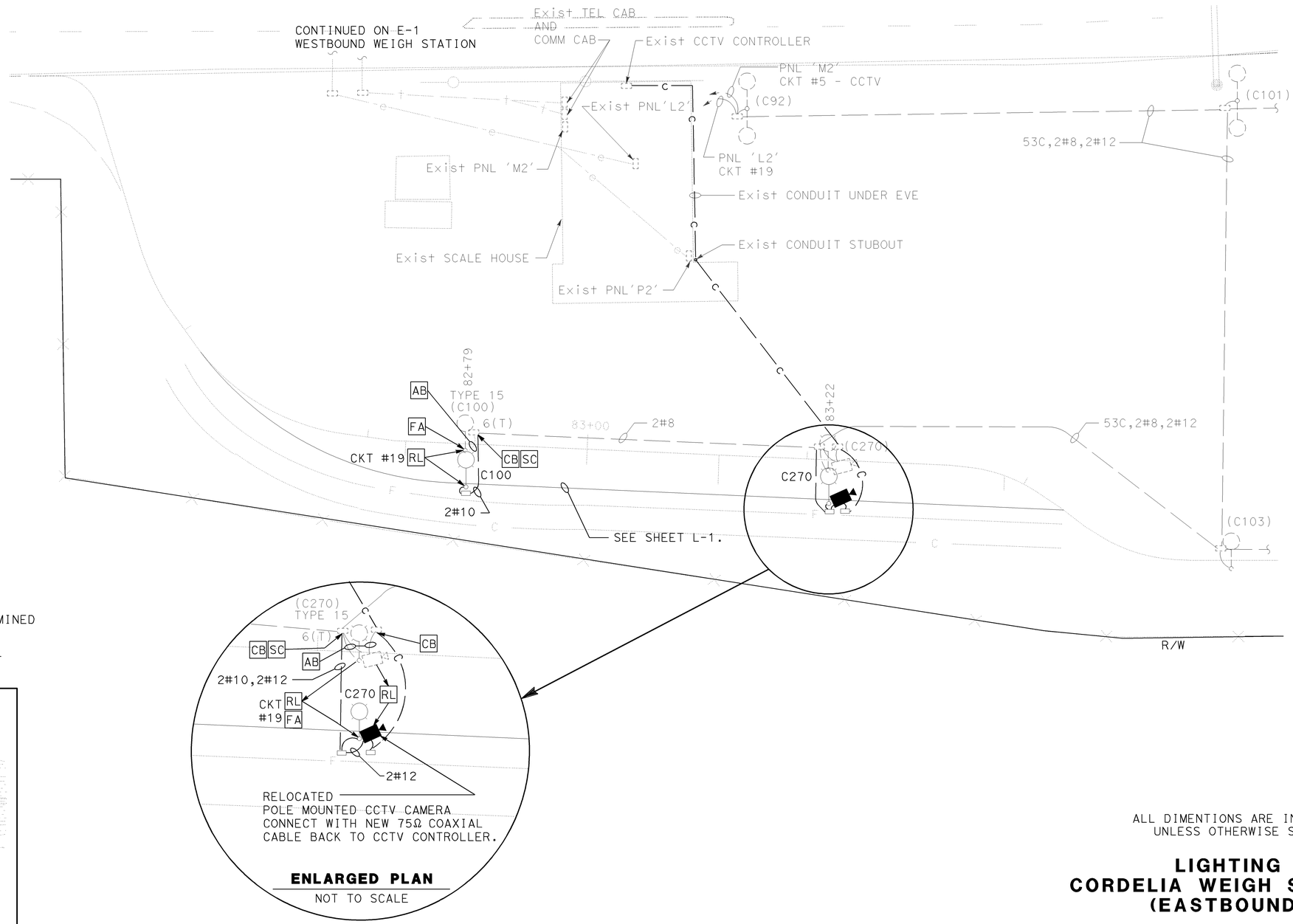
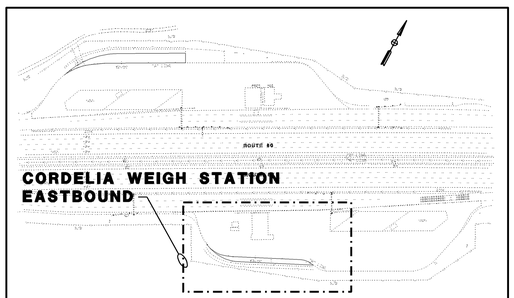


ENLARGED PLAN
NOT TO SCALE

NOTES:

1. EXACT LOCATION OF EQUIPMENT WILL BE DETERMINED BY THE ENGINEER.
2. THIS PLAN SHEET IS ACCURATE FOR ELECTRICAL WORK ONLY.



KEY PLAN
NOT TO SCALE

ALL DIMENTIONS ARE IN METERS
UNLESS OTHERWISE SHOWN.

LIGHTING
CORDELIA WEIGH STATION
(EASTBOUND)

SCALE 1:200 **E-2**

CALCULATED/ DESIGNED BY	JESSE CHEN	DATE REVISED	2/03
CHECKED BY	NELSON LEE	DATE REVISED	2/03

PROJECT ENGINEER: JESSE CHEN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ELECTRICAL DESIGN BRANCH
SACRAMENTO

LAST REVISION
DATE PLOTTED => 12-JUN-2006
TIME PLOTTED => 16:05

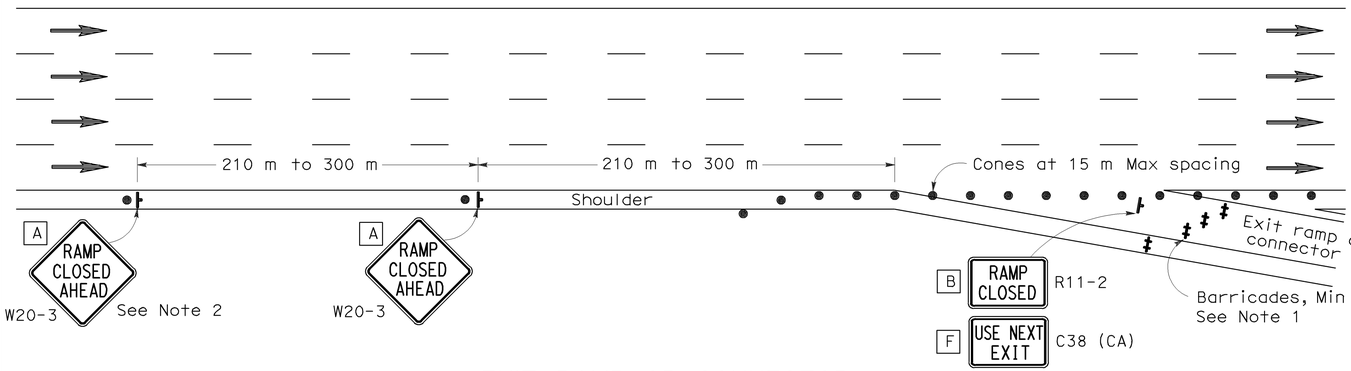
FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => trmnguye
DGN FILE => 444470ug002.dgn

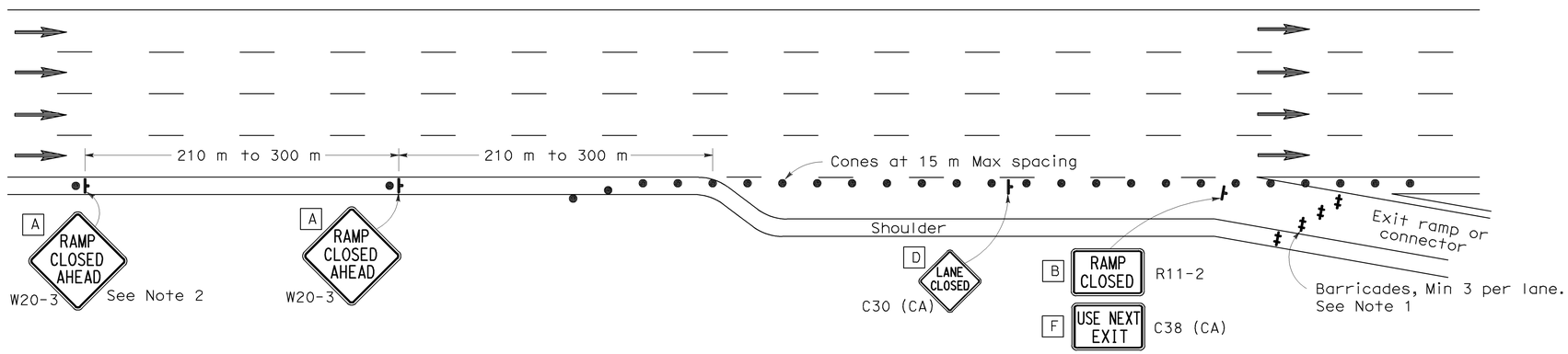
CU 03391

EA 444701

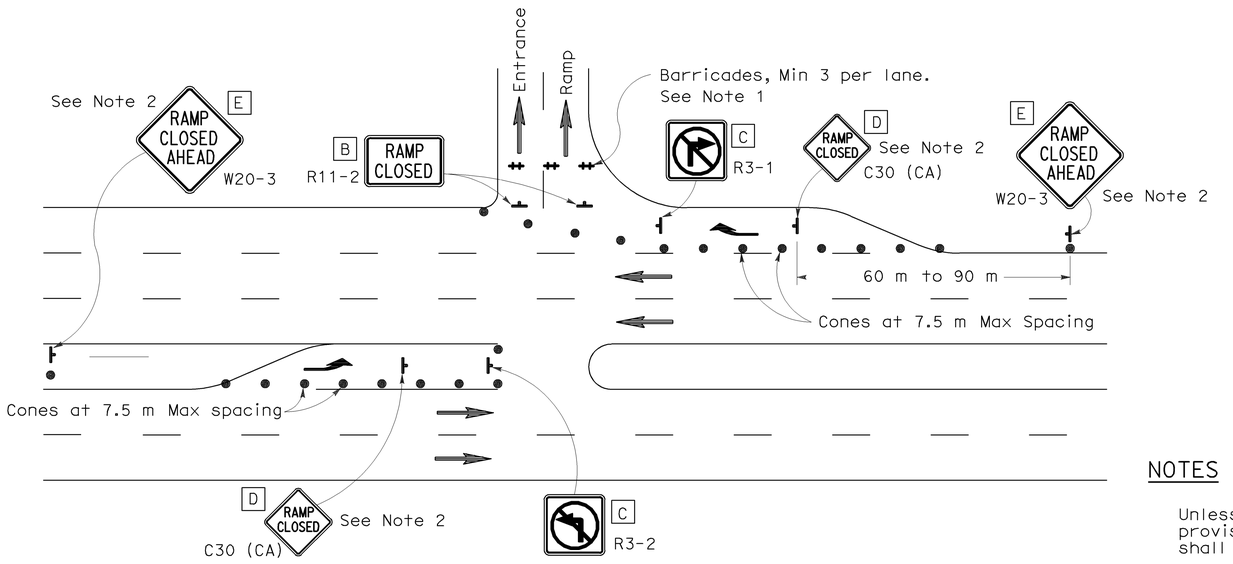
TYPICAL RAMP CLOSURES



EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



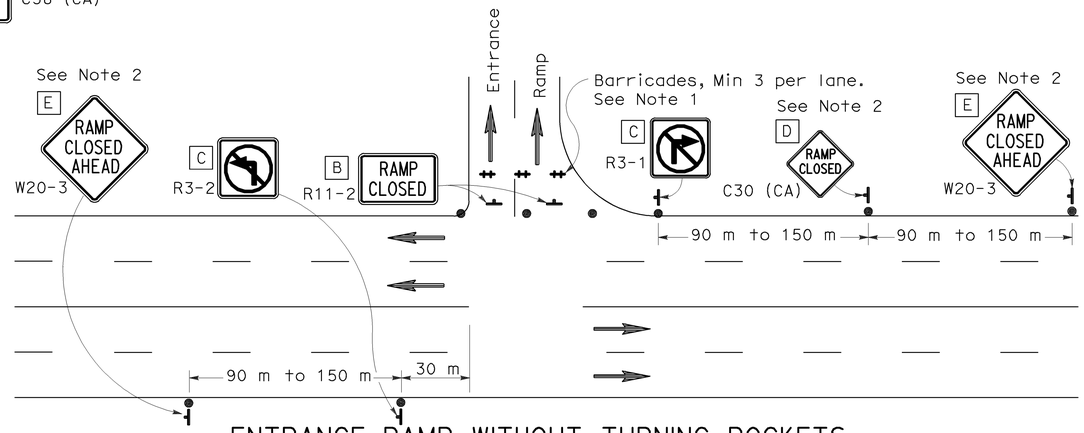
ENTRANCE RAMP WITH TURNING POCKETS

LEGEND

- Traffic Cone
- Temporary Sign
- Barricades
- Direction of Travel
- Turn Arrow

SIGN PANEL SIZE (Min)

A	1200 mm x 1200 mm
B	1200 mm x 750 mm
C	750 mm x 750 mm
D	762 mm x 762 mm
E	900 mm x 900 mm
F	1219 mm x 914 mm



ENTRANCE RAMP WITHOUT TURNING POCKETS

NOTES

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on orange background.

California code are designated by (CA). Otherwise, Federal codes are shown.

NOTES

1. Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
2. Instead of placing the W20-3 "RAMP CLOSED AHEAD" and C30 (CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed by the Engineer, on all guide signs that refer to the closed ramp. The letter size on the overlay shall be the same as the guide sign.
3. Each advance W20-3 "RAMP CLOSED AHEAD" sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 400 mm x 400 mm in size and shall be orange or fluorescent red-orange in color.
4. All cones used for ramp closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
5. Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime ramp closures only.
6. At least one person shall be assigned to provide full time maintenance of traffic control devices, unless otherwise directed by the Engineer.
7. The existing "EXIT" sign in the gore area shall be covered during ramp closures.

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	23.2	28	29

REGISTERED CIVIL ENGINEER

Greg W. Edwards No. C36386 Exp. 6-30-06 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

April 28, 2005
PLANS APPROVAL DATE

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To accompany plans dated 6-5-06

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR RAMP CLOSURE

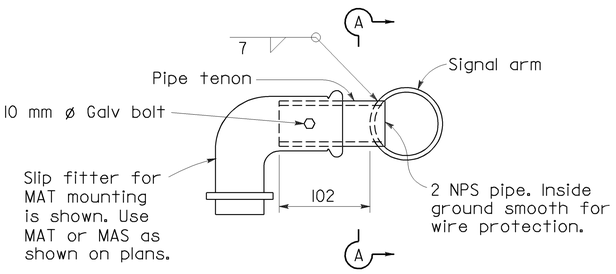
NO SCALE

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

RSP T14 DATED APRIL 28, 2005 SUPERSEDES STANDARD PLAN T14
DATED JULY 1, 2004-PAGE 223 OF THE STANDARD PLANS BOOK DATED JULY 2004.

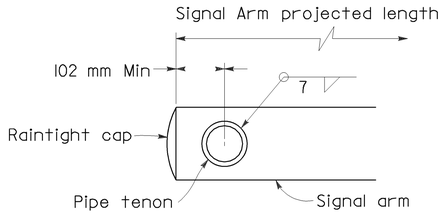
REVISED STANDARD PLAN RSP T14

2004 REVISED Std PLAN RSP T14



ES-4D

DETAIL S-SIDE TENON



SECTION A-A

IDENTIFICATION NUMBER

Attach a stamped metal tag with each pole's indentification number to shaft above handhole. 7 mm high number minimum.

A similar tag shall be attached to the top of the signal mast arm near the pole plate.

Sample Identification Number

Type | Load case | Design wind velocity (km/h) | Signal arm length maximum (m) | Standard plan year | Only for poles with fatigue resistant welds

19A - 3 - 161 - 9.1 - 04 - F

Use SL for special load case

Caltrans Metric

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	23.2	29	29

REGISTERED CIVIL ENGINEER

April 28, 2005
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Tillat Sattar — No. C42892 — Exp. 03-31-2006 — CIVIL — STATE OF CALIFORNIA

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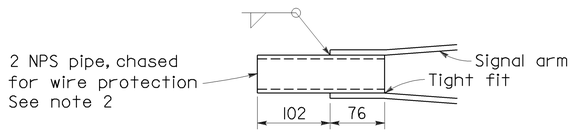
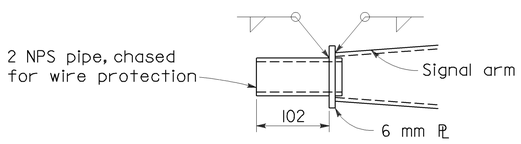
To accompany plans dated 6-5-06

PIPE TENONS

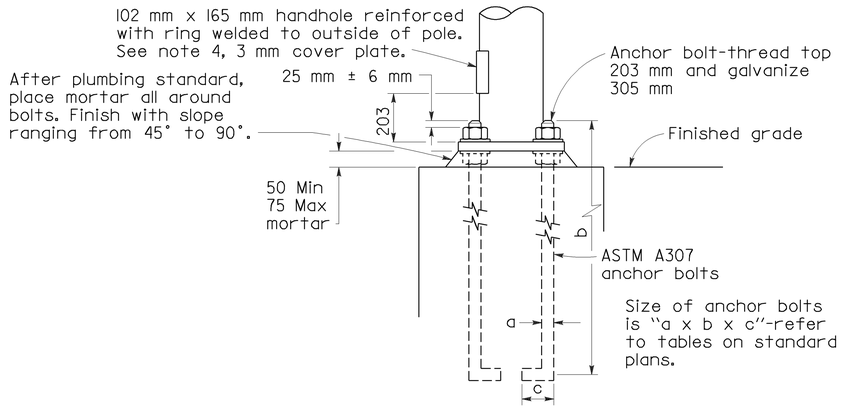


DETAIL TS-TIP TENON

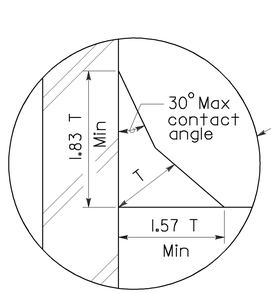


DETAIL TL-TIP TENON

This detail supersedes Detail S when so designated



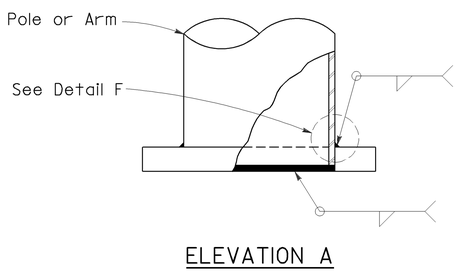
HANDHOLE AND ANCHORAGE DETAILS



For weld size calculations T must be 5 mm or more

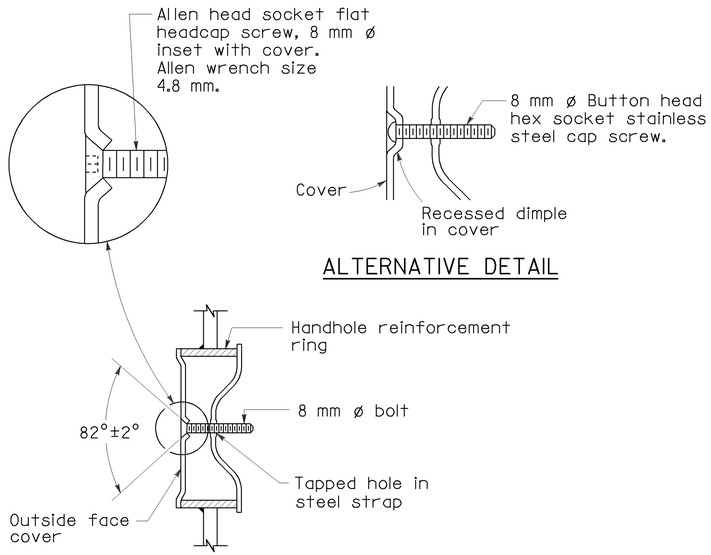
DETAIL F

Fatigue resistant weld



Weld Size	Wall Thickness
7	3.04
8	4.55
10	6.07
11	7.94
4	3.04
5	4.55
7	6.07
8	7.94

ELEVATION A



ALTERNATIVE DETAIL

TAMPER RESISTANT HANDHOLE COVER

GENERAL NOTES

SPECIFICATIONS

DESIGN : AASHTO Standard specifications for structural supports for highway signs, luminaires and traffic signals dated 2001.

Loading

WIND LOADINGS : 161 km/h

Unit Stresses

STRUCTURAL STEEL : fy = 330 MPa tapered steel tube
fy = 250 MPa unless otherwise noted

CONSTRUCTION : Standard Specifications and the Special Provisions

NOTES

1. ASTM A307 anchor bolts are required for each pole. Provide a hex nut, leveling nut and 2 washers for each bolt.
2. Luminaire arms shall be round, tapered steel tubes, taper of 11.45 mm/m to 11.66 mm/m with an end section 60 mm OD for mounting hardware. Extensions of 2 NPS Standard pipe and 178 mm long may be used at the option of the manufacturer. When low pressure sodium luminaires are required, the extension shall be 381 mm.
3. Signal arms shall be round, tapered steel tubes, maximum taper 11.66 mm/m.
4. Handhole reinforcement ring shall be 6 mm x 51 mm for 3.04 mm to 6.07 mm poles, 10 mm x 51mm for 7.94 mm.
5. Handholes for lighting standards shall be located on the downstream side of the pole unless otherwise noted on the plans.
6. Detail F, fatigue resistant weld, is required at signal arm plate and pole base plate.
7. Cap screws shall be tightened by the turn-of-nut method 1/3 turn to form a snug tight condition. No washer will be required.
8. During pole erection, the post shall be raked as necessary with the use of leveling nuts to provide a plumb pole axis.
9. When Project Plans show a lesser number of signs and signals, the Project Plans shall prevail.
10. Outside diameter, wall thickness, and corresponding section properties at the base of traffic signal poles and arms as shown in the Standard Plans are minimums. Unless otherwise specified, alternative sections require approval by the Engineer.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARDS DETAILS No. 1)

NO SCALE

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

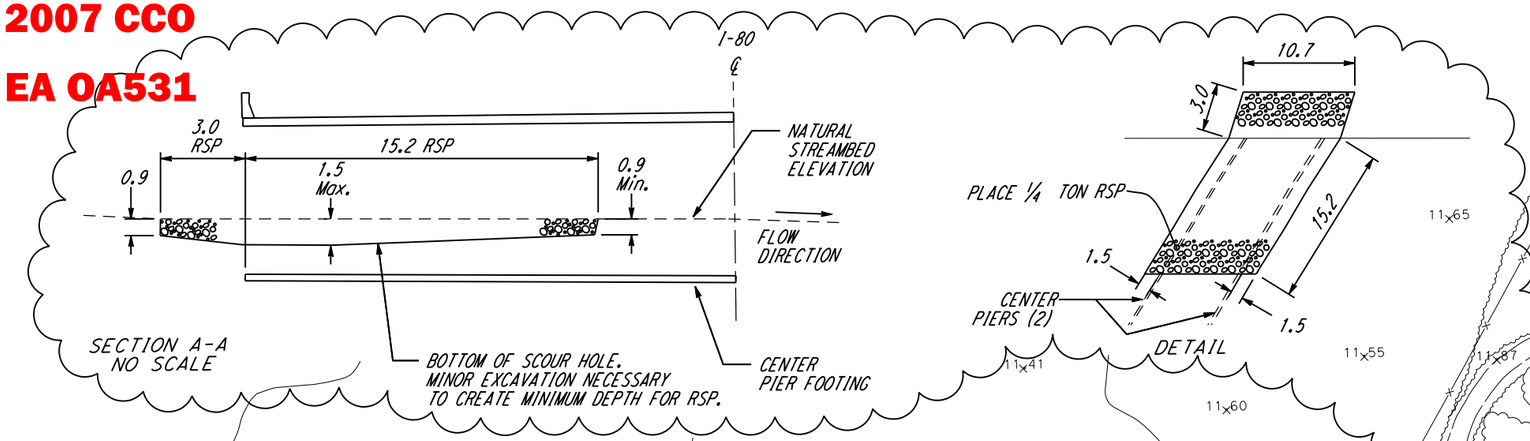
RSP ES-7M DATED APRIL 28, 2005 SUPERSEDES RSP ES-7M DATED JANUARY 24,2005 AND STANDARD PLAN ES-7M DATED JULY 1, 2004-PAGE 463 OF THE STANDARD PLANS BOOK DATED JULY 2004.

REVISED STANDARD PLAN RSP ES-7M

2004 REVISED Std PLAN RSP ES-7M

2007 CCO

EA 0A531



DIST	COUNTY	ROUTE	KILOMETERS POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	18.3/32.3	133	537

John WM Mountin 8/31/07
REGISTERED CIVIL ENGINEER DATE

12-31-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — JOHN WM MOUNTIN No. 39335 Exp. 12/31/07 CIVIL — STATE OF CALIFORNIA

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WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

Caltrans Metric

FAIRFIELD

SOLANO COUNTY

DENSE BRUSH · DENSE GROUND COVER · DENSE TREES · GNV · ASPH · DIKE · "WT2-1" LINE · "EI2-1" LINE · "B" LINE · "H-R" LINE · REMOVED SYSTEM 30 · 450 mm ASP · ROUTE 80 · SOL - 80 · CONC · TANK · DENSE BRUSH · PLOWED FIELD · Suisun Creek · FAIRFIELD-SUISUN SLOUGH · R/W · B/B · oSP

MATCH LINE - SEE SHEET D-17

MATCH LINE - SEE SHEET D-19

SEE DETAIL ABOVE

SEE PREVIOUS CCO 08/08/08

John WM Mountin 11/07/08
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER — JOHN WM MOUNTIN No. 39335 Exp. 12/31/09 CIVIL — STATE OF CALIFORNIA

DRAINAGE PLAN

SCALE 1:500

D-18

REVISED BY	DATE REVISED
AMY FURTADO	JOHN WM MOUNTIN

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR: JOSEPH PETERSON

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

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LAST REVISION 00-00-00 | DATE PLOTTED => $DATE | TIME PLOTTED => $TIME

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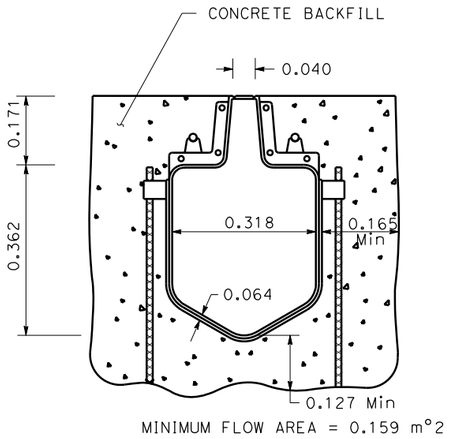
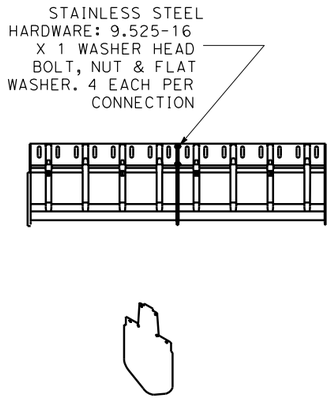
2007 CCO

EA 0A531

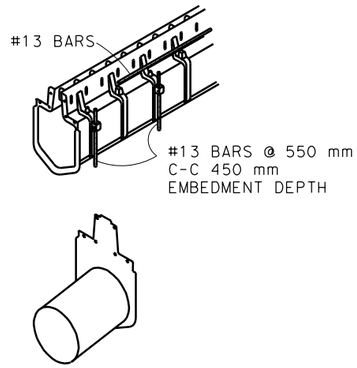


MINIMUM FLOW AREA = 0.159 m°2

SPLD

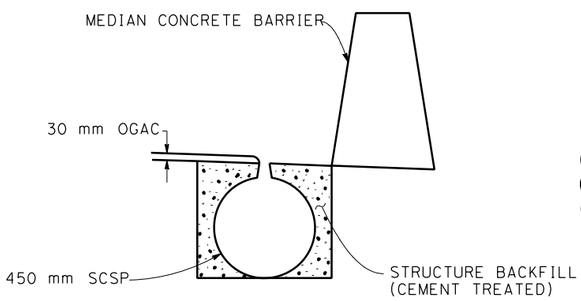


END CAP



PLASTIC 300 mm OUTLET

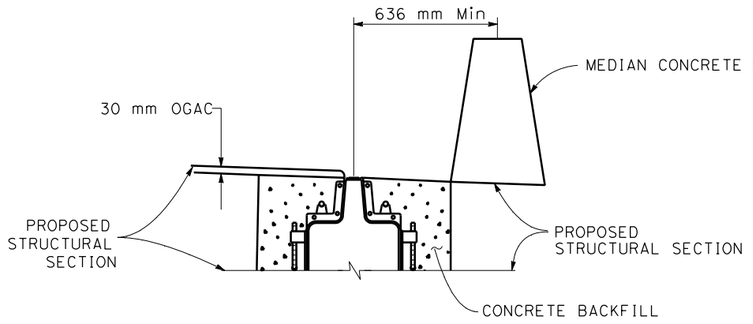
SLOTTED PLASTIC LINE DRAIN (SPLD)



SCSP OPTION

NOTES:

1. TOP OF SCSP BEARING BAR TO BE FLUSH WITH BOTTOM OF OGAC LAYER.
2. INSTALLATION ADJACENT TO MEDIAN CONCRETE BARRIER SHOWN. SIMILAR WHEN INSTALLED ADJACENT TO AC DIKE (TYPE F) UNDER DTBB *OR ADJACENT TO EXISTING TYPE 50 CONCRETE BARRIER.*
3. FOR SCSP DETAILS NOT SHOWN, SEE STANDARD PLANS D98A AND B.
4. TRENCH SHAPE REQUIRED AS SHOWN.



SPLD OPTION

NOTES:

1. TOP OF GRATE OF SPLD TO BE FLUSH WITH BOTTOM OF OGAC LAYER.
2. INSTALLATION ADJACENT TO MEDIAN CONCRETE BARRIER SHOWN. SIMILAR WHEN INSTALLED ADJACENT TO AC DIKE (TYPE F) UNDER DTBB *OR ADJACENT TO EXISTING TYPE 50 CONCRETE BARRIER.*

INSTALLATION OF ASP

DIST	COUNTY	ROUTE	KILOMETERS POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	18.3/32.3	170	537

John WM Mountin 8/31/07
REGISTERED CIVIL ENGINEER DATE

12-31-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — JOHN WM MOUNTIN No. 39335 Exp. 12/31/07 CIVIL — STATE OF CALIFORNIA

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SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

John WM Mountin 10/22/08
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER — JOHN WM MOUNTIN No. 39335 Exp. 12/31/09 CIVIL — STATE OF CALIFORNIA

REVISED BY | DATE REVISED
AMY FURTADO | JOHN WM MOUNTIN
CALCULATED-DESIGNED BY | CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR: JOSEPH PETERSON
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DRAINAGE DETAILS

NO SCALE

DD-3

LAST REVISION 00-00-00 | DATE PLOTTED => $DATE | TIME PLOTTED => $TIME

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2007 CCO

EA 0A531

Caltrans Metric

DIST	COUNTY	ROUTE	KILOMETERS POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	18.3/32.3	370	537

Mukhlis A. Lohman 8/31/07
REGISTERED CIVIL ENGINEER DATE

12-31-08
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
M. J. LOHMAN
No. 39727
Exp. 12/31/07
CIVIL
STATE OF CALIFORNIA

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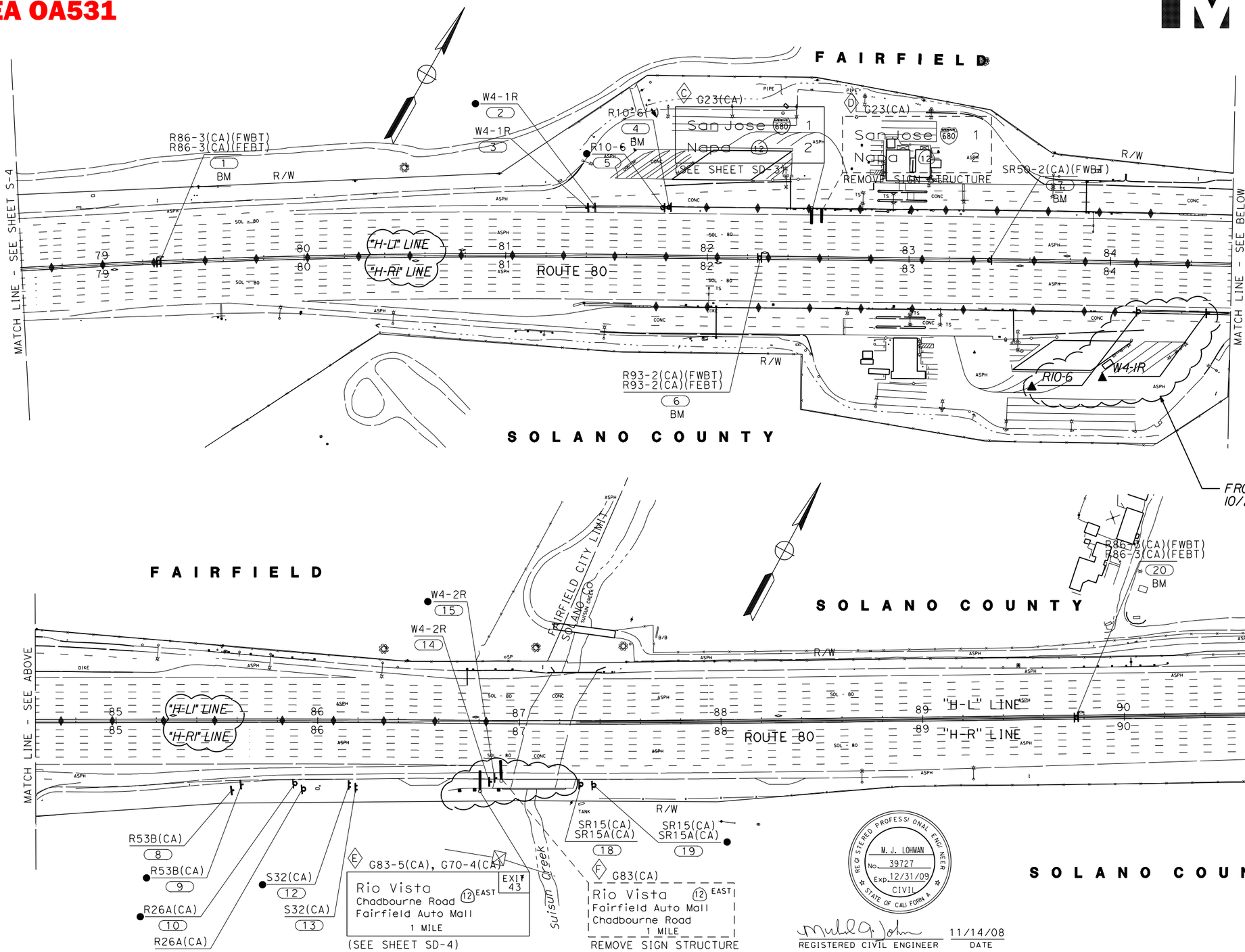

REGISTERED PROFESSIONAL ENGINEER
M. J. LOHMAN
No. 39727
Exp. 12/31/09
CIVIL
STATE OF CALIFORNIA

Mukhlis A. Lohman 11/14/08
REGISTERED CIVIL ENGINEER DATE

SIGN PLAN

SCALE: 1:1000

S-5

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

REVISED BY	DATE REVISED
HUEY TRUONG	KARSTEN ADAM

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR: RONI BOUKHALIL

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION | DATE PLOTTED => $DATE
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DGN FILE => $REQUEST

CU 04264

EA 0A531I

INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2-5	LAYOUTS
6	TEMPORARY WATER POLLUTION CONTROL PLAN, DETAILS AND QUANTITIES
7-9	EROSION CONTROL PLAN, DETAILS AND QUANTITIES
10-13	UTILITY PLANS
14-17	STAGE CONSTRUCTION PLANS
18-20	CONSTRUCTION AREA SIGNS
21	SUMMARY OF QUANTITIES
STRUCTURE PLANS	
22	GENERAL PLAN
23-35	ELECTRICAL PLANS
36-37	SIGN PLANS
38-40	LOG OF TEST BORINGS

THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO CONTRACTORS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

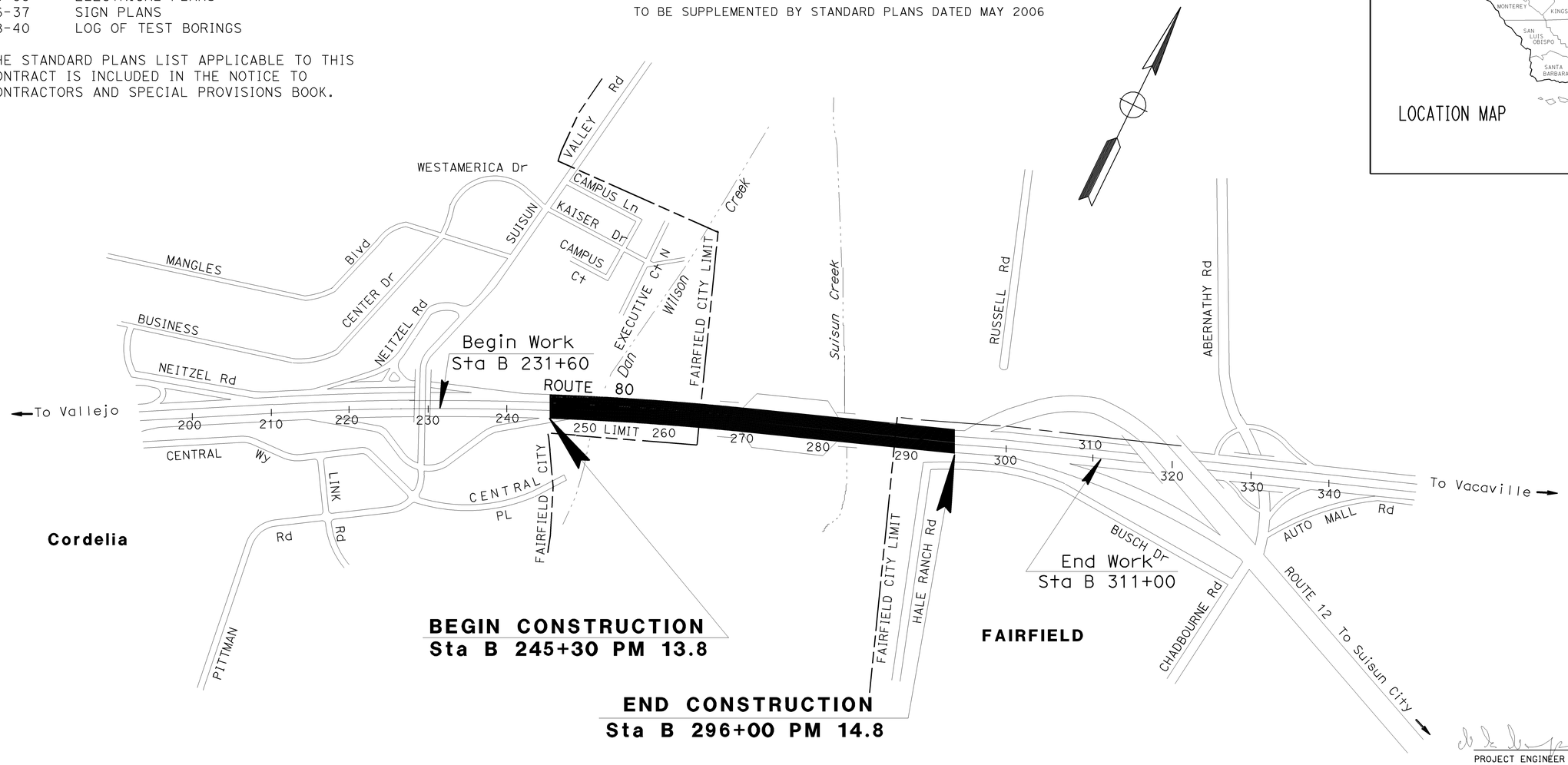
STATE HIGHWAY

IN SOLANO COUNTY
IN AND NEAR FAIRFIELD
FROM 0.3 MILE EAST OF SUISUN VALLEY ROAD TO 1.3 MILES EAST OF SUISUN VALLEY ROAD

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	13.8/14.8	1	40

LOCATION MAP



NO SCALE

PROJECT MANAGER: JERRY P. MA

DESIGN ENGINEER: NARASINGA M. NAGAR

PROJECT ENGINEER
REGISTERED CIVIL ENGINEER — DATE 3-3-08

Narasinga Rao M. Nagar
No. 26012
Exp. 3-31-2010
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

May 12, 2008
PLANS APPROVAL DATE

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THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO CONTRACTORS."

CONTRACT No. 04-3A8104

LAST REVISION 05-09-08 | DATE PLOTTED => 19-MAY-2008 | TIME PLOTTED => 11:14

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	13.8/14.8	2	40

3-3-08
REGISTERED CIVIL ENGINEER DATE

5-12-08
PLANS APPROVAL DATE

Narasinga Rao M. Nagar No. 26012 Exp. 3-31-10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

ABBREVIATION

AFTS	ALTERNATIVE FLARED TERMINAL SYSTEM
WSMS	WEIGHT STATION MESSAGE SIGN
SP	STANDARD PLAN

TABLE A
EB EXISTING PAVEMENT STRUCTURE SECTION

LOCATION	AC	AB	CTB	AS
	FT	FT	FT	FT
R† "B" 240+83 TO 267+02	1.80			0.50
R† "B" 267+02 TO 270+80	0.60	0.50		1.27
R† "B" 270+80 TO 272+10	0.45		0.70	

TABLE B
WB EXISTING PAVEMENT STRUCTURE SECTION

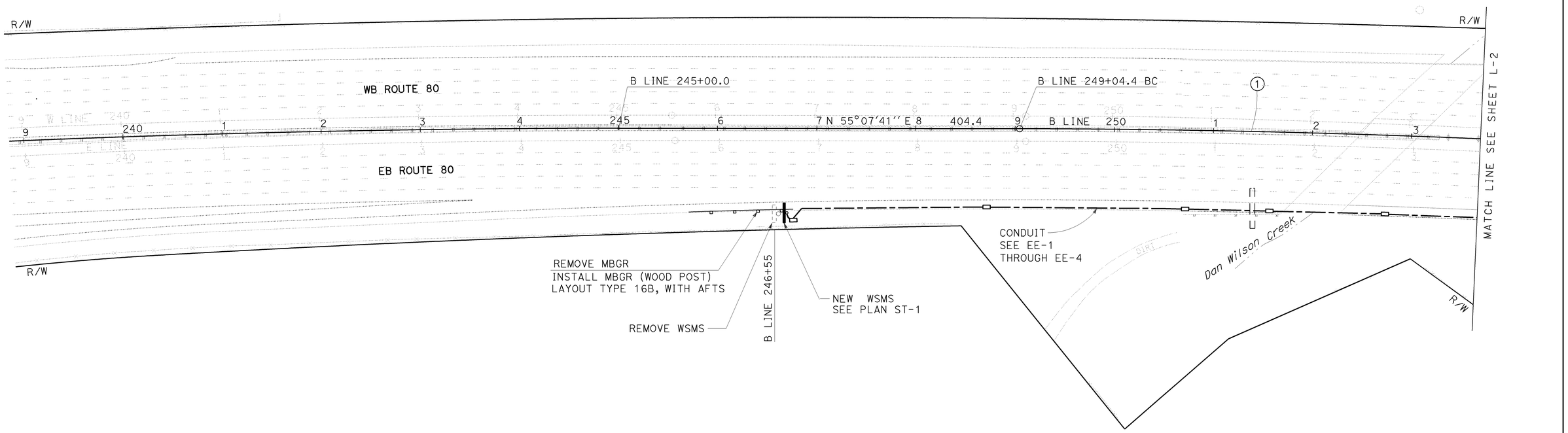
LOCATION	AC	AB	CTB	AS
	FT	FT	FT	FT
L† "B" 272+32 TO 274+30	0.45		0.70	
L† "B" 275+80 TO 278+23	0.60	0.50		1.27
L† "B" 278+23 TO 294+63	1.80			0.50
L† "B" 294+63 TO 296+10	0.60	0.50		1.27

LEGEND

EXISTING GATE

CURVE DATA

No.	R	Δ	T	L	N-COORDINATE	E-COORDINATE
①	11482.80	2° 26′ 00″	243.872	487.671	1834731.894	6532674.996



NOTE:

THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UNDERGROUNG UTILITIES IN AND AROUND THE THE AREA PRIOR TO THE START OF THE WORK FOR INSTALLING METAL BEAM GUARD RAILING FOR WSMS SIGN.

LAYOUT
SCALE 1" = 50′

L-1

REVISED BY | DATE REVISED
NARASINGA RAO M NAGAR | JIMMY CHAO
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: HALIM MATHKOUR
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

LAST REVISION | DATE PLOTTED => 28-MAY-2008
04-18-08 | TIME PLOTTED => 07:24

FOR COMPLETE RIGHT OF WAY AND
ACCURATE ACCESS DATA, SEE RIGHT OF
WAY RECORD MAPS AT DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	13.8/14.8	3	40

3-3-08
REGISTERED CIVIL ENGINEER DATE

5-12-08
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Narasinga Rao M. Nagar
No. 26012
Exp. 3-31-10
CIVIL
STATE OF CALIFORNIA

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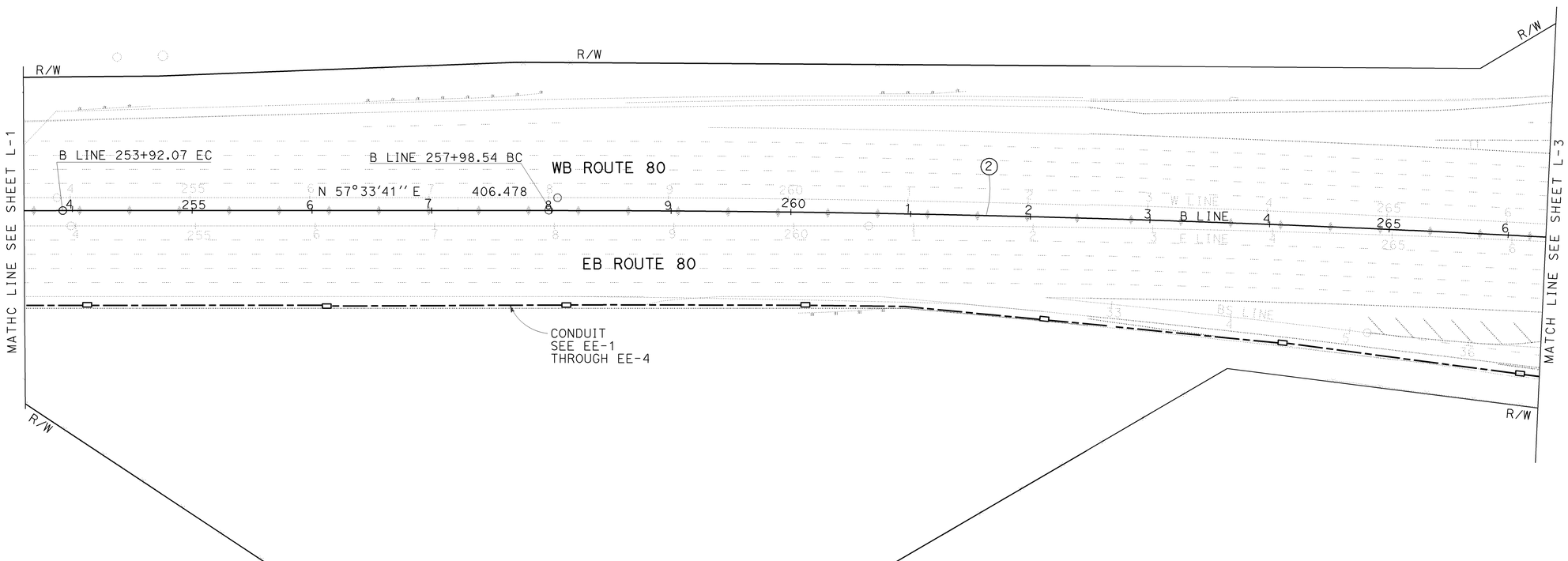
CURVE DATA

No.	R	Δ	T	L	N-COORDINATE	E-COORDINATE
②	15419.76	3° 34′ 15″	480.657	961.003	1844898.849	6527264.384



FOR NOTES, ABBREVIATIONS
&/OR LEGEND, SEE SHEET L-1

LAYOUT
SCALE 1" = 50′

L-2

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY: NARASINGA RAO M NAGAR
CHECKED BY: JIMMY CHAO
FUNCTIONAL SUPERVISOR: HALIM MATHKOUR
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

LAST REVISION 02-29-08
DATE PLOTTED => 28-MAY-2008
TIME PLOTTED => 07:24

BORDER LAST REVISED 3/1/2007
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
USERNAME => trmnguye
DGN FILE => 43a810ea002.dgn
CU 04247
EA 3A8101

FOR COMPLETE RIGHT OF WAY AND
ACCURATE ACCESS DATA, SEE RIGHT OF
WAY RECORD MAPS AT DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	13.8/14.8	4	40

3-3-08
REGISTERED CIVIL ENGINEER DATE

5-12-08
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Narasinga Rao M. Nagar
No. 26012
Exp. 3-31-10
CIVIL
STATE OF CALIFORNIA

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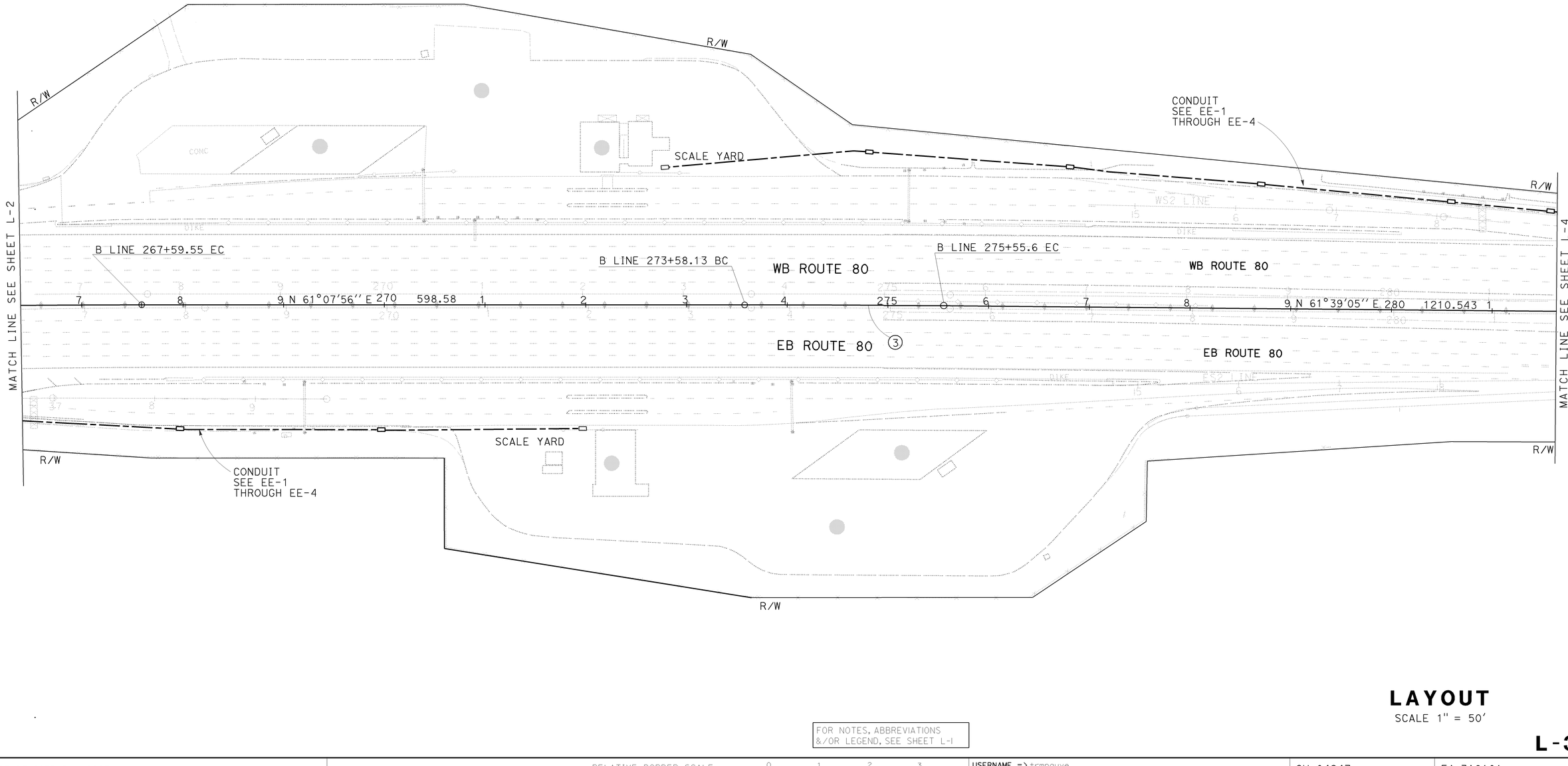
CURVE DATA

No.	R	Δ	T	L	N-COORDINATE	E-COORDINATE
③	21793.04	0° 31′ 09″	98.73	197.47	1826334.941	6538730.977



FOR NOTES, ABBREVIATIONS
&/OR LEGEND, SEE SHEET L-1

LAYOUT

SCALE 1" = 50'

L-3

CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
NARASINGA RAO M NAGAR
JIMMY CHAO
FUNCTIONAL SUPERVISOR
HALIM MATHKOUR
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

LAST REVISION | DATE PLOTTED => 28-MAY-2008
03-03-08 | TIME PLOTTED => 10:28

BORDER LAST REVISED 3/1/2007
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
USERNAME => trmnguye
DGN FILE => 43a810ea003.dgn
CU 04247
EA 3A8101

FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

NOTES

1. UTILITIES SHOWN ARE EXISTING. LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR.
2. SEE ELECTRICAL PLANS FOR EXISTING CALTRANS ELECTRICAL LINES.
3. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES WHERE WORK IS TO BE DONE OVER THE EXISTING UTILITIES.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	13.8/14.8	10	40

3-3-08
REGISTERED CIVIL ENGINEER DATE

5-12-08
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Narasinga Rao M. Nagar
No. 26012
Exp. 3-31-10
CIVIL
STATE OF CALIFORNIA

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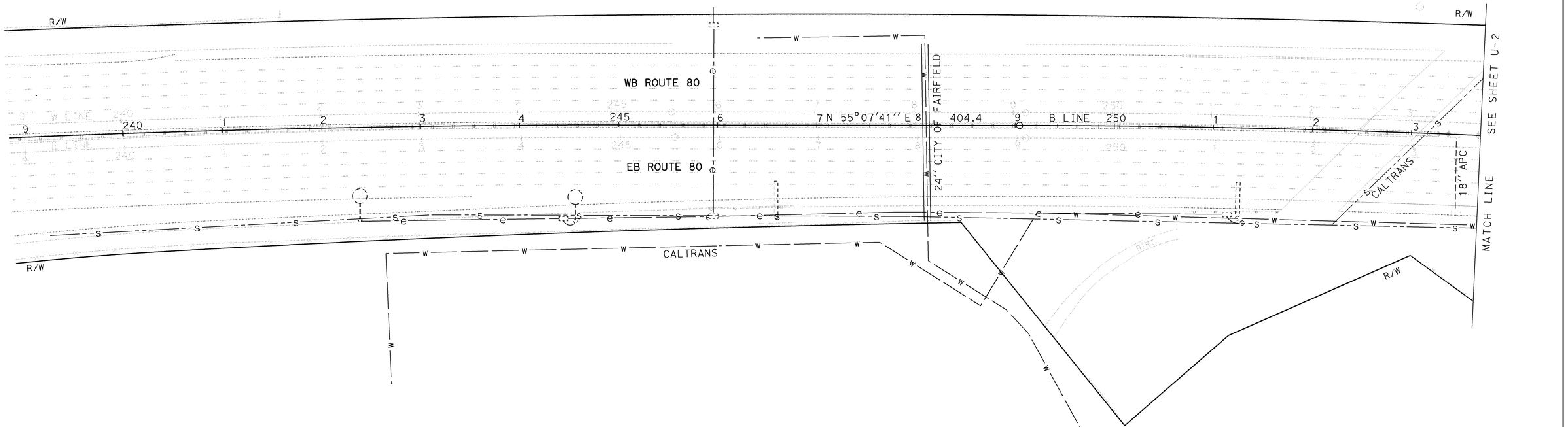

UTILITY PLAN

SCALE 1" = 50'

This Plan Accurate for Utility Information Only

U-1

NARASINGA RAD M. NAGAR — CALCULATED-DESIGNED BY
MIGUEL CORDIS — CHECKED BY
HALIM MATHKOUR — FUNCTIONAL SUPERVISOR
REVISED BY
DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

LAST REVISION DATE PLOTTED => 23-MAY-2008
04-28-08 TIME PLOTTED => 17:36

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => trphils
DGN FILE => 43a810ka001.dgn

CU 04247

EA 3A8101

FOR COMPLETE RIGHT OF WAY AND
ACCURATE ACCESS DATA, SEE RIGHT OF
WAY RECORD MAPS AT DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	13.8/14.8	11	40

3-3-08
REGISTERED CIVIL ENGINEER DATE

Narasinga Rao M. Nagar
No. 26012
Exp 3-31-10
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

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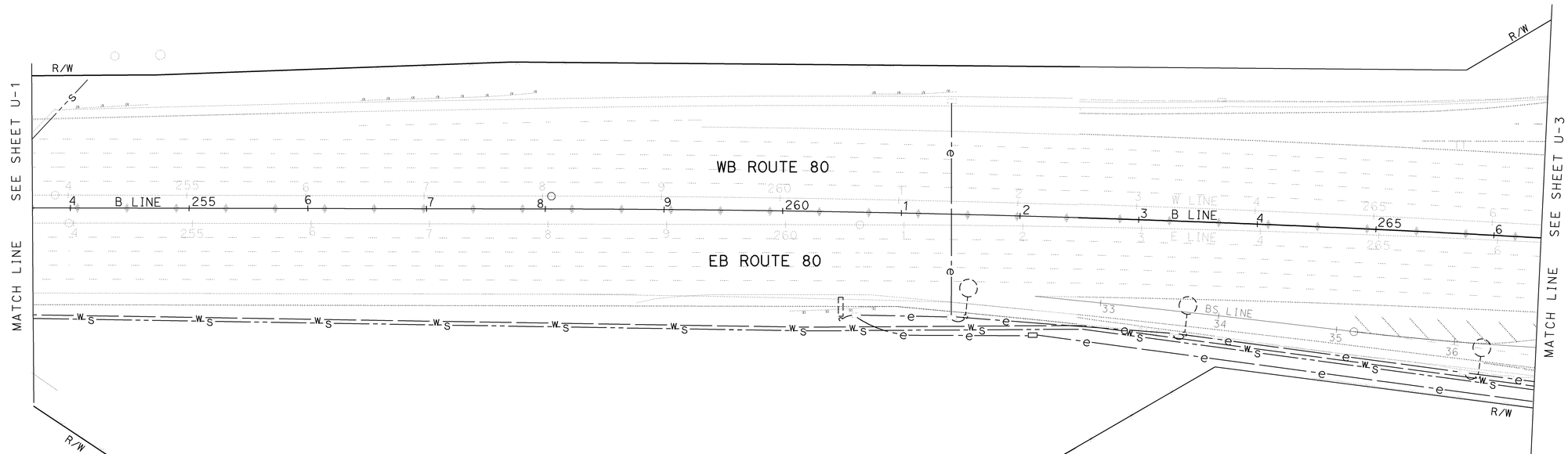

FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET U-1

This Plan Accurate for Utility Information Only

UTILITY PLAN

SCALE 1'' = 50'

U-2

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY | NARASHINGA RAD M. NAGAR
CHECKED BY | MIGUEL CORDIS
FUNCTIONAL SUPERVISOR | HALIM MATHKOUR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

LAST REVISION | DATE PLOTTED => 23-MAY-2008
TIME PLOTTED => 17:36
10-25-08

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => trphils
DGN FILE => 43a810ka002.dgn

CU 04247

EA 3A8101

FOR COMPLETE RIGHT OF WAY AND
ACCURATE ACCESS DATA, SEE RIGHT OF
WAY RECORD MAPS AT DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	13.8/14.8	12	40

3-3-08
REGISTERED CIVIL ENGINEER DATE

5-12-08
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Narasinga Rao M. Nagar
No. 26012
Exp. 3-31-10
CIVIL
STATE OF CALIFORNIA

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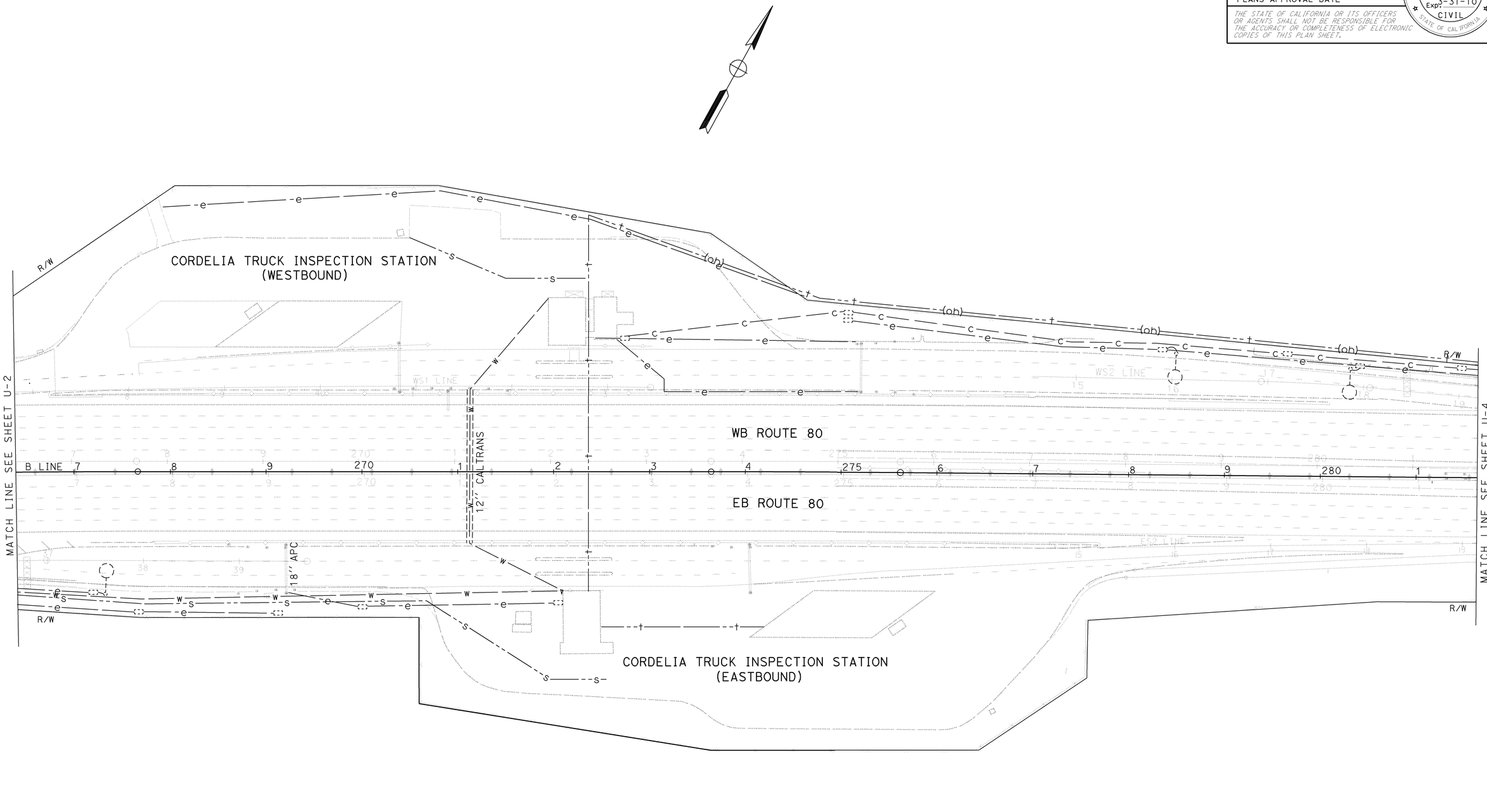

FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET U-1

This Plan Accurate for Utility Information Only

UTILITY PLAN

SCALE 1" = 50'

U-3

REVISED BY | DATE REVISED
NARASINGA RAO M. NAGAR | MIGUEL CORDIS
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: HALIM MATHKOUR
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

LAST REVISION | DATE PLOTTED => 23-MAY-2008
02-27-08 | TIME PLOTTED => 17:36

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => trphils
DGN FILE => 43q810kq003.dgn

CU 04247

EA 3A8101

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	22	40

REGISTERED ELECTRICAL ENGINEER — 04-21-08 DATE

REGISTERED PROFESSIONAL ENGINEER — BEATRICE BINDU — No. E 17240 — Exp. 6-30-10 — ELEC — STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

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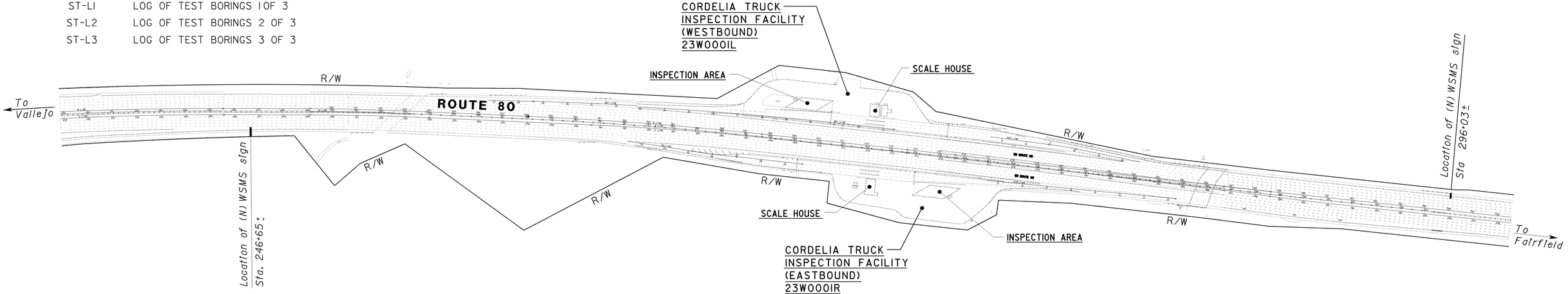
INDEX OF SHEETS

SHEET NO.	DESCRIPTION
GP	GENERAL PLAN
ELECTRICAL	
EE-0	LEGEND
EE-1	EXISTING SITE PLAN
EE-2	MODIFIED SITE PLAN NO. 1
EE-3	MODIFIED SITE PLAN NO. 2
EE-4	MODIFIED SITE PLAN NO. 3
EE-5	MODIFIED SITE PLAN NO. 4
EE-6	EXISTING SCALE HOUSE AND DETAILS
EE-7	MODIFIED SCALE HOUSE AND DETAILS
EE-8	MODIFIED SCHEMATIC DIAGRAMS - WESTBOUND
EE-9	MODIFIED SCHEMATIC DIAGRAMS - EASTBOUND
EE-10	DETAILS - EASTBOUND AND WESTBOUND
EE-11	WESTBOUND & EASTBOUND EXISTING SCHEMATIC & WIRING DIAGRAMS
EE-12	EXISTING SCHEMATIC DIAGRAM - EASTBOUND
STRUCTURAL	
ST-1	WEIGH STATION MESSAGE SIGN SITE PLAN
ST-2	WEIGH STATION MESSAGE SIGN
ST-L1	LOG OF TEST BORINGS 1 OF 3
ST-L2	LOG OF TEST BORINGS 2 OF 3
ST-L3	LOG OF TEST BORINGS 3 OF 3



PLAN

SCALE 1" = 200'-0"

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY.

DESIGN SUPERVISOR Mark Cheap
DESIGN ENGINEER

	BY	CHECKED
DESIGN	Beatrice Bindu	Mark Cheap
DETAILS	Kathi Andreasen	Beatrice Bindu
QUANTITIES	Beatrice Bindu	Mark Cheap

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

CU 04383
EA 3A8101

BRIDGE NO. 23W0001R/L
POST MILE 13.8/14.8

CORDELIA TRUCK INSPECTION FACILITIES
REPLACE WEIGH STATION MESSAGE SIGNS
GENERAL PLAN

SHEET GP

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 7/25/07 | 9/24/07 | 12/24/07 | 1/29/08 | 4/21/08

SHEET OF

19-MAY-2008 09:46

ee_gp.dgn

GRAPHIC SYMBOLS FOR ELECTRICAL WIRING AND LAYOUT DIAGRAMS

SYMBOL	DESCRIPTION
S	SINGLE POLE SWITCH
S_2	DOUBLE POLE SWITCH
S_3	THREE WAY SWITCH
S_4	FOUR WAY SWITCH
S_D	AUTOMATIC DOOR
S_K	KEY OPERATED SWITCH
S_P	SWITCH AND PILOT LIGHT
S_{MC}	MOMENTARY CONTACT SWITCH
S_{RC}	REMOTE CONTROL SWITCH
S_{WP}	WEATHERPROOF SWITCH
S_F	FAN SWITCH
S_L	LIGHT SWITCH
S_H	HEATER SWITCH
S_{VS}	VARIABLE SPEED MOTOR CONTROL SWITCH
S_{CHLF}	TWO SWITCHES, ONE SWITCH FOR LIGHT AND FAN AND TIMER SWITCH FOR HEAT LAMP
S_M	MOTION SENSOR SWITCH
S_T	MANUAL MOTOR STARTING SWITCH, THERMAL OVERLOAD TYPE
S_{HP}	MANUAL MOTOR STARTING SWITCH, WITHOUT OVERLOAD ELEMENT
T_S	TIMER SWITCH
	RADIO OUTLET
	TELEPHONE OUTLET
	SOUND SYSTEM LOUD SPEAKER OUTLET
	PUSHBUTTON
L	PUSHBUTTON STATION, NC, WITH LOCKING DEVICE FOR OPEN
	PUSHBUTTON STATION MOTOR CONTROL
	FLUSH-MOUNTED PANELBOARD AND CABINET
	SURFACE-MOUNTED PANELBOARD AND CABINET
	LIGHTING PANEL
	POWER PANEL
	COMBINATION LIGHTING AND POWER
MC	MOTOR CONTROLLER
	DISCONNECT SWITCH
	CONDUIT CONCEALED IN CEILING OR WALL
	CONDUIT CONCEALED IN FLOOR
	CONDUIT EXPOSED
	CROSS-LINES INDICATE NUMBER OF #12 AWG CONDUCTORS. LONGER CROSS-LINE INDICATES 1#12 AWG (G) FOR EQUIPMENT GROUNDING CONDUCTOR. NO CROSS-LINE INDICATES 2#12 WITH 1#12 (G) UNLESS OTHERWISE NOTED. ALL CONDUIT SHALL BE ½" UNLESS OTHERWISE NOTED.
A1, A2	HOMERUN TO PANELBOARD, ARROWS INDICATE NUMBER OF CIRCUITS, LETTER DENOTES PANEL-BOARD, NUMERAL DENOTES CIRCUIT.
SM	SURFACE METAL RACEWAY

(2) ½"C, PVC, 2#12
- CONDUCTOR INFO (PER CONDUIT)
- CONDUIT TYPE
- CONDUIT SIZE
- NUMBER OF CONDUITS (NO NUMBER INDICATES ONE CONDUIT)

MC	CONDUIT, METALLIC UNDERGROUND
PVC	CONDUIT, POLYVINYL CHLORIDE, UNDERGROUND
	CONDUIT, FLEXIBLE
	CONDUIT, TURN UP
	CONDUIT, TURN DOWN
	CONDUIT SEAL, EXPLOSION-PROOF
X	CONDUIT, EXPANSION JOINT
	ADAPTER, ONE TYPE CONDUIT TO ANOTHER
	PULL BOX-LETTER INDICATES TYPE OF PULL BOX (E-ELECTRICAL, T-TELEPHONE, R-RADIO)
(T)	PULL BOX (TRAFFIC RATED)-LETTER INDICATES TYPE OF PULL BOX (E-ELECTRICAL, T-TELEPHONE, R-RADIO)

SYMBOL	DESCRIPTION
A / EE-2	SECTION/ELEVATION LETTER; SHEET NUMBER
1 / EE-2	DETAIL NUMBER; SHEET NUMBER

REMODEL WORK

SYMBOL	DESCRIPTION
−E−E−	EXISTING CONDUIT AND CONDUCTORS-TO REMAIN UNLESS OTHERWISE NOTED
−✕✕−	EXISTING CONDUIT AND CONDUCTORS-REMOVE
S	EXISTING SWITCH-TO REMAIN
✕	EXISTING SWITCH-REMOVE
J	EXISTING JUNCTION BOX-TO REMAIN
✕	EXISTING JUNCTION BOX-REMOVE

STANDARD NOTES

AB	ABANDON, IF APPLIED TO CONDUIT, REMOVE CONDUCTORS.
BC	INSTALL PULL BOX IN EXISTING CONDUIT RUN.
CB	INSTALL CONDUIT INTO EXISTING PULL BOX.
CC	CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED.
CF	CONDUIT TO REMAIN FOR FUTURE USE. REMOVE CONDUCTORS, INSTALL PULL ROPE AND PLUG.
FA	REMOVE FOUNDATION ABOVE GRADE AND ABANDON FOUNDATION BELOW GRADE.
RL	RELOCATE EQUIPMENT.
RLD	RELOCATED EQUIPMENT.
SC	SPLICE NEW TO EXISTING CONDUCTORS.

STANDARD PLANS APPLICABLE

DATED MAY, 2006

- ES-8
- ES-13A
- S48
- S49

GRAPHIC SYMBOLS FOR ELECTRICAL DIAGRAMS

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER, SINGLE POLE
	CIRCUIT BREAKER, DOUBLE POLE
	CIRCUIT BREAKER, THREE POLE
GFCI	CIRCUIT BREAKER, WITH GROUND FAULT CIRCUIT INTERRUPTER
	CONTACT, NORMALLY OPEN
	CONTACT, NORMALLY CLOSED
	CONTACT, NORMALLY CLOSED, TIME DELAY CLOSING ON DE-ENERGIZING
	CONTACT, NORMALLY OPEN, TIME DELAY OPENING ON DE-ENERGIZING
	CONTACT,NORMALLY OPEN, TIME DELAY CLOSING ON ENERGIZING
	CONTACT, NORMALLY CLOSED, TIME DELAY OPENING ON ENERGIZING
	CONTACT, SINGLE POLE DOUBLE-THROW
	OPERATING COIL
	LIQUID LEVEL ACTUATED SWITCH, NORMALLY CLOSED
	LIQUID LEVEL ACTUATED SWITCH, NORMALLY OPEN
	PRESSURE ACTUATED SWITCH, NORMALLY CLOSED
	PRESSURE ACTUATED SWITCH, NORMALLY OPEN
	FLOW ACTUATED SWITCH, NORMALLY CLOSED
	FLOW ACTUATED SWITCH, NORMALLY OPEN
	TEMPERATURE ACTUATED SWITCH, NORMALLY CLOSED
	TEMPERATURE ACTUATED SWITCH, NORMALLY OPEN
	LIMIT SWITCH, NORMALLY CLOSED
	LIMIT SWITCH, NORMALLY OPEN
	PUSHBUTTON SWITCH, NORMALLY CLOSED
	PUSHBUTTON SWITCH, NORMALLY OPEN
	SWITCH, SINGLE-POLE
	SWITCH, SINGLE-POLE, DOUBLE-THROW
	SWITCH, DOUBLE-POLE
	SWITCH, DOUBLE-POLE, DOUBLE-THROW
	SWITCH, SINGLE-POLE, 3-POSITION
	THERMAL OVERLOAD
	FUSE
	RESISTOR
	VARIABLE RESISTOR
	TRANSFORMER WINDING
	GROUNDING ELECTRODE
	ENCLOSURE BOND
A	PILOT LIGHT (A=AMBER, G=GREEN, R=RED)
G	GENERATOR
M	MOTOR
F	FAN MOTOR

PROJECT NOTES

A. SEPARATE GROUNDED (NEUTRAL) CONDUCTOR SHALL BE USED FOR EACH 120-VOLT CIRCUIT.

B. HOMERUNS TO PANELBOARDS SHALL BE INSTALLED AS SHOWN ON THE PLANS. HOMERUNS SHALL NOT BE COMBINED.

C. A SINGLE INSULATED EQUIPMENT GROUNDING CONDUCTOR (SIZED AS REQUIRED) SHALL BE INSTALLED IN EACH CONDUIT RUN.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	23	40

Beatrice Bindu — 04-21-08
REGISTERED ELECTRICAL ENGINEER — DATE

REGISTERED PROFESSIONAL ENGINEER — BEATRICE BINDU — No. E 17240 — Exp. 6-30-10 — ELEC — STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

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ABBREVIATIONS

A	AMPERES
AI	ANALOG INPUT
AL	ALARM LIGHT
AO	ANALOG OUTPUT
BD	BUILDING DISCONNECT
BRK	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CMS	CHANGEABLE MESSAGE SIGN
CR	CONTROL RELAY
CSW	CURRENT SWITCH
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
DP	DUPLEX PLUG RECEPTACLE
DS	DOOR SWITCH
(E)	EXISTING
F	FUSE
FL	FAILURE LIGHT
FLA	FLASHER
FLEX	FLEXIBLE CONDUIT
FLS	FLOW SWITCH
FR	FAILURE RESET
G	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GRS	GALVANIZED RIGID STEEL
IR	INDUCTION RELAY
JB	JUNCTION BOX
L	LIGHT
LC	LIGHTING CONTACTOR
LCP	LIGHTING CONTROL PANEL
LD	LIGHT DISCONNECT
LL	LIQUID LEVEL RELAY
LLC	LIQUID LEVEL CONTROLLER
LP	LIGHT PANEL
LS	LIGHT SWITCH
LT	LIGHT TRANSFORMER
LTO	LIGHT TRANSFORMER OVERLOAD
MB	MAIN BREAKER
MC	METALLIC CONDUIT
MCP	MOTOR CIRCUIT PROTECTOR
MD	MAIN DISCONNECT
MSB	MAIN SWITCHBOARD
MT	EMPTY CONDUIT
(N)	NEW
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NO.	NUMBER
NSW	NEUTRAL SWITCHING BREAKER
OL	OVERLOAD
P	POLE
PB	PULL BOX
PB	PUSHBUTTON
PD	POWER DISCONNECT
PFR	PHASE FAILURE RELAY
PFRD	PHASE FAILURE RELAY DISCONNECT
PEC	PHOTOELECTRIC CELL
PL	PILOT LIGHT
PS	PRESSURE SWITCH
PTS	POWER TRANSFER SWITCH
PVC	POLYVINYL CHLORIDE
RES	RESISTOR
RTB	RADIO TERMINAL BOARD
S	STARTER COIL
SD	SERVICE DISCONNECT
SFR	SEAL FAILURE RELAY
SL	SUMP LIGHT
SPR	STANDBY POWER RECEPTACLE
SS	SELECTOR SWITCH
ST	STARTER
SV	SOLENOID VALVE
T	TRANSFORMER
TB	TERMINAL BLOCK
TDR	TIME DELAY RELAY
TGLS	TOGGLE SWITCH
TM	TIME METER
TOT	TOTAL
TS	TIMER SWITCH
TSW	TEST SWITCH
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UPS	UNINTERRUPTIBLE POWER SUPPLY
WLS	WATER LEVEL SWITCH
WP	WEATHERPROOF
WSMS	WEIGH STATION MESSAGE SIGN

	BY	CHECKED
DESIGN	Beatrice Bindu	Mark Cheap
DETAILS	Kathi Andreasen	Beatrice Bindu
QUANTITIES	Beatrice Bindu	Mark Cheap

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

BRIDGE NO. 23W0001R/L
POST MILE 13.8/14.8

CORDELIA TRUCK INSPECTION FACILITIES
REPLACE WEIGH STATION MESSAGE SIGNS
LEGEND

SHEET **EE-0**

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04383
EA 3A8101

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 9/14/07 | 11/26/07 | 12/14/07 | 1/29/08 | 4/21/08

SHEET OF

23-MAY-2008 17:38

ee_00.dgn

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	24	40

REGISTERED ELECTRICAL ENGINEER — 04-21-08 DATE

REGISTERED PROFESSIONAL ENGINEER — BEATRICE BINDU — No. E 17240 — Exp. 6-30-10 — ELEC — STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

Notes:

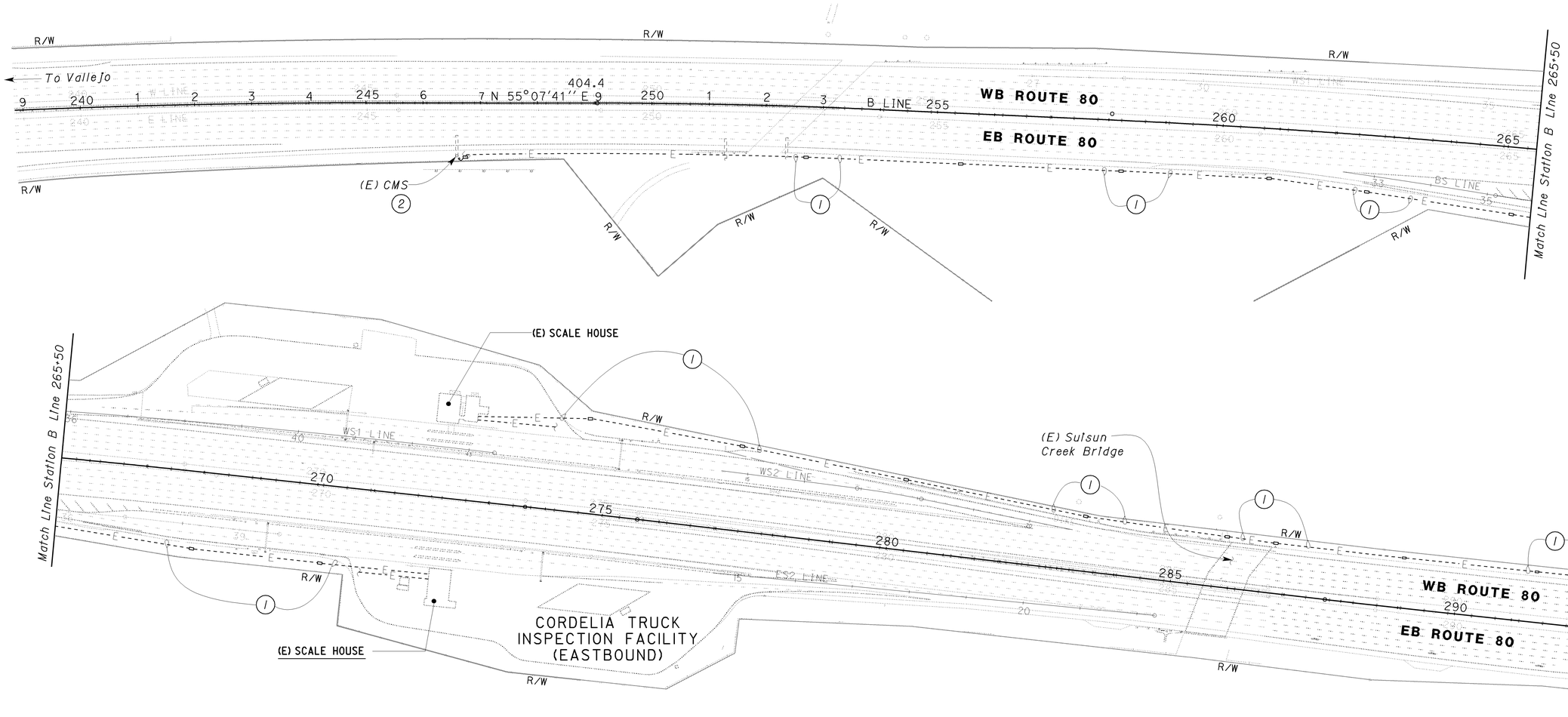
(1) *Existing conduit and conductors to existing Changeable Message Sign. Remove conductors feeding existing sign from Scale House to sign. Abandon underground conduit. Remove pull boxes and exposed conduits.*

(2) *Existing Changeable Message Sign (CMS) is supported by one steel post. Remove sign, post, electrical control cabinet, associated conduits and conductors.*

General Notes:

A. *Not all existing conduits are shown. The Contractor shall verify the exact location of all existing conduits.*

B. *The location of all conduits and pull boxes shown are approximate only. The actual location shall be verified in the field by the Contractor.*



PLAN

SCALE 1" = 100'-0"

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY.

	BY	CHECKED
DESIGN	Beatrice Bindu	Mark Cheap
DETAILS	Kathi Andreasen	Beatrice Bindu
QUANTITIES	Beatrice Bindu	Mark Cheap

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

CU 04383
EA 3A8101

BRIDGE NO. 23W0001R/L
POST MILE 13.8/14.8

CORDELIA TRUCK INSPECTION FACILITIES
REPLACE WEIGH STATION MESSAGE SIGNS
EXISTING SITE PLAN

SHEET **EE-1**

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)										SHEET	OF
11/15/07	12/14/07	1/25/08	4/21/08								

23-MAY-2008 17:38

ee_01.dgn

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	25	40

Beatrice Bindu
REGISTERED ELECTRICAL ENGINEER — 04-21-08 DATE

REGISTERED PROFESSIONAL ENGINEER
BEATRICE BINDU
No. E 17240
Exp. 6-30-10
ELEC
STATE OF CALIFORNIA

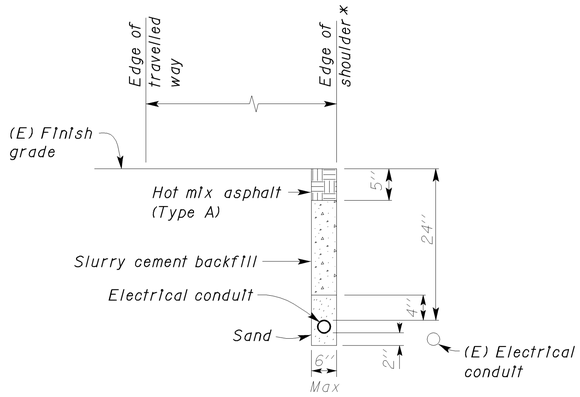
5-12-08
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

General Notes:

A. *Not all existing conduits are shown.*

B. *Contractor shall verify the exact location of existing electrical conduits.*



1 TYPICAL TRENCHING DETAIL

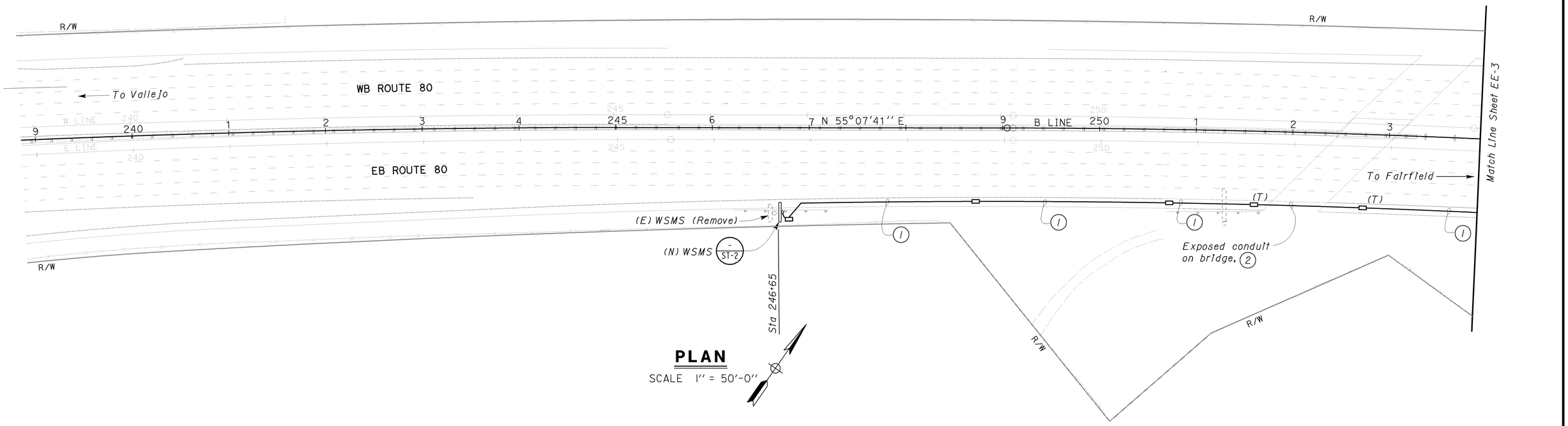
SCALE 1" = 1'-0"

* Edge of shoulder or as directed by the Engineer

Notes:

(1) *2"C, PVC, 2*6, 1*6G (Power), 7*10 (Control), 2*10 (Spare).*

(2) *Use PVC coated metal conduit.*



PLAN

SCALE 1" = 50'-0"

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY.

DESIGN	BY Beatrice Bindu	CHECKED Mark Cheap	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN	BRIDGE NO. 23W0001R/L	CORDELIA TRUCK INSPECTION FACILITIES REPLACE WEIGH STATION MESSAGE SIGNS	SHEET EE-2
DETAILS	BY Kathi Andreasen	CHECKED Beatrice Bindu			POST MILE 13.8/14.8	MODIFIED SITE PLAN NO. 1	
QUANTITIES	BY Beatrice Bindu	CHECKED Mark Cheap		CU 04383 EA 3A8101			

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)										SHEET	OF
5/31/07	6/15/07	6/29/07	8/29/07	9/14/07	10/16/07	11/30/07	12/14/07	1/29/08	4/21/08		

28-MAY-2008 10:29

ee_02.dgn

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	26	40

Beatrice Bindu — REGISTERED ELECTRICAL ENGINEER — 04-21-08 DATE

REGISTERED PROFESSIONAL ENGINEER — BEATRICE BINDU — No. E 17240 — Exp. 6-30-10 — ELEC — STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

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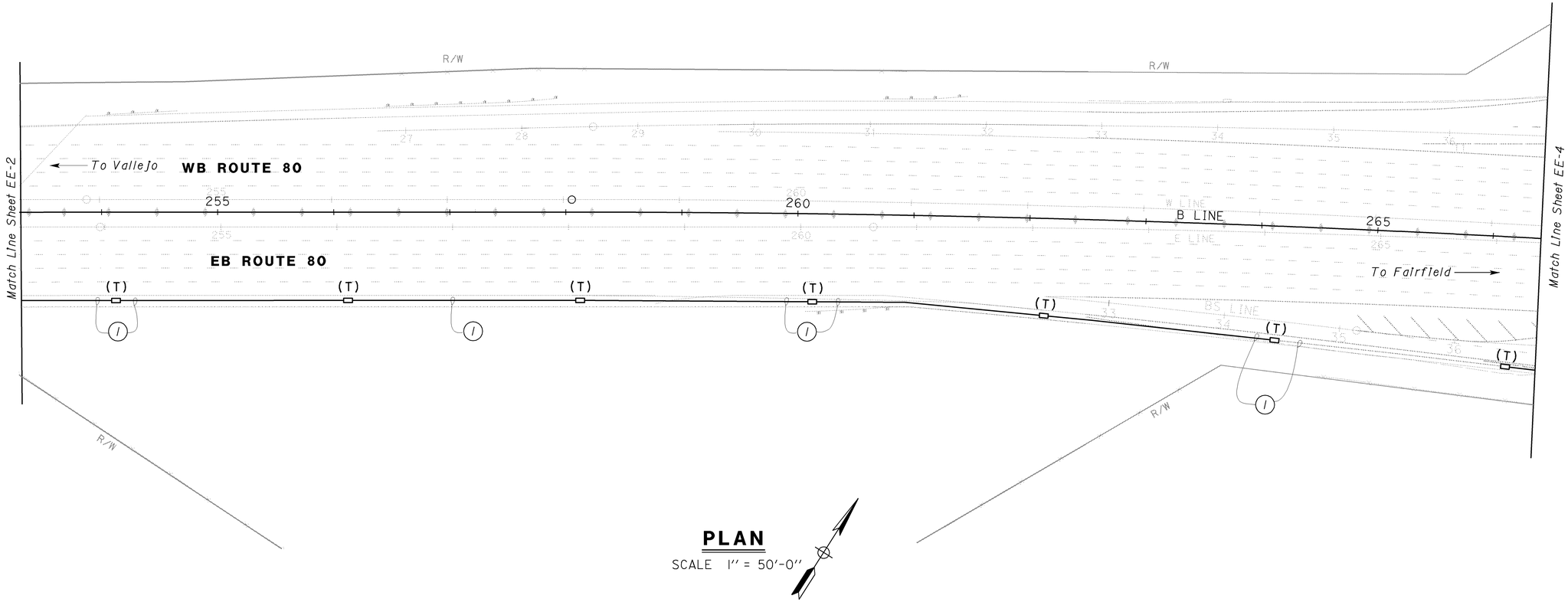
Note:

(1) *2"C, PVC, 2*6, 1*6G (Power), 7*10 (Control), 2*10 (Spare).*



PLAN

SCALE 1" = 50'-0"

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY.

	BY	CHECKED
DESIGN	Beatrice Bindu	Mark Cheap
DETAILS	Kathi Andreasen	Beatrice Bindu
QUANTITIES	Beatrice Bindu	Mark Cheap

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

CU 04383
EA 3A8101

BRIDGE NO. 23W0001R/L
POST MILE 13.8/14.8

CORDELIA TRUCK INSPECTION FACILITIES
REPLACE WEIGH STATION MESSAGE SIGNS
MODIFIED SITE PLAN NO. 2

SHEET **EE-3**

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)								SHEET	OF
5/8/07	6/15/07	6/29/07	9/4/07	11/30/07	12/4/07	1/29/08	4/21/08		

28-MAY-2008 10:29

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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	27	40

REGISTERED ELECTRICAL ENGINEER — 04-21-08 DATE

REGISTERED PROFESSIONAL ENGINEER
BEATRICE BINDU
No. E 17240
Exp. 6-30-10
ELEC
STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

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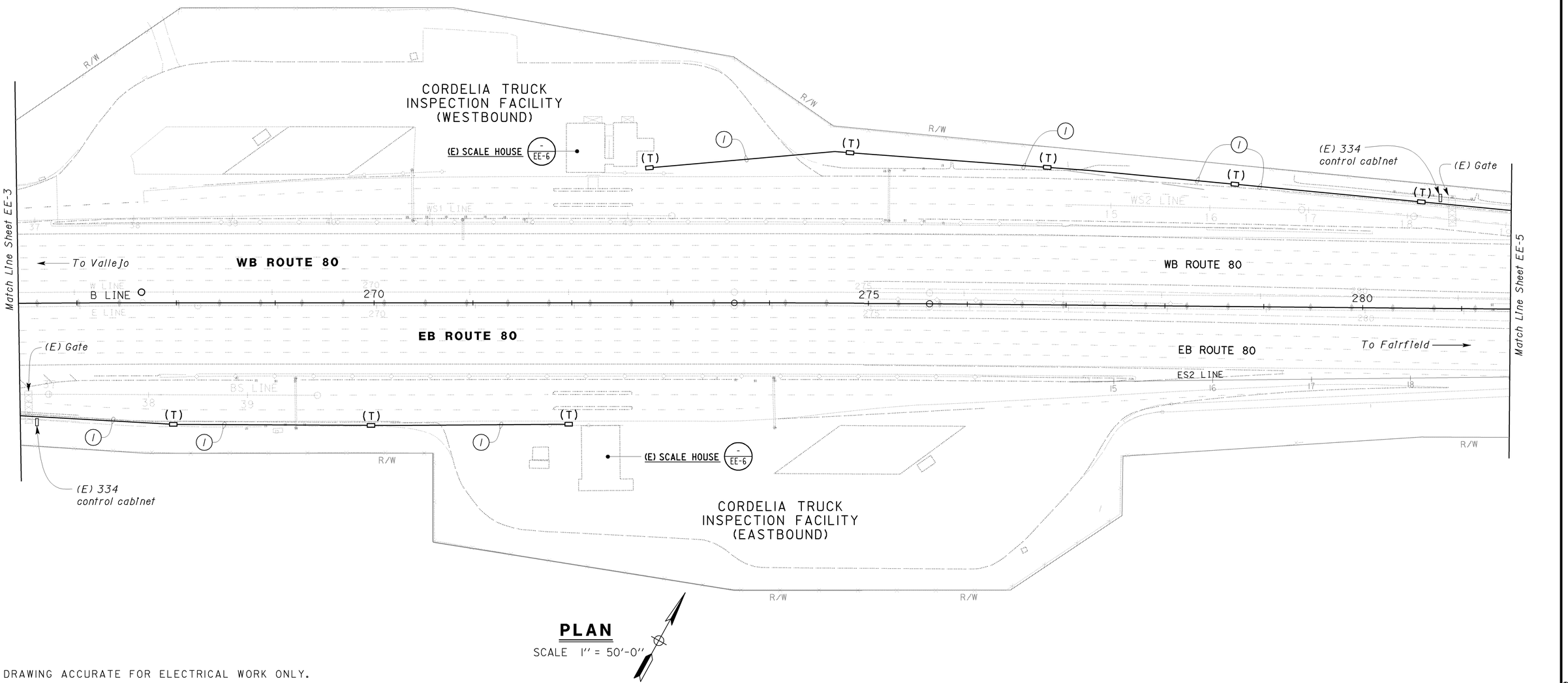
Note:

(1) *2"C, PVC, 2*6, 1*6G (Power), 7*10 (Control), 2*10 (Spare).*



PLAN

SCALE 1" = 50'-0"

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY.

	BY	CHECKED
DESIGN	Beatrice Bindu	Mark Cheap
DETAILS	Kathi Andreasen	Beatrice Bindu
QUANTITIES	Beatrice Bindu	Mark Cheap

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

CU 04383
EA 3A8101

BRIDGE NO. 23W0001R/L
POST MILE 13.8/14.8

CORDELIA TRUCK INSPECTION FACILITIES
REPLACE WEIGH STATION MESSAGE SIGNS

MODIFIED SITE PLAN NO. 3

SHEET EE-4

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 5/31/07 | 6/15/07 | 6/29/07 | 9/14/07 | 11/19/07 | 11/30/07 | 12/14/07 | 1/29/08 | 4/21/08

SHEET OF

28-MAY-2008 10:29

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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	29	40

REGISTERED ELECTRICAL ENGINEER — 04-21-08 DATE

REGISTERED PROFESSIONAL ENGINEER — BEATRICE BINDU — No. E 17240 — Exp. 6-30-10 — ELEC — STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

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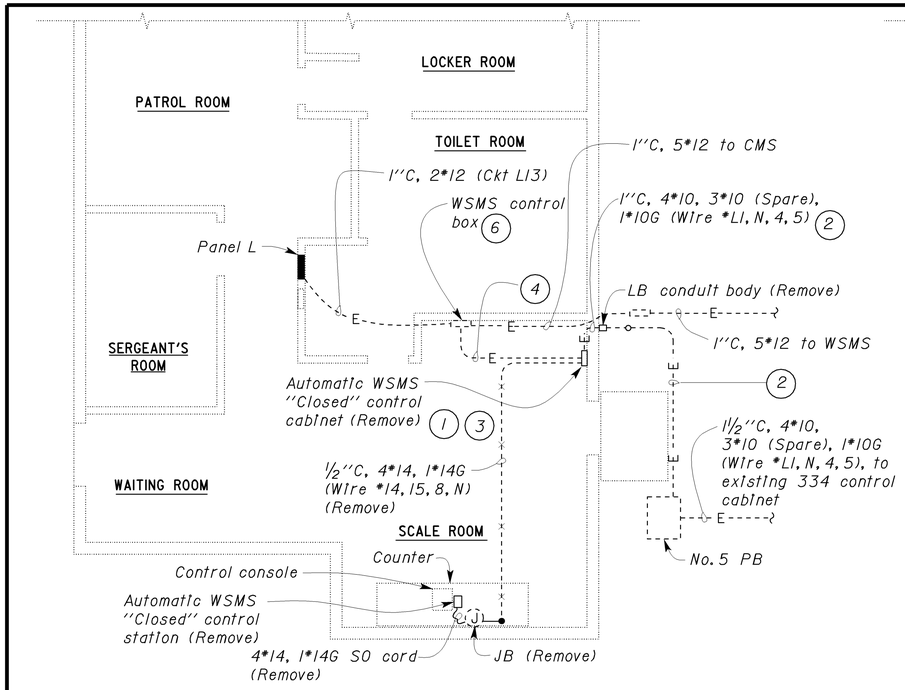
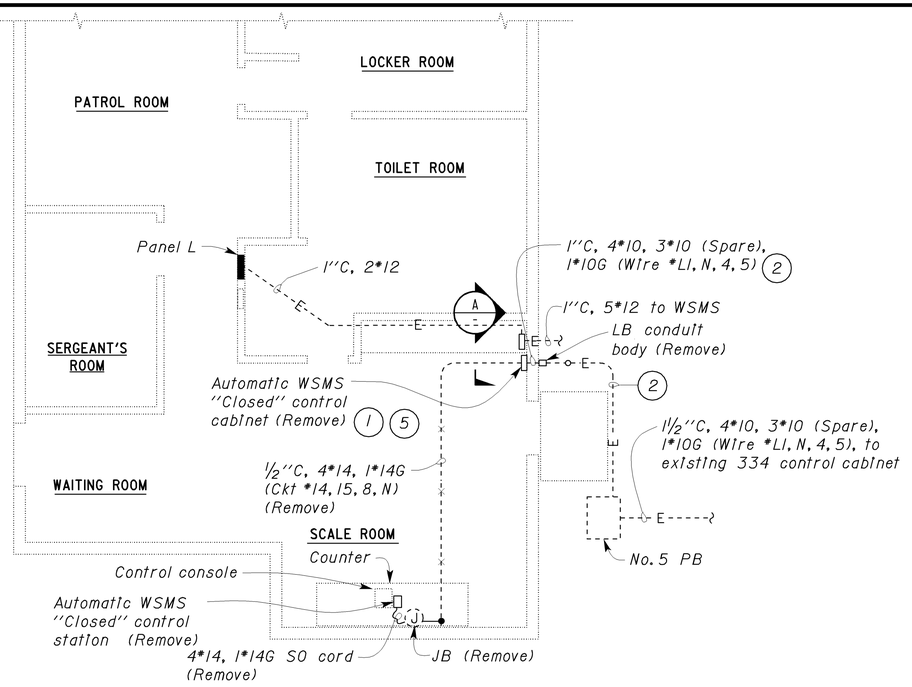


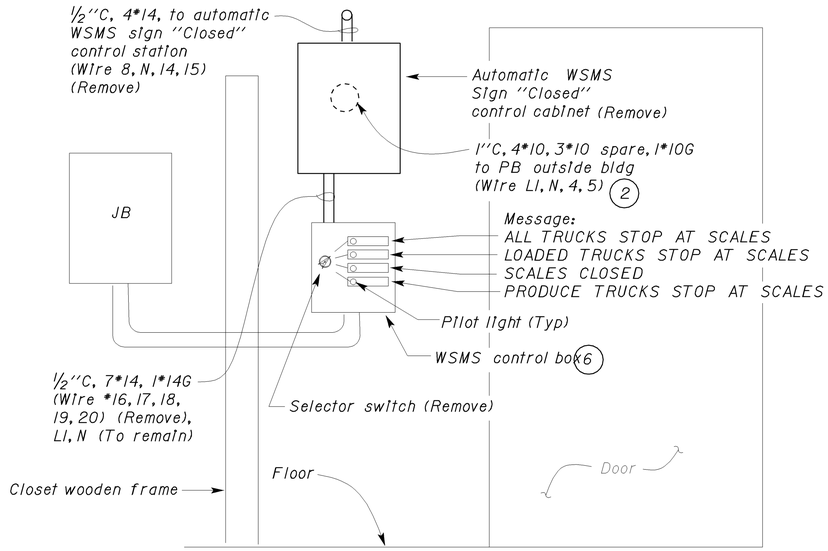
WESTBOUND PARTIAL FLOOR PLAN

SCALE 1/4" = 1'-0"



EASTBOUND PARTIAL FLOOR PLAN

SCALE 1/4" = 1'-0"



EASTBOUND AUTOMATIC WSMS "CLOSED" CONTROL CABINET

(A) ELEVATION

NO SCALE

Notes:

(1) Disconnect and label all conductors before removing the cabinet.

(2) Pull back existing conductors (7*10, 1*10G), to pull box. Remove conduit.

(3) For existing control schematic diagram, see (- / EE-11).

(4) ½" C, 7*12, 1*12G (Wire *12, 13, 14, 15, 16, L1, N). Remove wire *12, 13, 14, 15, 16.

(5) For existing control schematic diagram, see (1 / EE-12).

(6) Box to remain. Remove all electrical equipment from the box. Remove cover.

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY.

DESIGN	BY Beatrice Bindu	CHECKED Mark Cheap	
DETAILS	BY Kathi Andreasen	CHECKED Beatrice Bindu	
QUANTITIES	BY Beatrice Bindu	CHECKED Mark Cheap	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

CU 04383
EA 3A8101

BRIDGE NO. 23W0001R/L
POST MILE 13.8/14.8

CORDELIA TRUCK INSPECTION FACILITIES
REPLACE WEIGH STATION MESSAGE SIGNS
EXISTING SCALE HOUSE AND DETAILS

SHEET EE-6

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 9/15/07 | 12/14/07 | 1/29/08 | 4/21/08

SHEET OF

21-MAY-2008 08:04

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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	30	40

REGISTERED ELECTRICAL ENGINEER — 04-21-08 DATE

REGISTERED PROFESSIONAL ENGINEER — BEATRICE BINDU — No. E 17240 — Exp. 6-30-10 — ELEC — STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

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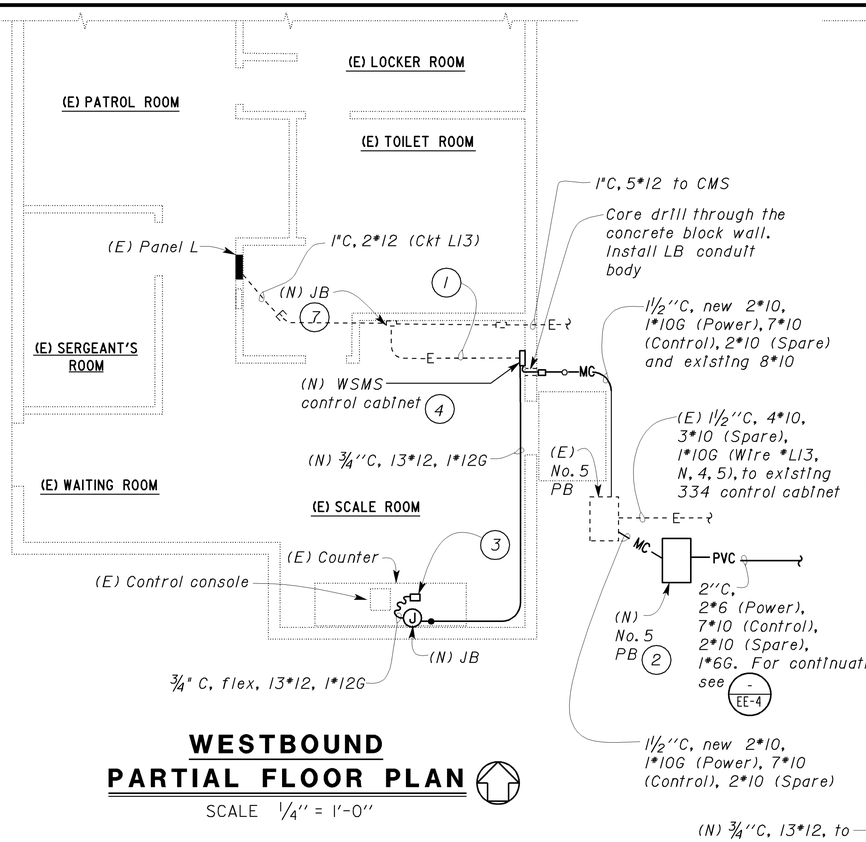
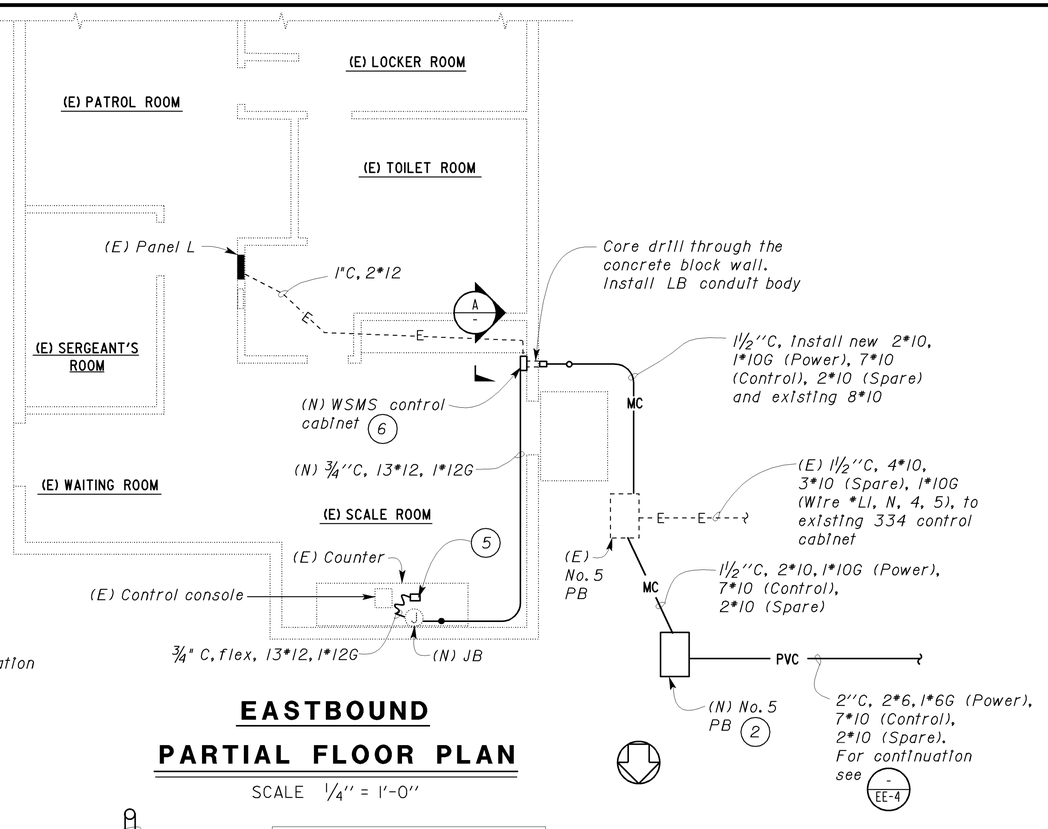


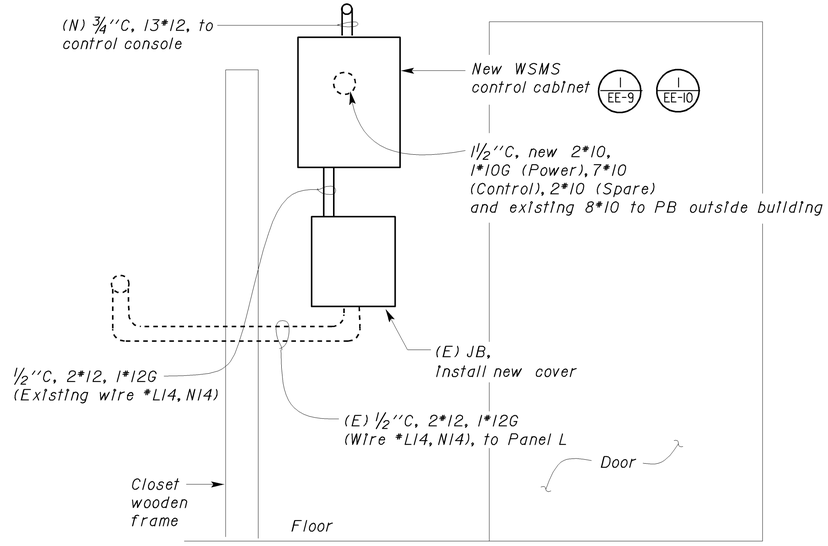
WESTBOUND PARTIAL FLOOR PLAN

SCALE 1/4" = 1'-0"



EASTBOUND PARTIAL FLOOR PLAN

SCALE 1/4" = 1'-0"



NEW WSMS CONTROL CABINET - EASTBOUND

A ELEVATION

Notes:

1. Existing 1½"C, 2*12, 1*12G (Wire *L1, N). Relabel L1, N1 to wire *L13, N13.
2. Install 2*6, 1*6G (Power), In new pull box. Splice 2*10 (Power) to 2*6 and 1*10G to 1*6G. Pull box cover shall read WSMS. This pull box also shown on sheet EE-4 for clarity.
3. Surface mounted WSMS control station on the counter, location as directed by the Engineer. For details see 2/EE-8 and 2/EE-10.
4. WSMS Control Cabinet. For details see 1/EE-8 and 1/EE-10.
5. Surface mounted WSMS Control station. on the counter. Location as directed by the Engineer. For details see 2/EE-9 and 2/EE-10.
6. WSMS Control Cabinet. For details see 1/EE-9 and 1/EE-10.
7. Install new blank cover.

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY.

DESIGN	BY Beatrice Bindu	CHECKED Mark Cheap	
DETAILS	BY Kathi Andreasen	CHECKED Beatrice Bindu	
QUANTITIES	BY Beatrice Bindu	CHECKED Mark Cheap	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

CU 04383
EA 3A8101

BRIDGE NO. 23W0001R/L
POST MILE 13.8/14.8

CORDELIA TRUCK INSPECTION FACILITIES REPLACE WEIGH STATION MESSAGE SIGNS

MODIFIED SCALE HOUSE AND DETAILS

SHEET EE-7

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 9/13/07 | 12/14/07 | 11/29/08 | 4/21/08 | SHEET | OF

19-MAY-2008 10:07

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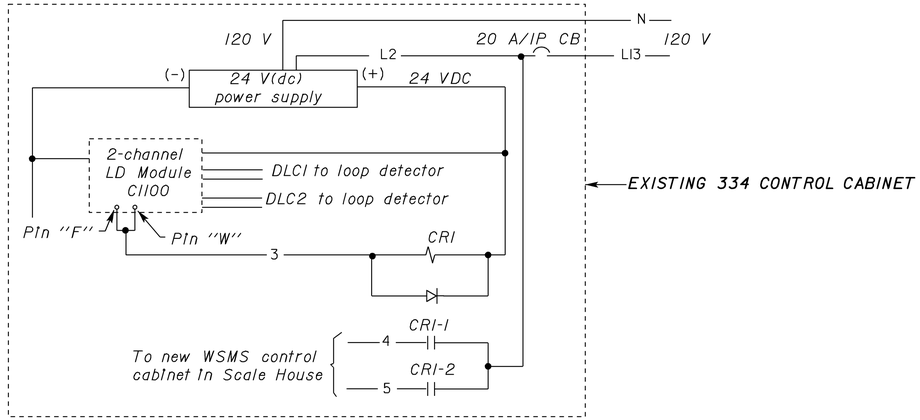
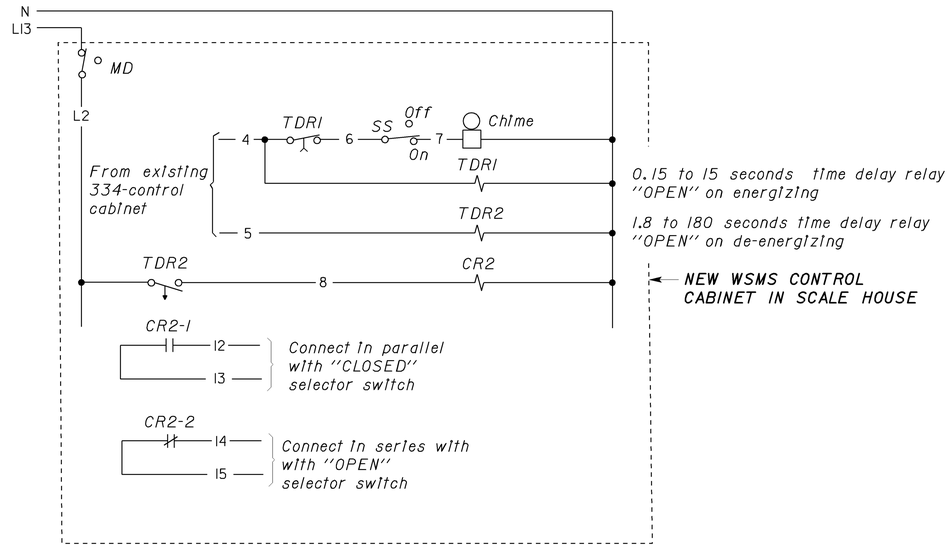
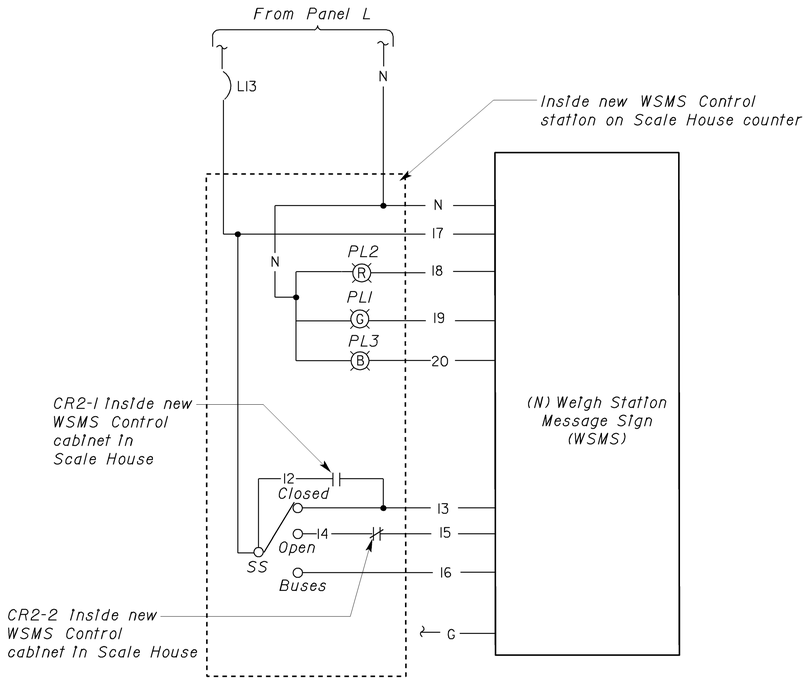




WSMS AUTOMATIC "CLOSED" CONTROL SCHEMATIC DIAGRAM-1



WSMS CONTROL SCHEMATIC DIAGRAM

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	31	40

REGISTERED ELECTRICAL ENGINEER — 04-21-08 DATE

REGISTERED PROFESSIONAL ENGINEER — BEATRICE BINDU — No. E 17240 — Exp. 6-30-10 — ELEC — STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

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DESIGN	BY Beatrice Bindu	CHECKED Mark Cheap
DETAILS	BY Kathi Andreasen	CHECKED Beatrice Bindu
QUANTITIES	BY Beatrice Bindu	CHECKED Mark Cheap

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

CU 04383
EA 3A8101

BRIDGE NO. 23W0001R/L
POST MILE 13.8/14.8

CORDELIA TRUCK INSPECTION FACILITIES
REPLACE WEIGH STATION MESSAGE SIGNS
MODIFIED SCHEMATIC DIAGRAMS - WESTBOUND

SHEET EE-8

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)										SHEET	OF
9/14/07	12/14/07	1/29/08	4/21/08								

21-MAY-2008 08:05

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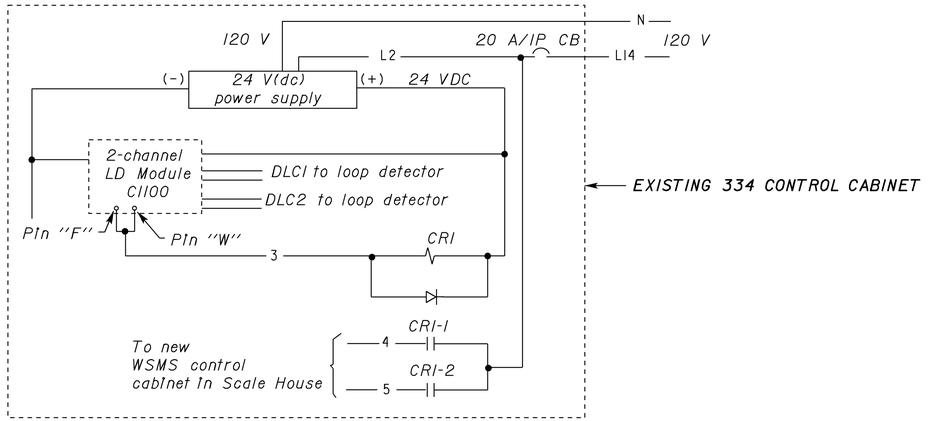
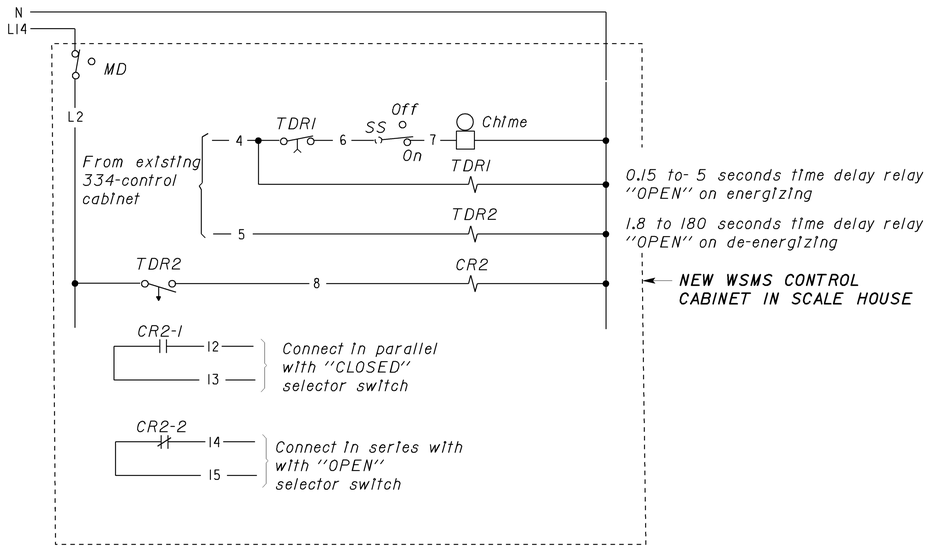
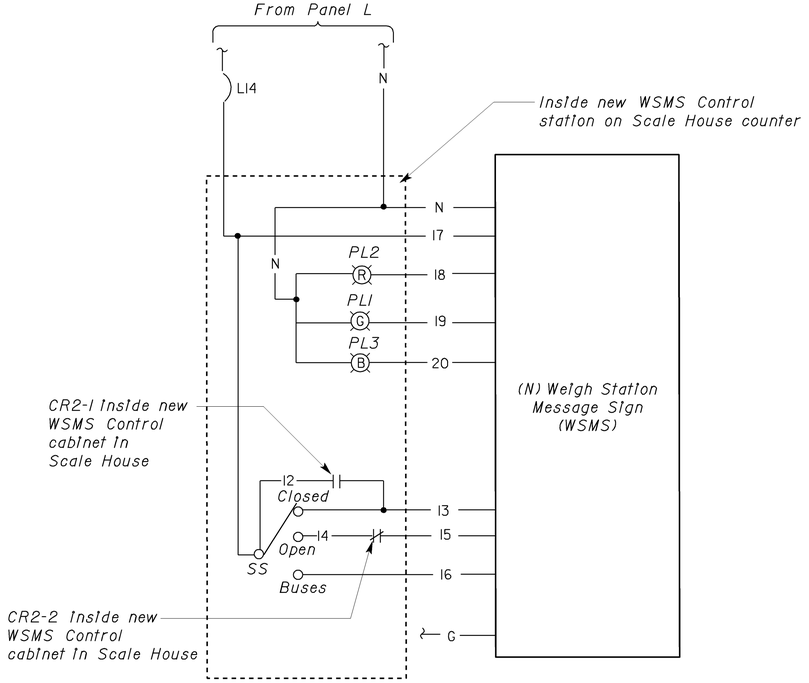




1 WSMS AUTOMATIC "CLOSED" CONTROL SCHEMATIC DIAGRAM



2 WSMS CONTROL SCHEMATIC DIAGRAM

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	32	40

REGISTERED ELECTRICAL ENGINEER — 04-21-08 DATE

REGISTERED PROFESSIONAL ENGINEER — BEATRICE BINDU — No. E 17240 — Exp. 6-30-10 — ELEC — STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

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DESIGN	BY Beatrice Bindu	CHECKED Mark Cheap	
DETAILS	BY Kathi Andreasen	CHECKED Beatrice Bindu	
QUANTITIES	BY Beatrice Bindu	CHECKED Mark Cheap	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

CU 04383
EA 3A8101

BRIDGE NO. 23W0001R/L
POST MILE 13.8/14.8

CORDELIA TRUCK INSPECTION FACILITIES
REPLACE WEIGH STATION MESSAGE SIGNS
MODIFIED SCHEMATIC DIAGRAMS - EASTBOUND

SHEET EE-9

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 9/14/07 | 12/14/07 | 11/29/08 | 4/21/08

SHEET OF

21-MAY-2008 08:05

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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	33	40

REGISTERED ELECTRICAL ENGINEER — 04-21-08 DATE

REGISTERED PROFESSIONAL ENGINEER — BEATRICE BINDU — No. E 17240 — Exp. 6-30-10 — ELEC — STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

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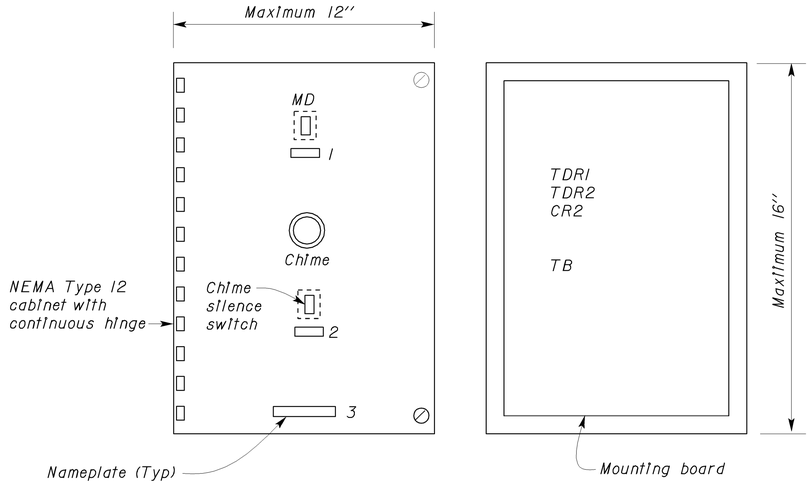
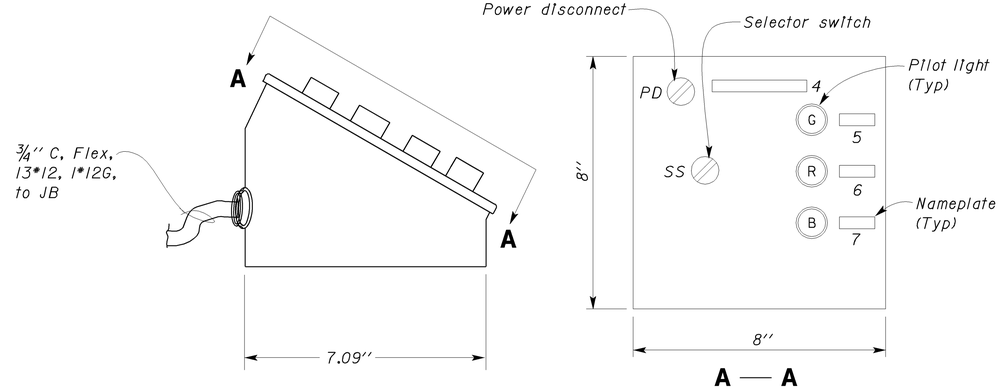
NAMEPLATE SCHEDULE		
ITEM NO.	INSCRIPTION	LETTER HEIGHT
1	POWER ON-OFF	1/4"
2	CHIME ON-OFF	1/4"
3	WSMS CONTROL CABINET	1/4"
4	WSMS CONTROL STATION	1/4"
5	OPEN	1/4"
6	CLOSED	1/4"
7	BUSES	1/4"



EXTERIOR DOOR

WESTBOUND AND EASTBOUND WSMS CONTROL CABINET

(1)



WESTBOUND AND EASTBOUND WSMS CONTROL STATION

(2)

NO SCALE

(Dimensions are approximate only)

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY.

DESIGN	BY Beatrice Bindu	CHECKED Mark Cheap	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
DETAILS	BY Kathi Andreasen	CHECKED Beatrice Bindu	
QUANTITIES	BY Beatrice Bindu	CHECKED Mark Cheap	

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

BRIDGE NO. 23W0001R/L
POST MILE 13.8/14.8

CORDELIA TRUCK INSPECTION FACILITIES REPLACE WEIGH STATION MESSAGE SIGNS

DETAILS - EASTBOUND AND WESTBOUND

SHEET EE-10

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04383
EA 3A8101

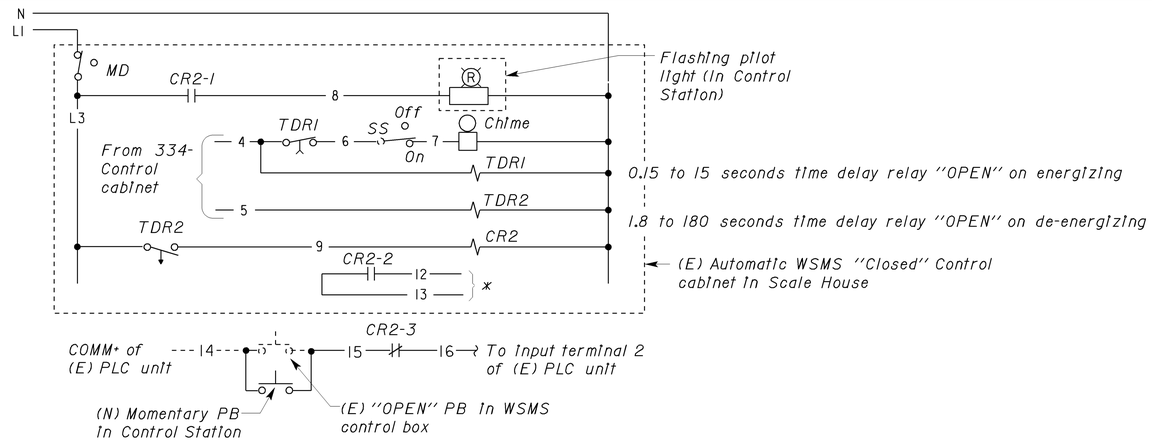
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 9/14/07 | 11/16/07 | 12/14/07 | 1/29/08 | 4/21/08

SHEET OF

19-MAY-2008 10:33

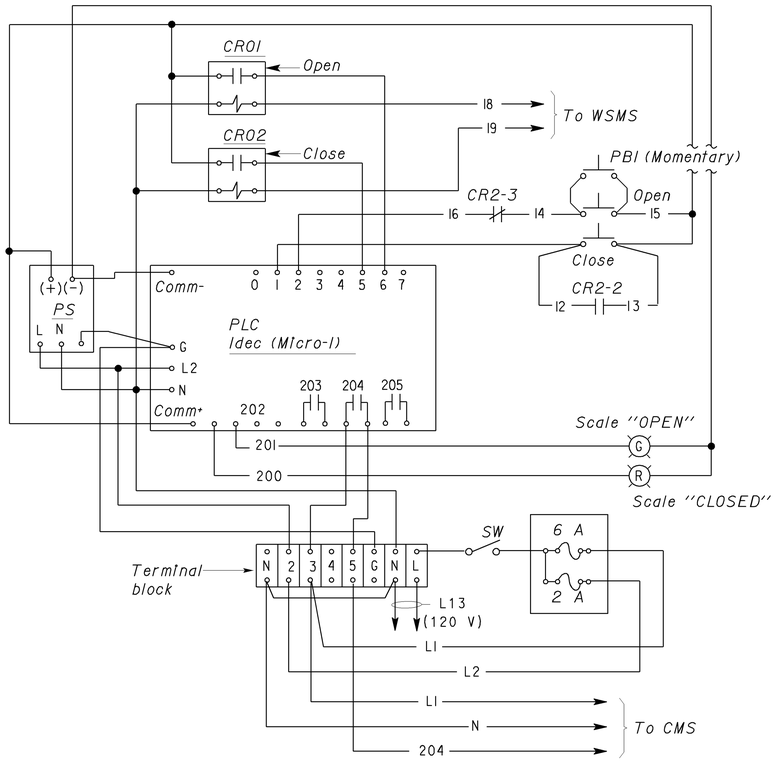
ee_10.dgn



* These two conductors are connected parallel to terminals of the existing weigh station "CLOSED" pushbutton.

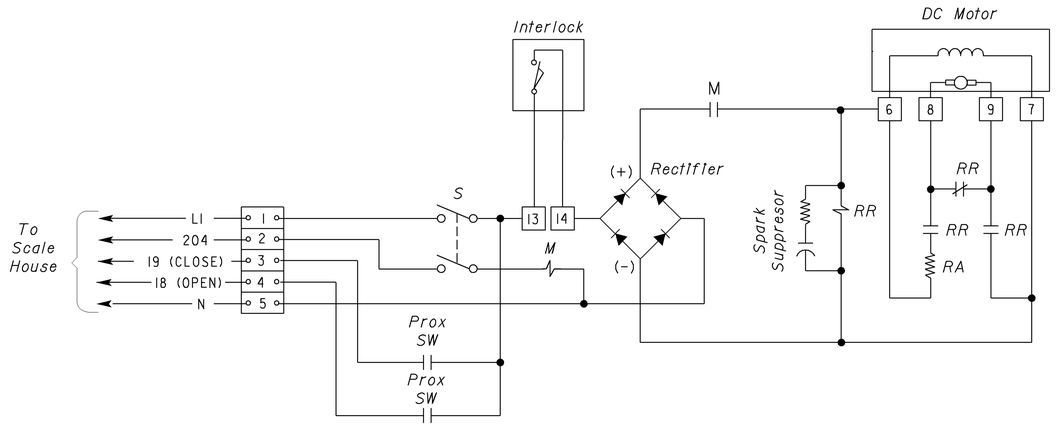
1 AUTOMATIC WSMS "CLOSED" CONTROL CABINET SCHEMATIC DIAGRAM (WESTBOUND)

(FOR INFORMATION ONLY)



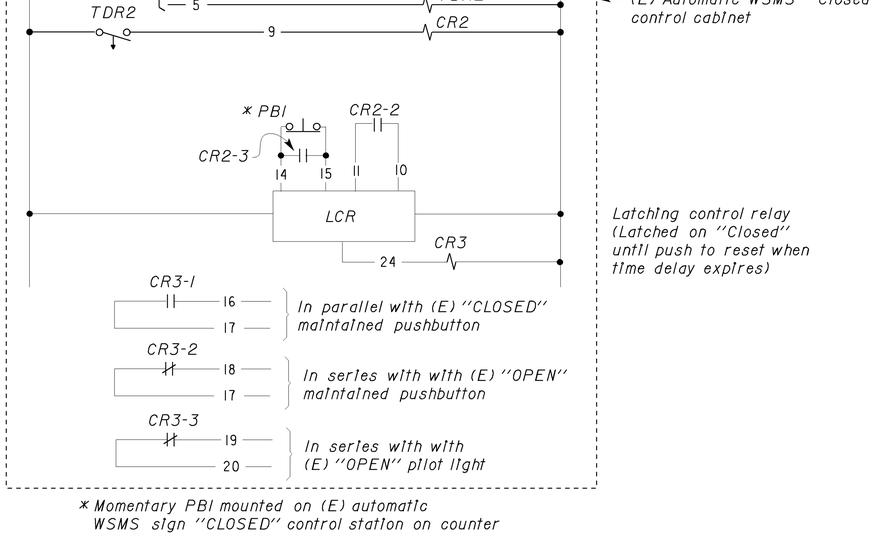
2 WSMS CONTROL BOX WIRING DIAGRAM (WESTBOUND)

(FOR INFORMATION ONLY)



3 WSMS WIRING DIAGRAM (WESTBOUND)

(FOR INFORMATION ONLY)



* Momentary PBI mounted on (E) automatic WSMS sign "CLOSED" control station on counter

4 CONTROL SCHEMATIC DIAGRAM FOR AUTOMATIC WSMS CLOSE (EASTBOUND)

(FOR INFORMATION ONLY)

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	34	40

REGISTERED ELECTRICAL ENGINEER — 04-21-08 DATE

REGISTERED PROFESSIONAL ENGINEER — BEATRICE BINDU — No. E 17240 — Exp. 6-30-10 — ELEC — STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

DESIGN	BY Beatrice Bindu	CHECKED Mark Cheap	
DETAILS	BY Kathi Andreasen	CHECKED Beatrice Bindu	
QUANTITIES	BY Beatrice Bindu	CHECKED Mark Cheap	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

CU 04383
EA 3A8101

BRIDGE NO. 23W0001R/L
POST MILE 13.8/14.8

CORDELIA TRUCK INSPECTION FACILITIES REPLACE WEIGH STATION MESSAGE SIGNS

WESTBOUND & EASTBOUND EXISTING SCHEMATIC & WIRING DIAGRAMS

SHEET EE-11

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)						SHEET	OF
6/29/07	9/15/07	12/14/07	1/29/08	4/21/08			

19-MAY-2008 10:33

ee_11.dgn

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	35	40

REGISTERED ELECTRICAL ENGINEER — 04-21-08 DATE

REGISTERED PROFESSIONAL ENGINEER — BEATRICE BINDU — No. E 17240 — Exp. 6-30-10 — ELEC — STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

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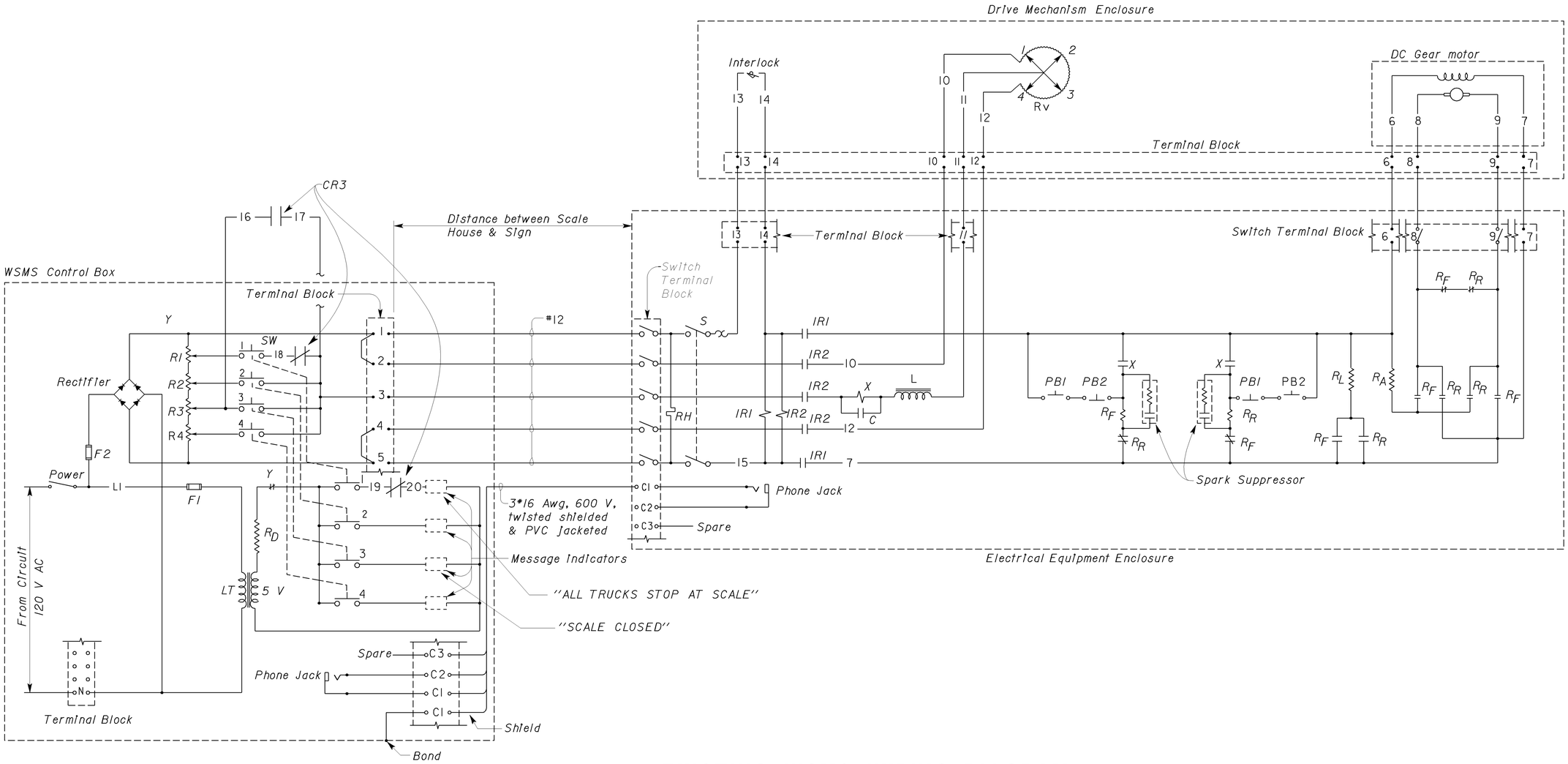
General Note:

Control relay CR3 is in the enclosure for automatic WSMS "CLOSED" control cabinet.



1 EXISTING WSMS WIRING DIAGRAM

(FOR INFORMATION ONLY)

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY.

	BY	CHECKED
DESIGN	Beatrice Bindu	Mark Cheap
DETAILS	Kathi Andreasen	Beatrice Bindu
QUANTITIES	Beatrice Bindu	Mark Cheap

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

BRIDGE NO. 23W0001R/L
POST MILE 13.8/14.8

CORDELIA TRUCK INSPECTION FACILITIES
REPLACE WEIGH STATION MESSAGE SIGNS
EXISTING SCHEMATIC DIAGRAM - EASTBOUND

SHEET **EE-12**

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04383
EA 3A8101

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)				SHEET	OF
9/11/07	12/14/07	1/29/08	4/21/08		

21-MAY-2008 08:05

ee_12.dgn

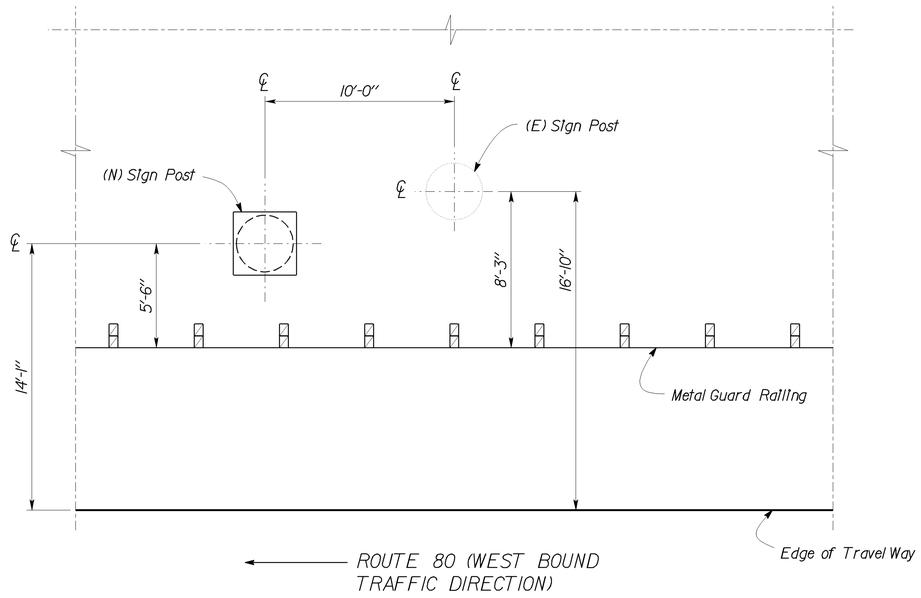
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	36	40

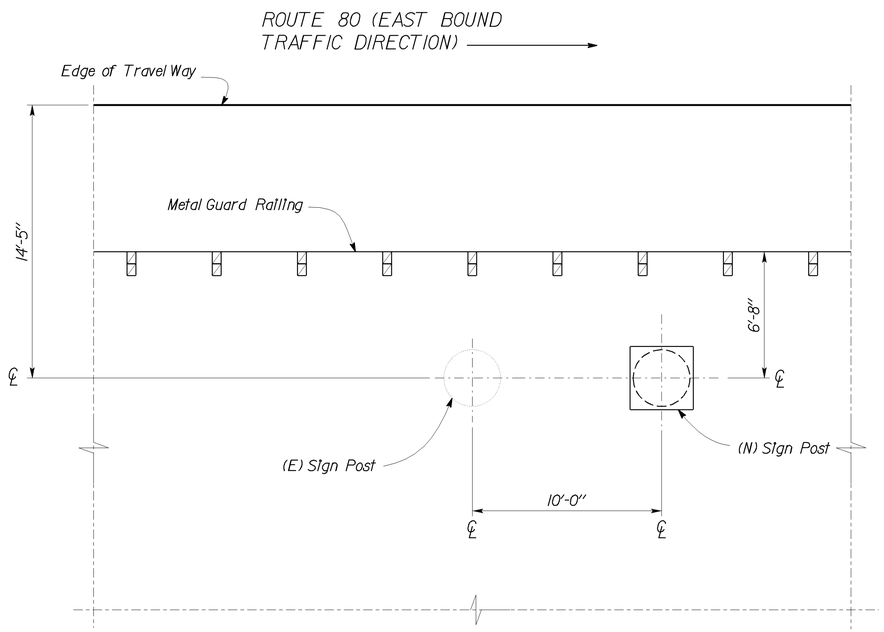
N Bapat — 12-05-07
REGISTERED CIVIL ENGINEER — DATE

REGISTERED PROFESSIONAL ENGINEER
C. N. Bapat
No. 46493
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.





NOTE

The Contractor shall field verify all existing underground utilities in and around the area prior to the start of the work for installing foundation for WSMS sign.

1 SITE PLAN
Scale 1/4" = 1' - 0"

DESIGN	BY Chandra Bapat	CHECKED Thomas Tong	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ARCHITECTURAL AND STRUCTURAL DESIGN	BRIDGE NO. 23W0001R/L	CORDELIA TRUCK INSPECTION FACILITIES REPLACE WEIGH STATION MESSAGE SIGNS	SHEET ST-1
DETAILS	BY Aleksey Serin	CHECKED Chandra Bapat			POST MILE 13.8/14.8	WEIGH STATION MESSAGE SIGN SITE PLAN	
QUANTITIES	BY	CHECKED					

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04 383
EA 3A8101

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)								SHEET	OF
10-11-07	10-17-07	01-09-08	01-16-08						

19-MAY-2008 10:16

st_01.dgn

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Sol	80	13.8/14.8	37	40

C. N. Bapat
REGISTERED CIVIL ENGINEER — 12-05-07 DATE

REGISTERED PROFESSIONAL ENGINEER — C. N. Bapat — No. 46493 — Exp. 6-30-09 — CIVIL — STATE OF CALIFORNIA

5-12-08
PLANS APPROVAL DATE

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12'' Double-stroke Letters, Typ (2)

ALL TRUCKS

STOP AT SCALES

MESSAGE NO. 1

SCALES CLOSED

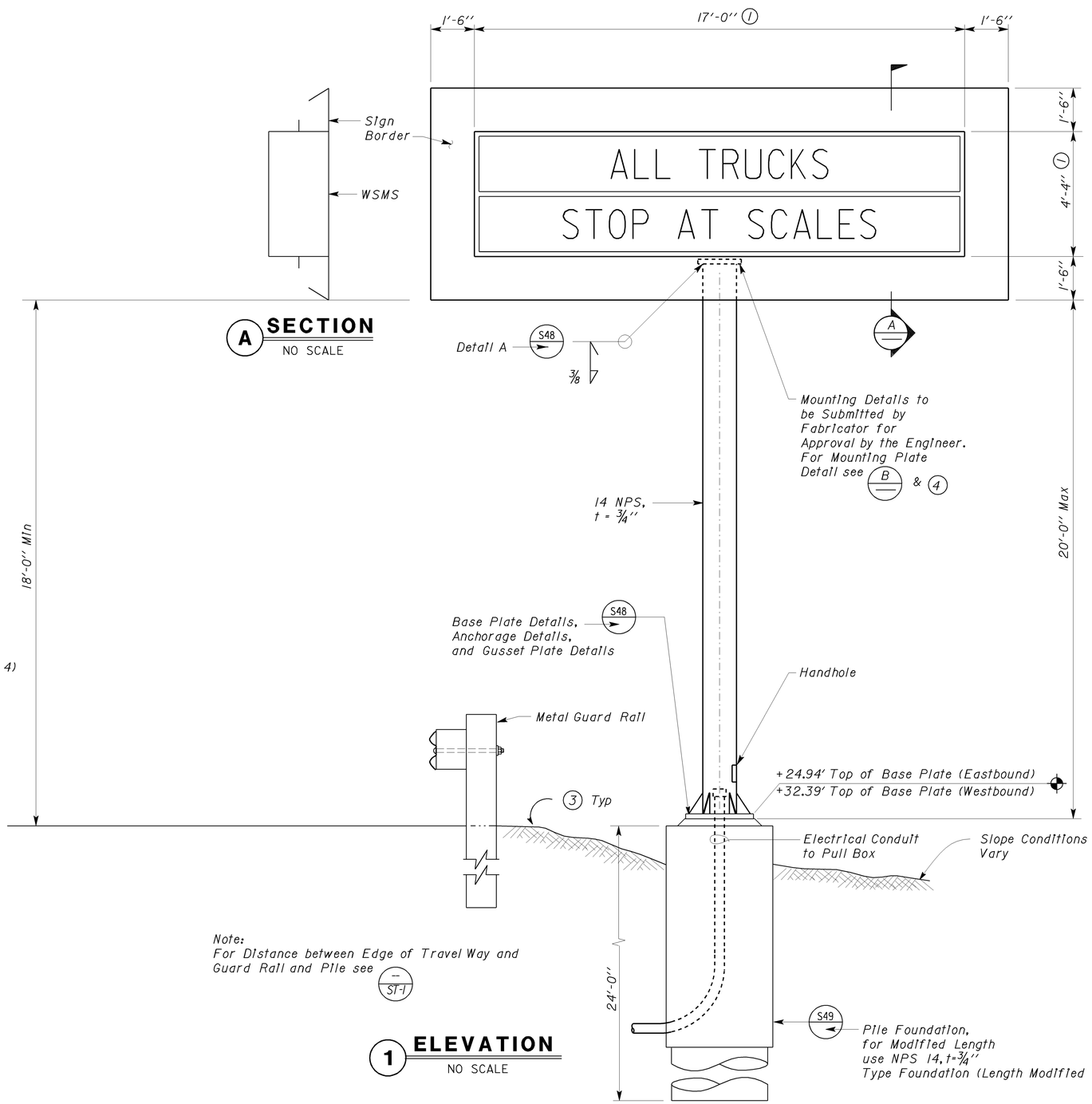
DO NOT ENTER

MESSAGE NO. 2

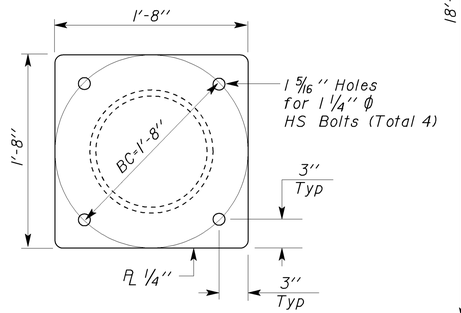
BUSES ONLY

STOP AT SCALES

MESSAGE NO. 3



1 **ELEVATION**
NO SCALE



B **PLAN VIEW SIGN MOUNTING PLATE**
NO SCALE

NOTE
The Contractor shall field verify all existing underground utilities in and around the area prior to the start of the work for installing foundation for WSMS sign.

WEIGH STATION MESSAGES SIGN

General Notes:

A. *For details not shown, see Standard Plans and Project Plans.*

B. *Specifications:*

Design AASHTO: Specification for the design and construction of structure supports for highway signs, 1994.

Wind loading: Normal to face of Sign: 40 PSF on 100% panel coverage. Transverse to face of Sign: 20% of normal face.

Notes:

(1) *Approximate dimensions shown. The projected sign face area shall not exceed the area shown by more than 10%. Actual size shall be submitted to provide proportionate layout of messages.*

(2) *Size of letters is the actual viewable size. Pixel size can be smaller.*

(3) *Provide slope protection at pole base.*

(4) *Mounting details duly stamped by a Registered Engineer along with Calculation, shall be provided for review.*

OVERHEAD SIGN QUANTITIES

SHEET	LOCATION	FURNISH SIGN STRUCTURE (LIGHTWEIGHT) (LB)	INSTALL SIGN STRUCTURE (LIGHTWEIGHT) (LB)
L-1	246+55	1,450	1,450
L-4	296+13	1,450	1,450
TOTAL		2,900	2,900

DESIGN	BY Chandra Bapat	CHECKED Thomas Tong	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ARCHITECTURAL AND STRUCTURAL DESIGN	BRIDGE NO. 23W0001R/L; POST MILE 13.8/14.8
DETAILS	BY Aleksey Serin	CHECKED Chandra Bapat			
QUANTITIES	BY	CHECKED			

CORDELIA TRUCK INSPECTION FACILITIES
REPLACE WEIGH STATION MESSAGE SIGNS
WEIGH STATION MESSAGE SIGN

SHEET ST-2

DOES SD Imperial Rev. 9/02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04 383
EA 3A8101

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
05-09-07 05-10-07 06-13-07 07-26-07 09-11-07 10-17-07 01-09-08 01-16-08		

19-MAY-2008 10:17

st_02.dgn

DEPARTMENT OF INDUSTRIAL RELATIONS
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT
2211 Park Towne Circle, Suite 2
Sacramento, California 95825

Telephone (916) 574-2540
FAX (916) 574-2542

March 22, 2011

HDR Engineering, Inc.
2121 North California Blvd., Suite 475
Walnut Creek, CA 94596

Attention: Rosalynn Chongchaikit (via e-mail: Rosalynn.Chongchaikit@hdrinc.com)

Subject: Underground Classification #'s: C106-095-11T thru C114-095-11T

Cordelia Commercial Vehicle Enforcement Signs

Ms. Chongchaikit:

The information provided to this office relative to the above project has been reviewed. On the basis of this analysis, Underground Classification of "Potentially Gassy with Special Conditions" has been assigned to the shaft(s) identified on your submittal. Please retain the original Classification for your records and deliver a true and correct copy of the Classification to the shaft contractor(s) for posting at the job site.

When the contractor who will be performing the work is selected, please advise them to notify this office to determine if a mandated Prejob Conference with the Division is required prior to commencing any activity associated with drilling of the shaft(s).

Should you have another bore under construction that is not required to have an Underground Classification (i.e.: less than 30 inches in diameter), please contact the Mining and Tunneling Unit prior to any employee entry of such a space.

If you have any questions on this subject, please contact this office at your earliest convenience.

Sincerely,

John R Leahy

John R. Leahy
Senior Engineer

cc: R. Brockman
File

State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

C106-095-11T

DEPARTMENT OF TRANSPORTATION
NAME OF TUNNEL OR MINE AND COMPANY NAME

of 111 Grand Avenue, Oakland, CA 94612
MAILING ADDRESS

at CORDELIA COMMERCIAL VEHICLE ENFORCEMENT - SIGN B
LOCATION

has been classified as ***POTENTIALLY GASSY with Special Conditions***
CLASSIFICATION

as required by the California Labor Code § 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

SPECIAL CONDITIONS

1. A Certified Gas Tester shall perform pre-entry and continuous monitoring of the underground environment to measure Oxygen and detect explosive, flammable, and toxic gasses whenever an employee is working in the underground environment.
2. Mechanical ventilation shall provide for continuous exhaust of fumes and air at any time an employee is working in the underground environment. The primary ventilation fans must be located outside of the underground environment and shall be reversible by a single switch near the fan location.
3. The Division shall be notified immediately if any **Flammable Gas** or **Petroleum Vapor** exceeds 5% of the Lower Explosive Limit.
4. All utilities that may be in conflict with the project shall be identified and physically located (potholed) prior to the start of project operations.

The two 60-inch diameter by 33 feet deep drilled shafts located on eastbound Route 80, approximately 0.8 miles east of the intersection of Suisun Valley Road and Route 80, Fairfield, Solano County.

Date March 22, 2011

John R. Leahy, Senior Engineer

State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

C107-095-11T

DEPARTMENT OF TRANSPORTATION
NAME OF TUNNEL OR MINE AND COMPANY NAME

of 111 Grand Avenue, Oakland, CA 94612
MAILING ADDRESS

at CORDELIA COMMERCIAL VEHICLE ENFORCEMENT - SIGN B
LOCATION

has been classified as ***POTENTIALLY GASSY with Special Conditions***
CLASSIFICATION

as required by the California Labor Code § 7955.

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SPECIAL CONDITIONS

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3. The Division shall be notified immediately if any **Flammable Gas** or **Petroleum Vapor** exceeds 5% of the Lower Explosive Limit.
4. All utilities that may be in conflict with the project shall be identified and physically located (potholed) prior to the start of project operations.

The two 60-inch diameter by 33 feet deep drilled shafts located on eastbound Route 80, approximately 0.9 miles east of the intersection of Suisun Valley Road and Route 80, Fairfield, Solano County.

Date March 22, 2011

John R. Leahy, Senior Engineer

State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

C108-095-11T

DEPARTMENT OF TRANSPORTATION
NAME OF TUNNEL OR MINE AND COMPANY NAME

of 111 Grand Avenue, Oakland, CA 94612
MAILING ADDRESS

at CORDELIA COMMERCIAL VEHICLE ENFORCEMENT - SIGN B
LOCATION

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CLASSIFICATION

as required by the California Labor Code § 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

SPECIAL CONDITIONS

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4. All utilities that may be in conflict with the project shall be identified and physically located (potholed) prior to the start of project operations.

The two 60-inch diameter by 33 feet deep drilled shafts located on eastbound Route 80, approximately 1.2 miles east of the intersection of Suisun Valley Road and Route 80, Fairfield, Solano County.

Date March 22, 2011

John R. Leahy, Senior Engineer

State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

C109-095-11T

DEPARTMENT OF TRANSPORTATION
NAME OF TUNNEL OR MINE AND COMPANY NAME

of 111 Grand Avenue, Oakland, CA 94612
MAILING ADDRESS

at CORDELIA COMMERCIAL VEHICLE ENFORCEMENT - SIGN B
LOCATION

has been classified as ***POTENTIALLY GASSY with Special Conditions***
CLASSIFICATION

as required by the California Labor Code § 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

SPECIAL CONDITIONS

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2. Mechanical ventilation shall provide for continuous exhaust of fumes and air at any time an employee is working in the underground environment. The primary ventilation fans must be located outside of the underground environment and shall be reversible by a single switch near the fan location.
3. The Division shall be notified immediately if any **Flammable Gas** or **Petroleum Vapor** exceeds 5% of the Lower Explosive Limit.
4. All utilities that may be in conflict with the project shall be identified and physically located (potholed) prior to the start of project operations.

The two 60-inch diameter by 33 feet deep drilled shafts located on eastbound Route 80, approximately 1.4 miles east of the intersection of Suisun Valley Road and Route 80, Fairfield, Solano County.

Date March 22, 2011

John R. Leahy, Senior Engineer

State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

C110-095-11T

DEPARTMENT OF TRANSPORTATION
NAME OF TUNNEL OR MINE AND COMPANY NAME

of 111 Grand Avenue, Oakland, CA 94612
MAILING ADDRESS

at CORDELIA COMMERCIAL VEHICLE ENFORCEMENT - SIGN B
LOCATION

has been classified as ***POTENTIALLY GASSY with Special Conditions***
CLASSIFICATION

as required by the California Labor Code § 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

SPECIAL CONDITIONS

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3. The Division shall be notified immediately if any **Flammable Gas** or **Petroleum Vapor** exceeds 5% of the Lower Explosive Limit.
4. All utilities that may be in conflict with the project shall be identified and physically located (potholed) prior to the start of project operations.

The two 60-inch diameter by 33 feet deep drilled shafts located on eastbound Route 80, approximately 1.4 miles east of the intersection of Suisun Valley Road and Route 80, Fairfield, Solano County.

Date March 22, 2011

John R. Leahy, Senior Engineer

State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

C111-095-11T

DEPARTMENT OF TRANSPORTATION
NAME OF TUNNEL OR MINE AND COMPANY NAME

of 111 Grand Avenue, Oakland, CA 94612
MAILING ADDRESS

at CORDELIA COMMERCIAL VEHICLE ENFORCEMENT - SIGN B
LOCATION

has been classified as ***POTENTIALLY GASSY with Special Conditions***
CLASSIFICATION

as required by the California Labor Code § 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

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3. The Division shall be notified immediately if any **Flammable Gas** or **Petroleum Vapor** exceeds 5% of the Lower Explosive Limit.
4. All utilities that may be in conflict with the project shall be identified and physically located (potholed) prior to the start of project operations.

The two 60-inch diameter by 25 feet deep drilled shafts located on eastbound Route 80, approximately 1.5 miles east of the intersection of Suisun Valley Road and Route 80, Fairfield, Solano County.

Date March 22, 2011

John R. Leahy, Senior Engineer

State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

C112-095-11T

DEPARTMENT OF TRANSPORTATION
NAME OF TUNNEL OR MINE AND COMPANY NAME

of 111 Grand Avenue, Oakland, CA 94612
MAILING ADDRESS

at CORDELIA COMMERCIAL VEHICLE ENFORCEMENT - SIGN B
LOCATION

has been classified as ***POTENTIALLY GASSY with Special Conditions***
CLASSIFICATION

as required by the California Labor Code § 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

SPECIAL CONDITIONS

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3. The Division shall be notified immediately if any **Flammable Gas** or **Petroleum Vapor** exceeds 5% of the Lower Explosive Limit.
4. All utilities that may be in conflict with the project shall be identified and physically located (potholed) prior to the start of project operations.

The two 60-inch diameter by 25 feet deep drilled shafts located on eastbound Route 80, approximately 1.7 miles east of the intersection of Suisun Valley Road and Route 80, Fairfield, Solano County.

Date March 22, 2011

John R. Leahy, Senior Engineer

State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

C113-095-11T

DEPARTMENT OF TRANSPORTATION
NAME OF TUNNEL OR MINE AND COMPANY NAME

of 111 Grand Avenue, Oakland, CA 94612
MAILING ADDRESS

at CORDELIA COMMERCIAL VEHICLE ENFORCEMENT - SIGN B
LOCATION

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CLASSIFICATION

as required by the California Labor Code § 7955.

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3. The Division shall be notified immediately if any **Flammable Gas** or **Petroleum Vapor** exceeds 5% of the Lower Explosive Limit.
4. All utilities that may be in conflict with the project shall be identified and physically located (potholed) prior to the start of project operations.

The two 60-inch diameter by 33 feet deep drilled shafts located on eastbound Route 12, approximately 0.6 miles west of the intersection of Chadbourne Road and Route 12, Fairfield, Solano County.

Date March 22, 2011

John R. Leahy, Senior Engineer

State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

C114-095-11T

DEPARTMENT OF TRANSPORTATION
NAME OF TUNNEL OR MINE AND COMPANY NAME

of 111 Grand Avenue, Oakland, CA 94612
MAILING ADDRESS

at CORDELIA COMMERCIAL VEHICLE ENFORCEMENT - SIGN B
LOCATION

has been classified as ***POTENTIALLY GASSY with Special Conditions***
CLASSIFICATION

as required by the California Labor Code § 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

SPECIAL CONDITIONS

1. A Certified Gas Tester shall perform pre-entry and continuous monitoring of the underground environment to measure Oxygen and detect explosive, flammable, and toxic gasses whenever an employee is working in the underground environment.
2. Mechanical ventilation shall provide for continuous exhaust of fumes and air at any time an employee is working in the underground environment. The primary ventilation fans must be located outside of the underground environment and shall be reversible by a single switch near the fan location.
3. The Division shall be notified immediately if any **Flammable Gas** or **Petroleum Vapor** exceeds 5% of the Lower Explosive Limit.
4. All utilities that may be in conflict with the project shall be identified and physically located (potholed) prior to the start of project operations.

The two 60-inch diameter by 33 feet deep drilled shafts located on eastbound Route 12, approximately 0.3 miles west of the intersection of Chadbourne Road and Route 12, Fairfield, Solano County.

Date March 22, 2011

John R. Leahy, Senior Engineer