FOR CONTRACT NO.: **12-0L3004**

INFORMATION HANDOUT

MATERIALS INFORMATION

AERIALLY DEPOSITED LEAD SITE INVESTIGATION

INSTALLATION DETAILS FOR BATTERY BACKUP SYSTEM

ROUTE: 12-ORA-405- 17.9

June 22, 2012
Project No. 208449007

Mr. Wayne Chiou
State of California Department of Transportation
District 12, Environmental Engineering
3347 Michelson Drive, Suite 100
Irvine, California 92612-8894

Subject: Aerially Deposited Lead Site Investigation
SB I-405 Bolsa Avenue On- and Off-Ramps and the Intersection of Westminster Mall Drive and SB I-5 Manchester Avenue On-Ramp
Westminster and Anaheim, California
Task Order No. 12-0L3001-07
EA No. 0L3001-07
Contract No. 12A1340

Dear Mr. Chiou:

In accordance with the State of California Department of Transportation Contract No. 12A1340, Task Order No. 12-0L3001-07, Ninyo & Moore has conducted aerially deposited lead investigations at Interstates 405 and 5 in the cities of Westminster and Anaheim, respectively.

The following report documents our methodologies, conclusions, and recommendations.

We appreciate the opportunity to be of service to you on this project.

Sincerely,
NINYO & MOORE

Patrick Cullip
Senior Staff Environmental Engineer

Michael S. Cushner, CAC
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Senior Geologist

PJC/MSC/NA/JJR/lr

Distribution: (8) Addressee (5 bound copies, 1 unbound copy, 1 CD; 1 via e-mail)

AERIALLY DEPOSITED LEAD SITE INVESTIGATION
SB I-405 BOLSA AVENUE ON- AND OFF-RAMPS AND THE INTERSECTION OF WESTMINSTER MALL DRIVE AND SB I-5 MANCHESTER AVENUE ON-RAMP
WESTMINSTER AND ANAHEIM, CALIFORNIA
TASK ORDER NO. 12-0L3001-07
EA NO. 0L3001-07, CONTRACT NO. 12A1340

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June 22, 2012
Project No. 208449007

AERIALLY DEPOSITED LEAD INVESTIGATION REPORT

Task Order No. 12-0L3001-07
E.A. 0L3001-07

This report was prepared by the staff of Ninyo & Moore Geotechnical and Environmental Sciences Consultants under the supervision of the Engineer and/or Geologist whose signature appears hereon.

The findings, recommendations, specifications, or professional opinions are presented within the limits described by the client, after being prepared in accordance with generally accepted professional engineering and geologic practice. No warranty is expressed or implied.

John Jay Roberts, PG, CEG
Senior Geologist

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EXECUTIVE SUMMARY

The State of California Department of Transportation (Caltrans) authorized Ninyo & Moore to conduct aerially deposited lead (ADL) site investigations for the southbound (SB) Interstate 405 (I-405) Bolsa Avenue on- and off-ramps and the intersection of Westminster Mall Drive in the city of Westminster (Site 1, Figure 1), and the SB Interstate 5 (I-5) Manchester Avenue on-ramp in Anaheim (Site 2, Figure 2). Work was conducted in general accordance with Caltrans Contract No. 12A1340, Task Order No. 12-0L3001-07 (TO 07), dated April 27, 2012.

It is our understanding that Caltrans proposes to install new traffic control hardware at the four corners of the intersection and one location at Westminster Mall Drive and Goldenwest Street at Site 1, and install a metal beam guard rail at the north shoulder of the Manchester Avenue on-ramp at Site 2. This investigation was performed to evaluate the presence of lead in soil resulting from the combustion during the age of leaded fuel from nearby traffic. Data collected during this investigation were used to develop recommendations for the potential reuse or disposal of soil excavated from the site and to inform Caltrans of potential health and safety issues concerning the presence of lead in soil for workers at the site during construction activities.

Ninyo & Moore collected 34 soil samples from nine borings at the sites (B1 through B4 at Site 2 and B5 through B9 at Site 1). Three samples contained a total lead concentration greater than or equal to 50 milligrams per kilogram (mg/kg) and less than 1,000 mg/kg and were subsequently analyzed for soluble lead in accordance with the Waste Extraction Test (WET) using citric acid. The results of the soluble lead by WET-citric were below 5.0 milligrams per liter (mg/l), which is the Soluble Threshold Limit Concentration for California hazardous waste (Title 22 California Code of Regulations, Section 66261.24). Four samples were analyzed for pH. The pH levels ranged from 8.2 to 9.2.

Our recommendations for soil reuse on the sites are based on the guidelines set forth by the Department of Toxic Substances Control (DTSC) Lead Variance issued to Caltrans on June 30, 2009 (DTSC Variance). Laboratory analytical results for lead were compared to the guidelines of the DTSC Variance for potential reuse of the soil as fill within the Caltrans right-of-way.

Our recommendations for off-site disposal were based on the comparison of lead concentrations in soil samples to the California Health and Safety Code thresholds and Title 40 Code of Federal Regulations 261.24 thresholds.

Based on the analytical results, the on-site reuse and the off-site disposal recommendations are summarized below.

Recommendations for Soil for Reuse by Caltrans – Site 1

Soil at Site 1 can be reused on site with the following restrictions:

- Scenario A: The soil in the surface layer (surface to 0.5 feet below ground surface [bgs]) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 1.5- to 4-foot layers combined (0.5 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X).

- Scenario B: The soil in the surface and 1.5-foot layers combined (surface to 1.5 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 3- and 4-foot layers combined (1.5 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X).

- Scenario C: The soil in the surface to 3-foot layers combined (surface to 3 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 4-foot layer (3 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X).

- Scenario D: The soil in the layers combined (surface to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X).

Recommendations for Soil to be Disposed Off Site – Site 1

If Caltrans elects to dispose the soil off site, the following restrictions apply:

- Scenario A: The soil in the surface layer (surface to 0.5 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 1.5- to 4-foot layers combined (0.5 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X).

- Scenario B: The soil in the surface and 1.5-foot layer combined (surface to 1.5 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 3- and 4-foot layers combined (1.5 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X).

- Scenario C: The soil in the surface to 3-foot layers combined (surface to 3 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 4-foot layer (3 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X).

- Scenario D: The soil in the layers combined (surface to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X).

Recommendations for Soil for Reuse by Caltrans – Site 2

Soil at Site 2 can be reused on site with the following restrictions:

- Scenario A: The soil in the surface layer (surface to 0.5 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 1.5- to 4-foot layers combined (0.5 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X).

- Scenario B: The soil in the surface and 1.5-foot layers combined (surface to 1.5 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations(Soil Type X). The remaining soil from the 3- and 4-foot layers combined (1.5 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X).

- Scenario C: The soil in the surface to 3-foot layers combined (surface to 3 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 4-foot layer (3 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X).

- Scenario D: The soil in the layers combined (surface to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X).

Recommendations for Soil to be Disposed Off Site – Site 2

If Caltrans elects to dispose the soil off site, the following restrictions apply:

- Scenario A: The soil in the surface layer (surface to 0.5 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 1.5- to 4-foot layers combined (0.5 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X).

- Scenario B: The soil in the surface and 1.5-foot layer combined (surface to 1.5 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 3- and 4-foot layers combined (1.5 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X).

- Scenario C: The soil in the surface to 3-foot layers combined (surface to 3 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 4-foot layer (3 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X).

- Scenario D: The soil in the layers combined (surface to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X).

Caltrans should notify the contractors performing the construction activities that elevated concentrations of lead are present in on-site soil. Appropriate health and safety measures should be taken to minimize the potential exposure to lead.

1. INTRODUCTION

The State of California Department of Transportation (Caltrans) authorized Ninyo & Moore to conduct aerially deposited lead (ADL) site investigations for the southbound (SB) Interstate 405 (I-405) Bolsa Avenue on- and off-ramps and the intersection of Westminster Mall Drive in the city of Westminster (Site 1, Figure 1), and the SB Interstate 5 (I-5) Manchester Avenue on-ramp in Anaheim (Site 2, Figure 2). Work was conducted in general accordance with Caltrans Contract No. 12A1340, Task Order No. 12-0L3001-07 (TO 07), dated April 27, 2012.

1.1. Project Description and Objective

It is our understanding that Caltrans is planning the following improvements:

- Site 1 – Installation of new traffic control hardware at the four corners of the intersection and one location at Westminster Mall Drive and Goldenwest Street.
- Site 2 – Installation of a metal beam guard rail at the north shoulder of the Manchester Avenue on-ramp.

This report has been prepared by Ninyo & Moore to document the results of a study to evaluate the presence of ADL at the four corners of the intersection of Site 1 and along the unpaved shoulder area of the Site 2. Nine borings were hand augered at Sites 1 and 2 for this task order.

1.2. Scope of Work

Ninyo & Moore performed the tasks described in the following sections.

1.2.1. Prefield Activities

Prefield activities included:

- Preparing a site specific health and safety plan (HSP).
- Marking boring locations at the sites.

- Notifying Underground Service Alert (USA) that Ninyo & Moore would be advancing soil borings in the area (USA ticket number A21370547 for Site 1 and USA ticket number A21420524 for Site 2).

- Preparing a project schedule and coordinating work with subcontractors.

1.2.2. Soil Sampling

Soil sampling was conducted on May 22, 2012. Five boring locations (B5 through B9) for Site 1 and four boring locations (B1 through B4) for Site 2 were chosen, as shown on Figures 3 and 4, respectively. One boring at each sampling location was advanced and sampled using a hand auger. Four soil samples were attempted for collection from depths of surface to ½, 1½, 3, and 4 feet below ground surface (bgs) at each boring location.

1.2.3. Laboratory Analysis

Ninyo & Moore submitted the soil samples under chain-of-custody (COC) protocol to Pat-Chem Laboratories of Moorpark, California; a laboratory certified by the State of California Department of Health Services Environmental Laboratory Accreditation Program.

1.2.4. Global Positioning System Surveying

Approximate latitude and longitude (North American Datum 83) of sampling locations were recorded with a handheld GPS unit (GeoXT, Trimble). The latitude and longitude data for each boring are presented on Table 1 and Table 2.

1.2.5. Report Preparation

This report was prepared in general accordance Caltrans Contract No. 12A1340 and TO 07 dated April 27, 2012.

1.3. Previous Site Investigations

Ninyo & Moore has not performed previous investigations at this site. In addition, Caltrans has not notified Ninyo & Moore of previous investigations performed at the site.

2. BACKGROUND

Caltrans obtained a variance (V09 HQSCD006) from the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), on June 30, 2009 (DTSC Variance). The DTSC Variance allows for conditional reuse of lead-impacted soil within the Caltrans right-of-way (ROW). Background information regarding the source of ADL and the reuse or disposal of lead-impacted soil is discussed in the following sections.

2.1. Aerially Deposited Lead (ADL) in Soil

Analyses for lead in soil along highways throughout the state of California have revealed that lead is commonly present along the shoulders of the highways as a result of automobile exhaust containing lead from the combustion of leaded gasoline. Elevated concentrations of lead are commonly found in the upper 2 feet of soil. Lead concentrations in soil are dependent on many variables; but in general, are a function of the age of the highway and the volume of traffic using the highway.

2.2. Hazardous Waste Classification Criteria

Soil that exceeds the following limitations may be classified as hazardous waste with respect to lead concentrations:

- The soil contains 1,000 milligrams per kilogram (mg/kg) or more total lead, exceeding the Total Threshold Limit Concentration (TTLC) for California hazardous waste (Title 22 California Code of Regulations [CCR], Section 66261.24);

- The soil contains 5.0 milligrams per liter (mg/l) or more citric acid-extractable lead, exceeding the Soluble Threshold Limit Concentration (STLC) for California hazardous waste (Title 22 CCR, Section 66261.24);

- The soil contains than 5.0 mg/l or more leachable lead using the Toxicity Characteristic Leaching Procedure (TCLP), exceeding the maximum concentration for the toxicity characteristic of the Resource, Conservation, and Recovery Act (RCRA; Title 40 Code of Federal Regulations [CFR] 261.24); or

- The soil pH is less than or equal to 2.0 or greater than or equal to 12.5, which exceeds the limits for the corrosivity characteristic of RCRA hazardous waste (40 CFR 261.22) and California hazardous waste (Title 22 CCR, Section 66261.22).

2.3. DTSC Variance

In accordance with the DTSC Variance, soil that is subject to the guidelines presented below may be reused within the Caltrans ROW. A chart presenting the different ADL soil type classifications is included in Appendix A.

2.3.1. Reuse – Condition 1

Soil containing less than 1.5 mg/l extractable lead by the Waste Extraction Test (WET) using de-ionized water as the extractant (WET-DI) and less than or equal to 1,411 mg/kg total lead (United States Environmental Protection Agency [EPA] Method 6010B) may be used as fill in the Caltrans ROW provided the soil is placed a minimum of 5 feet above the maximum level of the water table and covered with at least 1 foot of non-hazardous soil.

2.3.2. Reuse – Condition 2

Soil containing greater than or equal to 1.5 mg/l, but less than 150 mg/l, extractable lead by WET-DI method, or more than 1,411 mg/kg total lead but less than 3,397 mg/kg total lead, may be used as fill in the Caltrans ROW provided the soil is placed a minimum of 5 feet above the maximum level of the water table and protected from infiltration by a paved structure that will be maintained by Caltrans.

2.3.3. Reuse – Condition 3

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.

2.4. Criteria for Disposal of Soil Not Intended for Reuse On Site

If Caltrans elects to dispose soil within the Caltrans ROW that has been excavated during construction activities, the soil may be classified either as hazardous waste or non-hazardous waste. The distinction is based on the total and soluble lead concentrations compared to the TTLC and STLC criteria. As mentioned in Section 2.2, the TTLC for total lead is 1,000 mg/kg and the STLC for citric acid extractable lead is 5.0 mg/l. Waste containing lead

concentrations in excess of or equal to those listed must be disposed at a Class I hazardous waste disposal facility pursuant to State of California regulations.

3. INVESTIGATION METHODS

The investigation activities are described in the following subsections and were conducted in general accordance with the TO that was approved by Caltrans prior to beginning the field activities.

3.1. Health and Safety Plan (HSP)

A site-specific HSP dated May 18, 2012, was prepared by Ninyo & Moore and submitted to Caltrans for approval prior to commencing field work.

3.2. Utility Clearance

The boring locations were described to USA during the notification at least 2 working days prior to conducting the soil sampling. USA marked the member utilities known to be in the vicinity of the boring locations.

3.3. Hand-Auger Sampling

The field work was conducted on May 22, 2012. The boring locations were approved by the Caltrans TO Manager and are shown on the attached Figures 3 and 4. Four samples were attempted for collection from all borings (B1 through B9) at depths of surface to ½, 1½, 3, and 4 feet bgs unless refusal was encountered. The depths reached for each boring are presented on Table 1 and Table 2.

Samples were placed into new, 4-ounce, glass jars; capped with Teflon-coated plastic lids; labeled; placed in a resealable plastic bag; and stored in a cooler. The sampling equipment was decontaminated between each boring. Soil samples were transferred under COC protocol to Pat-Chem Laboratories within 24 hours of collection. In accordance with the TO, soil sample homogenization was performed in the laboratory.

Hand augering was conducted by Ninyo & Moore personnel.

3.4. Investigation-Derived Wastes

Soil cuttings generated by hand-auger drilling were returned to their corresponding bore-holes after collection of soil samples. Decontamination water was transported to Ninyo & Moore's Irvine office and placed in a drum pending chemical characterization. Based on the analytical result of the decontamination water sample, the decontamination water was subsequently disposed in the sanitary sewer.

3.5. Laboratory Analyses

Once the samples were received by Pat-Chem Laboratories the samples were separately homogenized and analyzed for the following:

- Thirty-four soil samples were analyzed for total lead using EPA Method 6010B;
- Three soil sample was analyzed for soluble lead by the WET using a citric acid extraction (WET-citric);
- Four soil samples were analyzed for pH using EPA Method 9045;
- One decontamination water sample was analyzed for total lead using EPA Method 6010B.

4. ANALYTICAL RESULTS

The results of this investigation are described in the following subsections. The analytical results of lead and pH are summarized in Table 1 and Table 2, and the sampling locations with their corresponding data are shown on Figures 5 and 6. Laboratory reports and COC records are included in Appendix B.

4.1. Total Lead

Thirty-four soil samples were analyzed for total lead. The maximum total lead concentration was 120 mg/kg. The minimum total lead concentration was not detected above the detection limit of 1.0 mg/kg (Table 1 and Table 2).

The decontamination water sample contained 0.05 mg/l of lead.

4.2. Soluble Lead – Citric Acid

Three of the 34 samples contained total lead at a concentration of greater than or equal to 50 mg/kg and less than 1,000 mg/kg and were subsequently analyzed for soluble lead by WET-citric. The maximum soluble lead concentration was 4.6 mg/l. The minimum soluble lead concentration was 0.86 mg/l (Table 1 and Table 2).

4.3. Soluble Lead – Deionized Water

None of the samples analyzed using the WET-citric contained soluble lead at a concentration greater than or equal to 5.0 mg/l, and subsequently no samples were analyzed for soluble lead using the WET-DI.

4.4. Soluble Lead – TCLP

None of the samples analyzed using the WET contained soluble lead at a concentration greater than or equal to 5.0 mg/l and subsequently no samples were analyzed for soluble lead by the TCLP Method.

4.5. pH

Four of the samples collected were analyzed for pH. The maximum pH level was 9.2 and the minimum pH level was 8.2.

5. STATISTICAL EVALUATION

Based on the data reported (Table 1 and Table 2) for the site, none of the samples with total lead concentrations in excess of 50 mg/kg contained soluble lead concentrations equal to or in excess of 5 mg/l. Therefore, additional testing was not performed and statistical analyses were not performed.

In order to evaluate four of the possible soil excavation depth scenarios, the following depth combinations were evaluated:

- **Scenario A** – surface soil (0 to ½ foot) and underlying subsurface soil (½ foot to 4 feet)
- **Scenario B** – the upper 1½ feet (0 to 1½ feet) and the underlying subsurface soil (1½ to 4 feet)

- **Scenario C** – the upper 3 feet (0 to 3 feet) and the underlying subsurface soil (3 to 4 feet)
- **Scenario D** – the entire 4-foot soil column

6. CONCLUSIONS

The analyses of the data for both sites indicate that the surface layers tend to have the highest concentrations of total lead, followed by the 3-, 1 ½ -, and 4-foot layers. Assuming the soil has not been disturbed since construction of the routes in the site vicinities, concentrations of total lead would be expected to decrease with depth.

7. RECOMMENDATIONS

Based on the findings of this study, recommendations are summarized on block diagrams in Appendix C and discussed below.

7.1. Recommendations for Soil for Reuse by Caltrans – Site 1

Soil at Site 1 can be reused on site with the following restrictions:

- Scenario A: The soil in the surface layer (surface to 0.5 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 1.5- to 4-foot layers combined (0.5 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total lead concentrations (Soil Type X).

- Scenario B: The soil in the surface and 1.5-foot layers combined (surface to 1.5 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 3- and 4-foot layers combined (1.5 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total lead concentrations (Soil Type X).

- Scenario C: The soil in the surface to 3-foot layers combined (surface to 3 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 4-foot layer (3 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total lead concentrations (Soil Type X).

- Scenario D: The soil in the layers combined (surface to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X).

7.2. Recommendations for Soil to be Disposed Off Site – Site 1

If Caltrans elects to dispose the soil off site, the following restrictions apply:

- Scenario A: The soil in the surface layer (surface to 0.5 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 1.5- to 4-foot layers combined (0.5 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total lead concentrations (Soil Type X).

- Scenario B: The soil in the surface and 1.5-foot layer combined (surface to 1.5 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 3- and 4-foot layers combined (1.5 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total lead concentrations (Soil Type X).

- Scenario C: The soil in the surface to 3-foot layers combined (surface to 3 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 4-foot layer (3 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total lead concentrations (Soil Type X).

- Scenario D: The soil in the layers combined (surface to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X).

7.3. Recommendations for Soil for Reuse by Caltrans – Site 2

Soil at Site 2 can be reused on site with the following restrictions:

- Scenario A: The soil in the surface layer (surface to 0.5 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 1.5- to 4-foot layers combined (0.5 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total lead concentrations (Soil Type X).

- Scenario B: The soil in the surface and 1.5-foot layers combined (surface to 1.5 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 3- and 4-foot layers combined (1.5 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total lead concentrations (Soil Type X).

- Scenario C: The soil in the surface to 3-foot layers combined (surface to 3 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead

concentrations (Soil Type X). The remaining soil from the 4-foot layer (3 to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total lead concentrations (Soil Type X).

- Scenario D: The soil in the layers combined (surface to 4 feet bgs) is suitable for on-site reuse by Caltrans with no restrictions based on total and soluble lead concentrations (Soil Type X).

7.4. Recommendations for Soil to be Disposed Off Site – Site 2

If Caltrans elects to dispose the soil off site, the following restrictions apply:

- Scenario A: The soil in the surface layer (surface to 0.5 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 1.5- to 4-foot layers combined (0.5 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total lead concentrations (Soil Type X).

- Scenario B: The soil in the surface and 1.5-foot layer combined (surface to 1.5 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 3- and 4-foot layers combined (1.5 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total lead concentrations (Soil Type X).

- Scenario C: The soil in the surface to 3-foot layers combined (surface to 3 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X). The remaining soil from the 4-foot layer (3 to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total lead concentrations (Soil Type X).

- Scenario D: The soil in the layers combined (surface to 4 feet bgs) is classified as non-hazardous and may be disposed off site with no restrictions based on total and soluble lead concentrations (Soil Type X).

Caltrans should notify the contractors performing the construction activities that elevated concentrations of lead are present in on-site soil. Appropriate health and safety measures should be taken to minimize the potential exposure to lead.

8. HEALTH EFFECTS OF LEAD

Concentrations of lead in soil at the site represent a potential threat to the health of site workers performing earthwork activities.

Lead in its element form is a heavy, ductile, soft, gray metal. The permissible exposure limit for lead is 0.05 milligrams per cubic meter (mg/m^3) in air based on an eight-hour time-weighted average. The immediately dangerous to life and health exposure limit is 100 mg/m^3 as established by the National Institute of Occupational Safety and Health. Exposure may produce several symptoms including weakness, eye irritation, facial pallor, pale eyes, lassitude, insomnia, anemia, tremors, malnutrition, constipation, paralysis of the wrists and ankles, abdominal pain, colic, nephropathy, encephalopathy, gingival lead line, hypertension, anorexia, and weight loss. Target organs are the central nervous system, kidneys, eyes, blood, gingival tissue, and the gastrointestinal tract.

Because of the potential hazard from exposure to lead-contaminated soil, a lead HSP should be prepared by a Certified Industrial Hygienist (CIH). In addition, all site workers (earthwork) should have completed a training program meeting the requirements of 29 CFR 1910.120 and 8 CCR 1532.1. The plan developed by the CIH should include a hazard analysis, dust control measures, air monitoring, signage, work practices, emergency response plans, personal protective equipment, decontamination, and documentation.

9. LIMITATIONS

The services outlined in this report have been conducted in a manner generally consistent with current regulatory guidelines. No warranty, expressed or implied, is made regarding the professional opinions presented in this report. Ninyo & Moore's opinions are based on an analysis of observed conditions and on information obtained from third parties. It is likely that variations in soil conditions may exist.

The samples collected and chemically analyzed and the observations made are believed to be representative of the general area evaluated; however, conditions can vary significantly between

sampling locations. The interpretations and opinions contained in this report are based on the results of laboratory tests and analyses intended to detect the presence and measure the concentration of selected chemical or physical constituents in samples collected from the site. The analyses have been conducted by an independent laboratory certified by the State of California to conduct such analyses. Ninyo & Moore has no involvement in, or control over, such anal- analyses and has no means of confirming the accuracy of laboratory results. Ninyo & Moore, therefore, disclaims any responsibility for inaccuracy in such laboratory results.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader wants any additional information, or has questions regarding content, interpretations presented, or completeness of this document. Opinions and judgments expressed herein, which are based on our understanding and interpretation of current regulatory standards, should not be construed as legal opinions.

For individuals with sensory disabilities, this document is available in alternate formats upon request. For any questions regarding this document, please call or write Wayne Chiou, Environmental Engineering, 3347 Michelson Drive, Suite 100, Irvine, California 92612-1692. Phone Number (949) 724-2221.

TABLE 1 – SOIL ANALYTICAL RESULTS – AERIALLY DEPOSITED LEAD, pH, AND GPS COORDINATES - SITE 2

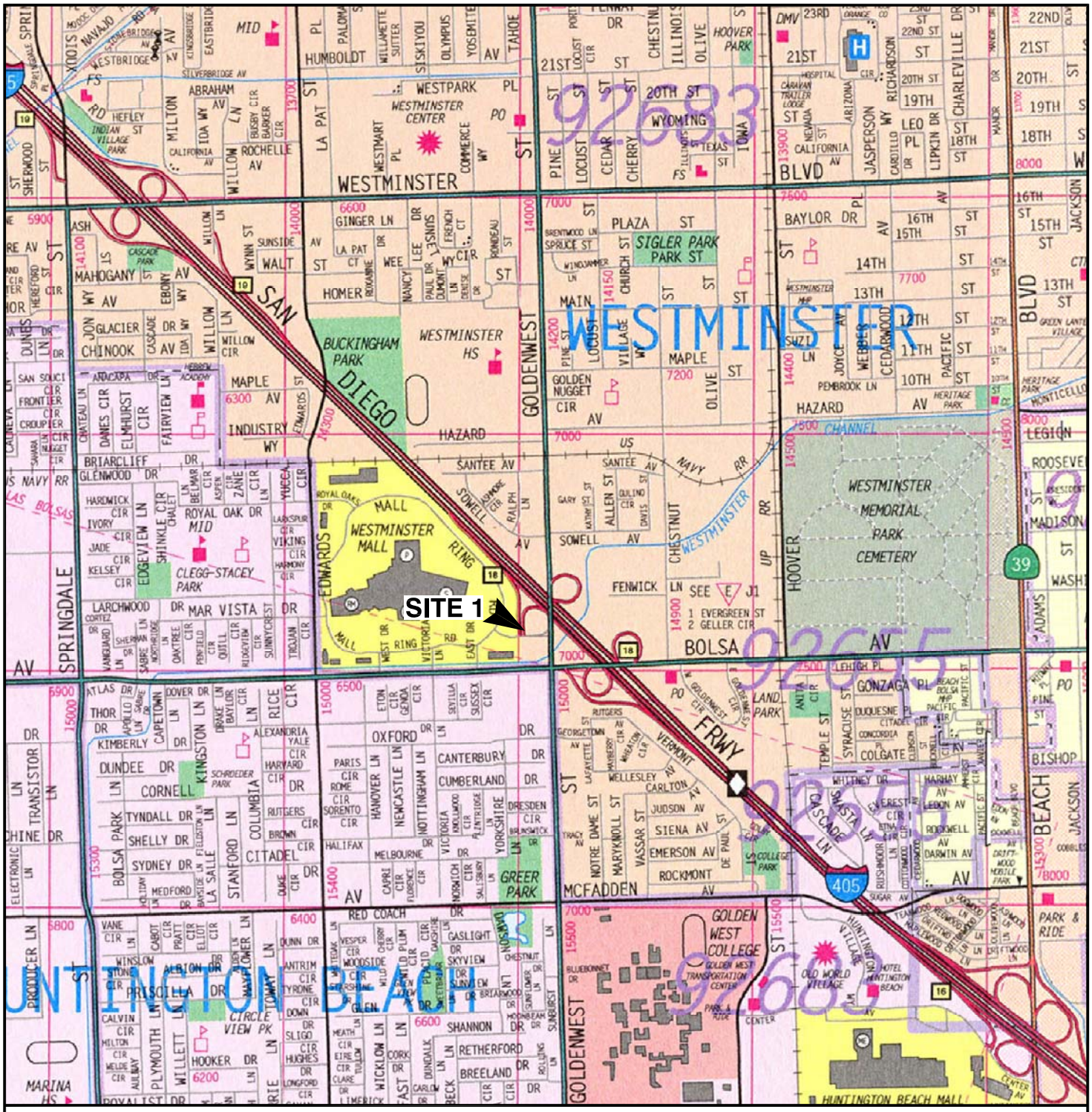
Sample	Sample Depth (feet) bgs	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH	Latitude	Longitude
B1-0.5	0.5	5/22/2012	7.5	--	--	--	8.2	33.802233	-117.902103
B1-1.5	1.5	5/22/2012	25	--	--	--	--		
B1-3.0	3.0	5/22/2012	11	--	--	--	--		
B1-4.0	4.0	5/22/2012	ND<1.0	--	--	--	--		
B2-0.5	0.5	5/22/2012	7.0	--	--	--	--	33.802083	-117.901753
B2-1.5	1.5	5/22/2012	20	--	--	--	--		
B2-3.0	3.0	5/22/2012	10	--	--	--	--		
B2-4.0	4.0	5/22/2012	2.7	--	--	--	--		
B3-0.5	0.5	5/22/2012	52	0.86	--	--	--	33.801878	-117.901528
B3-1.5	1.5	5/22/2012	11	--	--	--	--		
B3-3.0	3.0	5/22/2012	6.3	--	--	--	9.2		
B3-4.0	4.0	5/22/2012	16	--	--	--	--		
B4-0.5	0.5	5/22/2012	3.3	--	--	--	--	33.801683	-117.901317
B4-1.5	1.5	5/22/2012	8.9	--	--	--	--		
B4-3.0	3.0	5/22/2012	19	--	--	--	--		
B4-4.0	4.0	5/22/2012	43	--	--	--	--		
Maximum			52	0.86	NA	NA	9.2		
Average			14.1	0.86	NA	NA	8.7		
Minimum			ND<1.0	0.86	NA	NA	8.2		
Regulatory Limits			1411[(1)]	5[(2)]	1.5[(3)]	5[(4)]	5[(5)]		
Decontamination Water (mg/l)									
EB1	NA	5/22/2012	0.05	--	--	--	--		

Notes:
1 − Limit specified in addendum to Variance issued by the Department of Toxic Substances Control (DTSC) to Caltrans
2 − Soluble Threshold Limit Concentration for California Hazardous Waste (California Code of Regulations [CCR] Title 22, Section 66261.24)
3 − Limit Specified by DTSC Variance
4 − Maximum concentration for the TCLP of Resource, Conservation, and Recovery Act (RCRA) hazardous waste (40 Code of Federal Regulations, Section 261.24)
5 − Minimum value specified by DTSC variance
bgs – below ground surface
mg/kg – milligrams per kilogram
mg/l – milligrams per liter
NA – not applicable
TCLP – soluble lead by the Toxicity Characteristic Leaching Procedure
TTLC – total lead for comparison to the Total Threshold Limit Concentration
WET – Waste Extraction Test
WET-citric – soluble lead by WET using citric acid for comparison to the Soluble Threshold Limit Concentration
WET-DI – soluble lead by WET using deionized water for comparison to the Soluble Threshold Limit Concentration
-- – not analyzed

TABLE 2 – SOIL ANALYTICAL RESULTS – AERIALLY DEPOSITED LEAD, pH, AND GPS COORDINATES - SITE 1

Sample	Sample Depth (feet) bgs	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH	Latitude	Longitude
B5-0.5	0.5	5/22/2012	100	4.6	--	--	--	33.745656	-118.008267
B5-1.5	1.5	5/22/2012	9.4	--	--	--	8.4		
B6-0.5	0.5	5/22/2012	4.4	--	--	--	--	33.745647	-118.007906
B6-1.5	1.5	5/22/2012	ND<1.0	--	--	--	--		
B6-3.0	3.0	5/22/2012	2.8	--	--	--	--		
B6-4.0	4.0	5/22/2012	1.9	--	--	--	--		
B7-0.5	0.5	5/22/2012	15	--	--	--	--	33.745386	-118.008253
B7-1.5	1.5	5/22/2012	3.4	--	--	--	--		
B7-3.0	3.0	5/22/2012	3.3	--	--	--	--		
B7-4.0	4.0	5/22/2012	1.7	--	--	--	9.2		
B8-0.5	0.5	5/22/2012	120	4.5	--	--	--	33.745378	-118.008028
B8-1.5	1.5	5/22/2012	3.5	--	--	--	--		
B8-3.0	3.0	5/22/2012	9.6	--	--	--	--		
B8-4.0	4.0	5/22/2012	4.5	--	--	--	---		
B9-0.5	0.5	5/22/2012	1.2	--	--	--	--	33.745369	-118.007222
B9-1.5	1.5	5/22/2012	ND<1.0	--	--	--	--		
B9-3.0	3.0	5/22/2012	2.6	--	--	--	--		
B9-4.0	4.0	5/22/2012	2.9	--	--	--	--		
Maximum			120	4.6	NA	NA	9.2		
Average			16.0	4.6	NA	NA	8.8		
Minimum			ND<1.0	4.50	NA	NA	8.4		
Regulatory Limits			1411(1)	5(2)	1.5(3)	5(4)	5(5)		
Decontamination Water (mg/l)									
EB1	NA	5/22/2012	0.05	--	--	--	--		

Notes:
1 − Limit specified in addendum to Variance issued by the Department of Toxic Substances Control (DTSC) to Caltrans
2 − Soluble Threshold Limit Concentration for California Hazardous Waste (California Code of Regulations [CCR] Title 22, Section 66261.24)
3 − Limit Specified by DTSC Variance
4 − Maximum concentration for the TCLP of Resource, Conservation, and Recovery Act (RCRA) hazardous waste (40 Code of Federal Regulations, Section 261.24)
5 − Minimum value specified by DTSC variance
bgs – below ground surface
mg/kg – milligrams per kilogram
mg/l – milligrams per liter
NA – not applicable
TCLP – soluble lead by the Toxicity Characteristic Leaching Procedure
TTLC – total lead for comparison to the Total Threshold Limit Concentration
WET – Waste Extraction Test
WET-citric – soluble lead by WET using citric acid for comparison to the Soluble Threshold Limit Concentration
WET-DI – soluble lead by WET using deionized water for comparison to the Soluble Threshold Limit Concentration
-- – not analyzed



208449_A3.DWG.....GK

REFERENCE: 52ND EDITION, THOMAS GUIDE FOR LOS ANGELES/ORANGE COUNTIES, STREET GUIDE AND DIRECTORY

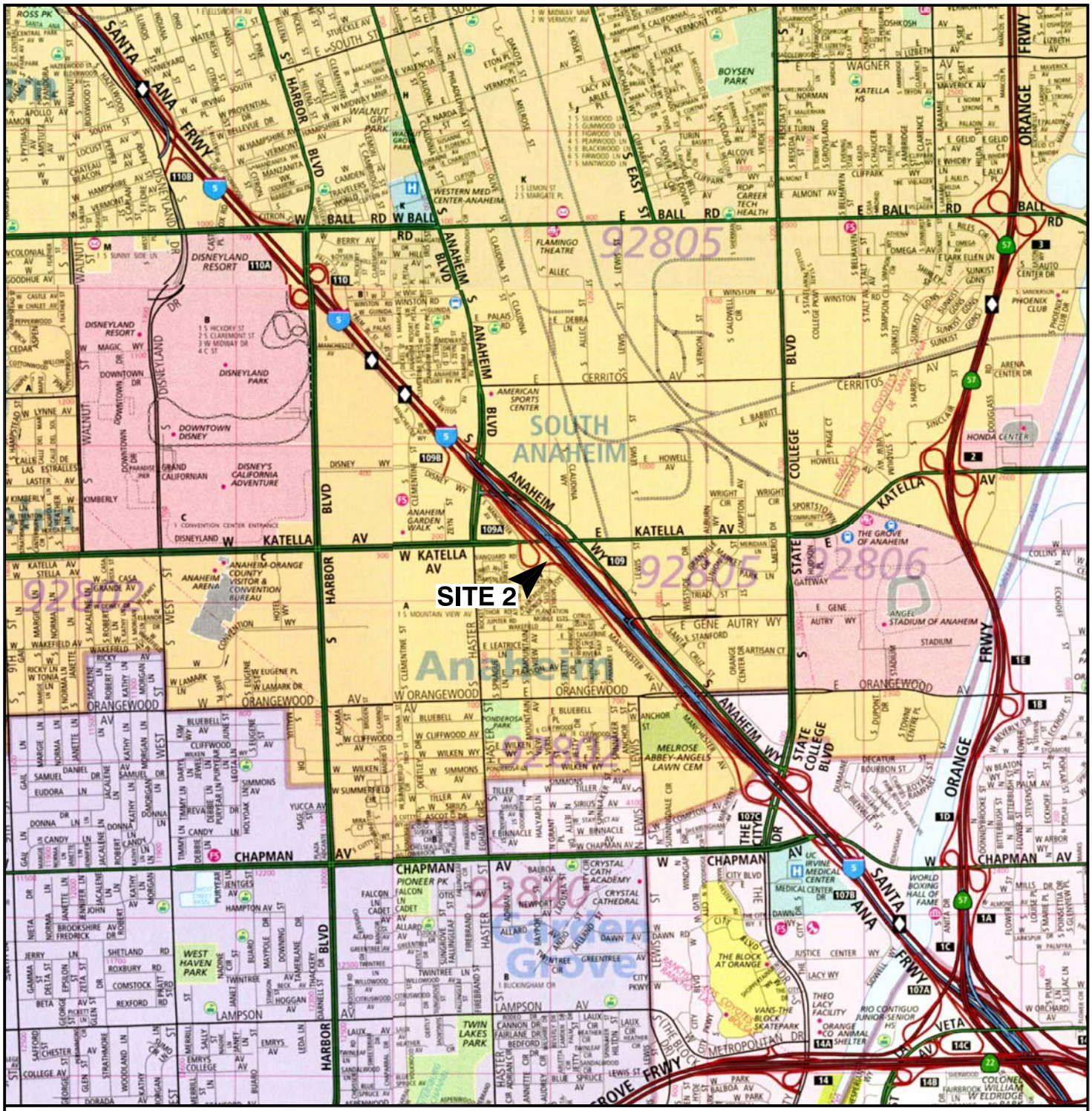
N

APPROXIMATE SCALE

0 2400 4800

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore	SITE LOCATION - SITE 1	FIGURE
PROJECT NO. 208449007 / DATE 6/12	SB I-405 BOLSA AVENUE ON AND OFF-RAMP SB I-5 MANCHESTER AVENUE ON-RAMP WESTMINSTER AND ANAHEIM, CALIFORNIA	1



REFERENCE: 52ND EDITION, THOMAS GUIDE FOR LOS ANGELES/ORANGE COUNTIES, STREET GUIDE AND DIRECTORY

N

APPROXIMATE SCALE

0 2400 4800

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

208449_A4.DWG.....GK

Ninyo & Moore	SITE LOCATION - SITE 2	FIGURE
PROJECT NO. 208449007 / DATE 6/12	SB I-405 BOLSA AVENUE ON AND OFF-RAMP SB I-5 MANCHESTER AVENUE ON-RAMP WESTMINSTER AND ANAHEIM, CALIFORNIA	2

REFERENCE: GOOGLE EARTH AERIAL PHOTO, 2012.

N

SCALE IN FEET

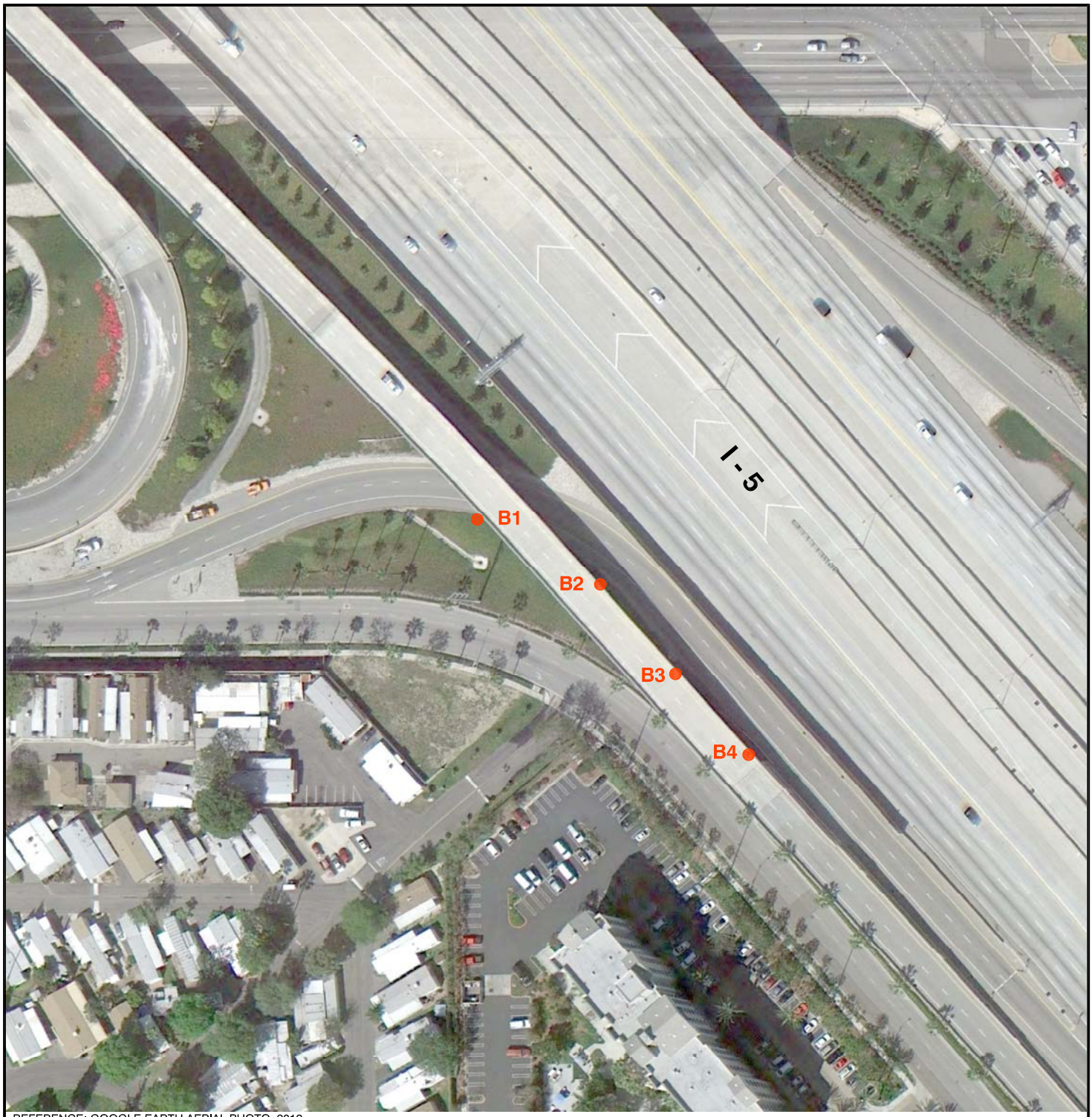
0 100 200

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

LEGEND	
B9 ●	BORING

208449_A6.DWG..... – G.K.

Ninyo & Moore	BORING LOCATIONS - SITE 1	FIGURE
PROJECT NO. 208449007 / DATE 6/12	SB I-405 BOLSA AVENUE ON AND OFF-RAMP SB I-5 MANCHESTER AVENUE ON-RAMP WESTMINSTER AND ANAHEIM, CALIFORNIA	3



REFERENCE: GOOGLE EARTH AERIAL PHOTO, 2012.

N

SCALE IN FEET

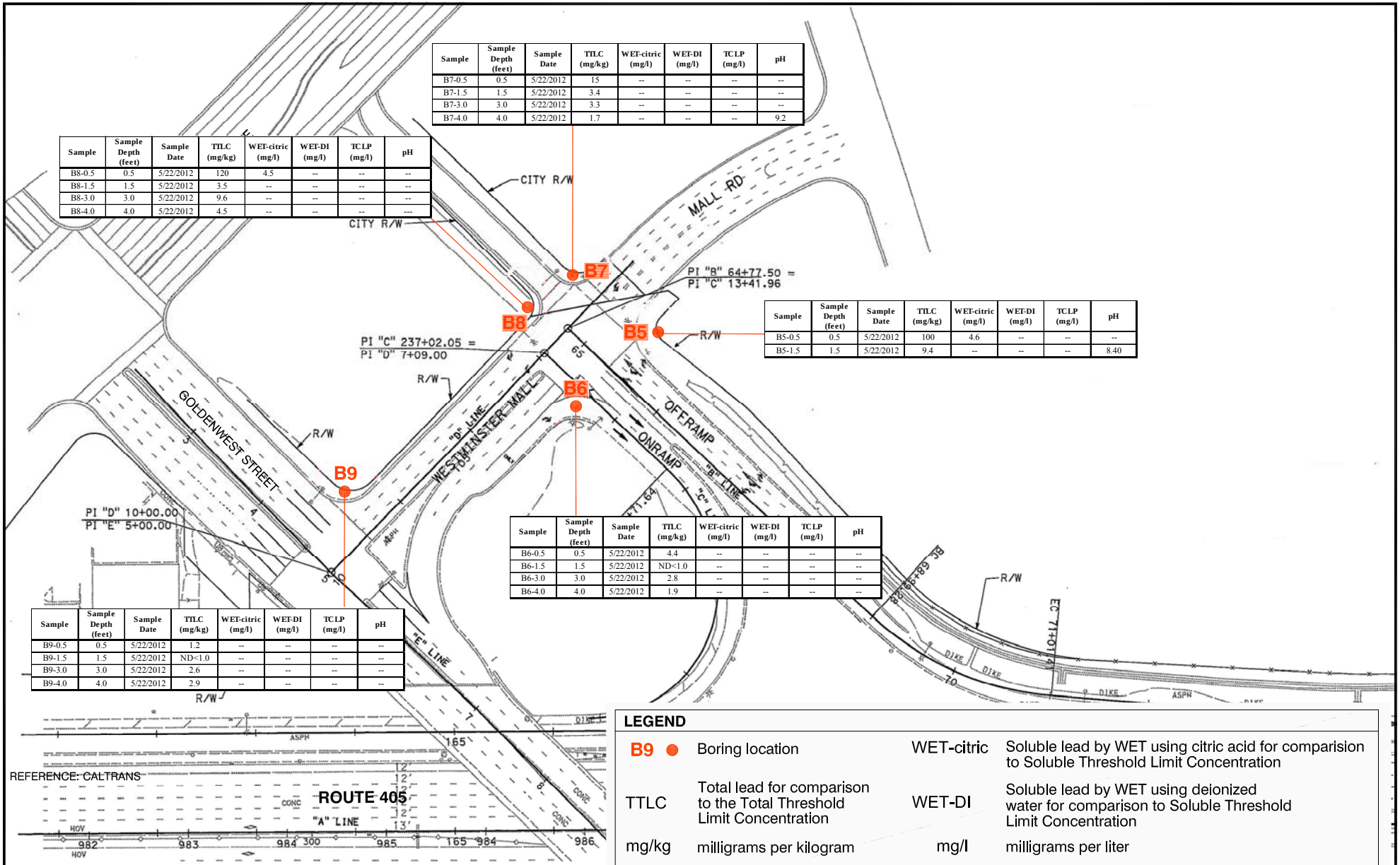
0 120 240

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

LEGEND	
B4 ●	BORING

208449_A5.DWG..... — G.K.

Ninyo & Moore	BORING LOCATIONS - SITE 2	FIGURE
PROJECT NO. 208449007 / DATE 6/12	SB I-405 BOLSA AVENUE ON AND OFF-RAMP SB I-5 MANCHESTER AVENUE ON-RAMP WESTMINSTER AND ANAHEIM, CALIFORNIA	4



Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B7-0.5	0.5	5/22/2012	15	--	--	--	--
B7-1.5	1.5	5/22/2012	3.4	--	--	--	--
B7-3.0	3.0	5/22/2012	3.3	--	--	--	--
B7-4.0	4.0	5/22/2012	1.7	--	--	--	9.2

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B8-0.5	0.5	5/22/2012	120	4.5	--	--	--
B8-1.5	1.5	5/22/2012	3.5	--	--	--	--
B8-3.0	3.0	5/22/2012	9.6	--	--	--	--
B8-4.0	4.0	5/22/2012	4.5	--	--	--	---

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B5-0.5	0.5	5/22/2012	100	4.6	--	--	--
B5-1.5	1.5	5/22/2012	9.4	--	--	--	8.40

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B6-0.5	0.5	5/22/2012	4.4	--	--	--	--
B6-1.5	1.5	5/22/2012	ND<1.0	--	--	--	--
B6-3.0	3.0	5/22/2012	2.8	--	--	--	--
B6-4.0	4.0	5/22/2012	1.9	--	--	--	--

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B9-0.5	0.5	5/22/2012	1.2	--	--	--	--
B9-1.5	1.5	5/22/2012	ND<1.0	--	--	--	--
B9-3.0	3.0	5/22/2012	2.6	--	--	--	--
B9-4.0	4.0	5/22/2012	2.9	--	--	--	--

LEGEND

B9 ●	Boring location	WET-citric	Soluble lead by WET using citric acid for comparision to Soluble Threshold Limit Concentration
TTLC	Total lead for comparison to the Total Threshold Limit Concentration	WET-DI	Soluble lead by WET using deionized water for comparison to Soluble Threshold Limit Concentration
mg/kg	milligrams per kilogram	mg/l	milligrams per liter
WET	Waste Extraction Test	TCLP	Soluble lead by Toxicity Characteristic Leaching Procedure

REFERENCE: CALTRANS

SCALE IN FEET

0 150 300

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

208449_A7.DWG.....—G.K.

Ninyo & Moore

PROJECT NO.	DATE
208449007	6/12

BORING DATA - SITE 1

SB I-405 BOLSA AVENUE ON AND OFF-RAMP
SB I-5 MANCHESTER AVENUE ON-RAMP
WESTMINSTER AND ANAHEIM, CALIFORNIA

FIGURE

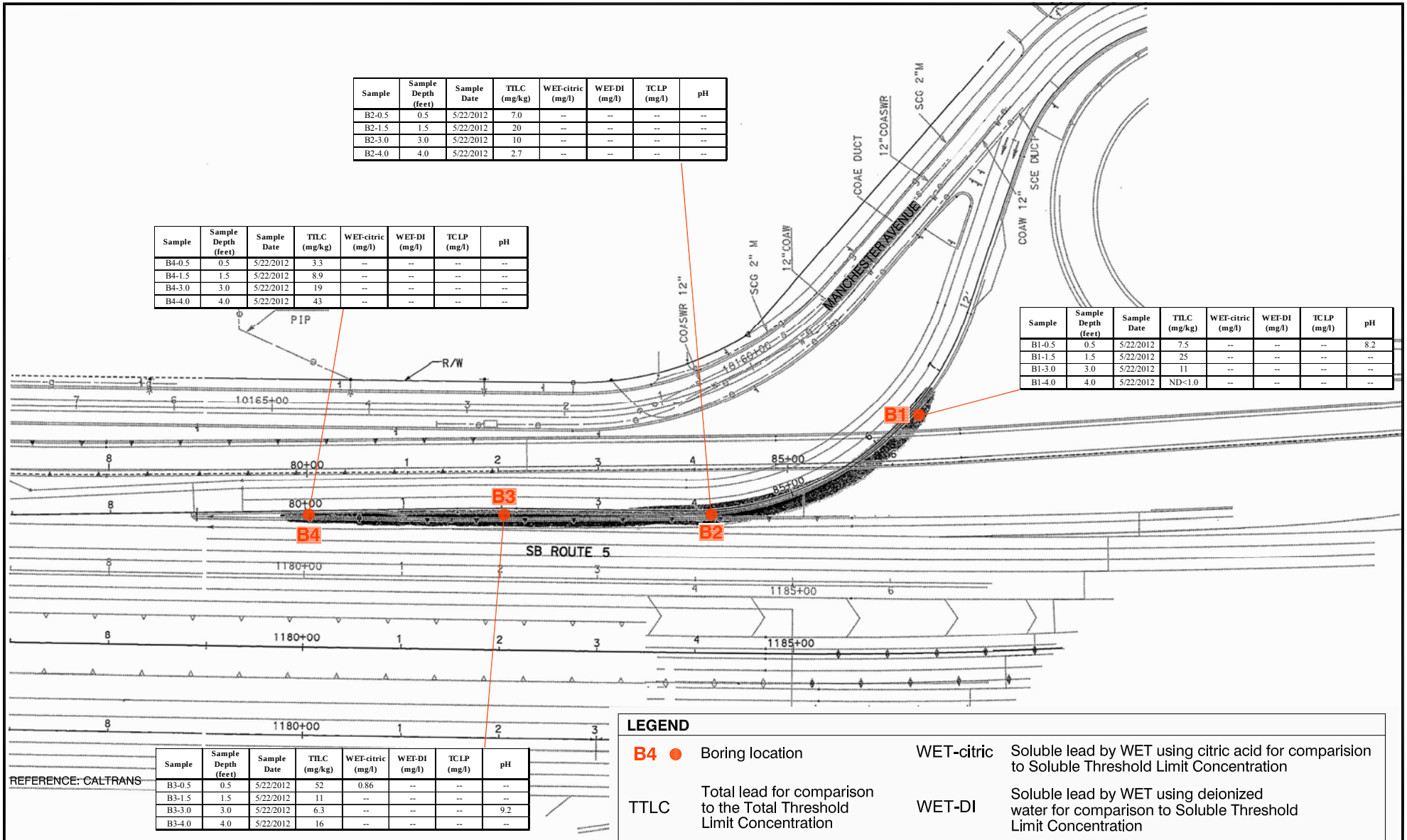
5

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B2-0.5	0.5	5/22/2012	7.0	--	--	--	--
B2-1.5	1.5	5/22/2012	20	--	--	--	--
B2-3.0	3.0	5/22/2012	10	--	--	--	--
B2-4.0	4.0	5/22/2012	2.7	--	--	--	--

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B4-0.5	0.5	5/22/2012	3.3	--	--	--	--
B4-1.5	1.5	5/22/2012	8.9	--	--	--	--
B4-3.0	3.0	5/22/2012	19	--	--	--	--
B4-4.0	4.0	5/22/2012	43	--	--	--	--

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B1-0.5	0.5	5/22/2012	7.5	--	--	--	8.2
B1-1.5	1.5	5/22/2012	25	--	--	--	--
B1-3.0	3.0	5/22/2012	11	--	--	--	--
B1-4.0	4.0	5/22/2012	ND<1.0	--	--	--	--

Sample	Sample Depth (feet)	Sample Date	TTLC (mg/kg)	WET-citric (mg/l)	WET-DI (mg/l)	TCLP (mg/l)	pH
B3-0.5	0.5	5/22/2012	52	0.86	--	--	--
B3-1.5	1.5	5/22/2012	11	--	--	--	--
B3-3.0	3.0	5/22/2012	6.3	--	--	--	9.2
B3-4.0	4.0	5/22/2012	16	--	--	--	--



REFERENCE: CALTRANS

LEGEND

B4 ●	Boring location	WET-citric	Soluble lead by WET using citric acid for comparision to Soluble Threshold Limit Concentration
TTLC	Total lead for comparison to the Total Threshold Limit Concentration	WET-DI	Soluble lead by WET using deionized water for comparison to Soluble Threshold Limit Concentration
mg/kg	milligrams per kilogram	mg/l	milligrams per liter
WET	Waste Extraction Test	TCLP	Soluble lead by Toxicity Characteristic Leaching Procedure

N

SCALE IN FEET

0 150 300

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

208449_A8.DWG.....—G.K.

Ninyo & Moore

BORING DATA - SITE 2

PROJECT NO.	DATE
208449007	6/12

SB I-405 BOLSA AVENUE ON AND OFF-RAMP
SB I-5 MANCHESTER AVENUE ON-RAMP
WESTMINSTER AND ANAHEIM, CALIFORNIA

FIGURE

6

APPENDIX A

AERIALLY DEPOSITED LEAD SOIL MANAGEMENT CHART

AERIALLY DEPOSITED LEAD SOIL MANAGEMENT			
SOLUBLE LEAD (mg/l)	**TOTAL LEAD (mg/kg)**	**SOIL TYPE**	**HANDLING**
CALIFORNIA TESTING			
STLC <5.0	TTLC <1000	X	Non-hazardous Waste. Notify and require Lead Compliance Plan for worker safety.
	1000 – 1411 and DI WET < 1.5 mg/l	Y1	Hazardous Waste. Variance applies – cover with minimum 1 foot of clean soil.*
	1411 – 3397 and DI WET < 150 mg/l	Y2	Hazardous Waste. Variance applies – cover with pavement structure. *
	1000 – 3397 but Surplus	Z2	Hazardous Waste - Surplus. Dispose at Class 1 disposal site.
	> 3397 or 1000 – 3397 & DI WET > 150 mg/l	Z2	Hazardous Waste – not reusable under Variance. Dispose at Class 1 disposal site.
STLC >5.0	TTLC < 1411 and DI WET < 1.5 mg/l	Y1	Hazardous Waste. Variance applies – cover with minimum of 1 foot of clean soil.*
	1411 – 3397 and DI WET < 150 mg/l	Y2	Hazardous Waste. Variance applies – cover with pavement structure.*
	< 3397 and DI WET < 150 mg/l but Surplus	Z2	Hazardous Waste - Surplus. Dispose at Class 1 disposal site.
	> 3397 or DI WET > 150 mg/l	Z2	Hazardous Waste – not reusable under Variance. Dispose at Class 1 disposal site.
FEDERAL TESTING			
TCLP > 5.0 mg/l	N/A	Z3	RCRA Hazardous Waste Dispose at Class 1 disposal site as a RCRA waste regardless of TTLC and STLC results.

*Note: For hazardous waste levels of lead - if pH is less than 5.5 soil must be placed under a pavement structure. If pH is less than 5.0 variance can not be used and the soil must be disposed as Z-2 material.

APPENDIX B

LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

PAT-CHEM LABORATORIES
11990 Discovery Ct. • Moorpark, CA 93021 • Ph. (805) 532-0012 • Fax (805) 532-0016

Customer: **Ninyo & Moore, Geo. & Enviro. Sciences Consul**
475 Goddard, Suite 200
Irvine CA, 92618

Attention: Mike Cushner
Report Date: 01-Jun-12 16:29
Subject: Lead Soil Samples

Project/P.O.#: 208449007,SB I-405 Bolsa/I-5 Manchester

PARAMETER	METHOD	QC BATCH	REPORTING LIMIT	ANALYZED (ANALYST)		RESULT	NOTE
B1-0.5 (Sample I.D.# : 1205269-01) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		7.5 mg/kg	
pH	EPA 9040	AE22308	0.1	23-May-12 (LL)		8.2 pH Units	
B1-1.5 (Sample I.D.# : 1205269-02) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		25 mg/kg	
B1-3.0 (Sample I.D.# : 1205269-03) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		11 mg/kg	
B1-4.0 (Sample I.D.# : 1205269-04) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)	<	1.0 mg/kg	
B2-0.5 (Sample I.D.# : 1205269-05) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		7.0 mg/kg	
B2-1.5 (Sample I.D.# : 1205269-06) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		20 mg/kg	
B2-3.0 (Sample I.D.# : 1205269-07) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		10 mg/kg	
B2-4.0 (Sample I.D.# : 1205269-08) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		2.7 mg/kg	
B3-0.5 (Sample I.D.# : 1205269-09) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		52 mg/kg	
Lead	EPA 6010B(STLC)	AE22918	0.20	29-May-12 (AF)		0.86 mg/l	
B3-1.5 (Sample I.D.# : 1205269-10) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		11 mg/kg	
B3-3.0 (Sample I.D.# : 1205269-11) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		6.3 mg/kg	

Respectfully Submitted,

Pat Brueckner 6/1/2012
Laboratory Director

PAT-CHEM LABORATORIES
11990 Discovery Ct. • Moorpark, CA 93021 • Ph. (805) 532-0012 • Fax (805) 532-0016

Customer: **Ninyo & Moore, Geo. & Enviro. Sciences Consul**
475 Goddard, Suite 200
Irvine CA, 92618

Attention: Mike Cushner
Report Date: 01-Jun-12 16:29
Subject: Lead Soil Samples

Project/P.O.#: 208449007,SB I-405 Bolsa/I-5 Manchester

PARAMETER	METHOD	QC BATCH	REPORTING LIMIT	ANALYZED (ANALYST)	RESULT	NOTE
B3-3.0 (Sample I.D.# : 1205269-11) Collected: 22-May-12 By P.R.						
pH	EPA 9040	AE22308	0.1	23-May-12 (LL)	9.2 pH Units	
B3-4.0 (Sample I.D.# : 1205269-12) Collected: 22-May-12 By P.R.						
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)	16 mg/kg	
B4-0.5 (Sample I.D.# : 1205269-13) Collected: 22-May-12 By P.R.						
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)	3.3 mg/kg	
B4-1.5 (Sample I.D.# : 1205269-14) Collected: 22-May-12 By P.R.						
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)	8.9 mg/kg	
B4-3.0 (Sample I.D.# : 1205269-15) Collected: 22-May-12 By P.R.						
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)	19 mg/kg	
B4-4.0 (Sample I.D.# : 1205269-16) Collected: 22-May-12 By P.R.						
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)	43 mg/kg	
B7-0.5 (Sample I.D.# : 1205269-17) Collected: 22-May-12 By P.R.						
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)	15 mg/kg	
B7-1.5 (Sample I.D.# : 1205269-18) Collected: 22-May-12 By P.R.						
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)	3.4 mg/kg	
B7-3.0 (Sample I.D.# : 1205269-19) Collected: 22-May-12 By P.R.						
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)	3.3 mg/kg	
B7-4.0 (Sample I.D.# : 1205269-20) Collected: 22-May-12 By P.R.						
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)	1.7 mg/kg	

Respectfully Submitted,

Pat Brueckner 6/1/2012
Laboratory Director

PAT-CHEM LABORATORIES
11990 Discovery Ct. • Moorpark, CA 93021 • Ph. (805) 532-0012 • Fax (805) 532-0016

Customer: **Ninyo & Moore, Geo. & Enviro. Sciences Consul**
475 Goddard, Suite 200
Irvine CA, 92618

Attention: Mike Cushner
Report Date: 01-Jun-12 16:29
Subject: Lead Soil Samples

Project/P.O.#: 208449007,SB I-405 Bolsa/I-5 Manchester

PARAMETER	METHOD	QC BATCH	REPORTING LIMIT	ANALYZED (ANALYST)		RESULT	NOTE
B7-4.0 (Sample I.D.# : 1205269-20) Collected: 22-May-12 By P.R.							
pH	EPA 9040	AE22308	0.1	23-May-12 (LL)		9.2 pH Units	
B8-0.5 (Sample I.D.# : 1205269-21) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		120 mg/kg	
Lead	EPA 6010B(STLC)	AE22918	0.20	29-May-12 (AF)		4.5 mg/l	
B8-1.5 (Sample I.D.# : 1205269-22) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		3.5 mg/kg	
B8-3.0 (Sample I.D.# : 1205269-23) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		9.6 mg/kg	
B8-4.0 (Sample I.D.# : 1205269-24) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		4.5 mg/kg	
B9-0.5 (Sample I.D.# : 1205269-25) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		1.2 mg/kg	
B9-1.5 (Sample I.D.# : 1205269-26) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)	<	1.0 mg/kg	
B9-3.0 (Sample I.D.# : 1205269-27) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		2.6 mg/kg	
B9-4.0 (Sample I.D.# : 1205269-28) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		2.9 mg/kg	
B5-0.5 (Sample I.D.# : 1205269-29) Collected: 22-May-12 By P.R.							
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		100 mg/kg	

Respectfully Submitted,

Pat Brueckner 6/1/2012
Laboratory Director

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Customer: **Ninyo & Moore, Geo. & Enviro. Sciences Consul**
475 Goddard, Suite 200
Irvine CA, 92618

Attention: Mike Cushner
Report Date: 01-Jun-12 16:29
Subject: Lead Soil Samples

Project/P.O.#: 208449007,SB I-405 Bolsa/I-5 Manchester

PARAMETER	METHOD	QC BATCH	REPORTING LIMIT	ANALYZED (ANALYST)		RESULT		NOTE
B5-0.5 (Sample I.D.# : 1205269-29) Collected: 22-May-12 By P.R.								
Lead	EPA 6010B(STLC)	AE22918	0.20	29-May-12 (AF)		4.6	mg/l	
B5-1.5 (Sample I.D.# : 1205269-30) Collected: 22-May-12 By P.R.								
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		9.4	mg/kg	
pH	EPA 9040	AE22308	0.1	23-May-12 (LL)		8.4	pH Units	
B6-0.5 (Sample I.D.# : 1205269-31) Collected: 22-May-12 By P.R.								
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		4.4	mg/kg	
B6-1.5 (Sample I.D.# : 1205269-32) Collected: 22-May-12 By P.R.								
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)	<	1.0	mg/kg	
B6-3.0 (Sample I.D.# : 1205269-33) Collected: 22-May-12 By P.R.								
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		2.8	mg/kg	
B6-4.0 (Sample I.D.# : 1205269-34) Collected: 22-May-12 By P.R.								
Lead	EPA 6010B	AE22404	1.0	24-May-12 (AF)		1.9	mg/kg	
EB1 (Sample I.D.# : 1205269-35) Collected: 22-May-12 By P.R.								
Lead	EPA 6010B	AE22405	0.02	24-May-12 (AF)		0.05	mg/l	

Respectfully Submitted,

Pat Brueckner 6/1/2012
Laboratory Director

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Customer: **Ninyo & Moore, Geo. & Enviro. Sciences Consul**
475 Goddard, Suite 200
Irvine CA, 92618

Attention: Mike Cushner
Report Date: 01-Jun-12 16:29
Subject: Lead Soil Samples

Project/P.O.#: 208449007,SB I-405 Bolsa/I-5 Manchester

Metals by EPA 6000/7000 Series Methods - Quality Control

Parameter	Result	Rep. Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Note
Batch AE22404 - EPA 3050B										
Blank (AE22404-BLK1)				Prepared & Analyzed: 24-May-12						
Lead	ND	1.0	mg/kg							
Blank (AE22404-BLK2)				Prepared & Analyzed: 24-May-12						
Lead	ND	1.0	mg/kg							
LCS (AE22404-BS1)				Prepared & Analyzed: 24-May-12						
Lead	25.0	1.0	mg/kg	25.0		99.9	80-120			
LCS (AE22404-BS2)				Prepared & Analyzed: 24-May-12						
Lead	26.2	1.0	mg/kg	25.0		105	80-120			
LCS Dup (AE22404-BSD1)				Prepared & Analyzed: 24-May-12						
Lead	25.0	1.0	mg/kg	25.0		100	80-120	0.0905	20	
LCS Dup (AE22404-BSD2)				Prepared & Analyzed: 24-May-12						
Lead	25.4	1.0	mg/kg	25.0		102	80-120	3.18	20	
Duplicate (AE22404-DUP1)		**Source: 1205269-01**		Prepared & Analyzed: 24-May-12						
Lead	7.50	1.0	mg/kg		7.53			0.462	20	
Duplicate (AE22404-DUP2)		**Source: 1205269-21**		Prepared & Analyzed: 24-May-12						
Lead	125	1.0	mg/kg		121			2.72	20	
Matrix Spike (AE22404-MS1)		**Source: 1205269-01**		Prepared & Analyzed: 24-May-12						
Lead	122	1.0	mg/kg	125	7.53	91.9	75-125			
Matrix Spike (AE22404-MS2)		**Source: 1205269-21**		Prepared & Analyzed: 24-May-12						
Lead	232	1.0	mg/kg	125	121	88.5	75-125			

Respectfully Submitted,

Pat Brueckner 6/1/2012
Laboratory Director

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475 Goddard, Suite 200
Irvine CA, 92618

Attention: Mike Cushner
Report Date: 01-Jun-12 16:29
Subject: Lead Soil Samples

Project/P.O.#: 208449007,SB I-405 Bolsa/I-5 Manchester

Metals by EPA 6000/7000 Series Methods - Quality Control

Parameter	Result	Rep. Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Note
Batch AE22404 - EPA 3050B										
Matrix Spike Dup (AE22404-MSD1)		**Source: 1205269-01**		Prepared & Analyzed: 24-May-12						
Lead	119	1.0	mg/kg	125	7.53	89.5	75-125	2.51	20	
Matrix Spike Dup (AE22404-MSD2)		**Source: 1205269-21**		Prepared & Analyzed: 24-May-12						
Lead	239	1.0	mg/kg	125	121	94.0	75-125	2.94	20	
Batch AE22405 - EPA 200 Series										
Blank (AE22405-BLK1)				Prepared & Analyzed: 24-May-12						
Lead	ND	0.02	mg/l							
LCS (AE22405-BS1)				Prepared & Analyzed: 24-May-12						
Lead	0.523	0.02	mg/l	0.500		105	80-120			
LCS Dup (AE22405-BSD1)				Prepared & Analyzed: 24-May-12						
Lead	0.523	0.02	mg/l	0.500		105	80-120	0.149	20	
Duplicate (AE22405-DUP1)		**Source: 1205287-45**		Prepared & Analyzed: 24-May-12						
Lead	ND	0.02	mg/l		ND				20	
Matrix Spike (AE22405-MS1)		**Source: 1205287-45**		Prepared & Analyzed: 24-May-12						
Lead	0.976	0.02	mg/l	1.00	ND	97.6	80-120			
Matrix Spike Dup (AE22405-MSD1)		**Source: 1205287-45**		Prepared & Analyzed: 24-May-12						
Lead	0.990	0.02	mg/l	1.00	ND	99.0	80-120	1.44	20	

Respectfully Submitted,

Pat Brueckner 6/1/2012
Laboratory Director

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Customer: **Ninyo & Moore, Geo. & Enviro. Sciences Consul**
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Irvine CA, 92618

Attention: Mike Cushner
Report Date: 01-Jun-12 16:29
Subject: Lead Soil Samples

Project/P.O.#: 208449007,SB I-405 Bolsa/I-5 Manchester

STLC Metals by 6000/7000 Series Methods - Quality Control

Parameter	Result	Rep. Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Note
Batch AE22918 - TCLP Metals										
Blank (AE22918-BLK1)				Prepared & Analyzed: 29-May-12						
Lead	ND	0.02	mg/l							
LCS (AE22918-BS1)				Prepared & Analyzed: 29-May-12						
Lead	0.524	0.02	mg/l	0.500		105	80-120			
LCS Dup (AE22918-BSD1)				Prepared & Analyzed: 29-May-12						
Lead	0.553	0.02	mg/l	0.500		111	80-120	5.36	20	
Duplicate (AE22918-DUP1)		**Source: 1205164-01**		Prepared & Analyzed: 29-May-12						
Lead	6.48	0.20	mg/l		6.56			1.14	20	
Matrix Spike (AE22918-MS1)		**Source: 1205164-01**		Prepared & Analyzed: 29-May-12						
Lead	16.0	0.20	mg/l	10.0	6.56	94.4	80-120			
Matrix Spike Dup (AE22918-MSD1)		**Source: 1205164-01**		Prepared & Analyzed: 29-May-12						
Lead	16.1	0.20	mg/l	10.0	6.56	94.9	80-120	0.342	20	

Respectfully Submitted,

Pat Brueckner 6/1/2012
Laboratory Director

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Customer: **Ninyo & Moore, Geo. & Enviro. Sciences Consul**
475 Goddard, Suite 200
Irvine CA, 92618

Attention: Mike Cushner
Report Date: 01-Jun-12 16:29
Subject: Lead Soil Samples

Project/P.O.#: 208449007,SB I-405 Bolsa/I-5 Manchester

General Inorganic Nonmetallic Chemistry by Standard Methods/EPA Methods - Quality Control

Parameter	Result	Rep. Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Note
Batch AE22308 - General Preparation										
Duplicate (AE22308-DUP1)		**Source: 1205269-01**		Prepared & Analyzed: 23-May-12						
pH	8.18	0.1	pH Units		8.23			0.609	15	

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis

Respectfully Submitted,

Pat Brueckner 6/1/2012
Laboratory Director

#1205269

LABORATORY	SITE	CONSULTANT
Pat Chem Laboratories 11990 Discovery Court Moorpark, CA 93021 (805) 532-0012 / fax (805) 532-0016	SB I-405 Bolsa Ave On & Off-Ramps at Westminster Mall Dr. and SB- I-5 Manchester Ave. On-Ramp Westminster, and Garden Grove, California EA 0L3001 Project Number 208449007	Ninyo & Moore 475 Goddard, Suite 200 Irvine CA 92618 (949) 753-7070 fax (949) 753-7071

Special Instructions:
Homogonize the samples
If total lead is <1,000 mg/kg, but >/= 50 mg/kg, run STLC WET test (citric acid extraction EPA Method 7000 series)
If STLC WET >/= 5 mg/l, run STLC-DI (DI extraction EPA Method 7000 series)
If total lead is >/=1,000 mg/kg or STLC WET >/=5 mg/l, run TCLP (EPA Method 7000 series for leachable lead)

Samplers Name: Pedro Rodriguez

Relinquished by (name/date and time)	Received by (name/date and time)
Pedro Rodriguez 5/22/12 1550	5/22/12 15:50
5/22/12 15:51	5/22/12 1551
5/22/12 1540	

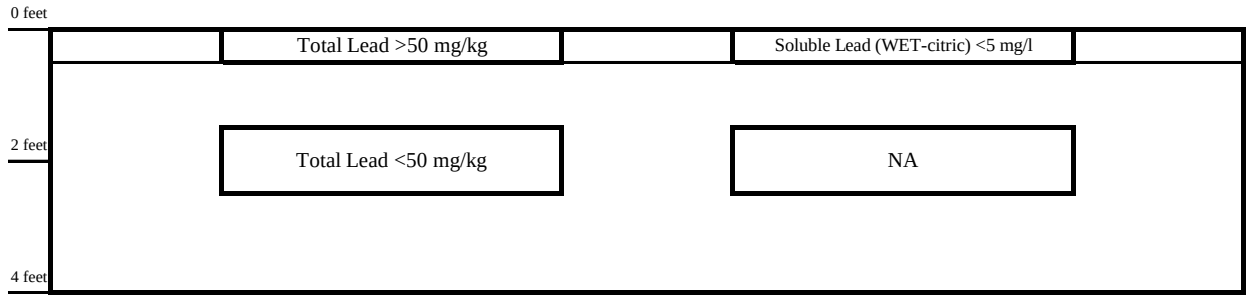
Lab No.	Sample I. D.	Date	Time	Total Lead EPA Method 6010	pH EPA Method 9045	Sample Type	Turn-Around Time	Container Type	HOLD
	B1-0.5	5/22/12	0744	X	X	Soil	Normal	Glass Jar	
	B1-1.5		0749	X		Soil	Normal	Glass Jar	
	B1-3.0		0753	X		Soil	Normal	Glass Jar	
	B1-4.0		0758	X		Soil	Normal	Glass Jar	
	B2-0.5		0810	X		Soil	Normal	Glass Jar	
	B2-1.5		0818	X		Soil	Normal	Glass Jar	
	B2-3.0		0820	X		Soil	Normal	Glass Jar	
	B2-4.0		0823	X		Soil	Normal	Glass Jar	
	B3-0.5		0837	X		Soil	Normal	Glass Jar	
	B3-1.5		0836	X		Soil	Normal	Glass Jar	
	B3-3.0		0828	X	X	Soil	Normal	Glass Jar	
	B3-4.0		0842	X		Soil	Normal	Glass Jar	
	B4-0.5		0849	X		Soil	Normal	Glass Jar	
	B4-1.5		0853	X		Soil	Normal	Glass Jar	
	B4-3.0		0855	X		Soil	Normal	Glass Jar	
	B4-4.0		0858	X		Soil	Normal	Glass Jar	
	B7-0.5		1027	X		Soil	Normal	Glass Jar	
	B7-1.5		1028	X		Soil	Normal	Glass Jar	
	B7-3.0		1033	X		Soil	Normal	Glass Jar	
	B7-4.0		1035	X	X	Soil	Normal	Glass Jar	
	B8-0.5		1048	X	***PH	Soil	Normal	Glass Jar	
	B8-1.5		1109	X		Soil	Normal	Glass Jar	
	B8-3.0		1115	X		Soil	Normal	Glass Jar	
	B8-4.0		1121	X		Soil	Normal	Glass Jar	
	B9-0.5		1132	X		Soil	Normal	Glass Jar	
	B9-1.5		1134	X		Soil	Normal	Glass Jar	
	B9-3.0		1140	X		Soil	Normal	Glass Jar	
	B9-4.0		1143	X		Soil	Normal	Glass Jar	
	B5-0.5		1153	X		Soil	Normal	Glass Jar	
	B5-1.5	↓	1209	X	X	Soil	Normal	Glass Jar	
~~—~~	~~B5-3.0~~			X		Soil	Normal	Glass Jar	NO Sample
~~—~~	~~B5-4.0~~			X		Soil	Normal	Glass Jar	No Sample
	B6-0.5	5/22/12	1239	X		Soil	Normal	Glass Jar	
	B6-1.5		1244	X		Soil	Normal	Glass Jar	
	B6-3.0		1248	X		Soil	Normal	Glass Jar	
	B6-4.0		1250	X		Soil	Normal	Glass Jar	
	EB1	↓	1300	X		Soil	Normal	Glass Jar	
						Soil	Normal	Glass Jar	
						Water	Normal	Plastic	

APPENDIX C

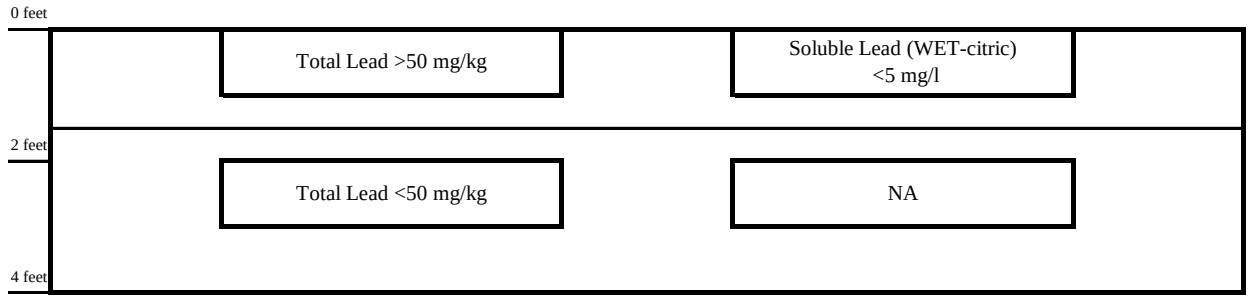
BLOCK DIAGRAMS

FIGURE C1 – BLOCK DIAGRAM FOR POTENTIAL CALTRANS RIGHT-OF-WAY RE-USE - SITE 1

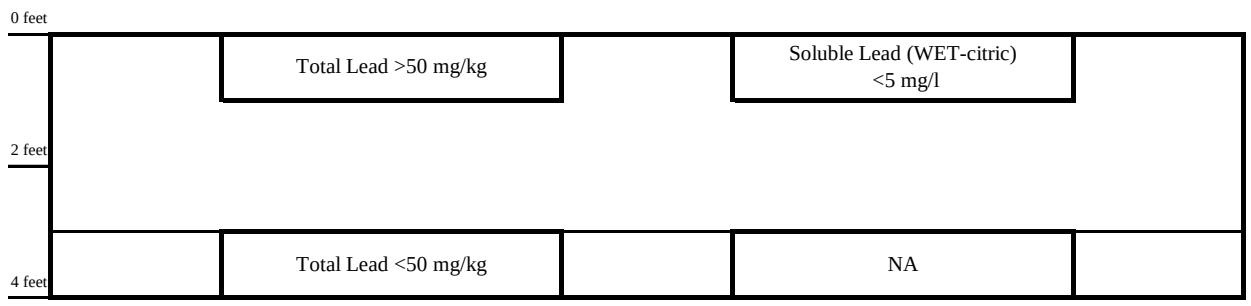
Scenario A



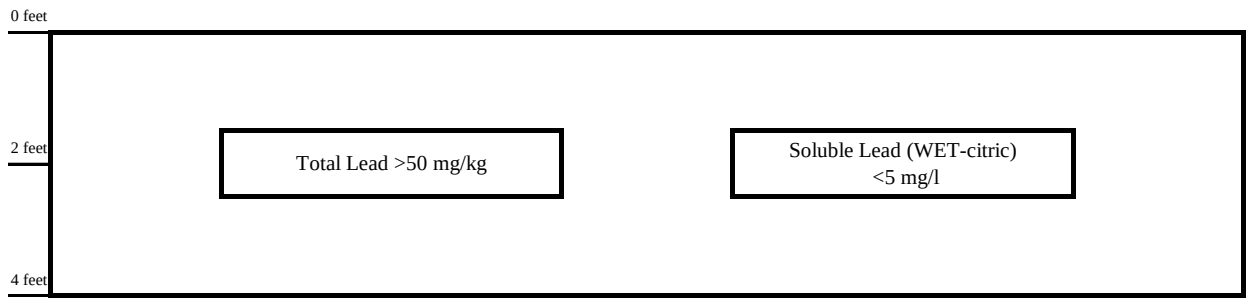
Scenario B



Scenario C



Scenario D



– Non-hazardous soil with respect to total and soluble lead

– Reuse Condition 1 [Hazardous. Variance applies. Use material on job site. Place a minimum of 5 feet above maximum water table elevation and cover with at least 1 foot of non-hazardous soil]

– Reuse Condition 2 [Hazardous. Variance applies. Use material on job site. Place a minimum of 5 feet above maximum water table elevation and protect from infiltration with a pavement structure which will be maintained by Caltrans]

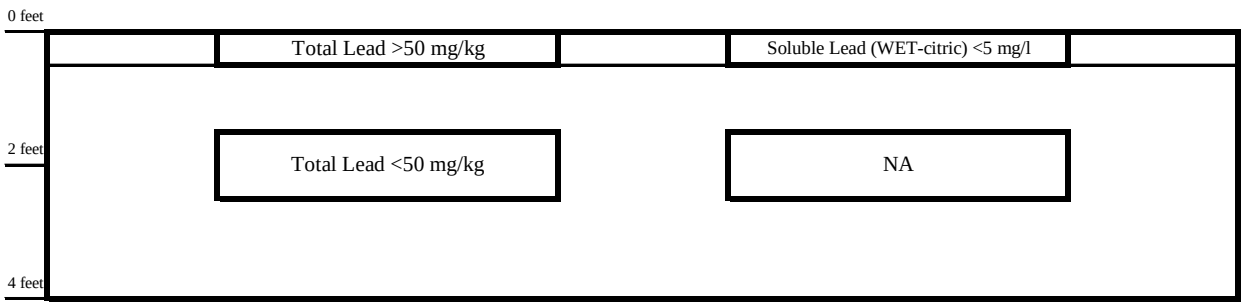
– Hazardous. Class 1 disposal site, all other Title 22 CCR requirements apply

– Hazardous. Class 1 disposal site RCRA based on the layer having a TCLP value ≥ 5 mg/l

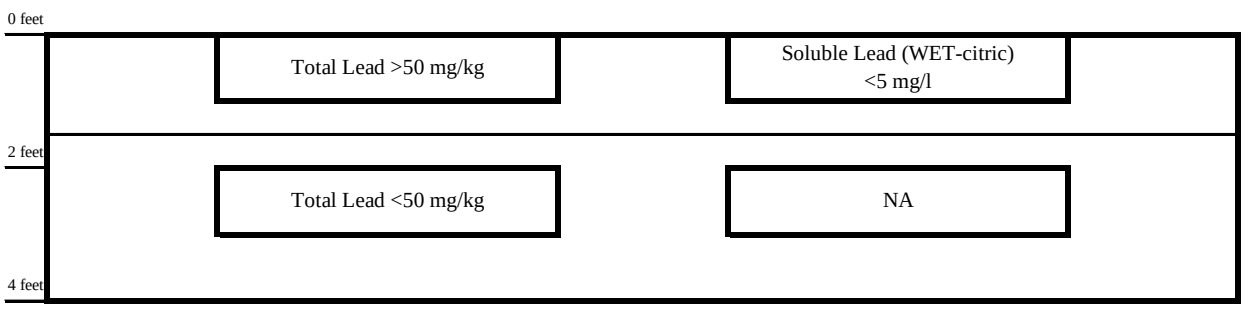
UCL – upper confidence limit
WET-DI – soluble lead using the Waste Extraction Test with deionized water
WET-citric acid – soluble lead using the Waste Extraction Test with citric acid
TCLP – Toxicity Characteristic Leaching Procedure
mg/kg – milligrams per kilogram
mg/l – milligrams per liter
CCR – California Code of Regulations
RCRA – Resource, Conservation, and Recovery Act
NA – not applicable

FIGURE C2 – BLOCK DIAGRAM FOR POTENTIAL CALTRANS OFF SITE DISPOSAL - SITE 1

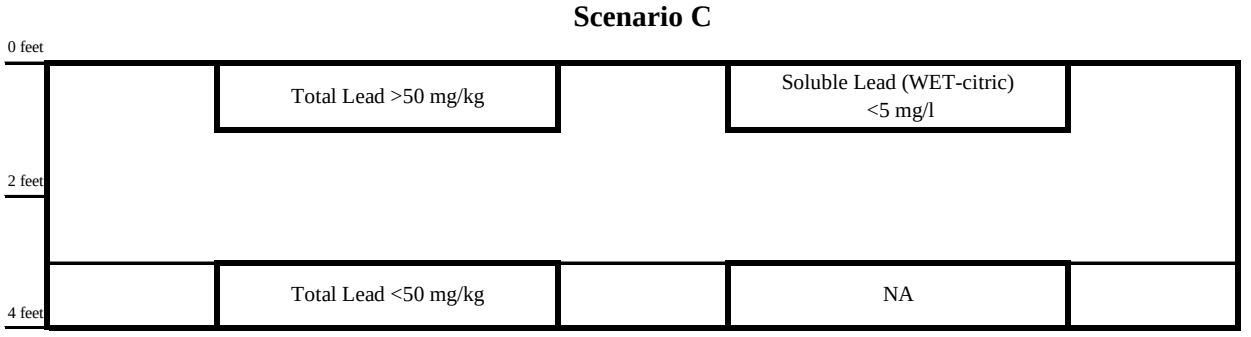
Scenario A



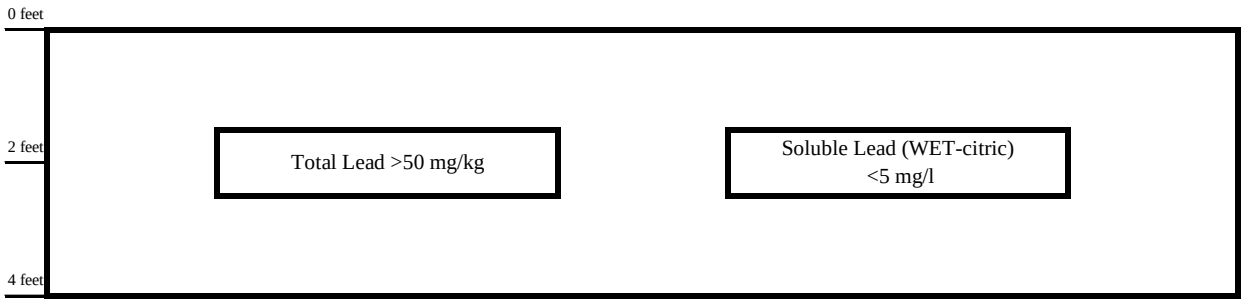
Scenario B



Scenario C



Scenario D



– Non-hazardous soil with respect to total and soluble lead

– Reuse Condition 1 [Hazardous. Variance applies. Use material on job site. Place a minimum of 5 feet above maximum water table elevation and cover with at least 1 foot of non-hazardous soil]

– Reuse Condition 2 [Hazardous. Variance applies. Use material on job site. Place a minimum of 5 feet above maximum water table elevation and protect from infiltration with a pavement structure which will be maintained by Caltrans]

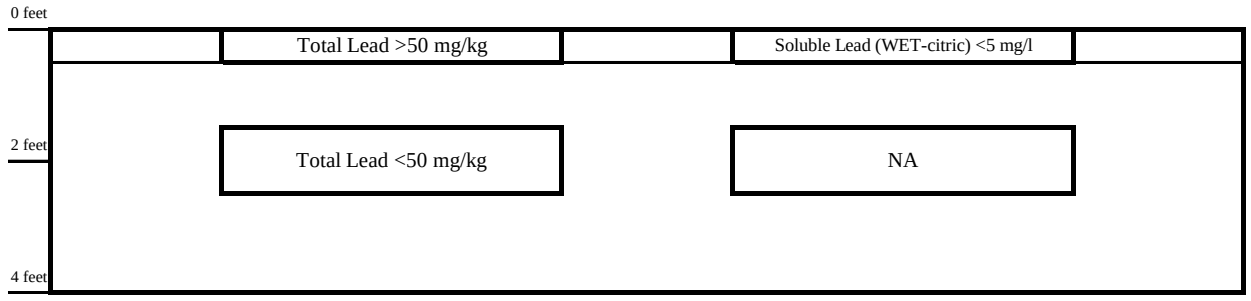
– Hazardous. Class 1 disposal site, all other Title 22 CCR requirements apply

– Hazardous. Class 1 disposal site RCRA based on the layer having a TCLP value ≥ 5 mg/l

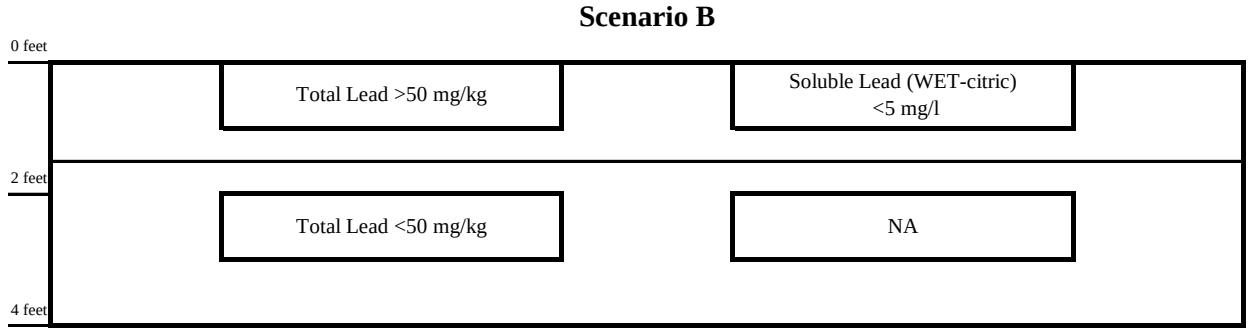
UCL – upper confidence limit
WET-DI – soluble lead using the Waste Extraction Test with deionized water
WET-citric acid – soluble lead using the Waste Extraction Test with citric acid
TCLP – Toxicity Characteristic Leaching Procedure
mg/kg – milligrams per kilogram
mg/l – milligrams per liter
CCR – California Code of Regulations
RCRA – Resource, Conservation, and Recovery Act
NA – not applicable

FIGURE C3 – BLOCK DIAGRAM FOR POTENTIAL CALTRANS RIGHT-OF-WAY RE-USE - SITE 2

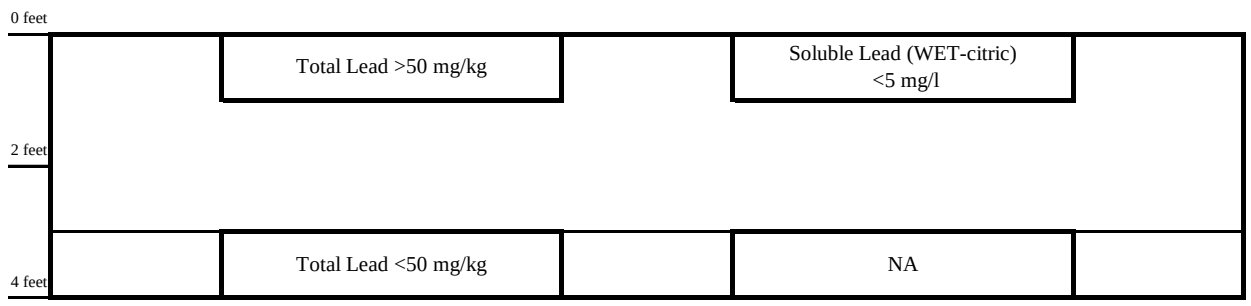
Scenario A



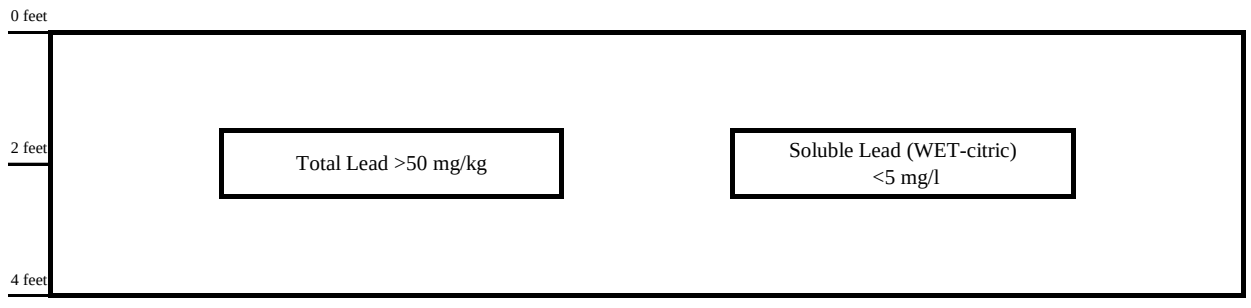
Scenario B



Scenario C



Scenario D



– Non-hazardous soil with respect to total and soluble lead

– Reuse Condition 1 [Hazardous. Variance applies. Use material on job site. Place a minimum of 5 feet above maximum water table elevation and cover with at least 1 foot of non-hazardous soil]

– Reuse Condition 2 [Hazardous. Variance applies. Use material on job site. Place a minimum of 5 feet above maximum water table elevation and protect from infiltration with a pavement structure which will be maintained by Caltrans]

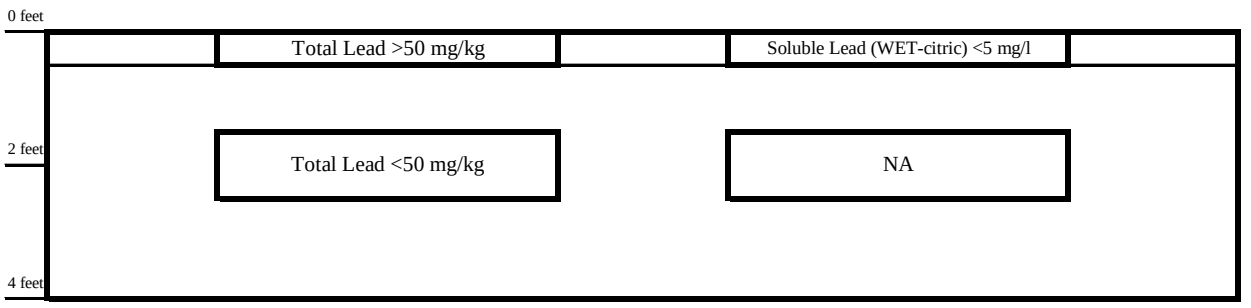
– Hazardous. Class 1 disposal site, all other Title 22 CCR requirements apply

– Hazardous. Class 1 disposal site RCRA based on the layer having a TCLP value ≥ 5 mg/l

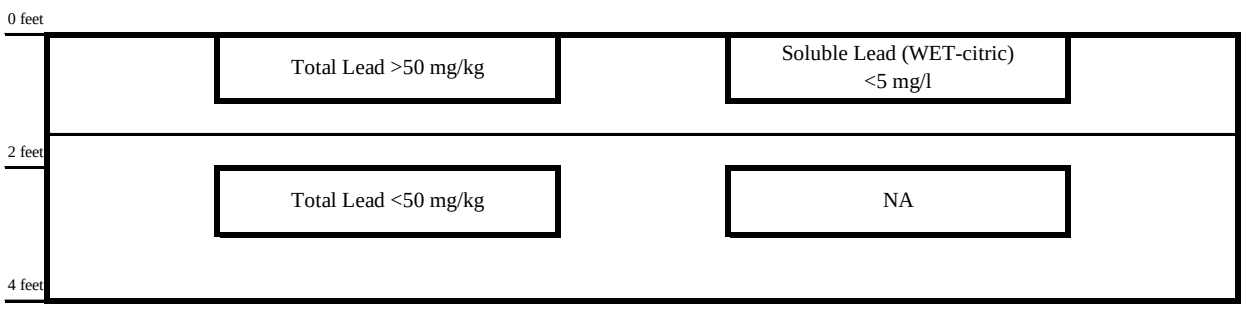
UCL – upper confidence limit
WET-DI – soluble lead using the Waste Extraction Test with deionized water
WET-citric acid – soluble lead using the Waste Extraction Test with citric acid
TCLP – Toxicity Characteristic Leaching Procedure
mg/kg – milligrams per kilogram
mg/l – milligrams per liter
CCR – California Code of Regulations
RCRA – Resource, Conservation, and Recovery Act
NA – not applicable

FIGURE C4 – BLOCK DIAGRAM FOR POTENTIAL CALTRANS OFF SITE DISPOSAL - SITE 2

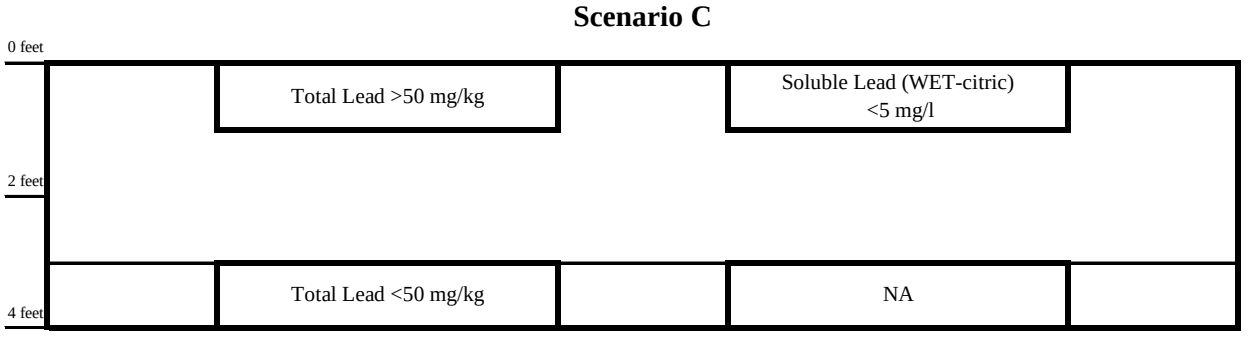
Scenario A



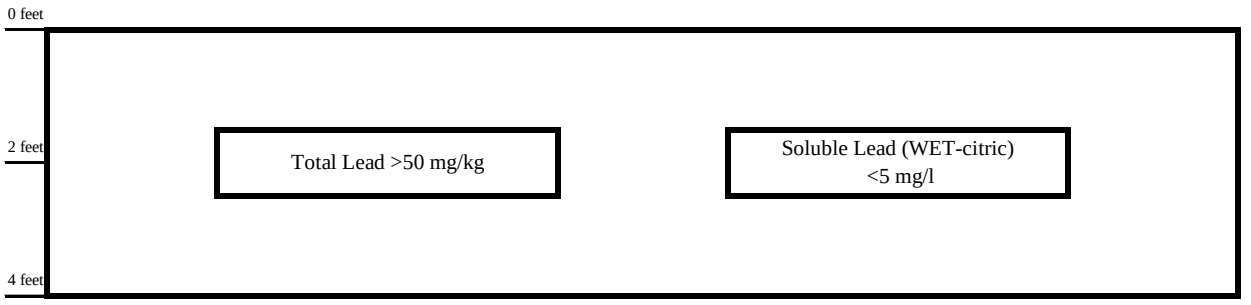
Scenario B



Scenario C



Scenario D



– Non-hazardous soil with respect to total and soluble lead

– Reuse Condition 1 [Hazardous. Variance applies. Use material on job site. Place a minimum of 5 feet above maximum water table elevation and cover with at least 1 foot of non-hazardous soil]

– Reuse Condition 2 [Hazardous. Variance applies. Use material on job site. Place a minimum of 5 feet above maximum water table elevation and protect from infiltration with a pavement structure which will be maintained by Caltrans]

– Hazardous. Class 1 disposal site, all other Title 22 CCR requirements apply

– Hazardous. Class 1 disposal site RCRA based on the layer having a TCLP value ≥ 5 mg/l

UCL – upper confidence limit
WET-DI – soluble lead using the Waste Extraction Test with deionized water
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TCLP – Toxicity Characteristic Leaching Procedure
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FOR CONTRACT NO.: **12-0L3004**

INSTALLATION DETAILS FOR BATTERY BACKUP SYSTEM

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

Theresa Gabriel — REGISTERED CIVIL ENGINEER — 12-20-07 DATE

Theresa A. Gabriel No. E15129 Exp. 6-30-10 ELECT — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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LEGEND: (THIS SHEET ONLY)

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AC- = GROUNDED CONDUCTOR
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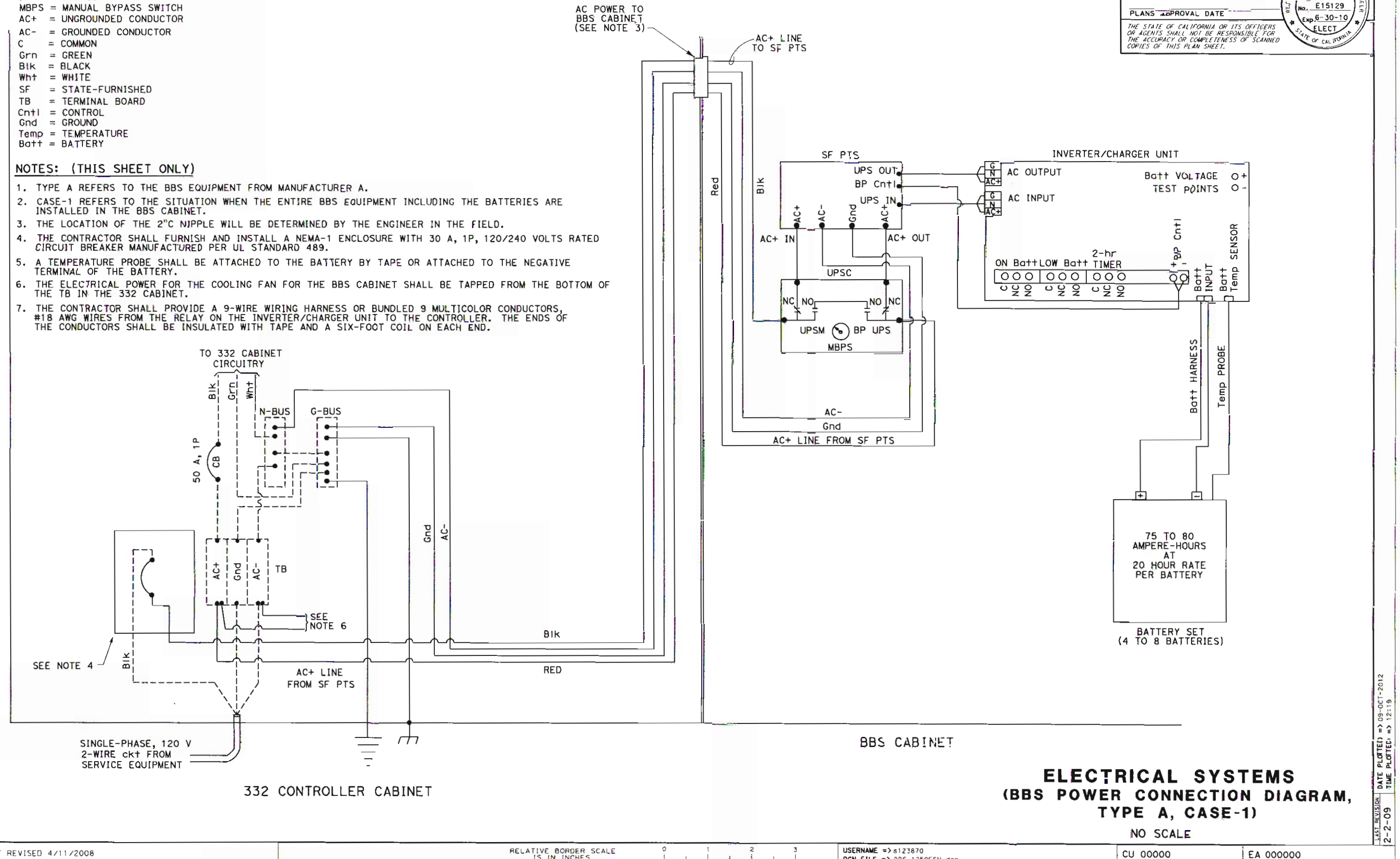
SF = STATE-FURNISHED
TB = TERMINAL BOARD
Cntl = CONTROL
Gnd = GROUND
Temp = TEMPERATURE
Batt = BATTERY

NOTES: (THIS SHEET ONLY)

1. TYPE A REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER A.
2. CASE-1 REFERS TO THE SITUATION WHEN THE ENTIRE BBS EQUIPMENT INCLUDING THE BATTERIES ARE INSTALLED IN THE BBS CABINET.
3. THE LOCATION OF THE 2"C NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
6. THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET SHALL BE TAPPED FROM THE BOTTOM OF THE TB IN THE 332 CABINET.
7. THE CONTRACTOR SHALL PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS SHALL BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.



ELECTRICAL SYSTEMS
(BBS POWER CONNECTION DIAGRAM, TYPE A, CASE-1)

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
FUNCTIONAL SUPERVISOR
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
LAST REVISION 2-2-09
DATE PLOTTED => 09-OCT-2012
TIME PLOTTED => 12:19

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USERNAME => s123870
DGN FILE => BBS 1250FSM.dgn
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Theresa Gabriel 12-20-07
REGISTERED CIVIL ENGINEER DATE

Theresa A. Gabriel No. E15129 Exp 6-30-10 ELECT
REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

PLANS APPROVAL DATE

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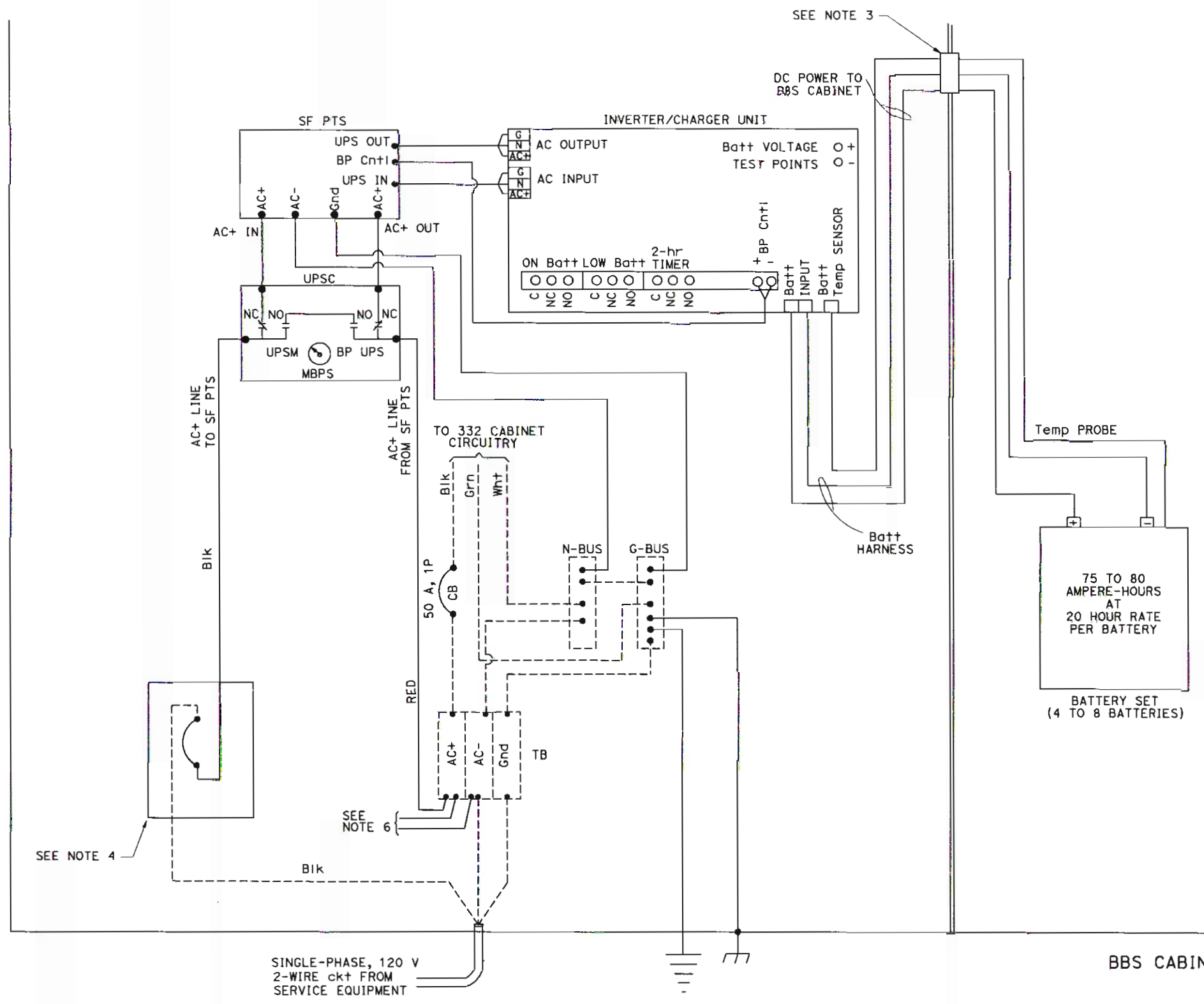

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Temp = TEMPERATURE
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Cntl = CONTROL
Gnd = GROUND

NOTES: (THIS SHEET ONLY)

1. TYPE B REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER B.
2. CASE-2 REFERS TO THE SITUATION WHEN ONLY THE BATTERIES ARE INSTALLED IN THE BBS CABINET. THE REMAINING EQUIPMENT IS PLACED IN THE 332 CONTROLLER CABINET.
3. THE LOCATION OF THE 2"C NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
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ELECTRICAL SYSTEMS
(BBS POWER CONNECTION DIAGRAM, TYPE A, CASE-2)

NO SCALE

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Caltrans

LAST REVISION 2-2-09
DATE PLOTTED => 09-OCT-2012
TIME PLOTTED => 12:20

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EA 000000

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NOTES: (THIS SHEET ONLY)

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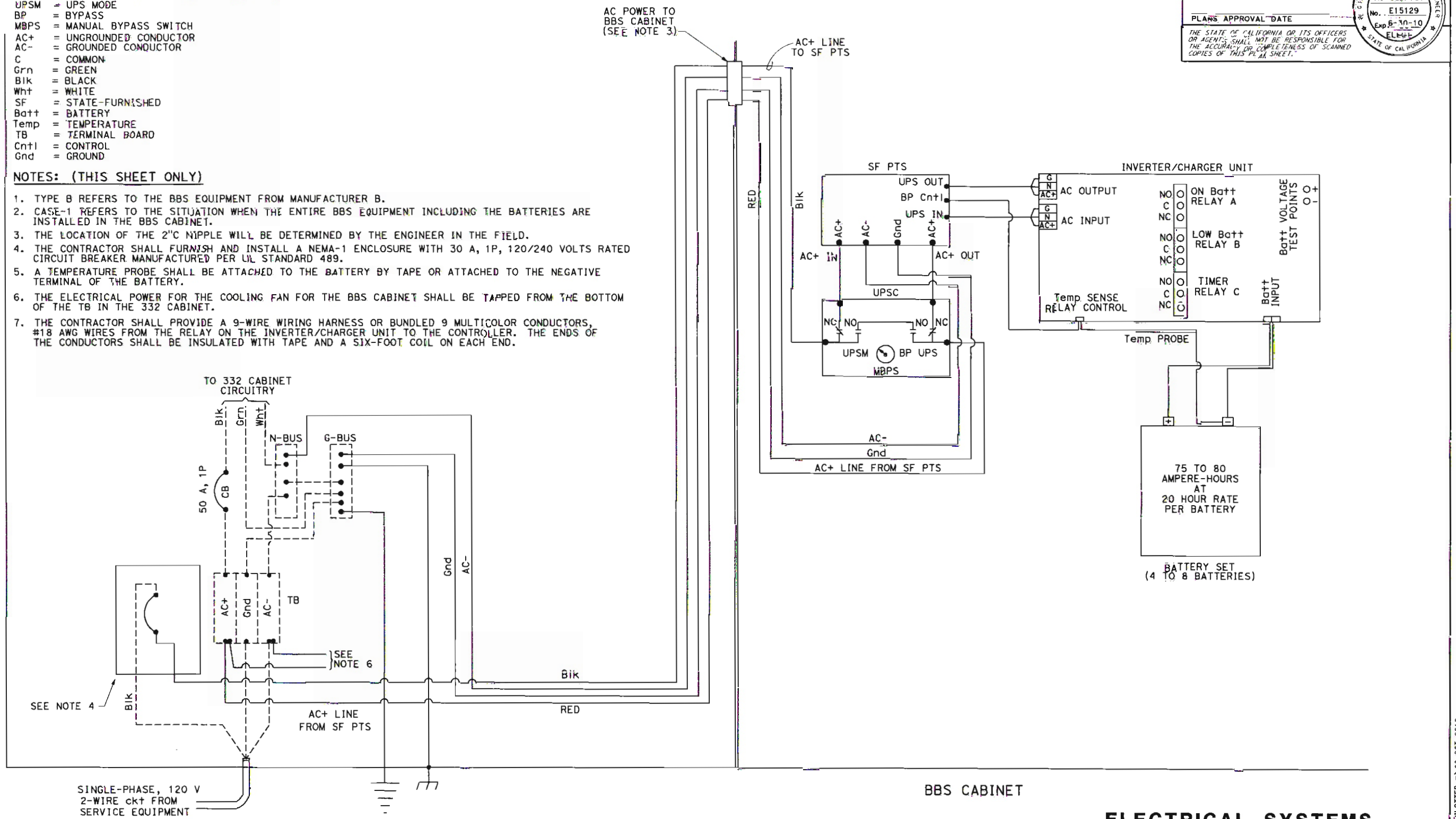

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

Theresa Gabriel — 12-20-07
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PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Theresa A. Gabriel — No. E15129 — Exp 6-30-10 — ELECT — STATE OF CALIFORNIA

ELECTRICAL SYSTEMS
(BBS POWER CONNECTION DIAGRAM, TYPE B, CASE-1)

NO SCALE

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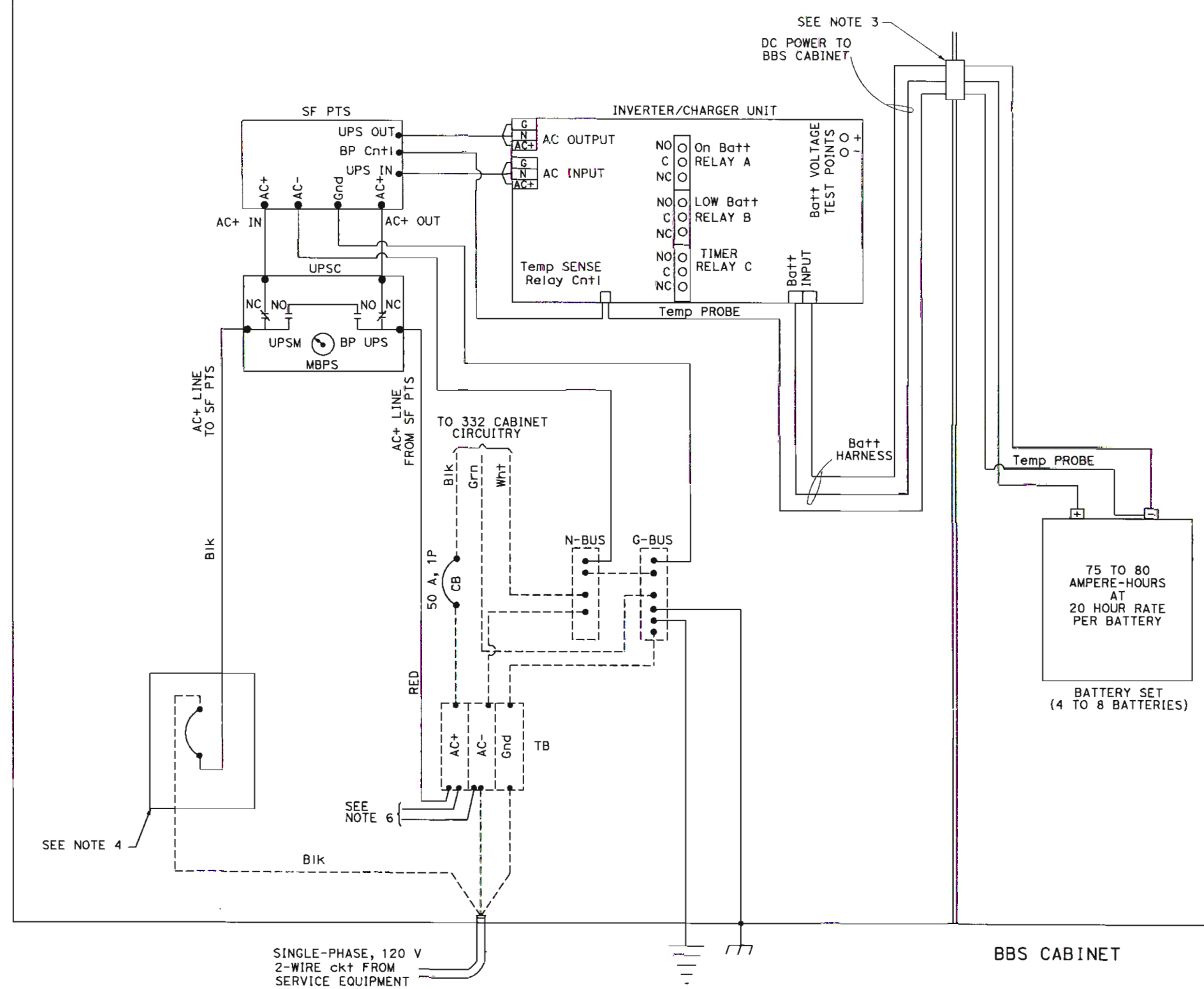

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ELECTRICAL SYSTEMS
(BBS POWER CONNECTION DIAGRAM, TYPE B, CASE-2)
NO SCALE

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PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Theresa A. Gabriel
No. E15129
Exp. 6-30-10
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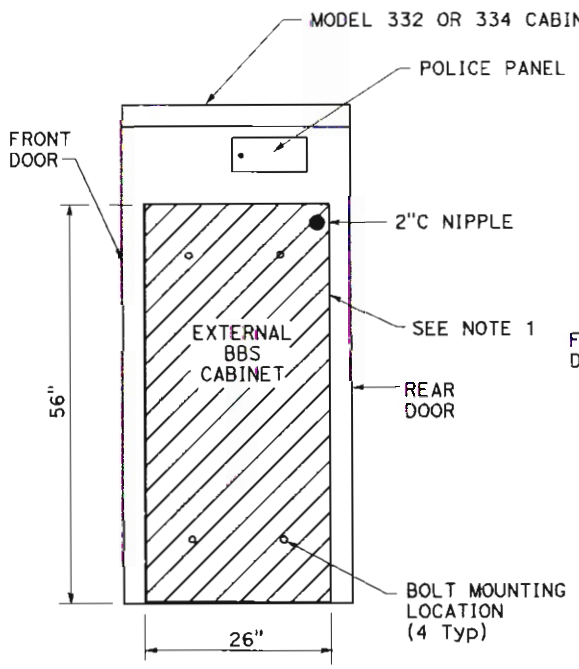
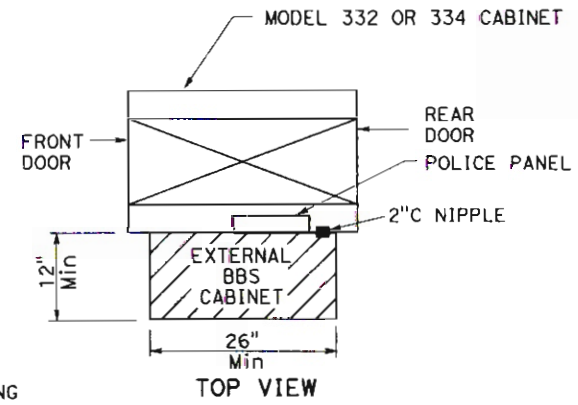
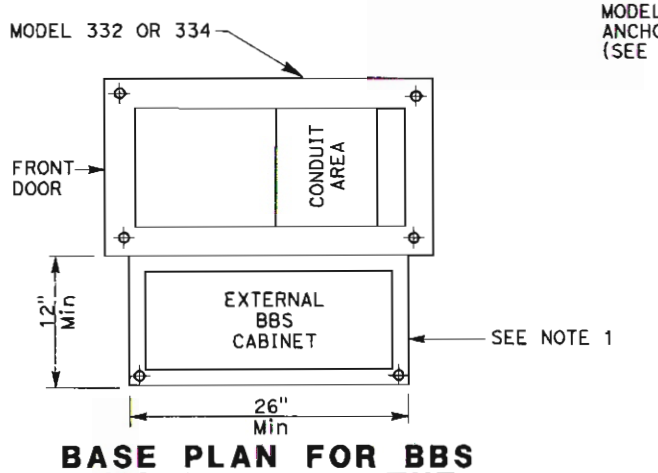


SIDE VIEW



TOP VIEW

EXTERNAL BBS CABINET MOUNTED TO THE MODEL 332 OR 334 CABINET

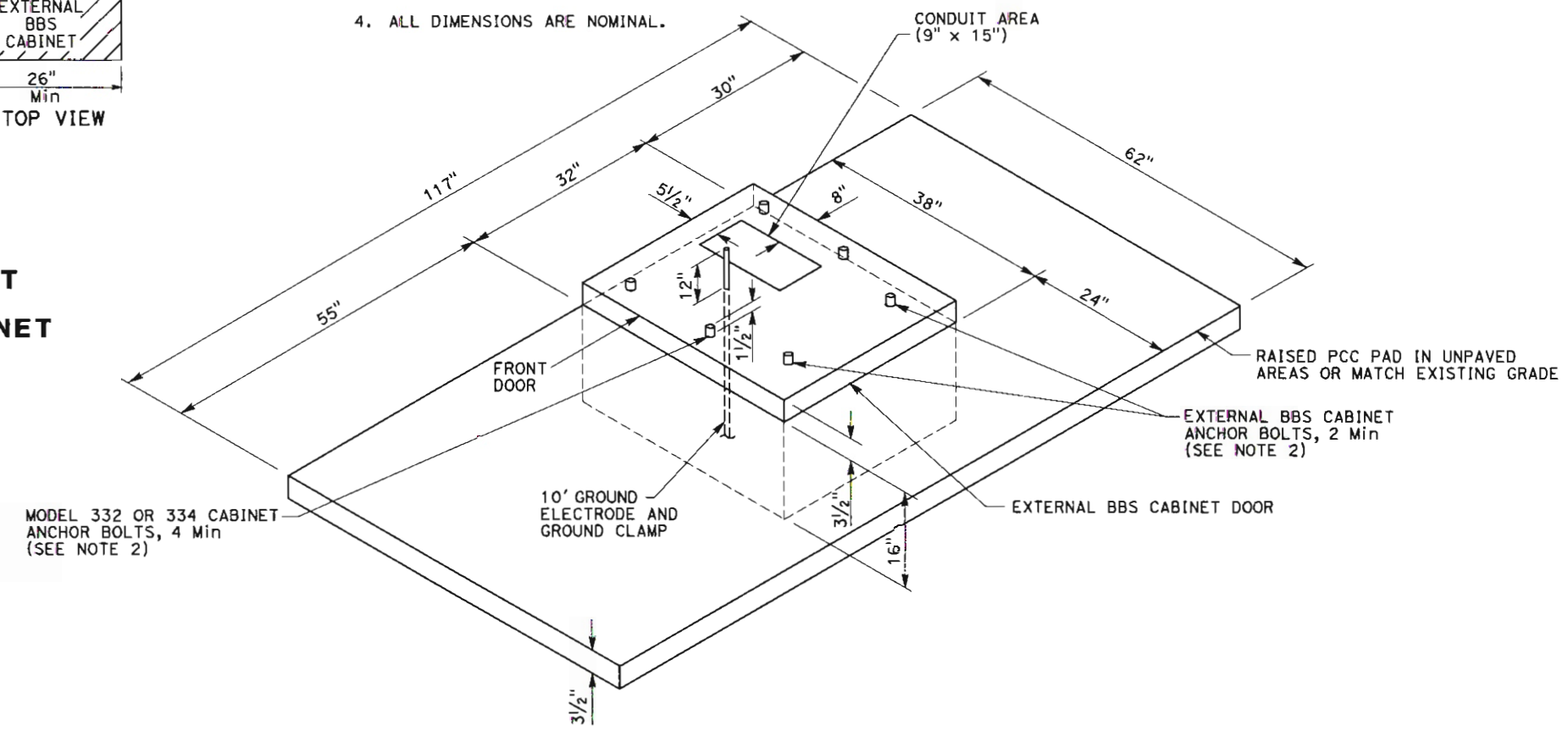


BASE PLAN FOR BBS MOUNTED TO THE MODEL 332 OR 334 CABINET

(FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE SHEET A6-1 TO A6-4, CABINET HOUSING DETAILS OF THE TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATION (TEES))

NOTE: (THIS SHEET ONLY)

1. THE EXTERNAL BBS CABINET SHALL BE MOUNTED TO THE MODEL 332 OR 334 CABINET WITH FOUR 18-8 STAINLESS STEEL HEX HEAD, FULLY-THREADED, ⅜"-16 X 1" BOLTS; TWO WASHERS PER BOLT, DESIGNED FOR ⅜" BOLTS AND ARE 18-8 STAINLESS STEEL, 1" OUTSIDE DIAMETER, ROUND, AND FLAT; AND ONE K-LOCK NUT PER BOLT THAT IS 18-8 STAINLESS STEEL AND A HEX-NUT. THE ENGINEER WILL HAVE TO APPROVE THE BOLT MOUNTING LOCATION PRIOR TO INSTALLATION.
2. THE ANCHOR BOLTS SHALL BE ¾" Dia X 15" WITH A 2"-90° BEND. THE CABINET MANUFACTURER'S SPECIFICATION SHALL DETERMINE THE LOCATION OF THE ANCHOR BOLTS IN THE FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE THE ANCHOR BOLTS AND ITS LOCATION IN THE FOUNDATION PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF THE BBS CABINET PRIOR TO CONSTRUCTING THE FOUNDATION OF THE MODIFIED PORTION OF THE Std MODEL 332 AND 334 CABINET FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE ANY NECESSARY DEVIATIONS PRIOR TO CONSTRUCTION.
4. ALL DIMENSIONS ARE NOMINAL.



MODIFIED MODEL 332 AND 334 CABINET FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM (BBS)

(FOR DIMENSIONS AND DETAILS NOT SHOWN AND ADDITIONAL NOTES, SEE SHEET ES-3C OF THE STANDARD PLANS FOR MODEL 332 AND 334 CABINETS)

ELECTRICAL SYSTEMS
(BBS FOUNDATION DETAILS)

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
FUNCTIONAL SUPERVISOR
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