Contract C19222

I-280/Foothill Expressway Off-Ramp Improvements

Volume 4
Information Handouts

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Santa Clara Valley Transportation Authority

Solutions that move you

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I-280/Foothill Off-Ramp Improvements
C19222

SUPPLEMENTAL PROJECT INFORMATION HANDOUT

1. Geotechnical Design and Materials Report
2. Preliminary Site Investigation Report
3. Storm Water Data Report

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GEOTECHNICAL DESIGN AND MATERIALS REPORT
NORTHBOUND ROUTE 280/FOOTHILL EXPRESSWAY
DIAGONAL OFF-RAMP IMPROVEMENTS
LOS ALTOS, SANTA CLARA COUNTY, CALIFORNIA
04-SCI-280 PM 11.2/11.5 04130-000861

For

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March 28, 2013

Job No. 2012-127-GDR

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1.0 INTRODUCTION

Santa Clara Valley Transportation Authority (VTA) proposes improvements to the Northbound Route 280/Foothill Expressway Diagonal Off-ramp in the city of Los Altos, Santa Clara County, California. The improvements include widening of the off-ramp, construction of a retaining wall and installation of a new overhead sign structure. This report presents the results of our geotechnical engineering investigation for the proposed improvements. Our work was performed generally in accordance with the scope of work as per our agreement. The location of the site and its vicinity are shown on the Project Location Map, Plate 1.

The purpose of this investigation was to evaluate the general soil conditions at the project site; evaluate their engineering properties; and provide geotechnical recommendations for the proposed improvements. The scope of work performed for this investigation included a review of the readily available soils and geologic information pertaining to the site, obtaining representative soil samples, logging soil materials encountered in three 30-ft deep and two 5-ft deep exploratory soil borings, laboratory testing of the collected samples, engineering analysis of the field and laboratory data, and preparation of this report.

The geotechnical recommendations presented in this report are intended for design input and are not intended to be used as specifications. These recommendations should not be used for bidding purposes or directly for construction cost estimates.

2.0 EXISTING FACILITIES AND PROPOSED IMPROVEMENTS

Existing Facilities

The proposed project site is located in the City of Los Altos, Santa Clara County, California. The existing facility is the Route 280/Foothill Expressway Interchange.

Proposed Improvements

The following construction is proposed as part of the improvements:

- Widening of the diagonal off-ramp from one lane to two lanes
- Overlay of the existing off-ramp pavement to satisfy design traffic indices
- Construction of a new retaining wall along the right edge of the pavement between Sta. 403+25 and Sta. 405+50 ("FE2" Line")
- Installation of a new overhead sign structure near the entrance to the ramp at Sta. 414+60 "BES" Line).

The proposed improvements are shown on the Site Plan (Plate 2).

3.0 PERTINENT REPORTS AND INVESTIGATION

Caltrans as-built plans were reviewed to supplement pavement information for the project.

- Caltrans as-built roadway plans showing typical cross sections - RTE 280 (Contract No. 04-170364, August 23, 1967)

4.0 PHYSICAL SETTING

4.1 Climate

The project area is located in the northwestern part of Santa Clara County, California. The climate in this area can be described as semi-arid (subtropical) which is generally characterized with moderate climatic conditions. Based on the information from the "Western Regional Climate Center", the temperature ranges in the project vicinity are from 52° F to 82° F in summer and from 41° F to 62° F in winter. The average annual precipitation is 14.5 inches and the average monthly precipitation from October through April is 1.95 inches. About 94% of the total precipitation falls between October and April.

4.2 Topography and Drainage

The Route 280/Foothill Expressway Interchange is in a developed area of Los Altos. The Interchange is built on fill. The diagonal off-ramp to Foothill Expressway is approximately 1500 feet long. Elevations along the ramp range from 290 feet to 302 feet. A side slope, approximately 2(H):1(V), is present on the northern side of the ramp. Adjacent ground surface below the slope is at an elevation of approximately 285 feet.

4.3 Man-Made and Natural Features of Engineering and Construction Significance

The subject was considered and was determined to be not significant for the project.

4.4 Regional Geology and Seismicity

In the general project area, the geologic unit comprises the Alluvial fan deposits, early quaternary and older deposits and bedrock.

Faults in the vicinity of the project site with a moderate to high potential for surface rupture include the Cascade Fault, Monte Vista- Shannon fault Zone and the San Andreas Fault Zone. Significant earthquakes, which have occurred in the region, are generally associated with crustal movements along well-defined active fault zones. A Regional Fault Map (based on Caltrans, 2007), showing the project site location relative to the major active faults in the region, is presented on Plate 4.

4.5 Soil Survey Mapping

The subject was considered and was determined to be not applicable for the project.

5.0 EXPLORATION

5.1 Drilling and Sampling

Based on the plans, discussions with design engineer, five exploratory soil borings were drilled: three to a maximum depth of approximately 30 feet and two to approximate depths of 5 feet below

the existing ground surface. Two of the 30-ft deep borings were drilled with a truck-mounted drill rig using hollow stem auger drilling method. Due to space limitations, a portable drill rig using solid stem drilling method was used for drilling the other 30-ft deep boring,. The portable rig was also used for the two 5-ft deep borings. All the borings were drilled in the dirt near the edge of the right shoulder of the off-ramp. The boring locations are shown on the Site Plan, Plate 2. The boring locations, stations, and other relevant information are summarized in the table below.

TABLE 1: SUMMARY OF BORINGS

Boring No.	Station (ft)*	Offset (ft)	Boring Depth (ft)	Approx. Ground Elev. (ft)	Drill rig	Date drilled
A-12-001	414+60	60 Lt.	31.5	295.0	Portable	9/14/12
A-12-002	406+00	290 Lt.	30.0	301.0	Truck mounted	10/08/12
A-12-003	404+45	505 Lt.	30.0	297.0	Truck mounted	10/08/12
A-12-004	411+00	97 Lt.	5.0	303.0	Portable	9/14/12
A-12-005	408+15	176 Lt.	5.0	304.0	Portable	9/14/12
• Station with respect to "BES" Line						

Samples for the 30-ft deep borings were obtained at various depths generally from a 2.5-inch I.D. Modified California (MC) sampler; a 1.4-inch I.D Standard Penetration Test (SPT) sampler was used for one sample. The samplers were driven into subsurface soils under the impact of a 140-pound hammer having a free fall of 30 inches. Soil samples were collected typically at 5-foot intervals during drilling. In Borings A-12-002 and A-12-003 (for retaining wall support), closer sampling interval was adopted at shallow depth (near footing level) for additional data. The blow counts were recorded and presented on the boring logs in Appendix A.

When correlating standard penetration data in similar soils, the blow counts for the Modified California Sampler may be converted to equivalent SPT-N values by multiplying a factor of 0.65. The samples were sealed and transported to our laboratory for further evaluation and testing. In addition, bulk samples were obtained from depth of 1 to 5 feet for two of the 30-foot deep borings and the two 5-foot deep borings. The field investigation was conducted under the supervision of our field engineer who logged the test borings and prepared the samples for subsequent laboratory testing and evaluation.

5.2 Geologic Interpretation and Mapping

The subject was considered and was determined to be not significant for the project.

5.3 Geophysical Studies

The subject was considered and was determined to be not applicable for the project.

5.4 Instrumentation

The subject was considered and was determined to be not applicable for the project.

5.5 Exploration Notes

Existing roadway fill material consisting of sandy lean clay and/or clayey sand was typically encountered in the shallow (5 feet) borings. The other (deeper than 5 feet) exploratory borings encountered localized fill; medium dense to dense silty and clayey sand to stiff lean clay with sand and gravel. The drilling conditions using auger are considered normal.

6.0 GEOTECHNICAL TESTING

6.1 In-Situ Testing

In-situ testing consisted of recording blow counts during sampling in the field. The soil samples were obtained during drilling by driving a 2.5-inch I.D. Modified California sampler or a 1.4-inch I.D. Standard Penetration Test (SPT) sampler into the subsurface soils under the impact of a 140-lb hammer falling through 30 inches. Based on our previous experience, when correlating standard penetration data in similar soils, the blow counts for the Modified California Sampler can be converted to equivalent Standard Penetration Test blow counts by multiplying a factor of 0.65 (DMG Special Publication 117 and Daniel, et al. 2003). The in-situ test results are presented on the LOTB sheets in Appendix A.

6.2 Laboratory Testing

Laboratory tests performed included visual classification, moisture and density tests, pocket penetrometer tests, unconfined compression tests, Atterberg limit tests, grain size distribution, R-value tests and corrosion tests on selected samples. Laboratory test procedures and test results are presented in Appendix B.

7.0 GEOTECHNICAL CONDITIONS

7.1 Site Geology

General geologic features pertaining to the site were evaluated by reference to "Maps of Quaternary Deposits and Liquefaction Susceptibility in the Central San Francisco Bay Region, by R. C. Witter, K. L. Knudsen, J. M. Sowers, C. M. Wentworth, R. D. Koehler, and C. C. Randolph (USGS Open File Report 2006-1037)". A geologic map of the project area is presented on Plate 3. Based on the map, the native soils at the ramp location are predominantly Late Pleistocene Alluvium Fan Deposits (Qpf). Modern Stream Channel Deposits (Qhc) are indicated at the eastern end of the ramp.

7.1.1 Lithology

The subject was considered and was determined to be not applicable for the project.

7.1.2 Structure

The subject was considered and was determined to be not applicable for the project.

7.1.3 Existing Slope Stability

The subject was considered and was determined to be not applicable for the project.

7.2 Soil and Groundwater Conditions

Boring A-12-001 near the entrance to the on-ramp (the location of the proposed overhead sign structure) indicated hard lean clay for the entire 30-foot depth explored. Borings A-12-002 and A-12-003 were drilled at the location of the proposed retaining wall. Material encountered within that

depth ranged from medium dense to dense silty and clayey sand to stiff lean clay with sand and gravel. Dense to very dense clayey sand, possibly native material was encountered in both borings from a depth of around 17 feet to the bottom of the borings.

Groundwater was not encountered during drilling in the three borings. It should be noted that the groundwater level at the site may change with passage of time due to groundwater fluctuations from season to season, weather conditions, and other factors which may not have been present at the time of the investigation.

Subsurface conditions described above depict conditions only at the locations indicated on the Site Plan and on the particular date of our investigation. Subsurface conditions at other locations may differ from conditions occurring at the locations explored. Also, the passage of time may result in a change in the soil conditions at these locations due to environmental and other changes.

7.3 Water

7.3.1 Surface Water

The terrain at the project site gently slopes towards the north and northeast, and the surface water/drainage sheet flows towards the north and northeast.

7.3.1.1 Scour

The subject was considered and was determined to be not applicable for the project.

7.3.2.1 Erosion

The existing slopes have established landscaping to help control erosion. The subject was determined to be not significant for the project.

7.3.2 Groundwater

Groundwater was not encountered during drilling in any of the three borings. It should be noted that the groundwater level at the site may change with passage of time due to groundwater fluctuations from season to season, weather conditions, and other factors which may not have been present at the time of the investigation.

7.4 Project Site Seismicity

7.4.1 Ground Motions

The project site is located in a seismically active part of northern California. Many faults in the San Francisco Bay Area are capable of producing earthquakes that may cause strong ground shaking at the site. A Fault Map of the site and vicinity is presented on Plate 4. The map is based on the 2007 Caltrans Deterministic PGA Map. The fault database was developed primarily from CGS and USGS databases.

The major faults in the vicinity, their distances from the project site, fault types and the maximum earthquake magnitudes (Mmax) associated with each fault are summarized in the table below. These maximum earthquake magnitudes represent the largest earthquakes that could occur on the given fault based on the current understanding of the regional tectonic structure.

TABLE 2: SEISMIC SOURCES

Fault	Fault No.(1)	Fault Type	Distance from Site (miles)	Maximum Earthquake Magnitude (Mmax)
Cascade Fault	92	Reverse	1.0	6.9
Monte-Vista – Shannon Fault Zone	91	Reverse	1.2	6.7
San Andreas Fault Zone (Peninsula Section)	309	RLSS(2)	5.0	7.0

(1) Number of the Fault in the 2007 Fault Database associated with the 2007 Caltrans Deterministic PGA Map
(2) RLSS – Right-Lateral Strike Slip Fault

7.4.2 Seismic Hazard

Potential seismic hazards may arise from three sources: surface fault rupture, ground shaking and liquefaction. Since no active faults pass through the site, the potential for fault rupture is relatively low. Based on available geological and seismic information, the possibility of the site experiencing strong ground shaking may be considered moderate to high.

7.4.3 Liquefaction

Liquefaction is a phenomenon in which saturated soils are subject to a temporary but essentially total loss of shear strength under the reversing, cyclic shear stresses associated with earthquake shaking. Submerged, cohesionless sands and silts of low relative density are the type of soils which usually are susceptible to liquefaction - the susceptibility increases with decreasing relative density (reflected by the number of blows to drive a sampler), and decreasing fines content. Accepted procedures for the assessment for liquefaction potential for cohesionless soils have evolved over the years through research and field observations (Youd, et al, 2001). Recent research and field observations have shown that fine-grained soils of low plasticity are also potentially liquefiable, based on the moisture content and plasticity characteristics of the soils. Procedures for the assessment of liquefaction potential for fine-grained soils have also been established and have received general acceptance (Bray and Sancio, 2006). Groundwater was not encountered during drilling in any of the 30-foot deep borings drilled along the ramp. Additionally, the soils encountered were stiff to hard clays and dense clayey sands. Potential for liquefaction is therefore considered low.

8.0 GEOTECHNICALANALYSIS AND DESIGN

8.1 Dynamic Analysis

The subject was considered and was determined to be not applicable for the project.

8.1.1 Parameter Selection

The subject was considered and was determined to be not applicable for the project.

8.1.2 Analysis

The subject was considered and was determined to be not applicable for the project.

8.2 Cuts and Excavations

Based on the plans and profiles provided to us, no major unsupported cuts and excavations are planned for the project.

8.2.1 Stability

The subject was considered and was determined to be not applicable for the project.

8.2.2 Rippability

Based on the investigation, rippability does not appear to be a concern for construction.

8.2.3 Grading Factors

The subject was considered and was determined to be not significant for the project.

8.3 Embankments

The subject was determined to be not applicable for the project.

8.4 Earth Retaining Systems

Due to right-of-way and other geometric constraints, the project will require construction of a retaining wall. Information of approximate wall location, length and maximum wall height provided by the designer are summarized in below.

8.4.1 Retaining Wall

A retaining wall is proposed along the outer edge of the off-ramp between 403+25 and Sta. 405+50 ("FE2" Line) to facilitate widening of the off-ramp pavement. The wall will be approximately 225 feet long and the wall height will be 6 feet for the entire length of the wall. A concrete barrier (Type 736A) will be constructed on top of the wall for the entire wall length.

The wall will be a fill wall founded on the existing fill slope of the off-ramp on the east side. Per the drawings supplied by the Designer, the bottom of footing elevations range from 290.0 feet at the western end to 294.0 feet at the eastern end. Relevant borings along the wall alignment (Borings A-12-002 and A-12-003) indicate predominantly medium dense to very dense silty sands near the 'bottom of footing' elevations. The recommended bearing capacity under service and strength loading are 2.9 ksf and 3.8 ksf, respectively for footing founded on medium dense silty sand. Per Caltrans 2010 Standard Plan for Type 1A walls, the required toe pressures for Service and Strength Limit States loading conditions for a 6-ft high wall for Loading Case I are 1.0 ksf and 1.7 ksf, respectively, which are lower than the recommended bearing capacities. The planned Caltrans Standard Type 1A Retaining wall on spread footing is therefore reasonable.

A 10-ft thick layer of fat clay is indicated in Boring No. A-012-002 on the eastern end of the wall at an elevation of around 294.0 feet. Therefore, the bottom of footing for a portion of the wall near the eastern end may be on stiff fat clay. It is therefore recommended that 2 feet of the subgrade below the footing bottom be excavated and replaced with 2 feet of Aggregate Subbase (Class 2, Caltrans 2010 standard specifications) for the entire length of the wall.

8.5 Culvert Foundations

The subject was determined to be not applicable for the project.

8.5.1 Corrosion Investigations

The corrosion investigations were performed on one selected sample in general accordance with the provisions of California Test Method 643. A summary of the corrosion test results is presented below.

TABLE 3: CORROSION TEST RESULTS

Boring	Depth (ft)	pH	Resistivity (ohms-cm)	Sulfate (ppm)	Chloride (ppm)
A-12-002	14.5	6.98	1580	37.2	13.6

Based on the data, the site subsoil is non-corrosive per Caltrans corrosion design guidelines, and standard Type II modified or Type I-P (MS) modified cement may be used for the concrete

substructures. The minimum cement factor and cover thickness should be per Caltrans Bridge Design Specifications (Section 8.22).

8.6 Minor Structure Foundations

8.6.1 Overhead Sign Structure

Based on the information provided by designer, an overhead sign structure is proposed near the entrance to the off-ramp at Sta. 414+60 ("BES" Line).

Per the information supplied by the Designer, the overhead sign structure will conform to 2010 Caltrans Standard Plan S8 (Overhead Signs - Truss, Single Post Type). The planned sign will be Post Type VIII with a post height of 18'–4". Per Standard Plan S8, the sign structure should be founded on a 25-ft long, 5-ft diameter cast-in-drilled-hole (CIDH) pile.

Boring A-12-001 drilled near the location of the sign structure indicated hard lean clay for the entire depth of 30 feet drilled. Groundwater was not encountered during drilling.

The pile for the overhead sign structure will be subject to vertical loads, lateral loads, bending moments and torsion moments. Vertical loads are generally small and therefore vertical capacities developed from the frictional resistance from the adjacent soil should be acceptable. Specific loads were not provided by the Designer. Therefore, definitive analyses for lateral loads to determine the lateral deflections and bending moments were not performed. However, as noted earlier, the soils at the location are hard clays, which are capable of developing passive resistance comparable to that of loose to medium dense cohesionless material (the premise of Caltrans standard design for sign foundations). Caltrans standard design for the pile for the proposed overhead sign structure is therefore feasible.

9.0 STRUCTURAL PAVEMENT SECTIONS

Per information provided by the Designer, the existing pavement of Northbound I-280/Foothill Expressway Diagonal Off-Ramp will be widened between Sta. 402+30 ("FE2" Line) and Sta.

415+08 ("BES" Line) from one to two lanes. Widening is planned for both sides of the existing pavement. In addition, the existing pavement between Sta. 402+30 ("FE2" Line) and Sta. 415+08 ("BES" Line) will be overlaid to accommodate current design traffic indices supplied by the Designer.

9.1 R-value Test Results

For the proposed ramp widening, four bulk samples were collected at the project location. R-value tests were performed on two selected samples. The collected samples and the test results are presented below.

TABLE 4: SUMMARY OF R-VALUE TESTS

Boring No.	Boring Location		Sample Description	R-value
	Station*	Offset		
A-12-002	406+00	290 Lt.	Brown Silty Sand with trace of Clay	Not tested
A-12-003	404+45	505 Lt.	Yellowish Brown Silty Sand with some Gravel	41
A-12-004	411+00	97 Lt.	Yellowish Brown Clayey Sand with some Gravel	35
A-12-005	408+15	176 Lt.	Brown Clayey Sand	Not tested
*Station with respect to "BES" Line ** All bulk samples collected from 1 to 5 feet				

9.2 Design Basis for Recommended Structural Sections

The recommended structural pavement sections are based on Caltrans Highway Design Manual, using appropriate Traffic Index (TI) and R-value for each pavement section. TI values of 12 and 14 were recommended by the Designer for 20-year and 40-year design, respectively, representative of ramps and connectors with heavy truck traffic. Based on the test results, a design R-value of 30 was selected for the off-ramp. This assumes that all grading work will involve onsite soils only. Per the Designer, imported material will not be required.

9.3 New Pavement Sections for Widening of Off-Ramp

For new pavement sections, Caltrans District 4 requires that for TI of 12 or greater, Lean Concrete Base (LCB) shall be used instead of standard aggregate base (AB). Only flexible pavement sections are recommended, consistent with adjacent existing pavement section.

Class 2 Aggregate Subbase (AS) as preferred by Caltrans District 4 is recommended. An R-value of 50 was used for Class 2 AS in the design. The specifications for Class 2 AS should be per Caltrans 2010 standard specifications.

The recommended structural sections for the new pavement sections for widening of the off-ramp are presented in Table 5 below. Three options are provided: (a) Full depth asphalt (FDHMA); (b) Asphalt (HMA-A) with LCB only; and (c) Asphalt (HMA-A) with LCB and AS. Corresponding calculations are presented in Appendix C.

TABLE 5: RECOMMENDED STRUCTURAL PAVEMENT SECTIONS FOR WIDENING OF OFF-RAMP

Design Life	R-value	TI	Option 1	Option 2			Option 3			
			FDHMA	HMA-A	LCB	Total	HMA-A	LCB	AS	Total
20-year	30	12	1.30	0.75	0.70	1.45	0.60	0.60	0.55	1.75
40-year	30	14	1.55	0.85	0.85	1.70	0.70	0.70	0.65	2.05

TI: Traffic Index
F DHMA: Full Depth Hot Mix Asphalt (Type A) to be used in narrow areas only
HMA-A: Hot Mix Asphalt Concrete (Type A)
LCB: Lean Concrete Base
AS: Aggregate Subbase (Class 2, R-Value=50)
Flexible Pavement: Gravel Equivalent Calculation (Table 633.1, Highway Design Manual, July 2008)

9.4 Overlay of Existing Off-Ramp Pavement

The as-built pavement section(s) and typical cross sections at the project location was provided by the Designer and is presented in Appendix C. As-built section for the subject ramp per the as-built drawings dated August 1967 are presented below:

- 0.25-ft – AC
- 0.67-ft – RMCTB (Class A)
- 0.67-ft – AS (Class 1)

(RMCTB – Road Mixed Cement Treated Base)

The as-built section does not reflect any overlays that may have subsequently been placed. Per Caltrans review comment, the overlay section should consist of 0.15 ft HMA(A) with ½" grading.

In general, overlay design for an existing pavement should be based on deflection testing, which is beyond the scope of the present project. Additionally, standard design procedures for flexible structural pavements are for new pavements and therefore do not reflect the effects of pavement deterioration over time. Thus, conservative assumptions and appropriate judgment are required to design the overlays using standard procedures for new pavements.

It is assumed that the AS section has not deteriorated over time. For the RMCTB layer, an AB layer of equivalent thickness is assumed, allowing for the deterioration of cement in the RMCTB. Based on the assumptions, the required thickness of AC above the RMCTB layer are:

- 0.80 ft. - 20-year design
- 1.05 ft. - 40-year design

Pavement Reinforcement Fabric is recommended prior to placement of the overlay and local dig out and repair may be required to fix any damaged areas.

10.0 MATERIAL SOURCES

There are several commercial sources of asphalt, concrete, and aggregate products in the vicinity of the project area. Some of the available commercial suppliers in the vicinity of the project area are listed in the table below:

TABLE 6: SOURCES OF IMPORTED BORROW

Source	Location	Approx. Haul Distance (One way, miles)
Stevens Creek Quarry	12100 Stevens Canyon Road, Cupertino, CA	3
Graham Contractors	860 Lonus Street, San Jose, CA	10
Granite Construction Company	715 Comstock Street, Santa Clara<,CA	13
Evergreen Supply Company	2984 Monterey Highway, San Jose, CA	15
Graniterock	120 Granite Rock Way, San Jose, CA	17

11.0 MATERIAL DISPOSAL

Disposal of ADL contaminated material (if any) is beyond the scope of this project.

12.0 CONSTRUCTION CONSIDERATIONS

12.1 Construction Advisories

These sections are written primarily for the engineer responsible for the preparation of plans and specifications. Since these sections identify potential construction issues related to the project, it may also be of use to the Agency's representatives involved in monitoring of construction activity. The field investigation performed by us primarily addresses design issues and was not planned specifically to identify construction issues.

The project site is located along the existing US Route 280 and Foothill Expressway Interchange. Therefore, traffic control is required to maintain traffic flow along Route 280 and the respective city streets. The contractor should verify the utility lines, be aware of the existing conditions and plan the construction activities accordingly.

In our opinion, conventional equipment may be used to excavate the on-site soil materials. The materials to be excavated may consist of stiff clays with sand layers. Localized subgrade pumping may be encountered during earthwork construction depending on the weather, moisture condition of the subsurface soils, and surface drainage conditions. Equipment mobility may also be difficult if the subgrade is wet. In which case, the subgrade soils may require reworking, aeration, or over-excavation and replacing with dry granular fill to facilitate earthwork construction. It is possible that unknown old buried utilities or abandoned structures, concrete rubble etc. are located along the alignment. It might require special equipment and additional efforts to remove these buried objects.

Prospective contractors for the project must evaluate construction-related issues on the basis of their own knowledge and experience in the local area, on the basis of similar projects in other localities, or on the basis of field investigation on the site performed by them, taking into account their proposed construction methods and procedures. In addition, construction activities related to excavation and lateral earth support must conform to safety requirements of OSHA and other applicable municipal and Stage regulatory agencies.

12.2 Construction Consideration that Influence Specifications

The contractor should verify the conditions of the existing utility lines. These locations should not be used for stockpiling of borrow materials. Any conflicts with proposed construction should also be reviewed prior to construction.

12.3 Construction Monitoring and Instrumentation

To a degree, the performance of any structure is dependent upon construction procedures and quality. Hence, observation of the CIDH pile installation and grading work should be carried out by the geotechnical engineer or the appropriate regulating agencies. If the subsurface conditions different from those forming the basis of our recommendations is encountered this office should be informed in order to assess the need for design changes. Therefore, the recommendations presented in this report are contingent upon good quality control and these geotechnical observations during construction.

12.4 Hazardous Waste Considerations

The project environmental study report should be referred to for further details about any potential hazardous materials within the project site.

12.4 Differing Site Conditions

The soil conditions described in this report are based on available boring data. It should be noted that these borings depict subsurface conditions only at the locations drilled. Because of the variability from place to place within soils in general, and the nature of geologic depositions, subsurface conditions could change between the explored locations.

Early communication should be made between the Resident Engineer, the Contractor, and the Geotechnical Engineer as soon as conditions that differ from those established in this report are recognized by any of the parties. Additional recommendations could be provided if such conditions arise.

13.0 RECOMMENDATIONS AND SPECIFICATIONS

13.1 Summary of Recommendations

If the designer has questions or concerns with any of these recommendations, or, if conditions are found to be different during construction, the Geotechnical Engineer who prepared this report should be contacted. Additional fieldwork, analysis or changes in recommendations may be required. These services may be provided under a separate authorization, as necessary. A concise summary of the geotechnical recommendations is presented below:

- The subsoils generally consist of stiff clays
- Groundwater was not encountered during the time of the drilling.
- Structural pavement design recommendations are presented in Section 9 of this report.

13.2 Recommended Material Specifications

13.2.1 Standard Specifications

Unless otherwise stated in the special provisions, all materials specifications should conform to Caltrans Standard Specifications, 2010 edition, including but not limited to the following: Earthwork, Hot-Mix Asphalt, Aggregate Base and Aggregate Subbase etc.

13.2.2 Special Provisions

Imported Borrow:
Per the Designer, imported borrow material will not be required for the project. The project will be a net off-haul.

Aggregate Subbase (Class 2)
Aggregate Subbase (Class 2) shall conform to Section 25 of Caltrans 2010 standard specifications.

Lean Concrete Base
Lean concrete base shall conform to Section 28 of Caltrans 2010 standard specifications.

14.0 INVESTIGATION LIMITATIONS

Our services consist of professional opinions and recommendations made in accordance with generally accepted geotechnical engineering principles and practices and are based on our site reconnaissance and the assumption that the subsurface conditions do not deviate from observed conditions. All work done is in accordance with generally accepted geotechnical engineering principles and practices. No warranty, expressed or implied, of merchantability or fitness, is made or intended in connection with our work or by the furnishing of oral or written reports or findings. The scope of our services did not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in structures, soil, surface water, groundwater or air, below or around this site. Unanticipated soil conditions are commonly encountered and cannot be fully determined by taking soil samples and excavating test borings; different soil conditions may require that additional expenditures be made during construction to attain a properly constructed project. Some contingency fund is thus recommended to accommodate these possible extra costs.

This report has been prepared for the proposed improvements of the diagonal off-ramp as described earlier, to assist the engineer in the design of this project. In the event any changes in the design or location of the facilities are planned, or if any variations or undesirable conditions are encountered during construction, our conclusions and recommendations shall not be considered valid unless the changes or variations are reviewed and our recommendations modified or approved by us in writing.

This report is issued with the understanding that it is the designer's responsibility to ensure that the information and recommendations contained herein are incorporated into the project and that necessary steps are also taken to see that the recommendations are carried out in the field.

The findings in this report are valid as of the present date. However, changes in the subsurface conditions can occur with the passage of time, whether they are due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur, whether they result from legislation or from the broadening of knowledge.

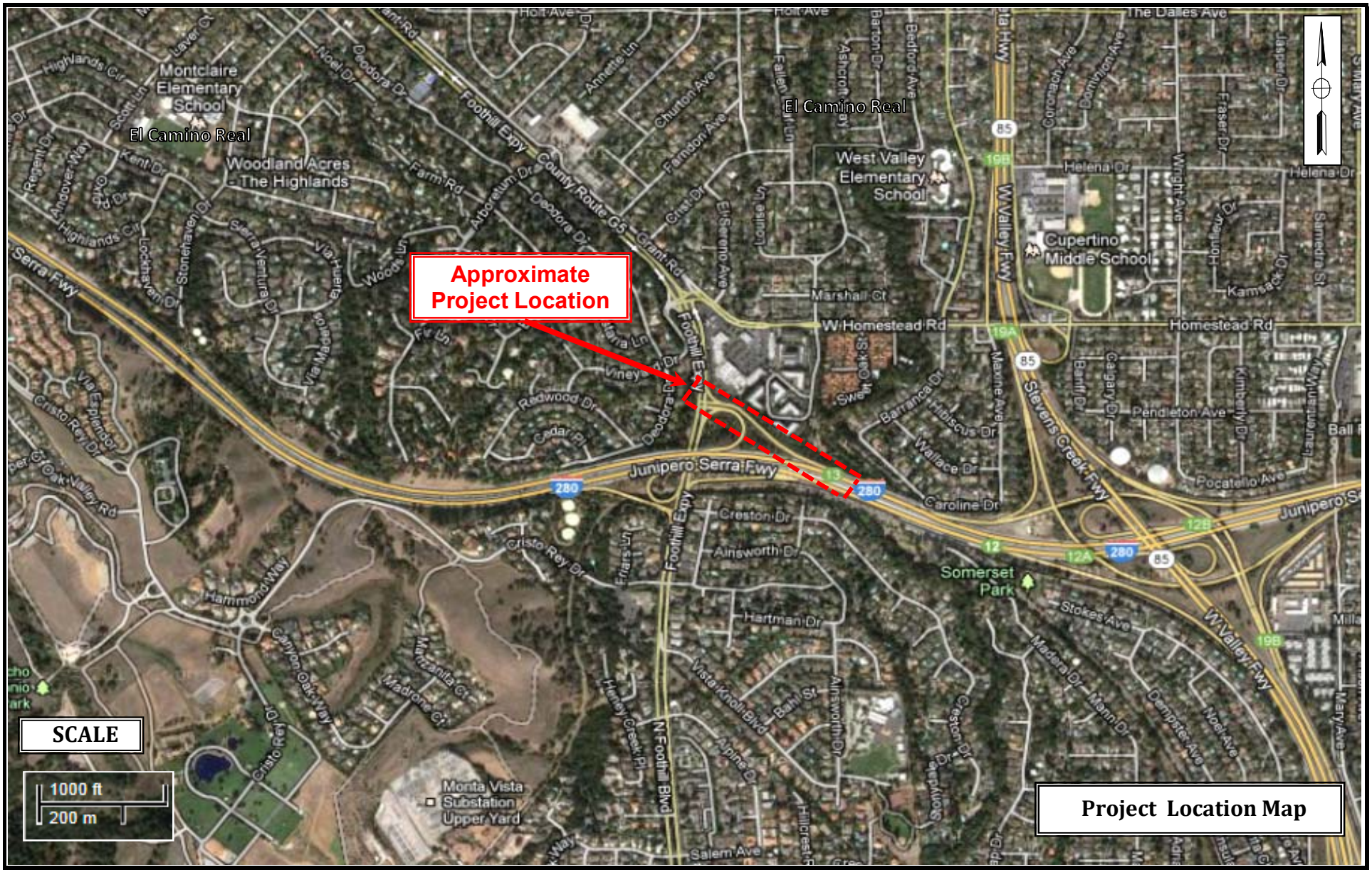
Accordingly, the findings in this report might be invalidated, wholly or partially, by changes outside of our control.

Very Truly Yours,
PARIKH CONSULTANTS, INC.

Y. David Wang, Ph.D., P.E. C52911
Senior Engineer

Gary Parikh, P.E., G.E. 666
Project Manager

REGISTERED PROFESSIONAL ENGINEER
GAURANG R. PARIKH
No. 666
EXP. 12-31-13
GEOTECHNICAL
STATE OF CALIFORNIA

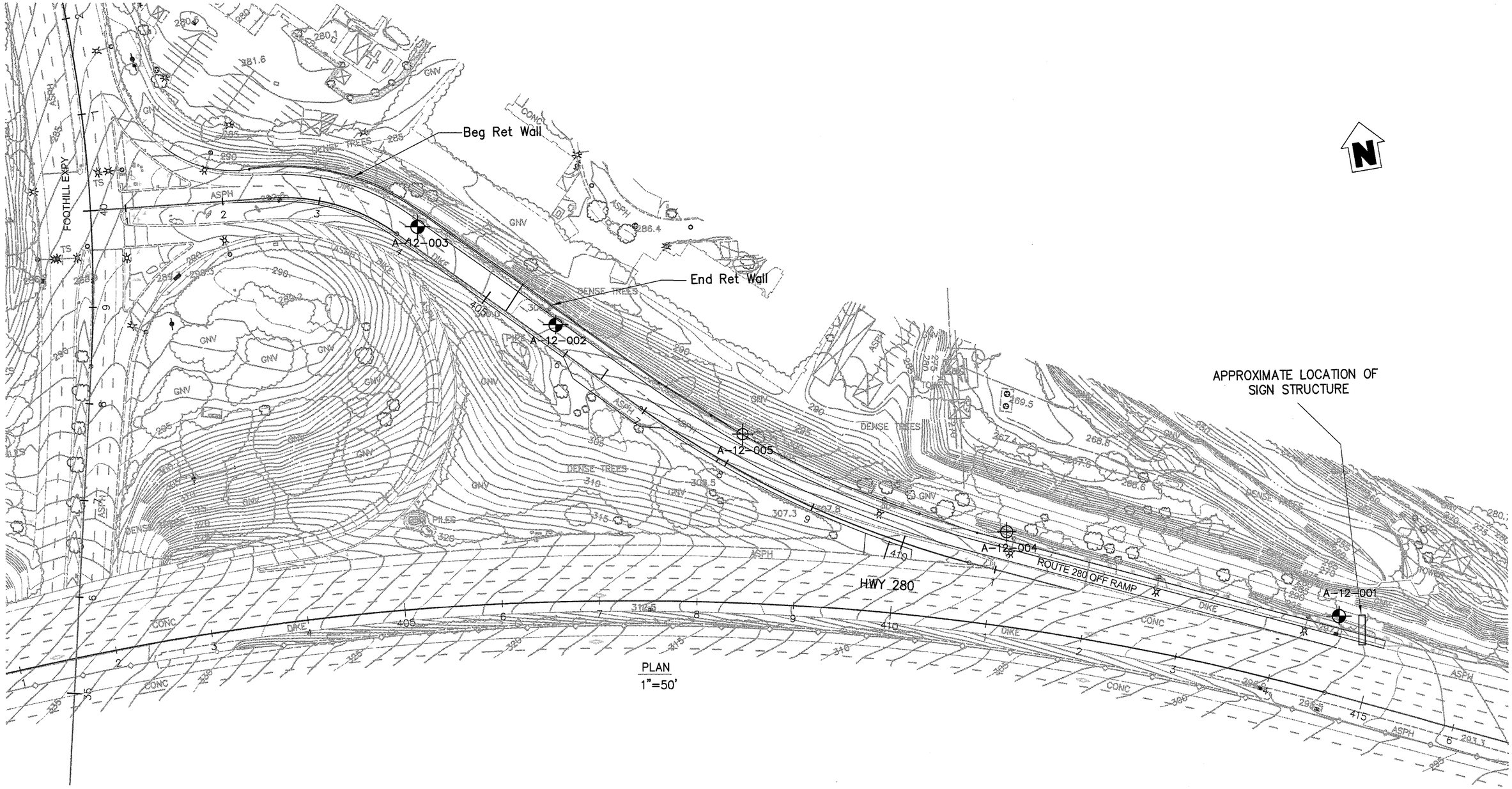


PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

NB I-280 /FOOTHILL EXPRESSWAY DIAGONAL OFF-RAMP IMPROVEMENTS
LOS ALTOS, SANTA CLARA COUNTY, CALIFORNIA

JOB NO.: 2012-127-GDR

PLATE NO.: 1



PLAN
1"=50'

SITE PLAN

LEGEND

A-12-001 thru A-12-003
Approx. Boring Location

A-12-004 & A-12-005
Approx. R-Value Boring Location

SCALE 1 inch = 5 feet

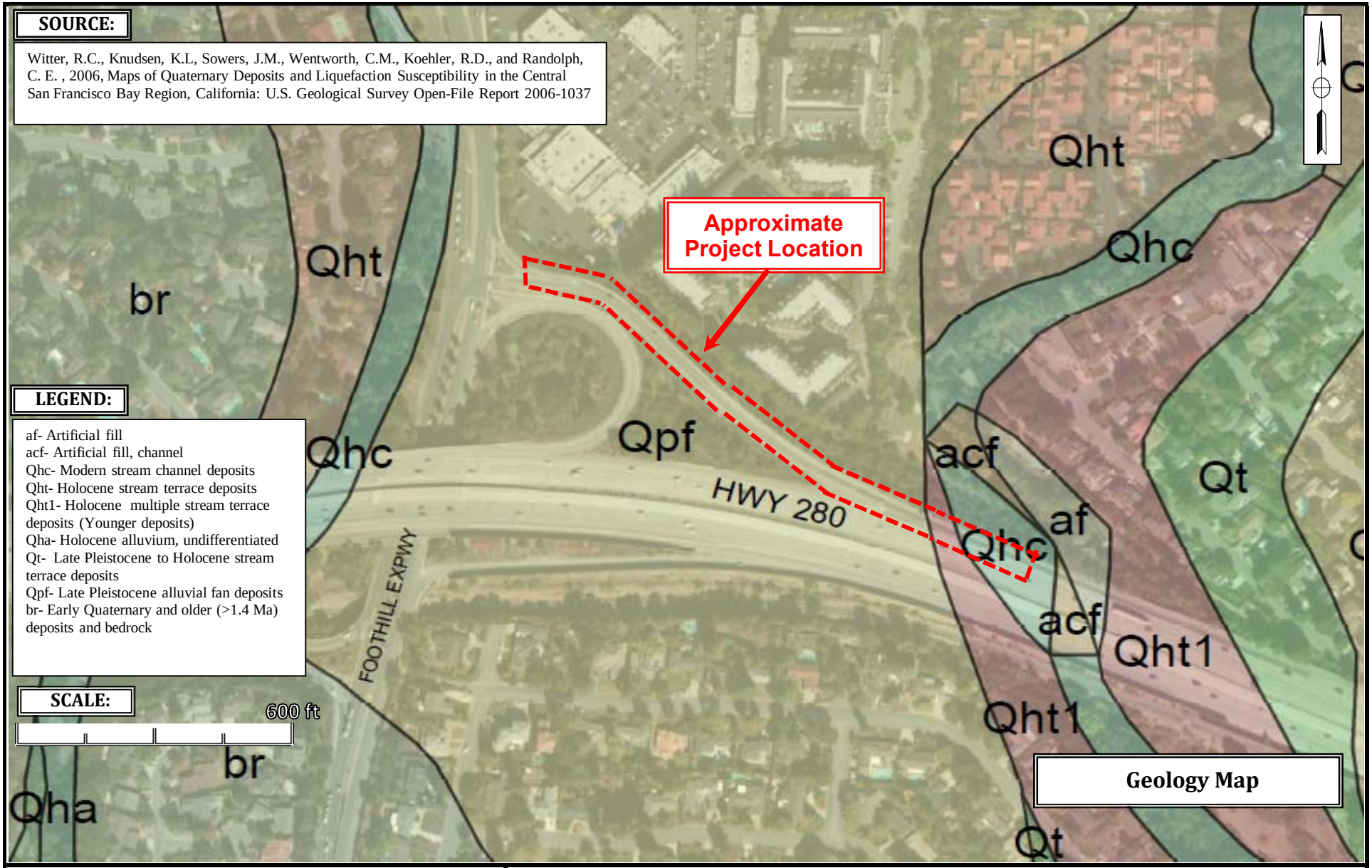
Note: All units are in feet unless otherwise specified
Reference Map was provided by Transportation Infrastructure Group

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

I-280 NB/ FOOTHILL EXPRESSWAY
DIAGONAL OFF RAMP IMPROVEMENTS
LOS ALTOS, SANTA CLARA COUNTY, CALIFORNIA

JOB NO.: 2012-127-GDR

PLATE NO: 2

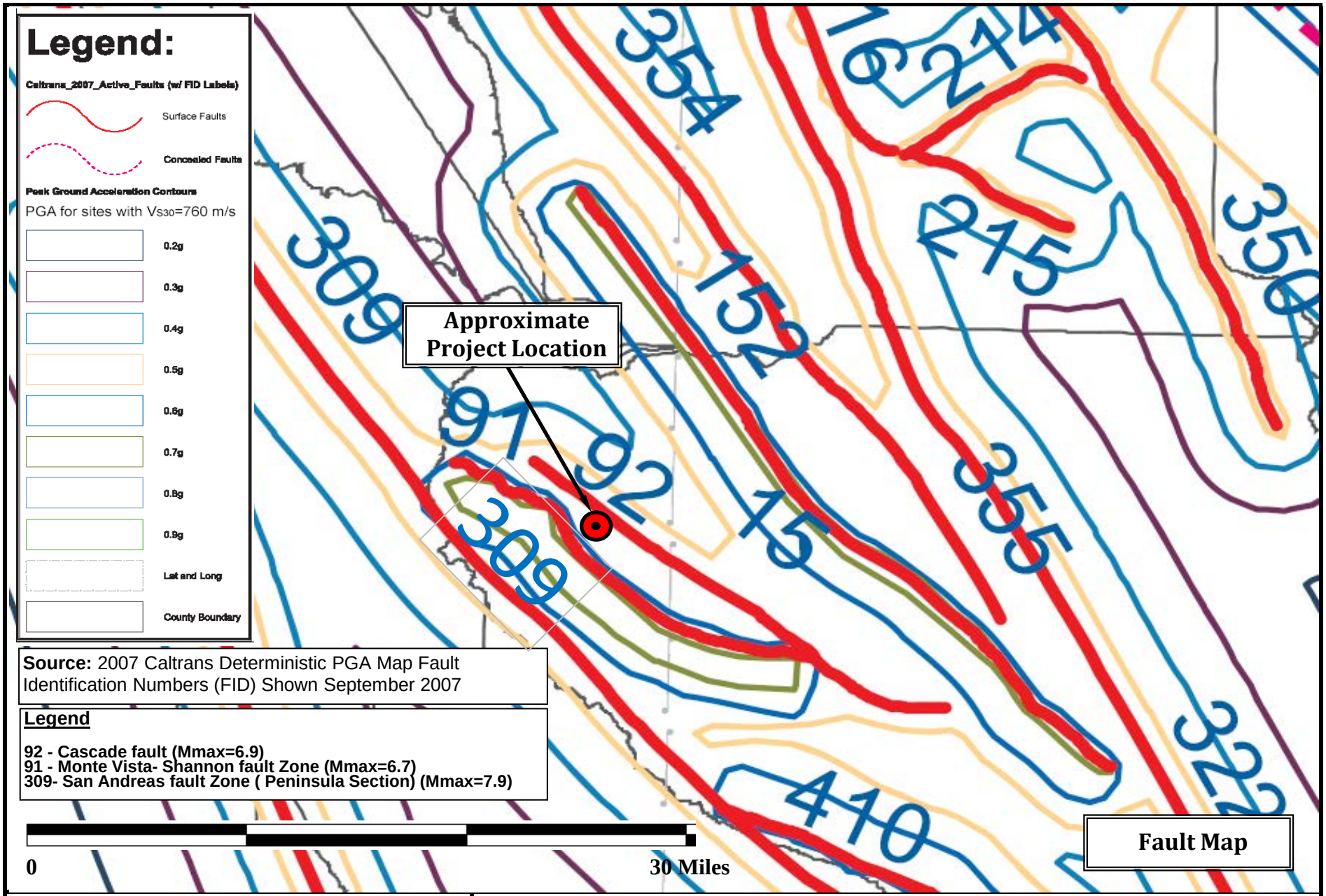


PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

NB I-280 /FOOTHILL EXPRESSWAY DIAGONAL OFF-RAMP IMPROVEMENTS
LOS ALTOS, SANTA CLARA COUNTY, CALIFORNIA

JOB NO.: 2011-127-GDR

PLATE NO.: 3

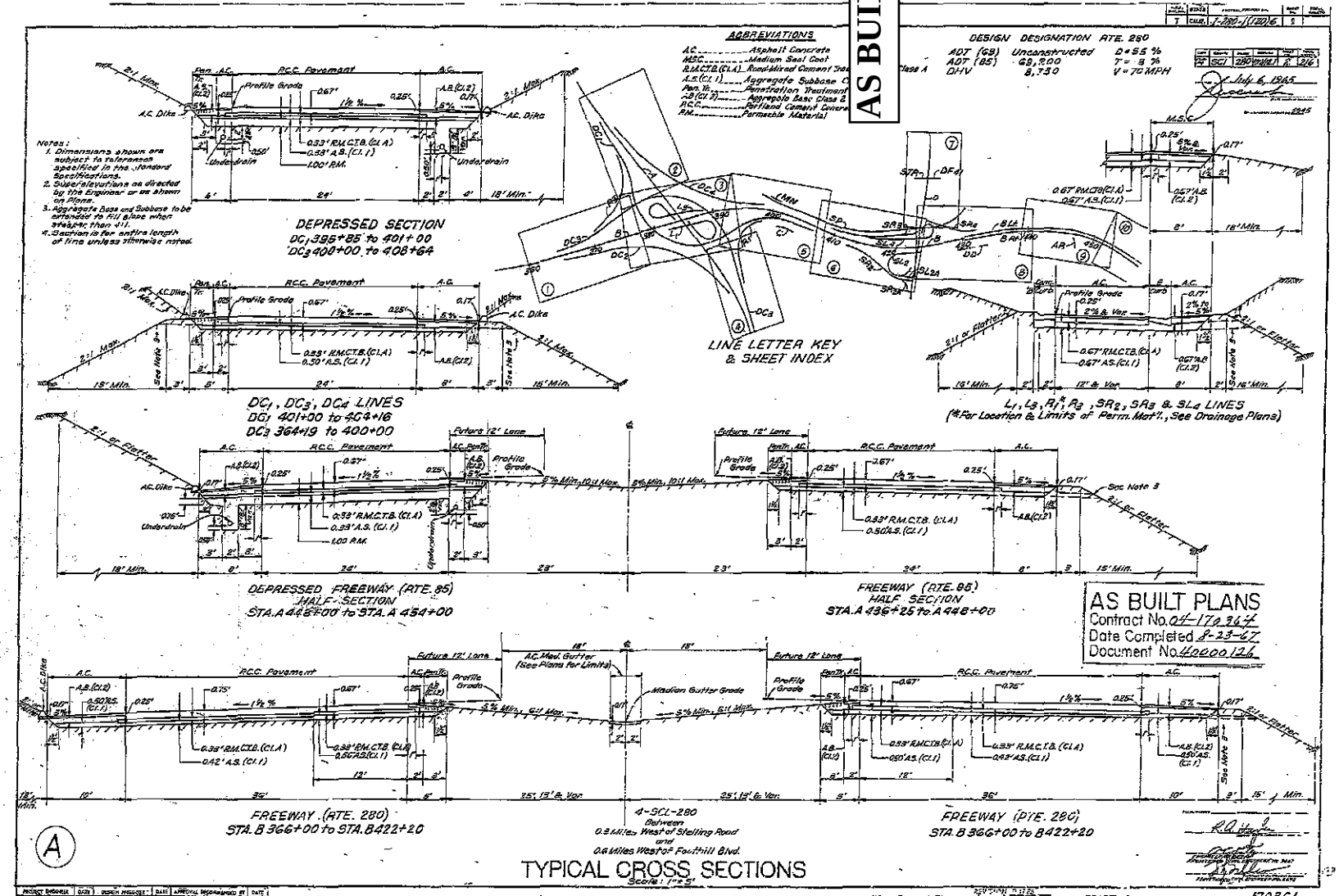


PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS TESTING

NB I-280/FOOTHILL EXPRESSWAY DIAGONAL OFF-RAMP IMPROVEMENTS
LOS ALTOS, SANTA CLARA COUNTY, CALIFORNIA

JOB NO.: 2012-127-GDR | **PLATE NO.: 4**

AS BUILT PAVEM



AS BUILT PLANS
Contract No. 04-170 347
Date Completed 8-23-67
Document No. 40000 126

F703G1

APPENDIX A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCL	280	11.2/11.3		

GEOTECHNICAL PROFESSIONAL — X — DATE

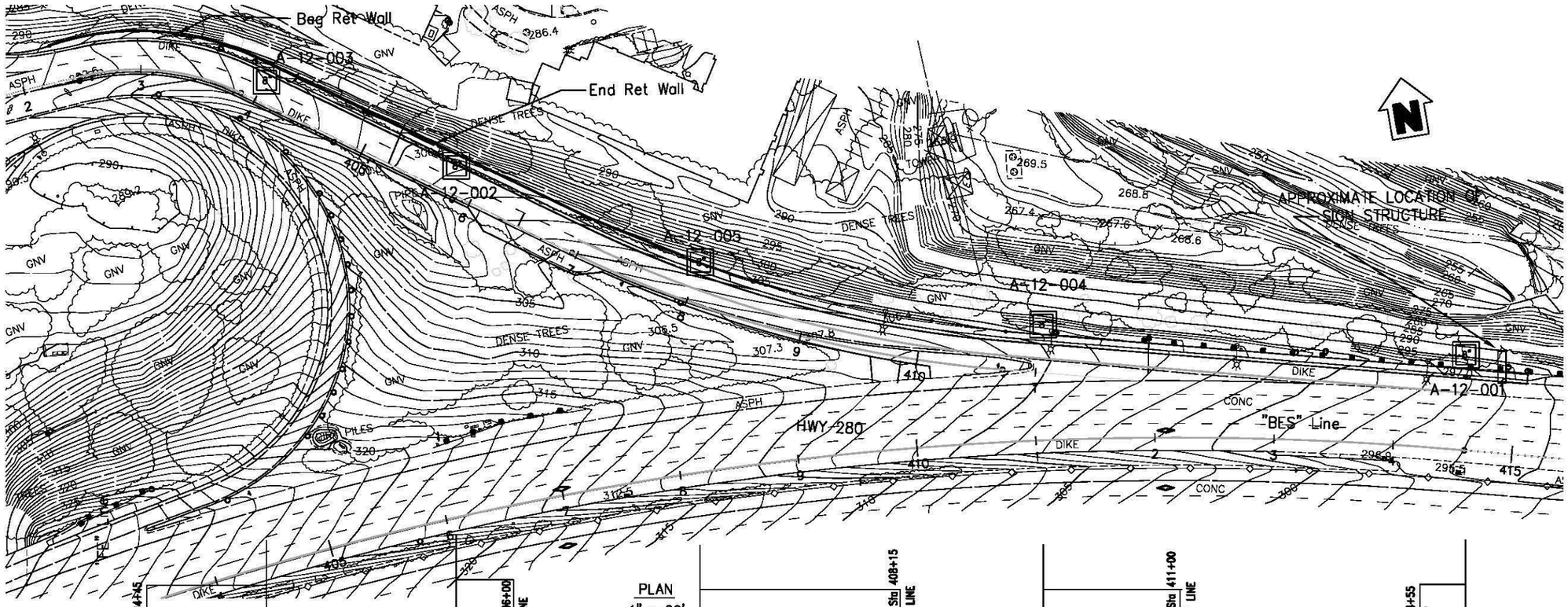
PLANS APPROVAL DATE

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

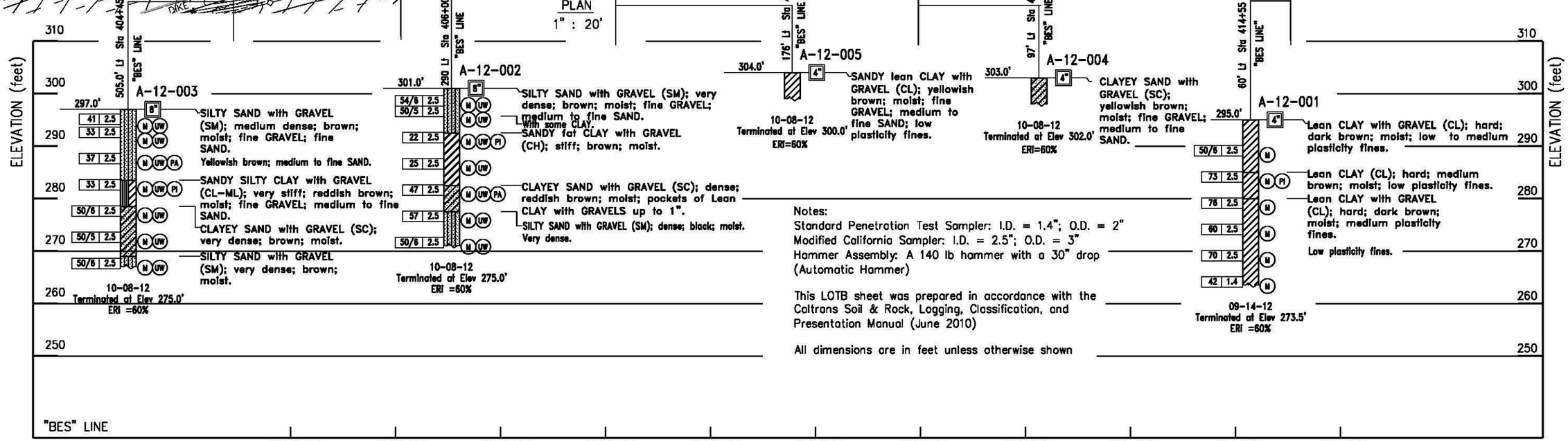
TRANSPORTATION INFRASTRUCTURE GROUP
4690 Chabot Drive, Suite 220
PLEASANTON, CA 94588

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

PLAN
1"=50'



PLAN
1" : 20'



Notes:
Standard Penetration Test Sampler: I.D. = 1.4"; O.D. = 2"
Modified California Sampler: I.D. = 2.5"; O.D. = 3"
Hammer Assembly: A 140 lb hammer with a 30" drop (Automatic Hammer)

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock, Logging, Classification, and Presentation Manual (June 2010)

All dimensions are in feet unless otherwise shown

PROFILE
Vert. : 1" = 10'
Hor. : 1" = 40'

PLATE A-1

DESIGN OVERSIGHT / SIGN OFF DATE	DRAWN BY	A. BAKANE	L. BHANGOO, A. BAKANE FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	PARTHA SRIKAR PROJECT ENGINEER	BRIDGE NO. -	I-280 NB/ FOOTHILL EXPWY DIAGONAL OFF RAMP IMPROVEMENTS
	CHECKED BY	G. PARIKH	DATE: SEPTEMBER 2012			POST MILES -	LOG OF TEST BORINGS 1 OF 3

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3

UNIT: X
PROJECT NUMBER & PHASE: X

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES | SHEET | OF

CONTRACT NO.: X PROJECT ID: X

FILE => $REQUEST

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

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly graded SAND Poorly graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL		
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (PP) Pocket Penetrometer
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (TV) Pocket Torvane
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)
- (VS) Vane Shear (AASHTO T 223)

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 inches)
Very loose	0 – 4
Loose	5 – 10
Medium Dense	11 – 30
Dense	31 – 50
Very Dense	> 50

MOISTURE

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE

Description		Size
Boulder		> 12"
Cobble		3" to 12"
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS

Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

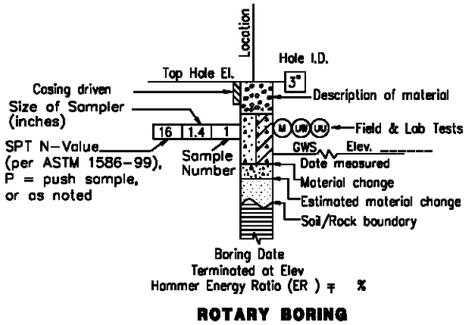
PLASTICITY OF FINE-GRAINED SOILS

Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

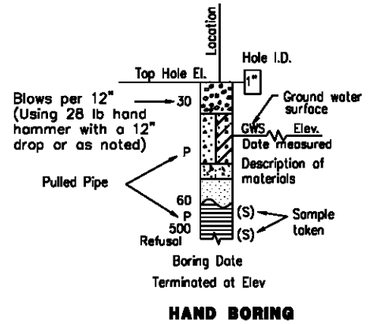
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
ST 3in	A	Auger Boring
ST 3in	R P	Rotary drilled boring Rotary percussion boring (air)
3in	R	Rotary drilled diamond core
ST 3in	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778-95)
□	O	Other

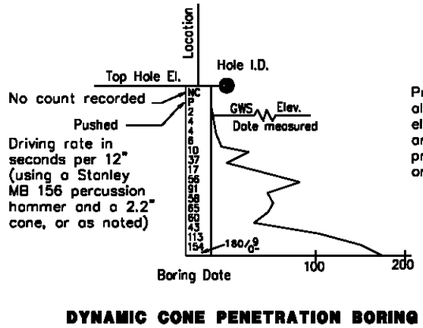
Note: Size in inches.



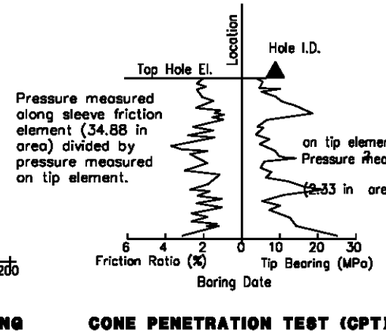
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCL	280	11.2/11.3		

GEOTECHNICAL PROFESSIONAL — X — DATE

PLANS APPROVAL DATE

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TRANSPORTATION INFRASTRUCTURE GROUP
4690 Chabot Drive, Suite 220
PLEASANTON, CA 94588

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

PLATE A-2

DESIGN OVERSIGHT	DRAWN BY	A. BAKANE	L., BHANGOO, A. BAKANE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	PARTHA SRIKAR	BRIDGE NO. -	I-280 NB/ FOOTHILL EXPWY DIAGONAL OFF RAMP IMPROVEMENTS
SIGN OFF DATE	CHECKED BY	G. PARIKH	FIELD INVESTIGATION BY: DATE: SEPTEMBER 2012		PROJECT ENGINEER	POST MILES -	LOG OF TEST BORINGS 2 OF 3

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: X
PROJECT NUMBER & PHASE: X

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES							SHEET	OF
X								

CONTRACT NO.: X PROJECT ID: X

FILE => $REQUEST

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

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCL	280	11.2/11.3		

GEOTECHNICAL PROFESSIONAL — X DATE

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PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 in.)
Very Loose	0 – 5
Loose	5 – 10
Medium Dense	10 – 30
Dense	30 – 50
Very Dense	Greater than 50

MOISTURE

Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% – 10%
Little	15% – 25%
Some	30% – 45%
Mostly	50% – 100%

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 – 12
Gravel	Coarse	3/4 – 3
	Fine	1/5 – 3/4
Sand	Coarse	1/16 – 1/5
	Medium	1/64 – 1/16
	Fine	1/300 – 1/64
Silt and Clay		Less than 1/300

PLATE A-3

DESIGN OVERSIGHT — SIGN OFF DATE

DRAWN BY: A. BAKANE
CHECKED BY: G. PARIKH

L. BHANGOO, A. BAKANE
FIELD INVESTIGATION BY:
DATE: SEPTEMBER 2012

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

PARTHA SRIKAR
PROJECT ENGINEER

UNIT: X
PROJECT NUMBER & PHASE: X

BRIDGE NO. -
POST MILES -

I-280 NB/ FOOTHILL EXPWY DIAGONAL OFF RAMP IMPROVEMENTS

LOG OF TEST BORINGS 3 OF 3

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

FILE => $REQUEST

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES — SHEET — OF

CONTRACT NO.: X — PROJECT ID: X

USERNAME => $USER — DATE PLOTTED => $DATE — TIME PLOTTED => $TIME

APPENDIX B

APPENDIX B
LABORATORY TESTS

Classification Tests

The field classification of the samples was visually verified in the laboratory according to the Unified Soil Classification System. The results are presented on "Log of Test Borings", Appendix A.

Moisture-Density

The natural moisture contents and dry unit weights were determined for selected undisturbed samples of the soils in general accordance with ASTM Test Method D 2216-98. This information was used to classify and correlate the soils. The results are presented on Plate B-2 "Summary of Laboratory Test Results", Appendix B.

Atterberg Limits

The Atterberg Limits were determined for selected samples of the fine-grained materials. These results were used to classify the soils, as well as to obtain an indication of the expansion potential with variations in moisture content. The Atterberg Limits were determined in general accordance with ASTM Test Method D 4318-00. The results of the test are presented on Plate B-3, "Plasticity Chart".

Grain Size Classification

Grain size classification tests (ASTM Test Method D 420) were performed on selected samples of granular soil to aid in the classification. The results are presented on Plate B-4, "Grain Size Distribution Curves".

Unconfined Compression Tests

Strength tests were performed on selected undisturbed samples using unconfined compression machine. Unconfined compression tests were performed in general accordance with ASTM Test Method D 2166-00. The results are presented on Plate B-5A and 5B.

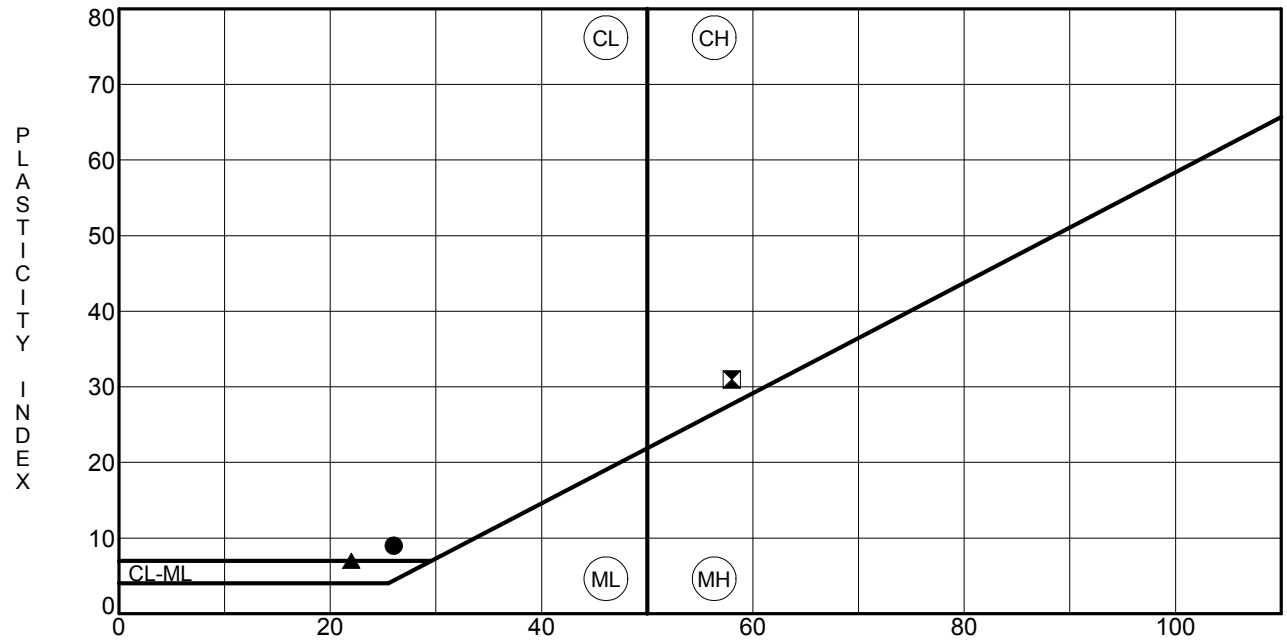
Corrosion Tests

Corrosion tests were performed on one selected sample to determine the corrosion potential of the soils. The pH and minimum resistivity tests were performed according to California Test Method 643. Sulfate and chloride tests were performed by Sunland Analytical. The test results are presented on Plate B-6.

R-value Tests

R-value tests were performed on representative bulk samples for pavement design. The tests were performed according to California Test Method 301. The test results are presented on Plate-7A through Plate-7C.

Borehole	Sample Number	Depth	Classi-fication	Water Content	Dry Density	Liquid Limit	Plastic Limit	Plasticity Index	% > Sieve 4	% < Sieve 200	Unconfined Compressive Strength (tsf)
A-12-001	1	6.0	CL	8.3	-						
A-12-001	2	11.0	CL	9.0	-	26	17	9			
A-12-001	3	16.0	CL	8.7	-						
A-12-001	4	21.0	CL	8.8	-						
A-12-001	5	26.0	CL	8.5	-						
A-12-001	6	31.0	CL	6.9	-						
A-12-002	1	2.5	SM	3.2	120.0						
A-12-002	2	4.5	SM	5.3	140.9						
A-12-002	3	9.5	CH	19.4	105.7	58	27	31			3.06
A-12-002	4	14.5	CH	14.7	114.5						1.39
A-12-002	5	19.5	SC	13.9	118.6				14.3	38.5	
A-12-002	6	24.5	SM	8.4	123.5						
A-12-002	7	29.5	SM	7.3	143.0						
A-12-003	1	2.5	SM	8.0	114.2						
A-12-003	2	4.5	SM	11.1	125.2						
A-12-003	3	9.5	SM	11.0	123.6				31.3	19.7	
A-12-003	4	14.5	CL-ML	7.9	103.8	22	15	7			
A-12-003	5	19.5	SC	12.6	128.1						
A-12-003	6	24.5	SC	10.1	126.5						
A-12-003	7	29.5	SC	9.2	130.1						



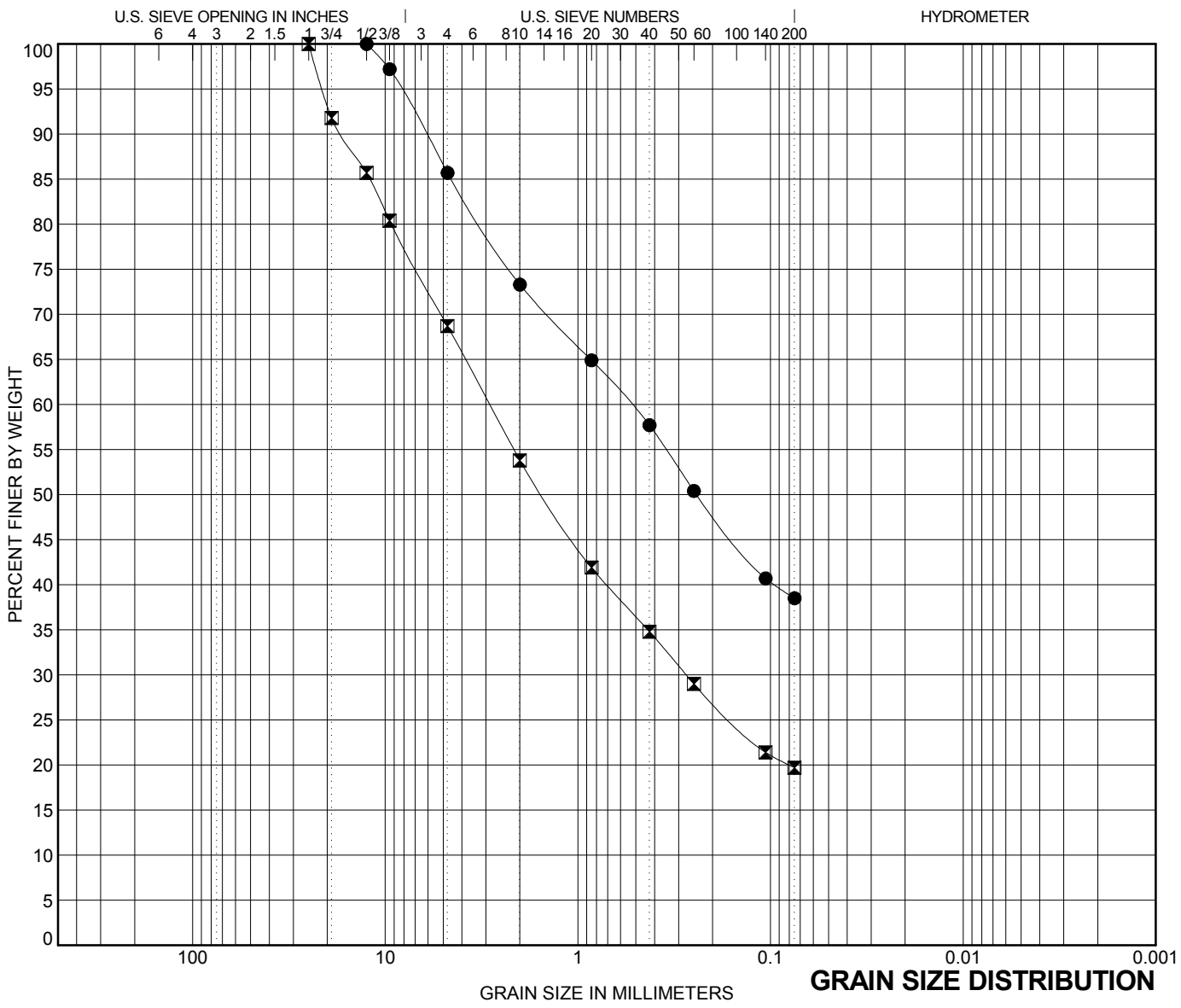
PLASTICITY

	BOREHOLE	SAMPLE #	DEPTH	LL	PL	PI	Fines	Classification
●	**A-12-001**	**2**	**11.0**	**26**	**17**	**9**		**Lean CLAY**
⧓	**A-12-002**	**3**	**9.5**	**58**	**27**	**31**		**Fat CLAY**
▲	**A-12-003**	**4**	**14.5**	**22**	**15**	**7**		**SILTY CLAY**

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

I-280 NB/ FOOTHILL EXPY DIAGONAL OFF RAMP IMPROVEMENTS
LOS ALTOS, SANTA CLARA COUNTY, CALIFORNIA

JOB NO: 2012-127-GDR | **PLATE NO:** B-3



GRAIN SIZE DISTRIBUTION

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BORING	SAMPLE #	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	A-12-002	5	19.5	CLAYEY SAND					
⊠	A-12-003	3	9.5	SILTY SAND with GRAVEL					

	BORING	SAMPLE #	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	A-12-002	5	19.5	12.5	0.53			14.3	47.2	38.5	
⊠	A-12-003	3	9.5	25	2.866	0.274		31.3	49.0	19.7	

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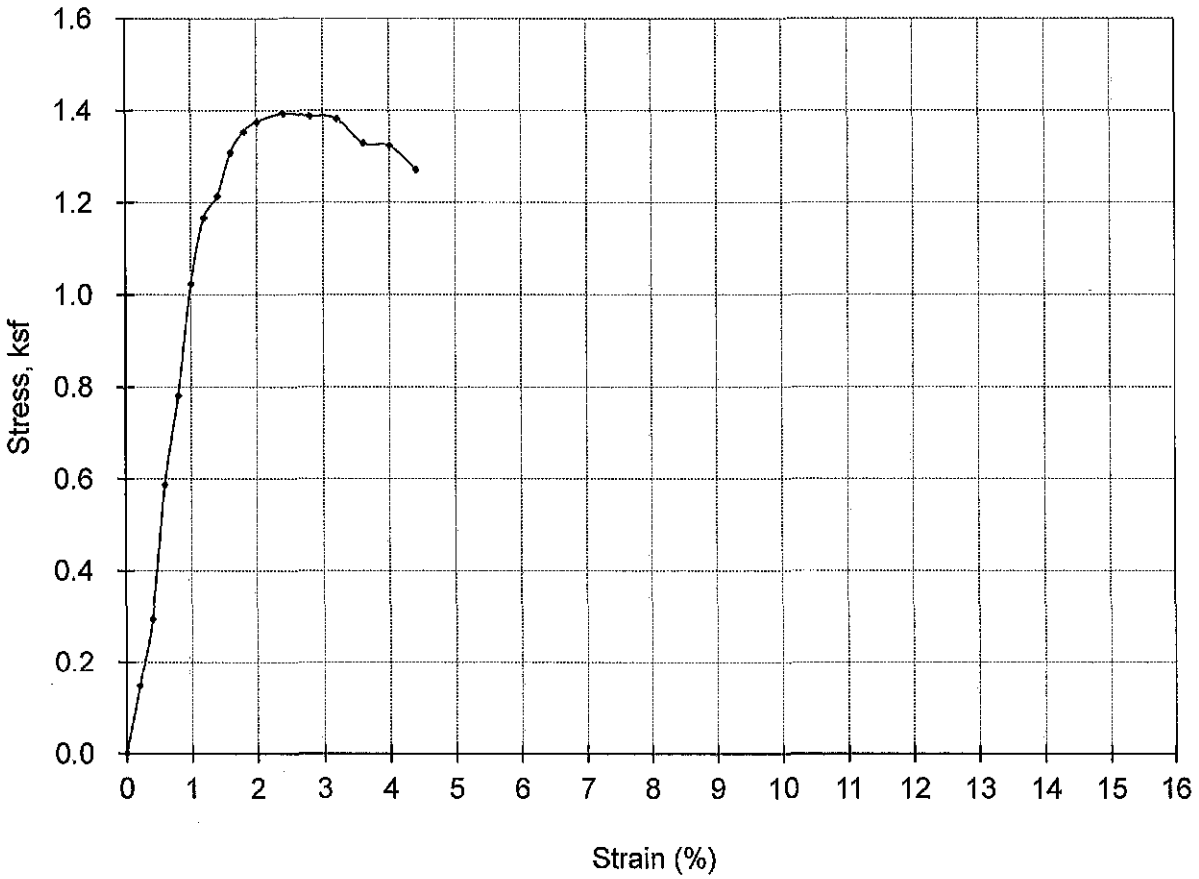
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

I-280 NB/ FOOTHILL EXPY DIAGONAL OFF RAMP IMPROVEMENTS
LOS ALTOS, SANTA CLARA COUNTY, CALIFORNIA

JOB NO: 2012-127-GDR

PLATE NO: B-4

UNCONFINED COMPRESSION TEST



Boring No.: A-12-002

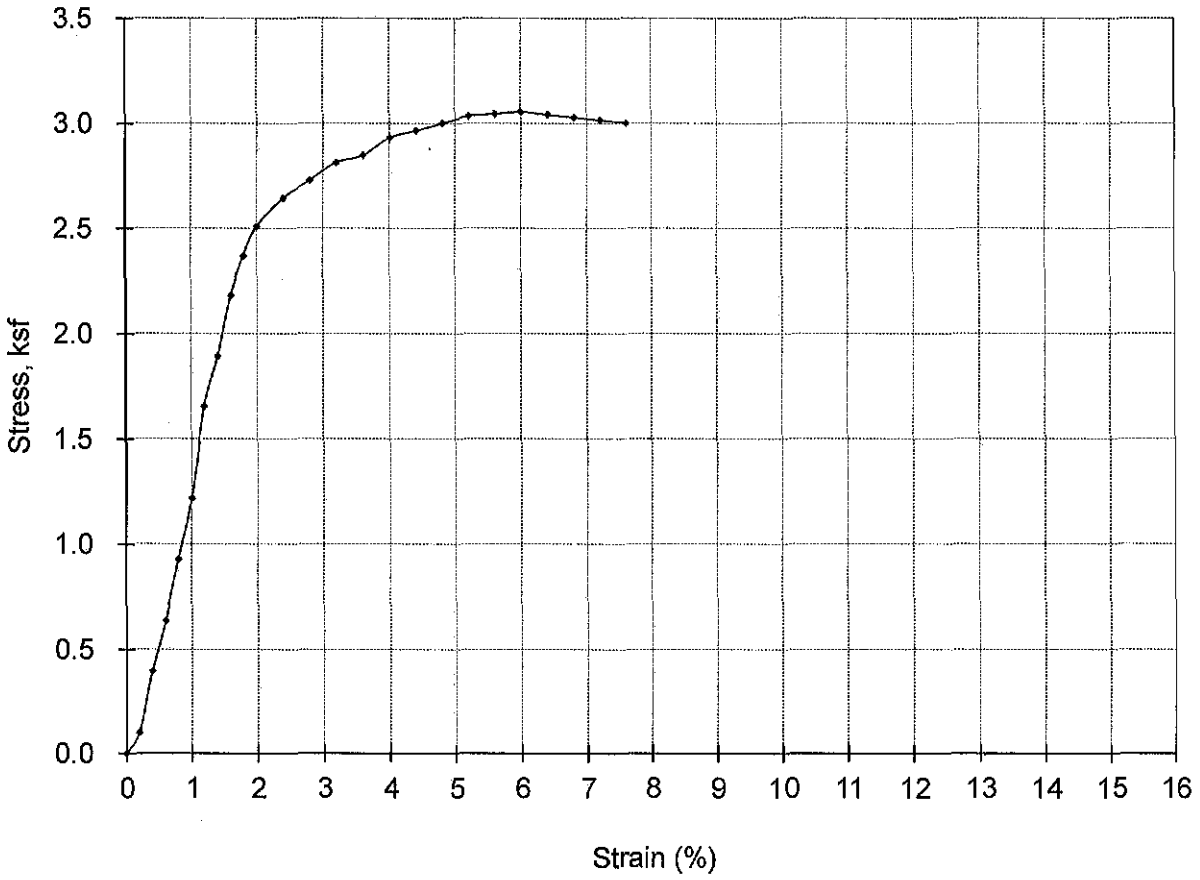
Sample No. : 4 **Maximum Strength (ksf):** 1.39

Depth (feet): 14.5 **Strain @ Failure (%):** 2.40

Material Description:
Firm, Sandy Fat Clay with Gravel

PARIKH CONSULTANTS, INC. GEOTECHNICAL CONSULTANTS MATERIALS TESTING	I-280/ FOOTHILL EXPRESSWAY DIAGONAL OFF RAMP IMPROVEMENTS LOS ALTOS, SANTA CLARA COUNTY, CALIFORNIA	
	JOB NO.: 2012-127-GDR	PLATE NO.: 5A

UNCONFINED COMPRESSION TEST



Boring No.: A-12-002

Sample No. : 3 **Maximum Strength (ksf):** 3.06

Depth (feet): 9.5 **Strain @ Failure (%):** 6.00

Material Description:
Very Stiff, Sandy Fat Clay with Gravel

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 10/31/2012
Date Submitted 10/25/2012

To: Prav Dayah
Parikh Consultants, Inc.
2360 Qume Dr, Ste.A
San Jose, CA 95131

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 2012-127-GDR/NB I280 Site ID : A12002#4 @ 14.5.
Thank you for your business.

* For future reference to this analysis please use SUN # 63482-131059.

EVALUATION FOR SOIL CORROSION

Soil pH	6.98		
Minimum Resistivity	1.58 ohm-cm (x1000)		
Chloride	13.6 ppm	00.00136	%
Sulfate	37.2 ppm	00.00372	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

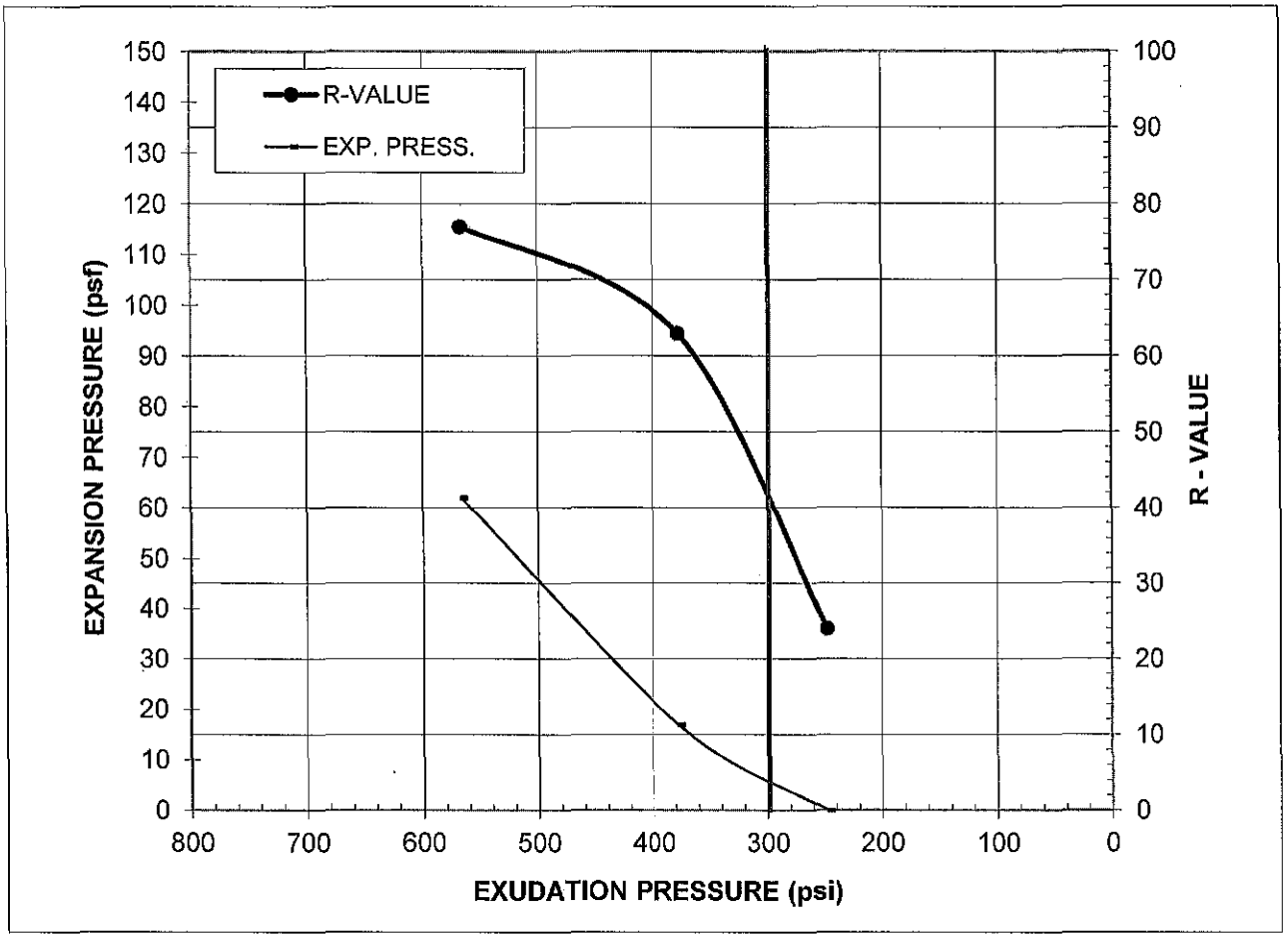
RECEIVED
NOV 1 2012
By

PLATE NO: 6

R-VALUE REPORT

Parikh Consultants, Inc. | ASTM D2844 or CTM 301 | (408) 452-9000

Project Name:	NB I-280 / Foothill Expressway Ramp Improvement			Date:	10/23/2012
Client:	Tranportation Infrastructure Group			Project #:	2012-127-GDR
Sample #:	A-12-003	Depth:	1'-5'	Lab #:	M874
Location / Source:		Onsite / Native		Sample Date:	
Material :	Silty Sand with some Gravel, yellowish brown			Sampled By:	



Specimen No.	A	B	C
Exudation Pressure, psi	248	378	567
Expansion Pressure, psf	0	17	62
R-Value	24	63	77
Moisture Content at Test, %	10.1	9.2	8.8
Dry Density at Test, pcf	130.6	132.1	132.7

R-Value @ 300 psi Exudation Pressure = 41

Expansion Pressure @300 psi Exudation, psf = 5

Minimum R-Value Requirement:

Comments:

Report By: Prav Dayah

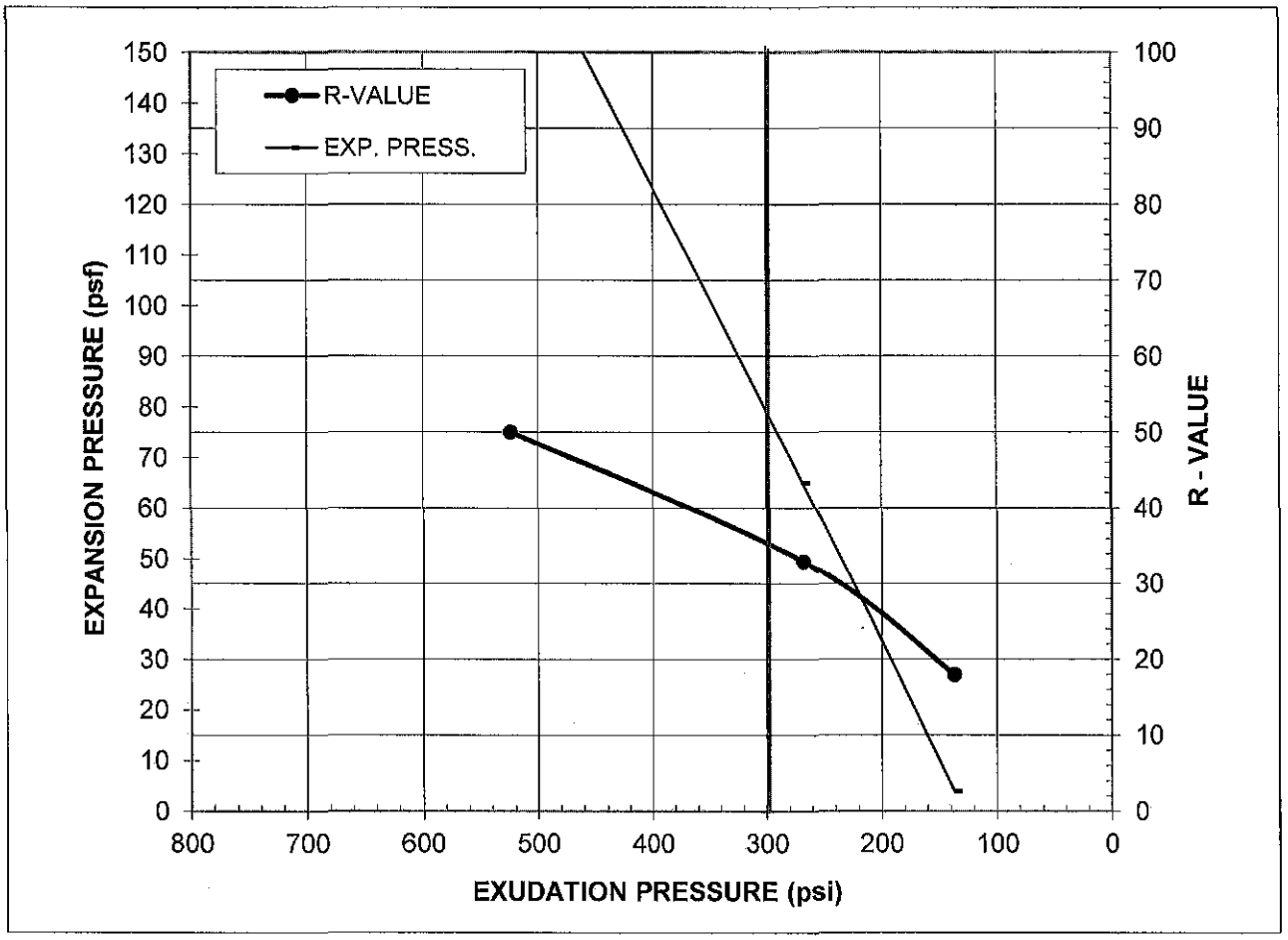
RVALUE with calcs pdp

PLATE NO: 7A

R-VALUE REPORT

Parikh Consultants, Inc. | ASTM D2844 or CTM 301 | (408) 452-9000

Project Name:	NB I-280 / Foothill Expressway Ramp Improvement			Date:	10/23/2012
Client:	Tranportation Infrastructure Group			Project #:	2012-127-GDR
Sample #:	A-12-004	Depth:	1'-5'	Lab #:	M874
Location / Source:		Onsite / Native		Sample Date:	
Material :	Clayey Sand with some Gravel, yellowish brown			Sampled By:	



Specimen No.	A	B	C
Exudation Pressure, psi	137	268	524
Expansion Pressure, psf	4	65	178
R-Value	18	33	50
Moisture Content at Test, %	18.1	16.7	15.8
Dry Density at Test, pcf	114.1	114.5	115.2

R-Value @ 300 psi Exudation Pressure = 35

Expansion Pressure @300 psi Exudation, psf = **78**

Minimum R-Value Requirement:

Comments:

Report By: Prav Dayah

RVALUE with calcs pdp

PLATE NO: 7B

APPENDIX C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCl	280	11.2/11.5	33	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Mark A. Wood No. C41258 Exp. 03/31/13 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TIG
8055 CAMINO ARROYO, SUITE 120
GILROY, CA 95020

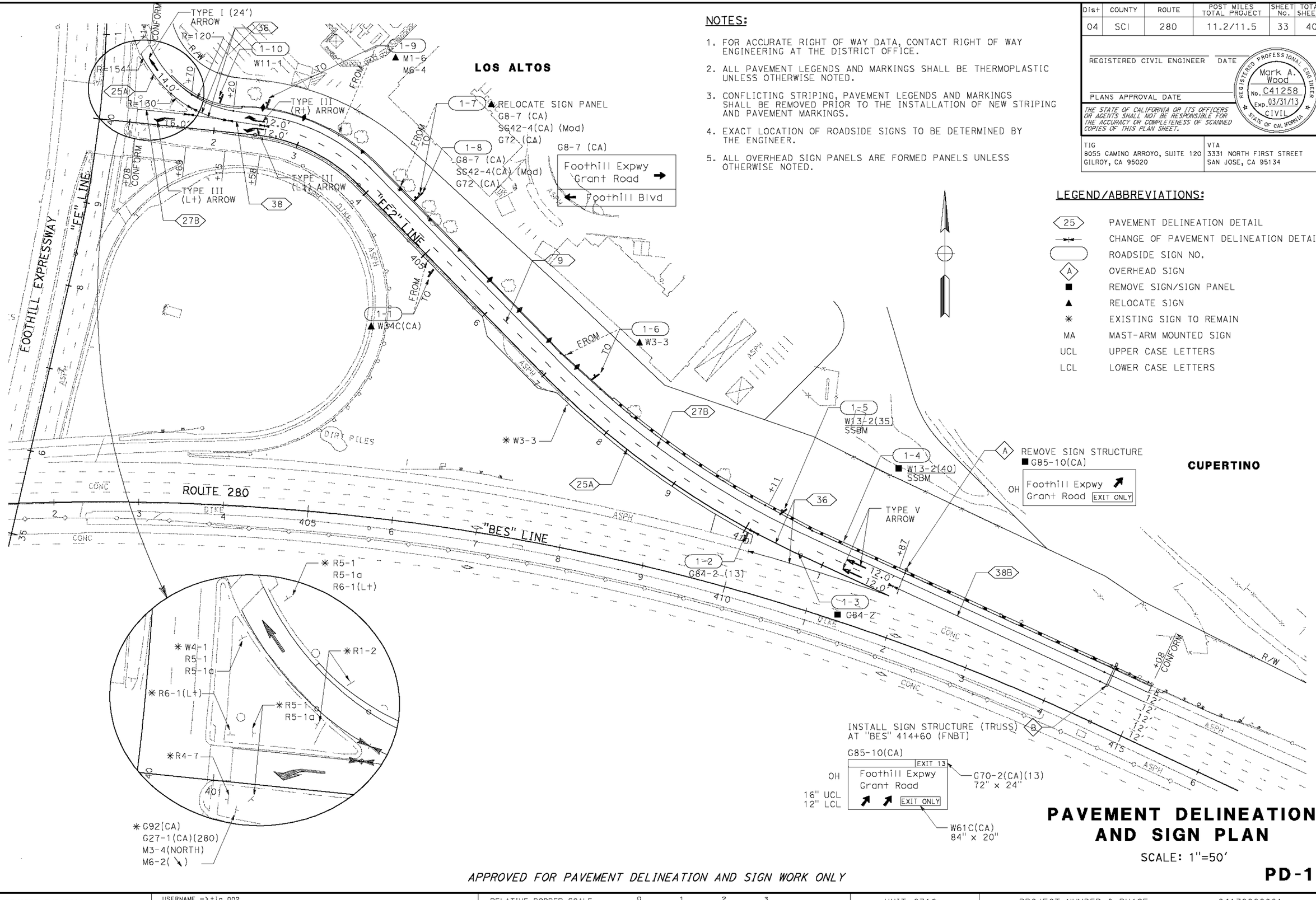
VTA
3331 NORTH FIRST STREET
SAN JOSE, CA 95134

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. ALL PAVEMENT LEGENDS AND MARKINGS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED.
3. CONFLICTING STRIPING, PAVEMENT LEGENDS AND MARKINGS SHALL BE REMOVED PRIOR TO THE INSTALLATION OF NEW STRIPING AND PAVEMENT MARKINGS.
4. EXACT LOCATION OF ROADSIDE SIGNS TO BE DETERMINED BY THE ENGINEER.
5. ALL OVERHEAD SIGN PANELS ARE FORMED PANELS UNLESS OTHERWISE NOTED.

LEGEND/ABBREVIATIONS:

25	PAVEMENT DELINEATION DETAIL
	CHANGE OF PAVEMENT DELINEATION DETAIL
	ROADSIDE SIGN NO.
A	OVERHEAD SIGN
■	REMOVE SIGN/SIGN PANEL
▲	RELOCATE SIGN
✳	EXISTING SIGN TO REMAIN
MA	MAST-ARM MOUNTED SIGN
UCL	UPPER CASE LETTERS
LCL	LOWER CASE LETTERS



PAVEMENT DELINEATION AND SIGN PLAN

SCALE: 1"=50'

APPROVED FOR PAVEMENT DELINEATION AND SIGN WORK ONLY

PD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | CONSULTANT FUNCTIONAL SUPERVISOR: THOMAS WINTCH | REVISED BY / DATE REVISED | CALCULATED-DESIGNED BY: INGRID SUPIT | CHECKED BY: MARK WOOD

LAST REVISION | DATE PLOTTED => 25-MAR-2013 | TIME PLOTTED => 16:17 | 03-25-13

BORDER LAST REVISED 7/2/2010 | USERNAME => tig_002 | DGN FILE => fthIPD01.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0716 | PROJECT NUMBER & PHASE 04130000861

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCl	280	11.2/11.5	35	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mark A. Wood
No. C41258
Exp. 03/31/13
CIVIL
STATE OF CALIFORNIA

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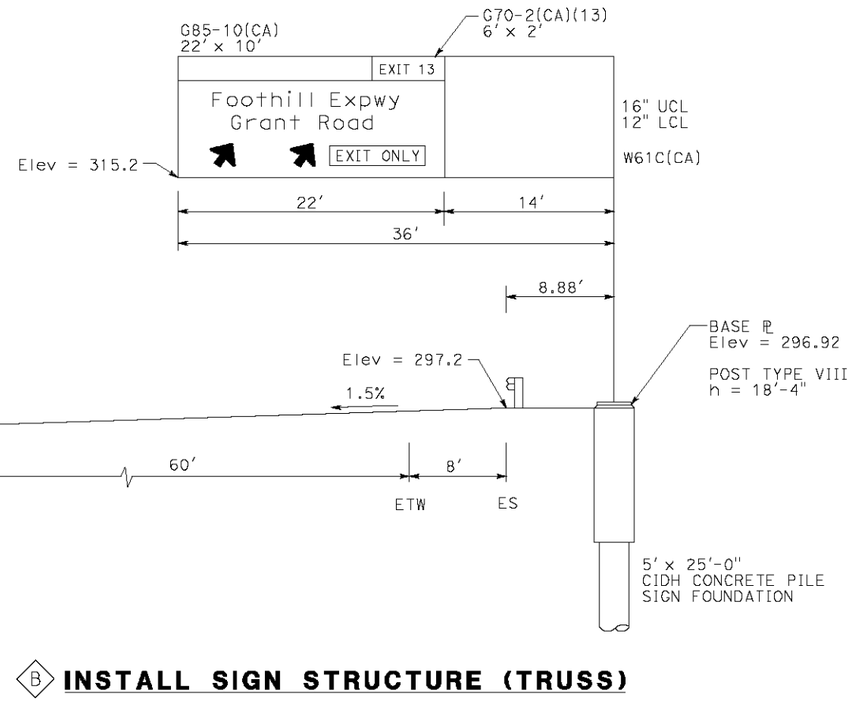
TIG	VTA
8055 CAMINO ARROYO, SUITE 120 GILROY, CA 95020	3331 NORTH FIRST STREET SAN JOSE, CA 95134



Ⓑ INSTALL SIGN STRUCTURE (TRUSS)

AT "BES" 414+60 (FNBT)

SIGN Ⓑ

G85-10(CA)

SIGN DETAILS

NO SCALE

SD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
CONSULTANT FUNCTIONAL SUPERVISOR: THOMAS WINTCH
CALCULATED-DESIGNED BY: INGRID SUPIT
CHECKED BY: MARK WOOD
REVISED BY
DATE REVISED

LAST REVISION 03-25-13
DATE PLOTTED => 25-MAR-2013
TIME PLOTTED => 16:09

BORDER LAST REVISED 7/2/2010
USERNAME => tig_002
DGN FILE => tthiSD01.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0716
PROJECT NUMBER & PHASE 04130000861

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCl	280	11.2/11.5	3	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Mark A. Wood — No. C41258 — Exp. 03/31/13 — CIVIL — STATE OF CALIFORNIA

TIG
8055 CAMINO ARROYO, SUITE 120
GILROY, CA 95020

VTA
3331 NORTH FIRST STREET
SAN JOSE, CA 95134

NOTES:

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATION IS AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. SEE LAYOUT PLANS FOR LOCATION OF HMA DIKES AND CURBS.
4. WHERE WIDENING AT THE EXISTING AC PAVEMENT, THE CONTRACTOR SHALL SAWCUT THE EXISTING SECTION 0.5' IN FROM THE EDGE AS SHOWN AND SAWCUT THROUGH AC LAYER.

TYPICAL PAVEMENT STRUCTURE SECTIONS:

[1] 1.30' FDHMA

[2] 0.60' HMA-A
0.60' LCB
0.55' CLASS 2 AS

[3] 0.15' HMA-A
0.15' COLD PLANE EXISTING PAVEMENT

[4] 0.50' MINOR CONCRETE (TEXTURED PAVING)
0.50' CLASS 2 AB

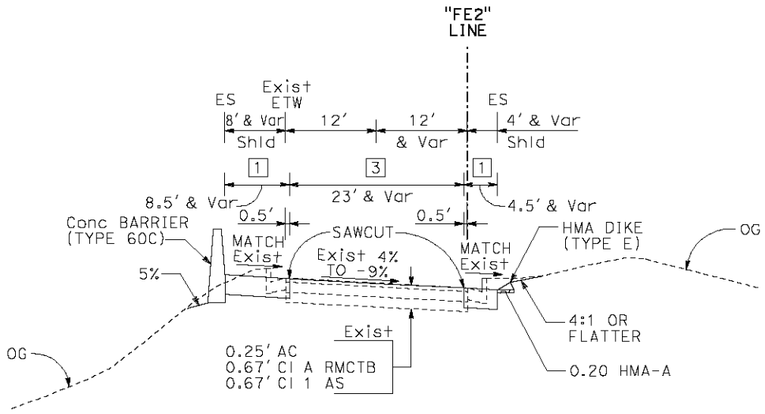
[5] 0.25' VEGETATION CONTROL (MINOR CONCRETE)

ROUTE 280/FOOTHILL EXPRESSWAY DESIGN DESIGNATION:

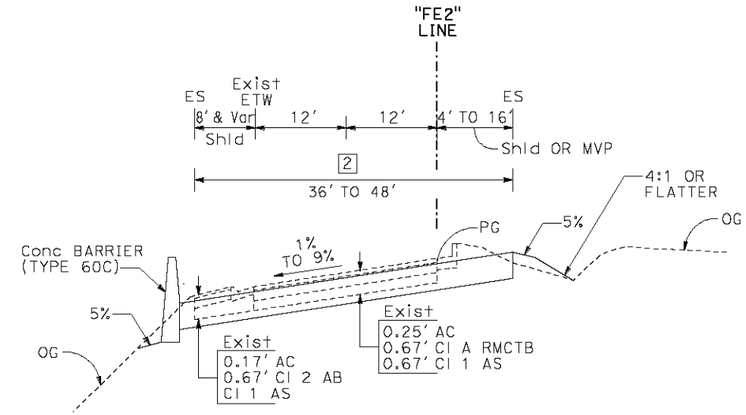
OFF-RAMP TI=12.0, R-VALUE=30
V DESIGN = 50 mph

ABBREVIATIONS:

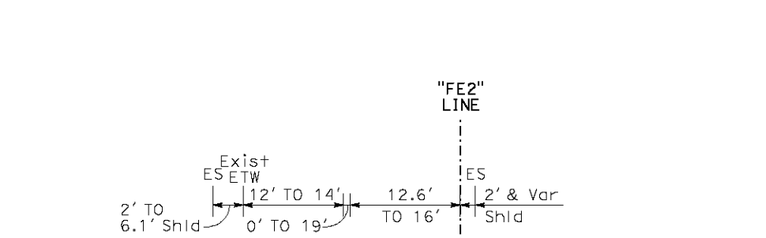
Aux	AUXILIARY
FDHMA	FULL DEPTH HOT MIX ASPHALT
RMCTB	ROAD-MIXED CEMENT TREATED BASE



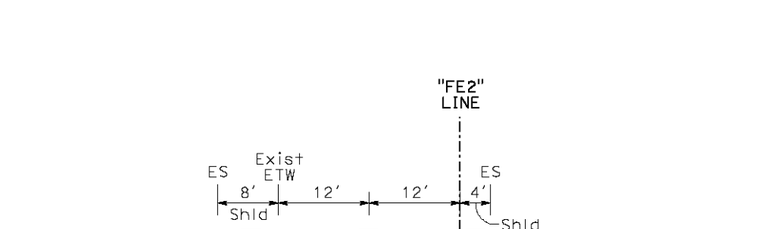
NORTHBOUND DIAGONAL OFF-RAMP
"FE2" Sta 402+30 TO 403+25



NORTHBOUND DIAGONAL OFF-RAMP
"FE2" Sta 405+50 TO 407+80



NORTHBOUND DIAGONAL OFF-RAMP
"FE2" Sta 401+44 TO 402+30



NORTHBOUND DIAGONAL OFF-RAMP
"FE2" Sta 403+25 TO 405+50

TYPICAL CROSS SECTION
NO SCALE

X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: THOMAS WINTCH

CALCULATED-DESIGNED BY | CHECKED BY

REVISED BY: MARK WOOD | INGRID SUPIT

DATE REVISED

LAST REVISION 03-25-13 | DATE PLOTTED => 25-MAR-2013 | TIME PLOTTED => 16:06

BORDER LAST REVISED 7/2/2010 | USERNAME => tig_002 | DGN FILE => fthIX01.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0716 | PROJECT NUMBER & PHASE 04130000861

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCl	280	11.2/11.5	4	40

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

Mark A. Wood
No. C41258
Exp. 03/31/13
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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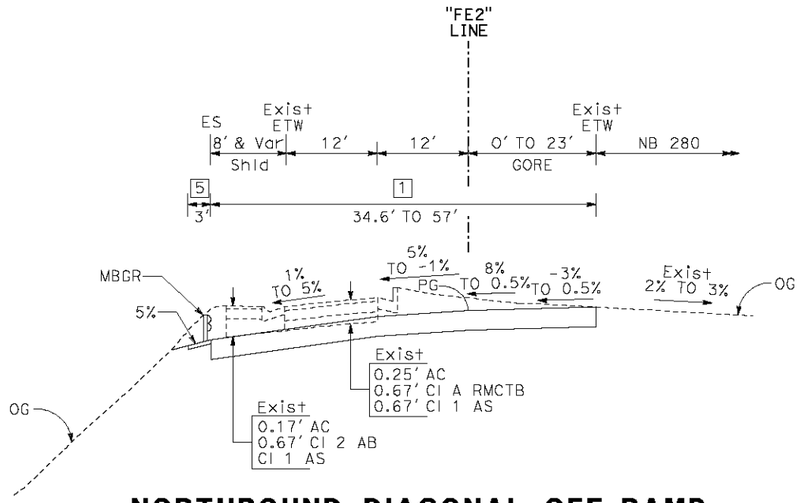
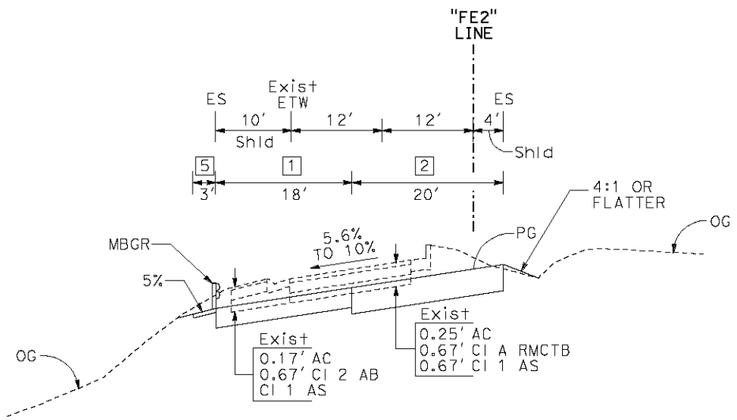
TIG	VTA
8055 CAMINO ARROYO, SUITE 120 GILROY, CA 95020	3331 NORTH FIRST STREET SAN JOSE, CA 95134



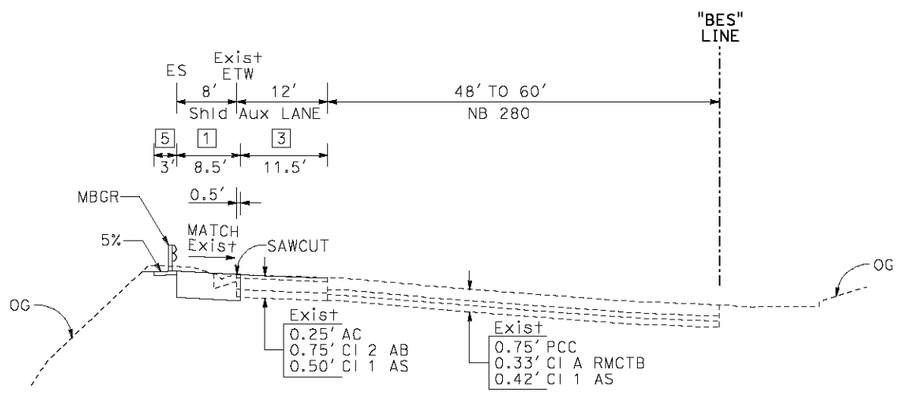
NORTHBOUND DIAGONAL OFF-RAMP

"FE2" Sta 410+11 TO 411+60



NORTHBOUND DIAGONAL OFF-RAMP

"FE2" Sta 407+80 TO 410+11



NORTHBOUND ROUTE 280

"FE2" Sta 411+60 TO "BES"415+08

TYPICAL CROSS SECTION

NO SCALE

X-2

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY	CHECKED BY
INGRID SUPIT	MARK WOOD

CONSULTANT FUNCTIONAL SUPERVISOR: THOMAS WINTCH

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION | DATE PLOTTED => 25-MAR-2013
03-25-13 | TIME PLOTTED => 16:07

BORDER LAST REVISED 7/2/2010 | USERNAME => tig_002 | DGN FILE => fthlX02.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0716 | PROJECT NUMBER & PHASE 04130000861

Project: NB 280/Foothill
Job No: 2012-127-GDR
NB 280 Diagonal Off-ramp to Foothill Expwy

R-value (Soil) = 30
R-value (AS) = 50 (Class 2)

TI =	12.0	14.0	
Total GE req (ft) =	2.69	3.14	
Full Depth AC:			
Add SF (ft) =	0.10	0.10	
GE req(AC) + SF (ft) =	2.79	3.24	
(table 633.1) t(AC) (ft) =	1.30	1.55	
Depth (AC & LCB):			
GE req(AC+LCB) (ft) =	2.69	3.14	
40% of GE req (AC+LCB) (ft) =	1.08	1.25	
Add SF (ft) =	0.20	0.20	
GE req(AC) + SF (ft) =	1.28	1.45	
(table 633.1) t(AC) (ft) =	0.75	0.85	
(table 633.1) GE t(AC) (ft) =	1.38	1.51	
GE req(LCB) (ft) =	1.31	1.63	
(table 633.1) t(LCB) (ft) =	0.70	0.85	
Depth (AC, LCB & AS):			
GE req(AC+LCB) (ft) =	1.92	2.24	
40% of GE req (AC+LCB) (ft) =	0.77	0.90	
Add SF (ft) =	0.20	0.20	
GE req(AC) + SF (ft) =	0.97	1.10	
(table 633.1) t(AC) (ft) =	0.60	0.70	
(table 633.1) GE t(AC) (ft) =	1.02	1.16	
GE req(LCB) (ft) =	0.90	1.08	
Add SF (ft) =	0.2	0.2	
GE req(LCB) + SF (ft) =	1.10	1.28	
(table 633.1) t(LCB) (ft) =	**0.60**	**0.70**	
GE t(LCB) (ft) =	1.14	1.33	
GE t (AC+LCB) (ft) =	2.16	2.49	
GE req(AS) (ft) =	0.53	0.65	
(table 633.1) t(AS) (ft) =	0.55	0.65	

Note: User must input all values in yellow and then reference chapter 600 to get the final values in gray
For full depth of AC section, 0.1 ft satety factor is taken whereas for AC with AB and As 0.20 ft factor of safery is added.

PARIKH CONSULTANTS, INC.
GEOTECHNICAL CONSULTANTS
MATERIALS ENGINEERING

PROJECT NO. 2012-127-GDR
PROJECT NAME NB I-280 / Foothill Expwy Off-Ramp
CALCULATED BY Partha / Sircar DATE
CHECKED BY DATE
VERIFIED BY DATE
BACK CHECKED BY DATE

SUBJECT Overlay

PAVEMENT OVERLAY

Assumptions

Existing Pavement:

0.25-ft AC
0.67-ft RMCTB (Class A)
0.67-ft AS (Class 1)

R = 30

TI = 12 for 20-year Design
14 for 40-year Design

Assume R-value of AS = 40
RMCTB (Class A) use AB (GF=1.1) due to deterioration and deterioration

20-year design

$GE = 0.0032\,TI\,(100-R) = 0.0032 \times 12\,(100-30) = 2.69$

$(GE)_{CTB} = 0.67 \times 1.1 = 0.74$ $(GE)_{AS} = 0.65$

$\therefore (GE)_{AC} = 2.69 - 0.74 - 0.65 = 1.30$; $(GE)_{AC+SF} = 1.30 + 0.2 = 1.50$

For TI = 12; Thickness of AC = 0.80'; Overlay = 0.55'

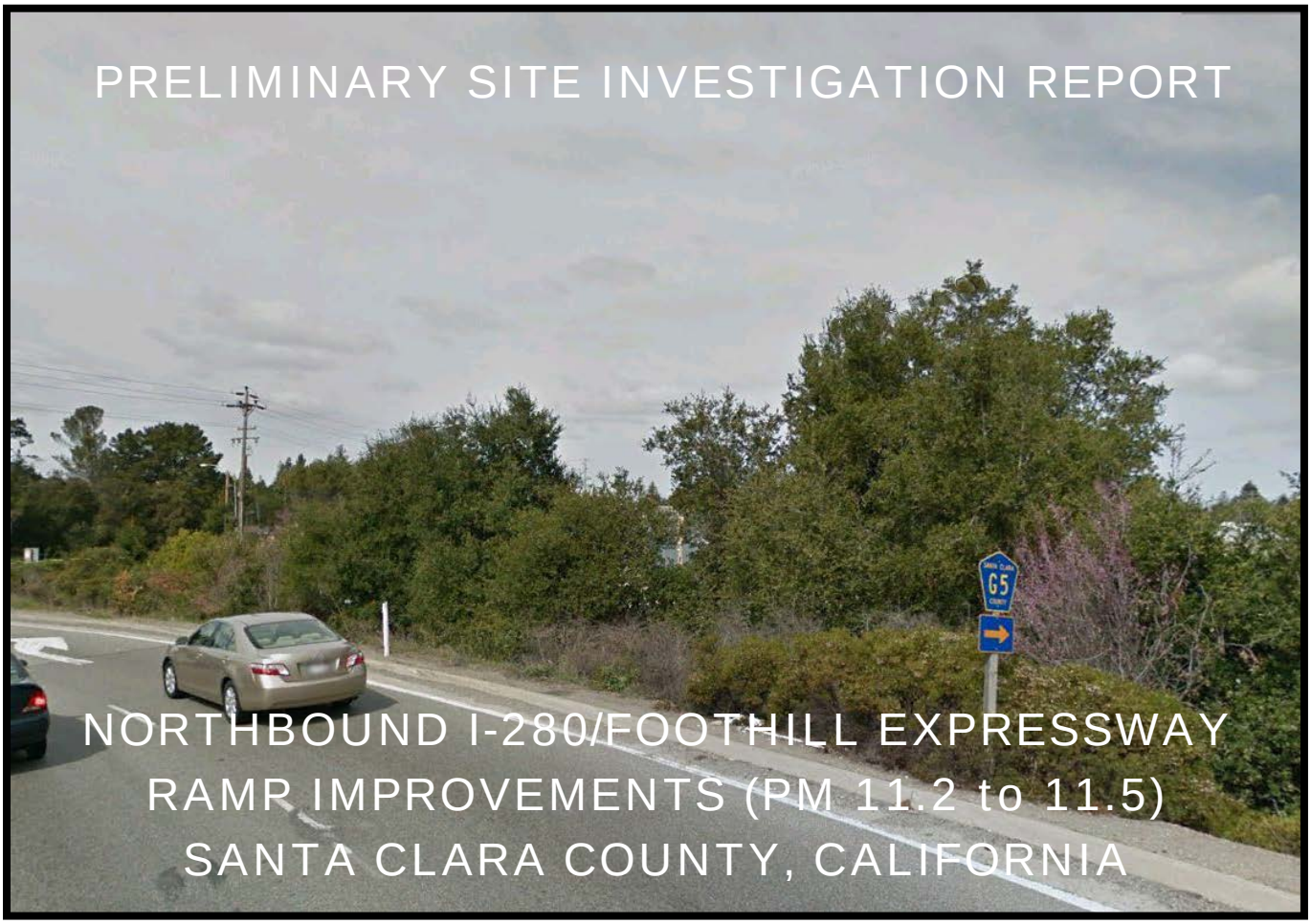
40-year design

$GE = 0.0032 \times 14 \times (100-30) = 3.14$

$(GE)_{AC} = 3.14 - 0.74 - 0.65 = 1.75$; $(GE)_{AC+SF} = 1.75 + 0.2 = 1.95$

For TI = 14, Thickness of AC = 1.05 ; Overlay = 0.80'

PRELIMINARY SITE INVESTIGATION REPORT



NORTHBOUND I-280/FOOTHILL EXPRESSWAY RAMP IMPROVEMENTS (PM 11.2 to 11.5) SANTA CLARA COUNTY, CALIFORNIA

PREPARED FOR:
TRANSPORTATION INFRASTRUCTURE GROUP
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GILROY, CA 95020

PREPARED BY:
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LIVERMORE, CA 94550

GEOCON

GEOCON PROJECT NO. E8668-06-01

JANUARY 2013

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REPORT LIMITATIONS

This report has been prepared exclusively for Transportation Infrastructure Group. The information contained herein is only valid as of the date of the report and will require an update to reflect additional information obtained.

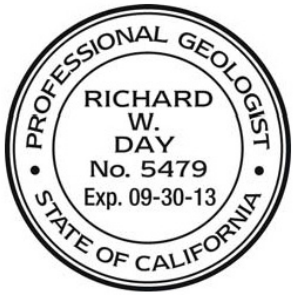
This report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts 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. This report does not constitute a standard, specification, or regulation.

GEOCON CONSULTANTS, INC.

Luann Beadle
Sr. Staff Scientist

Richard Day, CEG, CHG
Senior Geologist



PRELIMINARY SITE INVESTIGATION REPORT

1.0 INTRODUCTION

This *Preliminary Site Investigation Report* for the ramp improvements at northbound Interstate 280 (I-280) to Foothill Expressway in Santa Clara County, California, was prepared by Geocon for Transportation Infrastructure Group (TIG).

1.1 Project Description and Proposed Improvements

The project consists of Caltrans right-of-way (ROW) along the northbound I-280 exit ramp to Foothill Expressway in Los Altos, Santa Clara County, California. The project includes the widening the exit ramp from one lane to two lanes for a distance of approximately 500 feet. All work will take place within the existing Caltrans right-of-way.

The project location is depicted on the attached Vicinity Map, Figure 1.

1.2 General Objectives

The purpose of the site investigation was to evaluate concentrations of 17 California Assessment Manual (CAM 17) metals, including aerially-deposited lead (ADL), petroleum hydrocarbons, pesticides, naturally occurring asbestos (NOA), and pH in Site soil. The investigative results will be used to inform the construction contractor if soil impacted with metals, petroleum hydrocarbons, pesticides, and/or NOA is present within the project boundaries for health, safety, management, and disposal evaluation purposes.

2.0 BACKGROUND

2.1 Hazardous Waste Determination Criteria

Regulatory criteria to classify a waste as California hazardous for handling and disposal purposes are contained in the CCR, Title 22, Division 4.5, Chapter 11, Article 3, §66261.24. Criteria to classify a waste as Resource, Conservation, and Recovery Act (RCRA) hazardous are contained in Chapter 40 of the Code of Federal Regulations (40 CFR), Section 261.

For waste containing metals, the waste is classified as California hazardous when: 1) the representative total metal content equals or exceeds the respective Total Threshold Limit Concentration (TTLC); or 2) the representative soluble metal content equals or exceeds the respective Soluble Threshold Limit Concentration (STLC) based on the standard Waste Extraction Test (WET). A waste has the potential of exceeding the STLC when the waste's total metal content is greater than or equal to ten times the respective STLC value since the WET uses a 1:10 dilution ratio. Hence, when a total metal is detected at a concentration greater than or equal to ten times the respective STLC, and assuming that 100 percent of the total metals are soluble, soluble metal analysis is required. A material is classified as RCRA

hazardous, or Federal hazardous, when the representative soluble metal content equals or exceeds the Federal regulatory level based on the Toxicity Characteristic Leaching Procedure (TCLP).

The above regulatory criteria are based on chemical concentrations. Wastes may also be classified as hazardous based on other criteria such as ignitability and corrosivity; however, for the purposes of this investigation, toxicity (i.e., representative lead concentrations) is the primary factor considered for waste classification since waste generated during the construction activities would not likely warrant testing for ignitability or other criteria. Waste that is classified as either California hazardous or RCRA hazardous requires management as a hazardous waste.

2.2 DTSC Variance

The DTSC issued a statewide Variance effective July 1, 2009, regarding the management of ADL-impacted soils within Caltrans right-of-way. Under the Variance, soil that is classified as a non-RCRA hazardous waste (i.e., California hazardous waste), based primarily on ADL content (i.e., total lead ≥1,000 mg/kg and/or soluble WET lead ≥ 5 mg/l), may be suitable for reuse within Caltrans right-of-way. ADL soil that is classified as a RCRA hazardous waste is not eligible for reuse under the Variance and must be disposed of as a RCRA hazardous waste (Caltrans Type Z-3).

ADL soil reused under the Variance must always be at least five feet above the highest groundwater elevation and, depending on lead concentrations, must be covered with at least one foot of non-hazardous soil or a pavement structure. The ADL soil may not be placed in areas where it might contact groundwater or surface water (such as streams and rivers), and must be buried in locations that are protected from erosion that may result from storm water run-on and run-off.

Review of the statewide Variance indicates the following conditions regarding the reuse and management of ADL-impacted soil as fill material for construction and maintenance operations. If ADL soil meets the Variance criteria but is not intended to be reused within Caltrans right-of-way, then the excavated soil must be disposed of as a California hazardous waste (Caltrans Type Z-2). A copy of the Variance is presented as Appendix A.

Caltrans Type Y-1: ADL soil exhibiting a total lead concentration less than or equal to 1,411 milligrams per kilogram (mg/kg), a DI-WET (WET using deionized water as extractant) lead concentration less than or equal to 1.5 milligrams per liter (mg/l), and a pH value greater than or equal to 5.5 may be reused within the same Caltrans corridor and must be covered with at least one foot of non-hazardous soil.

Caltrans Type Y-2: ADL soil exhibiting a total lead concentration less than or equal to 1,411 mg/kg, a DI-WET lead concentration less than or equal to 1.5 mg/l, and a pH value greater than 5 and less than 5.5 may be reused within the same Caltrans corridor and must be covered and protected from infiltration by a pavement structure.

ADL soil exhibiting a total lead concentration less than or equal to 1,411 mg/kg, a DI-WET lead concentration greater than 1.5 mg/l and less than or equal to 150 mg/l, and a pH value greater than 5 may be reused within the same Caltrans corridor and must be covered and protected from infiltration by a pavement structure.

ADL soil exhibiting a total lead concentration greater than 1,411 mg/kg and less than or equal to 3,397 mg/kg, a DI-WET lead concentration less than or equal to 150 mg/l, and a pH value greater than 5 may be reused within the same Caltrans corridor and must be covered and protected from infiltration by a pavement structure.

Caltrans Type Z-2: ADL soil exhibiting a total lead concentration greater than 3,397 mg/kg, a DI-WET lead concentration greater than 150 mg/l, or a pH value less than or equal to 5 is not eligible for reuse under the Variance and must be disposed of as a California hazardous waste.

Caltrans Type Z-3: ADL soil exhibiting a TCLP lead concentration greater than or equal to 5 mg/l is not eligible for reuse under the Variance and must be disposed of as a RCRA hazardous waste.

2.3 Environmental Screening Levels

The San Francisco Bay Regional Water Quality Control Board (SFRWQCB) has prepared a technical report entitled *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater, Interim Final* (May 2008), which presents Environmental Screening Levels (ESLs) for soil, groundwater, soil gas, and surface water, to assist in evaluating sites impacted by releases of hazardous chemicals. The ESLs are conservative values for more than 100 commonly detected contaminants, which may be used to compare with environmental data collected at a site. ESLs are strictly risk assessment tools and "not regulatory clean up standards." The presence of a chemical at concentrations in excess of an ESL does not necessarily indicate that adverse impacts to human health or the environment are occurring; this simply indicates that a potential for adverse risk may exist and that additional evaluation is or "may be" warranted (SFRWQCB, 2008).

Residential and commercial/industrial land use ESLs are commonly used by contractors, soil trucking companies, and private and commercial land owners as default acceptance criteria to evaluate suitability of import soil material. The most conservative ESL table was used for comparative purposes: Table A – Shallow Soil (≤3 meters below ground surface; bgs) – Groundwater is a Current or Potential Source of Drinking Water. The respective ESLs are listed at the end of Tables 3 through 4.

2.4 Naturally Occurring Asbestos

As defined in current California Air Resources Board (CARB) rules, serpentine material refers to any material that contains at least 10% serpentine, and asbestos-containing serpentine refers to serpentine materials with an asbestos content greater than 5% as determined by CARB Test Method 435 (CARB 435). The use of serpentine material for road surfacing is prohibited in California by Title 17 of the California Code of Regulations (CCR) Section 93106, Asbestos Airborne Toxic Control Measure (ATCM) for Surfacing Application (ATCM 93106), unless the material has been tested and determined to have an asbestos content of less than 0.25%. Materials found to contain asbestos of 0.25% or more are considered to be designated waste if transported offsite, requiring disposal at a landfill facility designated to accept asbestos waste. Alternatively, asbestos-containing materials may be reused onsite if buried beneath a minimum 6 inches of soil.

The CARB specifies mitigation practices for construction, grading, quarrying, and surface mining operations that contain natural occurrences of asbestos outlined in Title 17, Section 93105, Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (ATCM 93105). Based on Part (e) Subpart (2) of ATCM 93105 an asbestos dust mitigation plan is required and must be implemented for a project if NOA is disturbed after the start of construction. Additionally, ATCM 93105 specifies that the air pollution control district (APCD) must be notified and an asbestos dust mitigation plan submitted to the APCD. The ATCM states that air monitoring may be required on the property. NOA potentially poses a health hazard when it becomes an airborne particulate.

The construction/maintenance activities mentioned above could disturb NOA-laden debris and soil, thereby potentially creating an airborne hazard. Mitigation practices can reduce the risk of exposure to airborne NOA containing dust. Dust suppression practices include wetting the materials being disturbed and wearing approved respirators with high-efficiency particulate air (HEPA) filters during construction activities.

3.0 SCOPE OF SERVICES

The scope of services included the following:

3.1 Pre-field Activities

- Prepared the *Limited Site Investigation Workplan* describing the proposed scope of services dated November 19, 2012. The workplan was reviewed and approved by Caltrans on November 19, 2012.
- Retained the services of Advanced Technology Laboratories (ATL), a Caltrans-approved and California-certified analytical laboratory, to perform the chemical analyses of soil samples.
- Retained the services of EMSL Analytical Laboratories (EMSL), a Caltrans-approved and California-certified analytical laboratory, to perform the asbestos analyses of soil samples.

3.2 Field Activities

The field soil investigation was performed on December 6, 2012 by Geocon staff. The following field activities were performed during the sampling efforts:

- Advanced 6 soil borings at the project location using hand-auger drilling techniques. The borings were advanced to a maximum depth of 2.5 feet.
- Collected 14 soil samples for total lead analysis.
- Collected 4 soil samples for selected analysis of CAM 17 metals.
- Collected 6 soil samples for total petroleum hydrocarbons as diesel (TPHd) and as motor oil (TPHmo) analysis.
- Collected 6 soil samples for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (BTEX), and fuel oxygenate compound (FOC) analysis.
- Collected 6 surface soil samples for pesticides analysis.
- Collected 6 deeper soil samples for NOA analysis.
- Transported samples to California-certified environmental laboratories for analysis under standard chain-of-custody (COC) documentation.

4.0 INVESTIGATIVE METHODS

4.1 Sampling Procedures

Soil samples were collected from six borings within the project area using hand-auger techniques. Approximate boring locations are shown on the Site Plan, Figure 2.

Soil samples for total lead and NOA analyses were collected into new resealable plastic bags. Soil samples for CAM 17 metals, TPH, BTEX, and FOCs analyses were collected into metal tubes. Sample containers were labeled and transported to Caltrans-approved, certified environmental laboratories using standard COC documentation. The hand auger borings were backfilled to surface with soil cuttings.

Geocon provided QA/QC procedures during the field activities. These procedures included washing the sampling equipment with a Liqui-Nox® solution followed by a double rinse with deionized water. Decontamination water was disposed of to the ground surface within Caltrans right-of-way in a manner not to create runoff, away from drain inlets or potential water bodies.

4.2 Laboratory Analyses

Laboratory analyses were performed by ATL and EMSL under standard turnaround-time (TAT). The laboratory reports and COC documentation are included in Appendix B.

The soil samples were analyzed as follows:

- 14 samples for total lead using Environmental Protection Agency (EPA) Test Method 6010 ICAP.
- 4 samples for CAM 17 metals according to Title 22 CCR, EPA Test Methods 6010 ICAP and 7471A.
- 6 samples with total lead concentrations exceeding 50 mg/kg (i.e., exceeding ten times the lead STLC of 5 mg/l) were further analyzed for WET lead.
- 5 samples were further analyzed for DI-WET lead
- 2 samples with the highest total lead concentrations were further analyzed for TCLP lead.
- 5 samples for pH using EPA Test Method 9045C.
- 1 sample with total chromium exceeding 50 mg/kg (i.e., exceeding ten times the chromium STLC of 5 mg/l) was further analyzed for WET chromium.
- 6 samples for TPHd and TPHmo using EPA Test Method 8015B.
- 6 samples for TPHg using EPA Test Method 8015M.
- 6 samples for BTEX and FOCs using EPA Test Method 8260.
- 6 samples for pesticides using EPA Test Method 8081.
- 6 samples for NOA using CARB 435.

4.3 Laboratory QA/QC

QA/QC procedures were performed for each method of analysis with specificity for each analyte listed in the test method's QA/QC. The laboratory QA/QC procedures included the following:

- One method blank for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One sample analyzed in duplicate for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One spiked sample for every ten samples, batch of samples or type of matrix; whichever was more frequent, with spike made at ten times the detection limit or at the analyte level.

Prior to submitting the samples to the laboratory, the COC documentation was reviewed for accuracy and completeness.

5.0 INVESTIGATIVE RESULTS

5.1 Subsurface Conditions

Observations during field activities indicated that surface soil generally consists of compacted fill materials to a depth of 2.0 feet with light sand and small gravel to 2.5 feet. Refusal was encountered at multiple locations due to the presence of shallow utilities placed in the area without conduit, however,

subsequent attempts in immediately adjacent areas were successful. Groundwater was not encountered.

5.2 Laboratory Analytical Results

The analytical results for soil samples are included in Appendix B and are summarized in Tables 2 to 6 and as follows:

- The following metals were not detected above their respective laboratory reporting limits: antimony, beryllium, cadmium, mercury, molybdenum, selenium, silver, and thallium.
- Total lead was reported at concentrations ranging from 4.1 to 340 mg/kg.
- WET lead was reported at concentrations ranging from 6.0 to 26 mg/l.
- DI-WET lead was not detected at or above the reporting limit of 0.50 mg/l.
- TCLP lead was reported at concentrations of 0.54 and 0.68 mg/l in the two samples analyzed.
- pH values ranged from 7.5 to 8.0.
- WET chromium was not detected at or above the reporting limit of 1.0 mg/l.
- Remaining CAM 17 metals were reported in the samples at total concentrations below ten times their respective STLCs.
- TPHd was reported at concentrations ranging from 1.9 to 130 mg/kg.
- TPHmo was reported at concentrations ranging from 2.4 to 340 mg/kg
- TPHg was not detected at or above the reporting limit of 1.0 mg/kg.
- BTEX compounds were not detected in the samples at or above laboratory reporting limits.
- FOCs were not detected in the samples at or above laboratory reporting limits.
- Pesticides 4,4'-DDT and Chlordane were reported at concentrations ranging from 2.2 to 11 µg/kg.
- Remaining pesticides were not detected at or above laboratory reporting limits.
- NOA was not detected in samples at the target sensitivity level of 0.25% Chrysotile.

5.3 Laboratory Quality Assurance/Quality Control

We reviewed the QA/QC results provided with the laboratory analytical reports. The data indicate non-detect results for the method blanks at or above the reporting limits. The surrogate recovery was below the acceptance limit for two samples. Re-extraction and/or re-analyses confirmed low recovery caused by matrix effects. The matrix spike/matrix spike duplicate recovery was outside of acceptance limits for two samples, however, the data was validated by laboratory control samples. Remaining samples and internal laboratory QA/QC samples showed acceptable recoveries and relative percent differences (RPDs). Based on this limited data review, no additional qualifications of the soil data are necessary, and the data are of sufficient quality for the purposes of this report.

5.4 Statistical Evaluation for Lead Detected in Soil Samples

The lead data for the Site were treated as a single population for statistical evaluation. Statistical methods are typically applied to the total lead data to evaluate: 1) the upper confidence limits (UCLs) of the arithmetic means of the total lead concentrations for each sampling depth; and 2) if an acceptable correlation between total and WET lead concentrations exists that would allow the prediction of WET lead concentrations based on calculated UCLs.

5.4.1 Calculating the UCLs for the Arithmetic Mean

The upper one-sided 90% and 95% UCLs of the arithmetic mean are defined as the values that, when calculated repeatedly for randomly drawn subsets of site data, equal or exceed the true mean 90% and 95% of the time, respectively. The UCLs of the arithmetic mean concentration are used as the mean concentrations because it is not possible to know the true mean due to the essentially infinite number of soil samples that could be collected from a site. The UCLs therefore account for uncertainties due to limited sampling data. As data become less limited at a site, uncertainties decrease, and the UCLs move closer to the true mean.

Non-parametric bootstrap techniques were used to calculate the UCLs. The outlier and bootstrap test results are included in Appendix C. The following tables present the calculated UCLs and statistics for the site data.

Northbound I-280 Offramp to Foothill Expressway (borings NB1 to NB6)

SAMPLE INTERVAL (feet)	TOTAL LEAD 90% UCL (mg/kg)	TOTAL LEAD 95% UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	TOTAL LEAD MINIMUM (mg/kg)	TOTAL LEAD MAXIMUM (mg/kg)
0 to 0.5	250	267	194	49	340
1 to 1.5	48.0	52.9	28.5	5.4	110
2 to 2.5	6.17	6.31	5.65	4.1	6.6

5.4.2 Correlation of Total and WET Lead

Total and corresponding WET lead concentrations are bivariate data with a linear structure. This linear structure should allow for the prediction of WET lead concentrations based on the maximum total lead concentrations presented in the tables above.

To estimate the degree of interrelation between total and corresponding WET lead values (*x* and *y*, respectively), the *correlation coefficient [r]* is used. The correlation coefficient is a ratio that ranges from +1 to –1. A *correlation coefficient* of +1 indicates a perfect direct relationship between two variables; a *correlation coefficient* of –1 indicates that one variable changes inversely with relation to the other. Between the two extremes is a spectrum of less-than-perfect relationships, including zero, which indicates the lack of any sort of linear relationship at all. The *correlation coefficient* was

calculated for six (x, y) data points (i.e., soil samples analyzed for both total lead [x] and WET lead [y]). The resulting *coefficient of determination* (r^2) equaled 0.8878, which yields a corresponding *correlation coefficient* (r) of 0.9422.

For the *correlation coefficient* that indicates a linear relationship between total and WET lead concentrations, it is possible to compute the line of dependence or a best-fit line between the two variables. A least squares method was used to find the equation of a best-fit line (regression line) by forcing the y-intercept equal to zero since that is a known point. The equation of the regression line was determined to be $y = 0.0689(x)$, where x represents total lead concentrations and y represents predicted WET lead concentrations.

This equation was used to estimate the expected WET lead concentrations for the total lead UCLs for the data set. Regression analysis results and a scatter plot depicting the (x, y) data points along with the regression line are included in Appendix C. The predicted WET lead concentrations are summarized in Table 6.

6.0 CONCLUSIONS

Waste classifications are evaluated based on the 90% UCL of the lead content for the relevant excavation depths; this has historically been considered sufficient to satisfy a good faith effort by the EPA as discussed in SW-846. Risk assessment characterization is based on the 95% UCL of the lead content in the waste for the relevant depths; this is in accordance with the Risk Assessment Guidance for Superfund (RAGS) Volume 1 Documentation for Exposure Assessment. Per Caltrans, the 90% UCLs are to be used to evaluate onsite reuse and the 95% UCLs are to be used to evaluate offsite disposal. If sample population groups do not contain sufficient data points to calculate UCLs, then the maximum total lead values are used in calculations.

6.1 Lead

The following table summarizes the predicted waste classification for excavated soil based on the calculated weighted averages of the total lead UCLs and predicted WET lead concentrations for data collected from the Site. Weighted averages are calculated by using the total lead concentration for each 0.5-foot depth interval as the value for the underlying 0.5-foot depth interval (unless a sample was collected from the underlying depth interval). The total and WET lead calculations are summarized below and in Table 6.

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	Waste Classification
0 to 1.0 ft	250	**17.2**	267	**Hazardous**
Underlying soil (1 to 2.5 ft)	*34.1*	*2.3*	*37.4*	*Non-hazardous*
0 to 2 ft	149	**10.3**	160	**Hazardous**
Underlying soil (2 to 2.5 ft)	*6.2*	*0.4*	*6.3*	*Non-hazardous*
0 to 2.5 ft	120	**8.3**	129	**Hazardous**

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal

Based on the data presented in the above table, soil excavated to a depth of one foot would be classified as a California hazardous waste since the 90% UCL-predicted WET lead concentration is greater than the lead STLC of 5.0 mg/l. Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste. Based on the reported DI-WET and pH results, soil excavated to a depth of one foot may be reused onsite (as Caltrans Type Y-1) in accordance with the DTSC Variance by placing the excavated soil under clean fill or pavement. Underlying soil (i.e., deeper than one foot) would be classified as non-hazardous based on lead content.

6.2 CAM 17 Metals

With the exception of chromium and lead, CAM 17 metals were reported in the samples at total concentrations below ten times their respective STLCs. The maximum total chromium concentration was less than the TTLC of 2,500 mg/kg and WET chromium was not detected at or above the laboratory reporting limit of 1.0 mg/l. Accordingly, soil would be classified as non-hazardous based on chromium content.

The CAM 17 metals concentrations in site soil were compared to ESLs. Arsenic and vanadium were reported at concentrations greater than their respective ESL values. ESLs and published background concentrations for these elements are summarized in the table below:

Metal	Mean	Maximum Concentration	RESIDENTIAL ESL	COMMERCIAL/ INDUSTRIAL ESL	CONSTRUCTION EXPOSURE ESL	PUBLISHED BACKGROUND MEAN[1]	PUBLISHED BACKGROUND RANGE [1]
Arsenic	1.2	1.9	0.39	1.6	15	3.5	0.6 to 11.0
Vanadium	50	93	16	200	770	112	39 to 288

Concentrations reported in milligrams per kilogram (mg/kg)
[1] Kearney Foundation of Soil Science, March 1996

The maximum arsenic concentration is greater than the residential and commercial/industrial land use ESLs; however, it is less than the construction exposure ESL and within the published background range. The SFRWQCB *November 2007 Update to Environmental Screening Levels (ESLs) Technical Document* states that ambient background concentrations of arsenic typically exceed risk-based screening levels. In such instances, it may be more appropriate to compare site data to regionally specific established background levels.

The maximum vanadium concentration is greater than the residential land use ESL; however, it is less than the commercial/industrial land use and construction exposure ESLs, and below the published background range.

Offsite reuse or disposal of excavated soil may be restricted based on metals content.

6.3 Petroleum Hydrocarbons

TPHg, BTEX, and FOCs were not detected above laboratory reporting limits.

TPHd was reported at concentrations ranging from 1.9 mg/kg to 130 mg/kg, with the surface samples (i.e. 0 to 0.5 ft) exceeding the residential and commercial/industrial ESLs of 83 mg/kg and below the construction/trench worker direct exposure ESL. Soil samples collected from depths of one foot and deeper did not contain TPHd at concentrations exceeding ESLs. TPHd has a calculated 95% UCL of 70.7 mg/kg.

TPHmo was reported at concentrations ranging from 2.4 mg/kg to 340 mg/kg, below the residential ESL of 370 mg/kg.

Based on the reported TPHd concentrations, offsite reuse or disposal of excavated soil may be restricted based on TPH content depending on proposed use. Additionally, onsite reuse of soil containing TPH in excess of commercial/industrial ESLs may require RWQCB concurrence. A summary of petroleum hydrocarbons results is included in Table 4.

6.4 Pesticides

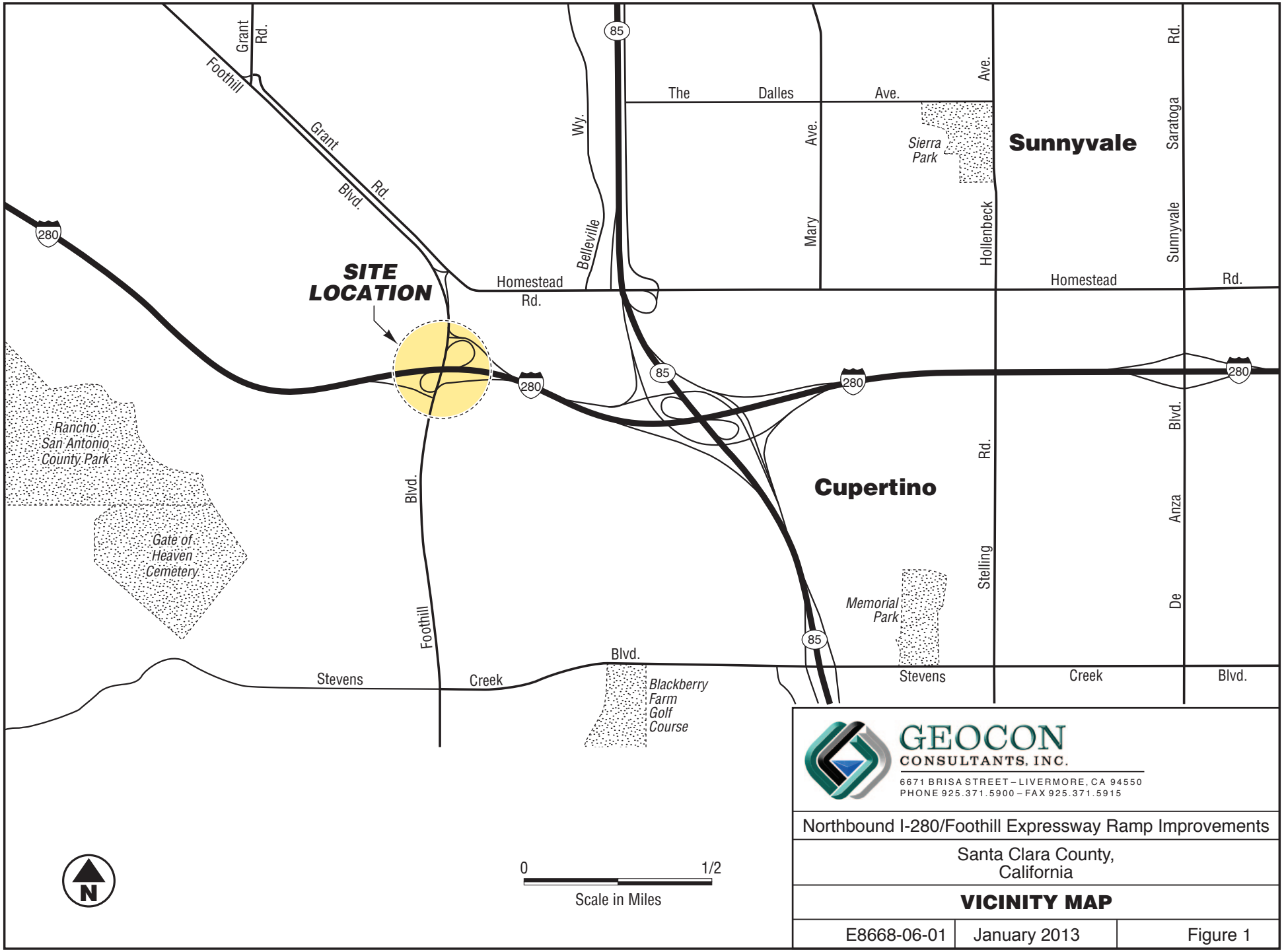
4,4'-DDT was reported at concentrations ranging from 2.2 to 3.4 micrograms per kilogram (µg/kg), below the residential ESL of 1,700 µg/kg. Chlordane was reported at concentrations ranging from 9.2 to 11 µg/kg, below the residential ESL of 440 µg/kg. Remaining pesticides were not detected. A summary of pesticides results is included in Table 4.

6.5 Naturally Occurring Asbestos

NOA was not detected in soil samples collected at the Site at or above the laboratory target sensitivity of 0.25%. A summary of NOA results is included in Table 5.

6.6 Worker Protection

The contractor(s) should prepare a project-specific health and safety plan to prevent or minimize worker exposure to metals and petroleum hydrocarbons in soil The plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of soil.



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Northbound I-280/Foothill Expressway Ramp Improvements

Santa Clara County, California

VICINITY MAP

E8668-06-01	January 2013	Figure 1

GEOCON CONSULTANTS, INC.

6671 BRISA STREET, LIVERMORE, CA 94550; PHONE 925 371-5900 - FAX 925 371-5915

NB I-280/Foothill Expressway Ramp Improvements

Santa Clara County, California

SITE PLAN

GEOCON Proj. No. E8668-06-01

EA No. 04-SCL-280 PM 11.2-11.5

January 2013

Figure 2

SITE0113

TABLE 1
Boring Coordinates
I-280 Foothill Expressway
Los Altos, California

Boring	Latitude	Longitude
NB1	37.334054556	-122.064239804
NB2	37.334301166	-122.064939220
NB3	37.334570294	-122.065596439
NB4	37.334916296	-122.066156369
NB5	37.335335708	-122.066686097
NB6	37.335682395	-122.067260263

TABLE 2
Summary of Lead and pH Results
I-280 Foothill Expressway
Los Altos, California

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	DI-WET Lead (mg/l)	TCLP Lead (mg/l)	pH
NB1-0	0 to 0.5	300	22	<0.50	0.68	7.9
NB1-1	1 to 1.5	32	---	---	---	---
NB1-2	2 to 2.5	6.4	---	---	---	---
NB2-0	0 to 0.5	210	13	<0.50	---	7.5
NB2-1	1 to 1.5	110	6.0	---	---	---
NB2-2	2 to 2.5	6.6	---	---	---	---
NB3-0	0 to 0.5	200	9.1	<0.50	---	8.0
NB3-1	1 to 1.5	6.3	---	---	---	---
NB3-2	2 to 2.5	6.6	---	---	---	---
NB4-0	0 to 0.5	340	26	<0.50	0.54	7.6
NB4-1	1 to 1.5	6.3	---	---	---	---
NB4-2	2 to 2.5	4.1	---	---	---	---
NB5-0	0 to 0.5	49	---	---	---	---
NB5-1	1 to 1.5	11	---	---	---	---
NB5-2	2 to 2.5	5.5	---	---	---	---
NB6-0	0 to 0.5	67	6.7	<0.50	---	7.7
NB6-1	1 to 1.5	5.4	---	---	---	---
NB6-2	2 to 2.5	4.7	---	---	---	---
Hazardous Waste Criteria						
TTLC (mg/kg)		1,000	---	---	---	---
STLC (mg/l)		---	5.0	---	---	---
TCLP (mg/l)		---	---	---	5.0	---

Notes:

mg/kg = Milligrams per kilogram
mg/l = Milligrams per liter
--- = Not analyzed
<5.0 = Not detected above the laboratory reporting limit
WET = Waste Extraction Test using citric acid as the extraction fluid
DI-WET = Waste Extraction Test using deionized water as the extraction fluid
TCLP = Toxicity Characteristic Leaching Procedure
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration

TABLE 3
Summary of CAM 17 Metals Results
I-280 Foothill Expressway
Los Altos, California

Sample ID	Sample Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
NB1-2	2 to 2.5	<2.0	1.9	290	<1.0	<1.0	22	5.4	16	6.4	<0.10	<1.0	25	<1.0	<1.0	<1.0	25	29
NB3-1	1 to 1.5	<2.0	<1.0	140	<1.0	<1.0	110 *<1.0*	27	43	6.3	<0.10	<1.0	100	<1.0	<1.0	<1.0	93	42
NB5-0	0 to 0.5	<2.0	1.2	120	<1.0	<1.0	37	11	32	49	<0.10	<1.0	39	<1.0	<1.0	<1.0	42	88
NB6-2	2 to 2.5	<2.0	1.7	76	<1.0	<1.0	35	10	24	4.7	<0.10	<1.0	37	<1.0	<1.0	<1.0	40	36
ESLs																		
Residential Land Use		6.3	0.39	750	4.0	1.7	750	40	230	200	1.3	40	150	10	20	1.3	16	600
Comm/Ind Land Use		40	1.6	1,500	8.0	7.4	750	80	230	750	10	40	150	10	40	16	200	600
Construction Exposure		310	15	2,600	98	39	1,200,000	94	310,000	750	58	78	260	3,900	3,900	62	770	230,000
Hazardous Waste Criteria																		
TTLC		500	500	10,000	75	100	2,500*	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000
STLC		15	5.0	100	0.75	1.0	5.0**	80	25	5.0	0.2	350	20	1.0	5.0	7.0	24	250
TCLP		---	5.0	100	---	1.0	6.0	---	---	5.0	0.2	---	---	1.0	5.0	---	---	---

Notes:

Results are shown in milligrams per kilogram (mg/kg).
Values listed for chromium are for Chromium III, as there is no standard for total chromium.
< = Analyte was not detected above the laboratory reporting limit.
ESLs = Environmental Screening Levels, Tables A and K-3, SFRWQCB, Revised May 2008.
TTLC = total threshold limit concentration
STLC = soluble threshold limit concentration
TCLP = toxicity characteristic leaching procedure
Values in italics indicate results of WET analysis

TABLE 4
Summary of Organic Compounds Results
I-280 Foothill Expressway
Los Altos, California

Sample ID	Sample Depth (ft)	TPHd (mg/kg)	TPHmo (mg/kg)	TPHg (mg/kg)	BTEX (ug/kg)	FOCs (ug/kg)	Pesticides (ug/kg)
NB1-0	0 to 0.5	79	210	<1.0	ND	ND	ND
NB2-0	0 to 0.5	---	---	---	---	---	ND
NB2-1	1 to 1.5	4.4	16	<1.0	ND	ND	---
NB3-0	0 to 0.5	---	---	---	---	---	4,4´-DDT = 2.2 Chlordane = 11
NB3-2	2 to 2.5	2.6	5.0	<1.0	ND	ND	---
NB4-0	0 to 0.5	130	340	<1.0	ND	ND	4,4´-DDT = 3.4 Chlordane = 9.9
NB5-0	0 to 0.5	---	---	---	---	---	ND
NB5-1	1 to 1.5	2.3	6.4	<1.0	ND	ND	---
NB6-0	0 to 0.5	---	---	---	---	---	4,4´-DDT = 2.4 Chlordane = 9.2
NB6-2	2 to 2.5	1.9	2.4	<1.0	ND	ND	---
	ESLs						
	Residential	83	370	83	---	---	4,4-DDT = 1,700 Chlordane = 440
	Commercial/Industrial	83	2,500	83	---	---	4,4-DDT = 4,000 Chlordane = 1,700
	Construction Exposure	4,200	12,000	4,200	---	---	4,4-DDT = 87,000 Chlordane = 21,000

Notes:
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilogram
TPHg = Total petroleum hydrocarbons as gasoline
TPHd = Total petroleum hydrocarbons as diesel
TPHmo = Total petroleum hydrocarbons as motor oil
BTEX = Benzene, toluene, ethylbenzene, and xylenes
FOCs = Fuel oxygenate compounds
--- = Not analyzed or no standard for this compound
< = Not detected above the stated laboratory reporting limit
ND = None detected
ESLs = Environmental Screening Levels

TABLE 5
Summary of NOA Results
I-280 Foothill Expressway
Los Altos, California

Sample ID	Sample Depth (feet)	Asbestos Content (% dry weight)
NB1-2	2 to 2.5	ND
NB2-2	2 to 2.5	ND
NB3-2	2 to 2.5	ND
NB4-2	2 to 2.5	ND
NB5-2	2 to 2.5	ND
NB6-2	2 to 2.5	ND

ND = None detected at 0.25% target analytical sensitivity.

TABLE 6
Summary of Lead Statistical Analysis
I-280 Foothill Expressway
Los Altos, California

Borings NB1 to NB6

TOTAL LEAD UCLs

	Total Lead (mg/kg)	
	90% UCL	**95% UCL**
0 to 0.5 foot	250	267
1.0 to 1.5 feet	48.0	52.9
2.0 to 2.5 feet[1]	6.2	6.3

EXCAVATION SCENARIOS

	Weighted Averages		
	90% UCL		95% UCL
Excavation Depth	**Total Lead (mg/kg)**	**WET Lead* (mg/l)**	**Total Lead (mg/kg)**
0 to 1.0 foot	250	17.2	267
Underlying Soil (1.0 to 2.5 feet)	*34.1*	*2.3*	*37.4*
0 to 2.0 feet	149	10.3	160
Underlying Soil (2.0 to 2.5 feet)	*6.2*	*0.4*	*6.3*
0 to 2.5 feet	120	8.3	129

Notes:

Weighted average values are based upon calculated UCLs for each depth interval.

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = Soluble (WET) lead concentrations are predicted using slope of regression line, where y = predicted soluble (WET) lead and x = total lead.

[1]= Maximum total lead value used for this sample depth due to insufficient data set to calculate UCLs

Regression Line Slope: $y =$ 0.0689 x

APPENDIX A

California Environmental Protection Agency
Department of Toxic Substances Control

VARIANCE

Applicant Names:

State of California
Department of Transportation
(Caltrans)
1120 N Street
Sacramento, California 95814

Variance No. V09HQSCD006

Effective Date: July 1, 2009

Expiration Date: July 1, 2014

Modification History:

Pursuant to California Health and Safety Code, Section 25143, the Department of Toxic Substances Control hereby issues the attached Variance consisting of 9 pages to the Department of Transportation.

Beverly Rikala
Team Leader, Operating Facilities Team
Department of Toxic Substances Control

Date: 6/30/09

1. INTRODUCTION.

a) Pursuant to Health and Safety Code, section 25143, the California Department of Toxic Substances Control (DTSC) grants this variance to the applicant below for waste considered to be hazardous solely because of its lead concentrations and as further specified herein.

b) DTSC hereby grants this variance only from the requirements specified herein and only in accordance with all terms and conditions specified herein.

2. IDENTIFYING INFORMATION.

APPLICANT/OWNER/OPERATOR

State of California
Department of Transportation, (Caltrans)
All Districts

3. TYPE OF VARIANCE.

Generation, Manifest, Transportation, Storage and Disposal.

4. ISSUANCE AND EXPIRATION DATES.

DATE ISSUED: July 1, 2009 EXPIRATION DATE: July 1, 2014

5. APPLICABLE STATUTES AND REGULATIONS. The hazardous waste that is the subject of this variance is fully regulated under Health and Safety Code, section 25100, et seq. and California Code of Regulations, title 22, division 4.5 except as specifically identified in Section 8 of this variance.

6. DEFINITION. For purposes of this variance, "lead-contaminated soil(s)" shall mean soil that meets the criteria for hazardous waste but contains less than 3397 mg/kg total lead and is hazardous primarily because of aerially-deposited lead contamination associated with exhaust emissions from the operation of motor vehicles.

7. FINDINGS/DETERMINATIONS. DTSC has determined that the variance applicant meets the requirements set forth in Health and Safety Code, section 25143 for a variance from specific regulatory requirements as outlined in Section 8 of this variance. The specific determinations and findings made by DTSC are as follows:

a) Caltrans intends to excavate, stockpile, transport, bury and cover large volumes of soil associated with highway construction projects. In the more urbanized highway corridors around the State this soil is contaminated with lead, primarily due to historic emissions from automobile exhausts. In situ sampling and laboratory testing has shown that some of the soil contains concentrations of lead in excess of State regulatory thresholds, and thus any generated waste from disturbance of the soil

would be regulated as hazardous waste. Such soil contains a Total Threshold Limit Concentration (TTLC) of 1000 milligrams per kilogram (mg/kg) or more lead and/or it meets or exceeds the Soluble Threshold Limit Concentration (STLC) for lead of 5 milligrams per liter (mg/l). A Human Health Risk Assessment prepared for this variance concludes that soil contaminated with elevated concentrations of lead can be managed in a way that presents no significant risk to human health.

b) The lead-contaminated soil will be placed only in Caltrans' right-of-way. Depending on concentration levels, the wastes will be covered with a minimum thickness of one (1) foot of non-hazardous soil or asphalt/concrete cover and will always be at least five (5) feet above the highest groundwater elevation. Caltrans will assure that proper health and safety procedures will be followed for workers, including any persons engaged in maintenance work in areas where the waste has been buried and covered.

c) DTSC finds and requires that the lead-contaminated soil excavated, stockpiled, transported, buried and covered pursuant to this variance is a non-RCRA hazardous waste, and that the waste management activity is insignificant as a potential hazard to human health and safety and the environment, when managed in accordance with the conditions, limitations and other requirements specified in this variance.

8. PROVISIONS WAIVED.

Provided Caltrans meets the terms and conditions of this variance, DTSC waives the hazardous waste management requirements of Health and Safety Code, Chapter 6.5 and California Code of Regulations, title 22 for the lead-contaminated soil that Caltrans reuses in projects that would require Caltrans to obtain a permit for a disposal facility and any other generator requirements that concern the transportation, manifesting, storage and land disposal of hazardous waste.

9. SPECIFIC CONDITIONS, LIMITATIONS AND OTHER REQUIREMENTS.

In order for the provisions discussed in section 8 to be waived, lead-contaminated soil must not exceed the contaminant concentrations discussed below and Caltrans management practices must meet all the following conditions:

a) Caltrans implementation of this variance shall comply with all applicable state laws and regulations for water quality control, water quality control plans, waste discharge requirements (including storm water permits), and others issued by the State Water Resources Control Board (SWRCB) and/or a California Regional Water Quality Control Board (RWQCB). Caltrans shall provide written notification to the appropriate RWQCB at least 30 days prior to advertisement for bids of projects that involve invocation of this variance, or as otherwise negotiated with the SWRCB or appropriate RWQCB.

b) The waivers in this variance shall only be applied to lead-contaminated soil that is not a RCRA hazardous waste and is hazardous primarily because of aerially-

deposited lead contamination associated with exhaust emissions from the operation of motor vehicles. The variance is not applicable to any other hazardous waste.

c) Soil containing 1.5 mg/l extractable lead or less (based on a modified waste extraction test using deionized water as the extractant) and 1411 mg/kg or less total lead may be used as fill provided that the lead-contaminated soil is placed a minimum of five (5) feet above the maximum historic water table elevation and covered with at least one (1) foot of nonhazardous soil that will be maintained by Caltrans to prevent future erosion.

d) Soil containing 150 mg/L extractable lead or less (based on a modified waste extraction test using deionized water as the extractant) and 3397 mg/kg or less total lead may be used as fill provided that the lead-contaminated soils are placed a minimum of five (5) feet above the maximum historic water table elevation and protected from infiltration by a pavement structure which will be maintained by Caltrans.

e) Lead-contaminated soil with a pH less than 5.5 but greater than 5.0 shall only be used as fill material under the paved portion of the roadway. Lead-contaminated soil with a pH at or less than 5.0 shall be managed as a hazardous waste.

f) For each project that has the potential to generate waste by disturbing lead-contaminated soil (as defined in 6), Caltrans shall conduct sampling and analysis to adequately characterize the soils containing aerially deposited lead in the areas of planned excavation along the project route. Such sampling and analysis shall include the Toxicity Characteristic Leaching Procedure (TCLP) as prescribed by the United States Environmental Protection Agency to determine whether concentrations of contaminants in soil exceed federal criteria for classification as a hazardous waste.

g) Lead-contaminated soil managed pursuant to this variance shall not be moved outside the designated corridor boundaries (see paragraph t) below. All lead-contaminated soil not buried and covered within the same Caltrans corridor where it originated is not eligible for management under this variance and shall be managed as a hazardous waste.

h) Lead-contaminated soil managed pursuant to this variance shall not be placed in areas where it would become in contact with groundwater or surface water (such as streams and rivers).

i) Lead-contaminated soil managed pursuant to this variance shall be buried and covered only in locations that are protected from erosion that may result from storm water run-on and run-off.

j) The lead-contaminated soil shall be buried and covered in a manner that will prevent accidental or deliberate breach of the asphalt, concrete, and/or cover soil.

k) The presence of lead-contaminated soil shall be incorporated into the projects' as-built drawings. The as-built drawings shall be annotated with the location, representative analytical data, and volume of lead-contaminated soil. The as-built drawings shall also state the depth of the cover. These as-built drawings shall be retained by Caltrans.

l) Caltrans shall ensure that no other hazardous wastes, other than the lead-contaminated hazardous waste soil, are placed in the burial areas.

m) Lead-contaminated soil shall not be buried within ten (10) feet of culverts or locations subject to frequent worker exposure.

n) Excavated lead-contaminated soil not placed into the designated area (fill area, roadbed area) by the end of the working day shall be stockpiled and covered with sheets of polyethylene or at least one foot of non-hazardous soil. The lead-contaminated soil, while stockpiled or under transport, shall be protected from contacting surface water and from being dislodged or transported by wind or storm water. The stockpile covers shall be inspected at least once a week and within 24 hours after rainstorms. If the lead-contaminated soil is stockpiled for more than 4 days from the time of excavation, Caltrans shall restrict public access to the stockpile by using barriers that meet the safety requirements of the construction zone. The lead-contaminated soil shall be stockpiled for no more than 90 days from the time the soil is first excavated. If the contaminated soil is stockpiled beyond the 90 day limit Caltrans shall:

1. notify DTSC in writing of the 90 day exceedance and expected date of removal;
2. perform weekly inspections of the stockpiled material to ensure that there is adequate protection from run-on, runoff, public access, and wind dispersion; and
3. notify DTSC on weekly basis of the stockpile status until the stockpile is removed.

The lead-contaminated soil shall be stockpiled for no more than 180 days from the time the soil is first excavated.

o) Caltrans shall ensure that all stockpiling of lead-contaminated soil remains within the project area of the specified corridor. Stockpiling of lead-contaminated soil within the specified corridor, but outside the project area, is prohibited.

p) Caltrans shall conduct confirmatory sampling of any stockpile area in areas not known or expected to contain lead-contaminated soil after removal of the lead-contaminated soil to ensure that contamination has not been left behind or has not migrated from the stockpiled material to the surrounding soils.

q) Caltrans shall stockpile lead-contaminated soil only on high ground (i.e. no sump areas or low points) so that stockpiled soil will not come in contact with surface

water run-on or run-off.

r) Caltrans shall not stockpile lead-contaminated soil in environmentally and ecologically sensitive areas.

s) Caltrans shall ensure that storm/rain run-off that has come into contact with stockpiled lead-contaminated soil will not flow to storm drains, inlets, or waters of the State.

t) Caltrans may dispose of the lead-contaminated soil only within the operating right-of-way of an existing highway, as defined in Streets and Highways Code, section 23. Caltrans may move lead-contaminated soil from one Caltrans project to another Caltrans project only if the lead-contaminated soil remains within the same designated corridor.

Caltrans shall record any movement of lead-contaminated soil by using a bill of lading. The bill of lading must contain: 1) the US DOT description including shipping name, hazard class and ID number; 2) handling codes; 3) quantity of material; 4) volume of material; 5) date of shipment; 6) origin and destination of shipment; and 7) any specific handling instructions. The bill of lading shall be referenced in and kept on file with the project's as-built drawings. The lead-contaminated soil must be kept covered during transportation.

u) For each specific corridor where this variance is to be implemented, all of the following information shall be submitted in writing to DTSC at least five (5) days before construction of any project begins:

1. plan drawing designating the boundaries of the corridor where lead-contaminated soils will be excavated, stockpiled, buried and covered;

2. a list of the Caltrans projects that the corridor encompasses;

3. a list of Caltrans contractors that will be conducting any phase of work on any project affected by this variance;

4. duration of corridor construction;

5. location where sampling and analytical data used to make lead concentration level determinations are kept (e.g. a particular Caltrans project file);

6. name and phone number (including area code) of project resident engineer and project manager;

7. location where Caltrans and contractor health and safety plan and records are kept;

8. location of project special provisions (including page or section number) for soil excavation, transportation, stockpile, burial and placement of cover material;

9. location of project drawings (including drawing page number) for soil excavation, burial and placement of cover in plan and cross section (for example, "The project plans are located at the resident engineer's office located at 5th and Main Streets, City of Fresno, See pages xxxxx of contract xxxx");

10. updated information if a Caltrans project within the corridor is added, changed or deleted; and

11. type of environmental document prepared for each project, date of adoption, document title, Clearing House number and where the document is available for review. A copy of the Caltrans Categorical Exemption, Categorical Exclusion Form, or if filed, the Notice of Exemption for any project shall be submitted to the DTSC Headquarters Project Manager.

v) Changes in location of lead-contaminated soil placement, quantities or protection measures (field changes) shall be noted in the resident engineer's project log within five (5) days of the field change.

w) Caltrans shall ensure that field changes are in compliance with the requirements of this variance.

x) Operational procedures described in the California Environmental Quality Act (CEQA) Special Initial Study shall be followed by Caltrans for activities conducted under this variance.

y) Caltrans shall implement appropriate health and safety procedures to protect its employees and the public, and to prevent or minimize exposure to potentially hazardous wastes. A project-specific health and safety plan must be prepared and implemented. The monitoring and exposure standards shall be based on construction standards for exposure to lead in California Code of Regulations, title 8, section 1532.1.

z) Caltrans shall provide a district Coordinator for this variance. This Coordinator will be the primary point of contact for information flowing to, or received from, DTSC regarding any matter or submission under this variance. Caltrans shall promptly notify DTSC of the name of Coordinator and any change in the Coordinator.

aa) Caltrans shall conduct regular inspections, consistent with Caltrans' Maintenance Division's current Pavement Inspection and Slope Inspection programs, of the locations where lead-contaminated soil has been buried and/or covered pursuant to this variance. If site inspection reveals deterioration of cover so that conditions in the variance are not met, Caltrans shall repair or replace the cover.

bb) Caltrans shall develop and implement a record keeping mechanisms to record and retain permanent records of all locations where lead-contaminated soil has been buried per this variance. The records shall be made available to DTSC.

cc) If areas subject to the terms of this variance are sold, relinquished or abandoned (including roadways), all future property owners shall be notified in writing in advance by Caltrans of the requirements of this variance, and Caltrans shall provide the owner with a copy of the variance. A copy of such a notice shall be sent to DTSC and contain the corridor location and project. Caltrans shall also disclose to DTSC and the new owner the location of areas where lead-contaminated soil has been buried. Future property owners shall be subject to the same requirements as Caltrans.

dd) For the purposes of informing the public about instances where the variance is implemented, Caltrans shall:

1. maintain current fact sheets at all Caltrans resident engineer offices and the Caltrans District office. Caltrans shall make the fact sheets available to anyone expressing an interest in variance-related work.

2. maintain a binder(s) containing copies of all reports submitted to DTSC at the District office. Caltrans shall ensure that the binders are readily accessible to the public.

3. carry out the following actions when it identifies additional projects:

(A) notify the public via a display advertisement in a newspaper of general circulation in that area.

(B) update and distribute the fact sheet to the mailing list and repository locations.

ee) Lead-contaminated soil may be buried only in areas where access is limited or where lead-contaminated soil is covered and contained by a pavement structure.

ff) Dust containing lead-contaminated soil must be controlled. Water or dust palliative may be applied to control dust. If visible dust migration occurs, all excavation, stockpiling and truck loading and burying must be stopped. The granting of this variance confers no relief on Caltrans from compliance with the laws, regulations and requirements enforced by any local air district or the California Air Resources Board.

gg) Sampling and analysis is required to show the lead-contaminated soil meets the variance criteria. All sampling and analysis must be conducted in accordance with the appropriate methods specified in U.S. EPA SW-846.

hh) DTSC retains the right to require Caltrans or any future owner to remove, and properly dispose of, lead-contaminated soil in the event DTSC determines it is necessary for protection of public health, safety or the environment.

ii) DTSC finds that some projects involving lead-contaminated soil are joint projects between Caltrans and other government entities. In these joint projects, Caltrans may not be the lead agency implementing the project although Caltrans is still involved if the project occurs on its right-of-way.

Caltrans may invoke this variance for joint projects where Caltrans and local government entity are involved provided that 1) the project is within the Caltrans Right-of-Way; 2) Caltrans reviews/ oversees all phases of the project including design, contracting, environmental assessment, construction, operation, and maintenance; and 3) Caltrans oversees the project to verify all variance conditions are complied with. Caltrans will be fully responsible for the variance notification and implementation in these joint projects.

jj) All correspondence shall be directed to the following office:

Hazardous Waste Permitting
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Attn: Caltrans Lead Variance Notification Unit

10. DISCLAIMER.

a) The issuance of this variance does not relieve Caltrans of the responsibility for compliance with Health and Safety Code, chapter 6.5, or the regulations adopted thereunder, and any other laws and regulations other than those specifically identified in Section 8 of this variance. Caltrans is subject to all terms and conditions herein. The granting of this variance confers no relief from compliance with any federal, State or local requirements other than those specifically provided herein.

b) The issuance of this variance does not release Caltrans from any liability associated with the handling of hazardous waste, except as specifically provided herein and subject to all terms and conditions of this variance.

11. VARIANCE MODIFICATION OR REVOCATION. This variance is subject to review at the discretion of DTSC and may be modified or revoked by DTSC upon change of ownership and at any other time pursuant to Health and Safety Code, section 25143.

12. CEQA DETERMINATION. DTSC adopted a Negative Declaration on June 30, 2009.

Approved:

6/30/09
Date

Beverly Rikala
Operating Facilities Team
Department of Toxic Substances Control

APPENDIX B

ADVANCED TECHNOLOGY LABORATORIES

December 14, 2012

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

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Tel: (925) 371-5900
Fax:(925) 371-5915

Re: ATL Work Order Number : 1204346

Client Reference : 280/FOOTHILL, E8668-06-01

Enclosed are the results for sample(s) received on December 07, 2012 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

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NB1-0	1204346-01	Soil	12/06/12 11:15	12/07/12 9:40
NB1-1	1204346-02	Soil	12/06/12 11:18	12/07/12 9:40
NB1-2	1204346-03	Soil	12/06/12 11:22	12/07/12 9:40
NB2-0	1204346-04	Soil	12/06/12 11:30	12/07/12 9:40
NB2-1	1204346-05	Soil	12/06/12 11:32	12/07/12 9:40
NB2-2	1204346-06	Soil	12/06/12 11:35	12/07/12 9:40
NB3-0	1204346-07	Soil	12/06/12 11:45	12/07/12 9:40
NB3-1	1204346-08	Soil	12/06/12 11:48	12/07/12 9:40
NB3-2	1204346-09	Soil	12/06/12 11:51	12/07/12 9:40
NB4-0	1204346-10	Soil	12/06/12 11:55	12/07/12 9:40
NB4-1	1204346-11	Soil	12/06/12 11:57	12/07/12 9:40
NB4-2	1204346-12	Soil	12/06/12 12:02	12/07/12 9:40
NB5-0	1204346-13	Soil	12/06/12 12:10	12/07/12 9:40
NB5-1	1204346-14	Soil	12/06/12 12:17	12/07/12 9:40
NB5-2	1204346-15	Soil	12/06/12 12:20	12/07/12 9:40
NB6-0	1204346-16	Soil	12/06/12 12:30	12/07/12 9:40
NB6-1	1204346-17	Soil	12/06/12 12:32	12/07/12 9:40
NB6-2	1204346-18	Soil	12/06/12 12:35	12/07/12 9:40

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB1-0

Lab ID: 1204346-01

Total Metals by ICP-AES EPA 6010B

Analyst: PT

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**300**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:46	

Gasoline Range Organics by EPA 8015B

Analyst: VN

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2L0201	12/10/2012	12/10/12 11:19	
Surrogate: 4-Bromofluorobenzene	*87.0 %*		*64 - 149*		B2L0201	12/10/2012	*12/10/12 11:19*	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**79**	20	NA	10	B2L0254	12/11/2012	12/11/12 22:09	
ORO	**210**	20	NA	10	B2L0254	12/11/2012	12/11/12 22:09	
Surrogate: p-Terphenyl	*80.5 %*		*39 - 123*		B2L0254	12/11/2012	*12/11/12 22:09*	

Organochlorine Pesticides by EPA 8081

Analyst: RP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4′-DDD	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
4,4′-DDE	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
4,4′-DDT [2C]	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
Aldrin	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
alpha-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
alpha-Chlordane [2C]	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
beta-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
Chlordane	ND	8.5	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
delta-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
Dieldrin	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
Endosulfan I	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
Endosulfan II	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
Endosulfan sulfate	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
Endrin	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
Endrin aldehyde	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
Endrin ketone	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB1-0

Lab ID: 1204346-01

Organochlorine Pesticides by EPA 8081

Analyst: RP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
gamma-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
gamma-Chlordane	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
Heptachlor	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
Heptachlor epoxide	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
Methoxychlor	ND	5.0	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
Toxaphene	ND	50	NA	1	B2L0286	12/12/2012	12/12/12 21:55	
Surrogate: Decachlorobiphenyl	*48.9 %*		*28 - 106*		B2L0286	12/12/2012	*12/12/12 21:55*	
Surrogate: Tetrachloro-m-xylene	*53.4 %*		*42 - 102*		B2L0286	12/12/2012	*12/12/12 21:55*	

Volatile Organic Compounds by EPA 8260

Analyst: TP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Benzene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:05	
Di-isopropyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:05	
Ethyl tert-butyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:05	
Ethylbenzene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:05	
m,p-Xylene	ND	10	NA	1	B2L0208	12/10/2012	12/10/12 13:05	
MTBE	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:05	
o-Xylene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:05	
tert-Amyl methyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:05	
tert-Butanol	ND	100	NA	1	B2L0208	12/10/2012	12/10/12 13:05	
Toluene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:05	
Surrogate: 1,2-Dichloroethane-d4	*104 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 13:05*	
Surrogate: 4-Bromofluorobenzene	*100 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 13:05*	
Surrogate: Dibromofluoromethane	*104 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 13:05*	
Surrogate: Toluene-d8	*102 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 13:05*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB1-1

Lab ID: 1204346-02

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

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**32**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:49	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB1-2

Lab ID: 1204346-03

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: PT**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Arsenic	**1.9**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Barium	**290**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Beryllium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Cadmium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Chromium	**22**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Cobalt	**5.4**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Copper	**16**	2.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Lead	**6.4**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Molybdenum	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Nickel	**25**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Selenium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Silver	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Thallium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Vanadium	**25**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	
Zinc	**29**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:50	

Mercury by AA (Cold Vapor) EPA 7471 — **Analyst: VV**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	NA	1	B2L0299	12/13/2012	12/13/12 13:24	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB2-0

Lab ID: 1204346-04

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

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**210**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:51	

Organochlorine Pesticides by EPA 8081 — **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
4,4´-DDE	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
4,4´-DDT [2C]	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
Aldrin	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
alpha-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
alpha-Chlordane [2C]	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
beta-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
Chlordane	ND	8.5	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
delta-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
Dieldrin	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
Endosulfan I	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
Endosulfan II	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
Endosulfan sulfate	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
Endrin	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
Endrin aldehyde	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
Endrin ketone	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
gamma-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
gamma-Chlordane	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
Heptachlor	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
Heptachlor epoxide	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
Methoxychlor	ND	5.0	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
Toxaphene	ND	50	NA	1	B2L0286	12/12/2012	12/12/12 22:53	
Surrogate: Decachlorobiphenyl	*20.9 %*	*28 - 106*			B2L0286	12/12/2012	*12/12/12 22:53*	S2
Surrogate: Tetrachloro-m-xylene	*31.3 %*	*42 - 102*			B2L0286	12/12/2012	*12/12/12 22:53*	S2

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB2-1

Lab ID: 1204346-05

Total Metals by ICP-AES EPA 6010B

Analyst: PT

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**110**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:53	

Gasoline Range Organics by EPA 8015B

Analyst: VN

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2L0201	12/10/2012	12/10/12 11:35	
Surrogate: 4-Bromofluorobenzene	*89.9 %*		*64 - 149*		B2L0201	12/10/2012	*12/10/12 11:35*	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**4.4**	1.0	NA	1	B2L0254	12/11/2012	12/11/12 21:36	
ORO	**16**	1.0	NA	1	B2L0254	12/11/2012	12/11/12 21:36	
Surrogate: p-Terphenyl	*109 %*		*39 - 123*		B2L0254	12/11/2012	*12/11/12 21:36*	

Volatile Organic Compounds by EPA 8260

Analyst: TP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Benzene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:25	
Di-isopropyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:25	
Ethyl tert-butyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:25	
Ethylbenzene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:25	
m,p-Xylene	ND	10	NA	1	B2L0208	12/10/2012	12/10/12 13:25	
MTBE	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:25	
o-Xylene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:25	
tert-Amyl methyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:25	
tert-Butanol	ND	100	NA	1	B2L0208	12/10/2012	12/10/12 13:25	
Toluene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:25	
Surrogate: 1,2-Dichloroethane-d4	*102 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 13:25*	
Surrogate: 4-Bromofluorobenzene	*98.9 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 13:25*	
Surrogate: Dibromofluoromethane	*105 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 13:25*	
Surrogate: Toluene-d8	*103 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 13:25*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB2-2

Lab ID: 1204346-06

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

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**6.6**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 14:54	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB3-0

Lab ID: 1204346-07

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

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**200**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:00	

Organochlorine Pesticides by EPA 8081 — **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
4,4´-DDE	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
4,4´-DDT [2C]	**2.2**	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
Aldrin	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
alpha-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
alpha-Chlordane [2C]	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
beta-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
Chlordane [2C]	**11**	8.5	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
delta-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
Dieldrin	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
Endosulfan I	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
Endosulfan II	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
Endosulfan sulfate	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
Endrin	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
Endrin aldehyde	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
Endrin ketone	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
gamma-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
gamma-Chlordane	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
Heptachlor	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
Heptachlor epoxide	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
Methoxychlor	ND	5.0	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
Toxaphene	ND	50	NA	1	B2L0286	12/12/2012	12/12/12 22:09	
Surrogate: Decachlorobiphenyl	*30.7 %*	*28 - 106*			B2L0286	12/12/2012	*12/12/12 22:09*	
Surrogate: Tetrachloro-m-xylene	*40.0 %*	*42 - 102*			B2L0286	12/12/2012	*12/12/12 22:09*	S2

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB3-1

Lab ID: 1204346-08

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: PT**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Arsenic	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Barium	**140**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Beryllium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Cadmium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Chromium	**110**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Cobalt	**27**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Copper	**43**	2.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Lead	**6.3**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Molybdenum	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Nickel	**100**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Selenium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Silver	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Thallium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Vanadium	**93**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	
Zinc	**42**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:01	

Mercury by AA (Cold Vapor) EPA 7471 — **Analyst: VV**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	NA	1	B2L0299	12/13/2012	12/13/12 13:26	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB3-2

Lab ID: 1204346-09

Total Metals by ICP-AES EPA 6010B

Analyst: PT

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**6.6**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:02	

Gasoline Range Organics by EPA 8015B

Analyst: VN

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2L0201	12/10/2012	12/10/12 11:50	
Surrogate: 4-Bromofluorobenzene	*86.6 %*		*64 - 149*		B2L0201	12/10/2012	*12/10/12 11:50*	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**2.6**	1.0	NA	1	B2L0254	12/11/2012	12/11/12 20:28	
ORO	**5.0**	1.0	NA	1	B2L0254	12/11/2012	12/11/12 20:28	
Surrogate: p-Terphenyl	*108 %*		*39 - 123*		B2L0254	12/11/2012	*12/11/12 20:28*	

Volatile Organic Compounds by EPA 8260

Analyst: TP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Benzene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:45	
Di-isopropyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:45	
Ethyl tert-butyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:45	
Ethylbenzene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:45	
m,p-Xylene	ND	10	NA	1	B2L0208	12/10/2012	12/10/12 13:45	
MTBE	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:45	
o-Xylene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:45	
tert-Amyl methyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:45	
tert-Butanol	ND	100	NA	1	B2L0208	12/10/2012	12/10/12 13:45	
Toluene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 13:45	
Surrogate: 1,2-Dichloroethane-d4	*105 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 13:45*	
Surrogate: 4-Bromofluorobenzene	*103 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 13:45*	
Surrogate: Dibromofluoromethane	*105 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 13:45*	
Surrogate: Toluene-d8	*108 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 13:45*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB4-0

Lab ID: 1204346-10

Total Metals by ICP-AES EPA 6010B

Analyst: PT

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**340**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:03	

Gasoline Range Organics by EPA 8015B

Analyst: VN

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2L0201	12/10/2012	12/10/12 12:06	
Surrogate: 4-Bromofluorobenzene	*85.2 %*		*64 - 149*		B2L0201	12/10/2012	*12/10/12 12:06*	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**130**	20	NA	10	B2L0254	12/11/2012	12/11/12 21:53	
ORO	**340**	20	NA	10	B2L0254	12/11/2012	12/11/12 21:53	
Surrogate: p-Terphenyl	*89.2 %*		*39 - 123*		B2L0254	12/11/2012	*12/11/12 21:53*	

Organochlorine Pesticides by EPA 8081

Analyst: RP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
4,4´-DDE	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
4,4´-DDT [2C]	**3.4**	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
Aldrin	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
alpha-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
alpha-Chlordane [2C]	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
beta-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
Chlordane [2C]	**9.9**	8.5	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
delta-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
Dieldrin	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
Endosulfan I	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
Endosulfan II	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
Endosulfan sulfate	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
Endrin	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
Endrin aldehyde	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
Endrin ketone	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB4-0

Lab ID: 1204346-10

Organochlorine Pesticides by EPA 8081

Analyst: RP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
gamma-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
gamma-Chlordane	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
Heptachlor	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
Heptachlor epoxide	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
Methoxychlor	ND	5.0	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
Toxaphene	ND	50	NA	1	B2L0286	12/12/2012	12/12/12 22:24	
Surrogate: Decachlorobiphenyl	*26.5 %*		*28 - 106*		B2L0286	12/12/2012	*12/12/12 22:24*	S2
Surrogate: Tetrachloro-m-xylene	*37.9 %*		*42 - 102*		B2L0286	12/12/2012	*12/12/12 22:24*	S2

Volatile Organic Compounds by EPA 8260

Analyst: TP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Benzene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:04	
Di-isopropyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:04	
Ethyl tert-butyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:04	
Ethylbenzene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:04	
m,p-Xylene	ND	10	NA	1	B2L0208	12/10/2012	12/10/12 14:04	
MTBE	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:04	
o-Xylene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:04	
tert-Amyl methyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:04	
tert-Butanol	ND	100	NA	1	B2L0208	12/10/2012	12/10/12 14:04	
Toluene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:04	
Surrogate: 1,2-Dichloroethane-d4	*108 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 14:04*	
Surrogate: 4-Bromofluorobenzene	*96.1 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 14:04*	
Surrogate: Dibromofluoromethane	*108 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 14:04*	
Surrogate: Toluene-d8	*105 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 14:04*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB4-1

Lab ID: 1204346-11

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

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**6.3**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:05	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB4-2

Lab ID: 1204346-12

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

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**4.1**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:06	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB5-0

Lab ID: 1204346-13

Title 22 Metals by ICP-AES EPA 6010B

Analyst: PT

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Arsenic	**1.2**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Barium	**120**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Beryllium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Cadmium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Chromium	**37**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Cobalt	**11**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Copper	**32**	2.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Lead	**49**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Molybdenum	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Nickel	**39**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Selenium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Silver	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Thallium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Vanadium	**42**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	
Zinc	**88**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:08	

Mercury by AA (Cold Vapor) EPA 7471

Analyst: VV

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	NA	1	B2L0299	12/13/2012	12/13/12 13:28	

Organochlorine Pesticides by EPA 8081

Analyst: RP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
4,4´-DDE	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
4,4´-DDT [2C]	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
Aldrin	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
alpha-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
alpha-Chlordane	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
beta-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
Chlordane	ND	8.5	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
delta-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
Dieldrin	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB5-0

Lab ID: 1204346-13

Organochlorine Pesticides by EPA 8081 **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
Endosulfan II	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
Endosulfan sulfate	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
Endrin	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
Endrin aldehyde	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
Endrin ketone	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
gamma-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
gamma-Chlordane	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
Heptachlor	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
Heptachlor epoxide	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
Methoxychlor	ND	5.0	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
Toxaphene	ND	50	NA	1	B2L0286	12/12/2012	12/12/12 18:33	
Surrogate: Decachlorobiphenyl	*43.1 %*		*28 - 106*		B2L0286	12/12/2012	*12/12/12 18:33*	
Surrogate: Tetrachloro-m-xylene	*50.1 %*		*42 - 102*		B2L0286	12/12/2012	*12/12/12 18:33*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB5-1
Lab ID: 1204346-14

Total Metals by ICP-AES EPA 6010B

Analyst: PT

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**11**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:09	

Gasoline Range Organics by EPA 8015B

Analyst: VN

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2L0201	12/10/2012	12/10/12 12:22	
Surrogate: 4-Bromofluorobenzene	*90.8 %*		*64 - 149*		B2L0201	12/10/2012	*12/10/12 12:22*	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**2.3**	1.0	NA	1	B2L0254	12/11/2012	12/11/12 21:19	
ORO	**6.4**	1.0	NA	1	B2L0254	12/11/2012	12/11/12 21:19	
Surrogate: p-Terphenyl	*112 %*		*39 - 123*		B2L0254	12/11/2012	*12/11/12 21:19*	

Volatile Organic Compounds by EPA 8260

Analyst: TP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Benzene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:24	
Di-isopropyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:24	
Ethyl tert-butyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:24	
Ethylbenzene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:24	
m,p-Xylene	ND	10	NA	1	B2L0208	12/10/2012	12/10/12 14:24	
MTBE	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:24	
o-Xylene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:24	
tert-Amyl methyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:24	
tert-Butanol	ND	100	NA	1	B2L0208	12/10/2012	12/10/12 14:24	
Toluene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:24	
Surrogate: 1,2-Dichloroethane-d4	*108 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 14:24*	
Surrogate: 4-Bromofluorobenzene	*96.9 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 14:24*	
Surrogate: Dibromofluoromethane	*112 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 14:24*	
Surrogate: Toluene-d8	*104 %*		*70 - 130*		B2L0208	12/10/2012	*12/10/12 14:24*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB5-2

Lab ID: 1204346-15

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

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**5.5**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:11	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB6-0

Lab ID: 1204346-16

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

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**67**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:13	

Organochlorine Pesticides by EPA 8081 — **Analyst: RP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
4,4´-DDE	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
4,4´-DDT [2C]	**2.4**	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
Aldrin	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
alpha-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
alpha-Chlordane [2C]	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
beta-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
Chlordane [2C]	**9.2**	8.5	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
delta-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
Dieldrin	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
Endosulfan I	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
Endosulfan II	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
Endosulfan sulfate	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
Endrin	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
Endrin aldehyde	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
Endrin ketone	ND	2.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
gamma-BHC	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
gamma-Chlordane	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
Heptachlor	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
Heptachlor epoxide	ND	1.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
Methoxychlor	ND	5.0	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
Toxaphene	ND	50	NA	1	B2L0286	12/12/2012	12/12/12 22:38	
Surrogate: Decachlorobiphenyl	*33.5 %*	*28 - 106*			B2L0286	12/12/2012	*12/12/12 22:38*	
Surrogate: Tetrachloro-m-xylene	*44.0 %*	*42 - 102*			B2L0286	12/12/2012	*12/12/12 22:38*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB6-1

Lab ID: 1204346-17

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

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**5.4**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:18	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB6-2

Lab ID: 1204346-18

Title 22 Metals by ICP-AES EPA 6010B

Analyst: PT

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Arsenic	**1.7**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Barium	**76**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Beryllium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Cadmium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Chromium	**35**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Cobalt	**10**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Copper	**24**	2.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Lead	**4.7**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Molybdenum	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Nickel	**37**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Selenium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Silver	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Thallium	ND	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Vanadium	**40**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	
Zinc	**36**	1.0	NA	1	B2L0242	12/11/2012	12/11/12 15:19	

Mercury by AA (Cold Vapor) EPA 7471

Analyst: VV

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	NA	1	B2L0299	12/13/2012	12/13/12 13:30	

Gasoline Range Organics by EPA 8015B

Analyst: VN

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2L0201	12/10/2012	12/10/12 12:37	
Surrogate: 4-Bromofluorobenzene	*90.6 %*		*64 - 149*		B2L0201	12/10/2012	*12/10/12 12:37*	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**1.9**	1.0	NA	1	B2L0254	12/11/2012	12/11/12 20:12	
ORO	**2.4**	1.0	NA	1	B2L0254	12/11/2012	12/11/12 20:12	
Surrogate: p-Terphenyl	*109 %*		*39 - 123*		B2L0254	12/11/2012	*12/11/12 20:12*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Client Sample ID NB6-2

Lab ID: 1204346-18

Volatile Organic Compounds by EPA 8260 **Analyst: TP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Benzene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:43	
Di-isopropyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:43	
Ethyl tert-butyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:43	
Ethylbenzene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:43	
m,p-Xylene	ND	10	NA	1	B2L0208	12/10/2012	12/10/12 14:43	
MTBE	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:43	
o-Xylene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:43	
tert-Amyl methyl ether	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:43	
tert-Butanol	ND	100	NA	1	B2L0208	12/10/2012	12/10/12 14:43	
Toluene	ND	5.0	NA	1	B2L0208	12/10/2012	12/10/12 14:43	
Surrogate: 1,2-Dichloroethane-d4	*107 %*	*70 - 130*			B2L0208	12/10/2012	*12/10/12 14:43*	
Surrogate: 4-Bromofluorobenzene	*101 %*	*70 - 130*			B2L0208	12/10/2012	*12/10/12 14:43*	
Surrogate: Dibromofluoromethane	*108 %*	*70 - 130*			B2L0208	12/10/2012	*12/10/12 14:43*	
Surrogate: Toluene-d8	*107 %*	*70 - 130*			B2L0208	12/10/2012	*12/10/12 14:43*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

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 B2L0242 - EPA 3050B									
Blank (B2L0242-BLK1)				Prepared: 12/11/2012 Analyzed: 12/11/2012					
Lead	ND	1.0			NR				
LCS (B2L0242-BS1)				Prepared: 12/11/2012 Analyzed: 12/11/2012					
Lead	48.9513	1.0	50.0000		97.9	80 - 120			
Matrix Spike (B2L0242-MS1)		**Source: 1204346-01**		Prepared: 12/11/2012 Analyzed: 12/12/2012					
Lead	601.476	1.0	125.000	304.681	237	45 - 111			M1
Matrix Spike Dup (B2L0242-MSD1)		**Source: 1204346-01**		Prepared: 12/11/2012 Analyzed: 12/12/2012					
Lead	618.049	1.0	125.000	304.681	251	45 - 111	2.72	20	M1

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Title 22 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 B2L0242 - EPA 3050B									
Blank (B2L0242-BLK1)				Prepared: 12/11/2012 Analyzed: 12/11/2012					
Antimony	ND	2.0			NR				
Arsenic	ND	1.0			NR				
Barium	ND	1.0			NR				
Beryllium	ND	1.0			NR				
Cadmium	ND	1.0			NR				
Chromium	ND	1.0			NR				
Cobalt	ND	1.0			NR				
Copper	ND	2.0			NR				
Lead	ND	1.0			NR				
Molybdenum	ND	1.0			NR				
Nickel	ND	1.0			NR				
Selenium	ND	1.0			NR				
Silver	ND	1.0			NR				
Thallium	ND	1.0			NR				
Vanadium	ND	1.0			NR				
Zinc	ND	1.0			NR				
LCS (B2L0242-BS1)				Prepared: 12/11/2012 Analyzed: 12/11/2012					
Antimony	48.0624	2.0	50.0000		96.1	80 - 120			
Arsenic	46.4026	1.0	50.0000		92.8	80 - 120			
Barium	47.9333	1.0	50.0000		95.9	80 - 120			
Beryllium	47.9170	1.0	50.0000		95.8	80 - 120			
Cadmium	46.3401	1.0	50.0000		92.7	80 - 120			
Chromium	49.8049	1.0	50.0000		99.6	80 - 120			
Cobalt	48.2425	1.0	50.0000		96.5	80 - 120			
Copper	50.4572	2.0	50.0000		101	80 - 120			
Lead	48.9513	1.0	50.0000		97.9	80 - 120			
Molybdenum	50.6596	1.0	50.0000		101	80 - 120			
Nickel	47.2864	1.0	50.0000		94.6	80 - 120			
Selenium	43.6366	1.0	50.0000		87.3	80 - 120			
Silver	48.0891	1.0	50.0000		96.2	80 - 120			
Thallium	51.1801	1.0	50.0000		102	80 - 120			
Vanadium	49.9538	1.0	50.0000		99.9	80 - 120			
Zinc	48.2139	1.0	50.0000		96.4	80 - 120			
Matrix Spike (B2L0242-MS1)		**Source: 1204346-01**		Prepared: 12/11/2012 Analyzed: 12/12/2012					
Antimony	67.7971	2.0	125.000	1.45537	53.1	34 - 102			
Arsenic	95.2160	1.0	125.000	1.66244	74.8	56 - 101			
Barium	299.113	1.0	125.000	241.330	46.2	31 - 136			
Beryllium	92.0596	1.0	125.000	ND	73.6	60 - 103			
Cadmium	82.1758	1.0	125.000	0.801250	65.1	53 - 100			
Chromium	137.163	1.0	125.000	41.7608	76.3	52 - 113			

Geocon Consultants, Inc.
6671 Brisa Street
Livermore , CA 94550

Project Number : 280/FOOTHILL, E8668-06-01
Report To : Chris Giuntoli
Reported : 12/14/2012

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2L0242 - EPA 3050B (continued)									
Matrix Spike (B2L0242-MS1) - Continued		**Source: 1204346-01**		Prepared: 12/11/2012 Analyzed: 12/12/2012					
Cobalt	92.1100	1.0	125.000	9.11212	66.4	53 - 103			
Copper	135.970	2.0	125.000	52.0784	67.1	56 - 121			
Lead	601.476	1.0	125.000	304.681	237	45 - 111			M1
Molybdenum	90.4384	1.0	125.000	1.08629	71.5	56 - 102			
Nickel	127.284	1.0	125.000	45.0838	65.8	46 - 111			
Selenium	89.1250	1.0	125.000	ND	71.3	48 - 103			
Silver	98.2820	1.0	125.000	ND	78.6	56 - 113			
Thallium	75.2032	1.0	125.000	ND	60.2	48 - 103			
Vanadium	127.984	1.0	125.000	36.7929	73.0	52 - 119			
Zinc	233.044	1.0	125.000	184.911	38.5	30 - 124			
Matrix Spike Dup (B2L0242-MSD1)		**Source: 1204346-01**		Prepared: 12/11/2012 Analyzed: 12/12/2012					
Antimony	74.5011	2.0	125.000	1.45537	58.4	34 - 102	9.42	20	
Arsenic	101.251	1.0	125.000	1.66244	79.7	56 - 101	6.14	20	
Barium	337.629	1.0	125.000	241.330	77.0	31 - 136	12.1	20	
Beryllium	99.3782	1.0	125.000	ND	79.5	60 - 103	7.65	20	
Cadmium	88.5028	1.0	125.000	0.801250	70.2	53 - 100	7.41	20	
Chromium	140.242	1.0	125.000	41.7608	78.8	52 - 113	2.22	20	
Cobalt	99.1398	1.0	125.000	9.11212	72.0	53 - 103	7.35	20	
Copper	147.414	2.0	125.000	52.0784	76.3	56 - 121	8.08	20	
Lead	618.049	1.0	125.000	304.681	251	45 - 111	2.72	20	M1
Molybdenum	98.3834	1.0	125.000	1.08629	77.8	56 - 102	8.42	20	
Nickel	133.838	1.0	125.000	45.0838	71.0	46 - 111	5.02	20	
Selenium	95.9215	1.0	125.000	ND	76.7	48 - 103	7.35	20	
Silver	106.182	1.0	125.000	ND	84.9	56 - 113	7.73	20	
Thallium	80.3142	1.0	125.000	ND	64.3	48 - 103	6.57	20	
Vanadium	137.480	1.0	125.000	36.7929	80.6	52 - 119	7.15	20	
Zinc	233.428	1.0	125.000	184.911	38.8	30 - 124	0.165	20	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Mercury by AA (Cold Vapor) EPA 7471 - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2L0299 - EPA 7471									
Blank (B2L0299-BLK1)				Prepared: 12/13/2012 Analyzed: 12/13/2012					
Mercury	ND	0.10			NR				
LCS (B2L0299-BS1)				Prepared: 12/13/2012 Analyzed: 12/13/2012					
Mercury	0.833032	0.10	0.833333		100	80 - 120			
Matrix Spike (B2L0299-MS1)		**Source: 1204322-01**		Prepared: 12/13/2012 Analyzed: 12/13/2012					
Mercury	0.347767	0.10	0.833333	ND	41.7	70 - 130			M2
Matrix Spike (B2L0299-MS2)		**Source: 1204322-01**		Prepared: 12/13/2012 Analyzed: 12/13/2012					
Mercury	0.001774		5.00000E-3	-8.0E-7	35.5	70 - 130			M2
Matrix Spike Dup (B2L0299-MSD1)		**Source: 1204322-01**		Prepared: 12/13/2012 Analyzed: 12/13/2012					
Mercury	0.310025	0.10	0.833333	ND	37.2	70 - 130	11.5	20	M2

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Gasoline Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2L0201 - GCVOAS									
Blank (B2L0201-BLK1)					Prepared: 12/10/2012 Analyzed: 12/10/2012				
Gasoline Range Organics	ND	1.0			NR				
Surrogate: 4-Bromofluorobenzene	*0.08820*		*0.100000*		*88.2*	*64 - 149*			
LCS (B2L0201-BS1)					Prepared: 12/10/2012 Analyzed: 12/10/2012				
Gasoline Range Organics	4.32200		5.00000		86.4	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1052*		*0.100000*		*105*	*64 - 149*			
LCS Dup (B2L0201-BSD1)					Prepared: 12/10/2012 Analyzed: 12/10/2012				
Gasoline Range Organics	4.99600		5.00000		99.9	70 - 130	14.5	20	
Surrogate: 4-Bromofluorobenzene	*0.1162*		*0.100000*		*116*	*64 - 149*			
Matrix Spike (B2L0201-MS1)		**Source: 1204346-01**			Prepared: 12/10/2012 Analyzed: 12/10/2012				
Gasoline Range Organics	4.23900		5.00000	0.157000	81.6	40 - 125			
Surrogate: 4-Bromofluorobenzene	*0.09744*		*0.100000*		*97.4*	*64 - 149*			
Matrix Spike Dup (B2L0201-MSD1)		**Source: 1204346-01**			Prepared: 12/10/2012 Analyzed: 12/10/2012				
Gasoline Range Organics	4.53500		5.00000	0.157000	87.6	40 - 125	6.75	20	
Surrogate: 4-Bromofluorobenzene	*0.1078*		*0.100000*		*108*	*64 - 149*			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2L0254 - GCSEMI_DRO_SOIL_LL									
Blank (B2L0254-BLK1)					Prepared: 12/11/2012 Analyzed: 12/11/2012				
DRO	ND	1.0			NR				
ORO	ND	1.0			NR				
Surrogate: p-Terphenyl	*2.379*		*2.66667*		*89.2*	*39 - 123*			
LCS (B2L0254-BS1)					Prepared: 12/11/2012 Analyzed: 12/11/2012				
DRO	22.7143	1.0	33.3333		68.1	37 - 109			
Surrogate: p-Terphenyl	*2.044*		*2.66667*		*76.7*	*39 - 123*			
Matrix Spike (B2L0254-MS1)		**Source: 1204346-09**			Prepared: 12/11/2012 Analyzed: 12/11/2012				
DRO	24.8633	1.0	33.3333	2.60000	66.8	29 - 107			
Surrogate: p-Terphenyl	*2.788*		*2.66667*		*105*	*39 - 123*			
Matrix Spike Dup (B2L0254-MSD1)		**Source: 1204346-09**			Prepared: 12/11/2012 Analyzed: 12/11/2012				
DRO	26.6490	1.0	33.3333	2.60000	72.1	29 - 107	6.93	20	
Surrogate: p-Terphenyl	*2.916*		*2.66667*		*109*	*39 - 123*			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2L0286 - GCSEMI_PCB/PEST									
Blank (B2L0286-BLK1)				Prepared: 12/12/2012 Analyzed: 12/12/2012					
4,4´-DDD	ND	2.0			NR				
4,4´-DDD [2C]	ND	2.0			NR				
4,4´-DDE	ND	2.0			NR				
4,4´-DDE [2C]	ND	2.0			NR				
4,4´-DDT	ND	2.0			NR				
4,4´-DDT [2C]	ND	2.0			NR				
Aldrin	ND	1.0			NR				
Aldrin [2C]	ND	1.0			NR				
alpha-BHC	ND	1.0			NR				
alpha-BHC [2C]	ND	1.0			NR				
alpha-Chlordane	ND	1.0			NR				
alpha-Chlordane [2C]	ND	1.0			NR				
beta-BHC	ND	1.0			NR				
beta-BHC [2C]	ND	1.0			NR				
Chlordane	ND	8.5			NR				
Chlordane [2C]	ND	8.5			NR				
delta-BHC	ND	1.0			NR				
delta-BHC [2C]	ND	1.0			NR				
Dieldrin	ND	2.0			NR				
Dieldrin [2C]	ND	2.0			NR				
Endosulfan I	ND	1.0			NR				
Endosulfan I [2C]	ND	1.0			NR				
Endosulfan II	ND	2.0			NR				
Endosulfan II [2C]	ND	2.0			NR				
Endosulfan sulfate	ND	2.0			NR				
Endosulfan Sulfate [2C]	ND	2.0			NR				
Endrin	ND	2.0			NR				
Endrin [2C]	ND	2.0			NR				
Endrin aldehyde	ND	2.0			NR				
Endrin aldehyde [2C]	ND	2.0			NR				
Endrin ketone	ND	2.0			NR				
Endrin ketone [2C]	ND	2.0			NR				
gamma-BHC	ND	1.0			NR				
gamma-BHC [2C]	ND	1.0			NR				
gamma-Chlordane	ND	1.0			NR				
gamma-Chlordane [2C]	ND	1.0			NR				
Heptachlor	ND	1.0			NR				
Heptachlor [2C]	ND	1.0			NR				
Heptachlor epoxide	ND	1.0			NR				
Heptachlor epoxide [2C]	ND	1.0			NR				
Methoxychlor	ND	5.0			NR				

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2L0286 - GCSEMI_PCB/PEST (continued)									
Blank (B2L0286-BLK1) - Continued					Prepared: 12/12/2012 Analyzed: 12/12/2012				
Methoxychlor [2C]	ND	5.0			NR				
Toxaphene	ND	50			NR				
Toxaphene [2C]	ND	50			NR				
Surrogate: Decachlorobiphenyl	*12.70*		*16.6667*		*76.2*	*28 - 106*			
Surrogate: Decachlorobiphenyl [2C]	*13.03*		*16.6667*		*78.2*	*28 - 106*			
Surrogate: Tetrachloro-m-xylene	*12.88*		*16.6667*		*77.3*	*42 - 102*			
Surrogate: Tetrachloro-m-xylene [2C]	*13.28*		*16.6667*		*79.7*	*42 - 102*			
LCS (B2L0286-BS1)					Prepared: 12/12/2012 Analyzed: 12/12/2012				
4,4´-DDT	12.5242	2.0	16.6667		75.1	50 - 124			
4,4´-DDT [2C]	12.9348	2.0	16.6667		77.6	50 - 124			
Aldrin	12.8610	1.0	16.6667		77.2	55 - 111			
Aldrin [2C]	12.4792	1.0	16.6667		74.9	55 - 111			
Dieldrin	12.3648	2.0	16.6667		74.2	58 - 110			
Dieldrin [2C]	12.9792	2.0	16.6667		77.9	58 - 110			
Endrin	11.0327	2.0	16.6667		66.2	54 - 103			
Endrin [2C]	11.8862	2.0	16.6667		71.3	54 - 103			
gamma-BHC	13.2570	1.0	16.6667		79.5	58 - 114			
gamma-BHC [2C]	13.5710	1.0	16.6667		81.4	58 - 114			
Heptachlor	12.9985	1.0	16.6667		78.0	55 - 119			
Heptachlor [2C]	14.0137	1.0	16.6667		84.1	55 - 119			
Surrogate: Decachlorobiphenyl	*12.34*		*16.6667*		*74.0*	*28 - 106*			
Surrogate: Decachlorobiphenyl [2C]	*12.64*		*16.6667*		*75.8*	*28 - 106*			
Surrogate: Tetrachloro-m-xylene	*12.46*		*16.6667*		*74.8*	*42 - 102*			
Surrogate: Tetrachloro-m-xylene [2C]	*12.68*		*16.6667*		*76.1*	*42 - 102*			
Matrix Spike (B2L0286-MS1)		**Source: 1204346-13**			Prepared: 12/12/2012 Analyzed: 12/12/2012				
4,4´-DDT	9.24367	2.0	16.6667	0.679000	51.4	12 - 174			
4,4´-DDT [2C]	8.69133	2.0	16.6667	0.805500	47.3	12 - 174			
Aldrin	8.38600	1.0	16.6667	ND	50.3	31 - 136			
Aldrin [2C]	7.56217	1.0	16.6667	ND	45.4	31 - 136			
Dieldrin	7.70100	2.0	16.6667	ND	46.2	24 - 151			
Dieldrin [2C]	8.55617	2.0	16.6667	ND	51.3	24 - 151			
Endrin	7.32983	2.0	16.6667	ND	44.0	21 - 151			
Endrin [2C]	7.55600	2.0	16.6667	ND	45.3	21 - 151			
gamma-BHC	7.61417	1.0	16.6667	ND	45.7	29 - 142			
gamma-BHC [2C]	7.21433	1.0	16.6667	ND	43.3	29 - 142			
Heptachlor	8.92900	1.0	16.6667	ND	53.6	25 - 154			
Heptachlor [2C]	8.67083	1.0	16.6667	ND	52.0	25 - 154			
Surrogate: Decachlorobiphenyl	*6.726*		*16.6667*		*40.4*	*28 - 106*			
Surrogate: Decachlorobiphenyl [2C]	*7.808*		*16.6667*		*46.8*	*28 - 106*			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2L0286 - GCSEMI_PCB/PEST (continued)									
Matrix Spike (B2L0286-MS1) - Continued		**Source: 1204346-13**		Prepared: 12/12/2012 Analyzed: 12/12/2012					
Surrogate: Tetrachloro-m-xylene	*8.406*		*16.6667*		*50.4*	*42 - 102*			
Surrogate: Tetrachloro-m-xylene [2C]	*7.807*		*16.6667*		*46.8*	*42 - 102*			
Matrix Spike Dup (B2L0286-MSD1)		**Source: 1204346-13**		Prepared: 12/12/2012 Analyzed: 12/12/2012					
4,4´-DDT	8.43100	2.0	16.6667	0.679000	46.5	12 - 174	9.20	20	
4,4´-DDT [2C]	8.12350	2.0	16.6667	0.805500	43.9	12 - 174	6.75	20	
Aldrin	7.93200	1.0	16.6667	ND	47.6	31 - 136	5.56	20	
Aldrin [2C]	7.26400	1.0	16.6667	ND	43.6	31 - 136	4.02	20	
Dieldrin	7.00350	2.0	16.6667	ND	42.0	24 - 151	9.49	20	
Dieldrin [2C]	8.01767	2.0	16.6667	ND	48.1	24 - 151	6.50	20	
Endrin	6.70450	2.0	16.6667	ND	40.2	21 - 151	8.91	20	
Endrin [2C]	7.12250	2.0	16.6667	ND	42.7	21 - 151	5.91	20	
gamma-BHC	7.23150	1.0	16.6667	ND	43.4	29 - 142	5.16	20	
gamma-BHC [2C]	6.82167	1.0	16.6667	ND	40.9	29 - 142	5.60	20	
Heptachlor	8.60633	1.0	16.6667	ND	51.6	25 - 154	3.68	20	
Heptachlor [2C]	8.39200	1.0	16.6667	ND	50.4	25 - 154	3.27	20	
Surrogate: Decachlorobiphenyl	*7.602*		*16.6667*		*45.6*	*28 - 106*			
Surrogate: Decachlorobiphenyl [2C]	*7.285*		*16.6667*		*43.7*	*28 - 106*			
Surrogate: Tetrachloro-m-xylene	*8.035*		*16.6667*		*48.2*	*42 - 102*			
Surrogate: Tetrachloro-m-xylene [2C]	*7.518*		*16.6667*		*45.1*	*42 - 102*			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2L0208 - MSVOAS									
Blank (B2L0208-BLK1)				Prepared: 12/10/2012 Analyzed: 12/10/2012					
Benzene	ND	5.0			NR				
Di-isopropyl ether	ND	5.0			NR				
Ethyl tert-butyl ether	ND	5.0			NR				
Ethylbenzene	ND	5.0			NR				
m,p-Xylene	ND	10			NR				
MTBE	ND	5.0			NR				
o-Xylene	ND	5.0			NR				
tert-Amyl methyl ether	ND	5.0			NR				
tert-Butanol	ND	100			NR				
Toluene	ND	5.0			NR				
Surrogate: 1,2-Dichloroethane-d4	*51.11*		*50.0000*		*102*	*70 - 130*			
Surrogate: 4-Bromofluorobenzene	*50.12*		*50.0000*		*100*	*70 - 130*			
Surrogate: Dibromofluoromethane	*50.54*		*50.0000*		*101*	*70 - 130*			
Surrogate: Toluene-d8	*52.16*		*50.0000*		*104*	*70 - 130*			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Volatile Organic Compounds by EPA 8260 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2L0208 - MSVOAS (continued)									
LCS (B2L0208-BS1)				Prepared: 12/10/2012 Analyzed: 12/10/2012					
1,1-Dichloroethene	56.4500	5.0	50.0000		113	70 - 130			
Benzene	118.980	5.0	100.000		119	70 - 130			
Chlorobenzene	59.9300	5.0	50.0000		120	70 - 130			
MTBE	58.8000	5.0	50.0000		118	70 - 130			
Toluene	114.130	5.0	100.000		114	70 - 130			
Trichloroethene	58.3400	5.0	50.0000		117	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	*50.21*		*50.0000*		*100*	*70 - 130*			
Surrogate: 4-Bromofluorobenzene	*50.94*		*50.0000*		*102*	*70 - 130*			
Surrogate: Dibromofluoromethane	*51.59*		*50.0000*		*103*	*70 - 130*			
Surrogate: Toluene-d8	*53.28*		*50.0000*		*107*	*70 - 130*			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Volatile Organic Compounds by EPA 8260 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2L0208 - MSVOAS (continued)									
LCS Dup (B2L0208-BSD1)				Prepared: 12/10/2012 Analyzed: 12/10/2012					
1,1-Dichloroethene	57.3800	5.0	50.0000		115	70 - 130	1.63	20	
Benzene	120.410	5.0	100.000		120	70 - 130	1.19	20	
Chlorobenzene	60.1400	5.0	50.0000		120	70 - 130	0.350	20	
MTBE	60.6100	5.0	50.0000		121	70 - 130	3.03	20	
Toluene	115.800	5.0	100.000		116	70 - 130	1.45	20	
Trichloroethene	59.1300	5.0	50.0000		118	70 - 130	1.35	20	
Surrogate: 1,2-Dichloroethane-d4	*49.47*		*50.0000*		*98.9*	*70 - 130*			
Surrogate: 4-Bromofluorobenzene	*51.31*		*50.0000*		*103*	*70 - 130*			
Surrogate: Dibromofluoromethane	*51.44*		*50.0000*		*103*	*70 - 130*			
Surrogate: Toluene-d8	*54.02*		*50.0000*		*108*	*70 - 130*			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Volatile Organic Compounds by EPA 8260 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2L0208 - MSVOAS (continued)									
Matrix Spike (B2L0208-MS1)		**Source: 1204346-01**		Prepared: 12/10/2012 Analyzed: 12/10/2012					
1,1-Dichloroethene	49.7700	5.0	50.0000	ND	99.5	70 - 130			
Benzene	103.880	5.0	100.000	ND	104	70 - 130			
Chlorobenzene	45.4200	5.0	50.0000	ND	90.8	70 - 130			
MTBE	53.9100	5.0	50.0000	ND	108	70 - 130			
Toluene	97.0200	5.0	100.000	ND	97.0	70 - 130			
Trichloroethene	48.6300	5.0	50.0000	ND	97.3	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	*48.31*		*50.0000*		*96.6*	*70 - 130*			
Surrogate: 4-Bromofluorobenzene	*49.81*		*50.0000*		*99.6*	*70 - 130*			
Surrogate: Dibromofluoromethane	*49.78*		*50.0000*		*99.6*	*70 - 130*			
Surrogate: Toluene-d8	*55.41*		*50.0000*		*111*	*70 - 130*			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Volatile Organic Compounds by EPA 8260 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2L0208 - MSVOAS (continued)									
Matrix Spike Dup (B2L0208-MSD1)		**Source: 1204346-01**		Prepared: 12/10/2012 Analyzed: 12/10/2012					
1,1-Dichloroethene	54.7400	5.0	50.0000	ND	109	70 - 130	9.51	20	
Benzene	110.350	5.0	100.000	ND	110	70 - 130	6.04	20	
Chlorobenzene	47.3800	5.0	50.0000	ND	94.8	70 - 130	4.22	20	
MTBE	57.5600	5.0	50.0000	ND	115	70 - 130	6.55	20	
Toluene	101.560	5.0	100.000	ND	102	70 - 130	4.57	20	
Trichloroethene	51.4500	5.0	50.0000	ND	103	70 - 130	5.64	20	
Surrogate: 1,2-Dichloroethane-d4	*50.62*		*50.0000*		*101*	*70 - 130*			
Surrogate: 4-Bromofluorobenzene	*50.58*		*50.0000*		*101*	*70 - 130*			
Surrogate: Dibromofluoromethane	*52.23*		*50.0000*		*104*	*70 - 130*			
Surrogate: Toluene-d8	*53.43*		*50.0000*		*107*	*70 - 130*			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/14/2012

Notes and Definitions

S2	Surrogate recovery was below laboratory acceptance limit. Reextraction and/or reanalysisconfirms low recovery caused by matrix effects.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte not detected at or above reporting limit
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.

CHAIN OF CUSTODY RECORD

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

P.O.#: E8668-06-01 Quote #:

As the authorized agent of the below named company, I hereby purchase testing services from ATL as dictated below and guarantee payment in full.

Submitter (Print): CHRIS GIUNTOLI

Signature:

Submitter - Please complete all SHADED areas and include QUOTE # above to ensure proper invoicing.

FOR LABORATORY USE ONLY:

Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☒ GSO ☐ 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 Consultant, Inc.**

Address: 6671 Brisa Street

City: Livermore State: CA Zip Code: 94550

TEL: (925) 371-5900

FAX: (925) 371-5915

Project Name: 280 / FOOTHILL Project #: E8668-06-01 Sampler: (Printed Name) CHRIS GIUNTOLI (Signature)

Relinquished by: (Signature and Printed Name)	Date: 12/6/12	Time: 1700	Received by: (Signature and Printed Name)	Date: 12/7/12	Time: 900
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

Bill To:

Attn: CHRIS GIUNTOLI E-mail:

Company: SAME AS ABOVE

Address:

City: State: Zip:

Send Report To:

Attn: SAME E-mail:

Company: SAME AS ABOVE

Addrress:

City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all Samples and Hardcopy will be disposed Forty-five(45) days after generation of report - electronic copies retained for five(5) years

Storage Fees (applies when storage is requested):
■ Sample : Forty-five(45) Days Complimentary - $2.00 / sample / mo thereafter.

Hardcopy Reports $17.50 per report.

CIRCLE or Write IN Analyses Needed

CIRCLE APPROPRIATE MATRIX: SOIL/SEDIMENT/SLUDGE; SOLIDS/WIPES/FILTERS; WATER-DRINKING/GROUND; WATER-STORM/WASTE; AQUEOUS/LAYERED-OIL

ITEM	BUSINESS HOURS 8:30 am to 5:30 pm: Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8260-624 (Volatiles)	8015B (GRO) / 8021 (BTEX)	TO-15 / TO-14 / TO-3 / RSK-175	8270B-625(BNA) / 8310(PAHs)	8015B(DRO)/8015B(HEAVY)+MOTOR OIL	8081 OrgCl / 8141 OrgPO4 Pest	8082 PCBs	6010B / 7471-CAM Metals	6010B-200.7 Metals	6020B-200.8-1640 Metals	7199-218.6 (Hex. Chromium)	300(Anions) / 314 (Perchlorate)	TOTAL LEAD	TPH-g GAS PACKAGE	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
1	1204345-01	NB1-0	12/6/12	1115			X	X									X	X	X	5	1	3	C	
2	-2	NB1-1		1118													X					2		
3	-3	NB1-2		1122							X											3		
4	-4	NB2-0		1130				X									X					3		
5	-5	NB2-1		1132			X										X	X				3		
6	-6	NB2-2		1135													X					2		
7	-7	NB3-0		1145				X									X					3		
8	-8	NB3-1		1148							X											3		
9	-9	NB3-2		1152			X										X	X				3		
10																								

QA/QC: RTNE ☐ CT ☒ Legal ☐ SWRCB ☐ Logcode: OTHER

REMARKS

■ Samples Submitted AFTER 3:30 PM, are considered received the following business day at 8:30 AM.

Weekend, Holiday, Off Hours Work ASK for QUOTE

Container Types: 1=Tube 2=VOA 3=Liter 4=Pint 5=Jar 6=Tedlar 7= Canister

Material: 1=Glass 2=Plastic 3=Metal

Preservatives: 1=HCl, 2=HNO_3 3=H_2SO_4 4=4°C 5=$Zn(Ac)_2$ 6=NaOH 7=$NA_2S_2O_4$

TAT 0	TAT 1	TAT 2	TAT 3	TAT 4	TAT 5	TAT 10
300% SURCHARGE SAME BUSINESS DAY IF RCV'D BY 9:00 AM ☐	100% SURCHARGE NEXT BUSINESS DAY 5:30 PM ☐	50% SURCHARGE 2ND BUSINESS DAY 5:30 PM ☐	30% SURCHARGE 3RD BUSINESS DAY 5:30 PM ☐	20% SURCHARGE 4TH BUSINESS DAY 5:30 PM ☐	NO SURCHARGE 5 -7 BUSINESS DAYS 5:30 PM ☒	10% DISCOUNT 10th BUSINESS DAY 5:30 PM ☐

For RUSH TCLP/STLC, add 2 days to respective TAT.

Subcon. TAT is 10-15 business days, Dioxin and Furans 21 business days.

Rev. 2012-0416

DISTRIBUTION: **White** with report. **Yellow** to folder. **Pink** to submitter.

CHAIN OF CUSTODY RECORD

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

P.O.#: E8668-06-01 Quote #:

As the authorized agent of the below named company, I hereby purchase testing services from ATL as dictated below and guarantee payment in full.

Submitter (Print): CHRIS GIUNTOLI

Signature:

Submitter - Please complete all SHADED areas and include QUOTE # above to ensure proper invoicing.

FOR LABORATORY USE ONLY:

Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☒ GSO ☐ Other:

Sample Condition Upon Receipt: 6.8°C

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 Consultant, Inc.** Address: 6671 Brisa Street TEL: (925) 371-5900

City: Livermore State: CA Zip Code: 94550 FAX: (925) 371-5915

Project Name: 280/FOOTHILL Project #: E8668-06-0 Sampler: (Printed Name) CHRIS GIUNTOLI (Signature)

Relinquished by: (Signature and Printed Name)	Date: 12/6/12	Time: 1700	Received by: (Signature and Printed Name) C. Argal	Date: 12/7/12	Time: 940
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

Bill To:
Attn: CHRIS GIUNTOLI E-mail:
Company: SAME AS ABOVE
Address:
City: State: Zip:

Send Report To:
Attn: SAME E-mail:
Company: SAME AS ABOVE
Address:
City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all Samples and Hardcopy will be disposed Forty-five(45) days after generation of report - electronic copies retained for five(5) years

Storage Fees (applies when storage is requested):
■ Sample : Forty-five(45) Days Complimentary - $2.00 / sample / mo thereafter.

Hardcopy Reports $17.50 per report.

CIRCLE or Write IN Analyses Needed — CIRCLE APPROPRIATE MATRIX

ITEM	BUSINESS HOURS 8:30 am to 5:30 pm Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8260-624 (Volatiles)	8015B (GRO) / 8021 (BTEX)	TO-15 / TO-14 / TO-3 / RSK-175	8270B-625(BNA) / 8310(PAHs)	8015B(DRO)	8081 Org Cl	8082 PCBs	8141 OrgPO4 Pest	6010B / 7471-CAM Metals	6010B-200.7 Metals	6020B-200.8-1640 Metals	7199-218.6 (Hex. Chromium)	300(Anions) / 314 (Perchlorate)	TOTAL LEAD	TPHg + BTEX PACKAGE	SOIL/SEDIMENT/SLUDGE	SOLIDS/WIPES/FILTERS	WATER-DRINKING/GROUND	WATER-STORM/WASTE	AQUEOUS/LAYERED-OIL	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
1	12434C-10	NB4-0	12/6/12	1155				X	X					X	X	X									5	1	3	C	
2	-11	NB4-1		1157										X												2		
3	-12	NB4-2		1202										X												2		
4	-13	NB5-0		1210				X		X																3		
5	-14	NB5-1		1217			X							X	X											3		
6	-15	NB5-2		1220										X												2		
7	-16	NB6-0		1230				X						X												3		
8	-17	NB6-1		1232										X												2		
9	-18	NB6-2		1235				X		X						X										3		
10																												

■ Samples Submitted AFTER 3:30 PM, are considered received the following business day at 8:30 AM.

Weekend, Holiday, Off Hours Work ASK for QUOTE

Container Types: 1=Tube 2=VOA 3=Liter 4=Pint 5=Jar 6=Tedlar 7= Canister

Material: 1=Glass 2=Plastic 3=Metal

Preservatives: 1=HCl, 2=HNO_3 3=H_2SO_4 4=4°C 5=$Zn(Ac)_2$ 6=NaOH 7=$NA_2S_2O_4$

TAT 0	TAT 1	TAT 2	TAT 3	TAT 4	TAT 5	TAT 10
300% SURCHARGE SAME BUSINESS DAY IF RCV'D BY 9:00 AM ☐	100% SURCHARGE NEXT BUSINESS DAY 5:30 PM ☐	50% SURCHARGE 2ND BUSINESS DAY 5:30 PM ☐	30% SURCHARGE 3RD BUSINESS DAY 5:30 PM ☐	20% SURCHARGE 4TH BUSINESS DAY 5:30 PM ☐	NO SURCHARGE 5 -7 BUSINESS DAYS 5:30 PM ☒	10% DISCOUNT 10th BUSINESS DAY 5:30 PM ☐

For RUSH TCLP/STLC, add 2 days to respective TAT.

Subcon. TATs 10-15 business days, Dioxin and Furans 21 business days.

QA/QC
RTNE ☐ CT ☒ Legal ☐
SWRCB ☐ Logcode
OTHER

Rev. 2012-0416

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

ADVANCED TECHNOLOGY LABORATORIES

December 26, 2012

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

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Tel: (925) 371-5900
Fax:(925) 371-5915

Re: ATL Work Order Number : 1204346
Client Reference : 280/FOOTHILL, E8668-06-01

Enclosed are the results for sample(s) received on December 07, 2012 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

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/26/2012

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NB1-0	1204346-01	Soil	12/06/12 11:15	12/07/12 9:40
NB2-0	1204346-04	Soil	12/06/12 11:30	12/07/12 9:40
NB2-1	1204346-05	Soil	12/06/12 11:32	12/07/12 9:40
NB3-0	1204346-07	Soil	12/06/12 11:45	12/07/12 9:40
NB3-1	1204346-08	Soil	12/06/12 11:48	12/07/12 9:40
NB4-0	1204346-10	Soil	12/06/12 11:55	12/07/12 9:40
NB6-0	1204346-16	Soil	12/06/12 12:30	12/07/12 9:40

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/26/2012

Total Metals by ICP-AES EPA 6010B

Analyte: Lead **Analyst: PT**

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1204346-05	NB2-1	**230**	mg/kg	1.0	NA	1	B2L0461	12/19/2012	12/20/12 08:52	

STLC Metals by ICP-AES by EPA 6010B

Analyte: Chromium **Analyst: PT**

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1204346-08	NB3-1	**ND**	mg/L	1.0	NA	20	B2L0492	12/20/2012	12/20/12 14:35	

STLC Lead by AA (Direct Aspiration) by EPA 7420

Analyte: Lead **Analyst: VV**

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1204346-01	NB1-0	**22**	mg/L	2.5	NA	5	B2L0491	12/20/2012	12/20/12 16:41	
1204346-04	NB2-0	**13**	mg/L	1.0	NA	2	B2L0491	12/20/2012	12/20/12 16:42	
1204346-05	NB2-1	**6.0**	mg/L	0.50	NA	1	B2L0491	12/20/2012	12/20/12 16:42	
1204346-07	NB3-0	**9.1**	mg/L	0.50	NA	1	B2L0491	12/20/2012	12/20/12 16:42	
1204346-10	NB4-0	**26**	mg/L	2.5	NA	5	B2L0491	12/20/2012	12/20/12 16:43	
1204346-16	NB6-0	**6.7**	mg/L	0.50	NA	1	B2L0491	12/20/2012	12/20/12 16:44	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/26/2012

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 B2L0242 - EPA 3050B									
Blank (B2L0242-BLK1)					Prepared: 12/11/2012 Analyzed: 12/11/2012				
Lead	ND	1.0			NR				
LCS (B2L0242-BS1)					Prepared: 12/11/2012 Analyzed: 12/11/2012				
Lead	48.9513	1.0	50.0000		97.9	80 - 120			
Matrix Spike (B2L0242-MS1)		**Source: 1204346-01**			Prepared: 12/11/2012 Analyzed: 12/12/2012				
Lead	601.476	1.0	125.000	304.681	237	45 - 111			M1
Matrix Spike Dup (B2L0242-MSD1)		**Source: 1204346-01**			Prepared: 12/11/2012 Analyzed: 12/12/2012				
Lead	618.049	1.0	125.000	304.681	251	45 - 111	2.72	20	M1
Batch B2L0461 - EPA 3050B									
Blank (B2L0461-BLK1)					Prepared: 12/19/2012 Analyzed: 12/20/2012				
Lead	ND	1.0			NR				
LCS (B2L0461-BS1)					Prepared: 12/19/2012 Analyzed: 12/20/2012				
Lead	47.6899	1.0	50.0000		95.4	80 - 120			
Matrix Spike (B2L0461-MS1)		**Source: 1204346-05RE1**			Prepared: 12/19/2012 Analyzed: 12/20/2012				
Lead	232.385	1.0	125.000	233.072	-0.549	45 - 111			M1
Matrix Spike Dup (B2L0461-MSD1)		**Source: 1204346-05RE1**			Prepared: 12/19/2012 Analyzed: 12/20/2012				
Lead	218.578	1.0	125.000	233.072	-11.6	45 - 111	6.12	20	M1
Batch S2L0137 - B2L0015									
Instrument Blank (S2L0137-IBL1)					Prepared: 12/11/2012 Analyzed: 12/11/2012				
Lead	ND	1.0			NR				

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/26/2012

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

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2L0492 - STLC Extraction									
Blank (B2L0492-BLK1)					Prepared: 12/20/2012 Analyzed: 12/20/2012				
Chromium	ND	1.0			NR				
LCS (B2L0492-BS1)					Prepared: 12/20/2012 Analyzed: 12/20/2012				
Chromium	1.94873	0.10	2.00000		97.4	80 - 120			
Matrix Spike (B2L0492-MS1)		**Source: 1204346-08**			Prepared: 12/20/2012 Analyzed: 12/20/2012				
Chromium	2.44520	0.10	2.50000	0.144915	92.0	74 - 103			
Matrix Spike Dup (B2L0492-MSD1)		**Source: 1204346-08**			Prepared: 12/20/2012 Analyzed: 12/20/2012				
Chromium	2.51139	0.10	2.50000	0.144915	94.7	74 - 103	2.67	20	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/26/2012

STLC Lead by AA (Direct Aspiration) by EPA 7420 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2L0491 - STLC Extraction									
Blank (B2L0491-BLK1)					Prepared: 12/20/2012 Analyzed: 12/20/2012				
Lead	ND	0.50			NR				
LCS (B2L0491-BS1)					Prepared: 12/20/2012 Analyzed: 12/20/2012				
Lead	5.16792	0.05	5.00000		103	80 - 120			
Matrix Spike (B2L0491-MS1)		**Source: 1204346-16**			Prepared: 12/20/2012 Analyzed: 12/20/2012				
Lead	13.3782	0.10	5.00000	6.70711	133	80 - 120			M1
Matrix Spike Dup (B2L0491-MSD1)		**Source: 1204346-16**			Prepared: 12/20/2012 Analyzed: 12/20/2012				
Lead	13.1181	0.10	5.00000	6.70711	128	80 - 120	1.96	20	M1
Batch S2L0285 - B2L0491									
Instrument Blank (S2L0285-IBL1)					Prepared: 12/20/2012 Analyzed: 12/20/2012				
Lead	ND	0.50			NR				

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 12/26/2012

Notes and Definitions

M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte not detected at or above reporting limit
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.

Diane Galvan

From: Luann Beadle [beadle@geoconinc.com]
Sent: Friday, December 14, 2012 4:08 PM
To: Diane Galvan
Subject: E8668-06-01 280/Foothill (Lab Order 1204346)

Hi Diane,

Please run the following WETs on a regular TAT:

1204346-01	NB1-0	Lead	300
1204346-04	NB2-0	Lead	210
1204346-05	NB2-1	Lead	110
1204346-07	NB3-0	Lead	200
1204346-10	NB4-0	Lead	340
1204346-16	NB6-0	Lead	67
1204346-08	NB3-1	Chromium	110

Also,
Please homogenize and re-run NB2-1.

Thanks,
Luann

Luann Beadle | Senior Staff Scientist
Geocon Consultants, Inc.
6671 Brisa Street, Livermore, CA 94550
Office: 925.371.5900, ext. 403 Direct: 925.961.5272 Mobile: 925.395.1669
http://www.beadle@geoconinc.com

ADVANCED TECHNOLOGY LABORATORIES

January 07, 2013

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

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Tel: (925) 371-5900
Fax:(925) 371-5915

Re: ATL Work Order Number : 1204346

Client Reference : 280/FOOTHILL, E8668-06-01

Enclosed are the results for sample(s) received on December 07, 2012 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

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	280/FOOTHILL, E8668-06-01
6671 Brisa Street		Report To :	Chris Giuntoli
Livermore , CA 94550		Reported :	01/07/2013

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NB1-0	1204346-01	Soil	12/06/12 11:15	12/07/12 9:40
NB2-0	1204346-04	Soil	12/06/12 11:30	12/07/12 9:40
NB3-0	1204346-07	Soil	12/06/12 11:45	12/07/12 9:40
NB4-0	1204346-10	Soil	12/06/12 11:55	12/07/12 9:40
NB6-0	1204346-16	Soil	12/06/12 12:30	12/07/12 9:40

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 01/07/2013

Client Sample ID NB1-0

Lab ID: 1204346-01

STLC-DI Lead by AA (Direct Aspiration) EPA 7420 — **Analyst: VV**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	ND	0.50	NA	1	B3A0128	01/07/2013	01/07/13 12:59	

TCLP Lead by AA (Direct Aspiration) EPA 7420 — **Analyst: VV**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**0.68**	0.50	NA	1	B3A0085	01/04/2013	01/04/13 13:01	

pH by EPA 9045C — **Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	MDL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	**7.9**	0.10	NA	1	B3A0055	01/03/2013	01/03/13 11:12	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 01/07/2013

Client Sample ID NB2-0

Lab ID: 1204346-04

STLC-DI Lead by AA (Direct Aspiration) EPA 7420 **Analyst: VV**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	ND	0.50	NA	1	B3A0128	01/07/2013	01/07/13 12:59	

pH by EPA 9045C **Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	MDL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	**7.5**	0.10	NA	1	B3A0055	01/03/2013	01/03/13 11:12	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 01/07/2013

Client Sample ID NB3-0

Lab ID: 1204346-07

STLC-DI Lead by AA (Direct Aspiration) EPA 7420 **Analyst: VV**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	ND	0.50	NA	1	B3A0128	01/07/2013	01/07/13 12:59	

pH by EPA 9045C **Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	MDL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	**8.0**	0.10	NA	1	B3A0055	01/03/2013	01/03/13 11:12	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 01/07/2013

Client Sample ID NB4-0

Lab ID: 1204346-10

STLC-DI Lead by AA (Direct Aspiration) EPA 7420 — **Analyst: VV**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	ND	0.50	NA	1	B3A0128	01/07/2013	01/07/13 13:00	

TCLP Lead by AA (Direct Aspiration) EPA 7420 — **Analyst: VV**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**0.54**	0.50	NA	1	B3A0085	01/04/2013	01/04/13 13:02	

pH by EPA 9045C — **Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	MDL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	**7.6**	0.10	NA	1	B3A0055	01/03/2013	01/03/13 11:12	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	280/FOOTHILL, E8668-06-01
6671 Brisa Street		Report To :	Chris Giuntoli
Livermore , CA 94550		Reported :	01/07/2013

Client Sample ID NB6-0

Lab ID: 1204346-16

STLC-DI Lead by AA (Direct Aspiration) EPA 7420 — **Analyst: VV**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	ND	0.50	NA	1	B3A0128	01/07/2013	01/07/13 13:00	

pH by EPA 9045C — **Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	MDL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	**7.7**	0.10	NA	1	B3A0055	01/03/2013	01/03/13 11:12	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 01/07/2013

QUALITY CONTROL SECTION

STLC-DI Lead by AA (Direct Aspiration) EPA 7420 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B3A0128 - STLC DI Extraction									
Blank (B3A0128-BLK1)				Prepared: 1/7/2013 Analyzed: 1/7/2013					
Lead	ND	0.50			NR				
LCS (B3A0128-BS1)				Prepared: 1/7/2013 Analyzed: 1/7/2013					
Lead	4.96742	0.05	5.00000		99.3	80 - 120			
Duplicate (B3A0128-DUP1)		**Source: 1204346-16**		Prepared: 1/7/2013 Analyzed: 1/7/2013					
Lead	ND	0.50		ND	NR			20	
Matrix Spike (B3A0128-MS1)		**Source: 1204346-16**		Prepared: 1/7/2013 Analyzed: 1/7/2013					
Lead	4.89126	0.05	5.00000	ND	97.8	80 - 120			
Matrix Spike Dup (B3A0128-MSD1)		**Source: 1204346-16**		Prepared: 1/7/2013 Analyzed: 1/7/2013					
Lead	4.91161	0.05	5.00000	ND	98.2	80 - 120	0.415	20	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 01/07/2013

TCLP Lead by AA (Direct Aspiration) EPA 7420 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B3A0085 - EPA 3010A_SOIL									
Blank (B3A0085-BLK1)				Prepared: 1/4/2013 Analyzed: 1/4/2013					
Lead	ND	0.50			NR				
Blank (B3A0085-BLK2)				Prepared: 1/4/2013 Analyzed: 1/4/2013					
Lead	ND	0.50			NR				
LCS (B3A0085-BS1)				Prepared: 1/4/2013 Analyzed: 1/4/2013					
Lead	1.07591	0.50	1.00000		108	80 - 120			
Duplicate (B3A0085-DUP1)		**Source: 1204346-01**		Prepared: 1/4/2013 Analyzed: 1/4/2013					
Lead	0.551615	0.50		0.677081	NR		20.4	20	R
Matrix Spike (B3A0085-MS1)		**Source: 1204346-01**		Prepared: 1/4/2013 Analyzed: 1/4/2013					
Lead	4.13551	0.50	2.50000	0.677081	138	80 - 120			M1
Matrix Spike Dup (B3A0085-MSD1)		**Source: 1204346-01**		Prepared: 1/4/2013 Analyzed: 1/4/2013					
Lead	4.00046	0.50	2.50000	0.677081	133	80 - 120	3.32	20	M1

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 01/07/2013

pH by EPA 9045C - Quality Control

Analyte	Result (pH Units)	PQL (pH Units)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B3A0055 - Prep_WC_1_S									
Duplicate (B3A0055-DUP1)		**Source: 1204346-16**		Prepared: 1/3/2013 Analyzed: 1/3/2013					
pH	7.77000	0.10		7.71000	NR		0.775	20	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : 280/FOOTHILL, E8668-06-01
6671 Brisa Street	Report To : Chris Giuntoli
Livermore , CA 94550	Reported : 01/07/2013

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte not detected at or above reporting limit
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.

Diane Galvan

From: Livermore Office [livermore@geoconinc.com]
Sent: Friday, December 28, 2012 10:17 AM
To: Diane Galvan
Cc: beadle@geoconinc.com
Subject: RE: Additional Resuts/EDD/Invoice - 280/FOOTHILL (1204346)

Hi, Diane.

Please run the following additional analyses on standard 5-day TAT:

Sample ID	DI-WET Lead	pH	TCLP Lead
NB1-0	X	X	X
NB2-0	X	X	---
NB3-0	X	X	---
NB4-0	X	X	X
NB6-0	X	X	---

Thanks,
Rick.

Please note new office extension and direct dial number.

Richard Day, CEG, CHG | *Principal / Senior Geologist*
Geocon Consultants, Inc.
6671 Brisa Street, Livermore, California 94550
Office 925.371.5900, ext. 401 Direct 925.961.5270 Mobile 925.872.5860
www.geoconinc.com

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:	091216051
CustomerID:	GECN21
CustomerPO:	E8668-06-01
ProjectID:	

Attn: **Chris Giuntoli**
Geocon Consultants, Inc.
6671 Brisa Street

Livermore, CA 94550

Project: **E8668-06-01**

Phone:	(925) 371-5900
Fax:	(925) 371-5915
Received:	12/10/12 9:00 AM
Analysis Date:	12/23/2012
Collected:	12/6/2012

Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
NB1-2 *091216051-0001*		Tan Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
NB2-2 *091216051-0002*		Tan Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
NB3-2 *091216051-0003*		Tan Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
NB4-2 *091216051-0004*		Tan Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
NB5-2 *091216051-0005*		Tan Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
NB6-2 *091216051-0006*		Tan Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Analyst(s)

Matthew Batongbacal (6)

Baojia Ke, Laboratory Manager
or other approved signatory

Initial report from 12/23/2012 17:39:41

091216051

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 091216051

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

Company: GEOCON		EMSL-Bill to: ☒ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*	
Street: 6671 BRISA ST			
City: LIVERMORE	State/Province: CA	Zip/Postal Code: 94550	Country:
Report To (Name): CHRIS GIUNTOLI		Fax #:	
Telephone #: 925-371-5900		Email Address: GIUNTOLI@GEOCONINC.COM	
Project Name/Number: EB668-06-01			
Please Provide Results: ☐ Fax ☒ Email	Purchase Order:	U.S. State Samples Taken:	

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 hours/6 hours, 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
- ☐ 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)
- ☐ EPA Protocol (Semi-Quantitative)
- ☐ EPA Protocol (Quantitative)

Other:
- ☐

☐ **Check For Positive Stop – Clearly Identify Homogenous Group**

Samplers Name: CHRIS GIUNTOLI **Samplers Signature:**

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
NB1-2	SOIL		12/6/12
NB2-2	"		"
NB3-2	"		"
NB4-2	"		"
NB5-2	"		"
NB6-2	"		"

Client Sample # (s): NB1-2 - NB6-2 **Total # of Samples:** 6

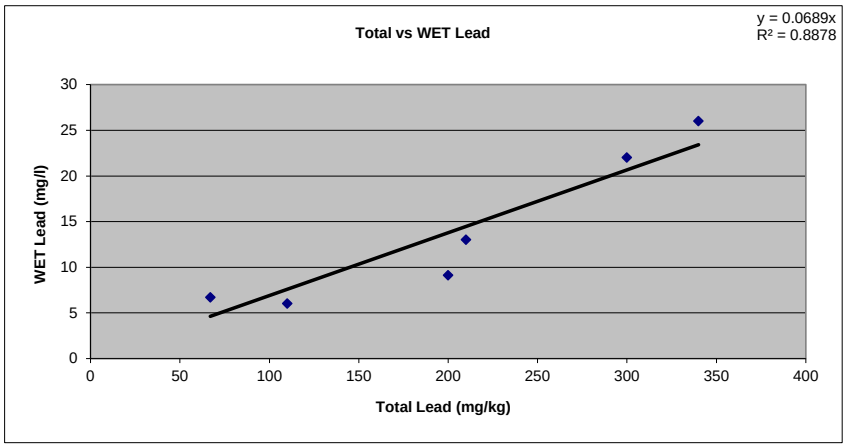
Relinquished (Client): **Date:** 12/7/12 **Time:** 1400

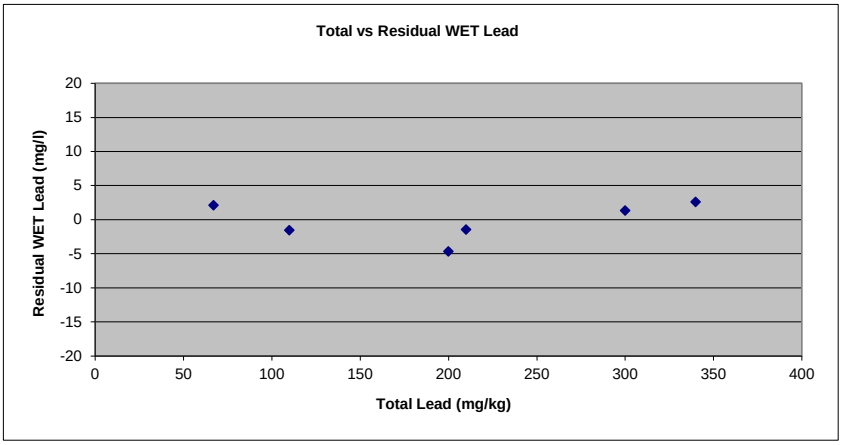
Received (Lab): **Date:** RECEIVED DEC 10 2012 **Time:** 0900

Comments/Special Instructions:

APPENDIX C

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	Residual WET Lead (mg/l)	Squared Residual WET Lead (mg/l)
NB1-0	0-0.5	300	22.0	1.33	1.78
NB2-0	0-0.5	210	13.0	-1.47	2.15
NB2-1	1-1.5	110	6.0	-1.58	2.49
NB6-0	0-0.5	67	6.7	2.08	4.35
NB4-0	0-0.5	340	26.0	2.58	6.65
NB3-0	0-0.5	200	9.1	-4.68	21.88





Pb - 0 to 0.5

Number of Valid Observations	6
Number of Distinct Observations	6
Minimum	49
Maximum	340
Mean	194
Median	205
SD	118.3
Variance	13999
Coefficient of Variation	0.609
Skewness	-0.156
Mean of log data	5.046
SD of log data	0.805
90% Standard Bootstrap UCL	**250**
95% Standard Bootstrap UCL	**267**

Pb - 1.0 to 1.5

Number of Valid Observations	6
Number of Distinct Observations	5
Minimum	5.4
Maximum	110
Mean	28.5
Median	8.65
SD	41.18
Variance	1696
Coefficient of Variation	1.445
Skewness	2.155
Mean of log data	2.655
SD of log data	1.198
90% Standard Bootstrap UCL	**48.0**
95% Standard Bootstrap UCL	**52.9**

Pb - 2.0 to 2.5

Number of Valid Observations	6
Number of Distinct Observations	5
Minimum	4.1
Maximum	6.6
Mean	5.65
Median	5.95
SD	1.067
Variance	1.139
Coefficient of Variation	0.189
Skewness	-0.604
Mean of log data	1.716
SD of log data	0.2
90% Standard Bootstrap UCL	**6.17**
95% Standard Bootstrap UCL	**6.31**

As

Number of Valid Observations	4
Number of Distinct Observations	4
Minimum	0.05
Maximum	1.9
Mean	1.21

V

Number of Valid Observations	4
Number of Distinct Observations	4
Minimum	25
Maximum	93
Mean	50

TPHd

Number of Valid Observations	6
Number of Distinct Observations	6
Minimum	1.9
Maximum	130
Mean	36.7
Median	3.5
SD	54.94
Variance	3019
Coefficient of Variation	1.497
Skewness	1.323
Mean of log data	2.191
SD of log data	1.907
95% Standard Bootstrap UCL	**70.7**

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Dist-County-Route: 04-SCl-280
Post Mile Limits: 11.2/11.5
Type of Work: Off-Ramp Widening
Project ID (EA): 0413000086 (4G6804)
Program Identification: Local Agency
Phase: ☐ PID ☐ PA/ED ☒ PS&E

Regional Water Quality Control Board(s): San Francisco Bay (2)
Total Disturbed Soil Area: 1.07 acres PCTA: 0.0 acre
Alternative Compliance (acres): 0 ATA 2 (50% Rule)? Yes ☐ No ☒
Estimated Const. Start Date: April 1, 2020 Estimated Const. Completion Date: Oct. 31, 2020
Risk Level: RL 1 ☐ RL 2 ☒ RL 3 ☐ WPCP ☐ Other: _____
Is MWELO applicable? Yes ☐ No ☒
Is the Project within a TMDL watershed? Yes ☒ No ☐
TMDL Compliance Units (acres): 0
Notification of ADL reuse (if yes, provide date): Yes ☐ Date: _____ No ☒

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

Analette Ochoa 11/11/19

Analette Ochoa, P.E., Registered Project Engineer — Date

I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:

REGISTERED PROFESSIONAL ENGINEER
ANALETTE A. OCHOA
No. 55279
Exp. 12/31/20
CIVIL
STATE OF CALIFORNIA

[Stamp Required at PS&E only]

Arun Guduguntla, Project Manager — *Date*

Markus Lansdowne, Designated Maintenance Representative — *Date*

Alex McDonald, Designated Landscape Architect Representative — *Date*

Norman Gonsalves, District/Regional Design SW Coordinator or Designee — *Date*

STORMWATER DATA INFORMATION

1. Project Description

The Santa Clara Valley Transportation Authority (VTA) proposes to widen the existing northbound Interstate 280 (I-280) exit to Foothill Expressway from one lane to two lanes (Project), in order to improve traffic operations in the section of northbound I-280 between the two-lane branch connector from State Route 85 (SR 85) and the Foothill Expressway off-ramp in the cities of Cupertino and Los Altos.

In its current state, SR 85 connects to Foothill Expressway with a short auxiliary lane of 1,000 feet. The close proximity of the SR 85 and Foothill Expressway interchanges (about 0.6 miles) creates a situation where traffic tends to get congested through the short weave section. Northbound I-280 traffic wanting to exit must merge into the #5 (auxiliary) lane. Traffic entering northbound I-280 from the outside lane of the two-lane connector from both northbound and southbound SR 85 must change lanes from the #5 (auxiliary) lane; otherwise, they are trapped in the off-ramp to Foothill Expressway.

The Project provides an additional exit lane to Foothill Expressway. The northbound I-280 outside lane (lane four) will have the option of exiting to Foothill Expressway or continuing on the freeway, thereby eliminating the need to merge with the #5 (auxiliary) lane. The Project area extends from the SR 85 connector ramp to northbound I-280 (PM 11.2) to Foothill Expressway (PM 11.5), as shown in the Project Vicinity included in the Required Attachments of this report.

The proposed improvements will include the following:

- Removal of curb and gutter on both sides of the off-ramp. Widening of both inside and outside shoulders to current standard widths.
- Widening the outside shoulder from 8 feet to 10 feet to enhance horizontal sight distance at the exit.
- Relocation and upgrade of the overhead sign to current standards.
- Extension of guardrail and/or addition of concrete barrier where warranted, and retaining wall.
- Relocation and upgrade to highway lighting near the off-ramp gore.
- Signing and striping.

Disturbed Soil Area (DSA) and Impervious Areas

The existing impervious area within the Project limits is 1.0 acre, and the Project creates 0.75 acres of new impervious surface (NIS); the NIS includes the net new impervious and replaced impervious surface resulting from the Project. The off-ramp widening at the Foothill Expressway exit creates 0.18 acres of net new impervious surface, and the pavement improvements create 0.57 acres of replaced impervious surface. This Project is not required to implement permanent stormwater treatment because the NIS is less than one acre.

The Project's total disturbed soil area (DSA) is 1.07 acres, which includes the NIS, plus cut and fill areas. There is no DSA related to staging areas. Caltrans and VTA have agreed that the Contractor's staging area will be located outside of the Project limits, but still within lands owned or leased by either agency. The location(s) will be coordinated between the Contractor, VTA, and Caltrans prior to the start of construction.

2. Site Data and Stormwater Quality Design Issues

The Project is located entirely within the Caltrans District 4 and the San Francisco Bay Regional Water Quality Control Board (RWQCB) Region 2.

Hydrologic Watershed

The Sacramento State Office of Water Programs' Water Quality Planning Tool identifies the Project as within planning watershed 2205500400, which is described as being within the Santa Clara hydrologic unit, Palo Alto hydrologic area, and hydrologic sub area 205.50.

Receiving Water Bodies

Runoff from the Project area is collected and conveyed by storm drain systems that ultimately discharge to Stevens Creek. Stevens Creek crosses I-280 at approximately PM 11.2; the creek crossing will not be impacted by the Project. After crossing I-280, Stevens Creek continues for about 7 miles before draining to San Francisco Bay, South.

Clean Water Act 303(d) list

Stevens Creek is listed an impaired water body on the State Water Resource Control Board (SWRCB) 2014 and 2016 California Integrated Report (Clean Water Act Section 303(d) List/305(b) Report). The creek is listed as impaired for diazinon, water temperature, toxicity, and trash. The diazinon impairment is currently being addressed by the Diazinon and Pesticide-related Toxicity in Urban Creeks Total Maximum Daily Load (TMDL) that was adopted in 2005. The impairments for water temperature and toxicity have estimated TMDL completion dates of 2021 and 2019, respectively. The trash impairment is being addressed by action other than a TMDL, including as efforts under the Caltrans National Pollutant Discharge Elimination System (NPDES) Permit and local Municipal Separate Storm Sewer System Permit.

Beneficial Uses

The San Francisco Bay RWQCB *Water Quality Control Plan* (Basin Plan) (2017) lists the following existing beneficial uses for Stevens Creek:

- Freshwater Replenishment (FRSH)
- Groundwater Recharge (GWR)
- Cold Freshwater Habitat (COLD)
- Fish Migration (MIGR)
- Preservation of Rare & Endangered Species (RARE)
- Spawning, Reproduction, and/or Early Development (SPWN)
- Warm Freshwater Habitat (WARM)
- Wildlife Habitat (WILD)
- Water Contact Recreation (REC-1)
- Non-Contact Water Recreation(REC-2)

401 Certification

A 401 Certification is not required for this Project.

Drinking Water Reservoirs and/or Recharge Facilities

The Caltrans *District 4 Work Plan* (2018) does not identify any drinking water reservoirs and/or recharge facilities along I-280 within Santa Clara County.

Local Agency Requirements/Concerns

The Project is entirely within Caltrans' right-of-way, so there are no local agency requirements applicable to the Project.

Climate

There is an increased probability of rain events to occur between October and April. In the Project area, rain during the summer months is infrequent. The average annual rainfall is 20 inches. The Project is located in a Mediterranean climate, which is characterized by warm, dry summers and mild, wet winters. July and August are the warmest months of the year with an average high of 83 degrees Fahrenheit, and the coldest month is December, with an average high of 42 degrees Fahrenheit.

Topography

The *Geotechnical Design and Materials Report* (2012) states the interchange is built on fill. The northern side of the exit ramp currently has a side slope, approximately 2:1 (H:V). The elevation at the Project site ranges from approximately 290 to 302 feet.

A site specific length-slope (LS) factor was not calculated for this Project because the sediment risk factor, discussed in Section 3 of this report, was determined to be low, so calculating a site-specific LS factor would not provide additional benefit for the Project risk level determination.

Land Use

According to the *City of Los Altos Land Use Map* (2018), the area surrounding the northern side of the off-ramp is designated as medium density multi-family residential and neighborhood commercial land uses.

Soil Classification

The geotechnical report concluded the surface soils along the ramp consisted of medium dense to dense silty and clayey sand to stiff lean clay with sand and gravel. The soils near the entrance of the ramp consist of hard lean clay. The soil types are expected to be favorable for vegetation to be established, so turbidity impacts are not expected.

Turbidity impacts will be addressed through the use of the soil stabilization and sediment control temporary construction site best management practices (BMP) discussed in Section 3 of this report and the permanent erosion control BMPs discussed in Section 6 of this report.

Groundwater

The geotechnical borings performed for the Project did not encounter groundwater. Therefore, dewatering is not proposed for this Project, and no impacts from dewatering activities are expected.

Slope Stabilization

The Caltrans District 4 *Work Plan* (2018) does not identify any slopes prone to erosion along I-280. New and disturbed slopes will be permanently stabilized as shown on the Project erosion control plans and described in Section 6 of this report.

Measures for Avoiding or Reducing Potential Stormwater Impacts

Every effort has been incorporated into the design to avoid or reduce potential stormwater impacts from the Project. Concentrated flows will be collected by storm drain systems and sheet flow from the roadway over unpaved surfaces is not proposed. Slopes will be compacted as specified in the Caltrans *Standard Specifications* (2018), and stabilized using permanent erosion control measures. The permanent erosion control strategy for this Project is discussed in Section 6 of this report. Placement of all BMP will be done in a manner to allow for maintenance access.

Right-of-Way

The entire Project is within Caltrans right-of-way and no additional right-of-way is required for placement of BMPs.

Existing Treatment BMPs

There are no known existing treatment BMPs impacted by this Project.

3. Construction Site BMPs to be used on Project

The proposed temporary construction site BMPs and their estimated quantities are listed in Table 1.

Table 1. Construction Site BMPs to be used on Project

BID ITEM No.	BID ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY
130100	JOB SITE MANAGEMENT	LS	1
130300	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	1
130310	RAIN EVENT ACTION PLAN	EA	12
130320	STORM WATER SAMPLING AND ANALYSIS DAY	EA	9
130330	STORM WATER ANNUAL REPORT	EA	2
130530	TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX)	SQYD	2,710
130570	TEMPORARY COVER	SQYD	280
130620	TEMPORARY DRAINAGE INLET PROTECTION	EA	7
130640	TEMPORARY FIBER ROLL	LF	2,180
130670A	TEMPORARY REINFORCED SILT FENCE (WILDLIFE EXCLUSION)	LF	1,500
130680	TEMPORARY SILT FENCE	LF	2,190
130710	TEMPORARY CONSTRUCTION ENTRANCE	EA	4
130730	STREET SWEEPING	LS	1
130900	TEMPORARY CONCRETE WASHOUT	LS	1

Temporary Construction Site BMPs Cost

The estimated temporary construction site BMP cost is $115,261.

Risk Level Determination

This Project disturbs more than 1 acre of soil and must comply with the Construction General Permit (CGP), Order 2009-0009-DWQ last amended by Order 2012-0006-DWQ.

The sediment risk is determined from the product of the rainfall runoff erosivity factor (R), the soil erodibility factor (K), and the LS. The R factor was calculated to be 6.48 by using the United States Environmental Protection Agency's (U.S. EPA) "Rainfall Erosivity Factor Calculator for Small Construction Sites" (2019). The K factor was determined to be 0.37, and the LS factor was determined to be 1.84 from the Sacramento State Office of Water Program's "Water Quality Planning Tool" (2019). The product of these factors equals 4; because this value is less than 15, the sediment risk is classified as low.

The Project's receiving water risk is classified as high because Stevens Creek has the combined existing beneficial uses of COLD, SPWN, and MIGR.

Based on the low sediment risk and high receiving water risk, the Project is classified as Risk Level 2. The risk level determination documentation is included in the Required Attachments of this report.

Caltrans and VTA have agreed that the Contractor's staging area will be located outside of the Project limits, but still within lands owned or leased by either agency. The location(s) will be coordinated between the Contractor, VTA, and Caltrans prior to the start of construction.

Storm Water Pollution Prevention Plan (SWPPP)

A SWPPP is required for this Project because the Project is subject to the CGP; the SWPPP will be prepared by the Contractor for approval by Caltrans. A lump sum for preparing the SWPPP is provided in the contract estimate.

Rain Event Action Plans are prepared by the Contractor prior to an anticipated rain event to describe the strategy for implementation of construction site BMPs and the method to ensure that runoff from the Project does not impact receiving waters. Stormwater sampling analysis day is performed at discharge locations during qualifying storm events. The samples collected are tested for compliance with pH and turbidity numeric action levels. If the levels are exceeded, then the Contractor is required to report the exceedance and document the efforts to address the exceedance; costs associated with exceedance reporting and corrective are not included in the contract bid. Storm Water Annual Reports are a collection and summary of all SWPPP-related activities; the reports include results of sampling and monitoring, corrective actions, and any other activities to demonstrate compliance with the CGP.

The quantities for rain event action plans and stormwater sampling and analysis day are based on the "Black Mountain 2 WSW" National Oceanic and Atmospheric Administration station.

Construction Site BMP Strategy

Caltrans and VTA have agreed that the Contractor's staging area will be located outside of the Project limits, but still within lands owned or leased by either agency. The location(s) will be coordinated between the Contractor, VTA, and Caltrans prior to the start of construction.

Temporary Soil Stabilization BMPs

Temporary fiber rolls will be installed along all new and reconstructed slopes and DSA locations to prevent sediment laden runoff. Temporary hydraulic mulch (bonded fiber matrix) will be applied on disturbed slopes to provide soil stabilization during construction. Temporary fiber rolls and temporary hydraulic mulch (bonded fiber matrix) are included as a separate contract bid item.

Temporary Sediment Control BMPs

Temporary silt fences and temporary fiber rolls are proposed to create a sediment perimeter around all DSAs and used as run-on barriers where necessary. Temporary silt fences and temporary fiber rolls are included as separate bid items. Existing and proposed storm drain inlets will be protected with temporary drainage inlet protection. Temporary drainage inlet protection is included as a separate bid item.

Temporary Tracking Control BMPs

Temporary construction entrances will be used for construction vehicle access to areas of proposed grading along the ramp. Additionally, although staging locations have not been identified at this phase, quantities for temporary construction entrances is included for use during construction to reduce tracking of mud and sediment from staging locations. Temporary construction entrance is included as a separate contract bid item. Street sweeping is required to avoid sediment transport onto the roadway or to areas where no work is proposed; street sweeping is included as a separate contract bid item.

Non-Stormwater Management and Waste Management & Materials Pollution Control

The Project involves the addition and/or replacement of concrete. Therefore, a lump sum for temporary concrete washout is included for this Project.

Temporary cover is identified as a separate contract bid item for use to cover stockpiles of DSA or construction materials, or the cover can be used as a temporary measure to protect slopes prone to erosion or wind transport.

A lump sum for job site management is provided to cover additional construction site BMPs that are needed for the Project but not paid for as other separate bid items, including wind erosion, spill prevention and control, material management, waste management, and non-stormwater management. The job site management lump sum can also be used as contingency if additional line items BMPs beyond those quantified are needed.

4. Maintenance BMPs

Drainage inlet markers are not required because there are no drainage inlets accessible to pedestrian or bicycle traffic within the Project area. A maintenance vehicle pullout is proposed midway along the ramp.

5. Other Water Quality Requirements and Agreements

This Project does not result in any work or impacts that require project-specific water quality negotiations, understandings, or agreements.

6. Permanent BMPs

Rapid Stability Assessment

A Rapid Stability Assessment is not required for this Project because there are no streams that cross the Project and the Project creates less than one acre of net NIS.

Design Pollution Prevention (DPP) BMP Strategy

The proposed DPP BMPs and their estimated quantities are listed in Table 2.

Table 2. DPP BMPs to be used on Project

BID ITEM No.	BID ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY
160110	TEMPORARY HIGH VISIBILITY FENCE	LF	120
210300	HYDROMULCH	SQFT	24,000
210350	FIBER ROLLS	LF	2,150
210420	STRAW	SQFT	8,650
210430	HYDROSEED	SQFT	24,000
210610	COMPOST (CY)	CY	74
210630	INCORPORATE MATERIALS	SQFT	8,650

DPP BMPs Cost

The estimated DPP BMP cost is $41,190.

Downstream Effects Related to Potentially Increased Flow, Checklist DPP-1, Parts 1 and 2

The proposed Project results in a net increase of 0.18 acres of impervious area. Based on the FEMA Flood Insurance Study (FIS), Stevens Creek near the Project site has a drainage area of 20 square miles. The Project results in a negligible increase in the peak runoff rate and discharge velocity when considering the size of the overall watershed.

Slope/Surface Protection Systems, Checklist DPP-1, Parts 1 and 3

The proposed ramp widening requires a minor amount of cut between 6 and 8 feet horizontally into the existing embankment both on the northern and southern sides of the off-ramp. The slope to be cut will be re-graded at a maximum of 2:1 (H:V) until it conforms to the existing slope. The Project also proposes fill for embankments with a maximum finished slope of 2:1 (H:V). DSA along with cut and fill slopes will be protected with permanent fiber rolls and revegetated with a hydraulic application mix of hydroseed and hydromulch to reestablish the existing grass cover. No non-standard permanent erosion control measures are required to stabilize the Project slopes and disturbed soil areas.

Based on the available topographic information, the existing slope on the southern side of the off-ramp ranges from 4:1 (H:V) to 10:1 (H:V), while the northern side is 2:1 (H:V).

Concentrated Flow Conveyance Systems, Checklist DPP-1, Parts 1 and 4

Drainage patterns are maintained and no new outfalls are proposed.

Preservation of Existing Vegetation, Checklist DPP-1, Parts 1 and 5

Clearing and grubbing will be minimized and controlled to the extent practicable to avoid impacts to existing vegetation and to reduce DSA. Preservation of existing vegetation is achieved by placing temporary high visibility fencing around environmentally sensitive vegetation, and is identified on the Contract Plans and coordinated with Caltrans' Environmental Division. Temporary reinforced silt fence with high visibility fencing is also placed along the right-of-way for wildlife exclusion and to identify the limits of the work area.

Treatment BMP Strategy

Implementation of treatment BMPs is not required because the Project creates less than one acre of NIS.

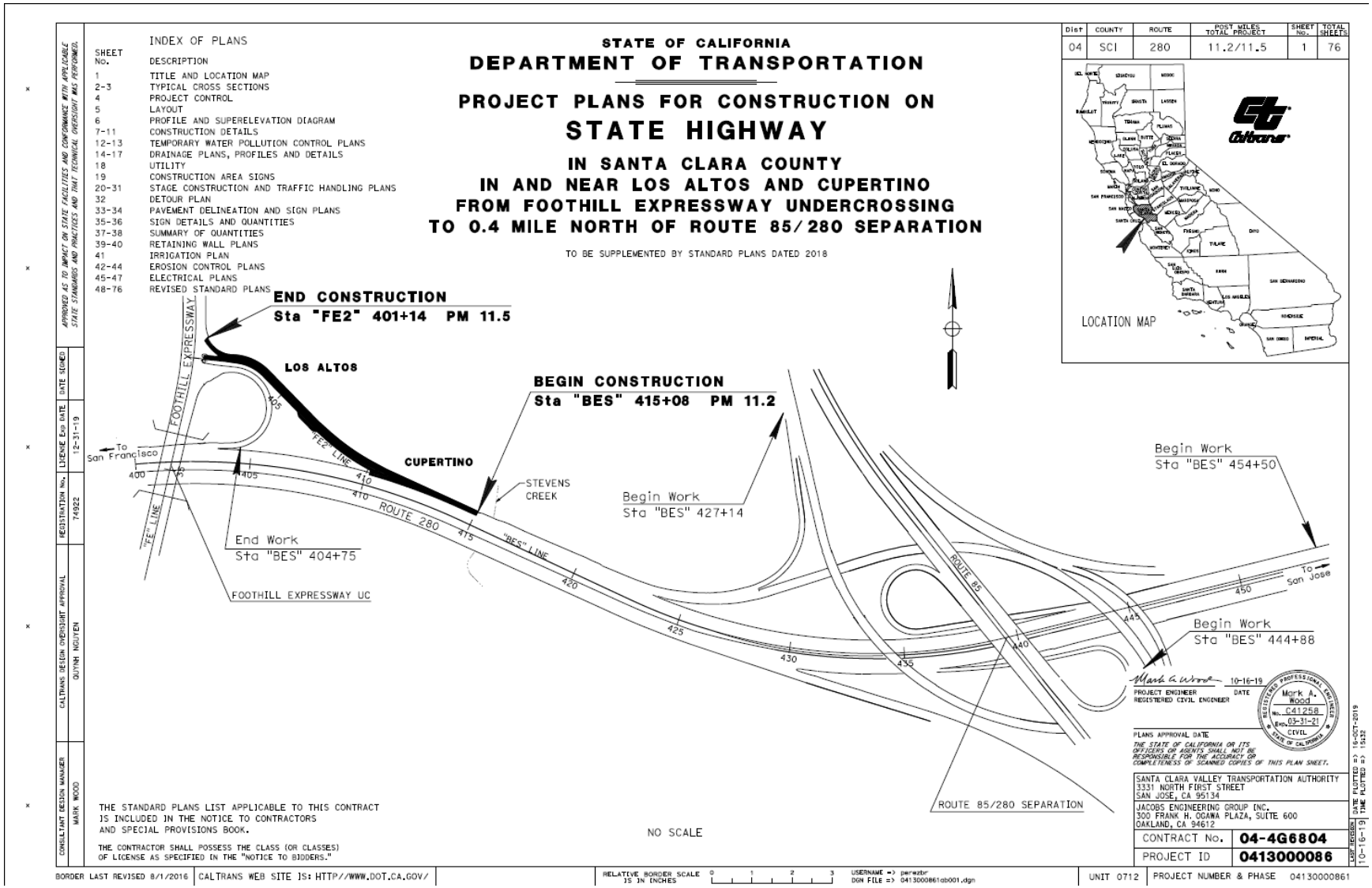
Trash control measures were considered for this Project but were determined to be infeasible because existing and proposed drainage inlets within the Project work limits are on-pavement and no cross culvert outfalls will be modified. Therefore, Caltrans type TR-4 trash inlets and gross solid removal devices are not feasible. Additionally, the topography, right-of-way and environmentally cleared areas do not provide adequate space to trash control devices.

Required Attachments (see 6.4.8)

- Vicinity Map
- Evaluation Documentation Form (EDF)
- Risk Level Determination Documentation
- SWDR Attachment for SMARTS Input

Supplemental Attachments

- Checklist SW-1, Site Data Sources
- SWDR Summary Spreadsheets
- Checklist SW-2, Stormwater Quality Issues Summary
- Checklist SW-3, Measures for Avoiding or Reducing Potential Stormwater Impacts
- Checklist DPP-1, Parts 1–5 (Design Pollution Prevention BMPs)
- Construction Site BMP Consideration Form
- Checklist CS-1, Parts 1–6 (Construction Site BMPs)
- Contract Plans showing BMP deployment


INDEX OF PLANS
SHEET No. DESCRIPTION
1 TITLE AND LOCATION MAP
2-3 TYPICAL CROSS SECTIONS
4 PROJECT CONTROL
5 LAYOUT
6 PROFILE AND SUPERELEVATION DIAGRAM
7-11 CONSTRUCTION DETAILS
12-13 TEMPORARY WATER POLLUTION CONTROL PLANS
14-17 DRAINAGE PLANS, PROFILES AND DETAILS
18 UTILITY
19 CONSTRUCTION AREA SIGNS
20-31 STAGE CONSTRUCTION AND TRAFFIC HANDLING PLANS
32 DETOUR PLAN
33-34 PAVEMENT DELINEATION AND SIGN PLANS
35-36 SIGN DETAILS AND QUANTITIES
37-38 SUMMARY OF QUANTITIES
39-40 RETAINING WALL PLANS
41 IRRIGATION PLAN
42-44 EROSION CONTROL PLANS
45-47 ELECTRICAL PLANS
48-76 REVISED STANDARD PLANS
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN SANTA CLARA COUNTY
IN AND NEAR LOS ALTOS AND CUPERTINO
FROM FOOTHILL EXPRESSWAY UNDERCROSSING
TO 0.4 MILE NORTH OF ROUTE 85/280 SEPARATION
TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2018
Dist 04 | COUNTY SCI | ROUTE 280 | POST-MILES TOTAL PROJECT 11.2/11.5 | SHEET No. 1 | TOTAL SHEETS 76
LOCATION MAP
END CONSTRUCTION
Sta "FE2" 401+14 PM 11.5
BEGIN CONSTRUCTION
Sta "BES" 415+08 PM 11.2
LOS ALTOS
CUPERTINO
FOOTHILL EXPRESSWAY
"FE2" LINE
"FE" LINE
"BES" LINE
ROUTE 280
ROUTE 85
To San Francisco
To San Jose
STEVENS CREEK
End Work
Sta "BES" 404+75
FOOTHILL EXPRESSWAY UC
Begin Work
Sta "BES" 427+14
Begin Work
Sta "BES" 454+50
Begin Work
Sta "BES" 444+88
ROUTE 85/280 SEPARATION
NO SCALE
THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO CONTRACTORS AND SPECIAL PROVISIONS BOOK.
THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."
APPROVED AS TO IMPACT ON STATE FACILITIES AND CONFORMANCE WITH APPLICABLE STATE STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.
CONSULTANT DESIGN MANAGER MARK WOOD
CALTRANS DESIGN OVERSIGHT APPROVAL QUYNH NGUYEN
REGISTRATION No. 74922
LICENSE Exp DATE 12-31-19
DATE SIGNED
PROJECT ENGINEER REGISTERED CIVIL ENGINEER Mark A. Wood 10-16-19
DATE
PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.
Mark A. Wood No. C41258 Exp. 03-31-21 CIVIL STATE OF CALIFORNIA
SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
3331 NORTH FIRST STREET
SAN JOSE, CA 95134
JACOBS ENGINEERING GROUP INC.
300 FRANK H. OGAWA PLAZA, SUITE 600
OAKLAND, CA 94612
CONTRACT No. 04-4G6804
PROJECT ID 0413000086
LAST REVISION DATE PLOTTED => 16-OCT-2019
TIME PLOTTED => 15:32
BORDER LAST REVISED 8/1/2016
CALTRANS WEB SITE IS: HTTP//WWW.DOT.CA.GOV/
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
USERNAME => perezbr
DGN FILE => 0413000861ab001.dgn
UNIT 0712
PROJECT NUMBER & PHASE 04130000861

DATE: November 2019

Project ID (EA): 0413000086 (4G6804)

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation
1.	Begin Project evaluation regarding requirement for implementation of Treatment BMPs	✓		See Figure 4-1, Project Evaluation Process for Consideration of Treatment BMPs. Continue to 2.
2.	Is the scope of the Project to install Treatment BMPs (e.g., Alternative Compliance or TMDL Compliance Units)?		✓	If **Yes**, go to 8. If **No**, continue to 3.
3.	Is there a direct or indirect discharge to surface waters?	✓		If **Yes**, continue to 4. If **No**, go to 9.
4.	As defined in the WQAR or ED, does the project: a. discharge to Areas of Special Biological Significance (ASBS), or b. discharge to a TMDL watershed where Caltrans is named stakeholder, or c. have other pollution control requirements for surface waters within the project limits?		✓	If **Yes to any**, contact the District/Regional Design Stormwater Coordinator or District/Regional NPDES Coordinator to discuss the Department's obligations, go to 8 or 5. _____*(Dist./Reg. Coordinator initials)* If **No** to all, continue to 5.
		✓		
			✓	
5.	Are any existing Treatment BMPs partially or completely removed? (ATA Condition 1, Section 4.4.1)		✓	If **Yes**, go to 8 **AND** continue to 6. If **No**, continue to 6.
6.	Is this a Routine Maintenance Project?		✓	If **Yes**, go to 9. If **No**, continue to 7.
7.	Does the project result in an increase of one acre or more of new impervious surface (NIS)?		✓	If **Yes**, go to 8. If **No**, go to 9.
8.	Project is required to implement Treatment BMPs.	Complete Checklist T-1, Part 1.		
9.	Project is not required to implement Treatment BMPs. _____ *(Dist./Reg. Design SW Coord. Initials)* AO *(Project Engineer Initials)* 11/11/19 *(Date)*	Document for Project Files by completing this form and attaching it to the SWDR.		

Risk Level Determination Documentation

Facility Information

Start Date: 04/01/2020	**Latitude:** 37.3353
End Date: 10/31/2020	**Longitude:** -122.0667

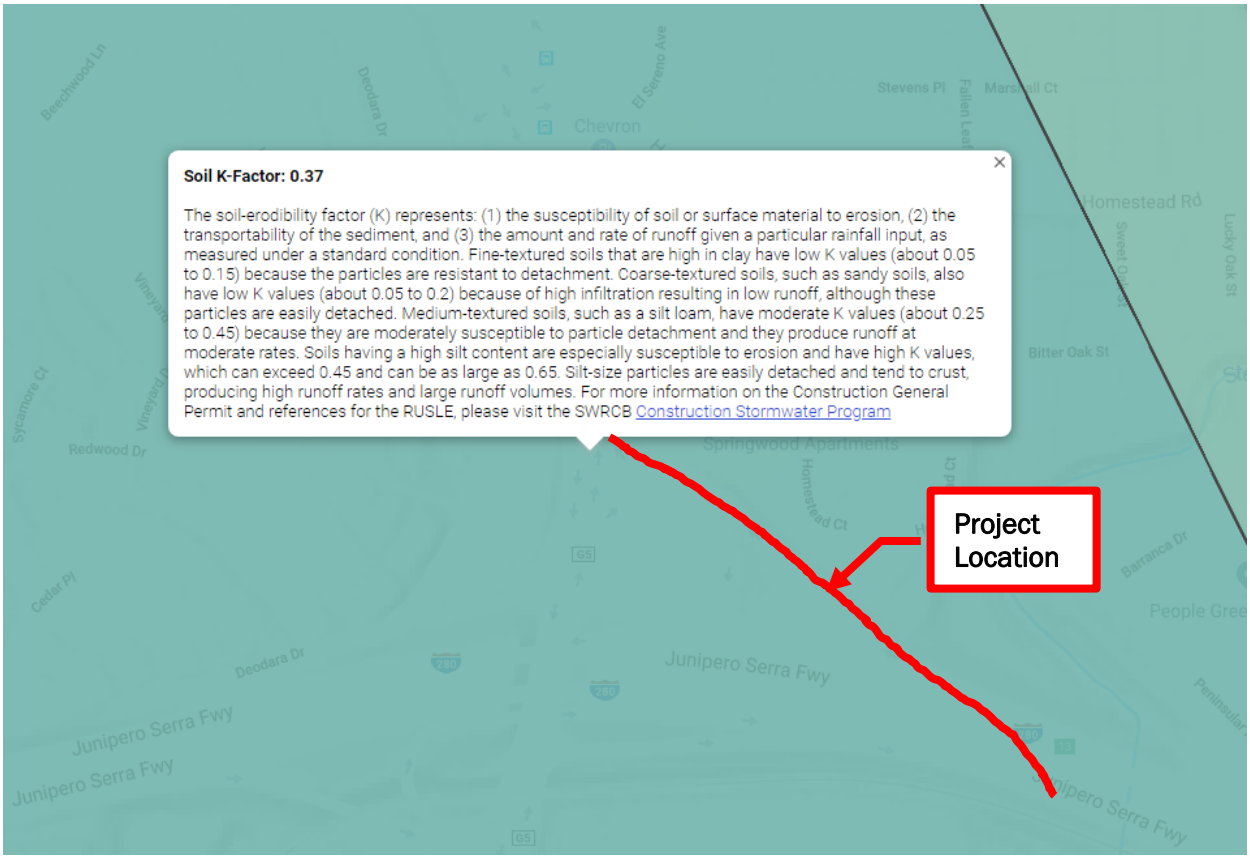
Calculation Results

Rainfall erosivity factor (R Factor) = **6.48**

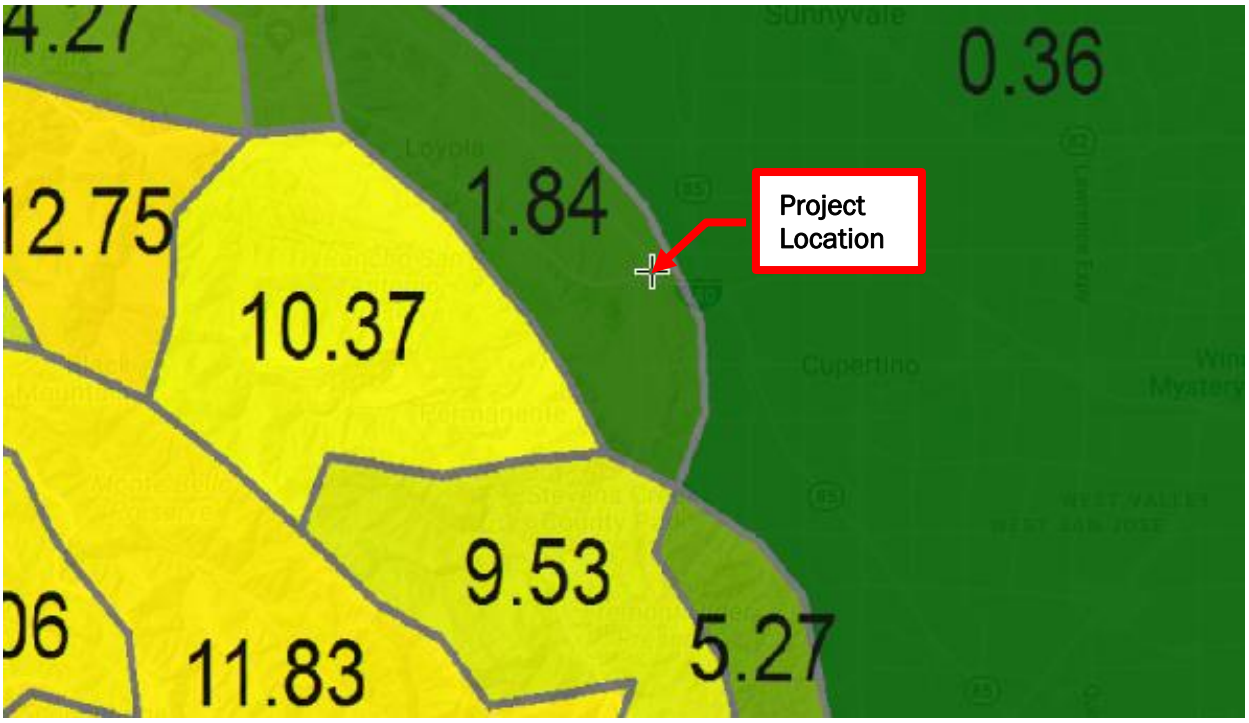
A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority, you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

Source: U.S. EPA



Source: Office of Water Programs



Source: Office of Water Programs

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
SAN MATEO AND SANTA CLARA COUNTIES, continued																			
Alambique Creek									E						E	E	E	E	
Sausal Creek (San Mateo)									E						E	E	E	E	
SANTA CLARA COUNTY ONLY																			
Palo Alto Harbor & Baylands										E		E	E			E	E	E	
Mayfield Slough										E		E	E			E	E	E	
Matadero Creek									E			E	E	E	E	E	E	E	
Deer Creek (Santa Clara)									E				E		E	E	E	E	
Arastradero Creek									E				E		E	E	E	E	
Charleston Slough										E		E	E			E	E	E	
Barron Creek															E	E	E	E	
Adobe Creek (Santa Clara)									E						E	E	E	E	
Mountain View Slough										E			E			E	E	E	
Permanente Creek				E					E				E	E	E	E	E	E	
Hale Creek									E						E	E	E	E	
Stevens Creek			E	E					E			E	E	E	E	E	E	E	

Source: San Francisco Bay RWQCB

Sediment Risk Factor Worksheet	Entry
A) R Factor	
Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site. https://www.epa.gov/npdes/rainfall-erosivity-factor-calculator-small-construction-sites#getTool	
R Factor Value	6.48
B) K Factor (weighted average, by area, for all site soils)	
The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted. Site-specific K factor guidance	
K Factor Value	0.37
C) LS Factor (weighted average, by area, for all slopes)	
The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction. LS Table	
LS Factor Value	1.84
Watershed Erosion Estimate (=RxKxLS) in tons/acre	4
Site Sediment Risk Factor Low Sediment Risk: < 15 tons/acre Medium Sediment Risk: >=15 and <75 tons/acre High Sediment Risk: >= 75 tons/acre	**Low**

Receiving Water (RW) Risk Factor Worksheet	Entry	Score
A. Watershed Characteristics	**yes/no**	
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment** (For help with impaired waterbodies please visit the link below) or has a **USEPA approved TMDL implementation plan for sediment**?: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml	**Yes**	**High**
OR		
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? (For help please review the appropriate Regional Board Basin Plan) http://www.waterboards.ca.gov/waterboards_map.shtml		

Combined Risk Level Matrix

Receiving Water Risk \ Sediment Risk	Low	Medium	High
Low	Level 1	Level 2	
High	Level 2		Level 3

Project Sediment Risk: Low

Project RW Risk: High

Project Combined Risk: Level 2

DESIGN INFORMATION FOR CONSTRUCTION

The following information is based on the PS&E design plans and specifications. If contract amendments or change orders are made after the design is complete, then the information should be updated by construction, as appropriate.

Project ID (EA): 0413000086 (4G6804)

Enter the following data into the CGP SMARTS Notice of Intent-Site Information page.

1. **Total site size** (acres); for project area use Caltrans RW x post mile limits (begin-end) on plan sheets.

Total site size 3.74 acres

2. Enter **latitude and longitude** in decimal degrees to 5 significant figures. Use a location from the center of the project. This information can be obtained from Survey information, GPS units, Google earth, CT Earth, or other mapping software.

Latitude: 37.33525

Longitude: -122.0667

3. **Total Area to be Disturbed** (total Disturbed Soil Area (DSA)): This information is already calculated and can be taken from SWDR Section 1. Describe in acres.

DSA 1.07 acres

4. **Imperviousness before Construction (percentage)** - This is calculated as the total impervious area of the project area divided by the total project area (see total site size), multiplied by 100. The impervious area is all paved areas or hard surfaces within the project limits.

Impervious area before construction % 26.7

5. **Percent of total disturbed (percentage)**; This should be calculated by dividing the total disturbed soil area by the total project area and multiply by 100.

Percent of Total disturbed area % 28.6

6. **Imperviousness after Construction (percentage)**, This should be calculated by adding all impervious area paved and hard surfaces based on the final design within project limits from above and dividing by the total project area from above multiply by 100.

Impervious area after construction % 31.6

7. **Mile Post Marker**, enter the approximate post mile at the center of the project or take the average of the “begin” and “end” post mile markers from the title sheet.
Mile post Marker 11.35

8. **Is the construction site part of a larger common plan of development**? Yes or No; in most cases mark No for Caltrans projects, as this is intended for developers (in accordance with the EPA definitions referenced by the CGP in 40 CFR title 22). This clarification is based on direction from the State Board, see Appendix G for the definition of common plan of development. Coordinate with the District/Regional Design Stormwater Coordinator to determine if there is a special case project where the common plan of development applies. No X

9. **Name of development**. Mark "Not Applicable (N/A)" in most cases.

Name of plan or development: N/A

10. **Estimated Construction Commencement Date**, mm/dd/yyyy. The PE provides the estimated construction start date from the cover of the SWDR. The actual construction start date should be used to input into SMARTS. After the contract is awarded, the RE will use an updated start date (if different) when entering in SMARTS. The RE needs to be aware of the original date provided by Design, as this date was used to calculate the design information including the Risk Level Determination. If the actual start date is different, construction should coordinate with the PE to determine if the Risk Level has changed.

Estimated Construction Commencement Date, 04/01/2020.

11. **Estimated Complete Grading Date/Complete Project Date**; The PE provides the estimated construction completion date from the cover of the SWDR to be used for both of these inputs. After the contract is awarded, the RE will use an updated completion date (if different) when entering in SMARTS. The RE needs to be aware of the original completion date provided by Design, as this date was used to calculate the design information including the Risk Level Determination. If the completion date is different, construction should coordinate with the PE to determine if the Risk Level has changed.

Estimated Complete Grading Date/Complete Project: 10/31/2020. Use the same date for both inputs, unless instructed otherwise.

12. **Does the Stormwater from the construction site discharge directly or indirectly into waters of the United States.**

Indirect discharge (Y/N) - If yes, list name(s) of receiving water(s) _____

Direct discharge Y - If yes, list name(s) of receiving water(s) Stevens Creek

13. **Risk Level**; the combined project risk level is calculated using the sediment risk factor and the water body risk factor to give one overall project risk level. Use the Caltrans risk level determination guidance, (see the Stormwater design web page). Attach all risk calculations.

R factor value 6.48

K factor value 0.37

LS factor value 1.84

Receiving water risk comes from the state water resources control board mapping of water bodies for 303-d listing or TMDLs for sediment or water body with the beneficial use of cold and spawn and migratory. The input will either be high= yes and low=no;

Receiving water risk yes, (yes or no)

The dates used for determining the project risk level and other design elements of the project required for CGP compliance are dependent on having the same sediment risk factor. This is a critical element for compliance, as modifying the estimated construction dates may cause the sediment risk factor to change and ultimately modify the overall project risk factor. This could impact the projects CGP compliance requirements and the assumptions used for the design documents and engineers estimate.

14. **Post Construction**: The PE provides project information related to Municipal Separate Storm Sewer System (MS4) areas.

Is the project located within a permitted Phase I or Phase II MS4 area? This will usually be answered Yes for all projects.

Does the Phase I or Phase II MS4 have an approved Stormwater Management Plan (SWMP) that includes post-construction requirements? This will usually be answered Yes for all projects.

Contact the District/Regional NPDES Coordinator with any questions.

15. Provide electronic copy of plan sheets in .pdf format that can be loaded to SMARTS, burn a CD for the RE to use for the project. The Title sheet can be used as the site map.

16. Methodology for obtaining the CGP NOT decided by the PDT, see SWDR Section 6 text for methodology text and computational proof as appropriate, circle one. See SWRCB bulletin for details: http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/bulletin_2013_1.pdf

a. 70% final cover method: Attach photo documentation To be provided during construction

b. RUSLE II: Attach computational proof and photo documentation _____

c. Other custom method if coordinated with local regional board, attach photo documentation or other proof as necessary.

Checklist SW-1, Site Data Sources

Prepared by: WRECO Date: November 2019 District-Co-Route: 04-SCl-280

PM: 11.2/11.5 Project ID (or EA): 0413000086 (4G6804) RWQCB: San Francisco Bay (2)

Information for the following data categories should be obtained, reviewed and referenced as necessary throughout the project planning phase. Collect available project reports and any available documents pertaining to the category and list them and reference your data source. For specific examples of documents within these categories, refer to Section 6.4.3.2. Example categories have been listed below; add additional categories, as needed. Summarize pertinent information in Section 2 of the SWDR.

DATA CATEGORY/SOURCES	Date
Water Quality	
• Sacramento State Office of Water Programs. Water Quality Planning Tool. < http://www.owp.csus.edu/wqpt/wqpt.aspx >	Accessed: July 2019
• State Water Resources Control Board. *2014/2016 California Integrated Report (Clean Water Act Section 303[d] List / 305[b] Report).*	October 3, 2017
• California Regional Water Quality Control Board, San Francisco Bay Region. *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan).*	May 2017
Geotechnical	
• Parikh Consultants, Inc. *Geotechnical Design and Materials Report (Draft) Northbound Route 280/Foothill Expressway Diagonal Off-Ramp Improvements Los Altos, Santa Clara County, California.*	November 2012
• US Dept. of Agriculture (USDA), Natural Resources Conservation Service (NRCS). Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>	Accessed: November 2012
Topographic	
• United States Geological Survey. *Cupertino Quadrangle, California, 7.5-Minute Series.*	2018
Hydraulic	
• Federal Emergency Management Agency. *Flood Insurance Rate Map, Santa Clara County, California and Incorporated Areas.* Panel 204 of 830. Map Number 06085C0204H.	May 2009
Climatic	
• National Climatic Data Center, National Oceanic & Atmospheric Administration. <http://www.ncdc.noaa.gov/oa/ncdc.html>	Accessed: July 2019
Other Data Categories	
• Caltrans. *District 4 Work Plan Fiscal Year 2019-2020.* CTSW-RT-18-379.06.2	October 1, 2018
• Caltrans. Storm Water Quality Handbooks, *Construction Site Best Management Practices (BMPs) Manual. CTSW-RT-17-314.18.1*	May 2017

• Caltrans. *Storm Water Quality Handbooks, Project Planning and Design Guide*. CTSW-RT-17-314.24.1.	July 2017
• City of Los Altos. *Land Use Map.*	October 2018
• United States Environmental Protection Agency. *Rainfall Erosivity Factor Calculator for Small Construction Sites* <https://lew.epa.gov/>	Accessed: July 2019

SWDR Summary Spreadsheets

SWDR Signed Date	District	EA/Project ID	County	Route	Beg_PM	End_PM
	4	4G6804/0413000086	SCL	280	11.20	11.50

Project Description	Project Phase	Long SWDR	Risk Level	DSA (ac)	TMDL Waterbody
Off-Ramp Widening	PS&E	Yes	RL2	1.07	Yes

Biofiltration Strips and Swales	Detention	Infiltration Devices	GSRD	TST	MedFilter	DPPIA	SA	Other BMP
0	0	0	0	0	0	0	0	0

Est. Const_Start	Est. Const _Comp	Net New Impervious area (NNI)	Replaced Impervious Surface (RIS)	Additional Treatment Area (ATA)	Post Const Treatment Area (ac)
4/1/2020	10/31/2020	0.75	0.18	0.00	0.00

Treated Impervious Area (ac)	Treated Impervious Area Balance (ac)	Treated Pervious Area (ac)	Stabilized Area (ac)	MWELO	RSA	SW Comment
0.00	**0.00**	0.00	0.00	No	No	

Checklist SW-2, Stormwater Quality Issues Summary

Prepared by: WRECO Date: November 2019 District-Co-Route: 04-SCl-280

PM: 11.2/11.5 Project ID (or EA): 0413000086 (4G6804) RWQCB: San Francisco Bay (2)

The following questions provide a guide to collecting critical information relevant to project stormwater quality issues. Consult other Caltrans functional units (Environmental, Landscape Architecture, Maintenance, etc.) and the District/Regional Design Stormwater Coordinator as necessary. Summarize pertinent responses in Section 2 of the SWDR; do not discuss items identified as not applicable.

1.	Determine the receiving waters for the project	☒Complete	☐NA
2.	For the project limits, list the 303(d) impaired receiving water bodies and their constituents of concern.	☒Complete	☐NA
3.	Determine if there are any municipal or domestic water supply reservoirs or groundwater percolation facilities within the project limits, as shown by DWP.	☒Complete	☐NA
4.	Determine the RWQCB special requirements, including TMDLs, effluent limits, etc.	☒Complete	☐NA
5.	Determine regulatory agencies seasonal construction and construction exclusion dates or restrictions required by federal, state, or local agencies.	☒Complete	☐NA
6.	Determine if a 401 certification will be required.	☒Complete	☐NA
7.	Identify rainy season.	☒Complete	☐NA
8.	If applicable, determine the general climate of the project area. Identify annual rainfall and rainfall intensity curves.	☒Complete	☐NA
9.	If considering Treatment BMPs, determine the soil classification, permeability, erodibility and depth to groundwater.	☐Complete	☒NA
10.	Determine contaminated soils within the project area.	☒Complete	☐NA
11.	Determine the total disturbed soil area of the project.	☒Complete	☐NA
12.	Describe the topography of the project site.	☒Complete	☐NA
13.	List any areas outside of the Caltrans right-of-way that will be included in the project (e.g., contractor's staging yard, work from barges, easements for staging).	☒Complete	☐NA
14.	Determine if additional right-of-way acquisition or easements and right-of-entry will be required for design, construction and maintenance of BMPs. If so, how much?	☒Complete	☐NA
15.	Determine the estimated unit costs for right-of-way should it be needed for Treatment BMPs, stabilized conveyance systems, lay-back slopes, or interception ditches.	☐Complete	☒NA
16.	Determine if project area has any slope stabilization concerns.	☒Complete	☐NA
17.	Describe the local land use within the project area and adjacent areas.	☒Complete	☐NA
18.	Evaluate the presence of dry weather flow.	☐Complete	☒NA

Checklist SW-3, Measures for Avoiding or Reducing Potential Stormwater Impacts

Prepared by: WRECO Date: November 2019 District-Co-Route: 04-SCl-280

PM: 11.2/11.5 Project ID (or EA): 0413000086 (4G6804) RWQCB: San Francisco Bay (2)

The PE should confer with other functional units, such as Landscape Architecture, Hydraulics, Environmental, Materials, Construction and Maintenance, as needed to assess these issues. Summarize pertinent responses in Section 2 of the SWDR; do not discuss items identified as not applicable.

Options for avoiding or reducing potential impacts during project planning include the following:

1.	Can the project be relocated or realigned to avoid/reduce impacts to receiving waters or to increase the preservation of critical (or problematic) areas such as floodplains, steep slopes, wetlands, and areas with erosive or unstable soil conditions?	☐Yes	☒No	☐NA
2.	Can structures and bridges be designed or located to reduce work in live streams and minimize construction impacts?	☐Yes	☐No	☒NA
3.	Can any of the following methods be utilized to minimize erosion from slopes:			
	a. Disturbing existing slopes only when necessary?	☒Yes	☐No	☐NA
	b. Minimizing cut and fill areas to reduce slope lengths?	☒Yes	☐No	☐NA
	c. Incorporating retaining walls to reduce steepness of slopes or to shorten slopes?	☐Yes	☐No	☒NA
	d. Acquiring right-of-way easements (such as grading easements) to reduce steepness of slopes?	☐Yes	☐No	☒NA
	e. Avoiding soils or formations that will be particularly difficult to re-stabilize?	☒Yes	☐No	☐NA
	f. Providing cut and fill slopes flat enough to allow re-vegetation and limit erosion to pre-construction rates?	☒es	☐No	☐NA
	g. Providing benches or terraces on high cut and fill slopes to reduce concentration of flows?	☐Yes	☐No	☒NA
	h. Rounding and shaping slopes to reduce concentrated flow?	☒Yes	☐No	☐NA
	i. Collecting concentrated flows in stabilized drains and channels?	☒Yes	☐No	☐NA
4.	Does the project design allow for the ease of maintaining all BMPs?	☒Yes	☐No	
5.	Can the project be scheduled or phased to minimize soil-disturbing work during the rainy season?	☒Yes	☐No	
6.	Can permanent stormwater pollution controls such as paved slopes, vegetated slopes, basins, and conveyance systems be installed early in the construction process to provide additional protection and to possibly utilize them in addressing construction stormwater impacts?	☒Yes	☐No	☐NA

Design Pollution Prevention BMPs

Checklist DPP-1, Part 1

Prepared by: WRECO Date: November 2019 District-Co-Route: 04-SCl-280

PM: 11.2/11.5 Project ID (or EA): 0413000086 (4G6804) RWQCB: San Francisco Bay (2)

Consideration of Design Pollution Prevention BMPs

Consideration of Downstream Effects Related to Potentially Increased Flow [to streams or channels]

Will the project increase velocity or volume of downstream flow?	☒Yes	☐No	☐NA
Will the project discharge to unlined channels?	☐Yes	☒No	☐NA
Will the project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability?	☐Yes	☒No	☐NA

If Yes was answered to any of the above questions, consider ***Downstream Effects Related to Potentially Increased Flow***, complete the Checklist DPP-1, Part 2.

Slope/Surface Protection Systems

Will the project create new slopes or modify existing slopes?	☒Yes	☐No	☐NA

If Yes was answered to the above question, consider ***Slope/Surface Protection Systems***, complete the Checklist DPP-1, Part 3.

Concentrated Flow Conveyance Systems

Will the project create or modify ditches, dikes, berms, or swales?	☒Yes	☐No	☐NA
Will project create new slopes or modify existing slopes?	☒Yes	☐No	☐NA
Will it be necessary to direct or intercept surface runoff?	☒Yes	☐No	☐NA
Will cross drains be modified?	☒Yes	☐No	☐NA

If Yes was answered to any of the above questions, consider ***Concentrated Flow Conveyance Systems***; complete the Checklist DPP-1, Part 4.

Preservation of Existing Vegetation, Soils, and Stream Buffer Areas

It is the goal of the Stormwater Program to maximize the protection of desirable existing vegetation, soils, and stream buffer areas to provide erosion and sediment control benefits on all projects. ☒Complete

Consider ***Preservation of Existing Vegetation, soils, and stream buffer areas***, complete the Checklist DPP-1, Part 5.

Design Pollution Prevention BMPs

Checklist DPP-1, Part 2

Prepared by: WRECO Date: November 2019 District-Co-Route: 04-SCl-280

PM: 11.2/11.5 Project ID (or EA): 0413000086 (4G6804) RWQCB: San Francisco Bay (2)

Downstream Effects Related to Potentially Increased Flow

1.	Review total paved area and reduce to the maximum extent practicable.	☒Complete
2.	Review channel lining materials and design for stream bank erosion control.	☒Complete
	(a) See Chapters 860 and 870 of the HDM.	☒Complete
	(b) Consider channel erosion control measures within the construction limits as well as downstream. Consider scour velocity. If erosion control measures are required downstream of construction limits obtain the appropriate permits and right of way documents to include work within the construction limits.	☒Complete
3.	Include, where appropriate, energy dissipation devices at culvert outlets.	☒Complete
4.	Ensure all transitions between culvert outlets/headwalls/wingwalls and channels are smooth to reduce turbulence and scour.	☒Complete
5.	Include, if appropriate, peak flow attenuation basins or devices to reduce peak discharges.	☒Complete
6.	Calculate the water quality volume infiltrated within the project limits. These calculations will be used in the Checklist T-1, Part 1.	☐Complete

Design Pollution Prevention BMPs

Checklist DPP-1, Part 3

Prepared by: WRECO Date: November 2019 District-Co-Route: 04-SCl-280

PM: 11.2/11.5 Project ID (or EA): 0413000086 (4G6804) RWQCB: San Francisco Bay (2)

Slope / Surface Protection Systems

1.	What are the proposed areas of cut and fill? (attach plan or map)	☒Complete	
2.	Were benches or terraces provided on high cut and fill slopes to shorten slope length?	☐Yes	☒No
3.	Were concentrated flows collected in stabilized drains or channels?	☒Yes	☐No
4.	Are new or disturbed slopes > 4:1 horizontal:vertical (h:v)?	☐Yes	☒No
	If Yes, District Landscape Architect is responsible for an erosion control strategy and may prepare an erosion control plan.		
5.	Are new or disturbed slopes > 2:1 (h:v)?	☐Yes	☒No
	If Yes, DES Geotechnical Design unit must prepare a Geotechnical Design Report, and the District Landscape Architect should prepare or approve an erosion control plan. Concurrence must be obtained from the District Maintenance Stormwater Coordinator for slopes steeper than 2:1 (h:v).		

VEGETATED SURFACES

1.	Identify existing vegetation.	☒Complete	
2.	Evaluate site to determine soil types, appropriate vegetation and planting strategies.	☒Complete	
3.	How long will it take for permanent vegetation to establish?	☒Complete	
4.	Plan transition BMPs from construction to permanent establishment.	☒Complete	
5.	Have vegetated areas and supporting permanent irrigation systems been designed to comply with the Model Water Efficient Landscape Ordinance (MWELO)?	☐Yes	☒No
6.	Minimize overland and concentrated flow depths and velocities.	☒Complete	

HARD SURFACES

1.	Are hard surfaces minimized?	☒Yes	☐No
	Review appropriate SSPs for Vegetated Surface and Hard Surface Protection Systems.	☒Complete	

Design Pollution Prevention BMPs

Checklist DPP-1, Part 4

Prepared by: WRECO Date: November 2019 District-Co-Route: 04-SCl-280

PM: 11.2/11.5 Project ID (or EA): 0413000086 (4G6804) RWQCB: San Francisco Bay (2)

Concentrated Flow Conveyance Systems

Ditches, Berms, Dikes and Swales

1. Consider Ditches, Berms, Dikes, and Swales as per Topics 813, 834.3, 835, and Chapter 860 of the HDM. ☒Complete
2. Review existing and proposed conditions to remove any dike not required for slope stability, erosion control, and water conveyance. ☒Complete
3. Evaluate risks due to erosion, overtopping, flow backups or washout. ☒Complete
4. Consider outlet protection where localized scour is anticipated. ☒Complete
5. Examine the site for run-on from off-site sources. ☒Complete
6. Consider permissible shear and velocity when selecting lining material (See Table 865.2 in the HDM). ☒Complete

Overside Drains

1. Consider downdrains, as per Index 834.4 of the HDM. ☒Complete
2. Consider paved spillways for side slopes flatter than 4:1 h:v. ☒Complete

Flared Culvert End Sections

1. Consider flared end sections on culvert inlets and outlets as per Chapter 827 of the HDM. ☒Complete

Outlet Protection/Velocity Dissipation Devices

1. Consider outlet protection/velocity dissipation devices at outlets, including cross drains, as per Chapters 827 and 870 of the HDM. ☒Complete

Review appropriate SSPs for Concentrated Flow Conveyance Systems. ☒Complete

Design Pollution Prevention BMPs

Checklist DPP-1, Part 5

Prepared by: WRECO Date: November 2019 District-Co-Route: 04-SCl-280

PM: 11.2/11.5 Project ID (or EA): 0413000086 (4G6804) RWQCB: San Francisco Bay (2)

Preservation of Existing Vegetation, Soils, and Stream Buffer Areas

1. Review Preservation of Property, (Clearing and Grubbing) to reduce clearing and grubbing and maximize preservation of existing vegetation, soils, and stream buffer areas. ☒Complete
2. Has all vegetation, soils, and stream buffer areas to be retained been coordinated with Environmental, and identified and defined in the contract plans? ☒Yes ☐No
3. Have steps been taken to minimize disturbed areas, such as locating temporary roadways to avoid stands of trees and shrubs and to follow existing contours to reduce cutting and filling? ☒Complete
4. Have impacts to preserved vegetation, soils, and stream buffer areas been considered while work is occurring in disturbed areas? ☒Yes ☐No
5. Are all areas to be preserved delineated on the plans? ☒Yes ☐No

DATE: November 2019

Project ID (EA): 0413000086 (4G6804)

Project Evaluation Process for the Consideration of Construction Site BMPs

No.	Criteria	Yes ✓	No ✓	Supplemental Information
1.	Will construction of the project result in areas of disturbed soil as defined by the Project Planning and Design Guide (PPDG)?	✓		If Yes, Construction Site BMPs for Soil Stabilization (SS) will be required. Review CS-1, Part 1. Continue to 2. If No, Continue to 3.
2.	Is there a potential for disturbed soil areas within the project to discharge to storm drain inlets, drainage ditches, areas outside the RW, etc.?	✓		If Yes, Construction Site BMPs for Sediment Control (SC) will be required. Review CS-1, Part 2. Continue to 3.
3.	Is there a potential for sediment or construction related materials and wastes to be tracked offsite and deposited on private or public paved roads by construction vehicles and equipment?	✓		If Yes, Construction Site BMPs for Tracking Control (TC) will be required. Review CS-1, Part 3. Continue to 4.
4.	Is there a potential for wind to transport soil and dust offsite during the period of construction?	✓		If Yes, Construction Site BMPs for Wind Erosion Control (WE) will be required. Review CS-1, Part 4. Continue to 5.
5.	Is dewatering anticipated or will construction activities occur within or adjacent to a live channel or stream?		✓	If Yes, Construction Site BMPs for Non-Stormwater Management (NS) will be required. Review CS-1, Part 5. Continue to 6.
6.	Will construction include saw-cutting, grinding, drilling, concrete or mortar mixing, hydro-demolition, blasting, sandblasting, painting, paving, or other activities that produce residues?	✓		If Yes, Construction Site BMPs for Non-Stormwater Management (NS) will be required. Review CS-1, Parts 5 & 6. Continue to 7.
7.	Are stockpiles of soil, construction related materials, and/or wastes anticipated?	✓		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Review CS-1, Part 6. Continue to 8.
8.	Is there a potential for construction related materials and wastes to have direct contact with stormwater; be dispersed by wind; be dumped and/or spilled into storm drain systems?	✓		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Review CS-1, Part 6.

Construction Site BMPs

Checklist CS-1, Part 1

Prepared by: WRECO Date: November 2019 District-Co-Route: 04-SCl-280

PM: 11.2/11.5 Project ID (or EA): 0413000086 (4G6804) RWQCB: San Francisco Bay (2)

Temporary Soil Stabilization

General Parameters

1. How many rainy seasons are anticipated between begin and end of construction? 2

2. What is the total disturbed soil area for the project? (ac) 1.07

3. Consult your District/Regional Design Stormwater Coordinator for the minimum required combination of temporary soil stabilization and temporary sediment controls and barriers for area, slope inclinations, rainy and non-rainy season, and active and non-active disturbed soil areas. ☒Complete

Scheduling

4. Does the project have a duration of more than one rainy season and have disturbed soil area in excess of 25 acres? ☐Yes ☒No

   (a) Include multiple mobilizations (Move-in/Move-out) as a separate contract bid line item to implement permanent erosion control or revegetation work on slopes that are substantially complete. (Estimate at least 6 mobilizations for each additional rainy season. Designated Construction Representative may suggest an alternate number of mobilizations.) ☐Complete

   (b) Edit specifications for permanent erosion control or revegetation work to be implemented on slopes that are substantially complete. ☐Complete

   (c) Edit permanent erosion control or revegetation specifications to require seeding and planting work to be performed when optimal. ☐Complete

Preservation of Existing Vegetation

5. Do Environmentally Sensitive Areas (ESAs) exist within or adjacent to the construction limits? (Verify the completion of DPP-1, Part 5) ☒Yes ☐No

   (a) Verify the protection of ESAs through delineation on all project plans. ☒Complete

   (b) Protect from clearing and grubbing and other construction disturbance by enclosing the ESA perimeter with high visibility plastic fence or other BMP. ☒Complete

6. Are there areas of existing vegetation (mature trees, native vegetation, landscape planting, etc.) that need not be disturbed by project construction? Will areas designated for proposed or existing Treatment BMPs need protection (infiltration characteristics, vegetative cover, etc.)? (Coordinate with District Environmental and Construction to determine limits of work necessary to preserve existing vegetation to the maximum extent practicable.) ☒Yes ☐No

   (a) Designate as outside of limits of work (or designate as ESAs) and show on all project plans. ☒Complete

   (b) Protect with high visibility plastic fence or other BMP. ☒Complete

7. If yes for 5, 6, or both, then designate ESA fencing as a separate contract bid line item, *if not already incorporated as part of design pollution prevention work (See DPP-1, Part 5).* ☒Complete

Slope Protection

8. Provide a temporary soil stabilization BMP(s) appropriate for the DSA, slope steepness, slope length, and soil erodibility. (Consult with District Landscape Architect.)

   (a) Select Hydraulic Mulch, Hydroseeding, Soil Binders, Straw Mulch, Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets, Wood Mulching, other BMPs or a combination to cover the DSA throughout the project's rainy season. ☒Complete

   (b) Increase the quantities by 25 percent for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.) ☒Complete

   (c) Designate as a separate contract bid line item. ☒Complete

Slope Interrupter Devices

9. For projects with temporary erosion control requirements, provide slope interrupter devices for all slopes with slope lengths equal to or greater than of 20 ft in length, in accordance with CGP requirements.

   (a) Select Fiber Rolls or other BMPs to protect slopes throughout the project's rainy season. ☒Complete

   (b) For slope inclination of 4:1 (h:v) and flatter, Fiber Rolls or other BMPs shall be placed along the contour and spaced 20 ft on center. ☒Complete

   (c) For slope inclination between 4:1 (h:v) and 2:1 (h:v), Fiber Rolls or other BMPs shall be placed along the contour and spaced 15 ft on center. ☒Complete

   (d) For slope inclination of 2:1 (h:v) and greater, Fiber Rolls or other BMPs shall be placed along the contour and spaced 10 ft on center. ☐Complete

   (e) Increase the quantities by 25 percent for each additional rainy season. (Designated Construction Representative may suggest alternate increase.) ☒Complete

   (f) Designate as a separate contract bid line item. ☒Complete

Channelized Flow

10. Identify locations within the project site where concentrated flow from stormwater runoff can erode areas of soil disturbance. Identify locations of concentrated flow that enters the site from outside of the RW (off-site run-on). ☒Complete

    (a) Utilize Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets, Earth Dikes/Swales, Ditches, Outlet Protection/Velocity Dissipation, Slope Drains, Check Dams, or other BMPs to convey concentrated flows in a non-erosive manner. ☒Complete

    (b) Designate as a separate contract bid line item, as appropriate. ☒Complete

Construction Site BMPs

Checklist CS-1, Part 2

Prepared by: WRECO Date: November 2019 District-Co-Route: 04-SCl-280

PM: 11.2/11.5 Project ID (or EA): 0413000086 (4G6804) RWQCB: San Francisco Bay (2)

Sediment Control

Perimeter Controls - Run-off Control

1. Is there a potential for sediment laden sheet and concentrated flows to discharge offsite from runoff cleared and grubbed areas, below cut slopes, embankment slopes, etc.? ☒Yes ☐No

   (a) Select linear sediment barrier such as Silt Fence, Fiber Rolls, Gravel Bag Berm, Sand Bag Barrier, Straw Bale Barrier, or a combination to protect wetlands, water courses, roads (paved and unpaved), construction activities, and adjacent properties. (Coordinate with District Construction for selection and preference of linear sediment barrier BMPs.) ☒Complete

   (b) Increase the quantities by 25 percent for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.) ☒Complete

   (c) Designate as a separate contract bid line item. ☒Complete

Perimeter Controls - Run-on Control

2. Do locations exist where sheet flow upslope of the project site and where concentrated flow upstream of the project site may contact DSA and construction activities? ☒Yes ☐No

   (a) Utilize linear sediment barriers such as Earth Dike/Drainage Swales and Lined Ditches, Fiber Rolls, Gravel Bag Berm, Sand Bag Barrier, Straw Bale Barrier, or other BMPs to convey flows through and/or around the project site. (Coordinate with District Construction for selection and preference of perimeter control BMPs.) ☒Complete

   (b) Designate as a separate contract bid line item, as appropriate. ☒Complete

Storm Drain Inlets

3. Do existing or proposed drainage inlets exist within the construction limits? ☒Yes ☐No

   (a) Select Drainage Inlet Protection to protect municipal storm drain systems or receiving waters wetlands at each drainage inlet. (Coordinate with District Construction for selection and preference of inlet protection BMPs.) ☒Complete

   (b) Designate as a separate contract bid line item. ☒Complete

4. Can existing or proposed drainage inlets utilize an excavated sediment trap as described in Drainage Inlet Protection - Type 2? ☐Yes ☒No

   (a) Include with other types of Drainage Inlet Protection. ☐Complete

Sediment/Desilting Basin

5. Does the project lie within a Rainfall Area where the required combination of temporary soil stabilization and sediment control BMPs includes desilting basins? ☒Yes ☐No

   (a) Consider feasibility for desilting basin allowing for available right-of-way within the construction limits, topography, soil type, disturbed soil area within the watershed, and climate conditions. Document if the inclusion of sediment/desilting basins is infeasible. ☒Complete

   (b) If feasible, design desilting basin(s) per the guidance in the *CASQA Construction BMP Guidance Handbook* to maximize capture of sediment-laden runoff. ☐Complete

   (c) Designate as a separate contract bid item ☐Complete

6. Is ATS to be used for controlling sediment? ☐Yes ☒No

   (a) If yes, then will desilting basin or other means of natural storage be used? ☐Yes ☐No

   (b) If no, then plan for storage tanks sufficient to hold treatment volume. ☒Complete

7. Will the project benefit from the early implementation of proposed permanent Treatment BMPs? (Coordinate with District Construction.) ☒Yes ☐No

   (a) Edit specifications for permanent Treatment BMP work to be implemented in a manner that will allow its use as a Construction Site BMP. ☒Complete

Sediment Trap

8. Can sediment traps be located to collect channelized runoff from disturbed soil areas prior to discharge? ☐Yes ☒No

   (a) Design sediment traps in accordance with the *CASQA Construction BMP Guidance Handbook*. ☐Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Construction Site BMPs

Checklist CS-1, Part 3

Prepared by: WRECO Date: November 2019 District-Co-Route: 04-SCl-280

PM: 11.2/11.5 Project ID (or EA): 0413000086 (4G6804) RWQCB: San Francisco Bay (2)

Tracking Controls

Stabilized Construction Entrance/Exit

1. Are there points of entrance and exit from the project site to paved roads where mud and dirt could be transported offsite by construction equipment? (Coordinate with District Construction for selection and preference of tracking control BMPs.) ☒Yes ☐No

   (a) Identify and designate these entrance/exit points as stabilized construction entrances. ☒Complete

   (b) Designate as a separate contract bid line item. ☒Complete

Tire/Wheel Wash

2. Are site conditions anticipated that would require additional or modified tracking controls such as entrance/outlet tire wash? (Coordinate with District Construction.) ☐Yes ☒No

   (a) Designate as a separate contract bid line item. ☐Complete

Stabilized Construction Roadway

3. Are temporary access roads necessary to access remote construction activity locations or to transport materials and equipment? (In addition to controlling dust and sediment tracking, access roads limit impact to sensitive areas by limiting ingress, and provide enhanced bearing capacity.) (Coordinate with District Construction.) ☐Yes ☒No

   (a) Designate these temporary access roads as stabilized construction roadways. ☐Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Street Sweeping and Vacuuming

1. Is there a potential for tracked sediment or construction related residues to be transported offsite and deposited on public or private roads? (Coordinate with District Construction for preference of including street sweeping and vacuuming with tracking control BMPs.) ☒Yes ☐No

   (a) Designate as a separate contract bid line item. ☒Complete

Construction Site BMPs

Checklist CS-1, Part 4

Prepared by: WRECO Date: November 2019 District-Co-Route: 04-SCl-280

PM: 11.2/11.5 Project ID (or EA): 0413000086 (4G6804) RWQCB: San Francisco Bay (2)

Wind Erosion Controls

Wind Erosion Control

1. Is the project located in an area where standard dust control practices in accordance with *Standard Specifications*, Section 14-903: Dust Control, are anticipated to be inadequate during construction to prevent the transport of dust offsite by wind? *(Note: Dust control by water truck application is paid for through the various items of work. Dust palliative, if it is included, is paid for as a separate item.)* ☐Yes ☒No

   (a) Select Hydraulic Mulch, Hydroseeding, Soil Binders, Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets, Wood Mulching or a combination to cover the DSA subject to wind erosion year-round, especially when significant wind and dry conditions are anticipated during project construction. (Coordinate with District Construction for selection and preference of wind erosion control BMPs.) ☐Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Construction Site BMPs

Checklist CS-1, Part 5

Prepared by: WRECO Date: November 2019 District-Co-Route: 04-SCl-280

PM: 11.2/11.5 Project ID (or EA): 0413000086 (4G6804) RWQCB: San Francisco Bay (2)

Non-Stormwater Management

Temporary Stream Crossing & Clear Water Diversion

1. Will construction activities occur within a water body or watercourse such as a lake, wetland, or stream? (Coordinate with District Construction for selection and preference for stream crossing and clear water diversion BMPs.) ☐Yes ☒No

   (a) Select from types offered in Temporary Stream Crossing to provide access through watercourses consistent with permits and agreements.[1] ☐Complete

   (b) Select from types offered in Clear Water Diversion to divert watercourse consistent with permits and agreements.[1] ☐Complete

   (c) Designate as a separate contract bid line item(s). ☐Complete

Other Non-Stormwater Management BMPs

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants? ☒Yes ☐No

   (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as Water Conservation Practices, Dewatering Operations, Paving and Grinding Operations, Potable Water/Irrigation, Vehicle and Equipment Cleaning, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Pile Driving Operations, Concrete Curing, Material and Equipment Use Over Water, Concrete Finishing, and Structure Demolition/Removal Over or Adjacent to Water.[1] ☒Complete

   (b) Verify that costs for non-stormwater management BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Job Site Management *Standard Specifications* Section 13 are anticipated to be inadequate or if requested by Construction. ☒Complete

[1] *Coordinate with District Environmental for consistency with US Army Corps of Engineers 404 and 401 permits and Dept. of Fish and Game 1601 Streambed alteration Agreements.*

Construction Site BMPs

Checklist CS-1, Part 6

Prepared by: WRECO Date: November 2019 District-Co-Route: 04-SCl-280

PM: 11.2/11.5 Project ID (or EA): 0413000086 (4G6804) RWQCB: San Francisco Bay (2)

Waste Management & Materials Pollution Control

Concrete Waste Management

1. Does the project include concrete placement or mortar mixing? ☒Yes ☐No

   (a) Select from types offered in Concrete Waste Management to provide concrete washout facilities. In addition, consider portable concrete washouts and vendor supplied concrete waste management services. (Coordinate with District Construction for selection and preference of waste management and materials pollution control BMPs.) ☒Complete

   (b) Designate as a separate contract bid line item if the quantity of concrete waste and washout are anticipated to exceed 5.2 yd^3 or if requested by Construction. ☒Complete

Other Waste Management and Materials Pollution Controls

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants? ☒Yes ☐No

   (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as Material Delivery and Storage, Material Use, Spill Prevention and Control, Solid Waste Management, Hazardous Waste Management, Contaminated Soil Management, Sanitary/Septic Waste Management, and Liquid Waste Management ☒Complete

   (b) Verify that costs for waste management and materials pollution control BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Job Site Management *Standard Specifications* Section 13 are anticipated to be inadequate or if requested by Construction. ☒Complete

Temporary Stockpiles (Soil, Materials, and Wastes)

3. Are stockpiles of soil, etc. anticipated during construction? ☒Yes ☐No

   (a) Verify that costs for stockpile management and associated sediment control and temporary soil stabilization BMPs for temporary stockpiles are identified in the contract documents. Designate as a separate contract bid line item if the requirements in Job Site Management *Standard Specifications* Section 13 are anticipated to be inadequate or if requested by Construction. ☒Complete

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCl	280	11.2/11.5	5	76

Mark A Wood — 10-16-19
REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Mark A. Wood — No. C41258 — Exp. 03-31-21 — CIVIL — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

JACOBS ENGINEERING GROUP INC.
300 FRANK H. OGAWA PLAZA,
SUITE 600
OAKLAND, CA 94612

VTA
3331 NORTH FIRST STREET
SAN JOSE, CA 95134

NOTES:

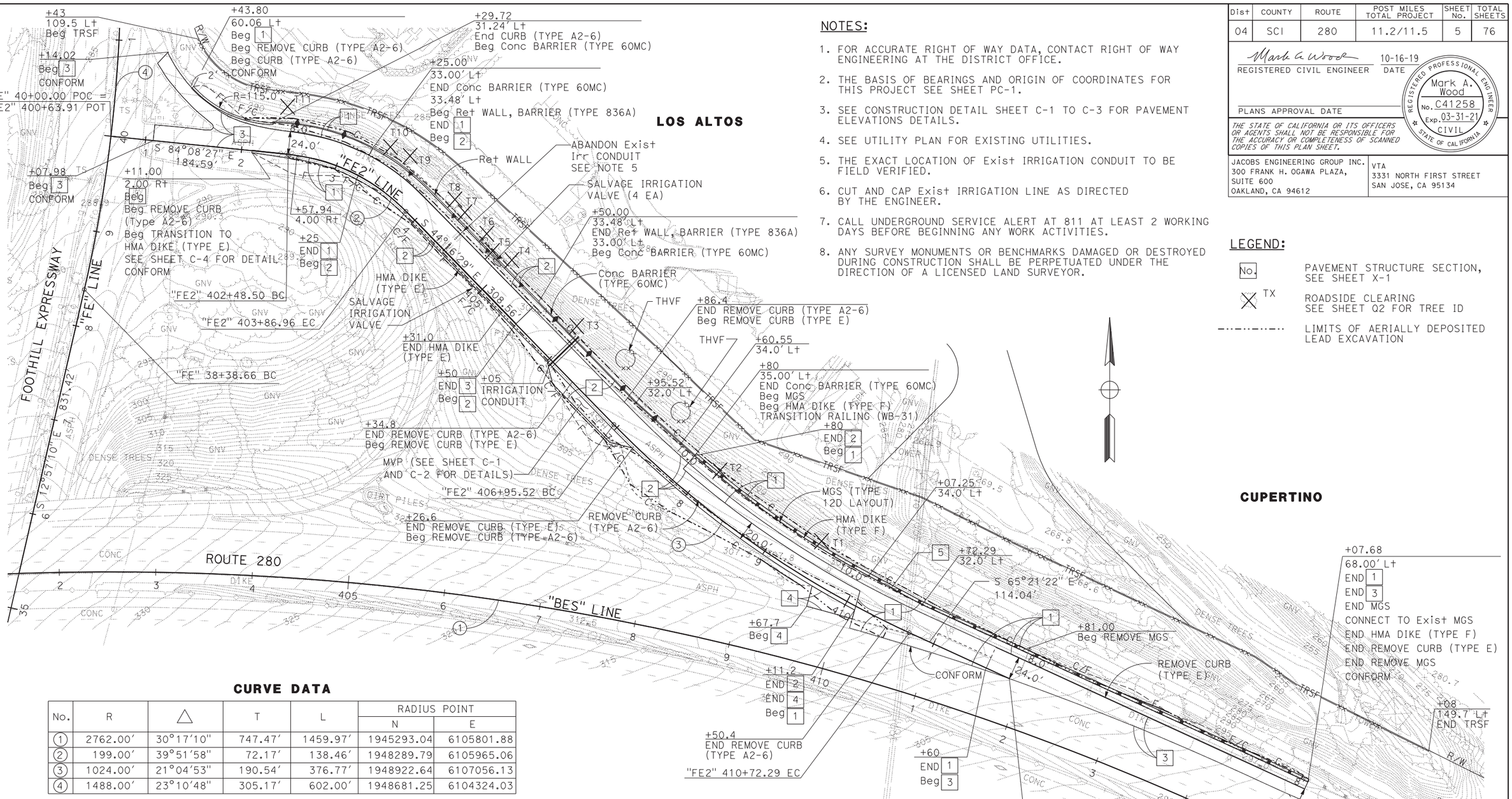
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. THE BASIS OF BEARINGS AND ORIGIN OF COORDINATES FOR THIS PROJECT SEE SHEET PC-1.
3. SEE CONSTRUCTION DETAIL SHEET C-1 TO C-3 FOR PAVEMENT ELEVATIONS DETAILS.
4. SEE UTILITY PLAN FOR EXISTING UTILITIES.
5. THE EXACT LOCATION OF Exist IRRIGATION CONDUIT TO BE FIELD VERIFIED.
6. CUT AND CAP Exist IRRIGATION LINE AS DIRECTED BY THE ENGINEER.
7. CALL UNDERGROUND SERVICE ALERT AT 811 AT LEAST 2 WORKING DAYS BEFORE BEGINNING ANY WORK ACTIVITIES.
8. ANY SURVEY MONUMENTS OR BENCHMARKS DAMAGED OR DESTROYED DURING CONSTRUCTION SHALL BE PERPETUATED UNDER THE DIRECTION OF A LICENSED LAND SURVEYOR.

LEGEND:

- [No.] — PAVEMENT STRUCTURE SECTION, SEE SHEET X-1
- TX — ROADSIDE CLEARING SEE SHEET Q2 FOR TREE ID
- LIMITS OF AERIALLY DEPOSITED LEAD EXCAVATION

LOS ALTOS

CUPERTINO



CURVE DATA

No.	R	△	T	L	RADIUS POINT N	RADIUS POINT E
①	2762.00'	30°17'10"	747.47'	1459.97'	1945293.04	6105801.88
②	199.00'	39°51'58"	72.17'	138.46'	1948289.79	6105965.06
③	1024.00'	21°04'53"	190.54'	376.77'	1948922.64	6107056.13
④	1488.00'	23°10'48"	305.17'	602.00'	1948681.25	6104324.03

WARNING - UNDERGROUND TELECOMMUNICATIONS FACILITIES (FOOTHILL EXPRESSWAY):

A. EXISTING COUNTY COMMUNICATION AND ELECTRICAL FACILITIES ARE LOCATED IN THE PROJECT AREA. COMMUNICATION FIBER OPTIC CABLE DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE TEMPORARILY RESTORED AND THEN REPLACED IN ACCORDANCE WITH CSS 86.01.06. DAMAGED FIBER OPTIC CABLE SHALL BE REPLACED FOR THE ENTIRE LENGTH BETWEEN EXISTING END-TO-END SPLICES. DAMAGED SIGNAL INTERCONNECT CABLE SHALL BE REPLACED FOR THE ENTIRE LENGTH BETWEEN CONTROLLER CABINETS.

B. ANY DAMAGE TO EXISTING ELECTRICAL OR COMMUNICATION SYSTEM SUCH AS LOOP DETECTORS AND FIBER OPTICS SHALL BE TEMPORARILY RESTORED TO FULL OPERATION OR VIA MICROWAVE DETECTION IMMEDIATELY AND REPLACED PRIOR TO PROJECT CLOSURE.

C. APPLICANT TO NOTIFY COUNTY FOR ANY PROPOSED MODIFICATIONS TO COUNTY-MAINTAINED SIGNAL OPERATIONS AND PHASING AT (408) 494-1342. NO MODIFICATION SHALL BE ALLOWED UNLESS APPROVED BY COUNTY IN WRITING. UPON APPROVAL, APPLICANT TO SCHEDULE APPOINTMENT WITH SIGNAL MAINTENANCE AT (408) 494-2700 PRIOR TO PERFORMING WORK.

LAYOUT

SCALE: 1"=50'

L-1

REVISED BY	DATE REVISED
PHILIP CHEUNG	MARK WOOD

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR: DARRELL VICE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 10-16-19 | DATE PLOTTED => 16-OCT-2019 | TIME PLOTTED => 15:29

BORDER LAST REVISED 7/2/2010 | USERNAME => perezbr | DGN FILE => 0413000861ea001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0712 | PROJECT NUMBER & PHASE 04130000861

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCl	280	11.2/11.5	12	76

Anlette Ochoa — 10-16-19
REGISTERED CIVIL ENGINEER — DATE

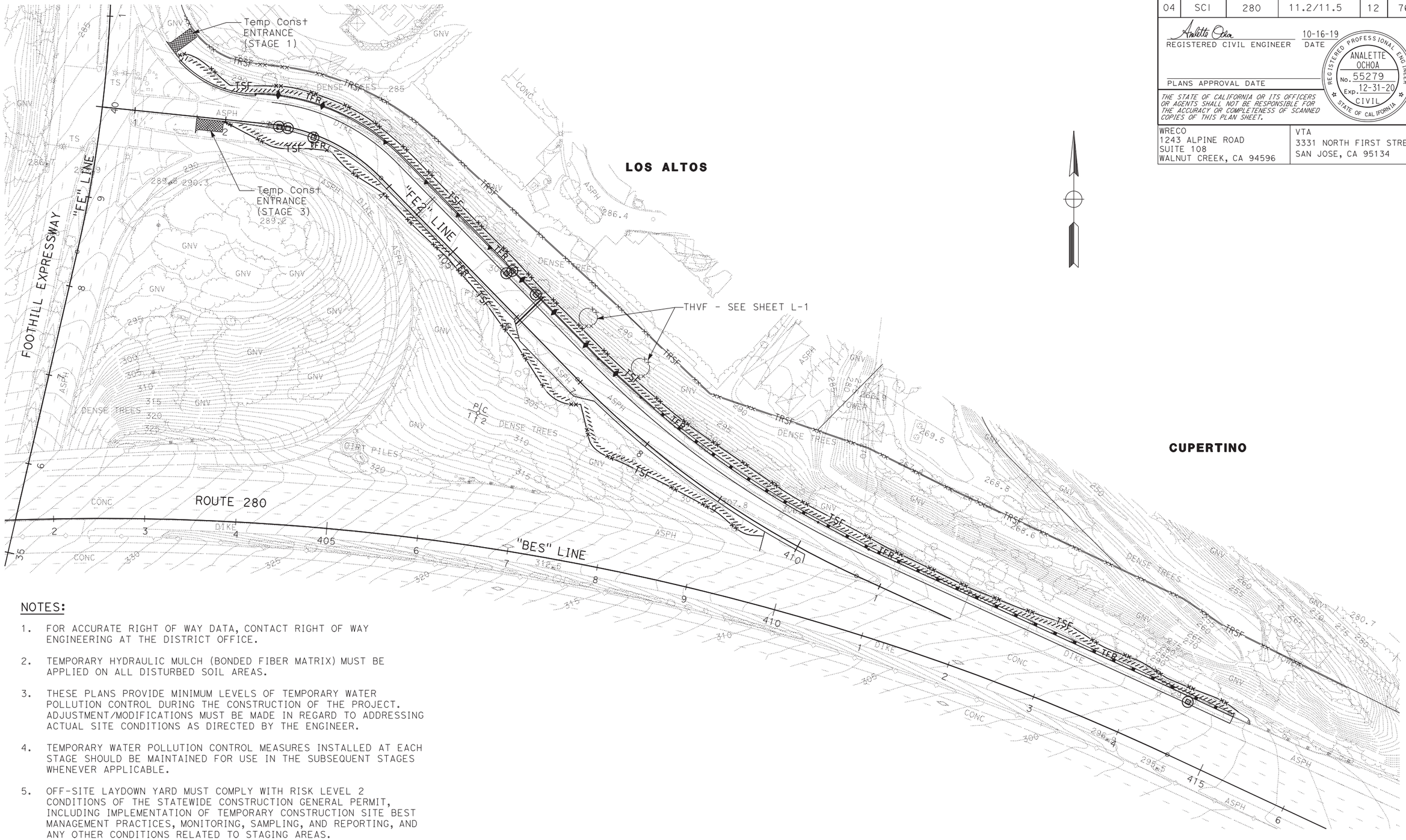
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ANALETTE OCHOA — No. 55279 — Exp. 12-31-20 — CIVIL — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VTA
3331 NORTH FIRST STREET
SAN JOSE, CA 95134



NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX) MUST BE APPLIED ON ALL DISTURBED SOIL AREAS.
3. THESE PLANS PROVIDE MINIMUM LEVELS OF TEMPORARY WATER POLLUTION CONTROL DURING THE CONSTRUCTION OF THE PROJECT. ADJUSTMENT/MODIFICATIONS MUST BE MADE IN REGARD TO ADDRESSING ACTUAL SITE CONDITIONS AS DIRECTED BY THE ENGINEER.
4. TEMPORARY WATER POLLUTION CONTROL MEASURES INSTALLED AT EACH STAGE SHOULD BE MAINTAINED FOR USE IN THE SUBSEQUENT STAGES WHENEVER APPLICABLE.
5. OFF-SITE LAYDOWN YARD MUST COMPLY WITH RISK LEVEL 2 CONDITIONS OF THE STATEWIDE CONSTRUCTION GENERAL PERMIT, INCLUDING IMPLEMENTATION OF TEMPORARY CONSTRUCTION SITE BEST MANAGEMENT PRACTICES, MONITORING, SAMPLING, AND REPORTING, AND ANY OTHER CONDITIONS RELATED TO STAGING AREAS.

APPROVED FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY

TEMPORARY WATER POLLUTION CONTROL PLAN

SCALE: 1"=50'

WPC-1

REVISED BY	ANDREW CHIN
DATE REVISED	ANALETTE OCHOA
CALCULATED-DESIGNED BY	
CHECKED BY	
CONSULTANT FUNCTIONAL SUPERVISOR	HAN-BIN LIANG
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	Caltrans

LAST REVISION 10-11-19 — DATE PLOTTED => 18-OCT-2019 — TIME PLOTTED => 11:53

BORDER LAST REVISED 7/2/2010 | USERNAME => perezbr | DGN FILE => 0413000861gb001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0712 | PROJECT NUMBER & PHASE 04130000861

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCl	280	11.2/11.5	14	76

Mark A Wood — REGISTERED CIVIL ENGINEER — 10-16-19 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Mark A. Wood — No. C41258 — Exp. 03-31-21 — CIVIL — STATE OF CALIFORNIA

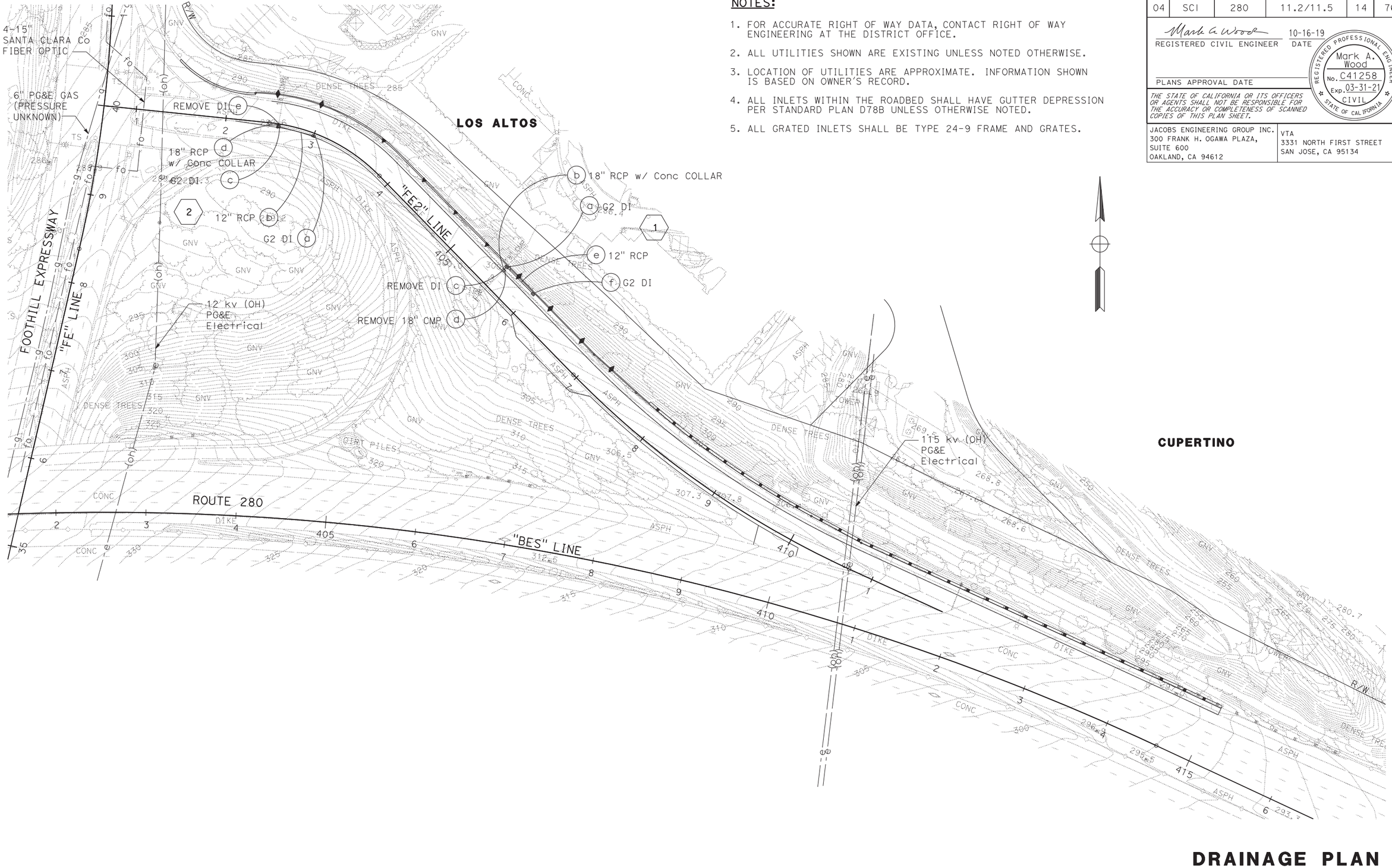
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

JACOBS ENGINEERING GROUP INC.
300 FRANK H. OGAWA PLAZA,
SUITE 600
OAKLAND, CA 94612

VTA
3331 NORTH FIRST STREET
SAN JOSE, CA 95134

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. ALL UTILITIES SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.
3. LOCATION OF UTILITIES ARE APPROXIMATE. INFORMATION SHOWN IS BASED ON OWNER'S RECORD.
4. ALL INLETS WITHIN THE ROADBED SHALL HAVE GUTTER DEPRESSION PER STANDARD PLAN D78B UNLESS OTHERWISE NOTED.
5. ALL GRATED INLETS SHALL BE TYPE 24-9 FRAME AND GRATES.



DRAINAGE PLAN

SCALE: 1"=50'

D-1

APPROVED FOR DRAINAGE AND UTILITY WORK ONLY

REVISED BY	DATE REVISED
PHILIP CHEUNG	MARK WOOD
CALCULATED-DESIGNED BY	CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR	DARRELL VICE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI	280	11.2/11.5	42	76

Analette Ochoa 10-16-19
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
ANALETTE OCHOA
No. 55279
Exp. 12-31-20
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VTA
3331 NORTH FIRST STREET
SAN JOSE, CA 95134

EROSION CONTROL TYPE 1

SEQUENCE	ITEM	MATERIAL		APPLICATION RATE	DEPTH	REMARKS
		DESCRIPTION	TYPE			
STEP 1	COMPOST	COMPOST	FINE	135 CY/ACRE	1"	
STEP 2	STRAW	STRAW	RICE	1.75 TONS/ACRE	-	
STEP 3	INCORPORATE MATERIALS	COMPOST/STRAW	-	-	2" TO 4"	
STEP 4	FIBER ROLLS	RICE STRAW FILLED AND JUTE COVERED	8 TO 10 INCHES IN Dia	-	-	INSTALLATION TYPE 1 (SEE NOTES ON EC-1)
STEP 5	HYDROSEED	SEED	MIX	57 LB/ACRE	-	
		FIBER	COMBINATION	1000 LB/ACRE		
		FERTILIZER	ORGANIC	600 LB/ACRE		
STEP 6	HYDROMULCH	FIBER	COMBINATION	2000 LB/ACRE	-	
		TACKIFIER	PLANT BASED	200 LB/ACRE		

SEED MIX

BOTANICAL NAME (COMMON NAME)	PERCENT GERMINATION (MINIMUM)	POUNDS PURE LIVE SEED PER ACRE (SLOPE MEASUREMENT)
BROMUS CARINATUS (CALIFORNIA BROME)	40	10
ESCHSCHOLZIA CALIFORNICA (CALIFORNIA POPPY)	35	1
FESTUCA MICROSTACHYS (THREE WEEKS FESCUE)	35	6
FESTUCA RUBRA (RED FESCUE)	40	6
HORDEUM BRACHYANTHERUM (BARLEY)	40	8
LEYMUS TRITICOIDES (CREEPING WILDRYE)	40	9
LUPINUS NANUS (SKY LUPINE)	40	3
MELICA CALIFORNICA (CALIFORNIA ONIONGRASS)	30	4
STIPA PULCHRA (PURPLE NEEDLEGRASS)	35	10

EROSION CONTROL LEGEND

ECL-1

REVISED BY | ANDREW CHIN
DATE REVISED | ANALETTE OCHOA
CALCULATED-DESIGNED BY
CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR | HAN-BIN LIANG
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | Caltrans

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USERNAME => perezbr
DGN FILE => 04130000861tc001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0712
PROJECT NUMBER & PHASE 04130000861

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCl	280	11.2/11.5	43	76

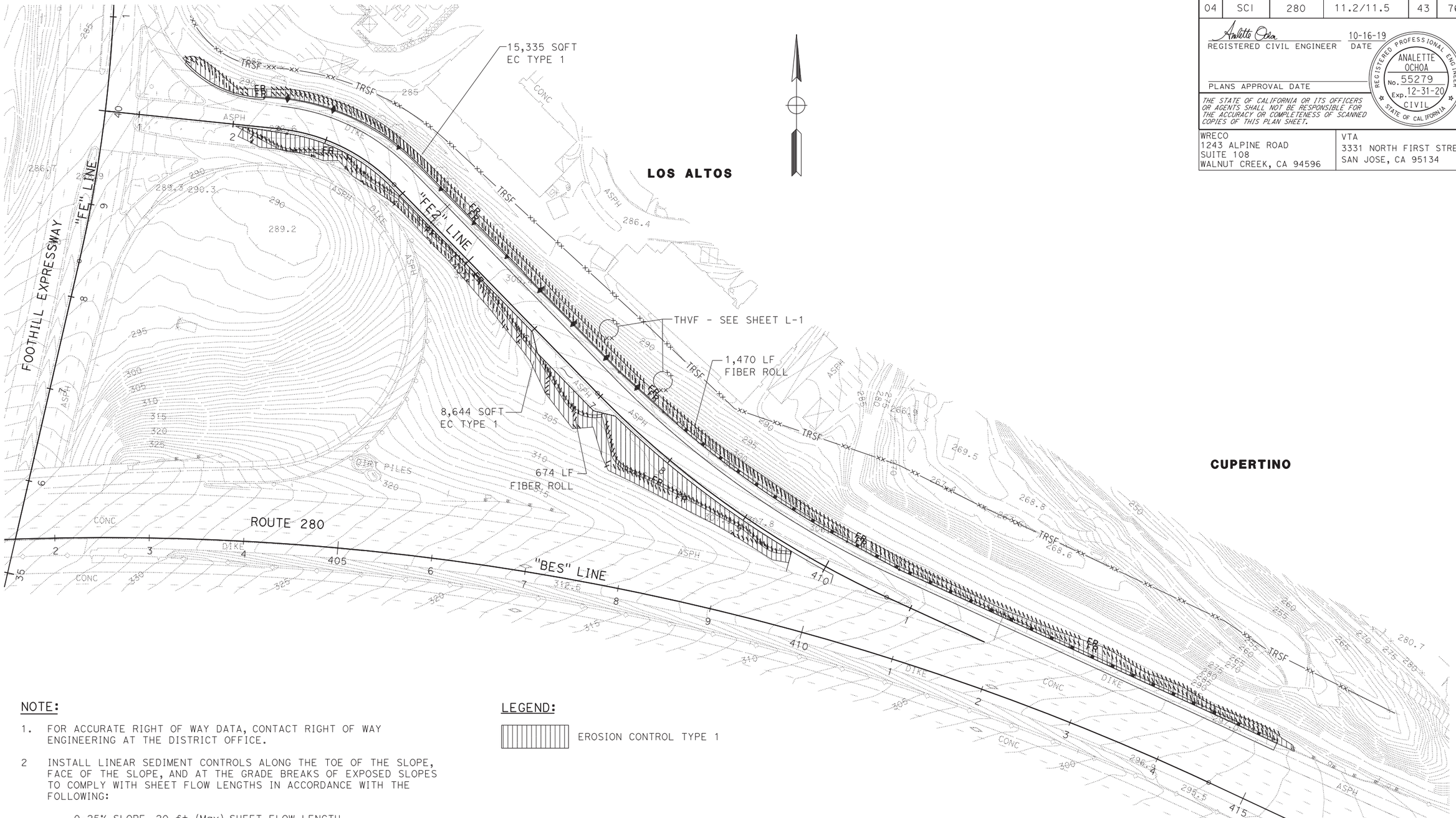
Analette Ochoa — REGISTERED CIVIL ENGINEER — 10-16-19 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ANALETTE OCHOA — No. 55279 — Exp. 12-31-20 — CIVIL — STATE OF CALIFORNIA

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VTA
3331 NORTH FIRST STREET
SAN JOSE, CA 95134



NOTE:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

2 INSTALL LINEAR SEDIMENT CONTROLS ALONG THE TOE OF THE SLOPE, FACE OF THE SLOPE, AND AT THE GRADE BREAKS OF EXPOSED SLOPES TO COMPLY WITH SHEET FLOW LENGTHS IN ACCORDANCE WITH THE FOLLOWING:

0-25% SLOPE, 20 ft (Max) SHEET FLOW LENGTH
25-50% SLOPE, 15 ft (Max) SHEET FLOW LENGTH
50% (+) SLOPE, 10 ft (Max) SHEET FLOW LENGTH

LEGEND:

EROSION CONTROL TYPE 1

EROSION CONTROL PLAN

SCALE: 1"=50'

APPROVED FOR EROSION CONTROL WORK ONLY

EC-1

REVISED BY	DATE REVISED
ANDREW CHIN	
ANALETTE OCHOA	

CALCULATED-DESIGNED BY
CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR
HAN-BIN LIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

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10-16-19 | TIME PLOTTED => 15:44

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