FOR CONTRACT NO: 04-4A9251
PROJECT ID: 0412000451

INFORMATION HANDOUT

MATERIALS INFORMATION

GEOTECHNICAL DESIGN AND FOUNDATION PLAN REVIEW MEMO
FOR THE SAN MATEO COUNTY SMART CORRIDOR PROJECT
Dated October 31, 2012

ROUTE: 04-SM,SCl-82, 84, 101, 109, 114-Var

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: MR. KEYHAN MOGHBEL
Chief
Peninsula Design

Date: October 31, 2012

Attention: G. Gin

File: 04-SM 82, 84, & 101
PM Various
04-4A9251
0412000425
Foundation Review

JM for MAHMOOD MOMENZADEH

From: JOHN MOORE JM
Transportation Engineer
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

MAHMOOD MOMENZADEH
Chief, Branch C
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject: Geotechnical Design and Foundation Plan Review Memo for the San Mateo County Smart Corridor Project

Note: This memo was originally submitted February 13th, 2012 under the EA 04-4A9201. The chargeable EA for this project has been changed to 04-4A9251.

Per your request, we have reviewed additional design plans dated July 19, 2011 for Intelligent Transportation System (ITS) device locations, specifically Extinguishable Message Signs (EMS) and Arterial Dynamic Message Signs (ADMS). Segment 3 of the San Mateo County Smart Corridor project will be located between the cities of Redwood City, Menlo Park, and East Palo Alto, primarily on State Routes 82 and 84, and local arterial streets going to and from, as well as parallel, to US-101. The project is located in San Mateo and Santa Clara Counties. Please refer to figure 1 – Location Map.

Our understanding is that three sign types are intended for this project. The first sign type is a Variable Message Sign (VMS), which is referred to in the plans as an Arterial Dynamic Message Sign (ADMS). The second sign type is called a Trailblazer sign and is referred to in the plans as an Extinguishable Message Sign (EMS). The third sign type is referred to in the plans as a Microwave Vehicle Detection System (MVDS). Based on our review of the plans we understand that four (4) ADMS signs, twenty-two (22) EMS signs, and nine (9) MVDS are planned for this project. In addition to the signs, two (2) Closed Circuit TV (CCTV) cameras are also planned.

PROJECT GEOLOGY, GROUNDWATER, AND LIQUEFACTION

The project site is located in San Mateo and Santa Clara County and lies on the flatland between the San Francisco Bay and the coastal Santa Cruz Mountains. The area gently slopes towards the bay and is drained by numerous creeks and streams. The sites are located in Redwood City to the north and west, Palo Alto to the south, and East Palo Alto to the east. This area has climate that is considered Mediterranean. It is warm during summer, when temperatures tend to be in the 60's, and cool during winter, when temperatures tend to be in the 50's. The warmest months of the year is July and August with an average maximum temperature of approximately 68° Fahrenheit, while the coldest month of the year is December with an average minimum temperature of 48° Fahrenheit. The annual average precipitation ranges from 15.71 inches, in Palo Alto, and 20.16 inches, in Redwood City. Winter months tend to be wetter than summer months. The wettest month of the year is January with an average rainfall between 3.24 and 4.2 inches. (Data taken from http://www.idcide.com/weather/ca/redwood-city.htm & http://www.idcide. com/weather/ca/palo-alto.htm)

Geology & Seismicity

The geology of the area is all Holocene deposits. The sites closest to the bay have Estuary Deposits (bay mud). This is a water-saturated estuarine mud consisting predominantly of clay and silty clay underlying tidal mudflats, marshland and salt evaporators of San Francisco bay. Moving farther away from the bay, the geology are Flood basin Deposits and Flood basin Deposits (salt affected). The composition of the Flood basin Deposits is organic-rich dark clay to very fine silty clay deposits occupying the lowest topographic positions either between the Holocene levee deposits or Holocene floodplain deposits. While the Flood basin Deposits (salt-affected) are clay to very fine silty-clay deposits similar to the un-salt-affected deposits except that they contain carbonate nodules and iron-stained mottles. These deposits may have been formed by the interaction of bicarbonate-rich upland water and saline water of the San Francisco Bay estuary. Salt-affected basin deposits are typically in contact with estuary deposits. Farther away from the Bay, Alluvial Fan Deposits are encountered, and are tan to reddish brown, dense, gravelly and clayey sand or clayey gravel those grades upward to sandy clay. These deposits are restricted to areas along the mountain front. Lastly there are Natural Levee Deposits, which are loose, moderate- to well-sorted sandy or clayey silt grading to sandy or silty clay. Levee deposits border the channels of creeks. (Quaternary Geologic Map of the San Jose East Quadrangle, Santa Clara County, CA by E. J. Helley 1 and J. R. Wesling 2 Open-File Report 90-427, Quaternary Geologic Map of the

Milpitas Quadrangle, Alameda and Santa Clara Counties, CA., by E. J. Helley 1 and J. R. Wesling 2 Open-File Report 89-671, Quaternary Geologic Map of the San Jose West Quadrangle, Santa Clara County, CA. By J. R. Wesling 1, and E. J. Helley 2 U. S. Geological Survey Open-File Report 89-672) Please refer to Figure 2a – Geologic Map and Figure 2b - Geologic Key.

The controlling faults for the project are the San Andreas (Peninsula section), Cascade, and Silver Creek faults. The Silver Creek fault is closest to the eastern sign locations, the Cascade is closest to the southernmost sign location in Santa Clara County, and the San Andreas is the controlling fault for the remainder of the locations. The project is located within the seismically active San Andreas Fault zone. The San Andreas and associated other faults trend north-by-northwest, paralleling the trend of the Coast Ranges. The controlling fault within the project limits is the San Andreas Fault, which is capable of producing a maximum moment magnitude (Mw) earthquake of 8.0 and ground motion in excess of 0.7 g. While the fault does not cross the project area, it does roughly parallel it.

Groundwater

Groundwater elevations could not be found at all locations, but we have attached three as-built Log of Test Borings sheets (LOTB's) which give a general groundwater elevation for the vicinity. The actual groundwater elevations could differ from that shown in these LOTB's depending on the amount of rain precipitation and site specific hydrogeology of each site. At SR 84 and SR 82 (which are the attached LOTB's named Five Points Separation), the groundwater elevation average is 9.5 feet and averages 11.75 feet below grade. University Avenue OC, at Highway 101, the average groundwater elevation and depths below grade are 7.7 feet and 13.6 feet, respectively. Highway 101 and SR 84 Interchange, the average elevation is 2 feet, and the depth to groundwater varies from 9 to 30 feet below grade. Please refer to the map of the as-built LOTB locations and the LOTB's, which are attached to this memo.

Liquefaction

Liquefaction susceptibility is moderate to very high; the susceptibility levels are presented on Figure 3 – Liquefaction Map. Please note that susceptibility is not site specific to each sign location and is a general indication of susceptibility. Based on the available LOTB's, the majority of the anticipated subsurface soils are clayey with medium to high consistency, and sandy soils, which are limited in thickness and relatively compact to dense. Based on this, liquefaction is either a localized zone where

very soft cohesional or loose to compact sands are present. Therefore, the consequence of liquefaction is only ground settlement that may cause tilting and settlement of the proposed foundation rather than the foundation failing.

Flooding

Flooding varies over the length of the project; the susceptibility levels are presented on Figure 4 – Flood Map.

Landslides

Most of the locations are located on flat land or have not been evaluated, so landslides are not an issue. The susceptibility levels are presented on Figure 5 – Landslide Map.

SITE & SUBSURFACE CONDITIONS

During the month of January 2012, a representative from our office visited each proposed sign location and evaluated it visually for foundation adequacy. Existing signs, overhead lights, and/or signals, located in close proximity to each proposed site and similar in nature to what is currently being proposed for each individual site showed no stress or deformation. In general, the signs are located in areas paved by either asphalt or concrete.

Subsurface Soil Conditions

Based on the available LOTB's in the vicinity of the respective sites, the subsurface soil conditions at the proposed sign locations generally consist of layered compact sand, silty sand/ sandy clay. Local zones of loose sand, silty sand, or soft clayey soil should be anticipated. For the purpose of the pile foundation installation, groundwater at the sites shall be anticipated at depths ranging from 5 to 10-ft.

FOUNDATION RECOMMENDATIONS

NOTE: Based on communications with Peninsula Design, 2006 Standard Plan Sheets will be used on this project where applicable.

We understand that the ADMS signs are to be founded using the 2006 Standard Plan ES-14C. The foundation details for these signs are located on 2006 Standard Plan S49. Based on 2006 Standard Plan S49, a 30-inch diameter CIDH pile foundation is required.

The depth varies between 10 and 11-feet depending upon the wall thickness of the post.

We understand that the EMS signs are to be founded on 24-inch diameter CIDH piles varying between 7-feet in depth for level ground or 9-feet in depth for sloping ground. Please refer to sheet SES-3, which is attached.

We understand that the MVDS poles are to be founded on 24-inch diameter CIDH piles varying between 8-feet in depth for level ground or 10-feet in depth for sloping ground. Please refer to sheets SES-1 and SES-2, which are attached.

We understand that the CCTV poles are to be founded on 24-inch diameter CIDH piles 6-feet in depth. Please refer to sheet 2006 Standard Plan ES-16A, which is attached.

It is our opinion that the site conditions for each foundation type and location will be satisfactory.

Should during the PS&E process, the decision be made to change the use of 2006 Standard Plans to 2010 Standard Plans, the corresponding equivalent 2010 Standard Plan Sheet should be used. Please contact our office to confirm the equivalent 2010 Standard Plan sheets to be used.

CORROSION

Corrosion tests for past projects in the general vicinity of this project have indicated the potential for corrosion. For example, corrosion testing of geotechnical samples for the San Francisquito Creek Bridge project (04-235621, located at Hwy-101, PM 0.0, in East Palo Alto) indicated the following:

pH	Chloride ppm	Sulfate ppm
5.14	778	6517

Since the area for this project is so large it is recommended that concrete for each foundation comply with the special provisions governing Corrosion Control for Portland Cement Concrete. Corrosion data for the San Francisquito Creek project is attached to this memo for review.

CONSTRUCTION CONSIDERATIONS

The field conditions for each planned sign are most likely comprised of variable thicknesses of engineered fill, which are underlain by native alluvium soils. As discussed earlier in the Groundwater section of this memo, it is likely that groundwater will be encountered during CIDH excavation. Due to these relatively high groundwater elevations, the concrete for the CIDH foundations will need to be placed using a wet placement method. The contractor can also opt to dewater the CIDH foundation prior to the placement of concrete. Temporary casing may be needed to prevent caving of the CIDH prior to the placement of concrete.

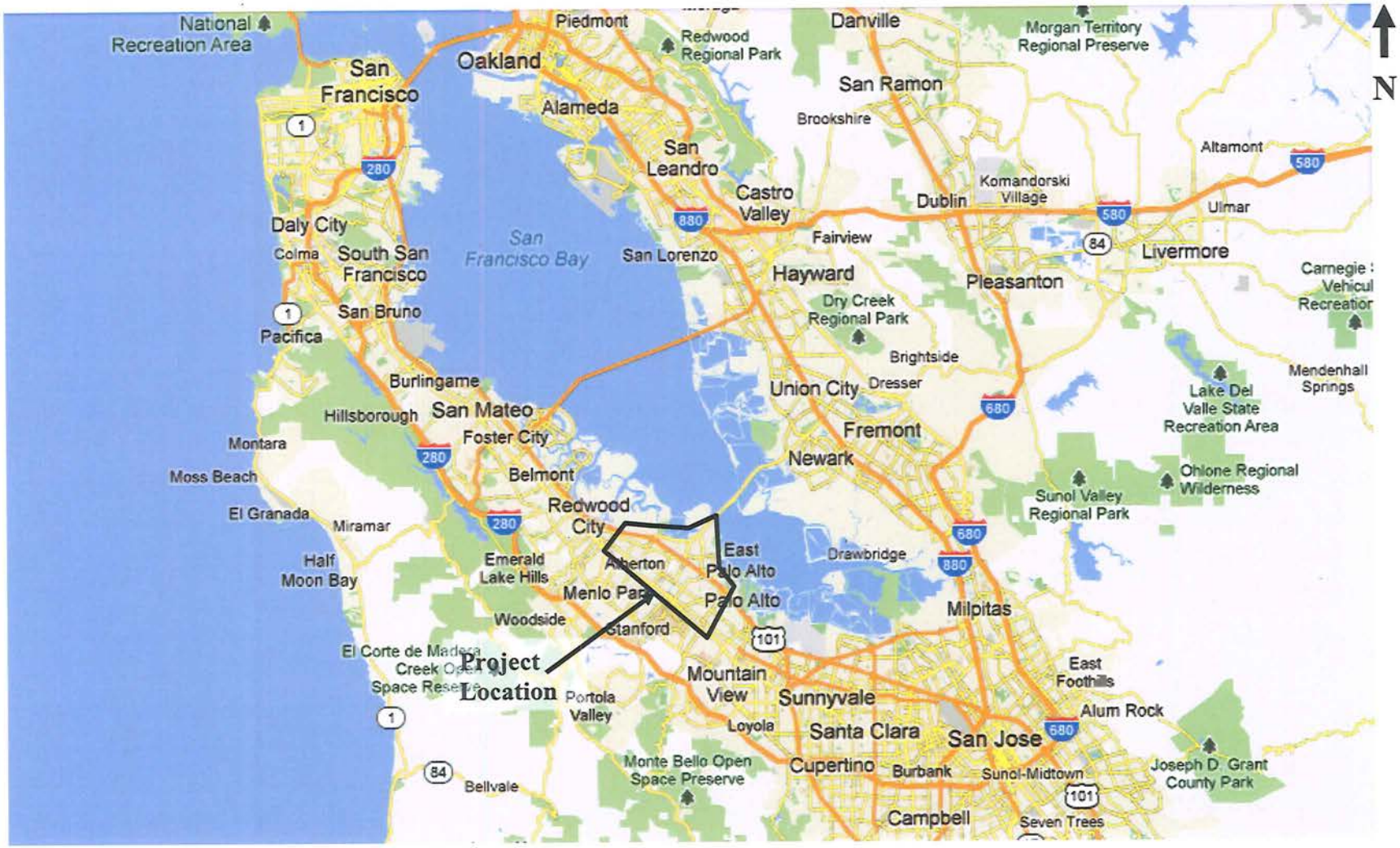
The recommendations contained in this memo are based on specific project information regarding structure type and location. If any conceptual changes are made during final project design, the Office of Geotechnical Design – West, Design Branch C, should review those changes to determine if these foundation recommendations are still applicable. Variations between anticipated and actual subsurface conditions may be encountered in localized areas during construction. This Office should be contacted for review and supplemental recommendation if significant variations in the subsurface conditions are encountered during construction.

Any questions regarding the above recommendations should be directed to the attention of John Moore at (510) 622-8742 or Mahmood Momenzadeh at (510) 286-5732.

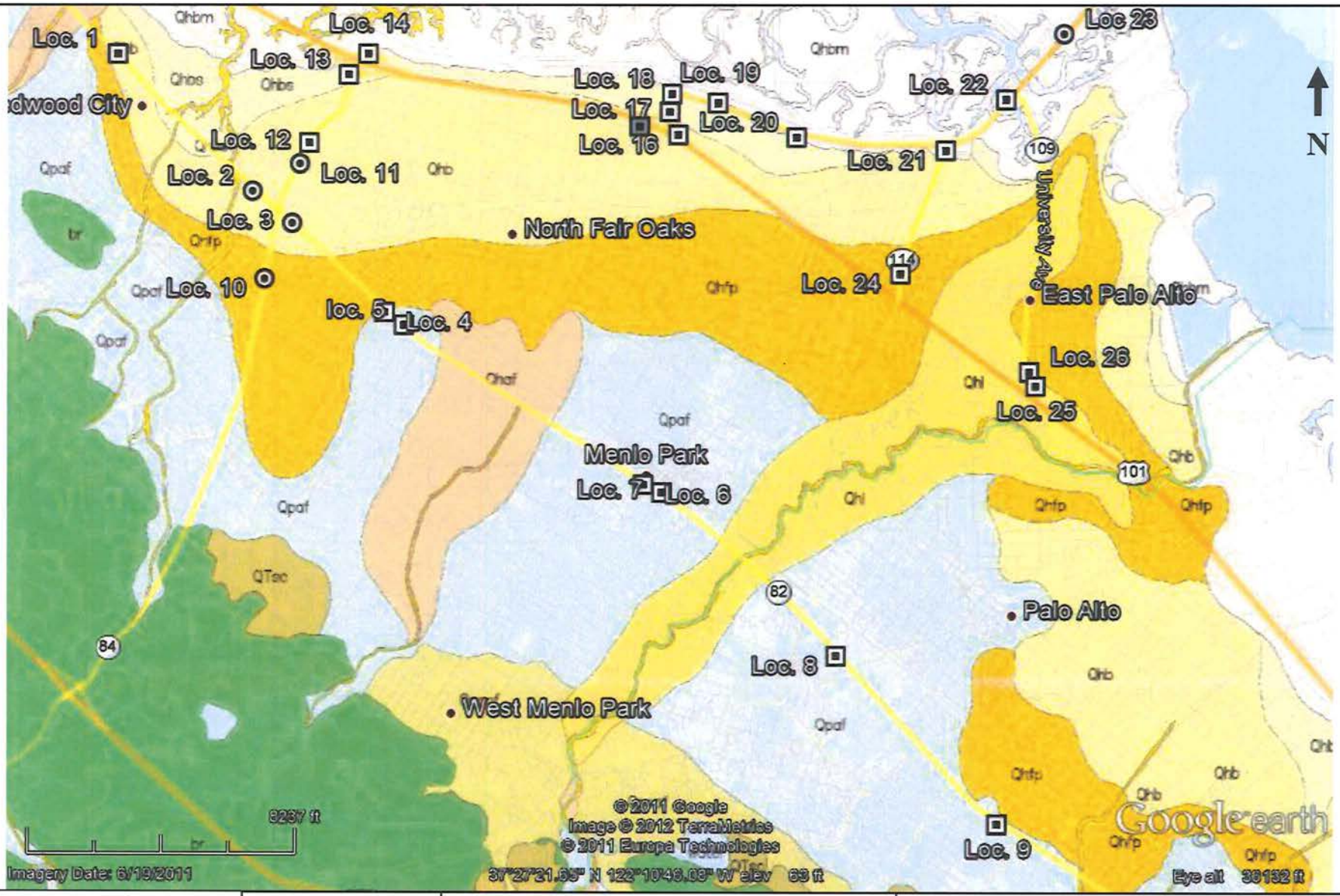
Attachments:

c: MMomenzadeh, TJPokrywka, SRajendra, JStayton, ALee

JMoore/jm



SCALE: Not to Scale	Caltrans	**DIVISION OF ENGINEERING SERVICES** GEOTECHNICAL SERVICES Office of GEOTECHNICAL DESIGN - WEST – BRANCH B	LOCATION MAP 04-SM-82/84/109 101/114 EFIS 0412000425 04-SCL 101 PM Varies OCTOBER 2012 FIGURE 1



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GEOTECHNICAL SERVICES
Office of GEOTECHNICAL DESIGN - WEST – BRANCH B

GEOLOGIC MAP

04-SM-82/84/109 101/114 EFIS 0412000425
04-SCL 101
PM Varies OCTOBER 2012

FIGURE 2a

Qhbd — **Beach deposits (Holocene)**—Loose clastic deposits composed of sand–to cobble-size fragments in the bay tidal zone. Moderately well-sorted by wave action. Near Little Coyote Point, deposits are composed mostly of oyster shell fragments; west of Coyote Point deposits are composed mostly of rock debris derived from artificial fill (af)

Qhbm — **Bay mud (Holocene)**—Water-saturated estuarine mud, predominantly gray, green and blue clay and silty clay underlying marshlands and tidal mud flats of San Francisco Bay, Pescadero, and Pacifica. The upper surface is covered with cordgrass (*Spartina* sp.) and pickleweed (*Salicornia* sp.). The mud also contains a few lenses of well-sorted, fine sand and silt, a few shelly layers (oysters), and peat. The mud interfingers with and grades into fine-grained deposits at the distal edge of Holocene fans, and was deposited during the post-Wisconsin rise in sea-level, about 12 ka to present (Imbrie and others, 1984). Mud varies in thickness from zero, at landward edge, to as much as 40 m near north County line

Qhb — **Basin deposits (Holocene)**—Very fine silty clay to clay deposits occupying flat-floored basins at the distal edge of alluvial fans adjacent to the bay mud (Qhbm). Also contains unconsolidated, locally organic, plastic silt and silty clay deposited in very flat valley floors

Qhfp — **Floodplain deposits (Holocene)**—Medium to dark gray, dense, sandy to silty clay. Lenses of coarser material (silt, sand, and pebbles) may be locally present. Flood plain deposits usually occur between levee deposits (Qhl) and basin deposits (Qhb)

Qhl — **Natural levee deposits (Holocene)**—Loose, moderately to well-sorted sandy or clayey silt grading to sandy or silty clay. These deposits are porous and permeable and provide conduits for transport of ground water. Levee deposits border stream channels, usually both banks, and slope away to flatter floodplains and basins. Abandoned levee systems, no longer bordering stream channels, have also been mapped

Qhaf — **Alluvial fan and fluvial deposits (Holocene)**—Alluvial fan deposits are brown or tan, medium dense to dense, gravely sand or sandy gravel that generally grades upward to sandy or silty clay. Near the distal fan edges, the fluvial deposits are typically brown, never reddish, medium dense sand that fines upward to sandy or silty clay

SCALE: Not to Scale	Caltrans	**DIVISION OF ENGINEERING SERVICES** GEOTECHNICAL SERVICES Office of GEOTECHNICAL DESIGN - WEST – BRANCH B	GEOLOGIC KEY 04-SM-82/84/109 101/114 EFIS 0412000425 04-SCL 101 PM Varies OCTOBER 2012 FIGURE 2b

Liquefaction Susceptibility Map

Susceptibility Level

- Very High
- High
- Moderate
- Low
- Very Low
- Major Roads
- Local Roads

Scale: 1 inch = 1.35 miles

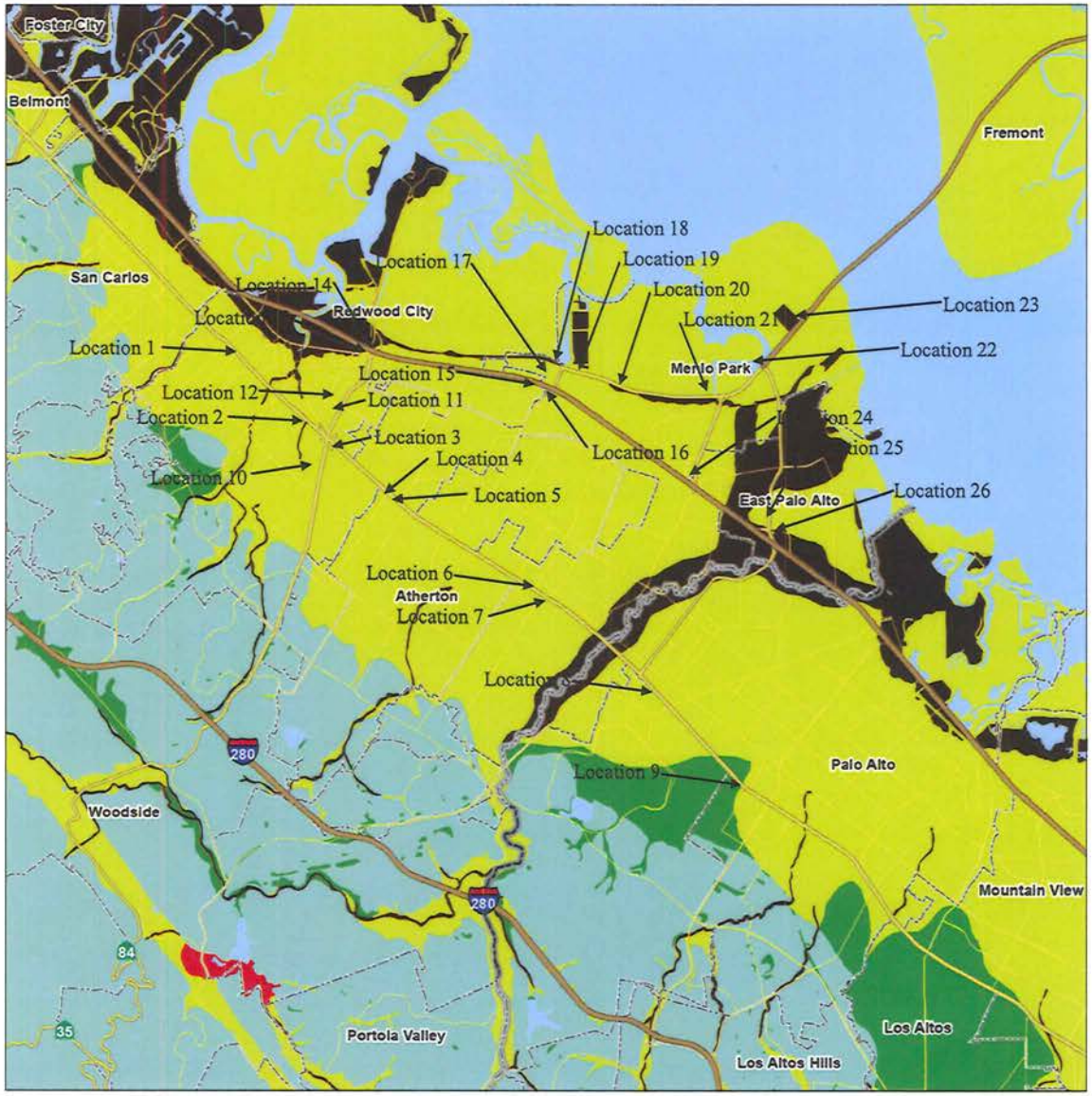
This map is intended for planning use only and is not intended to be site-specific. Rather, it depicts the general hazard level of a neighborhood and the relative hazard levels from community to community. Hazard levels are less likely to be accurate if your neighborhood is on or near the border between two zones. This information is not a substitute for a site-specific investigation by a licensed professional.

This map is available at http://quake.abag.ca.gov

Sources:
This map is based on work by William Lettis & Associates, Inc. and USGS. USGS Open-File Report 00-444, Knudsen & others, 2000 and USGS Open-File Report 2006-1037, Witter & others, 2006

For more information visit:
http://pubs.usgs.gov/of/2000/of00-444/
http://pubs.usgs.gov/of/2006/1037/

ABAG Geographic Information Systems



MAP TAKEN FROM:
USGS MARE ISLAND QUADRANGLE, 1980

SCALE

Not to Scale

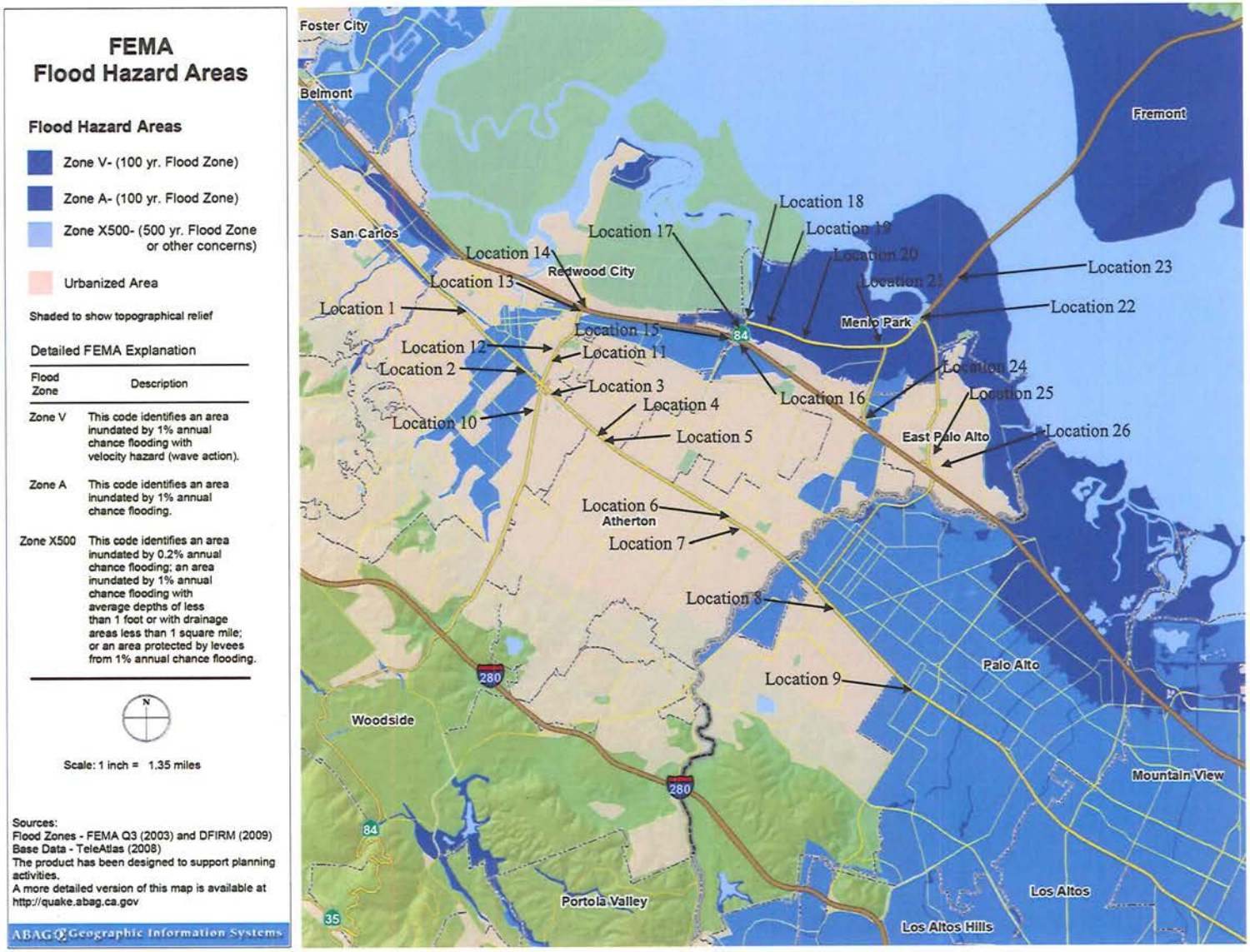
Caltrans

DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL SERVICES
Office of GEOTECHNICAL DESIGN - WEST – BRANCH B

LIQUEFACTION MAP

04-SM-82/84/109 101/114 EFIS 0412000425
04-SCL 101
PM Varies OCTOBER 2012

FIGURE 3



MAP TAKEN FROM:
USGS MARE ISLAND QUADRANGLE, 1980

SCALE

Not to Scale

Caltrans

DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL SERVICES
Office of GEOTECHNICAL DESIGN - WEST – BRANCH B

FLOOD MAP

04-SM-82/84/109 101/114 EFIS 0412000425
04-SCL 101
PM Varies OCTOBER 2012

FIGURE 4

California Geological Survey Seismic Hazard Zones of Required Investigation

Landslide Zones

Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Mapping In Progress

Mapping Planned

Area Not Yet Evaluated

N

Scale: 1 inch = 1.35 miles

This map is intended for planning use only, and is not intended to be site-specific. Rather, it depicts the general risk within neighborhoods and the relative risk from community to community.

For more detailed information regarding this map, please visit the CGS website at http://gmw.consrv.ca.gov/shmp/

Source:
California Geological Survey, 2007 & 2009

This map is available at http://quake.abag.ca.gov

ABAG Geographic Information Systems

MAP TAKEN FROM:
USGS MARE ISLAND QUADRANGLE, 1980

SCALE

Not to Scale

Caltrans

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Office of GEOTECHNICAL DESIGN - WEST – BRANCH B

LANDSLIDE MAP

04-SM-82/84/109 101/114 EFIS 0412000425
04-SCL 101
PM Varies OCTOBER 2012

FIGURE 5

DIST	COUNTY	ROUTE	POST MILES TOTAL	POST MILES PROJECT	SHEET NO	TOTAL SHEETS
04	SM,SCI	82,84,101 109,114	Var		160	189

Eliseo Lopez 4/11/12
REGISTERED CIVIL ENGINEER DATE

8-27-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER ELISEO LOPEZ No. C72910 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA

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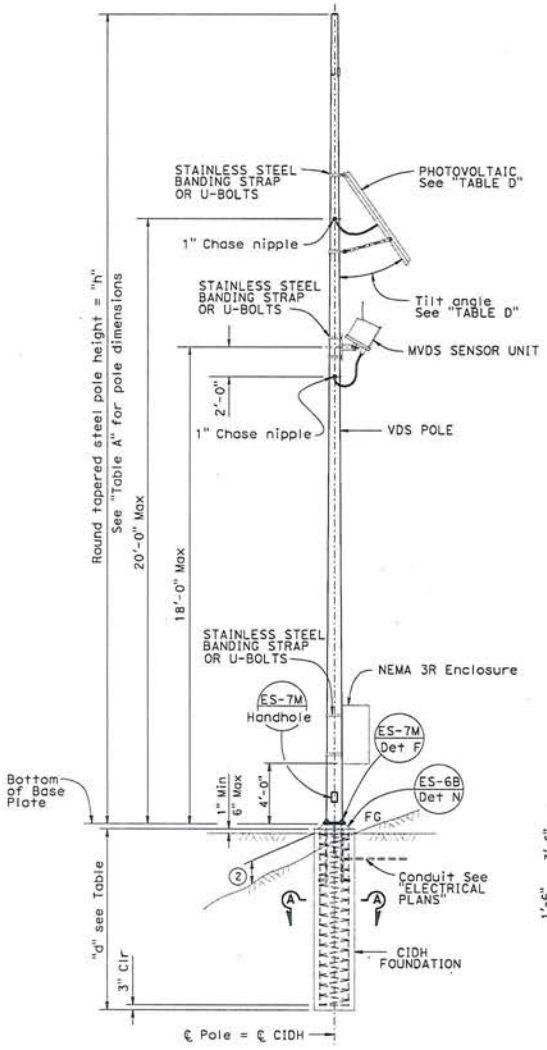


ELEVATION
NO SCALE

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

TABLE A

Pole Type	Pole Data: Height "h"	Min OD: BASE	Min OD: TOP	Thickness	Base Plate Data: "C"	Thickness	Anchor Bolts: SIZE	Anchor Bolts: BC = BOLT CIRCLE	"d" 2'-0" Ø CIDH Pile: LEVEL GROUND	"d" 2'-0" Ø CIDH Pile: SLOPING GROUND	Structural Steel LBS plus 3.5% Galvanizing
VDS 25	25'	7⅜"	3⅞"	0.1793"	1'-0"	1"	1" x 3'-0 x 4"	10½"	8'-0"	10'-0"	395

TABLE B

Attachment	Dimensions	Mounting Height	Weight Limits (lbs)
Enclosure	24"H* x 24"W* x 8"D*	4'-0" Max. bottom Clr.	134 Max
Photovoltaic	48"W x 30"H	20' Max	31 Max
MVDS SENSOR UNIT	9.8" x 9.8" x 14"	18' Max	11 Max

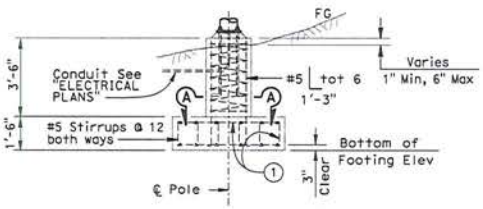
* Max Dimension

TABLE C

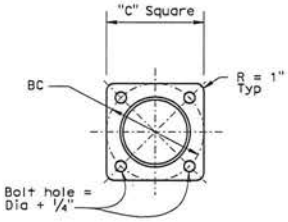
Spread Footing		
Ground	Footing Size Length x Width x Depth	Reinforcement Top & Bottom
Level	6'-0" x 6'-0" x 1'-6"	7 - #4
Sloping	7'-0" x 7'-0" x 1'-6"	8 - #4

TABLE D

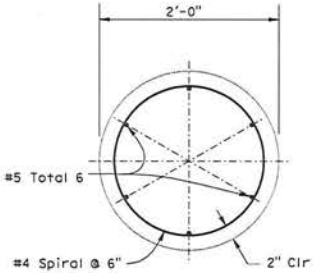
Photovoltaic Panel Limits	
Panel Size	Tilt Angle
10 ft^2 Max	45° Min



ALTERNATIVE FOOTING ELEVATION
NO SCALE



BASE PLATE
SCALE 1½"= 1'



SECTION A-A
SCALE 1½"= 1'

ABBREVIATIONS:
VDS = Vehicle Detection System
MVDS = Microwave Vehicle Detection System

GENERAL NOTES:

SPECIFICATIONS

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals dated 2001.

LOADING

Wind Loadings: 100 mph

UNIT STRESSES

Structural Steel: fy = 48,000 psi tapered steel tube
fy = 36,000 psi unless otherwise noted.

Anchor bolts = A307

Reinforced Concrete: f'c = 3,600 psi
fy = 60,000 psi

NOTES:

1. All steel shall be galvanized after fabrication.
2. During pole erection the pole shall be raked as necessary with the use of leveling nuts to provide a plumb pole axis.
3. The foundation shall be treated as level ground condition if the slope inclination is flatter than 4H:1V.
4. Foundation design is based on AASHTO 2001 article 13.6 Broms' approximate procedure assuming a cohessionless material. The angle of internal friction used is 30 degrees and unit weight of soil used is 120 lbs/ft^3.
5. For details not shown, see "2006 STANDARD PLANS" and "2006 REVISED STANDARD PLANS".

(1) #5 bars and #5 stirrups (top & bottom) to run both longitudinal and tranverse direction.
(2) 1'-3" Max for sloped finished grade.

BRANCH CHIEF	JEFFREY B WOODY	DESIGN	BY EUSEO LOPEZ	CHECKED DEVANG VORA
		DETAILS	BY A R DUDSAK	CHECKED DEVANG VORA
		QUANTITIES	BY	CHECKED

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
DESIGN AND TECHNICAL SERVICES
SPECIAL DESIGNS BRANCH A

BRIDGE NO. N/A
POST MILE

ELECTRICAL SYSTEMS
MICROWAVE VEHICLE DETECTION SYSTEM POLE DETAILS

SES-1

(ENGLISH) SPECIAL DESIGNS BRANCH BORDER SHEET (REV. 7-1-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3619
PROJECT NUMBER & PHASE: 0412000451-1
CONTRACT NO.: 04-4A9251

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: SJMS 4/11/12

SHEET 1 OF 3

FILE => spec_des_br_prj/2012sd/04-4A9251/04-4a9251_ses-1.dgn

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SM,SCI	82,84,101, 109,114	Var	161	189

Eliseo Lopez 4/11/12
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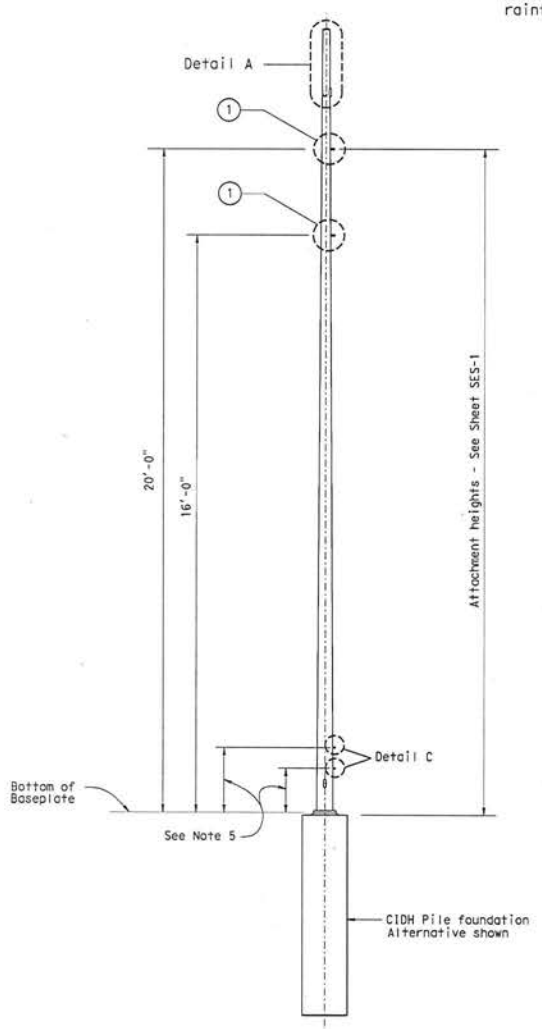
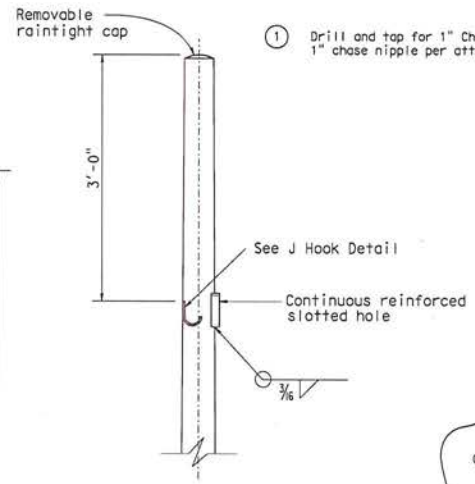
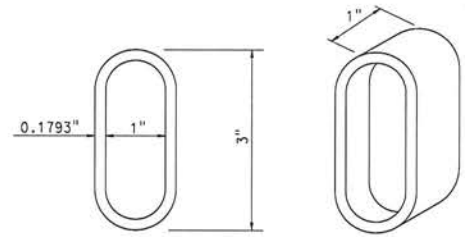


ELEVATION

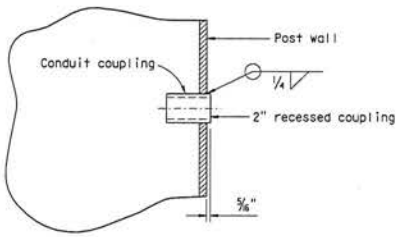


DETAIL A

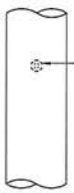
1 Drill and tap for 1" Chase nipple and plug with raintight plugs. 1" chase nipple per attachment per pole. (See Detail "B")



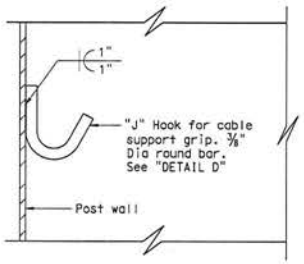
SLOTTED HOLE



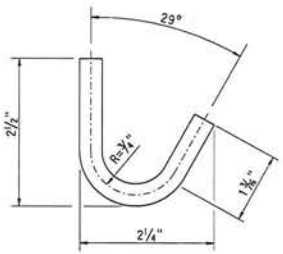
2" RECESSED COUPLING DETAIL C (TYPICAL)



DETAIL B
TYPICAL ELECTRICAL ACCESS DETAIL



J HOOK DETAIL



DETAIL D

NOTES:

1. Place all couplings on the same side of pole.
2. Chase nipples and slotted hole shall have a raintight plug. Plug should only be removed if chase nipple or slotted hole is used.
3. The chase nipples shall be 1'-0" min vertical clearance from the slotted hole and not on the same side as the slotted hole.
4. For attachment details, see sheet SES-1.
5. Coupling location above ground and spacing shall be verified to match choice of enclosure, prior to fabrication.
6. All attachments, unless otherwise noted, shall be mounted to pole with stainless steel straps or other method without drilling holes in pole. Enclosure may require drilling through post for mounting. Method of mounting enclosure will require Engineer approval.

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

BRANCH CHIEF JEFFREY B WOODY	DESIGN BY ELISEO LOPEZ	CHECKED DEVANG VORA	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
	DETAILS BY A R DUDSAK	CHECKED DEVANG VORA	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH A
	QUANTITIES BY	CHECKED	

BRIDGE NO. N/A POST MILE

ELECTRICAL SYSTEMS
MICROWAVE VEHICLE DETECTION SYSTEM POLE DETAILS

SES-2

(ENGLISH) SPECIAL DESIGNS BRANCH BORDER SHEET (REV. 7-1-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3619
PROJECT NUMBER & PHASE: 0412000451-1 CONTRACT NO.: 04-4A9251

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 4/11/12

SHEET 2 OF 3

FILE => spec_des_br_prj/2012sd/04-4A9251/04-4a9251_ses-2.dgn

USERNAME => s121614 DATE PLOTTED => 28-AUG-2012 TIME PLOTTED => 13:32

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SM,SCI	82,84,101, 109,114	Var	162	189

Eliseo Lopez 4/11/12
REGISTERED CIVIL ENGINEER DATE

8-27-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER ELISEO LOPEZ No. C72910 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA

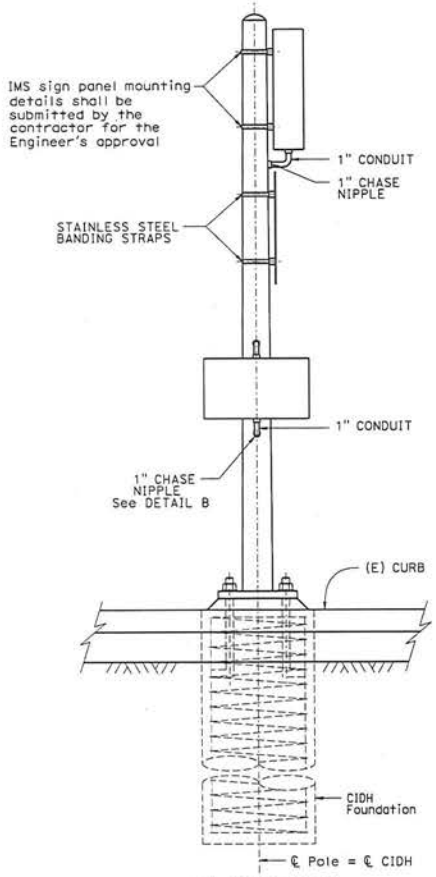
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

TABLE A

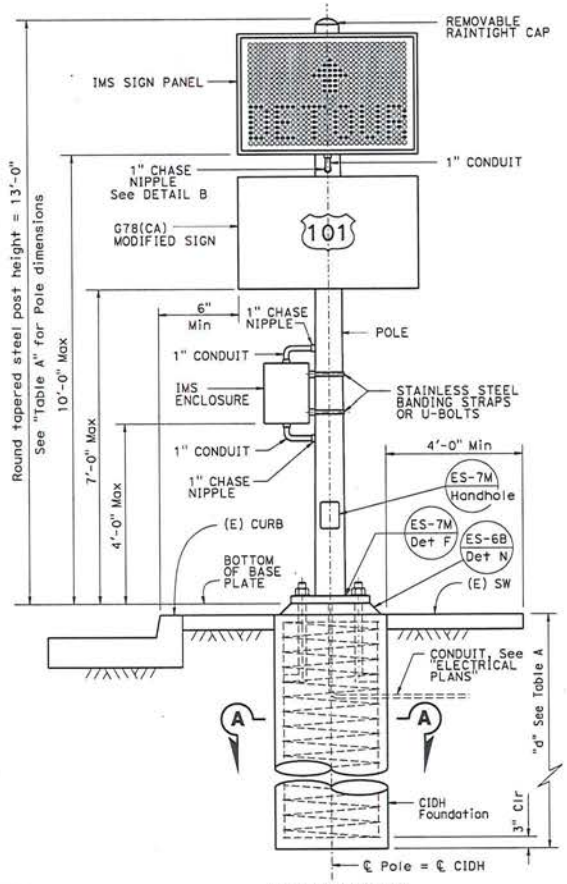
Pole Type	Pole Data: Height "h"	Min OD: Base	Min OD: Top	Thickness	Base Plate Data: "C"	Thickness	Anchor Bolts: Size	Anchor Bolts: BC = Bolt Circle	"d" 2'-0"ø CIDH Pile: Level Ground	"d" 2'-0"ø CIDH Pile: Sloping Ground	Structural Steel Lbs Plus 3.4% Galvanizing
VDS Pole Modified	13'	8"	6¼"	0.1793"	1'-0"	1"	1" x 3'-0" x 4"	11"	7'-0"	9'-0"	265

TABLE B

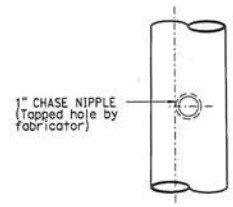
Attachment	Mounting Height	Weight Limits (lbs)
2'-4"H x 1'-4"W x 12"D IMS Enclosure	4'-0" Max. bottom Clr.	25 Max
G78(CA) Modified Sign 4'-0" W x 2'-6"H	7'-0" Max. bottom Clr.	20 Max
IMS Sign Panel 4'-0" W x 2'-8"H x 8"D	10'-0" Max. bottom Clr.	120 Max



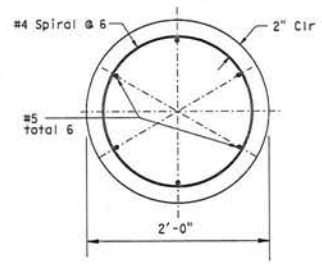
ELEVATION
SIDE VIEW
NO SCALE



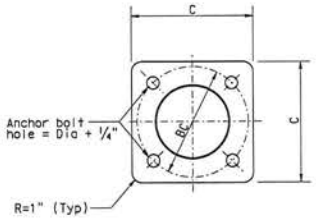
ELEVATION
FRONT VIEW
NO SCALE



DETAIL B
TYPICAL ELECTRICAL ACCESS DETAIL



SECTION A-A



BASE PLATE

ABBREVIATIONS:

IMS = Informational Message Sign

GENERAL NOTES:

SPECIFICATIONS:

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals dated 2001.

LOADING

Wind Loadings: 100 mph

UNIT STRESSES

Structural Steel: fy = 48,000 psi tapered steel tube.
fy = 36,000 psi unless otherwise noted.

Anchor bolts = A307

Reinforced Concrete: f'c = 3,600 psi
fy = 60,000 psi

NOTES:

1. All steel shall be galvanized after fabrication.
2. During pole erection the pole shall be raked as necessary with the use of leveling nuts to provide a plumb pole axis.
3. The foundation shall be treated as level ground condition if the slope inclination is flatter than 4H:1V.
4. Foundation design is based on AASHTO 2001 article 13.6 Broms' approximate procedure assuming a cohessionless material. The angle of internal friction used is 30 degrees and unit weight of soil used is 120 lb/ft³.
5. For details not shown, see "2006 STANDARD PLANS" and 2006 "REVISED STANDARD PLANS".
6. No additional loads shall be added to the VDS Pole without DES Structures approval and review.
7. Chase nipples have a raintight plug. Plug should be removed if chase nipple is used.
8. All attachments, unless otherwise noted, shall be mounted to pole with stainless steel straps or other method without drilling holes in pole. Enclosure may require drilling through pole for mounting. Method of mounting enclosure will require Engineer's approval.

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Standard Plan Sheet No.
Detail No.

BRANCH CHIEF JEFFREY B WOODY

	BY	CHECKED
DESIGN	ELISEO LOPEZ	K C LIU/DEVANG VORA
DETAILS	A R DUDSAK	K C LIU/DEVANG VORA
QUANTITIES	ELISEO LOPEZ	DEVANG VORA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
DESIGN AND TECHNICAL SERVICES
SPECIAL DESIGNS BRANCH A

BRIDGE NO. N/A
POST MILE

ELECTRICAL SYSTEMS
INFORMATIONAL MESSAGE SIGN

SES-3

[ENGLISH] SPECIAL DESIGNS BRANCH BORDER SHEET (REV. 7-1-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3619
PROJECT NUMBER & PHASE: 0412000451-1
CONTRACT NO.: 04-4A9251

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 8/24/12 8/24/12 7-16-12

SHEET 3 OF 3

FILE => spec_des_br_pr]/2012sd/04-4A9251/04-4a9251_ses-3.dgn

USERNAME => s3121614 DATE PLOTTED => 28-AUG-2012 TIME PLOTTED => 13:32

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SM,SCI	82,84,101, 109,114	Var	163	189

K. C. Liu 7/20/12
REGISTERED CIVIL ENGINEER DATE

8-27-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER K.C. LIU No. C50291 Exp. 6-30-13 CIVIL STATE OF CALIFORNIA

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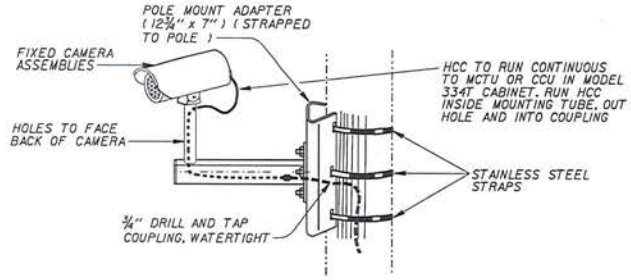
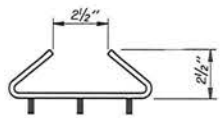
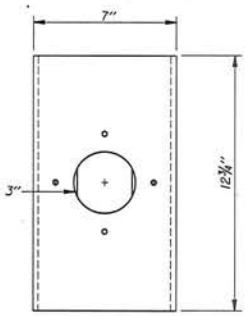


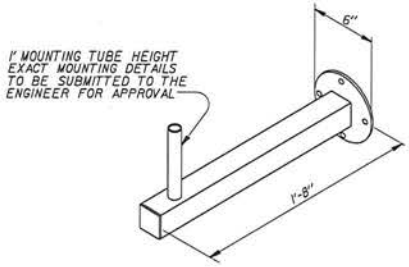
DETAIL A
CAMERA POLE MOUNTING DETAIL



PLAN VIEW



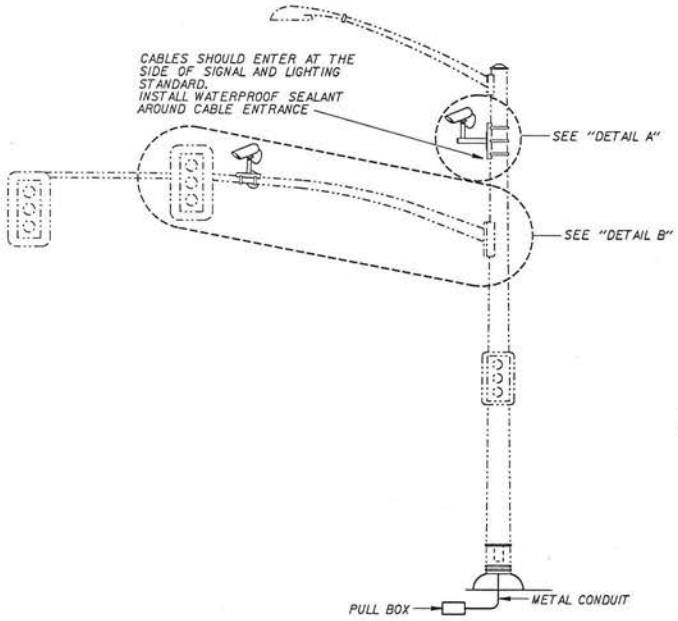
POLE MOUNT ADAPTER
FRONT VIEW



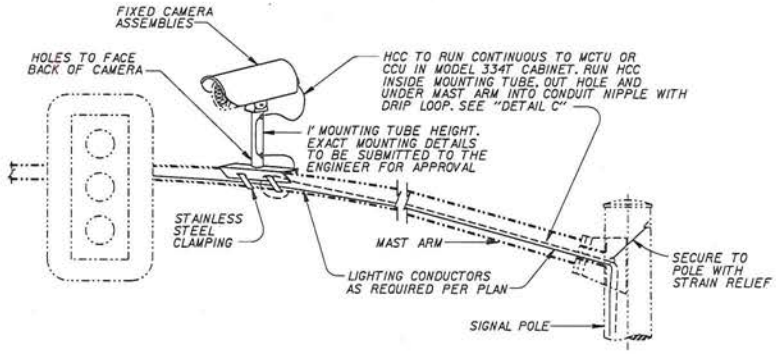
WALL MOUNT ARM

NOTES:

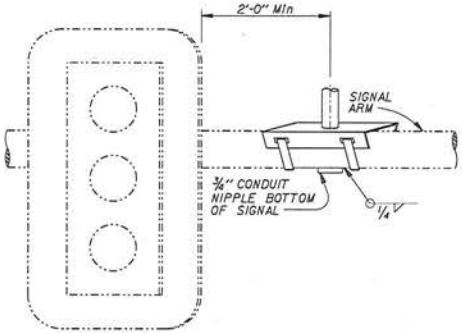
1. Attach the wall mount arm to the pole mount adapter with flat washer, lock washer and nut.
2. All metal conduits, bolts and miscellaneous hardware shall be galvanized.
3. Elements (Total fixed camera assembly) shall have a maximum weight of 10 lbs and a maximum effective pressure area of 1 square foot.
4. Maximum of 2 camera elements added per traffic signal structure. Maximum of 1 element per arm (Lighting arm or traffic signal arm).



FIXED CAMERA MOUNTING ON EXISTING SIGNAL AND LIGHTING STANDARDS



DETAIL B
CAMERA ARM MOUNTING DETAIL



DETAIL C

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

STANDARD PLAN SHEET No.
DETAIL No.

NO SCALE

BRANCH CHIEF JEFF WOODY	DESIGN	BY K.C. LIU	CHECKED USA TANAKA	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH A	BRIDGE NO. / POST MILE Various	CCTV CAMERA MOUNTING DETAILS No. 1 — SES-4
	DETAILS	BY R. YEE	CHECKED K.C. LIU				
	QUANTITIES	BY K.C. LIU	CHECKED USA TANAKA				

(ENGLISH) SPECIAL DESIGNS BRANCH BORDER SHEET (REV. 7-1-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3619
PROJECT NUMBER & PHASE: 0412000451-1 CONTRACT NO.: 04-4A9251

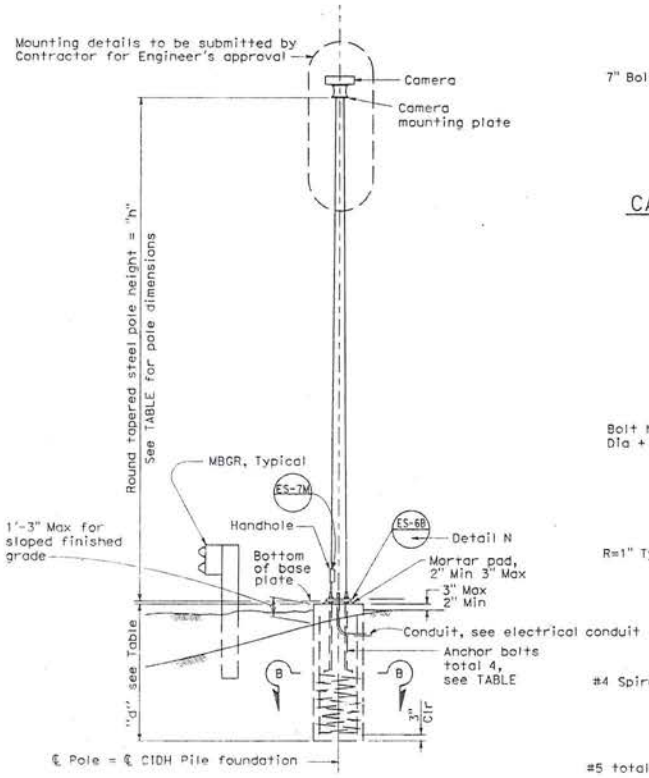
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES SHEET OF

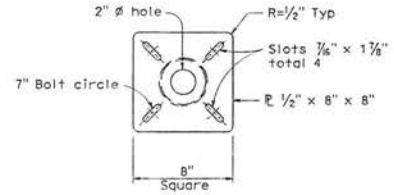
FILE => 2012bd/04-4A9251/ses-4.dgn

USERNAME => s121614 DATE PLOTTED => 28-AUG-2012 TIME PLOTTED => 13:32

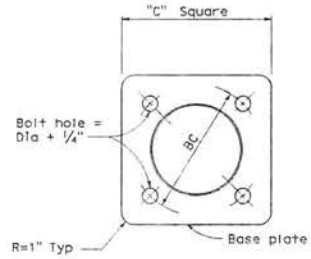
Pole Type	Pole Data				Base Plate Data				"d" 2'-0" ø CIDH Pile	Structural Steel LBS plus 3.5% Galvanizing
	Height "h"	Min OD		Thickness	"C"	Thickness	Anchor Bolts			
		BASE	TOP				SIZE	BC=BOLT CIRCLE		
CCTV 25	25'	7⅜"	3⅞"	0.1793"	1'-0"	1"	1" x 3'-0" x 4"	10½"	6'-0"	395
CCTV 30	30'	8"	3⅞"	0.1793"	1'-0"	1"	1" x 3'-0" x 4"	11"	7'-0"	475
CCTV 35	35'	8⅝"	3⅞"	0.1793"	1'-0"	1"	1" x 3'-0" x 4"	1'-0"	7'-0"	550
CCTV 40	40'	9⅜"	3⅞"	0.1793"	1'-1"	1"	1¼" x 3'-0" x 4"	1'-1"	7'-0"	650
CCTV 45	45'	10"	3⅞"	0.1793"	1'-1"	1"	1¼" x 3'-0" x 4"	1'-1½"	8'-0"	750



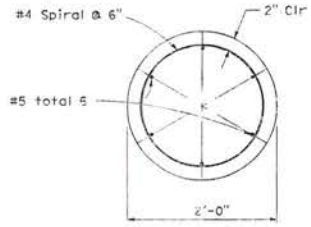
ELEVATION



CAMERA MOUNTING PLATE



BASE PLATE



SECTION B-B

GENERAL NOTES:

SPECIFICATIONS

Design : AASHTO Standard specifications for structural supports for highway signs, luminaires and traffic signals dated 2001.

LOADING

Wind Loadings : 100 mph

UNIT STRESSES

Structural Steel: fy = 48,000 psi tapered steel tube
fy = 36,000 psi unless otherwise noted

Anchor bolts = A307

Reinforced Concrete : f'c = 3600 psi
fy = 60,000 psi

NOTES:

1. The Contractor shall verify controlling field dimensions before ordering or fabricating any material.
2. All steel shall be galvanized after fabrication.
3. During pole erection, the post shall be raked as necessary with the use of leveling nuts to provide a plumb pole axis.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

May 1, 2006

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER Jeffrey B. Woody No. C41260 Exp. 3-31-07 CIVIL STATE OF CALIFORNIA

To get to the Caltrans web site, go to: http://www.dot.ca.gov

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

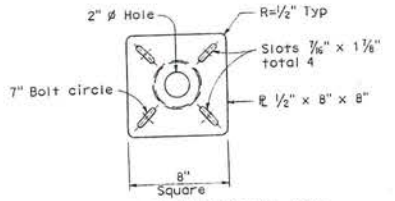
ELECTRICAL SYSTEMS (CLOSED CIRCUIT TELEVISION POLE DETAILS)

NO SCALE

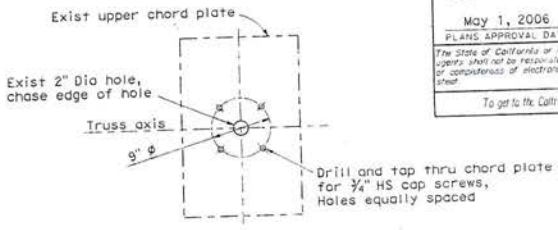
ES-16A

2006 STANDARD PLAN ES-16A

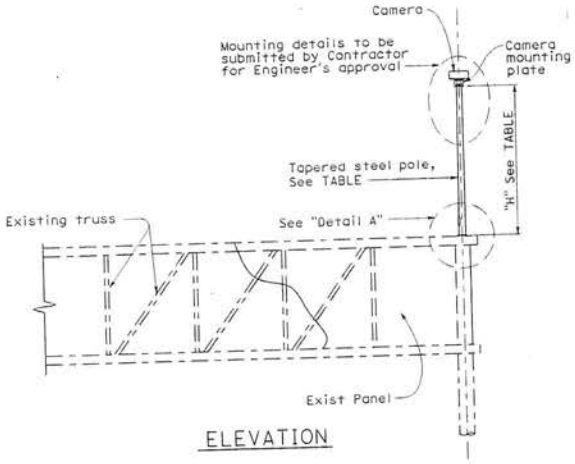
Pole Extension Type	Pole Data			
	Height "H"	Min OD		Thickness
		BASE	TOP	
CCTV 5	5'	4 3/16"	3 7/8"	0.1793"
CCTV 10	10'	5 1/4"	3 7/8"	0.1793"
CCTV 15	15'	5 5/16"	3 7/8"	0.1793"



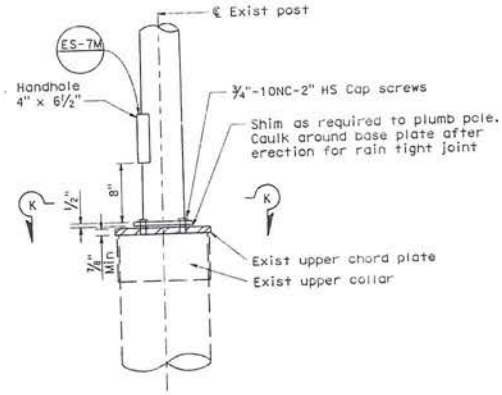
CAMERA MOUNTING PLATE



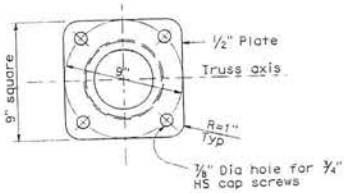
UPPER CHORD PLATE S13



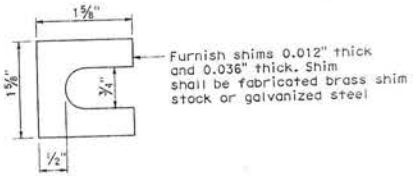
ELEVATION



DETAIL A



SECTION K-K



SHIM DETAIL

GENERAL NOTES:

SPECIFICATIONS

Design : AASHTO Standard specifications for structural supports for highway signs, luminaires and traffic signals dated 2001.

LOADING

Wind Loadings : 100 mph

UNIT STRESSES

Structural Steel: fy = 48,000 psi tapered steel tube
fy = 36,000 psi unless otherwise noted

NOTES:

1. The Contractor shall verify controlling field dimensions before ordering or fabricating any material.
2. All steel shall be galvanized after fabrication.
3. Bolt hole locations may vary at the discretion of the Engineer.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

May 1, 2006

PLANS APPROVAL DATE

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To get to the Caltrans web site, go to http://www.dot.ca.gov

REGISTERED PROFESSIONAL ENGINEER Jeffrey B. Woody No. C41260 Exp. 3-31-07 CIVIL STATE OF CALIFORNIA

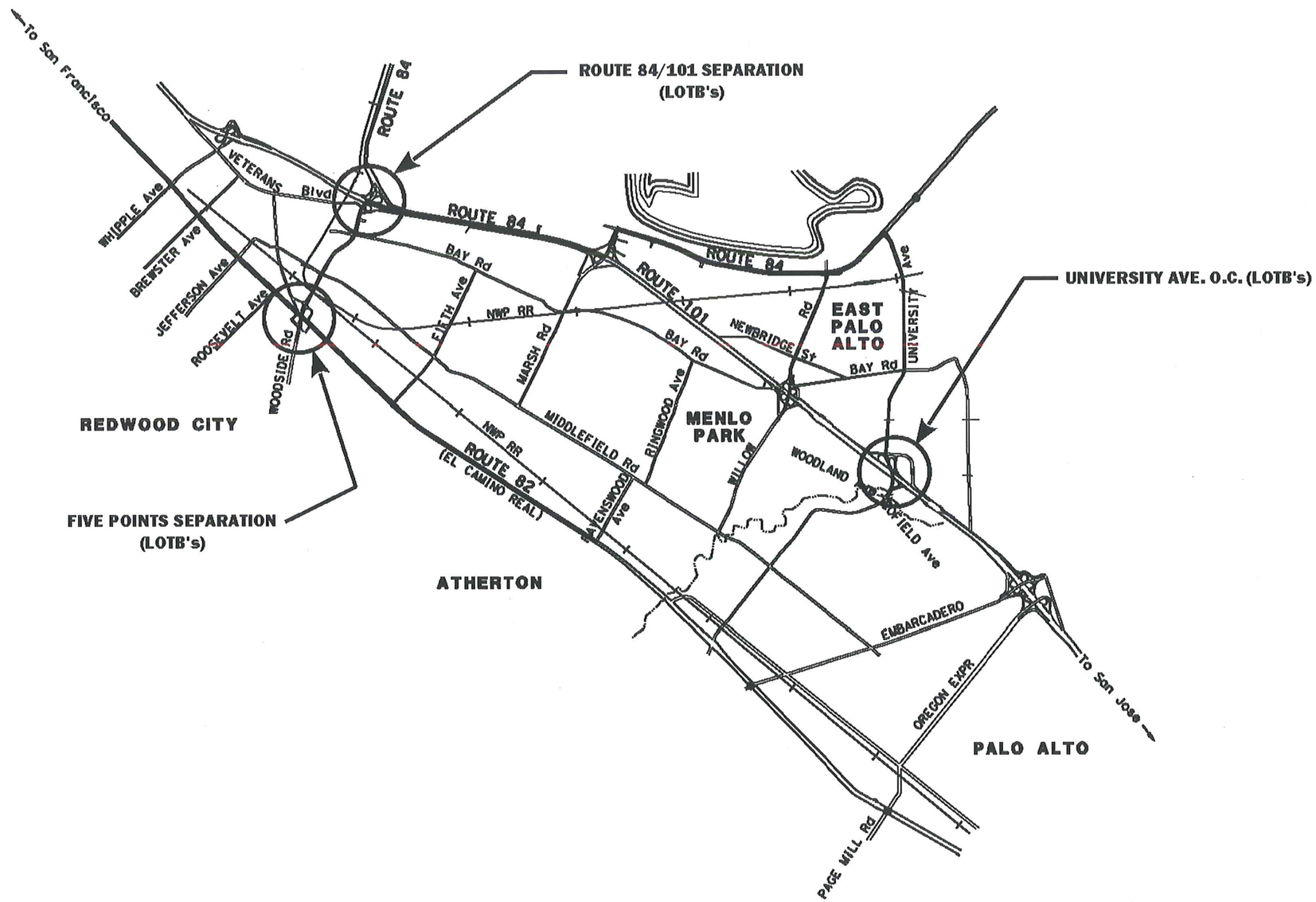
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (CLOSED CIRCUIT TELEVISION POLE DETAILS-OVERHEAD SIGN MOUNTED)

NO SCALE

ES-16B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, SCL	82,84,109, 101,114	Var		



AS-BUILT LOTB LOCATIONS

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

NO SCALE

CONTRACT No.	04-4A9251
PROJECT ID	0412000425

LAST REVISION 09-27-11 | DATE PLOTTED => @DATE | TIME PLOTTED => @TIME

PROJECT MANAGER

DESIGN ENGINEER

BORDER LAST REVISED 7/2/2010 | CALTRANS WEB SITE IS: HTTP//WWW.DOT.CA.GOV/ | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => @USER DGN FILE => @REQUEST | UNIT 0218 | PROJECT NUMBER & PHASE 04000011691

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SM				

Bobby O. Yukinari 10/7/94
REGISTERED GEOTECHNICAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER BOBBY O. YUKINARI No. 2086 Exp. 9-30-95 GEOTECHNICAL STATE OF CALIFORNIA

PLANS APPROVAL DATE

SAN MATEO COUNTY TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVENUE
SAN CARLOS, CALIFORNIA 94070

KLEINFELDER
2160 OAKLAND ROAD, SUITE B
SAN JOSE, CALIFORNIA 95131

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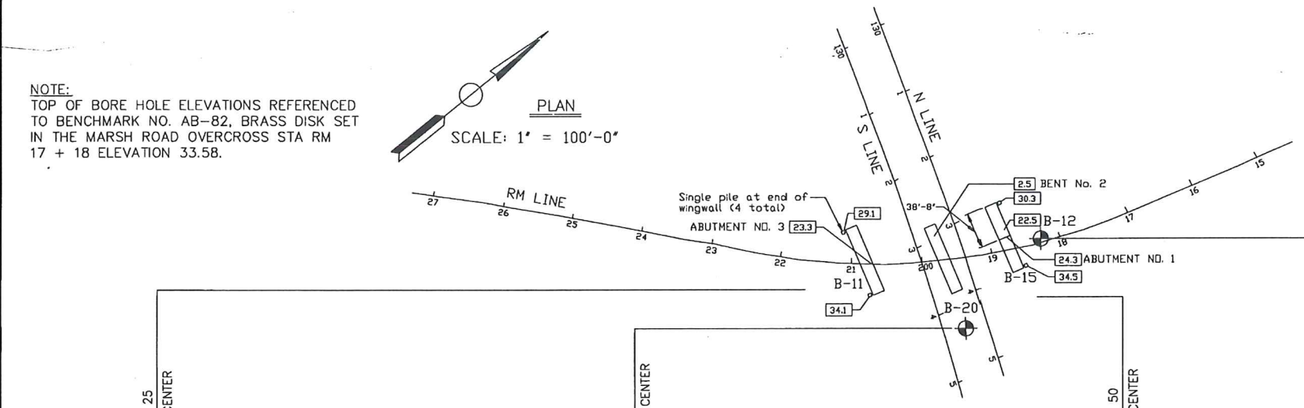
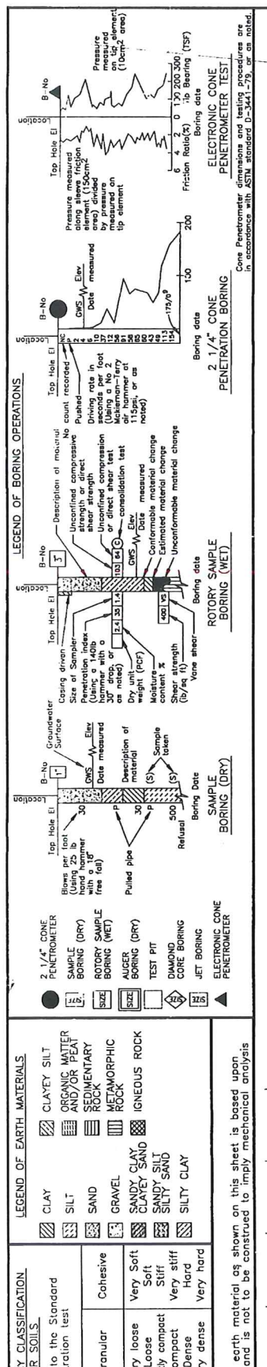
NO AS BUILT CHANGES
NO AS BUILT CHANGES
AS BUILT

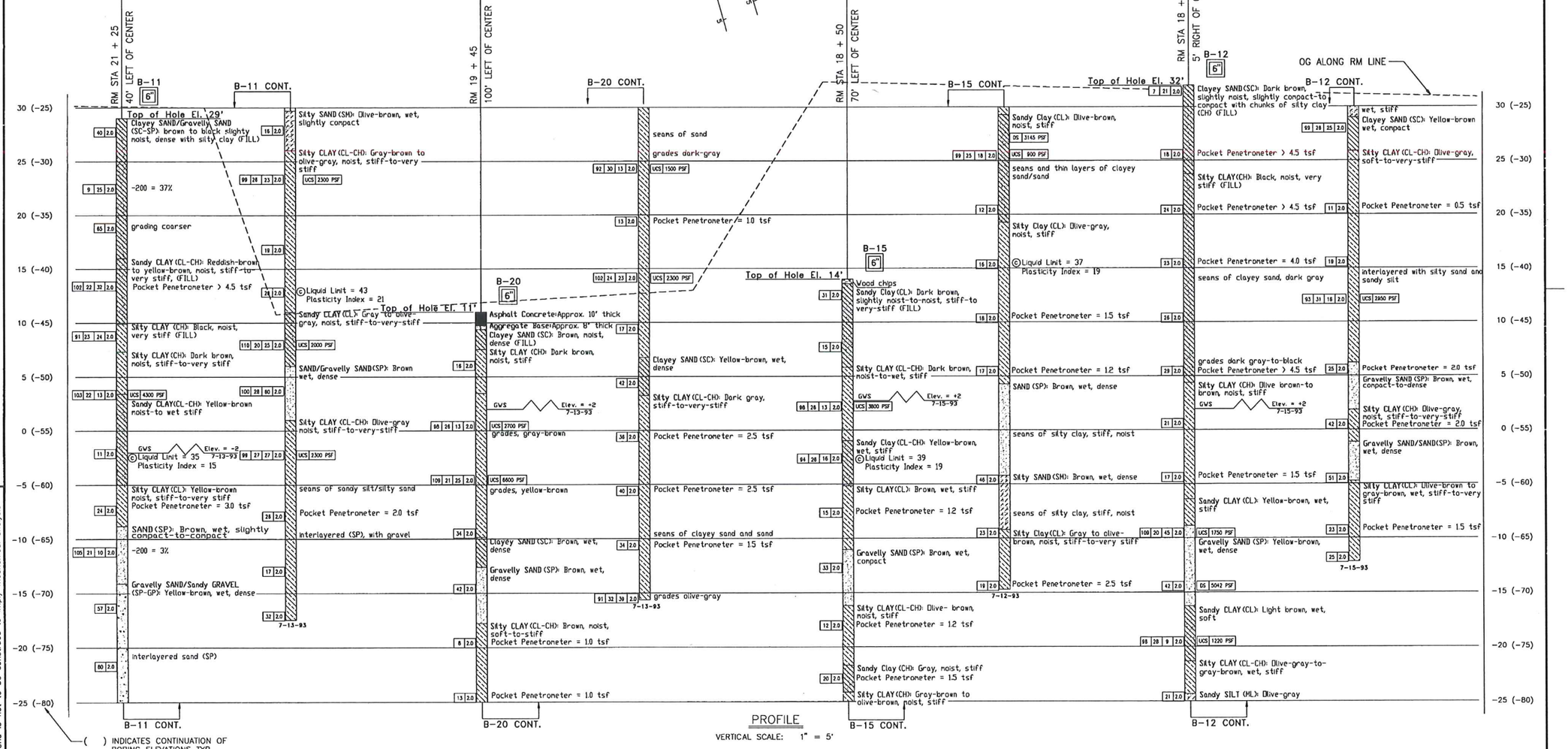
CORRECTIONS BY _____
CONTRACT NO. 04-235664
DATE _____

NOTE:
TOP OF BORE HOLE ELEVATIONS REFERENCED TO BENCHMARK NO. AB-82, BRASS DISK SET IN THE MARSH ROAD OVERCROSS STA RM 17 + 18 ELEVATION 33.58.





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



( ) INDICATES CONTINUATION OF BORING ELEVATIONS TYP.

PROFILE
VERTICAL SCALE: 1" = 5'

DESIGN OVERSIGHT 1-18-95 SIGN OFF DATE	DRAWN BY M. DONALDSON	CHECKED BY B. YUKINARI	FIELD INVESTIGATOR P. SCHMIDT; DATE

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER

BRIDGE NO. 35-0066
POST MILE 3.6

ROUTE 84/101 SEPARATION (REPLACE)
LOG OF TEST BORINGS

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04217
EA 235661

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 9/29/94

REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET 16 | OF 17

FILE JOB

ClibPDF - www.fastio.com

TO ACCOMPANY PLANS DATED	DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
	04	SM	101, 84			

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.

REG. PROJ. ENG. NO.	STATE	ROUTE NO.	POSTMILE LIMIT	SHEET NO.	TOTAL SHEETS
2	CAL.			80	111

F-181 (29)

Date	Contract No.	District	Structure	Sheet No.	Total Sheets
19	57-4TC31	04		40	111

July 16, 1956

NO AS BUILT CHANGES

NO AS BUILT CHANGES

AS BUILT

AS BUILT

CORRECTIONS BY

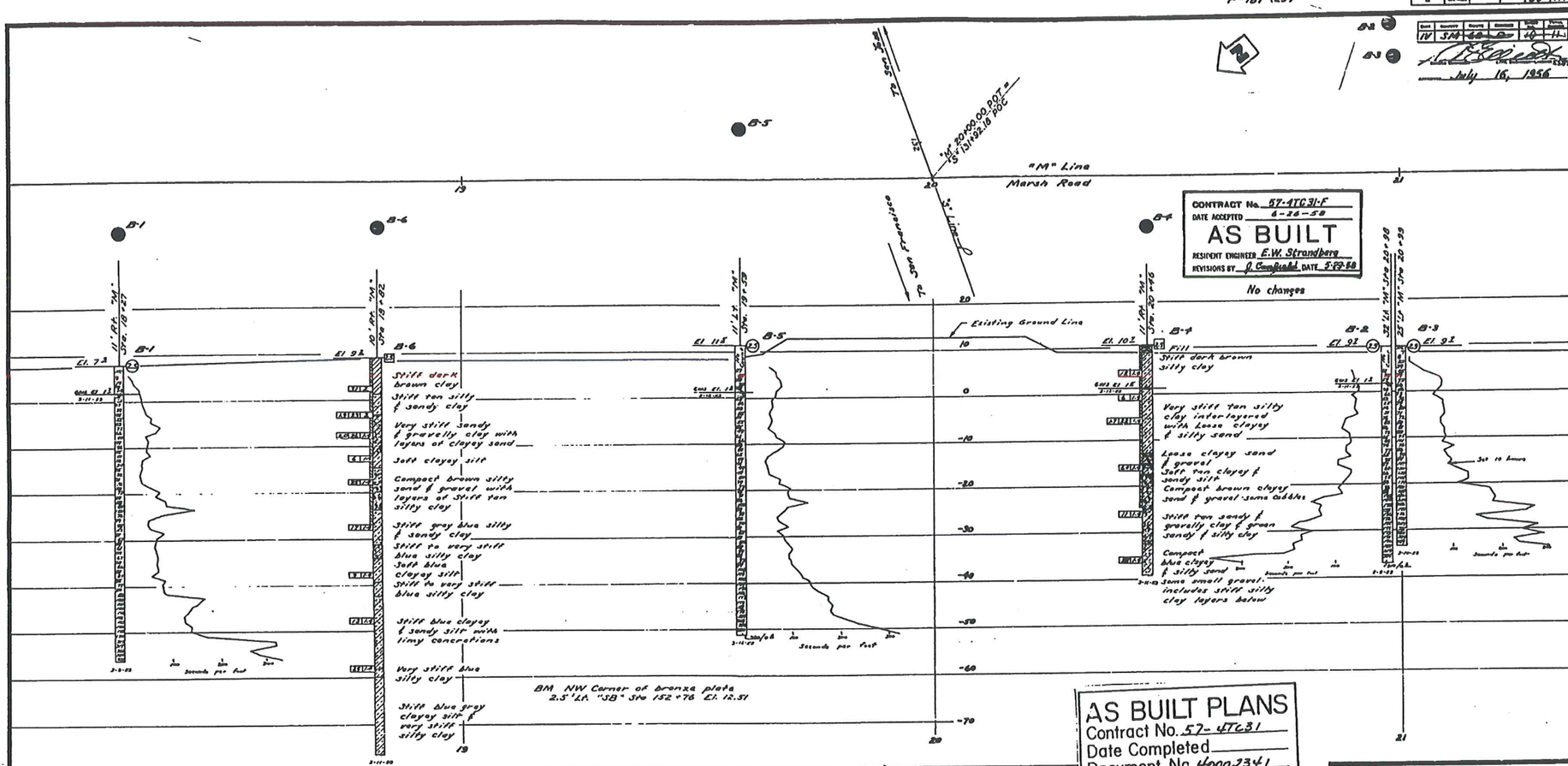
CORRECTIONS BY

CONTRACT NO. 04-235664

CONTRACT NO.

DATE

CONTRACT No. 57-4TC31-F
DATE ACCEPTED 6-26-50
AS BUILT
RESIDENT ENGINEER E.W. Strandberg
REVISIONS BY J. Campbell DATE 5-29-50
No changes



AS BUILT PLANS
Contract No. 57-4TC31
Date Completed
Document No. 4000-2341

Classification of Material Based on Standard Grade Size Limits

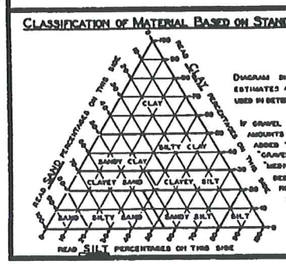


Diagram showing the basis for estimates of grade size distribution used in determination of class names

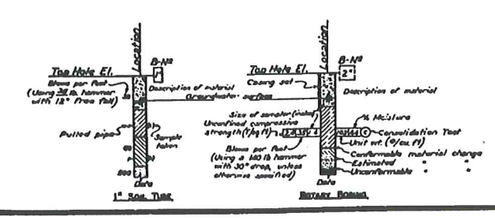
If gravel is present in appreciable amounts the term "gravelly" may be added to the class name, viz. "gravelly sand". The terms "coarse", "medium" and "fine" when used to describe gravel, sand and silt refer to standard grade size limits.

Legend of Earth Materials

- Gravel
- Sand
- Silt
- Clay
- Sandy Clay or Clayey Sand
- Sandy Silt or Silty Sand
- Silty Clay or Clayey Silt
- Peat and/or Organic Clay
- Filled 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



Notes

The contractor's attention is directed to section 2, article (c) of the standard specifications and to the special provisions accompanying this set of plans. Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis. Penetrometer borings having a rate of penetration measured in seconds per foot are driven with a No 2 Sherman-Terry air hammer at 110 psi.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

MARSH ROAD OVERCROSSING

LOG OF TEST BORINGS

SCALE: 1" = 10'	BRIDGE 35-66	FILE E-35	C-1563-10 DRAWING

1563 6

80

BRIDGE DEPARTMENT

FIELD STUDY by
DRAWN by
CHECKED by
Approved Environmental Impact Statement

DESIGN OVERSIGHT
1-12-95
SIGN OFF DATE

NOTE:
ADDITIONAL AS-BUILT FOUNDATION DATA MAY BE AVAILIABLE AT THE OFFICE OF TRANSPORTATION MATERIALS AND RESEARCH 5900 FOLSOM BOULEVARD SACRAMENTO, CALIFORNIA 95819.

DESIGN	BY	CHECKED
DETAILS	BY	CHECKED
QUANTITIES	BY	CHECKED

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04217
EA 235661

BRIDGE NO. 35-0066
POST MILE 3.6

ROUTE 84/101 SEPARATION (REPLACE)
AS-BUILT LOG OF TEST BORINGS

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 6/30/14

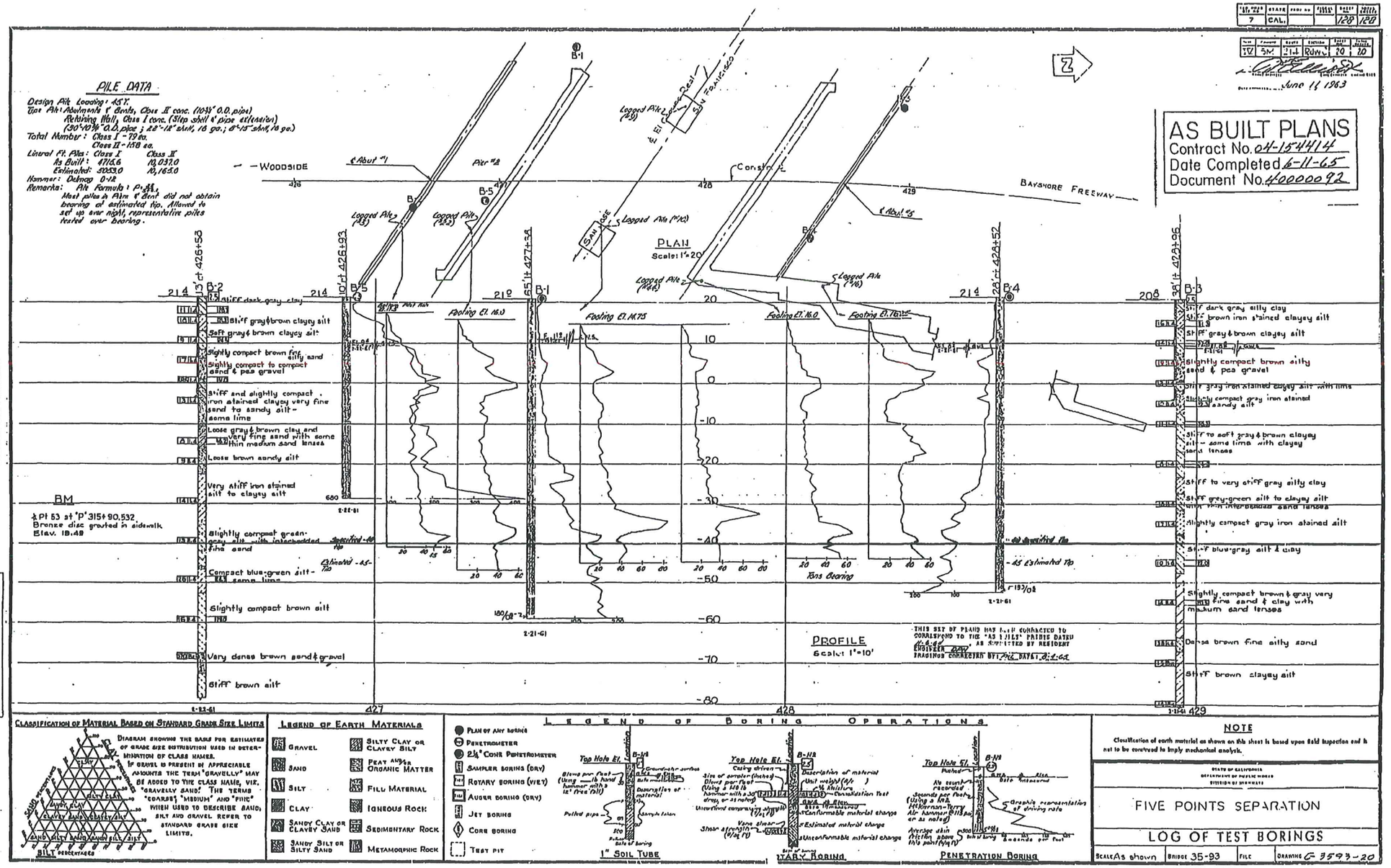
REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET 17 OF 17

(92082S16) 92082

ClibPDF - www.fastio.com

7-11-94 TO ACCOMPANY PLANS DATED	DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
	04	SM	84,101	24.7/24.9, 1.9/5.9	47	52



AS BUILT PLANS
Contract No. 04-154414
Date Completed 6-11-65
Document No. 40000092

REGISTERED PROFESSIONAL ENGINEER FRANKLIN P. TAYLOR 816 EXP. 3-31-96 GEOTECHNICAL STATE OF CALIFORNIA

The As-Built Log of Test Boring Sheet Was Used to Prepare the Geotechnical Report

NO CHANGES
AS BUILT
CORRECTIONS BY Tim Ehrich
CONTRACT NO. 04-141304
DATE 4-27-95

128

Thomas Post/Randy Anderson DESIGN OVERSIGHT 5/02/94 STINOFF DATE	NOTE: ADDITIONAL AS-BUILT FOUNDATION DATA MAY BE AVAILABLE AT THE DIVISION OF NEW TECHNOLOGY, MATERIALS AND RESEARCH 5900 FOLSOM BOULEVARD, SACRAMENTO, CALIFORNIA 95819	DESIGN BY C.D.Sun	CHECKED G.Rowe	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	W.Earl PROJECT ENGINEER	BRIDGE NO. 35-93	EARTHQUAKE RETROFIT PROJECT NO 414
		DETAILS BY W.Simonsma	CHECKED G.Rowe/W.Earl			POST MILE 24.68	FIVE POINTS SEPARATION
		QUANTITIES BY C.D.Sun	CHECKED G.Rowe		CU 04 EA 141301		AS-BUILT LOG OF TEST BORINGS

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES → ~~9-30-93~~ 10-21-93

REVISION DATES (PRELIMINARY STAGE ONLY) SHEET 6 OF 6

ClibPDF - www.fastio.com

FED. ROAD DIST. NO.	STATE	FACI. NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
7	CAL.			128	128

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
7V	SM	214	Rdwy.	20	20

June 14, 1963

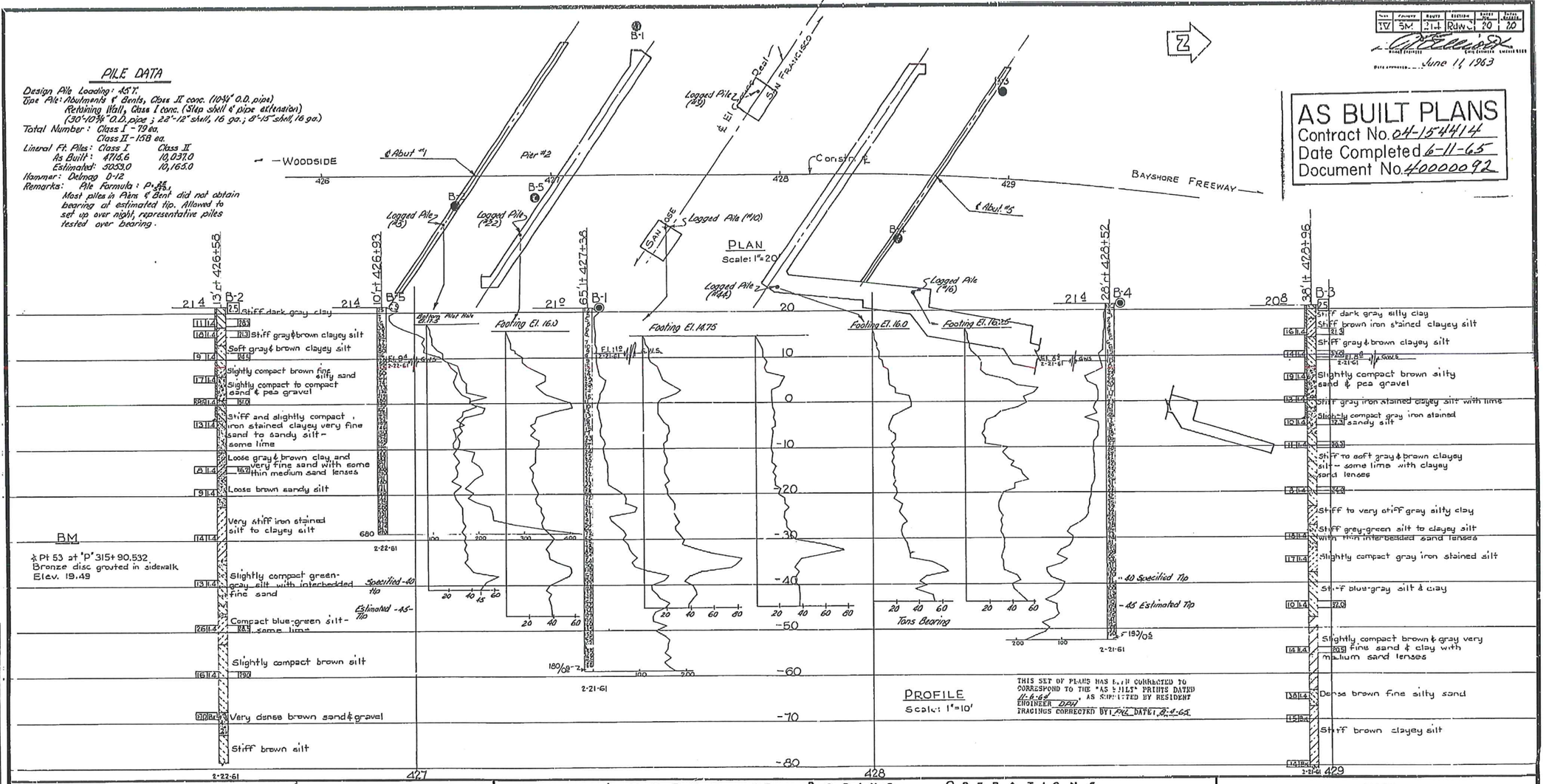
AS BUILT PLANS
Contract No. 04-154414
Date Completed 6-11-65
Document No. 40000092

PILE DATA

Design Pile Loading: 45 T.
Type Pile: Abutments & Bents, Class II conc. (10¾" O.D. pipe)
Retaining Wall, Class I conc. (Slip shell & pipe extension)
(30'-10¾" O.D. pipe; 22'-12" shell, 16 ga.; 8'-15" shell, 16 ga.)
Total Number: Class I - 79 ea.
Class II - 158 ea.

Lineal Ft. Piles:	Class I	Class II
As Built:	4716.6	10,037.0
Estimated:	5053.0	10,165.0

Hammer: Delmag D-12
Remarks: Pile Formula: $P = \frac{2E}{L+0.1}$.
Most piles in Pier & Bent did not obtain bearing at estimated tip. Allowed to set up over night, representative piles tested over bearing.



THIS SET OF PLANS HAS BEEN CORRECTED TO CORRESPOND TO THE "AS BUILT" PRINTS DATED 11-6-65, AS SUBMITTED BY RESIDENT ENGINEER DPH
TRACINGS CORRECTED BY: PHL DATE: 8-4-65

BRIDGE DEPARTMENT

FIELD STUDY: H. Haber 7-61
DRAWN: H. Daly 3-61
CHECKED: H. Haber 3-61
Approved & Recommended for Acceptance: [signature] Engineering Geologist, Engineering Geology

128

CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

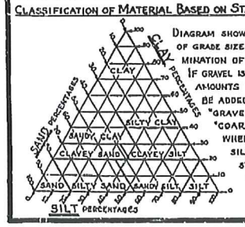


DIAGRAM SHOWING THE BASIS FOR ESTIMATES OF GRADE SIZE DISTRIBUTION USED IN DETERMINATION OF CLASS NAMES.

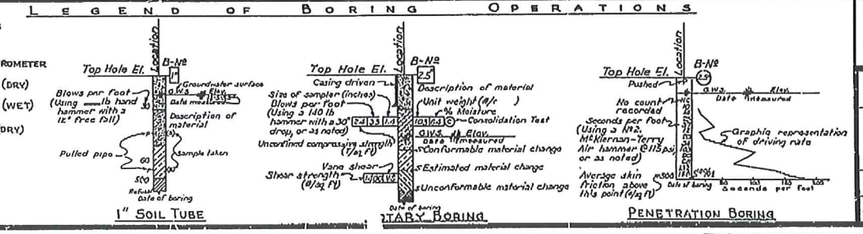
IF GRAVEL IS PRESENT IN APPRECIABLE AMOUNTS THE TERM "GRAVELLY" MAY BE ADDED TO THE CLASS NAME, VIZ. "GRAVELLY SAND." THE TERMS "COARSE," "MEDIUM" AND "FINE" WHEN USED TO DESCRIBE SAND, SILT AND GRAVEL REFER TO STANDARD GRADE SIZE LIMITS.

LEGEND OF EARTH MATERIALS

- 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



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.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

FIVE POINTS SEPARATION

LOG OF TEST BORINGS

SCALE As shown	BRIDGE 35-93	FILE	DRAWING G 3593-20

PREL. DRAWING NO. P-3593-6

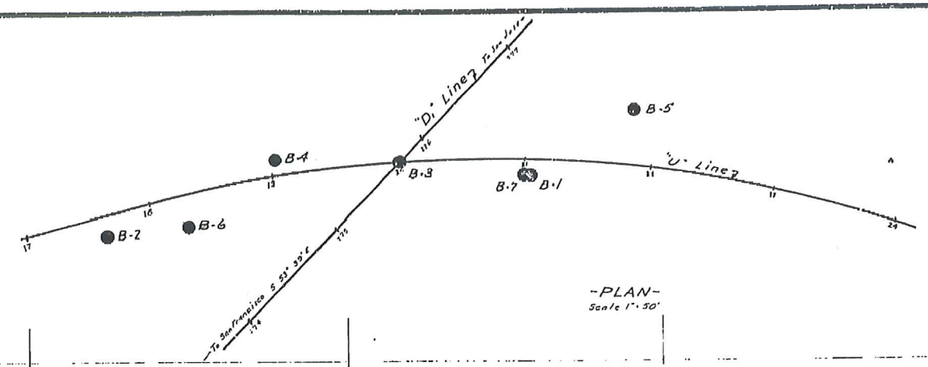
PR-3593-4

ClibPDF - www.fastio.com

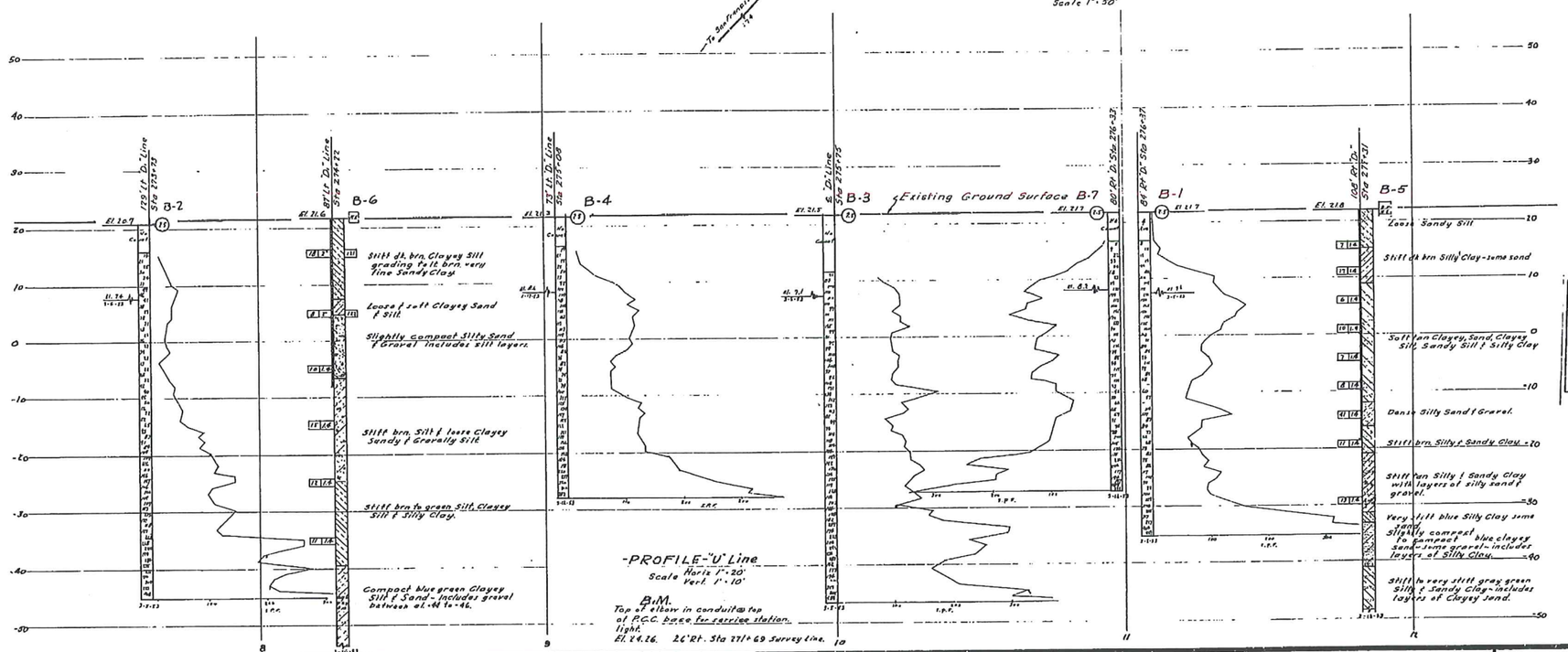
FED. AID DIST. NO.	STATE
2	CAL.

DIST.	COUNTY	ROUTE	SECTION	POST MILE	TOTAL SHEETS
10	SM	68	D	15	16

BRIDGE DEPARTMENT



-PLAN-
Scale 1" = 50'



-PROFILE-"U" Line
Scale Horiz. 1" = 20'
Vert. 1" = 10'

B.M.
Top of elbow in conduit @ top of P.C.C. base for service station light.
El. 24.26. 26' Rt. Sta 271+69 Survey Line.

AS BUILT PLANS
Contract No. 57-47C27
Date Completed
Document No. 40002342

CONTRACT No. 57-47C27
DATE ACCEPTED June 4, 1958
AS BUILT
No Change
RESIDENT ENGINEER W.S. Smith
REVISIONS BY R.M.M. DATE 5-5-58

FIELD STUDY: H. R. D. Mar 3-7-57
DRAWN: H. R. D. Mar 3-7-57
CHECKED: W. H. R. Fisher
Approval Recommended by: [signature]

CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

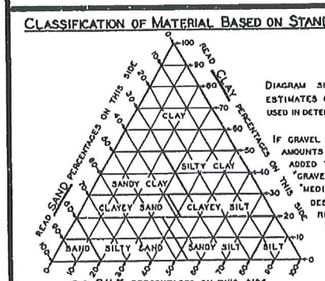


DIAGRAM SHOWING THE BASIS FOR ESTIMATES OF GRADE SIZE DISTRIBUTION USED IN DETERMINATION OF CLASS NAMES

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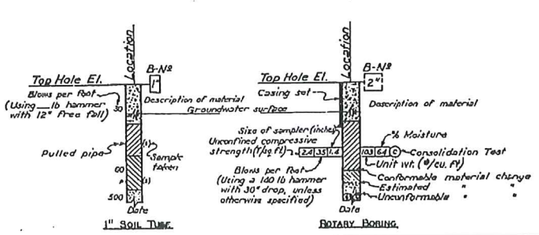
- Silty Clay or Clayey Silt
- Peat and/or Organic Clay
- Filled Material
- Igneous Rock
- Sedimentary Rock
- Metamorphic Rock

LEGEND OF BORING OPERATIONS

- Plan of any boring
- Penetrometer
- 2¼" Cone penetrometer
- Sampler boring (dry)
- Rotary boring (wet)
- Auger boring (dry)
- Jet boring
- Core boring
- Test pit



NOTES

THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 2, ARTICLE (C) OF THE STANDARD SPECIFICATIONS AND TO THE SPECIAL PROVISIONS ACCOMPANYING THIS SET OF PLANS.

CLASSIFICATION OF EARTH MATERIAL AS SHOWN ON THIS SHEET IS BASED UPON FIELD INSPECTION AND IS NOT TO BE CONSTRUED TO IMPLY MECHANICAL ANALYSIS.

PENETROMETER BORINGS HAVING A RATE OF PENETRATION MEASURED IN SECONDS PER FOOT ARE DRIVEN WITH A Nº 2 McKIERNAN-TERRY AIR HAMMER AT 115 PSI.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

UNIVERSITY AVE O.C.

LOG OF TEST BORINGS

SCALE: HORIZ. As Shown VERT. As Shown | BRIDGE 55-113 R/L | FILE | DRAWING 3515-15

84

3515 1 of 2

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ARTS TO THE BEST TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE ____ SIGNATURE ____ TITLE ____

ClibPDF - www.fastio.com

<Rudy_C_Lopez@dot.ca.gov>
01/26/2011 12:32 PM

To <Tung_Nguyen@dot.ca.gov>
cc
bcc
Subject Corrosion Test Summary Report - Soil, EA: 04-235620, P ID 0400000678 (Corr. #s CR110034 & CR110035)

History: This message has been forwarded.

Division of Engineering Services
Materials Engineering and Testing Services
Corrosion And Structural Concrete Field Investigation Branch
Report Date: 1/26/2011
Reported By: Lopez, Rudy

TEST SUMMARY REPORT - Soil/Water

Bridge Name: **SAN FRANCISQUITO CREEK**
Bridge Number: **35-0013**
EA No.: **04-235621**
EFIS No.: **0400000678**
Dist/Co/Rte/PM or KP: **04 / SM / 101 / 0.0**

SIC Number (TL101)	Sample Location	Sample Type	Sample Depth	Minimum Resistivity[1] (ohm-cm)	pH[2]	Chloride Content[3] (ppm)	Sulfate Content[4] (ppm)
C708227	SAN FRANCISQUITO CREEK	SOIL	16.5-20 FEET / BORE R-10-001,B2	978	7.2	163	781
C708248	SAN FRANCISQUITO CREEK	SOIL	20-25 FEET / BORE R-10-002, B2	394	5.14	778	6517

This site is corrosive (see note below for MSE wall backfill).

Controlling corrosion parameters are as follows:

- 5.14 pH
- 778 ppm Chloride
- 6517 ppm Sulfate

TEST NO. 6787 - 1P

BILLED

DATE RECEIVED AUG 16 2010

CALC. BY _____ APPROVED BY _____

DATE REPORTED NOV 12 2010

☐ DISTRICT DIRECTOR ☐ TRANS.
☐ DIS. MAT. LS ENGR. ☐ PAV'T.
☐ RESIDENT ENGINEER ☐ ACCOUN
☐ CONSTRUCTION ☐

GRADING ANALYSIS

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	SPECIF. LIMITS ☐ SOUGHT ☐
3					
2½					
2					
1½					
1					
¾					
½					
⅜					
4					
8					
16					
30					
50					
100					
200					
5μ					
1μ					

GRADING AS USED WAS OBTAINED AS FOLLOWS:

% BY WT. % BY VOL. TEST NO. DESCRIPTION

Resistivity = 4572
Specs: 1000 Ω-cm (min)

REMARKS:
pH = 7.6
Specs: 5.6 (min)

SURFACE

BASE

SUBBASE

GRAVEL EQUIVALENT FACTOR

TRAFFIC INDEX

R VALUE: EXUDATION PRESSURE
EXPANSION PRESSURE
AT EQUILIBRUM SPEC.

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS (FEET)

REPORT OF TESTS ON

SOIL

IF CONTRACT, USE CONTRACT ITEM

SOURCE	CHARGE	EXPENDITURE AUTHORIZATION

SPECIAL DESIGNATION (USE WHEN APPLICABLE)	ACTIVITY OR OBJECT	AMOUNT

TEST SPECIMEN	A	B	C	D
DATE TESTED				
COMPACTOR FOOT PRESSURE P.S.I.				
INITIAL MOISTURE %				
SOAK WATER ML				
WATER ADDED-ML (TOTAL)				
WATER ADDED %				
MOISTURE AT COMPACTION %				
WET WT. OF BRIQUETTE-GMS				
HEIGHT OF BRIQUETTE-INCHES				
DRY DENSITY OF BRIQ. - # CU. FT.				
STABILOMETER P_H AT 2000 LBS.				
DISPLACEMENT				
R-VALUE BY STABILOMETER				
EXUDATION PRES. P.S.I.				
THICK. BY STAB. FEET				
EXPANSION DIAL READING				
THICK. BY EXP. PRESS. FEET				
R-VALUE BY EXPANSION				

TEST RESULTS			SPEC.
LL. P.L P.I.			
CV			
S.E	AS REC'D.		
	CRUSHED		
	COMBINED		
LART	GRADE	100 REV.	
		500 REV.	
DUR	D_f		
	D_t		
% CRUSHED PARTICLES			

SP. GR.	☐ BULK (OV ☐ BULK (SS ☐ APPARE
	FINE
AS REC'D.	
CRUSHED	

REL. COMPACTION	
	IN PLACE
DENSITY	
MOISTURE	
% REL. COMP.	
SPEC.	

RICHARD CHAN
DISTRICT MATERIALS ENGINEER
BRANCH CHIEF, MATERIALS B

-TL-361 (Rev.10/78)

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
SAMPLE IDENTIFICATION CARD
TL-0101 (REV. 10/97)

CARD NUMBER C708226

☐ PRELIMINARY TESTS
☑ PROCESS TESTS
☐ ACCEPTANCE TESTS
INDEPENDENT ASSURANCE TESTS
☐ SPECIAL TESTS

SAMPLE SENT TO:
☐ HDQTRS. LAB
☐ LAB
☐ DIST. LAB
☐ SHIPMENT
☐ LAB
AUTHORIZATION NO.

FIELD NO.
DIST. LAB NO. ~~7934~~
6787-1P
OR REQ. NO.

6787-1P

AUG 16 2010

SAMPLE OF SOIL
FOR USE IN BRIDGE FOUNDATION DESIGN
SAMPLE FROM R-10-001
DEPTH 1-5'
LOCATION OF SOURCE SAN FRANCISQUITO CREEK

THIS SAMPLE IS SHIPPED IN (NO. CONTAINERS) B
AND IS ONE OF A GROUP OF
SAMPLES REPRESENTING (TONS, GALS, BBLS, STA, ETC.)

OWNER OR MANUFACTURER CALTRANS
TOTAL QUANTITY AVAILABLE
TEST RESULTS DESIRED ☑ NORMAL ☐ PRIORITY
DATE NEEDED 09/24/10
REMARKS
CORROSION TEST

COVER ADDITIONAL INFORMATION WITH LETTER
DATE SAMPLED 08/10/2010
BY TUNG NGUYEN TITLE T.E. (CIVIL)
DIST, CO, RTE, PM 04-SM-101-0.0
LIMITS

CONT. NO. 235620 PROJECT 0400000678
FED. NO. SUB OBJECT 160 (PHASE: 0)
RES. ENGR. OR SUPT. TUNG NGUYEN
ADDRESS 111 GRAND AVE, MS 16, 8TH FL. OAKLAND CA 94612
CONTRACTOR
PHONE: 510-622-1775 . FAX: 510-286-4839

MAIL TO SAME DESTINATION AS SAMPLE

800 700 600 500 400 300 200 100
EXUDATION PRESSURE (PSI)

87 46243

TEST NO. 6787 - 3P

BILLED

DATE RECEIVED AUG 16 2010

CALC. BY _____ APPROVED BY _____

DATE REPORTED DEC 17 2010

☐ DISTRICT DIRECTOR ☐ TRANS.
☐ DIS. MAT LS MGR. ☐ PAV'T. S
☐ RESIDENT ENGINEER ☐ ACCOUNT
☐ CONSTRUCTION ☐

GRADING ANALYSIS

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	SPECIF. LIMITS SOUGHT ☐
3					
2½					
2					
1½					
1					
¾					
½					
⅜					
4					
8					
16					
30					
50					
100					
200					
5μ					
1μ					

GRADING AS USED WAS OBTAINED AS FOLLOWS:

% BY WT. % BY VOL. TEST NO. DESCRIPTION

Resistivity = 2700
spec: 1000Ω-cm (min)

REMARKS:

pH = 7.66
spec: 5.6 (min)

SURFACE

BASE

SUBBASE

GRAVEL EQUIVALENT FACTOR

TRAFFIC INDEX

R VALUE: EXUDATION PRESSURE

EXPANSION PRESSURE

AT EQUILIBRUM SPEC.

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS (FEET)

REPORT OF TESTS ON

SOIL

IF CONTRACT, USE CONTRACT ITEM

SOURCE	CHARGE	EXPENDITURE AUTHORIZATION

SPECIAL DESIGNATION (USE WHEN APPLICABLE)	ACTIVITY OR OBJECT	AMOUNT

TEST SPECIMEN	A	B	C	D
DATE TESTED				
COMPACTOR FOOT PRESSURE P.S.I.				
INITIAL MOISTURE %				
SOAK WATER ML				
WATER ADDED-ML (TOTAL)				
WATER ADDED %				
MOISTURE AT COMPACTION %				
WET WT. OF BRIQUETTE-GMS				
HEIGHT OF BRIQUETTE-INCHES				
DRY DENSITY OF BRIQ. - # CU. FT.				
STABILOMETER P_H AT 2000 LBS.				
DISPLACEMENT				
R-VALUE BY STABILOMETER				
EXUDATION PRES. P.S.I.				
THICK. BY STAB. FEET				
EXPANSION DIAL READING				
THICK. BY EXP. PRESS. FEET				
R-VALUE BY EXPANSION				

TEST RESULTS			SPEC.
LL. P.L P.I.			
CV			
S.E	AS REC'D.		
	CRUSHED		
	COMBINED		
LART	GRADE	100 REV.	
		500 REV.	
DUR	D_f		
	D_i		
% CRUSHED PARTICLES			

SP. GR. ☐ BULK (OVE ☐ BULK (SSD ☐ APPAREN

	FINE
AS REC'D.	
CRUSHED	

REL. COMPACTION

	IN PLACE	OI
DENSITY		
MOISTURE		
% REL. COMP.		
SPEC.		

RICHARD CHAN
DISTRICT MATERIALS ENGINEER
BRANCH CHIEF, MATERIALS B

-TL-361 (Rev. 10/78)

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

SAMPLE IDENTIFICATION CARD

TL-0101 (REV. 10/97)

CARD NUMBER C708228

☐ PRELIMINARY TESTS
☑ PROCESS TESTS
☐ ACCEPTANCE TESTS
INDEPENDENT ASSURANCE TESTS
☐ DIST. LAB
☐ TRANS. LAB
☐ SPECIAL TESTS

SAMPLE SENT TO:
☐ HDQTRS. LAB
☐ BRANCH LAB
☐ DIST. LAB
SHIPMENT NO.
AUTHORIZATION

FIELD NO.
DIST. LAB NO. ~~7934~~
LOT NO. 6787-3P
PO. OR REQ. NO.

6787-3P

AUG 16 2010

SAMPLE OF SOIL

FOR USE IN. BRIDGE FOUNDATION DESIGN

SAMPLE FROM BORING R-10-002

DEPTH 0.2 - 10'

LOCATION OF SOURCE SAN FRANCISQUITO CREEK

THIS SAMPLE IS SHIPPED IN (NO. CONTAINERS) B-1 R-10-002

AND IS ONE OF A GROUP OF

SAMPLES REPRESENTING (TONS, GALS, BBLS, STA, ETC.)

OWNER OR MANUFACTURER CALTRANS

TOTAL QUANTITY AVAILABLE

TEST RESULTS DESIRED ☑ NORMAL ☐ PRIORITY

DATE NEEDED 09/24/10

REMARKS

CORROSION TEST

COVER ADDITIONAL INFORMATION WITH LETTER

DATE SAMPLED 08/10/2010

BY RIFAAT NASHED TITLE T.E. (CIVIL)

DIST, CO, RTE, PM 04-SM-101-0.0

LIMITS

CONT. NO. 235620 PROJECT 0400000678

FED. NO. SUB OBJECT 160

RES. ENGR. OR SUPT. TUNG NGUYEN

ADDRESS 111 GRAND AVE, MS16, 8TH FL. OAKLAND

CONTRACTOR CA94612

PHONE: 510-622-1775 FAX 510-286-4839

MAIL TO SAME DESTINATION AS SAMPLE

800 700 600 500 400 300 200 100

EXUDATION PRESSURE (PSI)

87 46243

TEST NO. 6787 - 23P

BILLED

DATE RECEIVED AUG 16 2010

CALC. BY _____ APPROVED BY _____

DATE REPORTED DEC 17 2010

☐ DISTRICT DIRECTOR ☐ TRANS. LA
☐ DIS. MAT LS MGR. ☐ PAV'T. SEC
☐ RESIDENT ENGINEER ☐ ACCOUNTIN
☐ CONSTRUCTION ☐

GRADING ANALYSIS

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	SPECIF. LIMITS SOUGHT ☐
3					
2½					
2					
1½					
1					
¾					
½					
⅜					
4					
8					
16					
30					
50					
100					
200					
5μ					
1μ					

GRADING AS USED WAS OBTAINED AS FOLLOWS:

% BY WT. % BY VOL. TEST NO. DESCRIPTION

(*) Resistivity = 394
Specs: 1000 Ω-cm (min)

REMARKS: pH = 5.14
Specs: 5.6 (min)

(*) MATERIAL / SAMPLE SENT TO METS - SACTO FOR CHLORIDE and SULFATE TESTING. MATERIAL SUBMITTED FOR TESTING FAILED MINIMUM SPECS.

SURFACE

BASE

SUBBASE

GRAVEL EQUIVALENT FACTOR

TRAFFIC INDEX

R VALUE: EXUDATION PRESSURE

EXPANSION PRESSURE

AT EQUILIBRUM SPEC.

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS (FEET)

REPORT OF TESTS ON

Soil

IF CONTRACT, USE CONTRACT ITEM

SOURCE	CHARGE	EXPENDITURE AUTHORIZATION

SPECIAL DESIGNATION (USE WHEN APPLICABLE)	ACTIVITY OR OBJECT	AMOUNT

TEST SPECIMEN	A	B	C	D
DATE TESTED				
COMPACTOR FOOT PRESSURE P.S.I.				
INITIAL MOISTURE %				
SOAK WATER ML				
WATER ADDED-ML (TOTAL)				
WATER ADDED %				
MOISTURE AT COMPACTION %				
WET WT. OF BRIQUETTE-GMS				
HEIGHT OF BRIQUETTE-INCHES				
DRY DENSITY OF BRIQ. - # CU. FT.				
STABILOMETER P_H AT 2000 LBS.				
DISPLACEMENT				
R-VALUE BY STABILOMETER				
EXUDATION PRES. P.S.I.				
THICK. BY STAB. FEET				
EXPANSION DIAL READING				
THICK. BY EXP. PRESS. FEET				
R-VALUE BY EXPANSION				

TEST RESULTS			SPEC.
LL.	P.L	P.I.	
CV			
S.E	AS REC'D.		
	CRUSHED		
	COMBINED		
LART	GRADE	100 REV.	
		500 REV.	
DUR	D_f		
	D_i		
% CRUSHED PARTICLES			

SP. GR. ☐ BULK (OVE ☐ BULK (SSD) ☐ APPARENT

	FINE	C
AS REC'D.		
CRUSHED		

REL. COMPACTION D

	IN PLACE	OP
DENSITY		
MOISTURE		
% REL. COMP.		
SPEC. %		

RICHARD CHAN
DISTRICT MATERIALS ENGINEER
BRANCH CHIEF, MATERIALS B

-TL-361 (Rev. 10/78)

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

SAMPLE IDENTIFICATION CARD

TL-0101 (REV. 10/97)

CARD NUMBER C708248

☐ PRELIMINARY TESTS
☑ PROCEDURE TESTS
☐ ACCEPTANCE TESTS
☐ INDEPENDENT ASSURANCE TESTS
☐ DIST. LAB
☐ TRANS. LAB
☐ SPECIAL TESTS

SAMPLE SENT TO:
☐ HDQTRS. LAB
☐ BRANCH LAB
☐ DIST. LAB
SHIPMENT NO.
AUTHORIZATION

FIELD NO.
DIST. LAB NO. ~~7934~~ 6787-23P
TO 6787-23P
PROJ. REQ. NO.

AUG 16 2010

SAMPLE OF Soil

FOR USE IN BRIDGE FOUNDATION DESIGN

SAMPLE FROM BORING R-10-002

DEPTH 20-25'

LOCATION OF SOURCE SAN FRANCISQUITO CREEK

THIS SAMPLE IS SHIPPED IN (NO. CONTAINERS) R-10-002-B2

AND IS ONE OF A GROUP OF

SAMPLES REPRESENTING (TONS, GALS, BBLS, STA. ETC.)

OWNER OR MANUFACTURER CALTRANS

TOTAL QUANTITY AVAILABLE

TEST RESULTS DESIRED ☑ NORMAL ☐ PRIORITY

DATE NEEDED 09/24/10

REMARKS

CORROSION TEST

COVER ADDITIONAL INFORMATION WITH LETTER

DATE SAMPLED 08/10/2010

BY RIFAAT NASHED TITLE T.E. (CIVIL)

DIST, CO, RTE, PM 04-SM-101-0.0

LIMITS

CONT. NO. 235620 Project 0400000678

FED. NO. SUB OBJECT 160

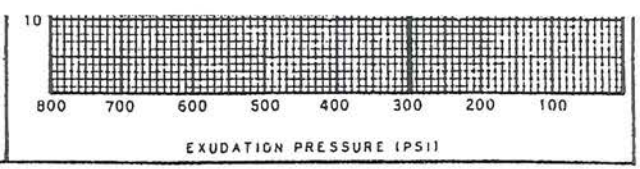
RES. ENGR. OR SUPT. TUNG NGUYEN

ADDRESS 111 GRAND AVE, MS16, 8TH FL. OAKLAND

CONTRACTOR CA94612

PHONE: 510-622-1775 FAX 510-286-4839

MAIL TO SAME DESTINATION AS SAMPLE



87 4643

TEST NO. 6787 - 43P

BILLED

DATE RECEIVED AUG 30 2010

CALC. BY _____ APPROVED BY _____

DATE REPORTED DEC 17 2010

☐ DISTRICT DIRECTOR ☐ TRANS.
☐ DIS. MAT LS ☐ PAV'T. S
☐ RESIDENT ENGINEER ☐ ACCOUNT
☐ CONSTRUCTION ☐

GRADING ANALYSIS

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	SPECIF. LIMITS SOUGHT ☐
3					
2½					
2					
1½					
1					
¾					
½					
⅜					
4					
8					
16					
30					
50					
100					
200					
5μ					
1μ					

GRADING AS USED WAS OBTAINED AS FOLLOWS:

% BY WT.	% BY VOL.	TEST NO.	DESCRIPTION

RESISTIVITY = 2672
SPEC: 1000 Ω-CM (MIN)

REMARKS: PH = 7.45
(SPEC: 6.6 (MIN))

SURFACE

BASE

SUBBASE

GRAVEL EQUIVALENT FACTOR

TRAFFIC INDEX

R VALUE: EXUDATION PRESSURE

EXPANSION PRESSURE

AT EQUILIBRUM SPEC.

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS (FEET)

REPORT OF TESTS ON

SOIL

IF CONTRACT, USE CONTRACT ITEM

SOURCE	CHARGE	EXPENDITURE AUTHORIZATION

SPECIAL DESIGNATION (USE WHEN APPLICABLE)	ACTIVITY OR OBJECT	AMOUNT

TEST SPECIMEN	A	B	C	D
DATE TESTED				
COMPACTOR FOOT PRESSURE P.S.I.				
INITIAL MOISTURE %				
SOAK WATER ML				
WATER ADDED-ML (TOTAL)				
WATER ADDED %				
MOISTURE AT COMPACTION %				
WET WT. OF BRIQUETTE-GMS				
HEIGHT OF BRIQUETTE-INCHES				
DRY DENSITY OF BRIQ. - # CU. FT.				
STABILOMETER P_H AT 2000 LBS.				
DISPLACEMENT				
R-VALUE BY STABILOMETER				
EXUDATION PRES. P.S.I.				
THICK. BY STAB. FEET				
EXPANSION DIAL READING				
THICK. BY EXP. PRESS. FEET				
R-VALUE BY EXPANSION				

TEST RESULTS			SPEC.
LL.	P.L	P.I.	
CV			
S.E	AS REC'D.		
	CRUSHED		
	COMBINED		
LART	GRADE	100 REV.	
		500 REV.	
DUR	D_f		
	D_i		
% CRUSHED PARTICLES			

SP. GR. ☐ BULK (OVE ☐ BULK (SSD ☐ APPAREN	FINE
AS REC'D.	
CRUSHED	

REL. COMPACTION D	IN PLACE	OP
DENSITY		
MOISTURE		
% REL. COMP.		
SPEC.		

RICHARD CHAIN
DISTRICT MATERIALS ENGINEER
BRANCH CHIEF, MATERIALS B

-TL-361 (Rev. 10/78)

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

SAMPLE IDENTIFICATION CARD

TL-0101 (REV. 10/97)

CARD NUMBER C708268

☐ PRELIMINARY TESTS
☑ PROJECT TESTS
☐ ACCEPTANCE TESTS
☐ INDEPENDENT ASSURANCE TESTS
☐ DIST. LAB
☐ TRANS. LAB
☐ SPECIAL TESTS

SAMPLE SENT TO:
☐ HQTRS. LAB
☐ BRANCH LAB
☐ DIST. LAB
SHIPMENT NO.
AUTHORIZATION NO.

FIELD NO.
LAB NO. 7934
P.O. REPORT NO.

6787-43P

AUG 30 2010

SAMPLE OF SOIL

FOR USE IN BRIDGE FOUNDATION DESIGN

SAMPLE FROM BORING R-10-003

DEPTH 2 - 5'

LOCATION OF SOURCE SAN FRANCISQUITO CREEK

THIS SAMPLE IS SHIPPED IN (NO. CONTAINERS) R-10-003 B1

AND IS ONE OF A GROUP OF

SAMPLES REPRESENTING (TONS, GALS, BBLS, STA, ETC.)

OWNER OR MANUFACTURER CALTRANS

TOTAL QUANTITY AVAILABLE

TEST RESULTS DESIRED ☑ NORMAL ☐ PRIORITY

DATE NEEDED 09/24/10

REMARKS

CORROSION TEST.

COVER ADDITIONAL INFORMATION WITH LETTER

DATE SAMPLED 08/17/2010

BY RIFAAT NASHED

TITLE T.E. (CIVIL)

DIST, CO, RTE, PM 04-SM-101-0.0

LIMITS

CONT. NO. 235620 PROJECT 0400000678

FED. NO. SUB OBJECT: 160

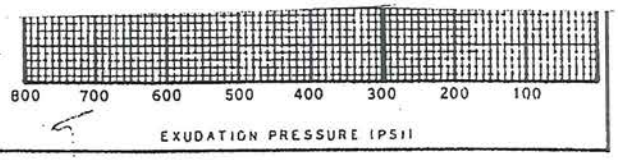
RES. ENGR. OR SUPT. TUNG NGUYEN

ADDRESS 111 GRAND AVE, MS16, 8TH FL. OAKLAND

CONTRACTOR CA94612

PHONE: 510-622-1775 FAX 510-286-4839

MAIL TO SAME DESTINATION AS SAMPLE



B/ 46243

TEST NO. 6787 - 44P

BILLED

DATE RECEIVED AUG 30 2010

CALC. BY _____ APPROVED BY _____

DATE REPORTED DEC 17 2010

☐ DISTRICT DIRECTOR ☐ TRANS.
☐ DIS. MAT LS. ☐ PAV'T. S
☐ RESIDENT ENGINEER ☐ ACCOUN
☐ CONSTRUCTION ☐

GRADING ANALYSIS

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	SPECIF. LIMITS SOUGHT ☐
3					
2½					
2					
1½					
1					
¾					
½					
⅜					
4					
8					
16					
30					
50					
100					
200					
5μ					
1μ					

GRADING AS USED WAS OBTAINED AS FOLLOWS:

% BY WT. % BY VOL. TEST NO. DESCRIPTION

Resistivity = 1926
Spec: 1000 Ω-cm (min)

REMARKS

pH = 7.67
Spec: 5.2 (min)

SURFACE

BASE

SUBBASE

GRAVEL EQUIVALENT FACTOR

TRAFFIC INDEX

R VALUE: EXUDATION PRESSURE

EXPANSION PRESSURE

AT EQUILIBRUM SPEC.

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS (FEET)

REPORT OF TESTS ON

SOIL

IF CONTRACT, USE CONTRACT ITEM

SOURCE	CHARGE	EXPENDITURE AUTHORIZATION

SPECIAL DESIGNATION (USE WHEN APPLICABLE)	ACTIVITY OR OBJECT	AMOUNT

TEST SPECIMEN	A	B	C	D
DATE TESTED				
COMPACTOR FOOT PRESSURE P.S.I.				
INITIAL MOISTURE %				
SOAK WATER ML				
WATER ADDED-ML (TOTAL)				
WATER ADDED %				
MOISTURE AT COMPACTION %				
WET WT. OF BRIQUETTE-GMS				
HEIGHT OF BRIQUETTE-INCHES				
DRY DENSITY OF BRIQ. - # CU. FT.				
STABILOMETER P_H AT 2000 LBS.				
DISPLACEMENT				
R-VALUE BY STABILOMETER				
EXUDATION PRES. P.S.I.				
THICK. BY STAB. FEET				
EXPANSION DIAL READING				
THICK. BY EXP. PRESS. FEET				
R-VALUE BY EXPANSION				

TEST RESULTS			SPEC.
LL. P.L P.I.			
CV			
S.E	AS REC'D.		
	CRUSHED		
	COMBINED		
LART	GRADE	100 REV.	
		500 REV.	
DUR	D_f		
	D_t		
% CRUSHED PARTICLES			

SP. GR. ☐ BULK (OV ☐ BULK (SS ☐ APPARE

	FINE
AS REC'D.	
CRUSHED	

REL. COMPACTION

	IN PLACE
DENSITY	
MOISTURE	
% REL. COMP.	
SPEC.	

RICHARD CHAN
DISTRICT MATERIALS ENGINEER
BRANCH CHIEF, MATERIALS B

-TL-361 (Rev.10/78)

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

SAMPLE IDENTIFICATION CARD

TL-0101 (REV. 10/97)

CARD NUMBER C708269

☐ PRELIMINARY TESTS ☐ PROCESS TESTS ☐ ACCEPTANCE TESTS ☐ DETERMINATIONS ☐ SPECIAL TESTS

SAMPLE SENT TO: ☐ HDQTRS. ☐ BRANCH ☐ DIST. ☐ SHIPMENT ☐ AUTHORIZATION NO.

FIELD NO.

DIST. LAB. NO. ~~7934~~

TOTAL NO. 6787-44P

PROJECT REQ. NO.

6787-44P

AUG 30 2010

SAMPLE OF SOIL

FOR USE IN BRIDGE FOUNDATION DESIGN

SAMPLE FROM R-10-003

DEPTH 5-10'

LOCATION OF SOURCE SAN FRANCISQUITO CREEK

THIS SAMPLE IS SHIPPED IN (NO. CONTAINERS) R-10-003 B2

AND IS ONE OF A GROUP OF

SAMPLES REPRESENTING (TONS, GALS, BBLS, STA, ETC.)

OWNER OR MANUFACTURER CALTRANS

TOTAL QUANTITY AVAILABLE

TEST RESULTS DESIRED ☑ NORMAL ☐ PRIORITY

DATE NEEDED 09/24/10

REMARKS

CORROSION TEST

COVER ADDITIONAL INFORMATION WITH LETTER

DATE SAMPLED 08/17/2010

BY RIFAAT NASHED TITLE T.E. (CIVIL)

DIST, CO, RTE, PM 04-SM-101-0.0

LIMITS

CONT. NO. 235620 PROJECT 0400000678

FED. NO. SUB OBJECT 160

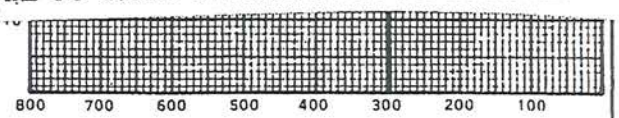
RES. ENGR. OR SUPT. TUNG NGUYEN

ADDRESS 111 GRAND AVE. MS 16, 8TH FL. OAKLAND

CONTRACTOR CA94612

PHONE: 510-622-1775, FAX: 510-286-4839

MAIL TO SAME DESTINATION AS SAMPLE



B/ 46243

TEST NO. 6787 - 2P

BILLED

DATE RECEIVED AUG 16 2010

CALC. BY _____ APPROVED BY _____

DATE REPORTED DEC 17 2010

☐ DISTRICT DIRECTOR ☐ TRANS.
☐ DIS. MAT LS. ENGR. ☐ PAV'T. S
☐ RESIDENT ENGINEER ☐ ACCOUN
☐ CONSTRUCTION ☐

GRADING ANALYSIS

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	SPECIF. LIMITS SOUGHT ☐
3					
2½					
2					
1½					
1					
¾					
½					
⅜					
4					
8					
16					
30					
50					
100					
200					
5μ					
1μ					

GRADING AS USED WAS OBTAINED AS FOLLOWS:

% BY WT. % BY VOL. TEST NO. DESCRIPTION

(*) RESISTIVITY = 978
SPEC: 1000 Ω-cm (min)

REMARKS:

pH = 7.2
(SPEC: 5.6 min)

(*) MATERIAL SUBMITTED FOR TESTING FAILED MINIMUM SPECS. ALSO TO BE SENT TO METS-SACTO FOR SULFATE & CHLORIDE TEST.

SURFACE

BASE

SUBBASE

GRAVEL EQUIVALENT FACTOR

TRAFFIC INDEX

R VALUE: EXUDATION PRESSURE

EXPANSION PRESSURE

AT EQUILIBRUM SPEC.

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS (FEET)

REPORT OF TESTS ON

SOIL

IF CONTRACT, USE CONTRACT ITEM

SOURCE	CHARGE	EXPENDITURE AUTHORIZATION

SPECIAL DESIGNATION (USE WHEN APPLICABLE)	ACTIVITY OR OBJECT	AMOUNT

TEST SPECIMEN	A	B	C	D
DATE TESTED				
COMPACTOR FOOT PRESSURE P.S.I.				
INITIAL MOISTURE %				
SOAK WATER ML				
WATER ADDED-ML (TOTAL)				
WATER ADDED %				
MOISTURE AT COMPACTION %				
WET WT. OF BRIQUETTE-GMS				
HEIGHT OF BRIQUETTE-INCHES				
DRY DENSITY OF BRIQ. - # CU. FT.				
STABILOMETER P_H AT 2000 LBS.				
DISPLACEMENT				
R-VALUE BY STABILOMETER				
EXUDATION PRES. P.S.I.				
THICK. BY STAB. FEET				
EXPANSION DIAL READING				
THICK. BY EXP. PRESS. FEET				
R-VALUE BY EXPANSION				

TEST RESULTS			SPEC.
LL.	P.L	P.I.	
CV			
S.E	AS REC'D.		
	CRUSHED		
	COMBINED		
LART	GRADE	100 REV.	
		500 REV.	
DUR	D_f		
	D_i		
% CRUSHED PARTICLES			

SP. GR.	☐ BULK (OVE ☐ BULK (SSD ☐ APPAREN
	FINE
AS REC'D.	
CRUSHED	

REL. COMPACTION		
	IN PLACE	OF
DENSITY		
MOISTURE		
% REL. COMP.		
SPEC.		

RICHARD CHAN
DISTRICT MATERIALS ENGINEER
BRANCH CHIEF, MATERIALS B

-TL-361 (Rev.10/78)

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

SAMPLE IDENTIFICATION CARD

TL-0101 (REV. 10/97)

CARD NUMBER C708227

☐ PRELIMINARY TESTS
☑ PROCESS TESTS
☐ ACCEPTANCE TESTS
INDEPENDENT ASSURANCE TESTS
☐ HDQTRS. LAB
☐ LAB
☐ DIST. LAB
☐ SPECIAL TESTS

SAMPLE SENT TO:
☐ HDQTRS. LAB
☐ LAB
☐ DIST. LAB
SHIPMENT NO.
AUTHORIZATION NO.

FIELD NO.

DIST. LAB NO. 7934

6787-2P

REQ. NO.

AUG 16 2010

SAMPLE OF SOIL

FOR USE IN BRIDGE FOUNDATION DESIGN

SAMPLE FROM R-10-001

DEPTH 16.5-20'

LOCATION OF SOURCE SAN FRANCISQUITO CREEK

THIS SAMPLE IS SHIPPED IN (NO. CONTAINERS) B2

AND IS ONE OF A GROUP OF

SAMPLES REPRESENTING (TONS, GALS, BBLS, STA, ETC.)

OWNER OR MANUFACTURER CALTRANS

TOTAL QUANTITY AVAILABLE

TEST RESULTS DESIRED ☑ NORMAL ☐ PRIORITY

DATE NEEDED 09/24/10

REMARKS

CORROSION TEST

COVER ADDITIONAL INFORMATION WITH LETTER

DATE SAMPLED 08/10/2010

BY TUNG NGUYEN TITLE T.E. (CIVIL)

DIST, CO, RTE, PM 04-SM-101-0.0

LIMITS

CONT. NO. 235620 PROJECT 0400000678

FED. NO. SUB OBJECT 160

RES. ENGR. OR SUPT. TUNG NGUYEN

ADDRESS 111 GRAND AVE. MS 16, 8TH FL. OAKLAND

CONTRACTOR CA 94612

PHONE: 510-622-1775 FAX: 510-286-4839

MAIL TO SAME DESTINATION AS SAMPLE

800 700 600 500 400 300 200 100

EXUDATION PRESSURE (PSI)

87 46743