INFORMATION HANDOUT

For Contract No. 02-3E7304
At 02-Sis-5-68.3

Identified by
Project ID 0200020157

MATERIALS INFORMATION

Foundation Report for Hilt Road Overcrossing (Replace) dated June 30, 2014

Asbestos and Lead-Containing Paint Survey Report dated March 17, 2014

Underground Classification dated December 9, 2014

M e m o r a n d u m

Serious drought.
Help Save Water!

To: MR. JASON LYNCH
BRANCH CHIEF (ACTING)
Division of Engineering Services
Structural Design-Mail Station 9-4/8I
Office of Bridge Design North and Central-Branch 2

Date: August 19, 2014

File: 02-SIS-5-PM R68.3
Hilt Road OC (Replace)
Br. No. 02-0202
E.A. 02-3E7301
Project ID 0200020157

Attn: Greg Slocum

From: **DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
Geotechnical Services – MS 5
Office of Geotechnical Design – North

Subject: Revised Foundation Report for Hilt Road Overcrossing (Replace).
THIS MEMO SUPERSEDES AND REPLACES THE MEMO DATED June 30, 2014 and August 12, 2014

Scope of Work

The Office of Geotechnical Design-North (OGD-N) has prepared the Foundation Report for the Hilt Road Overcrossing (Replace) (Br. No. 02-0202). This structure will replace Hilt Road Overcrossing (Br. No. 02-0130) located on Interstate 5 at PM R68.3, in Siskiyou County, California, approximately 1 mile south of the Oregon border.

This report includes review and evaluation of the existing Hilt Road OC (Bridge No. 02-0130), the As-Built bridge records, the As-Built Log of Test Borings (LOTBs), and a subsurface investigation in October and November of 2013.

Project Description

The proposed replacement, Hilt Road OC (Br. No. 02-0202) will be 234 feet 3-inches long, and is a PC/PS CA WF two span structure. The abutments and bent will be supported on CIDH piles. The existing structure Hilt Road OC (Br. No. 02-0130) will be removed and the new structure will be built on an alignment 44.25 feet to the north.

The following foundation recommendations are based on the subsurface information gathered during a subsurface investigation (October and November 2013). With regards to the foundation recommendations provided in this report, elevations are based on the NAVD 88 vertical datum, and horizontal coordinates are based on the NAD 83 horizontal datum, unless otherwise noted. The “As-Built” elevations were converted from NGVD 29 to NAVD 88 by using a conversion factor of +3.5 ft for this project.

Field Investigation and Testing Program

The Office of Geotechnical Design-North conducted a subsurface investigation in October and November 2013.

The 2013 subsurface investigation consisted of three mud rotary borings (Nos. RC-13-001, RC-13-002, and RC-13-003). The mud rotary borings were advanced using a self-casing wireline drilling method. The maximum depth reached by the 2013 subsurface investigation was approximately 100 feet. Sampling was achieved in all borings by utilizing the Standard Penetration Test (SPT) sampler. Selected soil and rock samples were tested in the Caltrans Geotechnical Laboratory. A summary of the borings drilled during the subsurface investigation is included below in Table 1.

Table 1. The 2013 Subsurface Exploration Summary for Hilt Road OC (Replace) (Br. No. 02-0202)

Boring No.	Completion Date	Drill Rig Type	Hammer Type	Hammer Efficiency (%)	Approx. Ground Surface Elevation (ft)	Boring Depth (ft)
RC-13-001	10/23/13	Acker	Auto	71	3115.8	100.0
RC-13-002	10/29/13	CS1000	Auto	85	3125.7	80.0
RC-13-003	11/5/13	CS1000	Auto	85	3120.6	80.0

Laboratory Testing

Laboratory testing was performed on selected samples of the subsurface materials obtained from the 2013 subsurface investigation. Tests were performed to determine the corrosion and engineering properties of the subsurface materials for use in the foundation analyses. Refer to the Corrosion Evaluation section of this report for information concerning corrosion test results. In addition to the corrosion tests, the following tests were performed on selected samples: particle-size analysis, Atterberg limits, unconfined compression strength, expansion index and moisture content.

The unconfined compressive strength of the rock typically ranged from approximately 800 psi to 1600 psi. There was also rock that was encountered that was as low as 506 psi and over 2188 psi.

Laboratory test results are included in the appendix of this report.

Site Geology and Subsurface Conditions

Regional Setting and Area Geology

Based on the Geologic Map of Weed Quadrangle (Wagner and Saucedo, 1987), the project vicinity consists of the Cretaceous Hornbrook Formation (Kh). This marine formation consists of massive arkosic sandstone, conglomerate, and shale.

A subsurface investigation was conducted in June 1964 for the existing Hilt Road OC (Bridge No. 02-0130). The investigation included two 2 ¼ inch diameter cone penetrometer borings and one 2 ½ inch diameter rotary boring to a maximum depth of approximately 30 feet. Based on the As-Built Log of Test Borings (LOTBs), the site is underlain by partly cemented clayey shale and hard, cemented clayey to silty shale.

The material encountered during the 2013 subsurface investigation generally consists of decomposed to fresh shale, siltstone and sandstone. At Abutment 1 the rock is overlain by fill consisting mostly of cobble to gravel sized shale fragments and lean clay.

The cohesive fill material consists of from stiff to hard, lean clay, lean clay with gravel, and gravel to cobble sized rock fragments in sandy lean clay. The cohesionless fill material consists of sandy silt and sandy silt with gravel sized rock fragments.

For subsurface data and boring locations, please refer to the Log of Test Borings for detailed observations, information and conditions.

Groundwater

During the 2013 subsurface investigation, RC-13-001 was finished as an open stand pipe piezometer. Groundwater elevation was subsequently measured at 3108.5 feet on October 30, 2013.

Groundwater elevations are subject to seasonal fluctuations and may occur at higher or lower elevations than observed. Groundwater elevations respond to rainfall patterns, and groundwater usage patterns. For more details, please refer to the LOTB sheets.

Scour Evaluation

Scour is not an issue at this site because the bridge is not in a water course.

Corrosion Evaluation

Composite soil samples were collected from Borings RC-13-001 and RC-13-003 drilled during the 2013 subsurface investigation. The Office of Testing and Technology Services, Corrosive Technology Branch tested the composite samples for corrosive potential. The Corrosion Technology Branch considers a site to be corrosive if one or more of the following conditions exist for the representative soil or water samples collected at the site: chloride concentration is 550 ppm or greater, sulfate concentration is 2000 ppm or greater, or the pH is 5.5 or less. The minimum resistivity serves only as an indicator parameter for the possible presence of soluble salts and is not used to define a site as being corrosive. It is the practice of the Corrosion Technology Branch that if the minimum resistivity of the sample is greater than 1000 ohm-cm, the sample is considered to be non-corrosive and testing to determine the sulfate and chloride content is not performed.

The results of the laboratory tests determined that the composite samples were considered to be non-corrosive at this site. Refer to Table 2 for specific test results.

Table 2. Corrosion Test Summary of the Composite Samples for Hilt Road OC (Replace). (Br. No. 02-0202)

SIC Corrosion Number	Nearby Support Location	Boring Number	Sample Depth (ft)	pH	Minimum Resistivity (ohm-cm)	Chloride Content (ppm)	Sulfate Content (ppm)
CR20130434	Bent 2	RC-13-001	3.5-6.5	5.92	1759	N/A	N/A
CR20130435	Abutment 1	RC-13-003	5-10	6.9	1058	37	424
CR20130436	Abutment 1	RC-13-003	25-30	7.37	1505	N/A	N/A

Seismic Recommendations

The deterministic spectrum from the Caltrans ARS Online Tool (version 2.3.06) is based on the nearest active fault that controls ground motion. The deterministic spectrum at this site is based on the Cedar Mountain fault system (Ikes Mountain section) (Fault ID No. 13) with MMax of 7.0. The fault is located east of the bridge site, and the closest distance to the fault rupture plane from the bridge site is approximately 25 miles.

Based on the As-Built Log of Test Borings, two V_{S30} (the weighted shear wave velocity for the top 100 feet of foundation materials) parameters are considered to be applicable to the foundation materials. A V_{S30} of 1650 feet per second was applied at Abutment 1 and a V_{S30} of 2160 feet per second was applied to Bent 2 and Abutment 3.

Based on the "Methodology for Developing Design Response Spectrum for Use in Seismic Design Recommendations, November 2012," the design ground motion is the highest spectral acceleration as obtained by any or a combination of the following three methods for the Hilt Road Overcrossing:

1) Statewide minimum deterministic spectrum requirements with MMax of 6.5, vertical strike-slip event with a rupture distance of 7.5 miles.
2) The nearest active fault as shown on the ARS Online Tool (Version 2.0.4).
3) The USGS 5% Probability of Exceedance in 50 years (975 years return period).

At Abutment 1, based on the V_{S30}, the design Acceleration Response Spectrum (ARS) curve is an envelope of combination of methods 1 and 3 as stated above. The peak ground acceleration is estimated to be 0.22 g as shown on the ARS curve.

At Bent 2 and Abutment 3, based on the V_{S30}, the design Acceleration Response Spectrum (ARS) curve is an envelope of combination of methods 1 and 3 as stated above. The peak ground acceleration is estimated to be 0.20 g as shown on the ARS curve.

The potential for soil liquefaction is insignificant due to the absence of saturated loose granular soils.

The potential for surface fault rupture at the site is absent because there are no known faults that are Holocene or younger in age that fall within 1,000 feet of the structure. The structure does not fall within an Alquist-Priolo Earthquake Fault Zone.

As-Built Foundation Data

The Hilt Road OC, (Bridge No. 02-0130) was constructed in 1966 with 45 ton H-Piles at Abutment 1 and Bent 2, and spread footings rated at 2.0 tsf at Abutment 3.

Table 3. 1966 As-Built Foundation Data Table for H-Piles for Hilt Road OC Bridge Number 02-0130.

Location	Foundation Type	Design Load (kips)	Estimated Tip Elevation (ft)[1]	Highest Tip Elevation (ft)[1]	Average Tip Elevation (ft)[1]	Lowest Tip Elevation (ft)[1]
Abutment 1	10BP42	90	3083.5 to 3079.5[2]	3090.2	3083.8	3081.2
Bent 2	10BP42	90	3091.5 to 3083.5[2]	3094.3	3091.0	3088.6

Note: 1. Estimated Tip Elevations from the August 7, 1964 Foundation Study Report.
2. The elevations are from 17 feet left of the "H' line to 17 feet right of the "H" line.

According to the Field Foundation Condition Report dated December 21, 1965, the piles "were driven to a minimum of 60 tons bearing ENR at Abutment 1 in lieu of 12 ft. penetration into original ground as requested by the Bridge Department Geology Section."

The Field Foundation Condition Report also states, "The fill in the area of Abutment #1 built some 80 ft above original ground slipped out shortly after this fill was built to subgrade. The fill was built on a 10 ft layer of original ground soft clay underlain by bedrock shale on a sloping profile. This fill was removed after failure to the bedrock shale and rebuilt under a contract change order with a settlement platform and settlement hubs as indicators of any possible repetition of excessive subsidence. The fill consolidation did stabilize after a period of approximately 40 days with a maximum settlement of 0.11 ft. A contract change order was prepared to extend the predrilling for piles at Abutment #1 to bedrock shale since the original ground was removed after the fill failure and it was decided that the predrilling would be required through this additional fill material to prevent overloading the piles by fill consolidation…The piles penetrated less than 2 ft into the shale bedrock at Abutment #1." At Bent 2 "The piles in the left footing of Bent #2 were driven in excess of the 45 ton bearing design value due to difficulty in obtaining the 12 ft penetration into the original ground. These piles were driven to an average elevation of 3089.0 (NGVD 29 datum). The piles in the right footing were driven to an average elevation of 3086.1 (NGVD 29 datum) and all piles penetrated original ground in excess of 13 ft."

Table 4. 1966 As-Built Foundation Data Table for Spread Footings for Hilt Road OC Bridge Number 02-0130.

Location	Foundation Type	Design (Allowable) Load (ksf)	Footing Elevations (feet)
Abutment 3 Left	Spread Footing	4.0	3131.0
Abutment 3 Right	Spread Footing	4.0	3132.0

According to the Field Foundation Condition Report, "The spread footing at Abutment #3 is founded at plan elevation (3127.5 to 3128.5 (NGVD 29 datum)) in fill material composed of weathered gray shale mixed with buff brown clay. This clay is the original ground overburden at the bridge site overlying gray shale bedrock at an approximate depth of 10 ft. The fill was compacted in excess of 95% relative compaction during construction and offered a very firm material at footing elevation."

Foundation Recommendations

The following foundation recommendations for the replacement of Hilt Road OC are based on the General Plan, conversations with Mr. Greg Slocum from the Division of Structure Design and the subsurface investigations conducted at the site.

CIDH piles drilled into rock (rock socket) are recommended at all support locations. At Abutment 1, 30 inch diameter permanent steel casing will be required from the pile cap to the rock.

Table 5. Foundation Design Recommendations for CIDH Piles for Bridge No. 02-0202[1,2].

Foundations Design Recommendations												
Support Location	Pile Type	Cut-Off Elevation (ft)	Service-I Limit State Load per Support (kips)	Total Permissible Support Settlement (inches)	Required Factored Nominal Resistance (kips)				30" CIDH with Permanent Steel Casing Specified Tip Elevation (ft)	24" CIDH Specified Tip Elevation (ft)	24" CIDH Rock Socket Design Tip Elevations (ft)	24" CIDH Rock Socket Specified Tip Elevation (ft)
					Strength Limit		Extreme Event					
					Comp. (φ=0.5)	Tension (φ=0.5)	Comp. (φ=1)	Tension (φ=0.8)				
Abut 1	30" CIDH with Permanent Steel Casing and 24" CIDH Rock Socket	3131.5	131	1.0	197	0	N/A	N/A	3080.5	N/A	3070.0 (a-I)	3070.0
Bent 2	24" CIDH Rock Socket	3106.8	115	1.0	177	0	279	77	N/A	N/A	3093.0 (a-I) 3094.0 (a-II) 3098.0 (b-II)	3093.0
Abut 3	24" CIDH with 24" CIDH Rock Socket	3134.5	131	1.0	197	0	N/A	N/A	N/A	3124.0	3112.0 (a-I)	3112.0

Notes:

1) *Design tip elevations are controlled by: (a-I) Compression (Strength Limit), (a-II) Compression (Extreme Event), (b-II) Tension (Extreme Event).*
2) *Design tip elevation for Lateral Load is typically provided by SD.*

Table 6. Pile Data Table, Hilt Road OC (Br. No. 02-0202).

Pile Data Table								
Location	Pile Type	Nominal Resistance (kips)		Cut-Off Elevation (ft)	30" CIDH with Permanent Steel Casing Specified Tip Elevation (ft)	24" CIDH Specified Tip Elevation (ft)	24" CIDH Rock Socket Design Tip Elevations (ft)	24" CIDH Rock Socket Specified Tip Elevation (ft)
		Compression	Tension					
Abut. 1	30" CIDH with Permanent Steel Casing and 24" CIDH Rock Socket	400	0	3131.5	3080.5	N/A	3070.0 (a-1)	3070.0
Bent 2	24" CIDH Rock Socket	360	100	3106.8	N/A	N/A	3093.0 (a-I) 3094.0 (a-II) 3098.0 (b-II)	3093.0
Abut 3	24"CIDH with 24" CIDH Rock Socket	400	0	3134.5	N/A	3124.0	3112.0 (a-I)	3112.0

Notes:

1) *Design tip elevations are controlled by: (a-I) Compression (Strength Limit), (a-II) Compression (Extreme Event), (b-II) Tension (Extreme Event).*
2) *Design tip elevation for Lateral Load is typically provided by SD.*

Construction Considerations

1. Groundwater was encountered during the subsurface investigation and should be considered during all phases of construction and pile installation. Groundwater surface elevation is subject to seasonal fluctuations. Groundwater may occur higher or lower than indicated on the Log of Test Boring Sheets (LOTB) at the time of construction. Wet pile installation method shall be used.

2. Piles at Bent 2 must be installed in a sequence such that no pile is drilled less than six feet from either an open hole or a hole that concrete has been placed and set. The concrete set time is dependent on the mix design, and the Engineer will determine the set time when mix design is approved.

3. At Abutment 1, if a gap is created between the permanent casing and surrounding soil/rock, the gap must be grouted to preserve lateral capacity.

4. Temporary casing may be necessary at Abutment 3 to the top of rock.

Project Information

"Project Information," discloses to bidders and contractors a list of pertinent information available for their inspection prior to bid opening. The following is information originating from Geotechnical Services.

Data and information attached with the project plans are:

A. Log of Test Borings (Hilt Road Overcrossing (Replace), Br. No. 02-0202).

Data and information included in the Information Handout provided to the bidders and contractors are:

A. Revised Foundation Report for Hilt Road Overcrossing (Replace), (Br. No. 02-0202) dated August 19, 2014.

Data and information available for inspection at the Transportation Laboratory:

A. Core Samples.
B. Rock and Soil Laboratory Data.

The recommendations contained in this report are based on specific project information regarding design loads and structure locations that has been provided by the Office of Bridge Design North and Central. If any conceptual changes are made during final project design, the Office of Geotechnical Design-North, should review those changes to determine if the foundation recommendations provided in this report are still applicable. Any questions regarding the above recommendations should be directed to Joseph Kaump (916) 227-1044 or Luke Leong (916) 227-1081, of the Office of Geotechnical Design-North.

Report by:

JOSEPH KAUMP, P. G.
Engineering Geologist
Office of Geotechnical Design-North

LUKE LEONG, P. E.
Transportation Engineer-Civil
Office of Geotechnical Design-North

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STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
Luke Leong
No. C 63525
Exp. 9/30/14
CIVIL
STATE OF CALIFORNIA

Attachment: ARS curve for Hilt Road OC Abutment 1
ARS curve for Hilt Road OC Bent 2 and Abutment 3
Lab Results

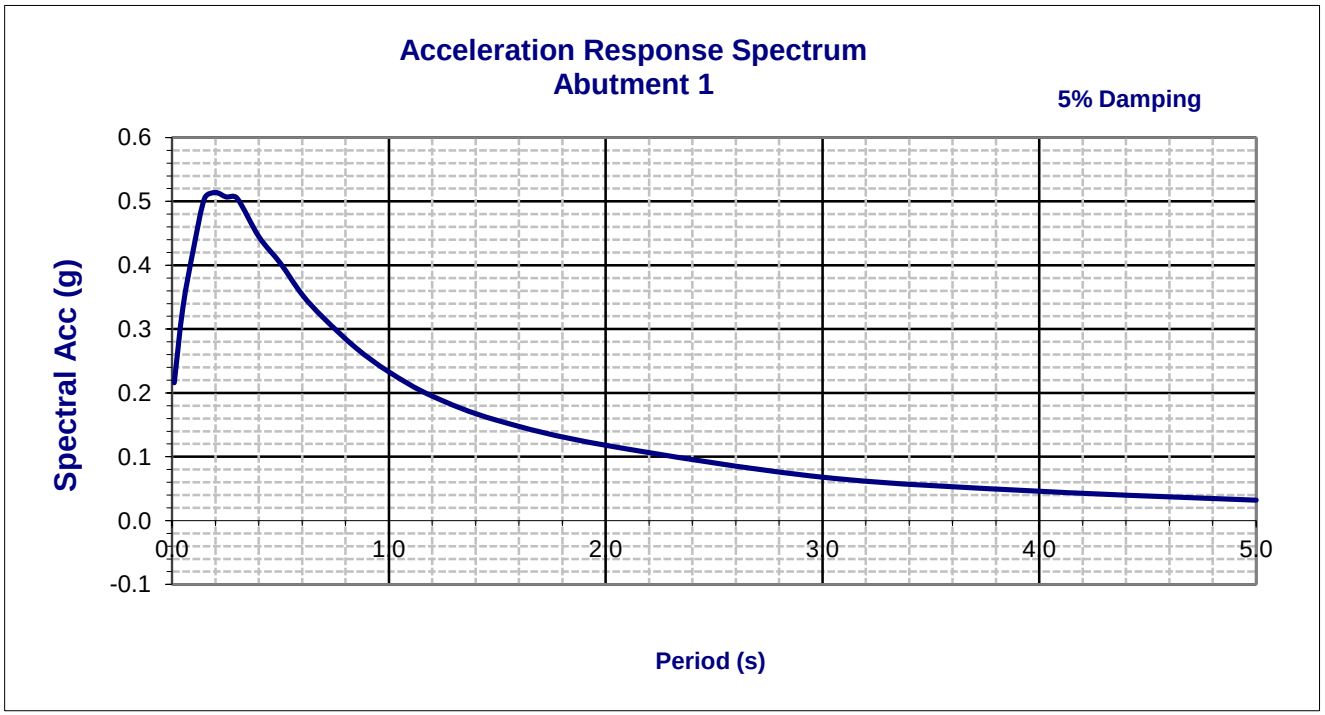
c: Reid Buell
Michael Webb - District Project Engineer
Structure Construction R.E. Pending File – RE_Pending_File@dot.ca.gov
Craig Whitten - DES Office Engineer
Byron Berger - District Materials Engineer
Derek Willis– District Project Manager

Hilt Road Overcrossing (Replace) **Latitude** 41.99269449

Bridge No. **02-0202** **Abutment 1** **Longitude** -122.60964274 Control: **Envelope Curve**

EFIS **0200020157**

Period (s)	Sa(g)
0.010	0.216
0.050	0.334
0.100	0.428
0.150	0.505
0.200	0.514
0.250	0.507
0.300	0.505
0.400	0.445
0.500	0.403
0.600	0.354
0.700	0.317
0.850	0.270
1.000	0.233
1.200	0.195
1.500	0.157
2.000	0.118
3.000	0.068
4.000	0.046
5.000	0.032



Nearest Deterministic Fault Data

Fault	Cedar Mountain Fault System (Ikes Mountain Section)		R_{rup}	25.2	mile
Fault ID	13		R_{jb}	25.2	mile
Fault Type	N		R_x	24.4	mile
Mmax	7		V_{S30}	1650	ft/sec
Dip	60/E	deg/direction	$Z_{1.0}$	N/A	feet
Z_{TOR}	0	mile	$Z_{2.5}$	N/A	mile

Notes

Please note the Design ARS curve is based on the Minimum Deterministic Spectrum & USGS 5% in 50 years harzard (2008).

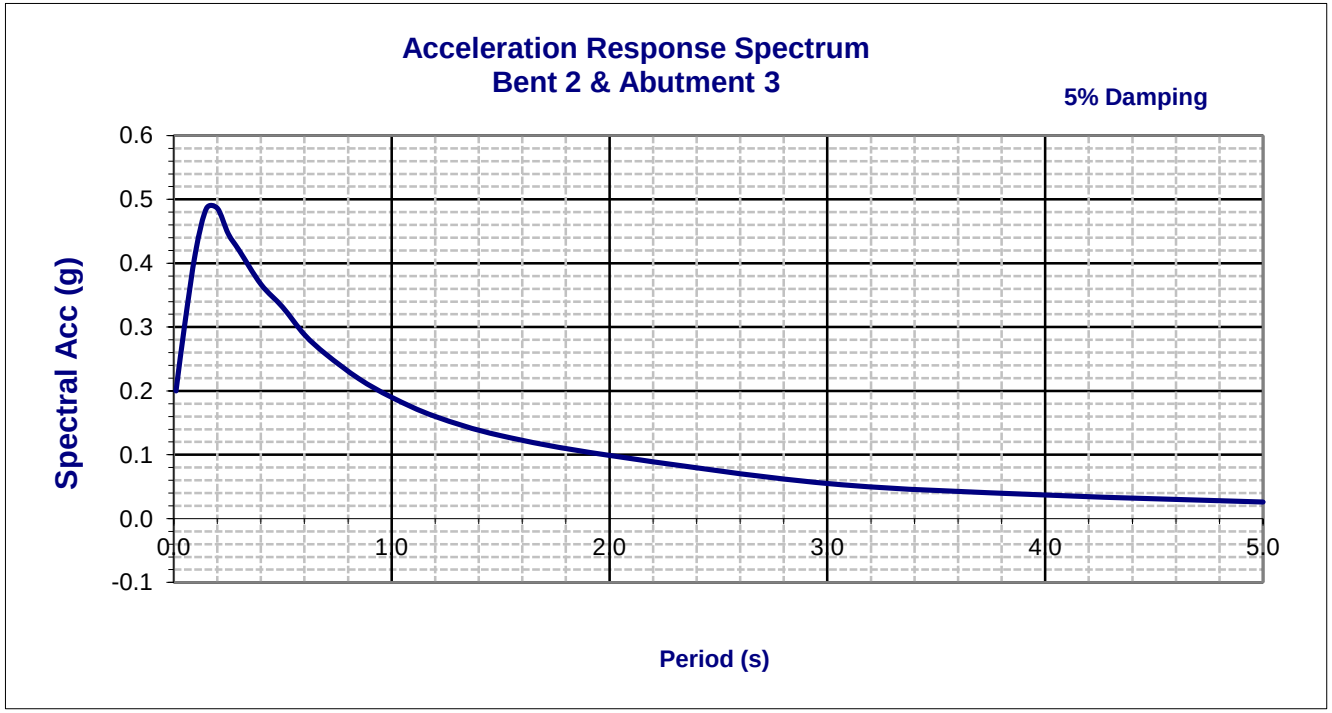
Design Response Spectrum

Hilt Road Overcrossing (Replace) **Latitude** 41.99269449

Bridge No. **02-0202** **Bent 2 & Abut 3** **Longitude** -122.60964274 Control: **Envelope Curve**

EFIS **0200020157**

Period (s)	Sa(g)
0.010	0.200
0.050	0.304
0.100	0.418
0.150	0.486
0.200	0.486
0.250	0.446
0.300	0.420
0.400	0.367
0.500	0.331
0.600	0.288
0.700	0.257
0.850	0.219
1.000	0.190
1.200	0.160
1.500	0.130
2.000	0.099
3.000	0.055
4.000	0.037
5.000	0.026



Nearest Deterministic Fault Data

Fault	Cedar Mountain Fault System (Ikes Mountain Section)		R_{rup}	25.2	mile
Fault ID	13		R_{jb}	25.2	mile
Fault Type	N		R_x	24.4	mile
Mmax	7		V_{S30}	2160	ft/sec
Dip	60/E	deg/direction	$Z_{1.0}$	N/A	feet
Z_{TOR}	0	mile	$Z_{2.5}$	N/A	mile

Notes

Please note the Design ARS curve is based on the Minimum Deterministic Spectrum & USGS 5% in 50 years harzard (2008).

Design Response Spectrum

DIVISION OF
ENGINEERING SERVICES
OFFICE OF GEOTECHNICAL SUPPORT
GEOTECHNICAL LABORATORY
5900 Folsom Boulevard
Sacramento, CA 95819

Date: 1/21/2014

To: Joe Kaump / GDN

From: Lilibeth C. Purta / (916) 227-5239

RE: Laboratory Test Report -- EA: 02-3E7300
Project: 0200020157
GL 13-087

Final test results.

Note: All remaining test specimens will be disposed of in 30 calendar days from the release date of the final test results.

AASHTO R18

OFFICE OF GEOTECHNICAL SUPPORT
GEOTECHNICAL LABORATORY TRACKING FORM

GL Tracking No. 13-087

Project Information

Project Name: Hilt Road OC
Structure No.: 02-0130
District: 02
County: SIS
Route: 5
PM: 68.3-

Project Charging

District: 02
EA: 2E7300
FA:
Activity Code: 160
MSA Code:
Sub Job:
Special Designation:

Client Information

Last Name: Kaump
First Name: Joe
Office: GDN
Phone: 227-1044

Dates

Dates Sampled: 2013-10-22
Samples Received: 2013-12-13
Samples to Grade Bench: 2013-12-19
Client's Due: 2014-01-31
GL Staff Due: 2014-01-16
Estimated Delivery: 2014-01-23

TL-101 Numbers

C739507-09

Comments

Project: 0200020157
Phase: 0

	Number Tests Requested	Number Tests Completed	Date Testing Started	Date Testing Completed
Unit Weight				
Moisture Content	12			
Specific Gravity				
Mechnical Analysis				
Atterberg Limits				
Consolidation				
Triaxial UU				
Triaxial CU				
Unconfined Comp	12			
Point Load				
Direct Shear				
Permeability				
Compaction Curve				
Swell Potential				
Collapse Potential				
Expansion Index				
Shrinkage Limit				
Corrosion	3			
Sand Equivalent				
R-Value				
Organic Content				
pH				
Cation Exchange				

BORING SAMPLE RECORD

GL TRACKING NO. 13-087
TESTING DUE:

PROJECT NAME: Hilt Road OC
DIST-CO-RTE-PM: 02-SIS-5-68.3-
DIST-EA: 02-2E7300
SUB JOB:
CLIENT: Joe Kaump

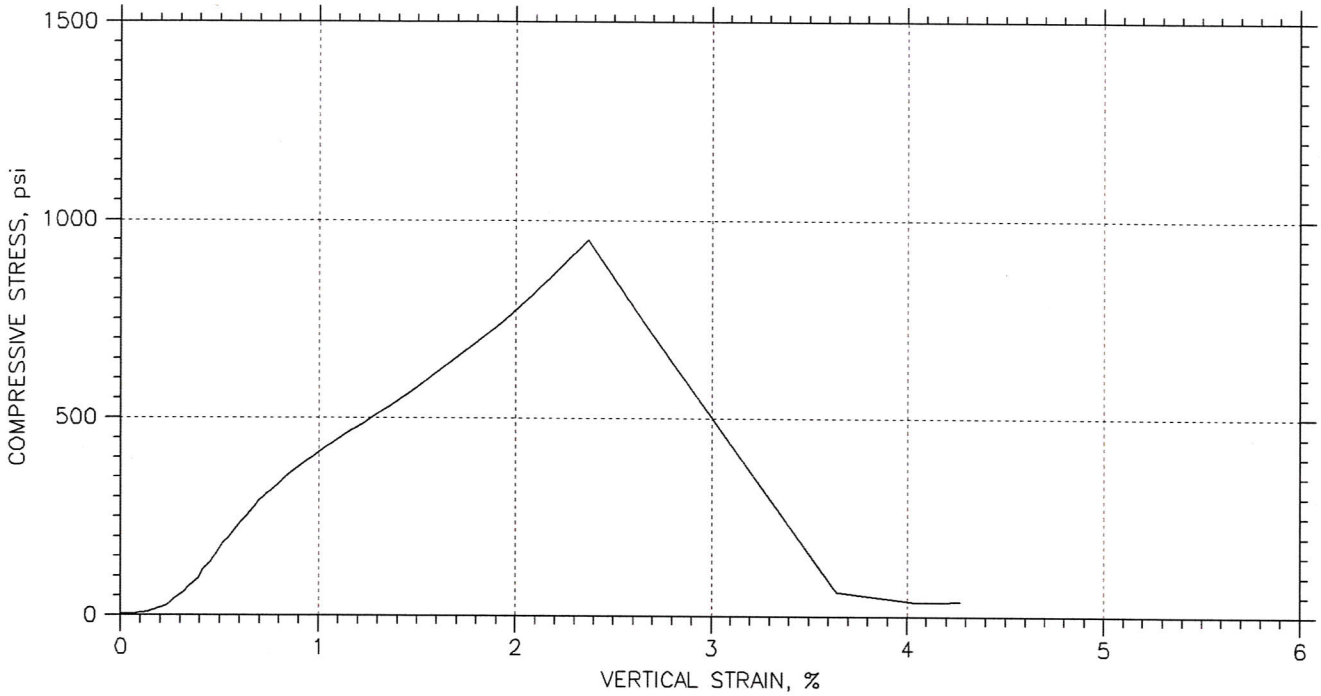
FA: ACT. CODE: 160
SPECIAL DESG:

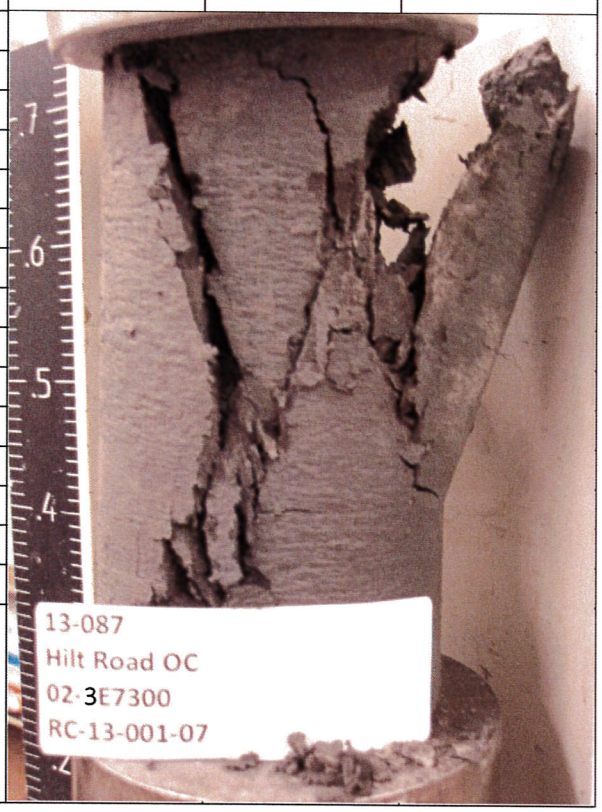
BR. NO: 02-0130
MSA CODE:

PHONE: 227-1044

Boring ID	Sample No.	Tube No.	Depth	Test Type																Remarks
				Unit Weight	Moisture Content	Specific Gravity	Mechanical Analysis	Atterberg	Consolidation	Triaxial UU	Triaxial CU	Unconfined Compression	Point Load	Direct Shear	Permeability	Compaction	Corrosion	Other		
RC-13-001	01&2		3.5-6.5														X			
RC-13-001	07		15.6-16.4		X							X								
RC-13-001	10		26.3-27		X							X								
RC-13-001	12		37.8-38.3		X							X								
RC-13-001	14		47.9-48.6		X							X								
RC-13-001	16		55-55.8		X							X								
RC-13-001	22		85-85.7		X							X								
RC-13-002	03		8-8.6		X							X								
RC-13-002	05		17.2-17.9		X							X								
RC-13-002	09		36.9-37.5		X							X								
RC-13-003	02&3		5-10														X			
RC-13-003	10&11		25-30														X			
RC-13-003	15		39.6-40		X							X								
RC-13-003	16		42.2-42.8		X							X								
RC-13-003	21		61.3-61.9		X							X								

UNCONFINED COMPRESSION TEST REPORT

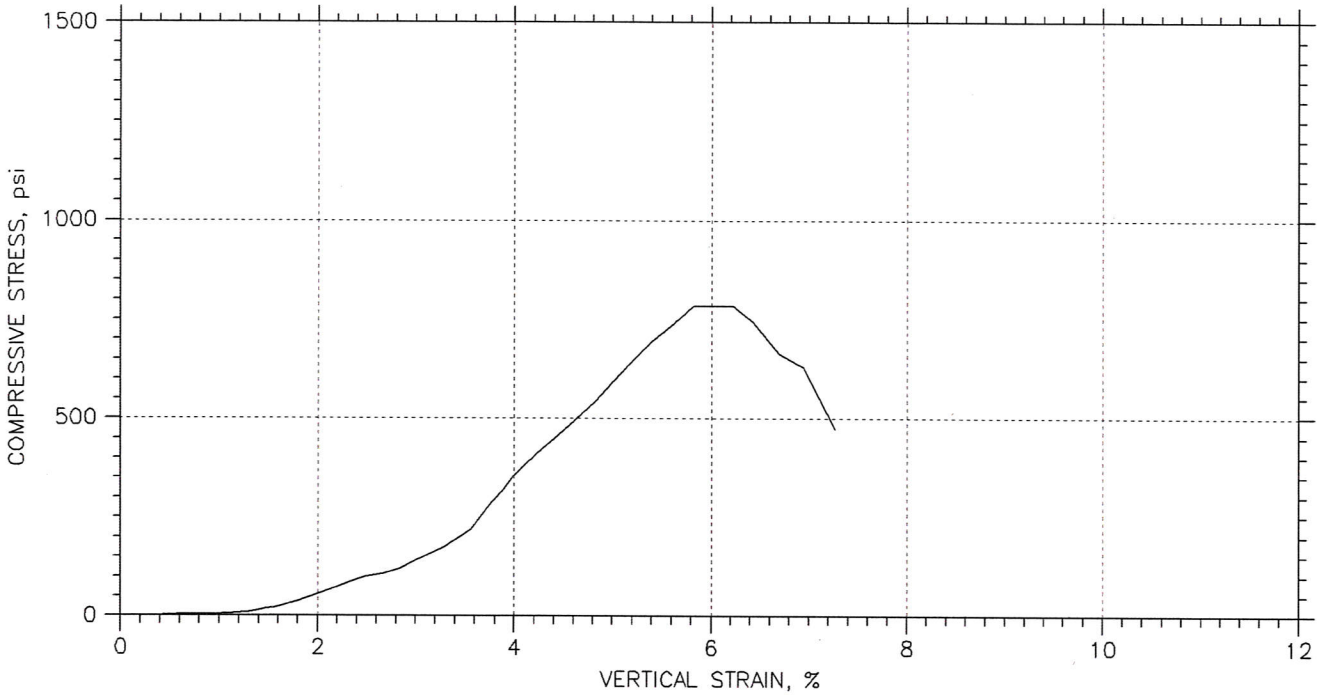


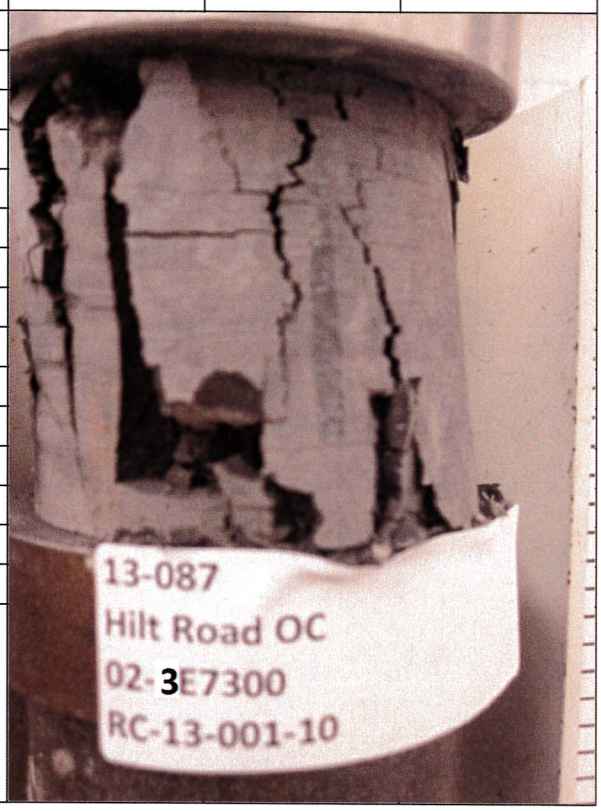
Symbol					
Test No.		Q14-002			
Initial	Diameter, in	2.35			
	Height, in	5.15			
	Water Content, %	5.51			
	Dry Density, pcf	146.6			
	Saturation, %				
	Void Ratio				
Unconfined Compressive Strength, psi		950.7			
Undrained Shear Strength, psi					
Time to Failure, min					
Strain Rate, %/min		1			
Implied Specific Gravity					
Liquid Limit		---			
Plastic Limit		---			
Plasticity Index		---			
Failure Sketch					

	Project: Hilt Road OC
	Location: 02-SIS-5-68.3
	Project No.: 02-3E7300
	Boring No.: RC-13-001-07
	Sample Type: core
	Description: Moist; Gray; Clay stone
	Remarks: ASTM D2166

Wed, 15-JAN-2014 09:42:49

UNCONFINED COMPRESSION TEST REPORT

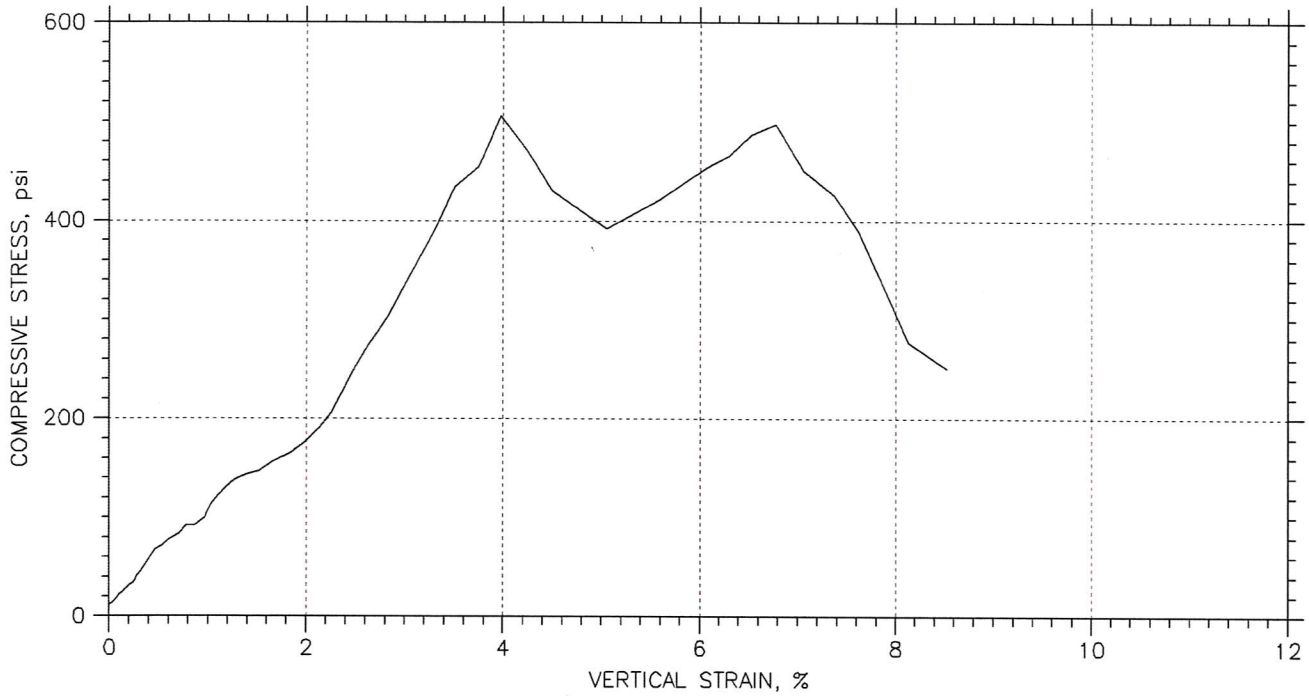


Symbol					
Test No.		Q14-003			
Initial	Diameter, in	2.39			
	Height, in	2.47			
	Water Content, %	5.44			
	Dry Density, pcf	144.6			
	Saturation, %				
	Void Ratio				
Unconfined Compressive Strength, psi		784.8			
Undrained Shear Strength, psi					
Time to Failure, min					
Strain Rate, %/min		1			
Implied Specific Gravity					
Liquid Limit		---			
Plastic Limit		---			
Plasticity Index		---			
Failure Sketch					

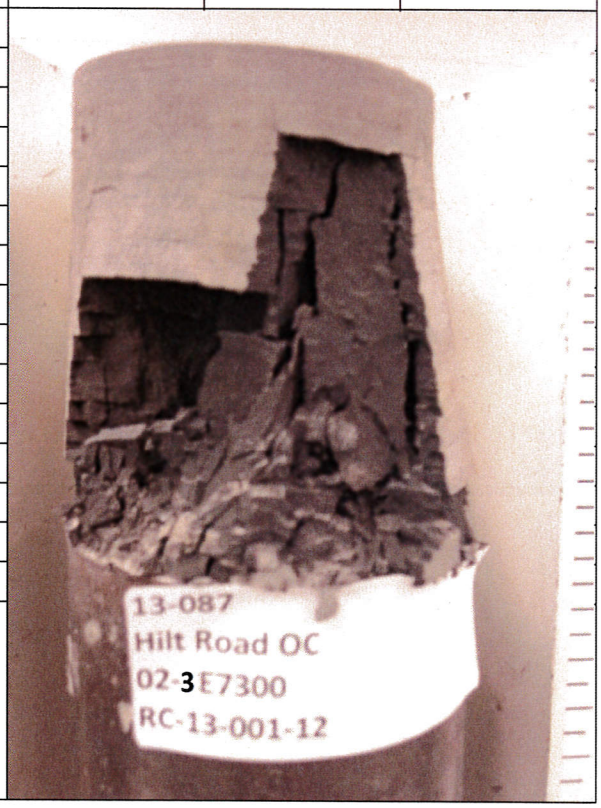
	Project: Hilt Road OC
	Location: 02-SIS-5-68.3
	Project No.: 02-3E7300
	Boring No.: RC-13-001-10
	Sample Type: core
	Description: Moist; Gray; Clay stone
	Remarks: ASTM D2166 Sample broke into pieces during cutting. L/D < 2

Wed, 15-JAN-2014 10:02:14

UNCONFINED COMPRESSION TEST REPORT



Symbol					
Test No.		Q14-004			
Initial	Diameter, in	2.39			
	Height, in	3.15			
	Water Content, %	4.65			
	Dry Density, pcf	148.6			
	Saturation, %				
	Void Ratio				
Unconfined Compressive Strength, psi		506			
Undrained Shear Strength, psi					
Time to Failure, min					
Strain Rate, %/min		1			
Implied Specific Gravity					
Liquid Limit		---			
Plastic Limit		---			
Plasticity Index		---			
Failure Sketch					

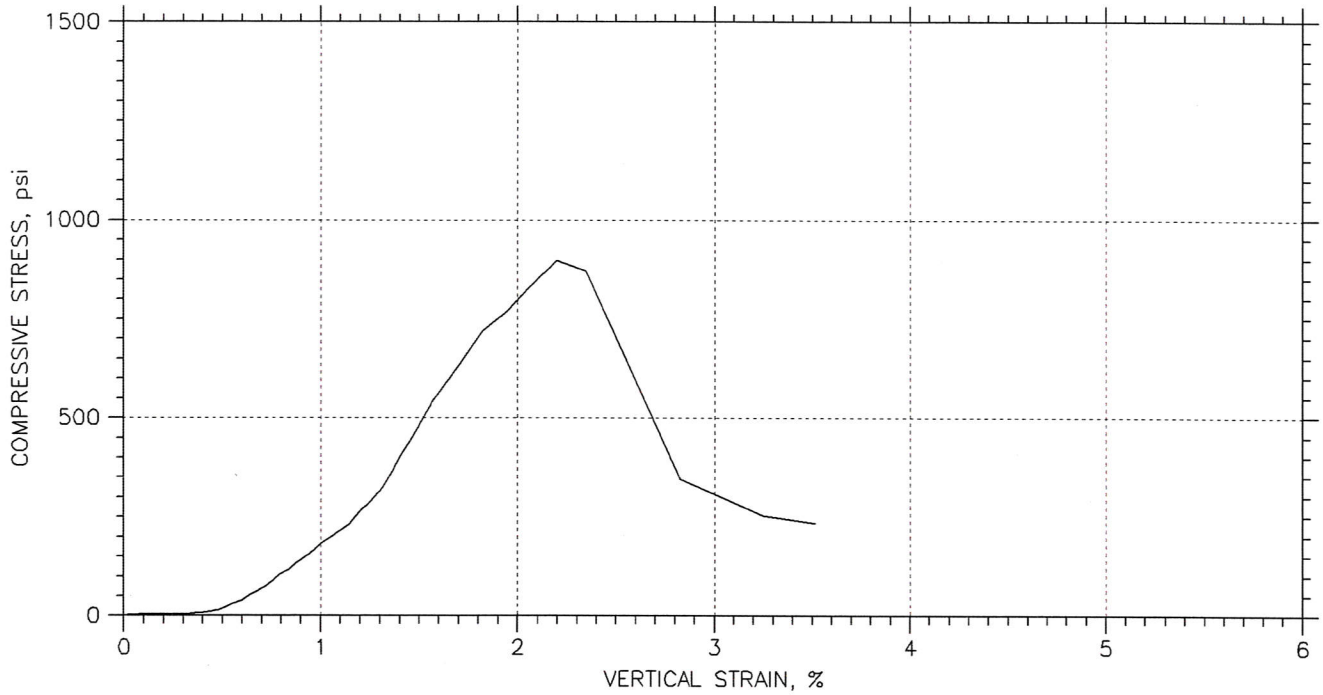


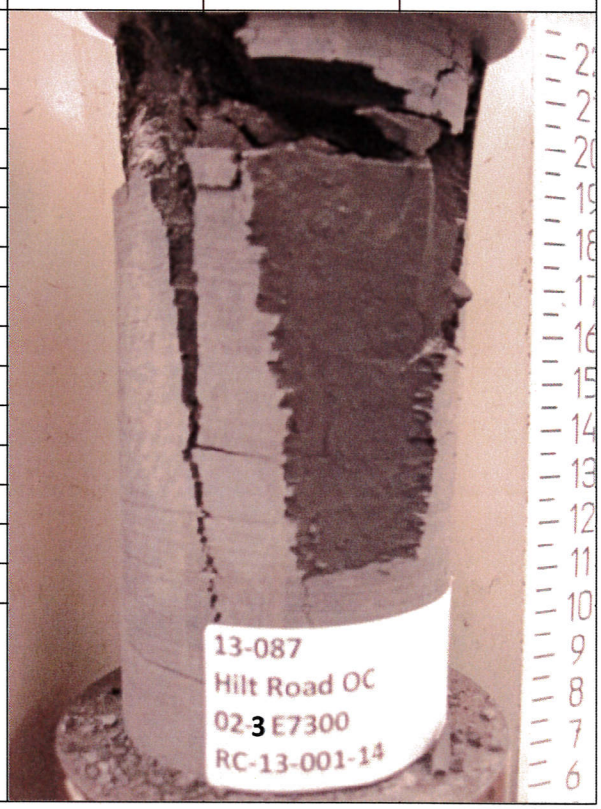
	Project: Hilt Road OC
	Location: 02-SIS-5-68.3
	Project No.: 02-3E7300
	Boring No.: RC-13-001-12
	Sample Type: core
	Description: Moist; Gray; Clay stone
	Remarks: ASTM D2166 Sample broke while weighing. L/D < 2

hp 1/16/14

Thu, 16-JAN-2014 13:04:58

UNCONFINED COMPRESSION TEST REPORT

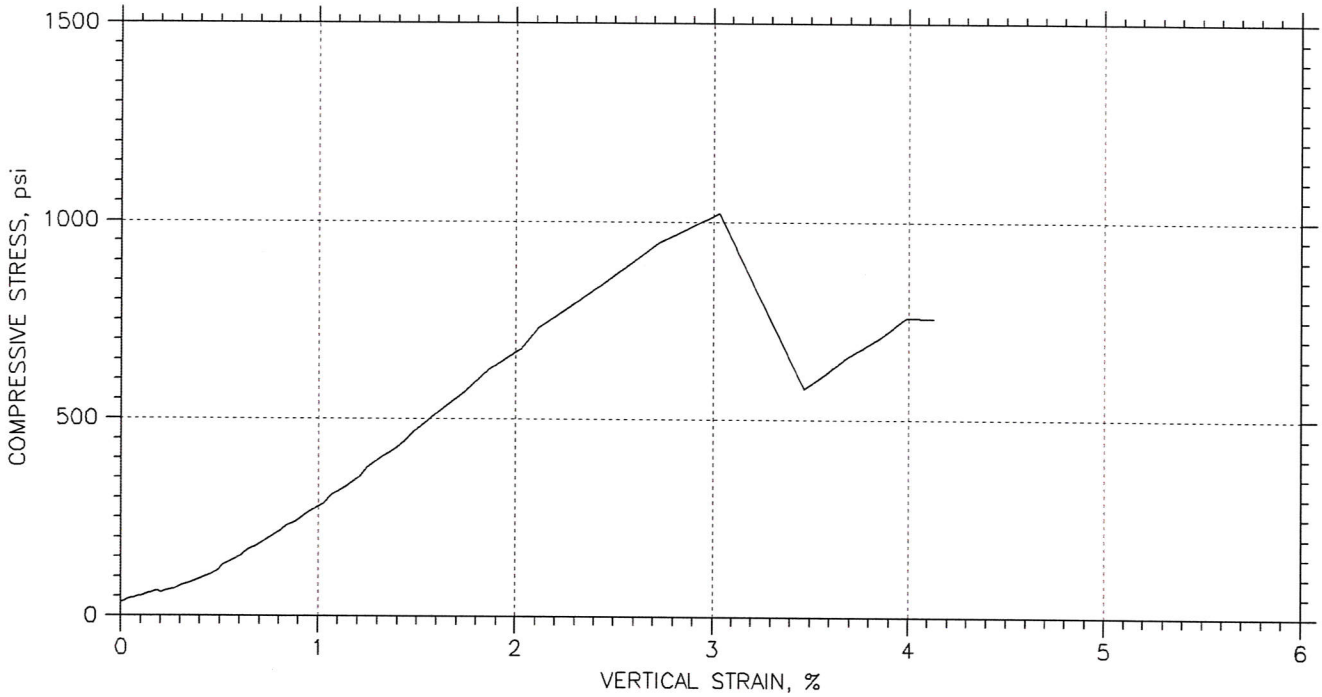


Symbol					
Test No.		Q14-005			
Initial	Diameter, in	2.39			
	Height, in	5.02			
	Water Content, %	4.25			
	Dry Density, pcf	152.5			
	Saturation, %				
	Void Ratio				
Unconfined Compressive Strength, psi		897.9			
Undrained Shear Strength, psi					
Time to Failure, min					
Strain Rate, %/min		1			
Implied Specific Gravity					
Liquid Limit		---			
Plastic Limit		---			
Plasticity Index		---			
Failure Sketch					

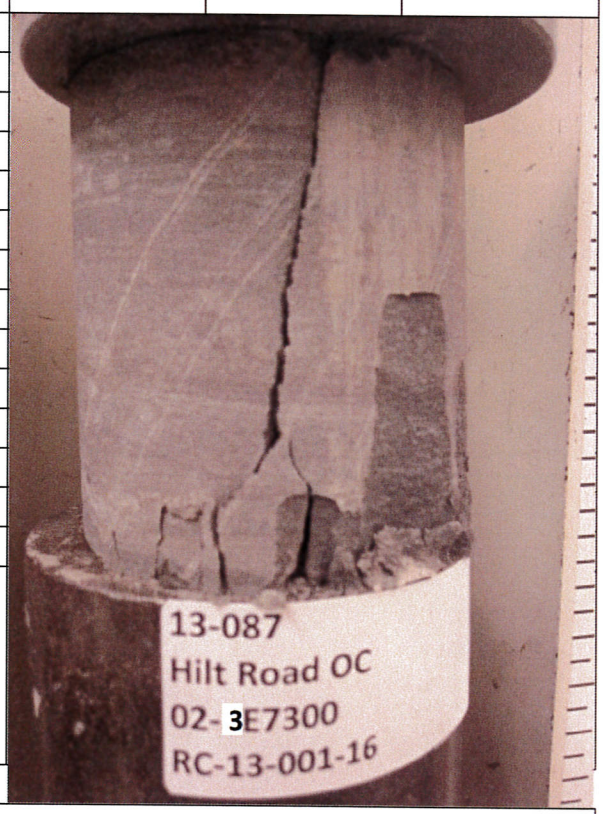
	Project: Hilt Road OC
	Location: 02-SIS-5-68.3
	Project No.: 02-3E7300
	Boring No.: RC-13-001-14
	Sample Type: core
	Description: Moist; Gray; Clay stone
	Remarks: ASTM D2166

Wed, 15-JAN-2014 10:07:55

UNCONFINED COMPRESSION TEST REPORT



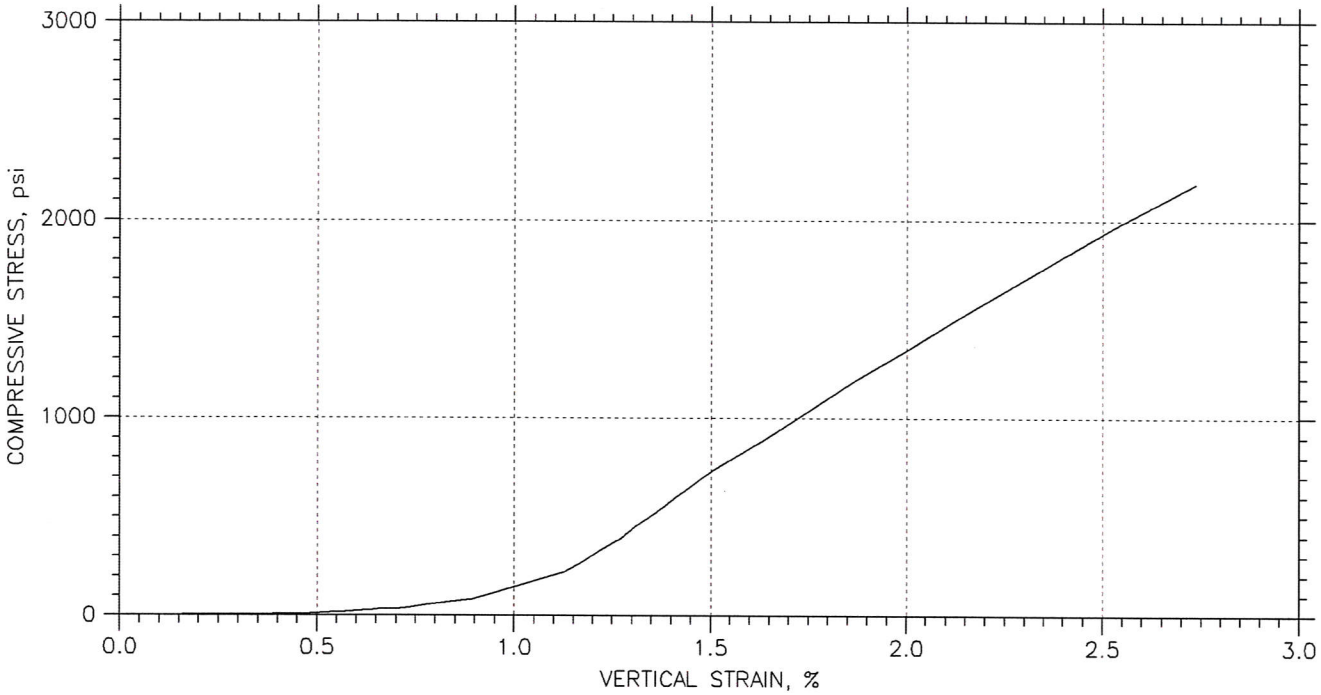
Symbol					
Test No.		Q14-006			
Initial	Diameter, in	2.39			
	Height, in	2.71			
	Water Content, %	2.80			
	Dry Density, pcf	152.2			
	Saturation, %				
	Void Ratio				
Unconfined Compressive Strength, psi		1022			
Undrained Shear Strength, psi					
Time to Failure, min					
Strain Rate, %/min		1			
Implied Specific Gravity					
Liquid Limit		---			
Plastic Limit		---			
Plasticity Index		---			
Failure Sketch					



	Project: Hilt Road OC
	Location: 02-SIS-5-68.3
	Project No.: 02-3E7300
	Boring No.: RC-13-001-16
	Sample Type: core
	Description: Moist; Gray; Clay Stone
	Remarks: ASTM D2166 Sample broke during cutting ; L/D < 2

Wed, 15-JAN-2014 10:12:10

UNCONFINED COMPRESSION TEST REPORT

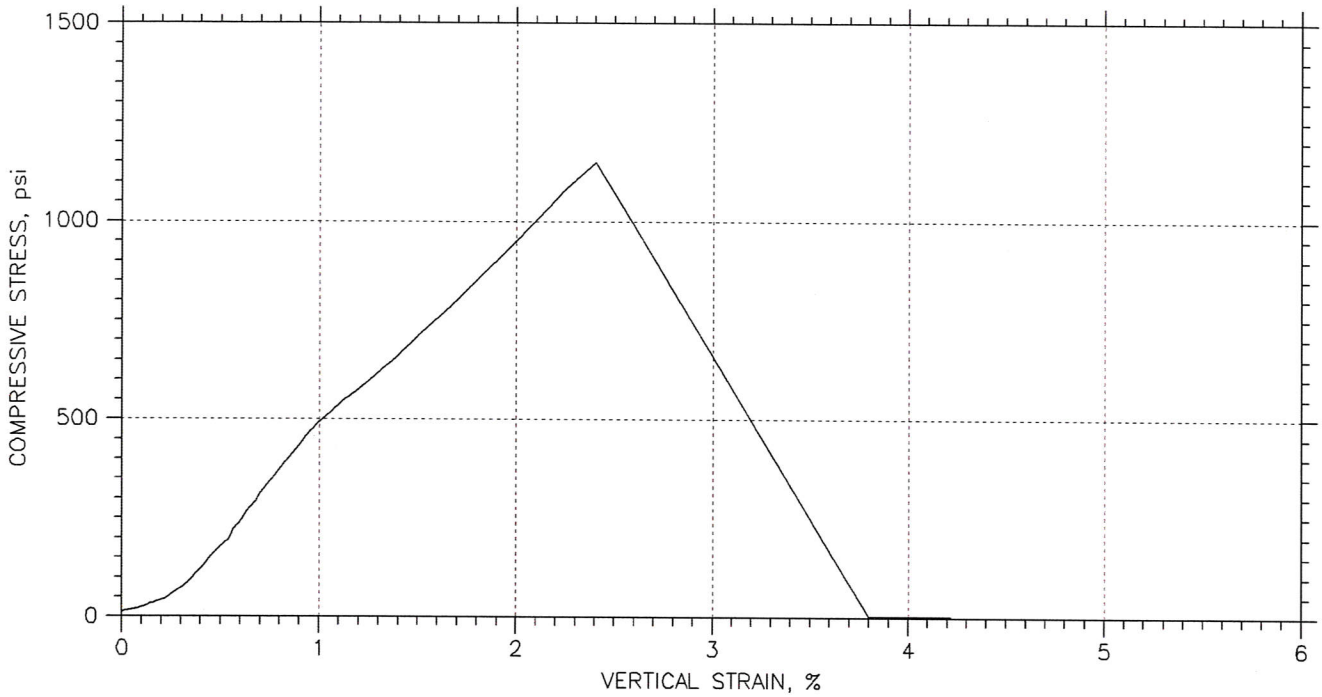


Symbol		
Test No.		Q14-007
Initial	Diameter, in	2.38
	Height, in	5.17
	Water Content, %	3.49
	Dry Density, pcf	154.4
	Saturation, %	
	Void Ratio	
Unconfined Compressive Strength, psi		2188
Undrained Shear Strength, psi		
Time to Failure, min		
Strain Rate, %/min		1
Implied Specific Gravity		
Liquid Limit		---
Plastic Limit		---
Plasticity Index		---
Failure Sketch		

	Project: Hilt Road OC
	Location: 02-SIS-5-68.3
	Project No.: 02-3E7300
	Boring No.: RC-13-001 - 22
	Sample Type: core
	Description: Moist; Gray; Clay Stone
	Remarks: ASTM D2166 **- Test have reached 10,000 lbs. maximum load on machine.**

Wed, 15-JAN-2014 10:16:22

UNCONFINED COMPRESSION TEST REPORT

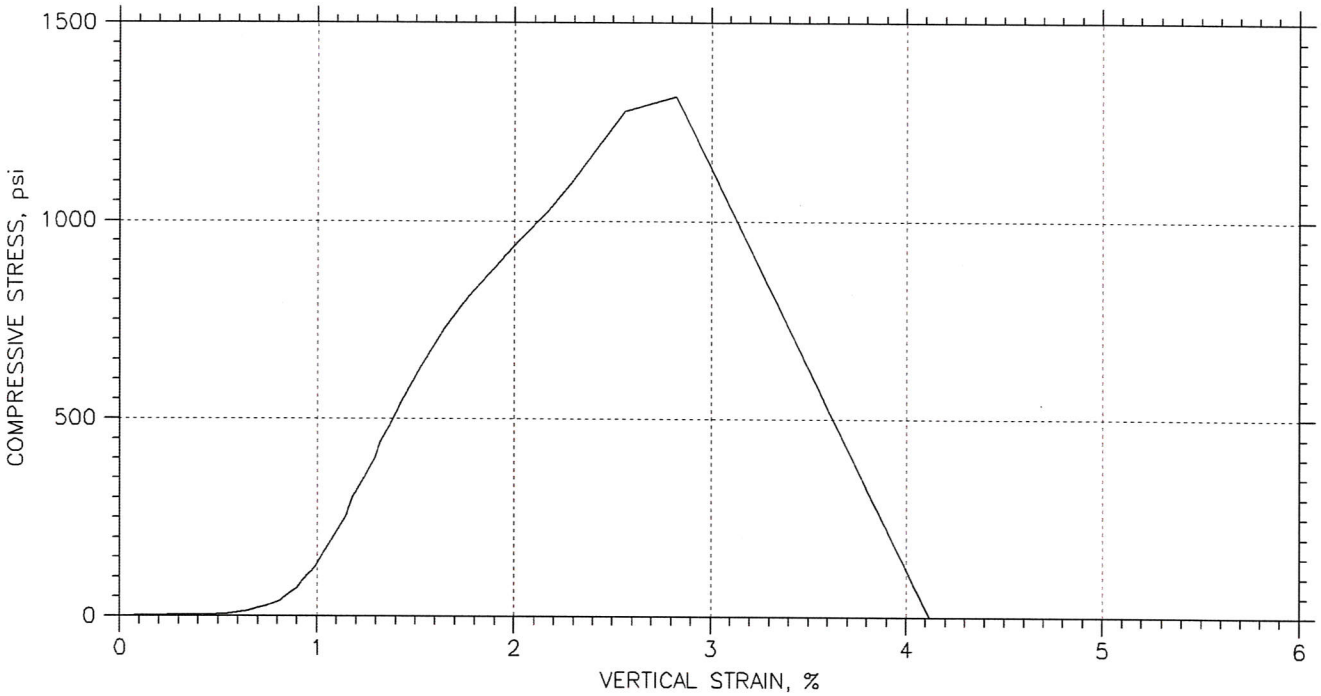


Symbol					
Test No.		Q14-008			
Initial	Diameter, in	2.39			
	Height, in	5.1			
	Water Content, %	6.62			
	Dry Density, pcf	144.4			
	Saturation, %				
	Void Ratio				
Unconfined Compressive Strength, psi		1148			
Undrained Shear Strength, psi					
Time to Failure, min					
Strain Rate, %/min		1			
Implied Specific Gravity					
Liquid Limit		---			
Plastic Limit		---			
Plasticity Index		---			
Failure Sketch					

	Project: Hilt Road OC
	Location: 02-SIS-5-68.3
	Project No.: 02-3E7300
	Boring No.: RC-13-002 -03
	Sample Type: core
	Description: Moist; Gray; Clay stone
	Remarks: ASTM D2166

Wed, 15-JAN-2014 10:19:59

UNCONFINED COMPRESSION TEST REPORT



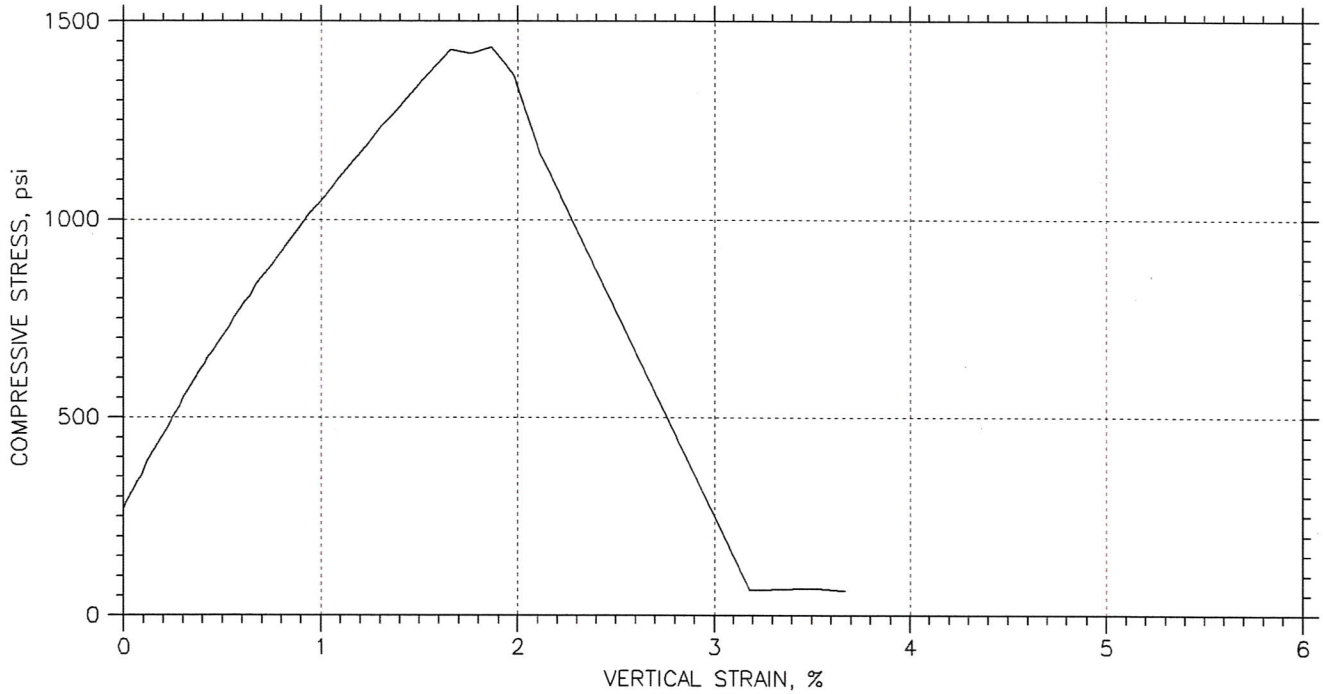
Symbol		
Test No.		Q14-009
Initial	Diameter, in	2.39
	Height, in	5.16
	Water Content, %	5.27
	Dry Density, pcf	146.8
	Saturation, %	
	Void Ratio	
Unconfined Compressive Strength, psi		1314
Undrained Shear Strength, psi		
Time to Failure, min		
Strain Rate, %/min		1
Implied Specific Gravity		
Liquid Limit		---
Plastic Limit		---
Plasticity Index		---
Failure Sketch		

	Project: Hilt Road OC
	Location: 02-SIS-5-68.3
	Project No.: 02-3E7300
	Boring No.: RC-13-002 -05
	Sample Type: core
	Description: Moist; Gray; Clay Stone
	Remarks: ASTM D2166

RP 1/16/14

Wed, 15-JAN-2014 10:24:45

UNCONFINED COMPRESSION TEST REPORT



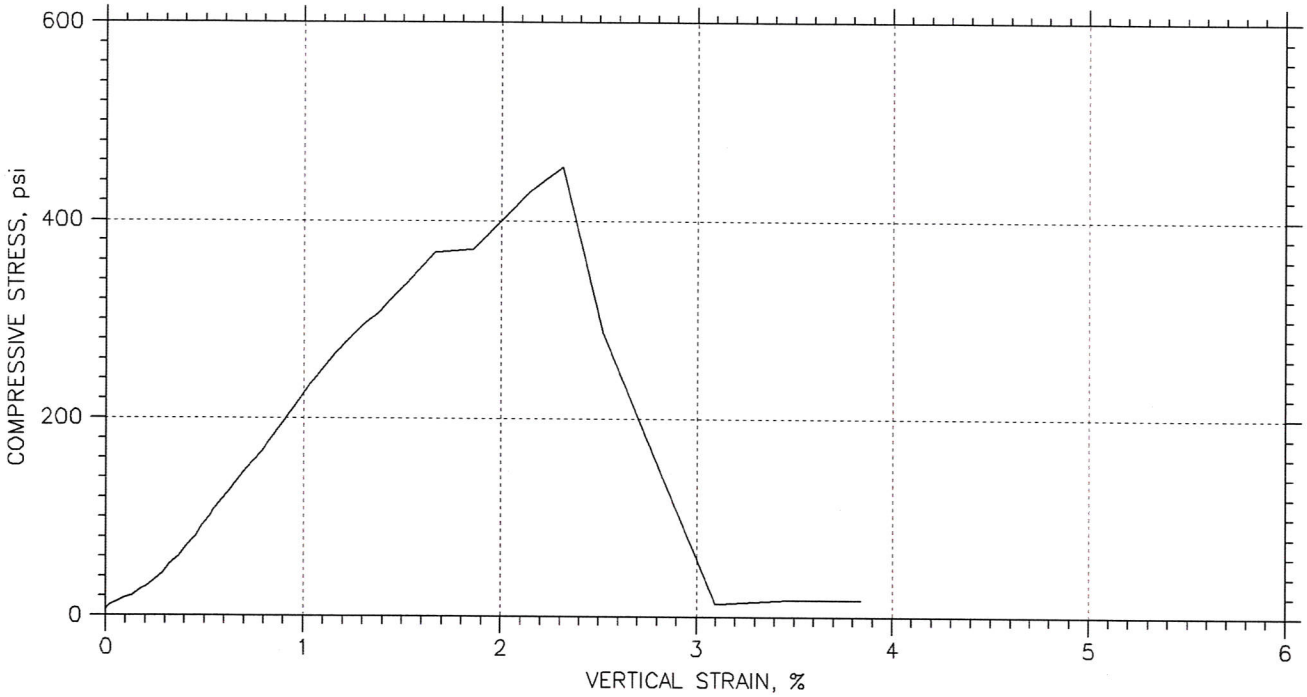
Symbol		
Test No.		Q14-010
Initial	Diameter, in	2.39
	Height, in	5.13
	Water Content, %	4.62
	Dry Density, pcf	150.3
	Saturation, %	
	Void Ratio	
Unconfined Compressive Strength, psi		1435
Undrained Shear Strength, psi		
Time to Failure, min		
Strain Rate, %/min		1
Implied Specific Gravity		
Liquid Limit		---
Plastic Limit		---
Plasticity Index		---
Failure Sketch		

	Project: Hilt Road OC
	Location: 02-SIS-5-68.3
	Project No.: 02-3E7300
	Boring No.: RC-13-002 - 09
	Sample Type: core
	Description: Moist; Gray; Clay Stone
	Remarks: ASTM D2166

WP 1/16/14

Wed, 15-JAN-2014 10:29:07

UNCONFINED COMPRESSION TEST REPORT

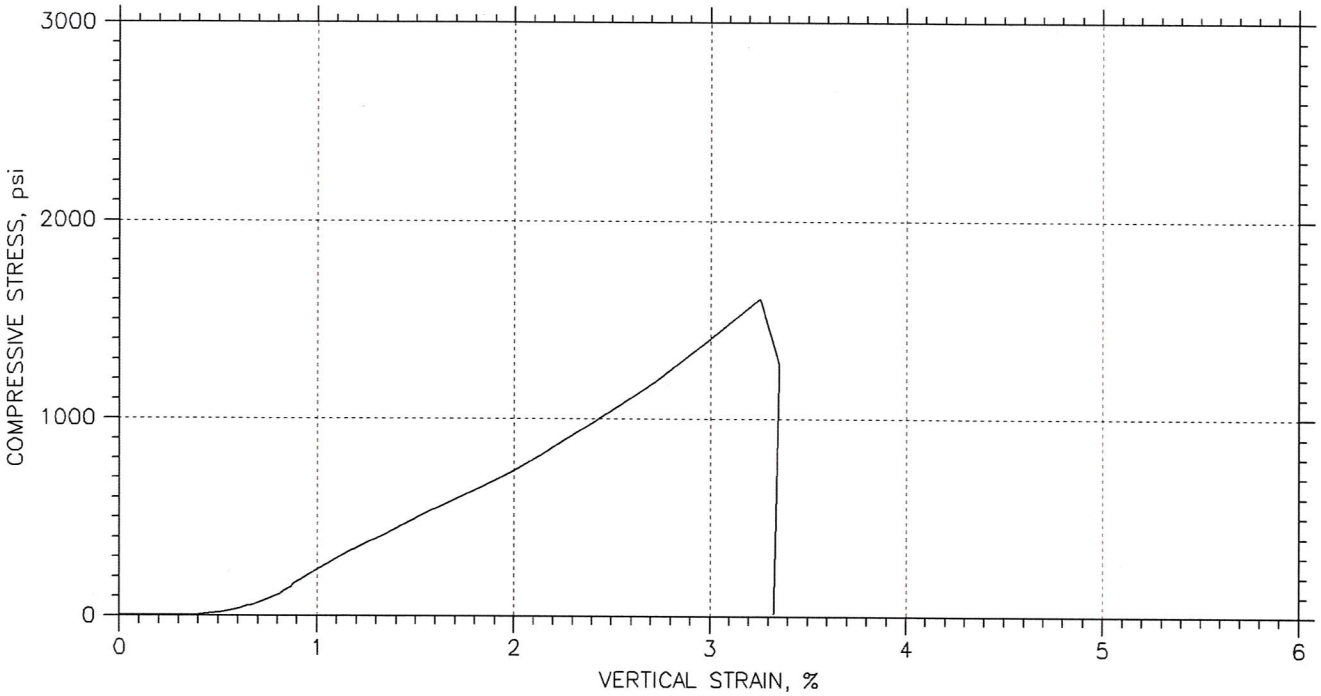


Symbol					
Test No.		Q14-011			
Initial	Diameter, in	2.4			
	Height, in	4.4			
	Water Content, %	8.16			
	Dry Density, pcf	137.3			
	Saturation, %				
	Void Ratio				
Unconfined Compressive Strength, psi		454.8			
Undrained Shear Strength, psi					
Time to Failure, min					
Strain Rate, %/min		1			
Implied Specific Gravity					
Liquid Limit		---			
Plastic Limit		---			
Plasticity Index		---			
Failure Sketch					

	Project: Hilt Road OC
	Location: 02-SIS-5-68.3
	Project No.: 02-3E7300
	Boring No.: RC-13-003 -15
	Sample Type: core
	Description: Moist; Gray; Clay stone
	Remarks: ASTM D2166 L/D < 2

Wed, 15-JAN-2014 10:32:26

UNCONFINED COMPRESSION TEST REPORT



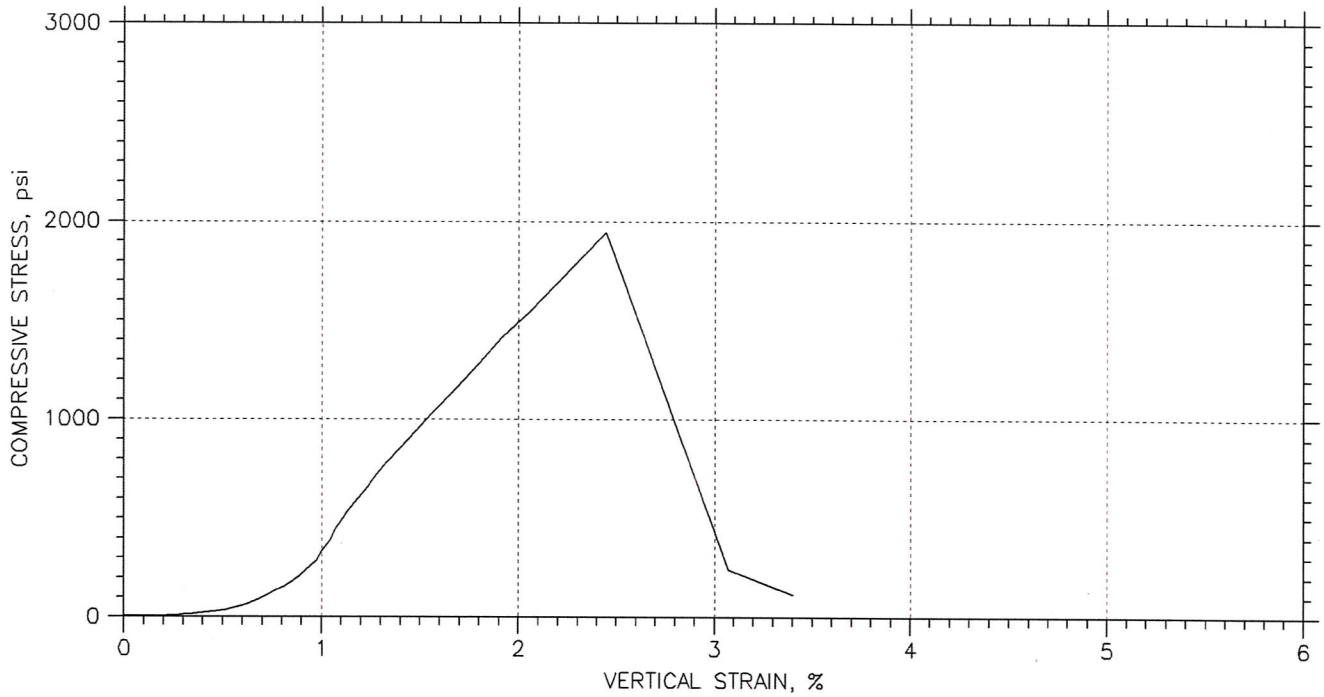
Symbol		
Test No.		Q14-012
Initial	Diameter, in	2.39
	Height, in	5.13
	Water Content, %	5.09
	Dry Density, pcf	147.7
	Saturation, %	
	Void Ratio	
Unconfined Compressive Strength, psi		1607
Undrained Shear Strength, psi		
Time to Failure, min		
Strain Rate, %/min		1
Implied Specific Gravity		
Liquid Limit		---
Plastic Limit		---
Plasticity Index		---
Failure Sketch		

	Project: Hilt Road OC
	Location: 02-SIS-5-68.3
	Project No.: 02-3E7300
	Boring No.: RC-13-003 - 16
	Sample Type: core
	Description: Moist; Gray; Clay stone
	Remarks: ASTM D2166

WP 1/16/14

Wed, 15-JAN-2014 10:36:11

UNCONFINED COMPRESSION TEST REPORT



Symbol		
Test No.		Q14-013
Initial	Diameter, in	2.39
	Height, in	5.11
	Water Content, %	3.50
	Dry Density, pcf	154.4
	Saturation, %	
	Void Ratio	
Unconfined Compressive Strength, psi		1945
Undrained Shear Strength, psi		
Time to Failure, min		
Strain Rate, %/min		1
Implied Specific Gravity		
Liquid Limit		---
Plastic Limit		---
Plasticity Index		---
Failure Sketch		

	Project: Hilt Road OC
	Location: 02-SIS-5-68.3
	Project No.: 02-3E7300
	Boring No.: RC-13-003 -21
	Sample Type: core
	Description: Moist; Gray; Clay stone
	Remarks: ASTM D2166

1/16/14

Wed, 15-JAN-2014 10:39:05

OFFICE OF GEOTECHNICAL SUPPORT
GEOTECHNICAL LABORATORY TRACKING FORM

GL Tracking No. 14-022

Project Information

Project Name: Hilt Road OC
Structure No.: 02-0130
District: 02
County: SIS
Route: 5
PM: 68.3-

Project Charging

District: 02
EA: 3E7300
FA:
Activity Code: 160
MSA Code:
Sub Job:
Special Designation:

Client Information

Last Name: Kaump
First Name: Joe
Office: GDN
Phone: 227-1044

Dates

Dates Sampled: 2013-10-30
Samples Received: 2014-05-06
Samples to Grade Bench: 2014-05-08
Client's Due: 2014-05-20
GL Staff Due: 2014-05-19
Estimated Delivery: 2014-05-20

TL-101 Numbers

C739510

Comments

Project: 0200020157
Phase: 0

Final request received 5/14/14

	Number Tests Requested	Number Tests Completed	Date Testing Started	Date Testing Completed
Unit Weight				
Moisture Content	1			
Specific Gravity				
Mechnical Analysis	1			
Atterberg Limits	1			
Consolidation				
Triaxial UU				
Triaxial CU				
Unconfined Comp				
Point Load				
Direct Shear				
Permeability				
Compaction Curve				
Swell Potential				
Collapse Potential				
Expansion Index	1			
Shrinkage Limit				
Corrosion				
Sand Equivalent				
R-Value				
Organic Content				
pH				
Cation Exchange				

BORING SAMPLE RECORD

GL TRACKING NO. 14-022
TESTING DUE:

PROJECT NAME: Hilt Road OC
DIST-CO-RTE-PM: 02-SIS-5-68.3-
DIST-EA: 02-3E7300
SUB JOB:
CLIENT: Joe Kaump

FA: ACT. CODE: 160
SPECIAL DESG:

BR. NO: 02-0130
MSA CODE:

PHONE: 227-1044

Boring ID	Sample No.	Tube No.	Depth	Test Type																	Remarks
				Unit Weight	Moisture Content	Specific Gravity	Mechanical Analysis	Atterberg	Consolidation	Triaxial UU	Triaxial CU	Unconfined Compression	Point Load	Direct Shear	Permeability	Compaction	Expansion Index	Corrosion	Other		
RC-13-003	5,6,7		11.5-20		X		X	X									X				

DIVISION OF
ENGINEERING SERVICES
OFFICE OF GEOTECHNICAL SUPPORT
GEOTECHNICAL LABORATORY
5900 Folsom Boulevard
Sacramento, CA 95819

Date: 5/19/2014

To: Joe Kaump / GDN

From: Lilibeth C. Purta / (916) 227-5239

RE: Laboratory Test Report -- EA: 02-3E7300
Project: 0200020157
GL 14-022

Final test results.

Note: All remaining test specimens will be disposed of in 30 calendar days from the release date of the final test results.

AASHTO R18

CALIFORNIA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL LABORATORY

GL TRACKING NO : 14-022
Dist - EA: 02-3E7300
Report Date: May 19, 2014
Page: 1/1

CLASSIFICATION TEST SUMMARY

SAMPLE ID	% FINER THAN																	ATTERBERG LIMITS		AS RECEIVED		Gs
	3"	2 1/2"	2"	1 1/2"	1"	3/4"	1/2"	3/8"	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200	5μ	1μ	LL	PI	γd (pcf)	%m	
RC-13-003_5,6,7				100	96	88	79	75	64	60	57	55	54	52	51	26	13	37	17			

Division of Engineering Services
Geotechnical Laboratory

Expansion Index

ASTM D 4829

Dist-EA: 02-3E7300
Dist-Co-Rte-PM: SIS-5-68.3/
Sample ID: RC-13-003_5,6,7

GI Tracking No.: 14-022
Approved : May 19, 2014

Volume of Mold: 12.6 in^3 Specific Gravity: 2.7

Prior to Test							Test Data		After Test
Soil + Mold (g)	Mold (g)	Specimen (g)	Moisture Content (%)	Dry Unit Weight Yd (pcf)	Saturation %	Initial Sample Height (in)	Initial Reading (in)	Final Reading (in)	Moisture Content (%)
753.9	363.6	390.3	10.8	106.3	49.6	1.0	1.2148	1.2451	22.4

Measured Expansion Index EI_{meas} = 30

Expansion Index at S=50%, EI_{50} = 30

Expansion Index	Potential Expansion
0-20	Very Low
21-50	Low
51-90	Medium
91-130	High
>130	Very High

REMARKS:

Project No. S9805-01-19
March 17, 2014

Steve Werner, Task Order Manager
Caltrans District 1
Environmental Engineering Office
1656 Union Street
Eureka, California 95501

Subject: ASBESTOS AND LEAD-CONTAINING PAINT SURVEY REPORT
HILT ROAD OVERCROSSING (BRIDGE 02-0130)
SISKIYOU COUNTY, CALIFORNIA
CONTRACT NO. 03A2132, E-FIS 02 0002 0157 (EA 02-3E7300)
TASK ORDER NO. 19, 02-SIS-5

Dear Mr. Werner:

In accordance with California Department of Transportation (Caltrans) Contract No. 03A2132 and Task Order No. 19, we have performed an asbestos and lead-containing paint (LCP) survey of the Hilt Road Overcrossing (Bridge 02-0130) in Siskiyou County, California. The scope of services included surveying the bridge for suspect asbestos-containing materials (ACM) and lead-containing paint, collecting bulk ACM and paint samples, and submitting the samples to laboratories for analyses.

PROJECT DESCRIPTION

The project consists of the Hilt Road Overcrossing at Post Mile (PM) 68.30 on Interstate 5 in Siskiyou County, California. We performed asbestos and LCP survey activities at the project location. The project location is depicted on the Vicinity Map, Figure 1, and Site Plan, Figure 2.

GENERAL OBJECTIVES

The scope of services outlined in TO-19 included the determination of the presence and quantity of asbestos and LCP at the project location prior to demolition. Assuming that no asbestos is added during future operations, our survey would satisfy National Emissions Standards for Hazardous Air Pollutants (NESHAP) requirements. The information obtained from this investigation will be used by Caltrans for waste profiling, determining California Occupational Safety and Health Administration (Cal/OSHA) applicability, and coordinating asbestos and LCP disturbance activities.

BACKGROUND

Asbestos

The Code of Federal Regulations (CFR), 40 CFR 61, Subpart M, NESHAP and Federal Occupational Safety and Health Administration (FED OSHA) classify ACM as any material or product that contains *greater 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 nonfriable 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 (can be crumbled, pulverized, or reduced to powder by hand pressure); 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 nonfriable 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) §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 operations) must be removed from structures prior to demolition. Certain nonfriable ACM and materials containing 1% or less asbestos may remain in structures during demolition; however, there are waste handling/disposal issues and Cal/OSHA work requirements that must be addressed. 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).

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 §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 substrate. Demolition of a deteriorated paint component would require waste characterization and appropriate disposal. Intact paint on a component is currently accepted by most landfills and recycling 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 representative total lead content equals or exceeds the respective Total Threshold Limit Concentration (TTLC) of 1,000 milligrams per kilogram (mg/kg); or 2) the representative soluble lead content equals or 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 representative 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 representative soluble lead content equals or 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 concentration) 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 paint coatings during demolition. Dust containing hazardous concentrations of lead may be generated during scraping or cutting materials coated with paint. Torching of these materials may produce hazardous fumes. Therefore, air monitoring and/or respiratory protection may be required during the demolition of materials coated with lead-containing paint. Guidelines regarding regulatory provisions for construction work where workers may be exposed to lead are presented in Title 8, CCR §1532.1.

Architectural Drawings and Previous Survey Activities

We reviewed structure architectural plans provided by Caltrans prior to field activities. We did not observe specifications or notes regarding the use of asbestos-containing materials or lead paint in the architectural plans provided. Previous asbestos survey reports were not available for our review.

SCOPE OF SERVICES

Mr. David Watts, a California-Certified Asbestos Consultant (CAC), certification No. 98-2404 (expiration September 16, 2014), and Certified Lead Paint Inspector/Assessor and Project Monitor with the California Department of Public Health Services (DPH), certification numbers I-1734 and M-1734 (expiration December 4, 2014), performed the asbestos and LCP survey at the project location on February 11, 2014.

Asbestos

Suspect ACM were grouped into homogeneous areas with representative samples randomly collected from each. In addition, each potential ACM was evaluated for friability. A total of ten bulk asbestos samples representing five suspect materials were collected.

Our procedures for inspection and sampling in accordance with TO-19 are discussed below:

- Collected bulk asbestos samples after first wetting friable materials with a light mist of water. The samples were then cut from the substrate and transferred to labeled containers.
- Relinquished bulk asbestos samples to EMSL Analytical, Inc., a California-licensed and Caltrans-approved subcontractor, for asbestos analysis in accordance with United States Environmental Protection Agency (EPA) Test Method 600/R-93/116 using polarized light microscopy (PLM) under chain-of-custody protocol. 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 turnaround period of five days.

Approximate sample locations are presented on Figure 2. Materials represented by the samples collected are shown in the attached photographs.

Lead Paint

A total of four bulk paint samples were collected from suspect LCP observed at the project location. Mr. Watts field-composited the suspect LCP samples into two paint schemes prior to submittal to the laboratory. We did not observe deteriorated LCP during our survey. Our sampling procedures in accordance with TO-19 are discussed below:

- Collected bulk samples of suspect LCP using techniques presented in HUD guidelines. In addition, the painted areas were evaluated for evidence of deterioration such as flaking or cracking.
- Relinquished the bulk LCP sample under chain-of-custody protocol to Advanced Technology Laboratories, a California-licensed and Caltrans-approved subcontractor, for lead analysis in accordance with EPA Test Method 6010B. Advanced Technology Laboratories is accredited by the DPH for lead analysis. The laboratory analyses were requested on a turnaround period of five days.

Approximate sample locations are presented on Figure 2. Materials represented by the samples collected are shown in the attached photographs.

INVESTIGATIVE RESULTS

Asbestos

Chrysotile asbestos at a concentration of 70% was detected in samples representing approximately 3 square feet of nonfriable sheet packing used as shims on the barrier rail system.

No asbestos was detected in samples of the remaining suspect materials collected during our survey. Sample group identification numbers, material descriptions, approximate quantities, friability assessments, and a summary of the analytical laboratory test results for asbestos are summarized in Table 1. Reproductions of the laboratory report and chain-of-custody documentation are attached.

Lead Paint

Composite samples representing intact paints at the site exhibited total lead concentrations of 23,000 and 7.5 mg/kg in the structural steel paint and yellow traffic striping, respectively. Further analysis of the sample representing paint applied to structural steel members on the bridge indicated a TCLP lead concentration of 21 mg/l.

Sample identification numbers, descriptions, peeling and flaking quantities, and a summary of the analytical laboratory test results for paint are summarized in Table 2. Reproductions of the laboratory reports and chain-of-custody documentation are attached.

RECOMMENDATIONS

Asbestos

NESHAP regulations do not require that asbestos-containing sheet packing (a Category I nonfriable/nonhazardous material) identified during our survey be removed prior to demolition or be treated as a hazardous waste. However, activities causing *disturbance* of the material (i.e., cutting, abrading, sanding, grinding, etc.) would require compliance with the Cal/OSHA asbestos standard (Title 8, CCR §1529).

We also recommend the notification of contractors (that will be conducting demolition, renovation, or related activities) of the presence of asbestos in their work areas (i.e., provide the contractor[s] with a copy of this report and a list of asbestos removed by contractor[s] during subsequent abatement activities). Personnel not trained for asbestos work should be instructed not to disturb asbestos.

Written notification to the U.S. EPA Region IX and the California Air Resources Board is required ten working days prior to commencement of *any* demolition activity (whether asbestos is present or not).

Lead Paint

Structural steel paint sampled during our survey would be classified as California and Federal hazardous based on lead content if stripped, blasted, or otherwise separated from the substrate. Yellow traffic striping sampled during our survey would not be classified as California or Federal hazardous.

We recommend that all paints at the project location be treated as lead-containing for purposes of determining the applicability of the Cal/OSHA lead standard during maintenance, renovation, and demolition activities. This recommendation is based on the fact that lead was a common ingredient of paints manufactured before 1978 and is still an ingredient of some paints. In accordance with Title 8, CCR §1532.1(p), written notification to the nearest Cal/OSHA district office is required at least 24 hours prior to certain lead-related work. Compliance and training requirements regarding construction activities where workers may be exposed to lead are presented in Title 8, CCR §1532.1, subsections (e) and (l), respectively. Contractors are responsible for segregating and characterizing waste streams prior to disposal.

REPORT LIMITATIONS

The asbestos and 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 structure identified above. Due to the nature of structure surveys, asbestos and LCP use, and laboratory analytical limitations, some ACM or LCP at the project location may not have been identified. Spaces such as cavities, voids, crawlspaces, and pipe chases may have been concealed to our investigator. Previous renovation work 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 ACM with indistinguishable non-ACM. Asbestos and/or LCP may exist in areas of the structure that were not accessible or sampled in conjunction with this TO.

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. If suspect ACM and/or LCP are found, additional sampling and analysis should be performed to determine if the materials contain asbestos or lead.

This report has been prepared exclusively for 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.

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. 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.

Please contact us should you have any questions concerning the contents of this report or if we may be of further service.

Sincerely,

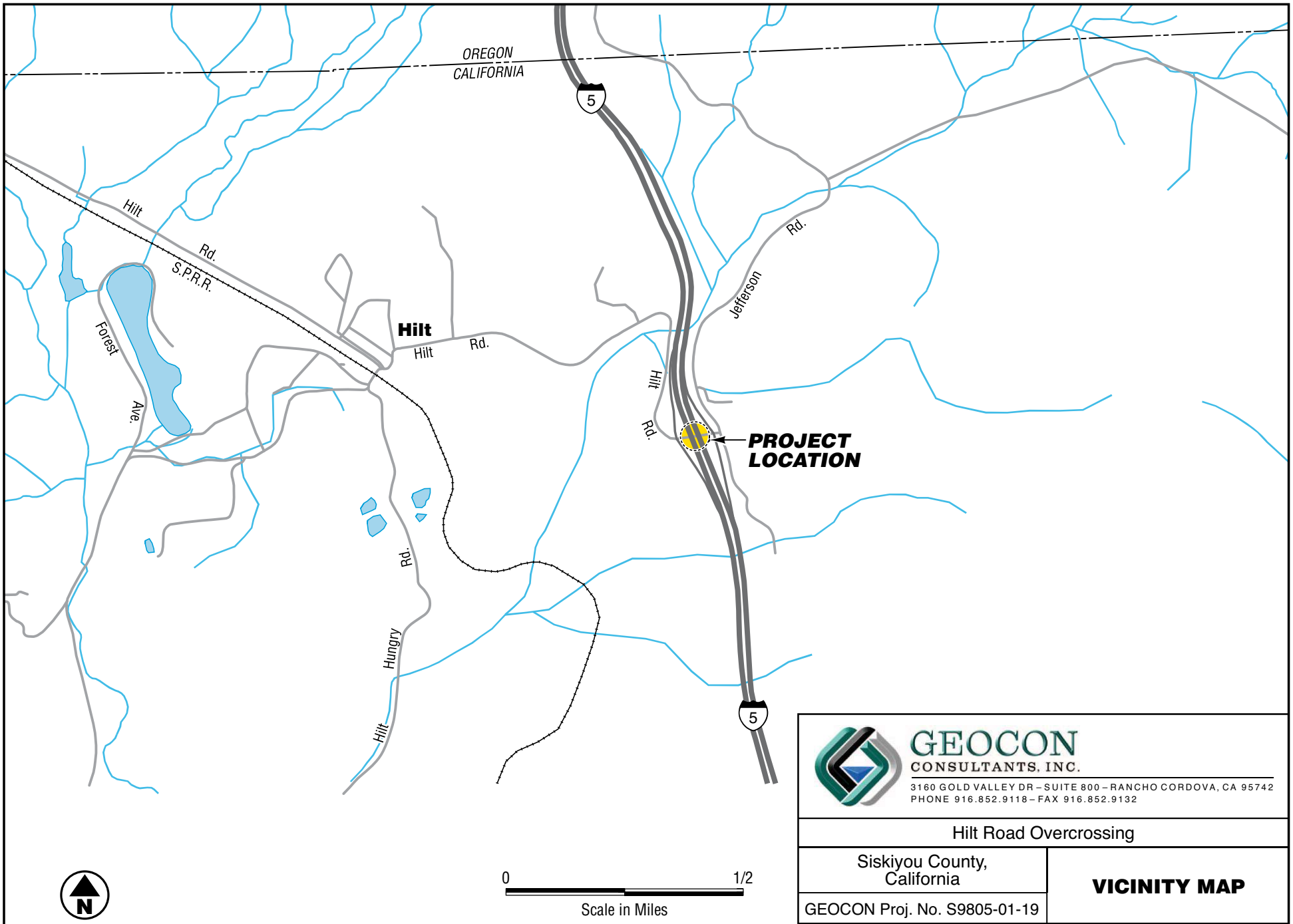
GEOCON CONSULTANTS INC.

David A. Watts, CAC No. 98-2404
Senior Project Scientist

John E. Jukrend, PE, CEG
Principal/Senior Engineer

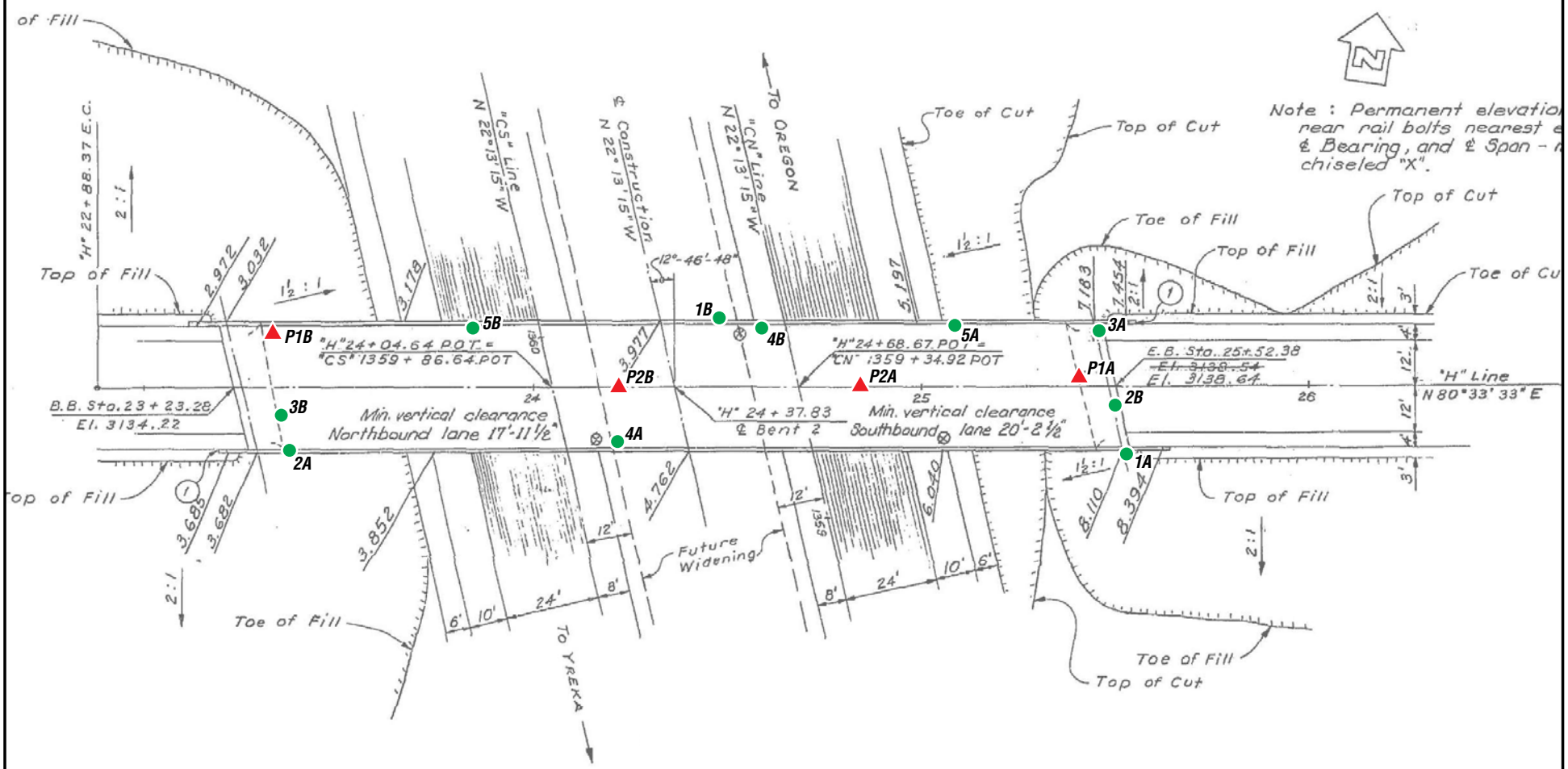
(2 + 2 CD) Addressee

Attachments:
- Figure 1, Vicinity Map
- Figure 2, Site Plan
- Site Photographs (1 through 6)
- Table 1, Summary of Asbestos Analytical Results
- Table 2, Summary of Paint Analytical Results – Total and Soluble Lead
- Analytical Laboratory Reports and Chain-of-custody Documentation



GEOCON
CONSULTANTS, INC.
3160 GOLD VALLEY DR – SUITE 800 – RANCHO CORDOVA, CA 95742
PHONE 916.852.9118 – FAX 916.852.9132

Hilt Road Overcrossing		
Siskiyou County, California	**VICINITY MAP**	
GEOCON Proj. No. S9805-01-19		
Task Order No. 19	March 2014	Figure 1



LEGEND:

- ● Approximate Asbestos Sample Location
- ▲ Approximate Paint Sample Location

0 40

Scale in Feet

GEOCON CONSULTANTS, INC.

3160 GOLD VALLEY DR – SUITE 800 – RANCHO CORDOVA, CA 95742
PHONE 916.852.9118 – FAX 916.852.9132

Hilt Road Overcrossing		
Siskiyou County, California	**SITE PLAN**	
GEOCON Proj. No. S9805-01-19		
Task Order No. 19	March 2014	Figure 2

Photo 1 – Hilt Road Overcrossing at PM 68.30 on Interstate 5 in Siskiyou County, California

Photo 2 – East abutment

Photo 3 – Bridge bearings

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PHONE 916.852.9118 – FAX 916.852.9132

PHOTOGRAPHS 1, 2, & 3		
Hilt Road Overcrossing Siskiyou County, California		
S9805-01-19		March 2014

Photo 4 – Asbestos sheet packing on bridge barrier rail system

Photo 5 – Truss and girder system

Photo 6 – Deck membrane

GEOCON
CONSULTANTS, INC.
3160 GOLD VALLEY DR – SUITE 800 – RANCHO CORDOVA, CA 95742
PHONE 916.852.9118 – FAX 916.852.9132

PHOTOGRAPHS 4, 5, & 6		
Hilt Road Overcrossing Siskiyou County, California		
S9805-01-19		March 2014

TABLE 1
SUMMARY OF ASBESTOS ANALYTICAL RESULTS
HILT ROAD OVERCROSSING
CALTRANS CONTRACT 03A2132, TASK ORDER NO. 19, EA 02-3E7300
SISKIYOU COUNTY, CALIFORNIA

Polarized Light Microscopy (PLM) - EPA Test Method 600/R-93/116

Sample Group No.	Description of Material	Approximate Quantity	Friable	Site Photos	Asbestos Content
1	Concrete	NA	NA	1 through 6	ND
2	Expansion joint fill material	NA	NA	2	ND
3	Bearing pads	NA	NA	3	ND
4	**Sheet packing (shims)**	**3 square feet**	**No**	**4**	**70%**
5	Deck membrane	NA	NA	6	ND

Notes:

NA = Not applicable (no asbestos detected)

ND = Not detected

TABLE 2
SUMMARY OF PAINT ANALYTICAL RESULTS - TOTAL AND SOLUBLE LEAD
HILT ROAD OVERCROSSING
CALTRANS CONTRACT 03A2132, TASK ORDER NO. 19, EA 02-3E7300
SISKIYOU COUNTY, CALIFORNIA

Paint Sample No.	Paint Description	Approximate Quantity Peeling/Flaking	Site Photos	Total Lead (mg/kg)	TCLP Lead (mg/l)
P1A/B	Green paint (structural steel members)	Intact	3 and 5	23,000	21
P2A/B	Yellow traffic striping	Intact	3 and 5	7.5	---

Notes:

mg/kg = milligrams per kilogram (EPA Test Method 6010B)
mg/l = milligrams per liter
TCLP = Toxicity Characteristic Leaching Procedure (EPA Test Method 6010B)
--- = Not analyzed

ADVANCED TECHNOLOGY LABORATORIES

February 20, 2014

ELAP No.: 1838
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No.: T104704502

Dave Watts
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Tel: (925) 961-5273
Fax:(925) 371-5915

Re: ATL Work Order Number : 1400446
Client Reference : HILT, S9805-01-19

Enclosed are the results for sample(s) received on February 13, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

3275 Walnut Avenue, Signal Hill, CA 90755 • Tel: 562-989-4045 • Fax: 562-989-4040
www.atlglobal.com

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	HILT, S9805-01-19
6671 Brisa Street		Report To :	Dave Watts
Livermore , CA 94550		Reported :	02/20/2014

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
0130-P1A\B	1400446-01	Paint	2/11/14 0:00	2/13/14 11:37
0130-P2A\B	1400446-02	Paint	2/11/14 0:00	2/13/14 11:37

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	HILT, S9805-01-19
6671 Brisa Street		Report To :	Dave Watts
Livermore , CA 94550		Reported :	02/20/2014

Client Sample ID 0130-P1A\B

Lab ID: 1400446-01

Total Metals by ICP-AES EPA 6010B **Analyst: CB**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**23000**	200	NA	50	B4B0289	02/19/2014	02/19/14 13:44	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number :	HILT, S9805-01-19
6671 Brisa Street	Report To :	Dave Watts
Livermore , CA 94550	Reported :	02/20/2014

Client Sample ID 0130-P2A\B
Lab ID: 1400446-02

Total Metals by ICP-AES EPA 6010B **Analyst: CB**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**7.5**	2.0	NA	1	B4B0289	02/19/2014	02/19/14 14:43	

QUALITY CONTROL SECTION

Total Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B4B0289 - EPA 3050B									
Blank (B4B0289-BLK1)				Prepared: 2/19/2014 Analyzed: 2/19/2014					
Lead	ND	1.0			NR				
LCS (B4B0289-BS1)				Prepared: 2/19/2014 Analyzed: 2/19/2014					
Lead	49.2274	1.0	50.0000		98.5	80 - 120			
LCS Dup (B4B0289-BSD1)				Prepared: 2/19/2014 Analyzed: 2/19/2014					
Lead	48.6229	1.0	50.0000		97.2	80 - 120	1.24	20	
Duplicate (B4B0289-DUP1)		**Source: 1400444-01**		Prepared: 2/19/2014 Analyzed: 2/19/2014					
Lead	3862.21	100		7203.36	NR		60.4	20	R

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	HILT, S9805-01-19
6671 Brisa Street		Report To :	Dave Watts
Livermore , CA 94550		Reported :	02/20/2014

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

CHAIN OF C STODY 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: D. WATTS
Address: 6671 Brisa Street
City: Livermore State: CA Zip Code: 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

Project Name: HILT Project #: S9805-01-19 Sampler: (Printed Name) D. WATTS (Signature) [signature]

Relinquished by: (Signature and Printed Name) [signature] Date: 2/12/14 Time: 1800 Received by: (Signature and Printed Name) GSO Date: 2/12/14 Time: 1800
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) FPOWS Date: 2/12/14 Time: 1037
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 2/11/14
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: 03A2132
ANTICIPATE SOLUBLE (MICRO) 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

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	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	1400446 - 1	0130-P1A\B	2/11/14	VAR					X									X	5-DAY	1	Bg P		GRN
	↓ - 2	↓ -P2A\B	↓	↓					↓									↓	↓	↓	↓		YTS

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

ADVANCED TECHNOLOGY LABORATORIES

February 27, 2014

ELAP No.: 1838
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No.: T104704502

Dave Watts
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Tel: (925) 961-5273
Fax:(925) 371-5915

Re: ATL Work Order Number : 1400446
Client Reference : HILT, S9805-01-19

Enclosed are the results for sample(s) received on February 13, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	HILT, S9805-01-19
6671 Brisa Street		Report To :	Dave Watts
Livermore , CA 94550		Reported :	02/27/2014

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
0130-P1A\B	1400446-01	Paint	2/11/14 0:00	2/13/14 11:37

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	HILT, S9805-01-19
6671 Brisa Street		Report To :	Dave Watts
Livermore , CA 94550		Reported :	02/27/2014

Client Sample ID 0130-P1A\B
Lab ID: 1400446-01

TCLP Metals by ICP-AES EPA 6010B **Analyst: CB**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**21**	0.083	NA	1	B4B0416	02/26/2014	02/27/14 10:43	

QUALITY CONTROL SECTION

TCLP Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B4B0416 - EPA 3010A_SOIL									
Blank (B4B0416-BLK1)				Prepared: 2/26/2014 Analyzed: 2/27/2014					
Lead	ND	0.050			NR				
Blank (B4B0416-BLK2)				Prepared: 2/26/2014 Analyzed: 2/27/2014					
Lead	ND	0.050			NR				
LCS (B4B0416-BS1)				Prepared: 2/26/2014 Analyzed: 2/27/2014					
Lead	0.987127	0.050	1.00000		98.7	80 - 120			
Duplicate (B4B0416-DUP1)		**Source: 1400520-01**		Prepared: 2/26/2014 Analyzed: 2/27/2014					
Lead	0.005796	0.050		0.057325	NR		163	20	M1
Matrix Spike (B4B0416-MS1)		**Source: 1400520-01**		Prepared: 2/26/2014 Analyzed: 2/27/2014					
Lead	2.48652	0.050	2.50000	0.057325	97.2	81 - 105			
Matrix Spike Dup (B4B0416-MSD1)		**Source: 1400520-01**		Prepared: 2/26/2014 Analyzed: 2/27/2014					
Lead	2.46509	0.050	2.50000	0.057325	96.3	81 - 105	0.866	20	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	HILT, S9805-01-19
6671 Brisa Street		Report To :	Dave Watts
Livermore , CA 94550		Reported :	02/27/2014

Notes and Definitions

M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

Diane Galvan

From: David Watts [watts@geoconinc.com]
Sent: Thursday, February 20, 2014 3:40 PM
To: Diane Galvan
Subject: S9805-01-19

TCLPs on all samples over 1000.same tat. Thx.

Sent from my iPhone

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone/Fax: (510) 895-3675 / (510) 895-3680
http://www.EMSL.com sanleandrolab@emsl.com

EMSL Order:	091402087
CustomerID:	GECN21
CustomerPO:	S9805-01-19
ProjectID:	03A2132

[illegible]
[illegible]
[illegible]
[illegible] **A 94550**

Phone:	(925) 371-5900
Fax:	(925) 371-5915
Received:	02/13/14 9:30 AM
Analysis Date:	2/17/2014
Collected:	2/11/2014

Project: **HILT / S9805-01-19**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy (Gravimetric Point Count)

Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos %	Type
0130-1A-Concrete *091402087-0001*	CONCRETE	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**	
0130-1B-Concrete *091402087-0002*	CONCRETE	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**	
0130-2A-Joint Fill Material *091402087-0003*	JOINT FILL MATERIAL	Black Fibrous Homogeneous	30%	Cellulose	70%	Non-fibrous (other)	**None Detected**	
0130-2B-Joint Fill Material *091402087-0004*	JOINT FILL MATERIAL	Black Fibrous Homogeneous	30%	Cellulose	70%	Non-fibrous (other)	**None Detected**	
0130-3A-Bearing Pads *091402087-0005*	BEARING PADS	Various Fibrous Homogeneous	10%	Synthetic	90%	Non-fibrous (other)	**None Detected**	
0130-3B-Bearing Pads *091402087-0006*	BEARING PADS	Various Non-Fibrous Homogeneous	10%	Synthetic	90%	Non-fibrous (other)	**None Detected**	
0130-4A-Sheet Packing *091402087-0007*	SHEET PACKING	Gray Fibrous Homogeneous			30%	Non-fibrous (other)	**70%**	**Chrysotile**

Analyst(s)
Amber Albon (9)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%
Samples analyzed by EMSL Analytical, Inc San Leandro, CA NVLAP Lab Code 101048-3, WA C884

Initial report from 02/18/2014 15:31:11

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone/Fax: (510) 895-3675 / (510) 895-3680
http://www.EMSL.com sanleandrolab@emsl.com

EMSL Order:	091402087
CustomerID:	GECN21
CustomerPO:	S9805-01-19
ProjectID:	03A2132

[illegible]
[illegible]
[illegible]
[illegible] **A 94550**

Phone:	(925) 371-5900
Fax:	(925) 371-5915
Received:	02/13/14 9:30 AM
Analysis Date:	2/17/2014
Collected:	2/11/2014

Project: **HILT / S9805-01-19**

[illegible]

Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos %	Type
0130-4B-Sheet Packing *091402087-0008*	SHEET PACKING						**Stop Positive (Not Analyzed)**	
0130-5A-Deck Membrane *091402087-0009*	DECK MEMBRANE	Black Fibrous Homogeneous	3%	Cellulose	97%	Non-fibrous (other)	**None Detected**	
0130-5B-Deck Membrane *091402087-0010*	DECK MEMBRANE	Black Fibrous Homogeneous	70%	Cellulose	30%	Non-fibrous (other)	**None Detected**	

Analyst(s)
Amber Albon (9)

Baojia Ke, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc San Leandro, CA NVLAP Lab Code 101048-3, WA C884

Initial report from 02/18/2014 15:31:11

THIS IS THE LAST PAGE OF THE REPORT.

OrderID: 091402087

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*:

№ 091402087

CONTRACT 0342132

EMSL ANALYTICAL, INC.
2235 POLVOROSA DR #230
SAN LEANDRO, CA 94577
PHONE: (510) 895-3675
FAX: (510) 895-3680

Company : GEOCON

Street: 6671 BRISA ST.

City: LIVERMORE **State/Province:** CA **Zip/Postal Code:** 94550 **Country:** USA

Report To (Name): D. WATTS **Telephone #:** 925-371-5900

Email Address: WATTS@GEOCONINC.COM **Fax #:** 925-371-5915 **Purchase Order:**

Project Name/Number: HILT / 39805-01-19 **Please Provide Results:** ☐ Fax ☒ Email

U.S. State Samples Taken: CA **CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

EMSL-Bill to: ☒ Same ☐ Different
If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PCM - Air ☐ Check if samples are from NY
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NYS 198.1 (friable in NY)
- ☐ NYS 198.6 NOB (non-friable-NY)
- ☐ NIOSH 9002 (<1%)

TEM – Air ☐ 4-4.5hr TAT (AHERA only)
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ Chatfield SOP
- ☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
- ☐ PLM CARB 435 - A (0.25% sensitivity)
- ☐ PLM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - C (0.01% sensitivity)
- ☐ TEM Qual. via Filtration Technique
- ☐ TEM Qual. via Drop-Mount Technique

Other:
- ☐

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** (>1%) **Filter Pore Size (Air Samples):** ☐ 0.8µm ☐ 0.45µm

Samplers Name: D. WATTS **Samplers Signature:** [signature]

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
0130 1A/B	CONCRETE	NA	11 FEB 2014
2	JOINT FILL MATERIAL		
3	BEARING PADS		
4	SHEET PACKING		
5	DECK MEMBRANE		

Client Sample # (s): 1A-5B **Total # of Samples:** 10

Relinquished (Client): [signature] **Date:** 12 FEB 2014 **Time:** 1700

Received (Lab): FEDEX RColon **Date:** 12 FEB 2014 2-13-14 **Time:** 1700 930

Comments/Special Instructions: Fed

Controlled Document – Asbestos COC – R6 – 4/11/2012

State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

15045A093CT **STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION**

of **N REGION DESIGN R4, DIST 2, CALTRANS, 1031 BUTTE ST; REDDING, CA 96001**

at **HILT ROAD OVERCROSSING STRUCTURE**

has been classified as ***** POTENTIALLY GASSY WITH SPECIAL CONDITIONS *****

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.**

Sixteen 30-inch-diameter 61.5-foot-deep drilled shafts located at the Hilt Road overcrossing of Interstate 5 in Siskiyou County

This classification shall be conspicuously posted at the place of employment.

Douglas Patterson, Senior Engineer

December 9, 2014

State of California
Department of Industrial Relations
Division of Occupational Safety & Health

REQUEST FOR PRE-JOB (TUNNEL)

ATTACH COPY OF CLASSIFICATION AND DIESEL PERMIT

Company Name: _____

Phone _____ FAX: _____

DATE FAXED: _____

PLEASE NOTE: THE BORING CONTRACTOR SHOULD SCHEDULE THE PREJOB AS FAR IN ADVANCE AS POSSIBLE - AT LEAST 3-4 DAYS IN ADVANCE. THE DIVISION REQUIRES THE JOB TO BE SET UP WHEN THE FIELD ENGINEER ARRIVES FOR THE PREJOB. THIS MEANS THAT THE BORE PIT HAS BEEN DUG AND PROPERLY GUARDED, THE CRANE IS IN PLACE AND READY TO LIFT, THE BORING MACHINE IS IN THE PIT AND READY TO GO, AND THE CREW IS READY TO BEGIN BORING THE TUNNEL. IF THERE IS A DELAY IN SETTING UP THE JOB, THE BORING CONTRACTOR SHOULD CONTACT THE DIVISION IMMEDIATELY.

PRE-JOB REQUEST DATE & TIME: _____

ON-SITE SUPERVISOR & CELL NO.: _____

CLASSIFICATION #: _____ **DIESEL PERMIT #:** _____

BORE DIAMETER AND LENGTH: _____ (Diameter) _____ (Length)

IS BORE ENTRY ANTICIPATED? YES NO
(Circle One)

You MUST contact the Division if entry is planned, REGARDLESS of the bore diameter.

MANNER OF EXCAVATION: _____

_____

JOB-SITE LOCATION AND DIRECTIONS: _____

_____

_____

GENERAL CONTRACTOR: _____

SUBMITTED BY: _____

REVIEWED BY: _____ **DATE:** _____

☐ *Mining & Tunneling Unit, District 1*
2424 Arden Way, Suite 125
Sacramento, California 95825-2400
(916) 574-2540; ***FAX: (916) 574-2542***

☐ *Mining & Tunneling Unit, District 2*
6150 Van Nuys Blvd., Suite 310
Van Nuys, California 91401-3333
(818) 901-5420; ***FAX: (818) 901-5579***

☐ *Mining & Tunneling Unit, District 3*
464 West Fourth Street, Suite 354
San Bernardino, California 92401-1442
(909) 383-6782; ***FAX: (909) 388-7132***