

**FOR CONTRACT NO.: 02-4C4014**

**INFORMATION HANDOUT**  
**MATERIALS INFORMATION**

OPTIONAL DISPOSAL SITE

PRELIMINARY GEOTECHNICAL REPORT

AERIALY DEPOSITED LEAD SITE INVESTIGATION REPORT

ELECTRICAL (REU 2E)

**ROUTE: 02-SHA-5-R11.0/R17.5**

# INFORMATIONAL HANDOUT

FOR CONSTRUCTION CONTRACT  
IN SHASTA COUNTY  
IN AND NEAR REDDING FROM 0.1 MILE NORTH OF SMITH ROAD  
OVERCROSSING TO 0.2 MILE NORTH OF ROUTE 5/299 SEPARATION

**PROJECT LOCATION**  
SHA-005-PM R11.0/R17.5  
SOUTH REDDING 6-LANE

**OPTIONAL DISPOSAL SITE**  
J.F. SHEA CONSTRUCTION, INC. - privately owned commercial sites at (1)  
18975 Smith Road, off of Churn Creek Road or (2) 17400 Clear Creek Road, off  
of Hwy 273, both in Redding (see pg 2 for further instructions)

**Note: The records from which this compilation was made may be inspected  
in the District Office at 1657 Riverside Drive Redding, CA 96001 or Contact  
the Disposal Site Coordinator, Linda Garner, (530) 225-3375, e-mail:  
Linda\_S\_Garner@dot.ca.gov**

**Facts stated herein are as known to the State of California, Caltrans, and are  
to be verified by the Contractor as per Section 6-2 of the Standard  
Specifications.**

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## General Information

Section 7-1.13 of the Standard Specifications applies to all of the project's disposal, including this site.

J.F. Shea Construction, Inc. has agreed to accept excess material from the South Redding 6-Lane Project; however, no formal arrangement has been made for the disposal of material at this private site. The contractor will contact J.F. Shea Construction, Inc. at least 48 hours prior to the beginning of the work at the number listed below.

Contact information:

The commercial quarry is owned and operated by J.F. Shea Construction, Inc.  
Phone: (530) 246-429 for the Material Department or Manager Juan Bernardino

Two possible disposal locations (site selection determined by J.F. Shea)

1. 18975 Smith Rd, Redding
2. 17400 Clear Creek Rd, Redding

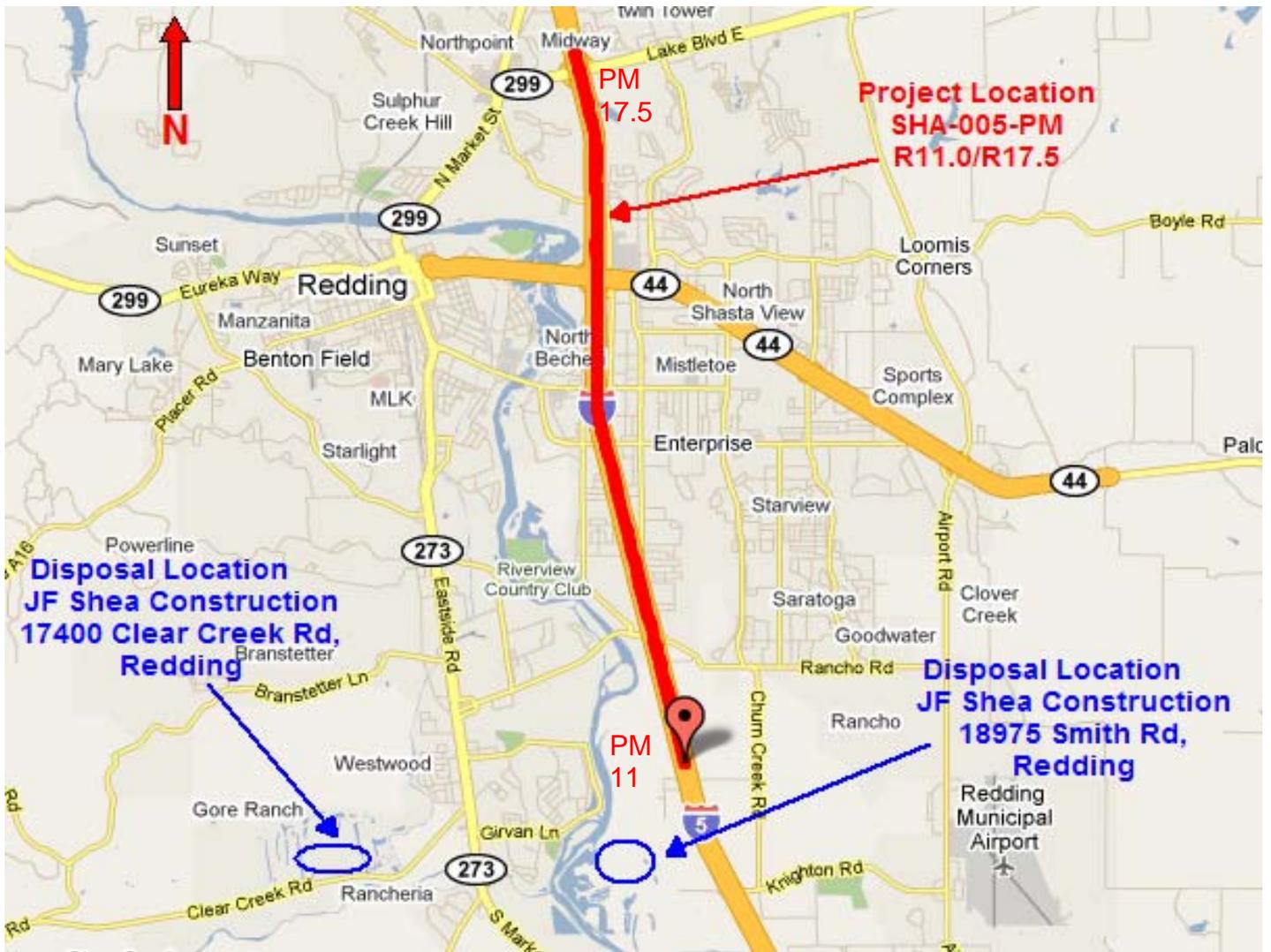
At the time of this handout, these sites were listed on the SMARA 3098 list, as active SMARA approved sites.

The following information was confirmed by a telephone conversation on April 21, 2010 between Linda Garner of Caltrans and Juan Bernardino, Manager of the J.F. Shea Construction Inc. in Redding. Caltrans makes no guarantee that this policy would extend to a future agreement.

- Prior to contract bid, the contractor shall confirm with the site Material Department to what location the material will be delivered.
- The contractor is responsible for all liability, agreements, costs and any fees associated with using this or any other site.
- Delivery of material shall be coordinated with the site Material Department.
- No hazardous material, Naturally Occurring Asbestos material, or unusable material will be deposited at this site. The contractor shall confirm with the quarry what usable materials are acceptable and proper handling procedures.
- The State assumes no liability for damage to contractor's equipment. No compensation will be made to the contractor for the handling of non-hazardous man-made material.

## Location Map - General

2 possible disposal locations: 18975 Smith Rd or 17400 Clear Creek Rd (confirm site with J.F. Shea Material Department)



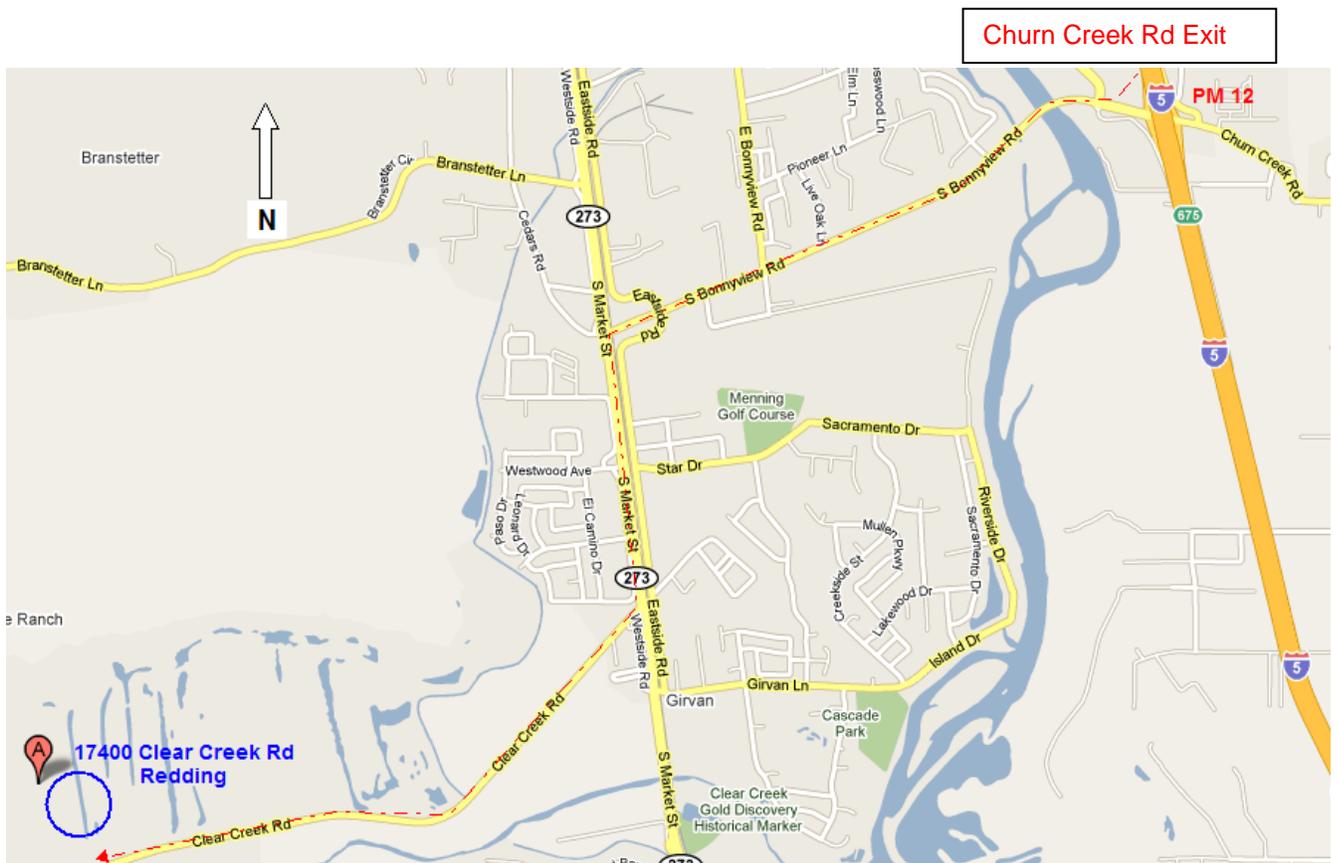
# Location Map – Detail (Smith Rd Site)

Location: 18975 Smith Road, Redding



# Location Map – Detail (Clear Creek Rd Site)

Location: 17400 Clear Creek Rd, Redding



## Memorandum

*Flex your power!  
Be energy efficient!*

To: JOHN MARTIN,  
BRANCH CHIEF DESIGN R1

Date: January 13, 2010

Attn: CHRIS GAIDO, PROJECT ENGINEER

File: 02-4C4010  
02-SHA-5-PM 11.0/17.5  
South Redding

From: **DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING SERVICES  
GEOTECHNICAL SERVICES NORTH – MS 5**

Subject: District Preliminary Geotechnical Report

### 1. Introduction

Per the request of District 2 North Region Design Services, the Office of Geotechnical Design- North (OGDN) is providing a District Preliminary Geotechnical Report (DPGR) for the proposed widening of Interstate 5 between post miles 11.0 through 17.5 in Shasta County.

This DPGR presents an overview of the project area, including regional and site geology, seismicity, and preliminary geotechnical recommendations for the proposed widening. The conclusions and recommendations in this report are intended to assist in the design process and are based on a background review of OGDN geotechnical and bridge files, published data from other sources, and a field reconnaissance. Although the scope of this report does not include any subsurface investigation or testing, a limited amount of subsurface descriptive data from the National Resource Conservation Soil Survey is provided.

The following documents and websites were consulted in the preparation of this report.

1. Caltrans Bridge files for the following structures located within the project area:
  - Br. # 06-0122, Bechelli-Churn Creek Road OC, PM 12.15
  - Br. # 06-0123, Loma Vista Drive OC, PM 12.92
  - Br. # 06-0124, Hartnell Avenue OC, PM 13.95
  - Br. # 06-0125, East Cypress Avenue UC, PM 14.44
  - Br. # 06-0126R and L, East Redding Separation, PM 15.43

Br. # 06-0127R and L, N5/W299 Connector UC, PM 15.59  
Br. # 06-0101 Hilltop Drive OC, PM 16.15  
Br. # 06-0129, 5/299 Separation, PM 17.30

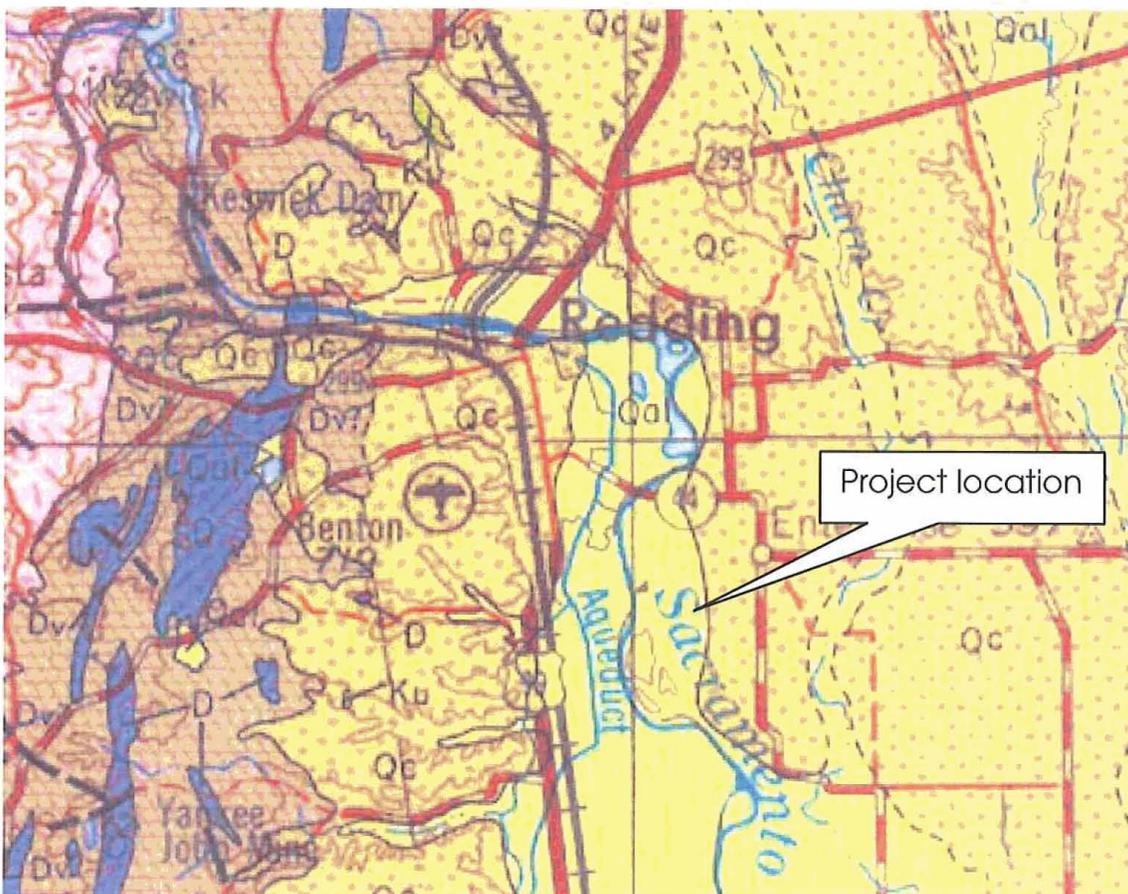
2. Helley, E.J., Harwood, D.S., Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierran Foothills, California, U. S. Geological Survey MF-1790, 1985.
3. National Resource Conservation Soil Survey, U.S. Department of Agriculture website,  
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>
4. Quaternary Fault and Fold Database for the United States, United States Geological Survey website,  
<http://earthquake.usgs.gov/regional/qfaults/ca/sus.html>
5. Soil Survey of Shasta County Area, California, U.S. Department of Agriculture Soil Conservation Service and Forest Service, 1974.
6. Strand, R.G., Geologic map of California: Redding sheet, California Division of Mines and Geology, 1962.
7. Western Regional Climate Data Center website, [www.wrcc.dri.edu](http://www.wrcc.dri.edu), 2009

## 2. Description of Proposed Improvements

Based on the information provided to this office, the proposed widen project for I-5 is to construct additional lanes in each direction, widening it from the current four lanes to a total of six lanes by reducing the width of the center median. For the northbound lanes, widening would begin at post mile 12.0 (see Photo 1) and end at post mile 16.57. On the southbound side, construction would extend from post mile 11.30 through 15.35. Both fill slopes and cut slopes would not exceed a height of ten feet, with H: V slope ratios of 2:1 or flatter. New culverts would connect with the existing drainage structures (see Photo 2). Median areas are typically landscaped or seeded (see Photos 3 and 4). The proposed project will include mitigation for increased surface runoff resulting from the new lanes, including the construction of additional underdrains and edge drains. No sound walls are proposed.

### 3. Existing Structures

Within the project limits, Interstate 5 is a four-lane, asphalt-paved highway with a wide median (see Photo 5). The highway trends generally north-south through the Redding area and is built on cuts and fills. The existing road shoulders are paved and right of way areas have been landscaped (see Photo 6). Structures located within the project area include, from south to north: Bechelli-Churn Creek Road OC, Loma Vista Drive OC, Hartnell Avenue OC, East Cypress Avenue UC, East Redding Separation, N5/W299 Connector UC, Hilltop Drive OC, and 5/299 Separation. Based on the information provided to OGDN, it appears only the East Cypress Avenue UC (ca.1960) may be impacted by the construction of additional lanes within the median area (see Photo 7). Existing slopes and fills may need to be reshaped to accommodate the proposed road widening. Overall, the roadway within the project interval appears to be maintained in good condition.



Location Map (from Strand, R.G., Geologic map of California: Redding sheet: California Division of Mines and Geology, 1962)

#### 4. Physical Setting

##### Climate

Climate in the Redding area is classified as subhumid mesothermal, with hot dry summers and cool moist winters. The nearest weather station to the project area that has complete climate data is the Redding Weather Service Office. Measured at this location, the average total precipitation was 34.18 inches. The average temperature ranged from a maximum of 98.8°F in July to a minimum of 36.1°F December. Average total snowfall is 4 inches, generally occurring in December and January only. These data are based on monthly climate records maintained by the Western Regional Climate Data Center for the period from November 1, 1986 through June 30, 2009.

##### Topography and Drainage

The project is located in the City of Redding, at the northernmost edge of the Sacramento Valley, and east of the Sacramento River. The Sacramento Valley is a large southerly-dipping basin or structural trough filled with sediments from the transported from the surrounding mountain ranges. These sedimentary deposits generally consist of gravelly alluvium and form gently sloping, low terraces which support oaks, manzanita shrubs and seasonal grasses. Here the I-5 corridor is located in an area characterized by broad terraces dissected by entrenched old streams, including drainages associated with Churn Creek. Topographic elevations within the vicinity of the proposed project vary from about 400 feet to 800 feet above sea level. On natural ground, runoff is described as slow, with low hazard of erosion.

##### Regional Geology

The Great Valley geomorphic province is an elongate lowland measuring about 400 miles long and 50 miles wide. It is flanked to the west by the Coast Ranges and to the east by the Sierra Nevada and divided in two segments, the Sacramento Valley to the north and the San Joaquin Valley to the south. The former occupies about two thirds of the Great Valley, whereas the latter makes up the remaining one third of the province. The south-flowing Sacramento River drains the northern Valley and the north-flowing San Joaquin River the southern portion of the Great Valley. The South Redding widen project is located in the northern edge of the Sacramento Valley, within the northern segment of the Great Valley.

Unconsolidated Recent and Pleistocene Sediments from eroded sediments, mainly from the Sierra Nevada, form the surface of the Great Valley. Underlying the recent alluvium is a 65,000 feet thick sedimentary basin filled with sedimentary deposits of marine and terrestrial origin. It is believed the sediments of Mesozoic age, comprised of sandstone, shale, and conglomerate, were deposited in an ocean basin that once lay west of the Mesozoic North American Margin. Cenozoic rocks deposited in increasingly shallow marine environments reflect the rapid uplift of the Sierra Nevada and gradual filling up of the sedimentary basin. Terrestrial sediments began to be deposited in the Sacramento Valley as early as 24 million years ago, when the Lovejoy Basalt buried alluvium across the Sacramento Valley. However, a deep marine environment persisted much longer in the San Joaquin Valley as marine shale and sandstone were deposited during early and middle Cenozoic time. Sediments from the Sierra Nevada and the newly formed Coast Ranges were deposited until the late Pliocene. During the same time period, pyroclastic flows and ash from the Cascades were deposited throughout the Sacramento Valley, particularly in the northern portion of the valley. During the late Pliocene more volcanic debris flows and pyroclastic lavas flowed into the northeastern portion of the Sacramento Valley. Continuing cycles of deposition and erosion formed the series of terraces visible today along the margins of the valley.

### **Site Geology and Soils**

The Geologic Map of California, Redding Quadrangle (1962), indicates that the project area is primarily underlain by continental deposits of the Pleistocene Red Bluff formation. These sediments form a series of Pleistocene alluvial terraces consisting of gravelly sand and silt and cemented conglomerates.

The National Resource Conservation Soil Survey data describes several soil series that dominate within the project limits: Red Bluff, Tehama and Churn. The *Red Bluff* soil series consists of well-drained to moderately well-drained gravelly alluvial soils from old mixed sources. The representative profile of the surface layer is six inches of brown, very strongly acid gravelly loam. The next layer of subsoil consists of mixed, reddish brown and red, very strongly acid to strongly acid clay loam. Below a depth of 13 inches is a layer of indurated, very gravelly hardpan about 15 inches thick. The lower 29 inches of the subsoil is red, strongly acid heavy clay loam and light clay. A light brown medium acid clay loam substratum is encountered at a depth of about 57 inches and is at least 60 inches thick.

The representative profile for the *Tehama Series* (0 to 3 percent slopes) consists of a surface layer of pale brown, medium acid and slightly acid loam about 30 inches thick. The upper part of the subsoil is pale brown to light yellowish-brown, neutral silty clay loam that grades, at a depth of about 45 inches, to yellowish-brown, neutral very gravelly clay loam. Permeability is slow and runoff is very slow. The hazard of erosion is none to slight. Degree of limitation for excavation is slight to moderate.

The representative profile for the *Churn Series* (0 to 3 percent slopes) is as follows: The 9 inch thick surface layer is light yellowish-brown, medium acid gravelly loam. The upper part of the subsoil is light yellowish-brown medium acid gravelly loam that is about 4 inches thick. The lower part of the subsoil is light yellowish-brown to strong-brown, medium acid gravelly clay loam that extends to a depth of more than 60 inches. This layer is well-drained, has moderately slow permeability, and was formed in alluvium from mixed sources. The content of gravel is 15 to 30 percent throughout the profile. Runoff is slow to medium, and the hazard of erosion is slight to moderate. The degree of limitation for excavation is slight

### **Corrosion Potential**

The scope of this study did not include any subsurface sampling or soil testing. However, it should be noted that some soils within the area are described by the National Resource Conservation Soil Survey as very strongly to moderately acid (pH 4.5 to 6.0). They are considered corrosive to steel and, to a lesser extent, corrosive to concrete. See Photo 8.

### **Groundwater and Surface Water**

This section of I-5 is located east of the meandering Sacramento River. The as-built from the 1960s did not encounter groundwater, however, the effects of subsequent construction and nearby well development during the past 50 years has likely altered the groundwater regime significantly. For example, the Final Foundation Report (dated July 26, 1999) for widening the East Redding Separation (Br # 06-0126R) documents groundwater at elevation 167 meters (548 ft). No recent groundwater data from within the project limits was available for review. Broadly speaking, the groundwater gradient within the project area most likely drains toward the Sacramento River in the center of the valley. Depths to groundwater will vary seasonally and fluctuate in response to precipitation.

During our December 2009 field review, no ponded water or springs were observed within the project limits. Existing collection areas, underdrains and edgedrains also appeared dry (see Photo 9). It is anticipated that groundwater will not interfere with any slope excavations or fill placements; however, the proposed additional lanes will cause reductions in the median detention basin capacities and these should be quantified. Runoff should be conveyed in a manner that will not affect slope stability. Any proposed structure modifications, e.g., East Redding Separation, will involve hydraulic analysis and design to develop drainage systems appropriate for the site.

During our field review we observed a fill slope location that appeared to be saturated at its base where it rests on a diverted creek bed (see Photos 10 and 11). However, there was no evidence of distress in the roadway upslope of this area.

### **Seismicity**

The following information on the project area's seismicity is derived from the January 31, 2008 Preliminary Foundation Report for the East Redding Separation (EA 02-2C0001):

Based on the Caltrans California Seismic Hazard Map 1996, the controlling fault is the Battle Creek fault with a maximum credible earthquake moment magnitude of  $M_w=6.5$ , and is located about 15.5 miles (25 kilometers) south of the site. The Peak Horizontal Bedrock Acceleration, based on the above map, is estimated to be 0.2g. The potential for surface rupture at the site due to fault movement is considered insignificant as there are no known faults projecting towards or passing directly through the project site.

## **5. Summary**

To summarize, our preliminary geotechnical review did not reveal any concerns that may affect construction of the project as proposed. A minimal amount of earthwork will be needed and this material should be easily rippable. The existing cut and fill slopes appear to be performing well as constructed, and the asphalt pavement is in good condition and free of any underlying instabilities. Perched or shallow groundwater is not anticipated. The additional lanes may significantly reduce the amount of permeable area from the existing median. Lastly, soil tests for corrosion potential are advised.

## 6. Additional Geotechnical Services

Borings or geotechnical testing may be required to describe and verify soil and bedrock conditions, and to obtain current groundwater measurements, corrosion data, and soil and rock strengths. If such geotechnical support is required, the District Project Manager should be aware that several permits may be required to prior to drilling and schedule sufficient time for obtaining the permits. Encroachment, right of entry and sensitive environmental permits may be required for the drilling in the District/County. In addition to the permits, sufficient time needs to be scheduled for utility clearances, road, or lane closures, site access and site hazardous assessments reports. If a site hazardous assessment report for soil and groundwater contamination is available, it should be communicated to our Office prior to starting any subsurface investigation.

The recommendations contained in this report are based on the specific project information provided to this office through December 31, 2009. If any conceptual changes are made during final design or in the field that could relate to or are related to geotechnical issues, the Office of Geotechnical Design North should review those changes to determine if these recommendations still apply. If you have any questions or comments, please call me at (916) 227-1069, or Doug Brittsan at (916) 227-1079.

*Marcia Kiese*

MARCIA KIEESE, PG, CEG  
Engineering Geologist  
Office of Geotechnical Design North, Br. C



- C: Byron Berger, D2 Materials (via email)  
Cindy Anderson, District 2 Environmental Planning (via email)  
Eskinder Tadesse, Project Coordination (via email)  
Phil Baker, Project Manager  
Douglas Brittsan, OGDN - Br C  
GDN File  
GS File  
Corporate (via email)

# PHOTOGRAPHS



Photo 1 - Beginning of NB construction at postmile 12.0



Photo 2 – Existing culvert and drainage ditch on NB I-5 in Redding



Photo 3 – Fiber rolls in detention basin

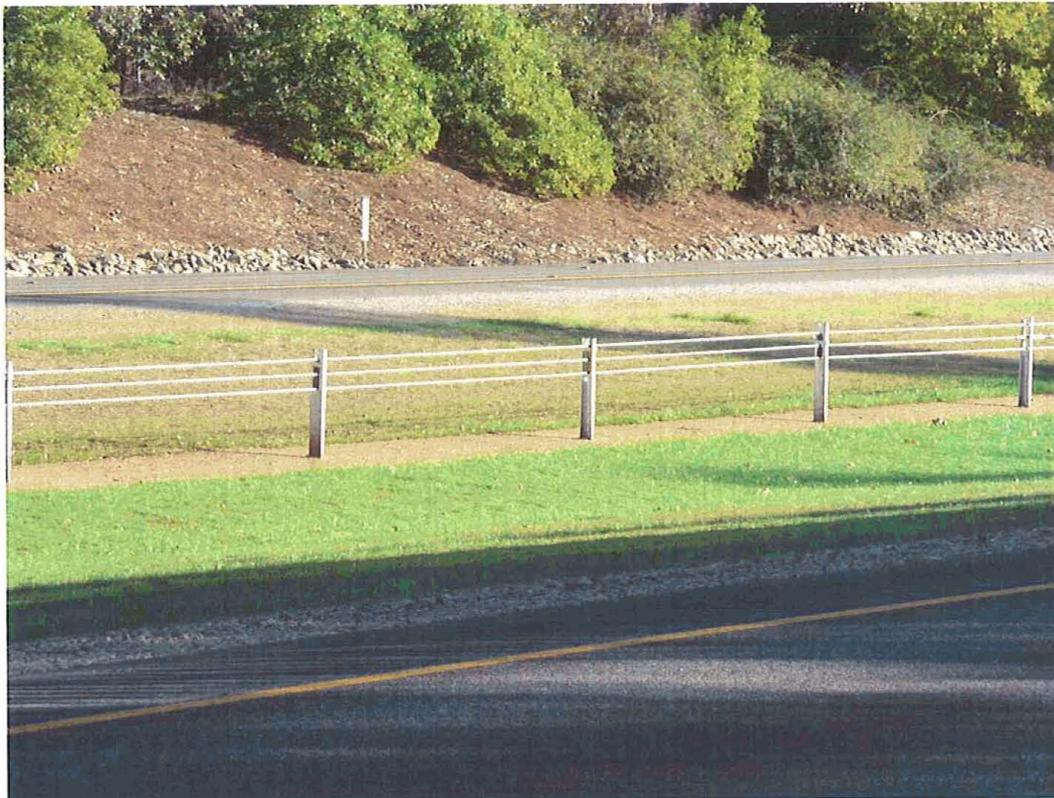


Photo 4 – Drainage ditch and detention basin to collect runoff

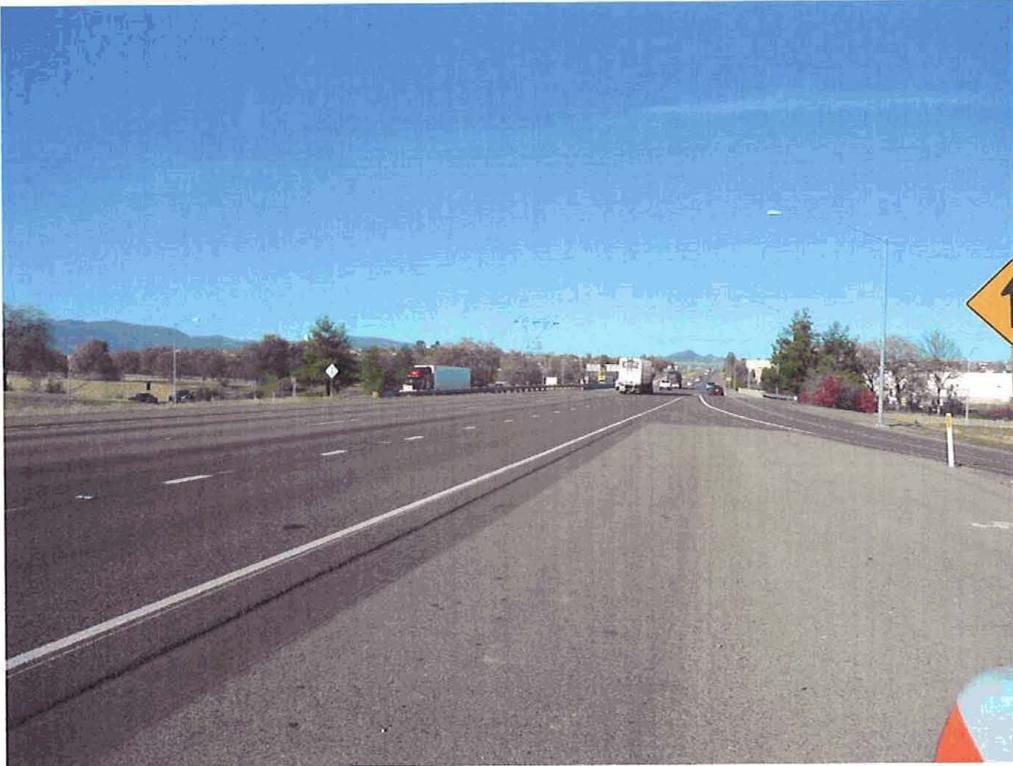


Photo 5 – Gore point and NB onramp at East Cypress Avenue UC



Photo 6 – Northbound I-5, approaching Hartnell Avenue OC



Photo 7 – East Cypress Avenue UC, looking south



Photo 8 – The red area indicates soils described by National Cooperative Soil Survey as corrosive to steel and concrete. (Map symbols: RbA=Red Bluff gravelly loam, TbA=Tehama loam, CaA=Churn loam)



Photo 9 – Under drain outlet

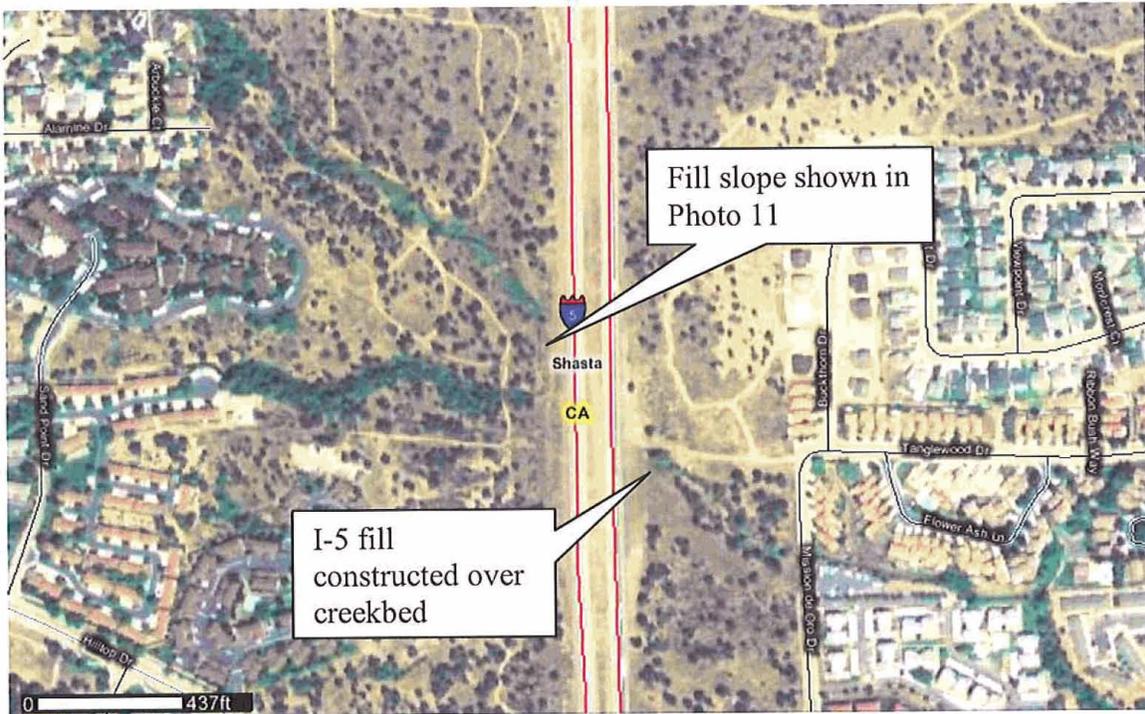
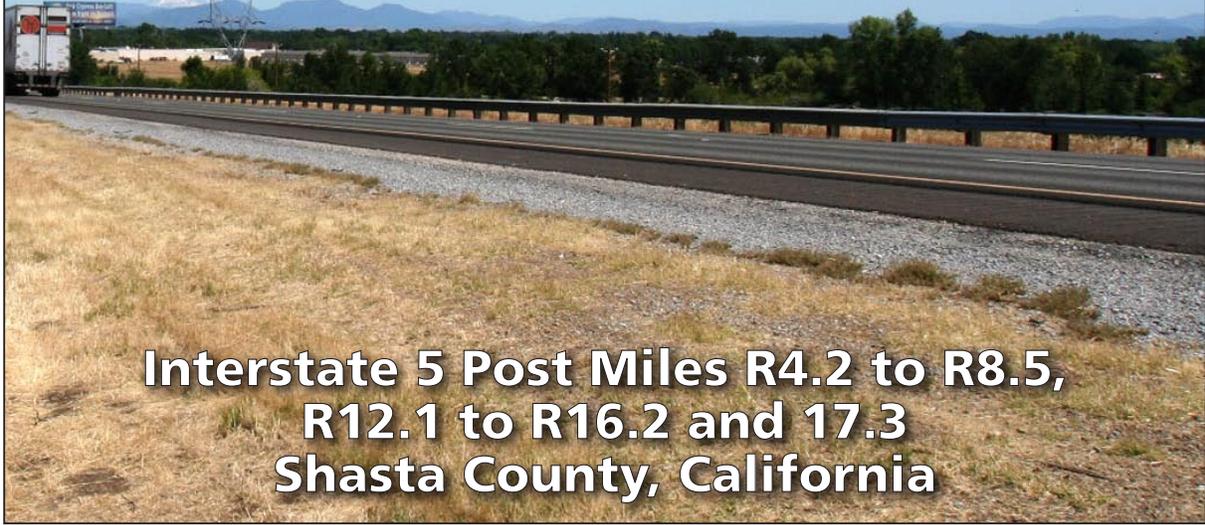


Photo 10 - Aerial view of I-5 north of Hilltop Drive



Photo 11 - Diverted creek flow at toe of saturated fill slope

# AERIALY DEPOSITED LEAD SITE INVESTIGATION REPORT



**PREPARED FOR:**

**CALIFORNIA DEPARTMENT OF TRANSPORTATION – DISTRICT 2  
ENVIRONMENTAL ENGINEERING OFFICE  
P.O. BOX 496073  
REDDING, CALIFORNIA 96049**



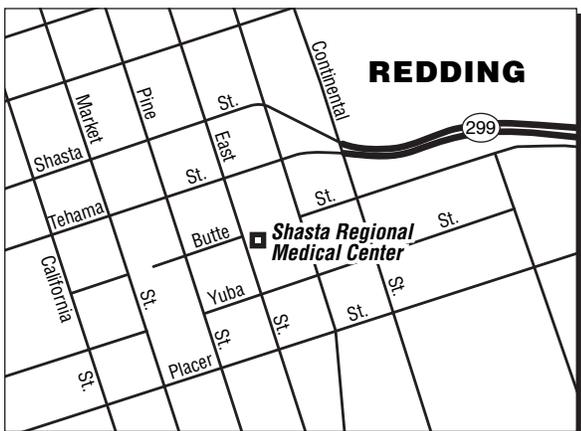
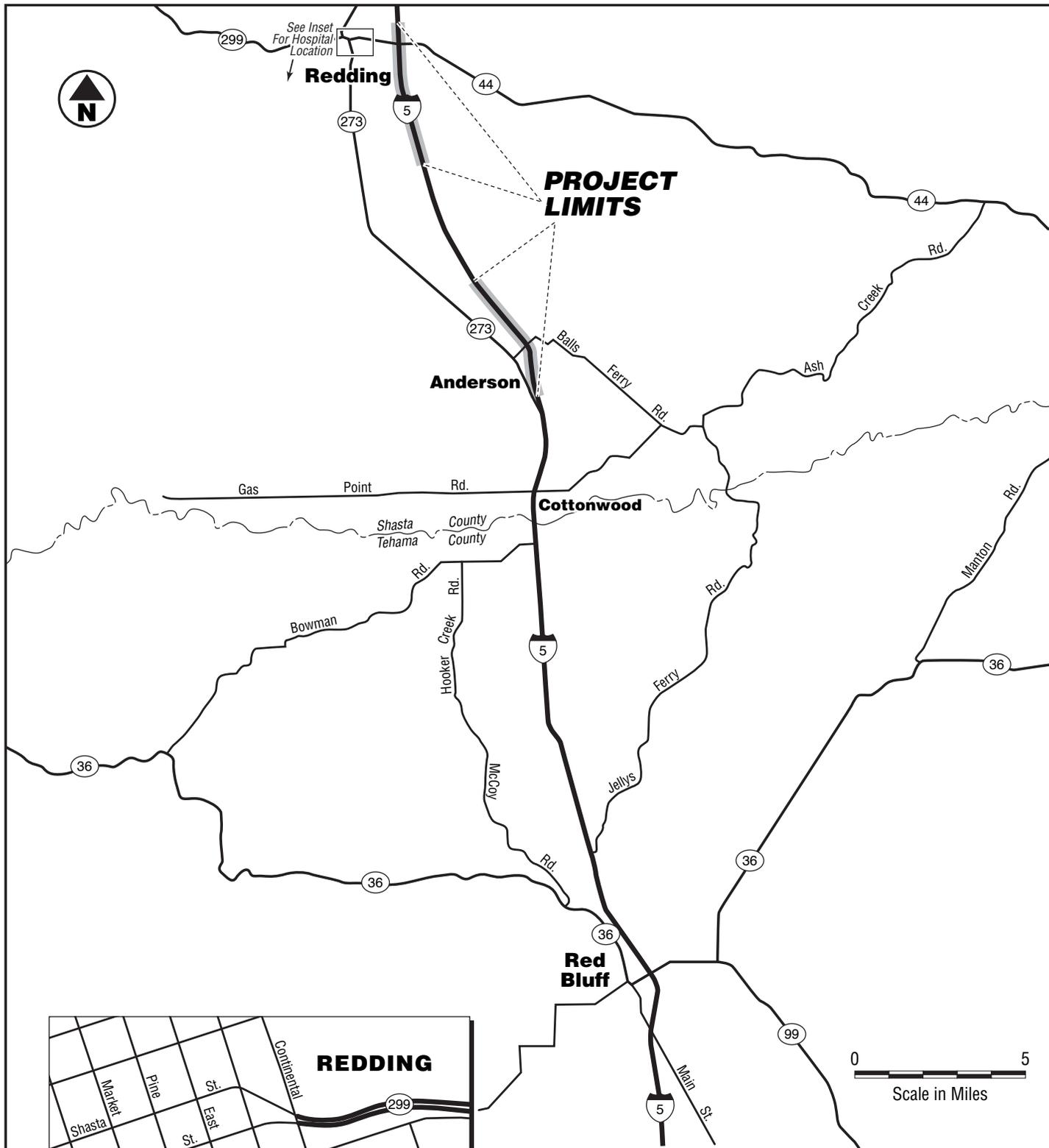
**PREPARED BY:**

**GEOCON CONSULTANTS, INC.  
3160 GOLD VALLEY DRIVE, SUITE 800  
RANCHO CORDOVA, CALIFORNIA 95742**

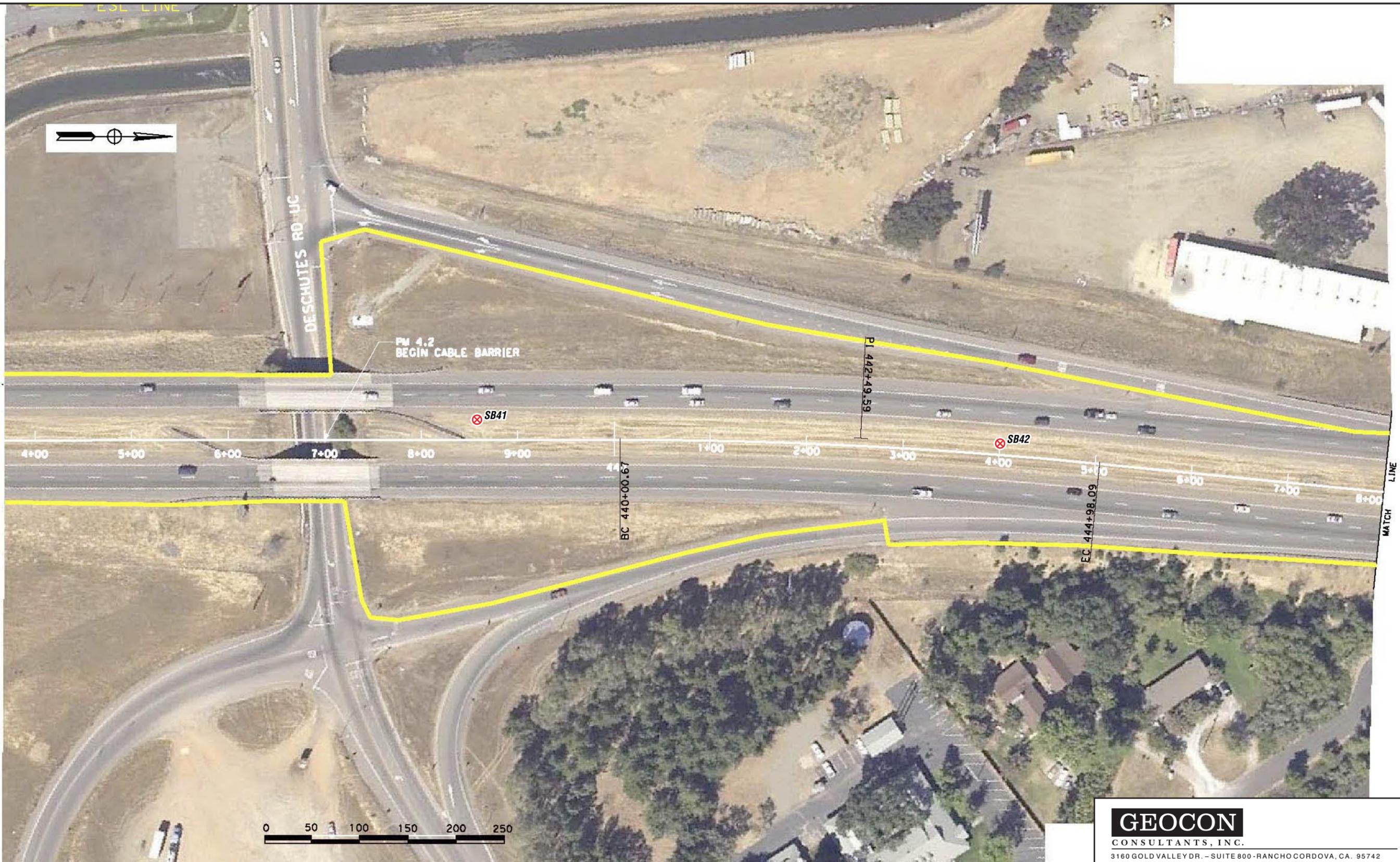


**GEOCON PROJECT NO. S9300-06-47  
TASK ORDER NO. 47, EA NO. 02-4C9901**

**JULY 2008**



<p><b>GEOCON</b>          CONSULTANTS, INC.          3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742          PHONE 916 852-9118 - FAX 916 852-9132</p>		
<p>Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3</p>		
<p>Shasta County, California</p>		<p><b>VICINITY MAP</b></p>
<p>GEOCON Proj. No. S9300-06-47</p>		
<p>Task Order No. 47</p>	<p>July 2008</p>	<p>Figure 1</p>



LEGEND:

SB1 ⊗ Approximate Soil Boring Location



**GEOCON**

CONSULTANTS, INC.

3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742  
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Shasta County,  
California

**SITE PLAN**

GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-1



LEGEND:  
 SB1 ⊗ Approximate Soil Boring Location



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Shasta County, California		<b>SITE PLAN</b>
GEOCON Proj. No. S9300-06-47		
Task Order No. 47	July 2008	Figure 2-2



**LEGEND**

— ESL LINE

LEGEND:

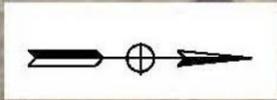
SB1 ⊗ Approximate Soil Boring Location



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LEGEND

— ESL LINE



LEGEND:

SB1 ⊗ Approximate Soil Boring Location



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Shasta County,  
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Task Order No. 47

**SITE PLAN**  
July 2008  
Figure 2-4



LEGEND:

SB1 ⊗ Approximate Soil Boring Location



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Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
California

## SITE PLAN

GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-5



**LAYOUT**  
SCALE: 1" = 40'  
L-6

**LEGEND:**

SB1 ⊗ Approximate Soil Boring Location

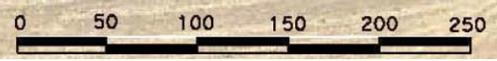


<p><b>GEOCON</b> CONSULTANTS, INC. 3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742 PHONE 916 852-9118 - FAX 916 852-9132</p>		
<p>Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3</p>		
<p>Shasta County, California</p>		<p><b>SITE PLAN</b></p>
<p>GEOCON Proj. No. S9300-06-47</p>		
<p>Task Order No. 47</p>	<p>July 2008</p>	



LEGEND:

SB1 ⊗ Approximate Soil Boring Location



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Shasta County, California		<b>SITE PLAN</b>
GEOCON Proj. No. S9300-06-47		
Task Order No. 47	July 2008	



LEGEND:

SB1 ⊗ Approximate Soil Boring Location



**GEOCON**

CONSULTANTS, INC.

3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742  
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Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
California

**SITE PLAN**

GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-8

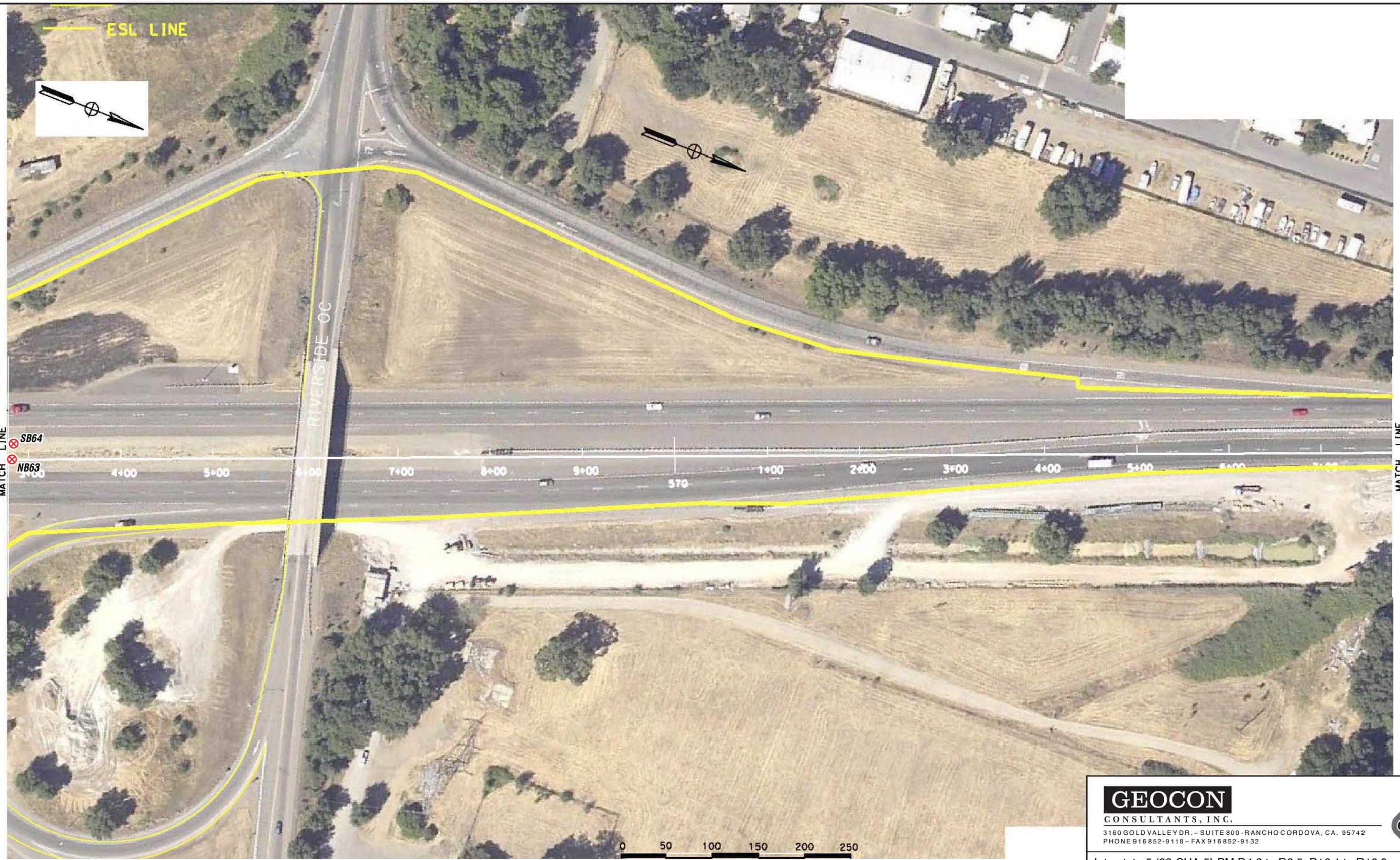


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LEGEND:

SB1 ⊗ Approximate Soil Boring Location



<b>GEOCON</b> CONSULTANTS, INC. <small>3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742          PHONE 916 852-9118 - FAX 916 852-9132</small>		
Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3		
Shasta County, California		<b>SITE PLAN</b>
GEOCON Proj. No. S9300-06-47		
Task Order No. 47		
July 2008		Figure 2-10



**GEOCON**

CONSULTANTS, INC.

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 PHONE 916 852-9118 - FAX 916 852-9132



Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
California

**SITE PLAN**

GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-11



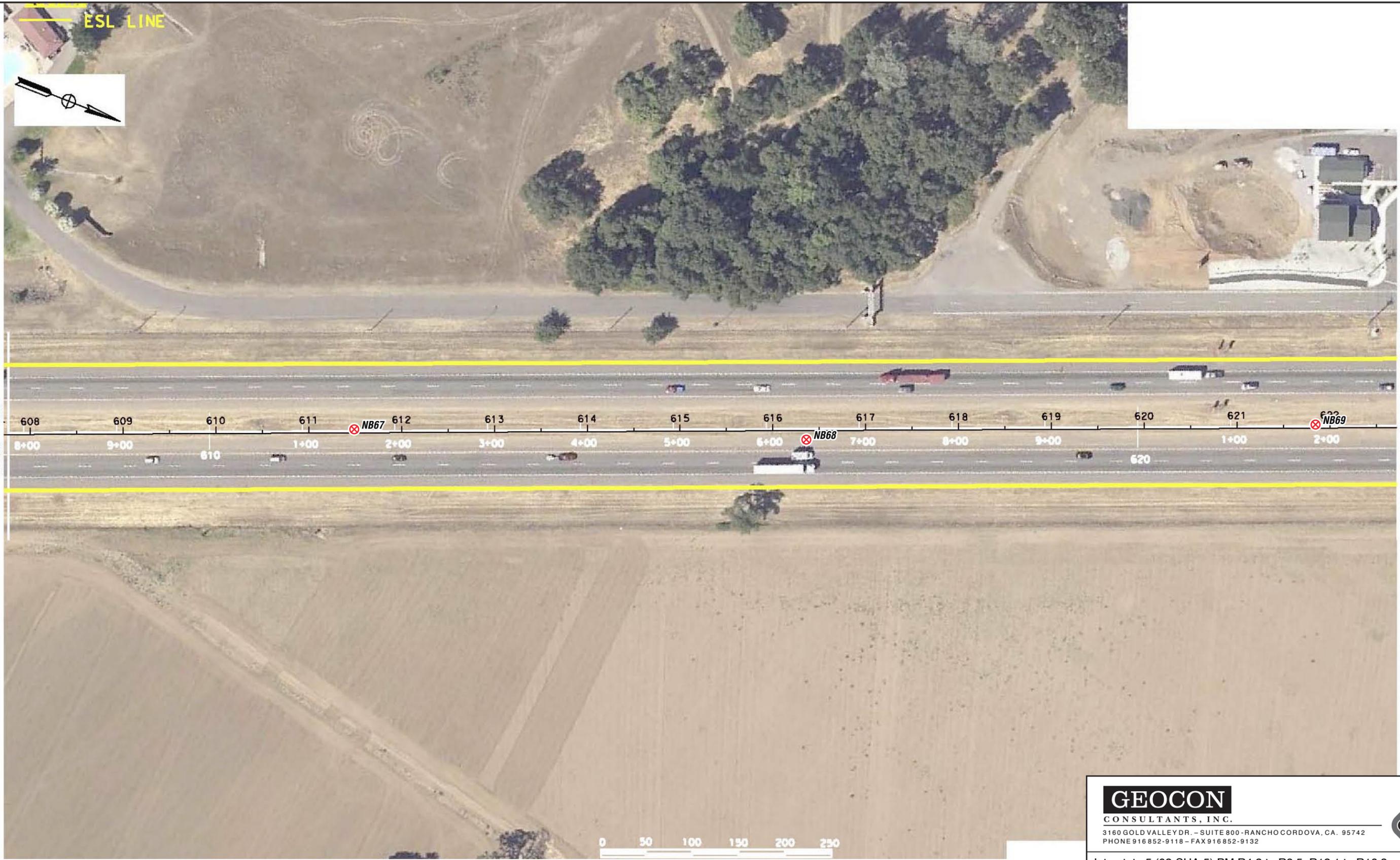


LEGEND:

SB1 ⊗ Approximate Soil Boring Location



<b>GEOCON</b> CONSULTANTS, INC. <small>3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742          PHONE 916 852-9118 - FAX 916 852-9132</small>		
Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3		
Shasta County, California		<b>SITE PLAN</b>
GEOCON Proj. No. S9300-06-47		
Task Order No. 47		July 2008
		Figure 2-12



LEGEND:

SB1 ⊗ Approximate Soil Boring Location



**GEOCON**

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PHONE 916 852-9118 - FAX 916 852-9132



Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
California

**SITE PLAN**

GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-13



LEGEND:

SB1 ⊗ Approximate Soil Boring Location



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PHONE 916 852-9118 - FAX 916 852-9132



Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
California

## SITE PLAN

GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-14



LEGEND:

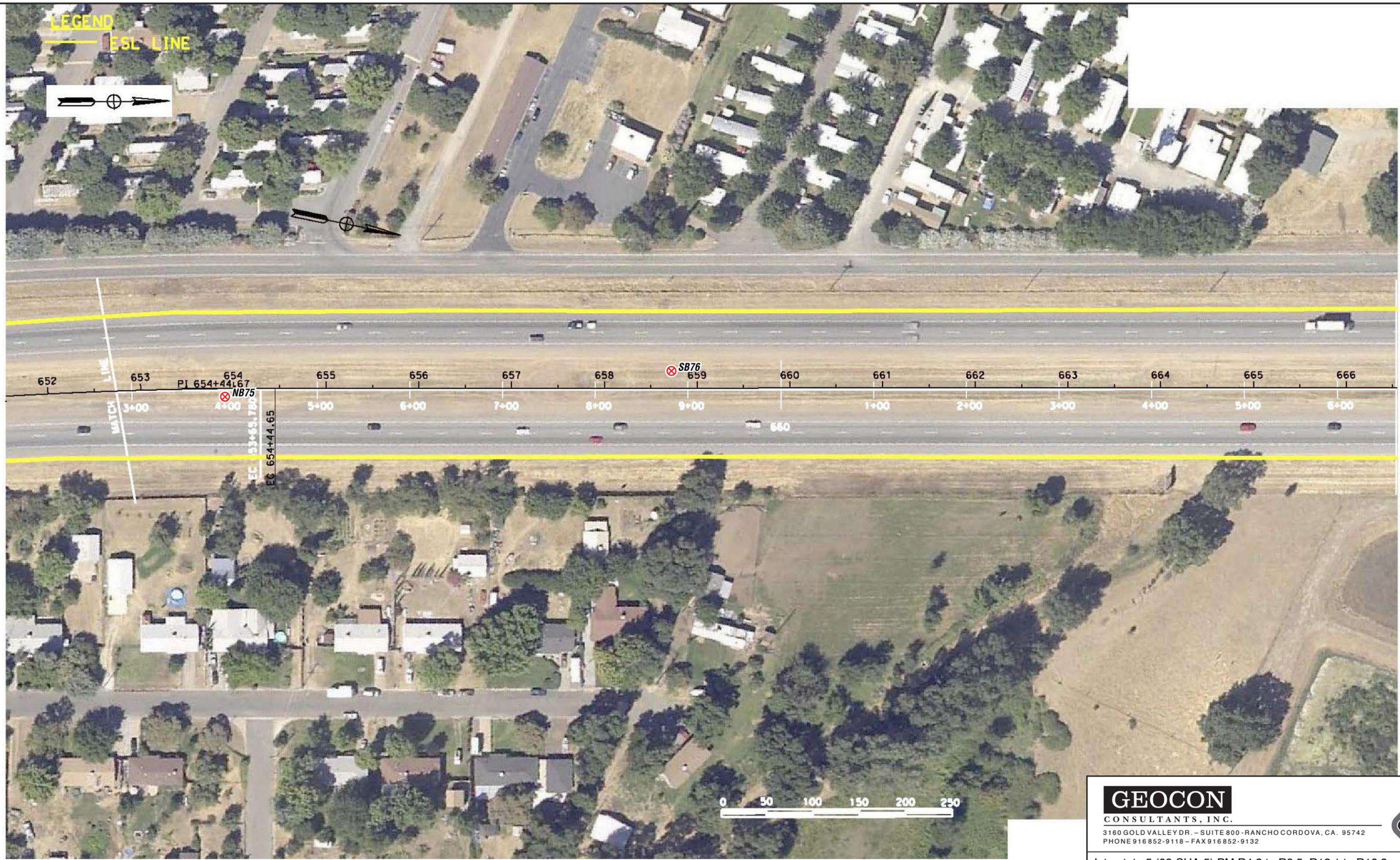
SB1 ⊗ Approximate Soil Boring Location



**GEOCON**  
CONSULTANTS, INC.  
3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742  
PHONE 916 852-9118 - FAX 916 852-9132

Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County, California	<b>SITE PLAN</b>
GEOCON Proj. No. S9300-06-47	
Task Order No. 47	July 2008
	Figure 2-15



LEGEND:

SB1 ⊗ Approximate Soil Boring Location



**GEOCON**

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3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742  
PHONE 916 852-9118 - FAX 916 852-9132



Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
California

**SITE PLAN**

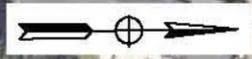
GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-16

**LEGEND**  
— ESL LINE



MATCH LINE



MATCH LINE

0 100  
Scale in Feet

**GEOCON**

CONSULTANTS, INC.

3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742  
PHONE 916 852-9118 - FAX 916 852-9132



Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
California

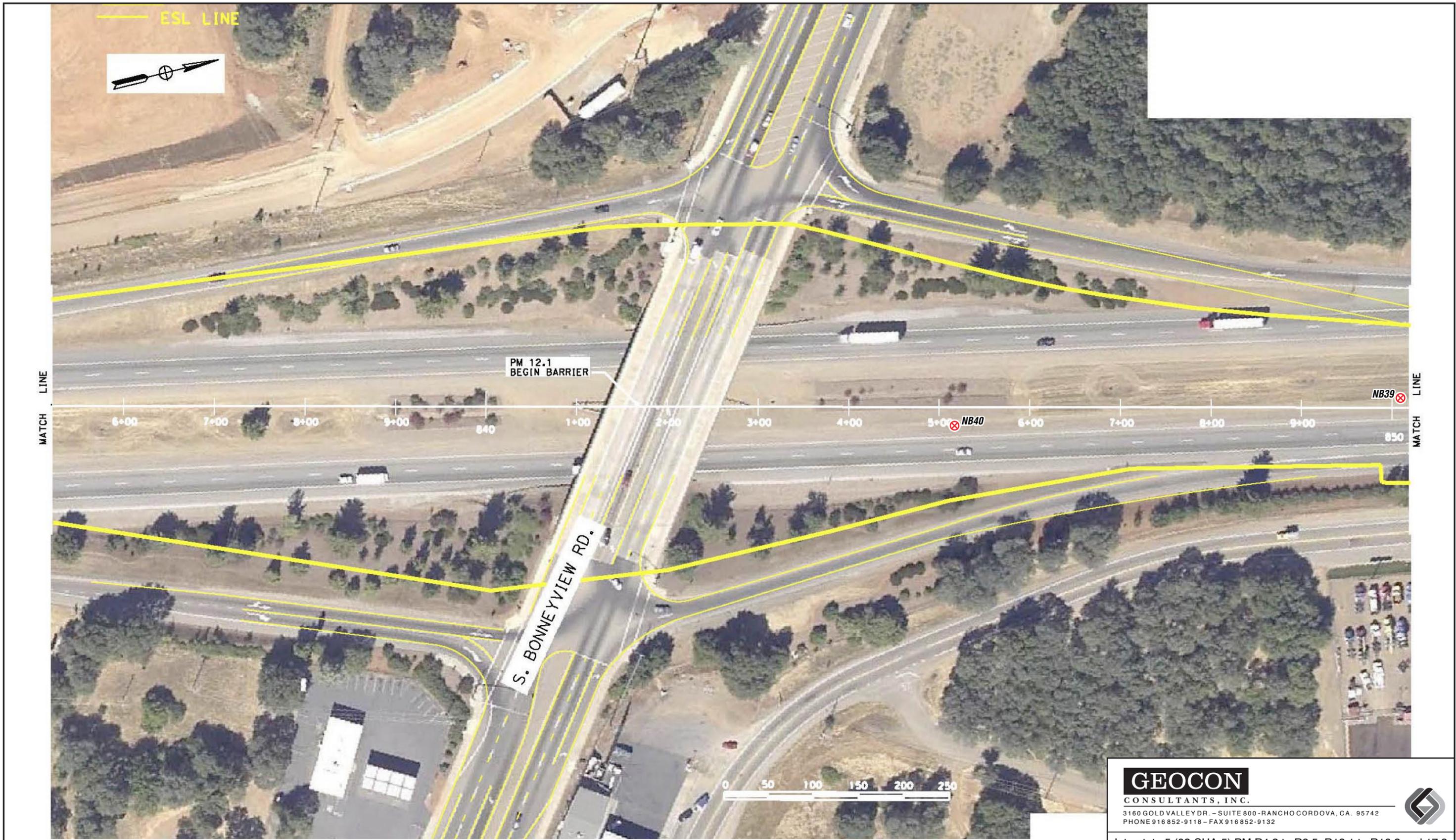
**SITE PLAN**

GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-17



LEGEND:

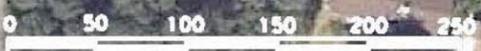
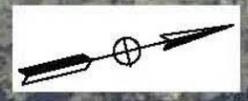
SB1 ⊗ Approximate Soil Boring Location



<p><b>GEOCON</b> CONSULTANTS, INC. 3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742 PHONE 916 852-9118 - FAX 916 852-9132</p>		
<p>Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3</p>		
<p>Shasta County, California</p>		<p><b>SITE PLAN</b></p>
<p>GEOCON Proj. No. S9300-06-47</p>		
<p>Task Order No. 47</p>	<p>July 2008</p>	



ESL LINE



LEGEND:  
 SB1 ⊗ Approximate Soil Boring Location



<b>GEOCON</b> CONSULTANTS, INC.		
<small>3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742 PHONE 916 852-9118 - FAX 916 852-9132</small>		
Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3		
Shasta County, California		<b>SITE PLAN</b>
GEOCON Proj. No. S9300-06-47		July 2008
Task Order No. 47		
		Figure 2-19



MATCH LINE

MATCH LINE

LEGEND:  
 SB1 ⊗ Approximate Soil Boring Location

0 100  
 Scale in Feet

<b>GEOCON</b> CONSULTANTS, INC. <small>3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742          PHONE 916 852-9118 - FAX 916 852-9132</small>		
Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3		
Shasta County, California		<b>SITE PLAN</b>
GEOCON Proj. No. S9300-06-47		
Task Order No. 47	July 2008	



LEGEND:  
 SB1 ⊗ Approximate Soil Boring Location



<b>GEOCON</b> CONSULTANTS, INC. <small>3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742          PHONE 916 852-9118 - FAX 916 852-9132</small>		
Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3		
Shasta County, California		<b>SITE PLAN</b>
GEOCON Proj. No. S9300-06-47		
Task Order No. 47	July 2008	



LEGEND:

SB1 ⊗ Approximate Soil Boring Location



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 PHONE 916 852-9118 - FAX 916 852-9132



Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
California

**SITE PLAN**

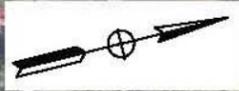
GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-22

**LEGEND**  
 — ESL LINE



LEGEND:  
 SB1 ⊗ Approximate Soil Boring Location



**GEOCON**

CONSULTANTS, INC.  
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 PHONE 916 852-9118 - FAX 916 852-9132

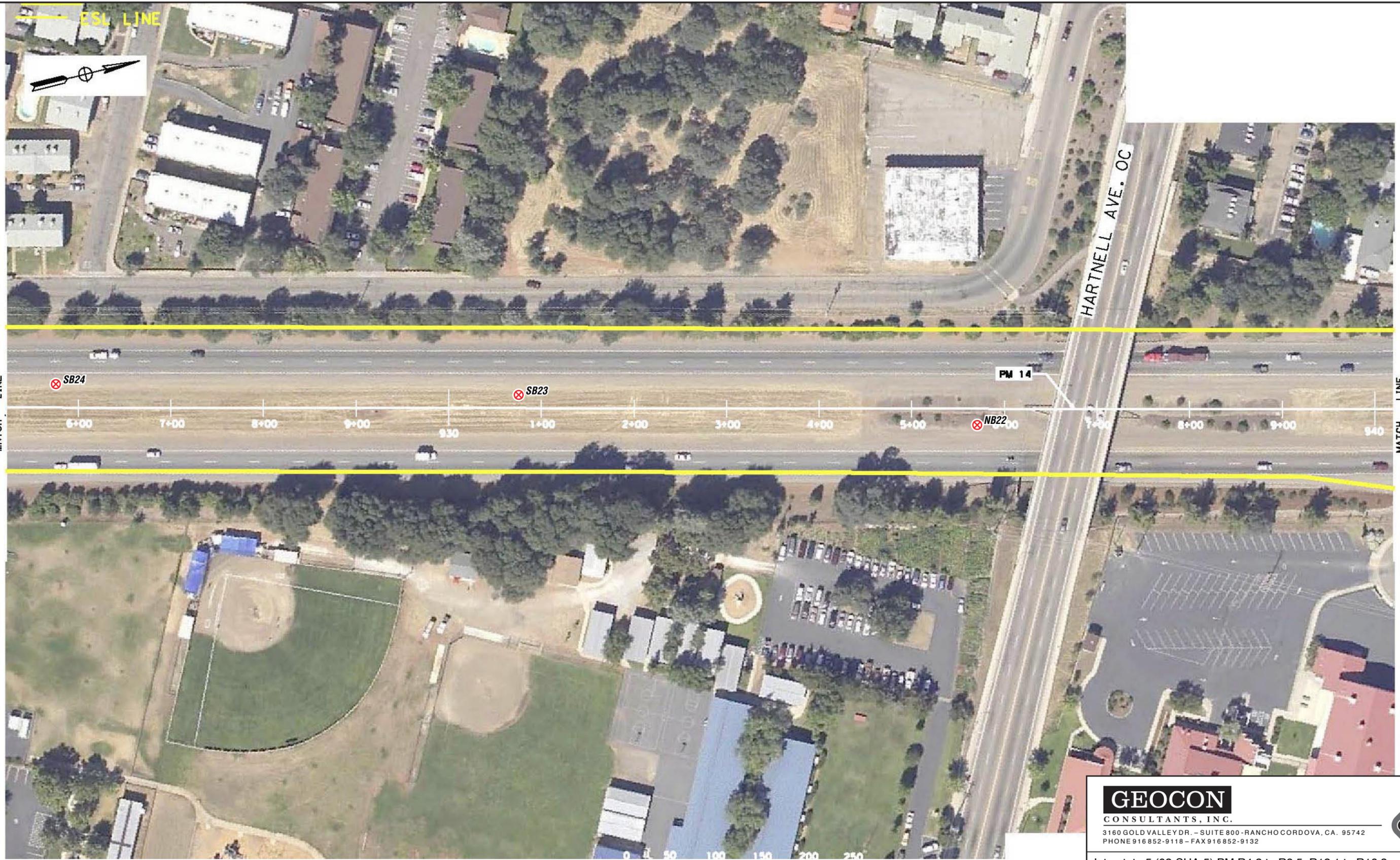


Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
 California  
 GEOCON Proj. No. S9300-06-47  
 Task Order No. 47

**SITE PLAN**

July 2008 Figure 2-23



LEGEND:  
 SB1 ⊗ Approximate Soil Boring Location



**GEOCON**

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 3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742  
 PHONE 916 852-9118 - FAX 916 852-9132



Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
 California

**SITE PLAN**

GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-24



LEGEND:

SB1 ⊗ Approximate Soil Boring Location



**GEOCON**

CONSULTANTS, INC.

3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742  
 PHONE 916 852-9118 - FAX 916 852-9132



Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
California

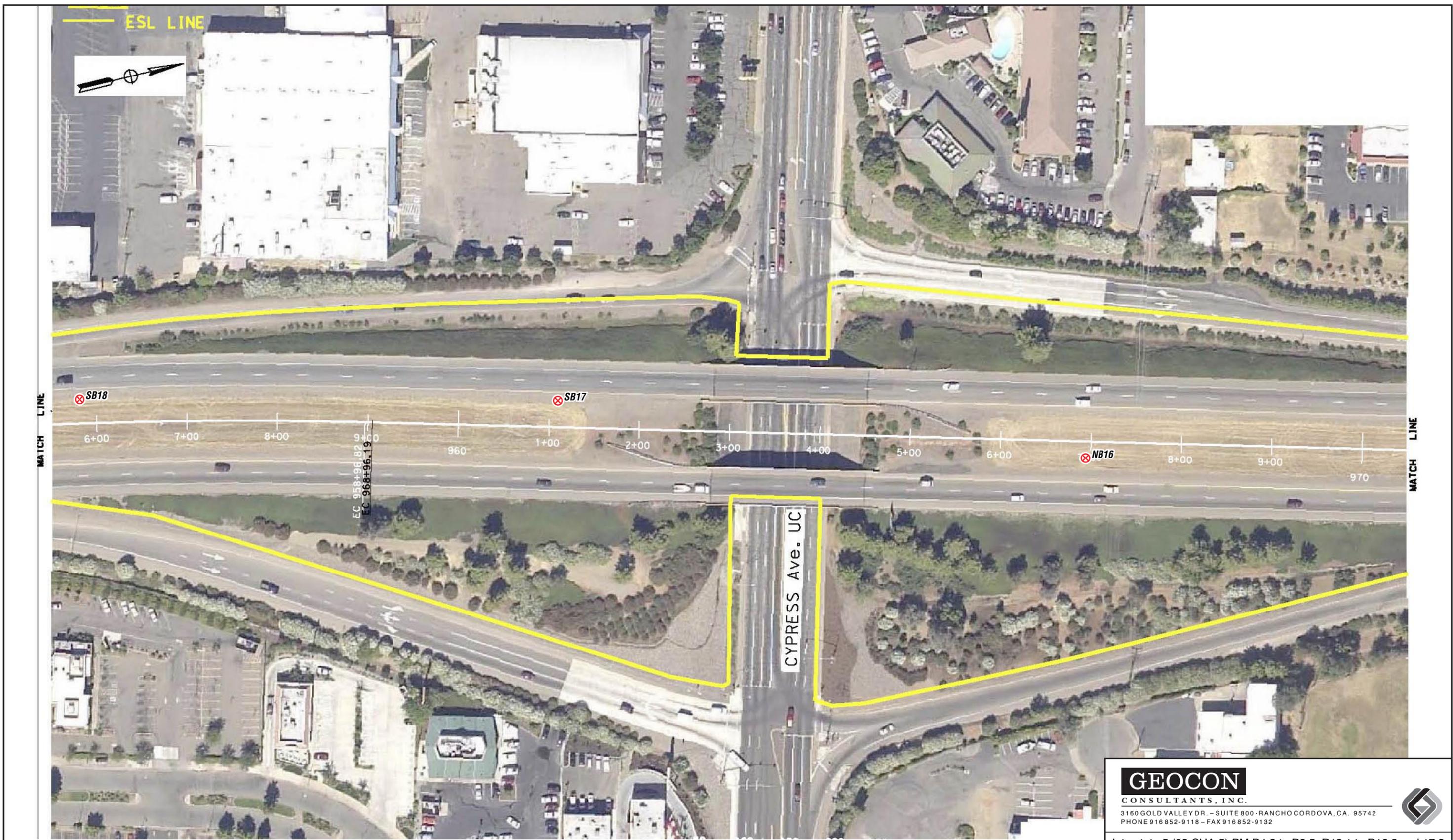
**SITE PLAN**

GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-25



LEGEND:

SB1 ⊗ Approximate Soil Boring Location



**GEOCON**

CONSULTANTS, INC.

3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742  
PHONE 916 852-9118 - FAX 916 852-9132



Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
California

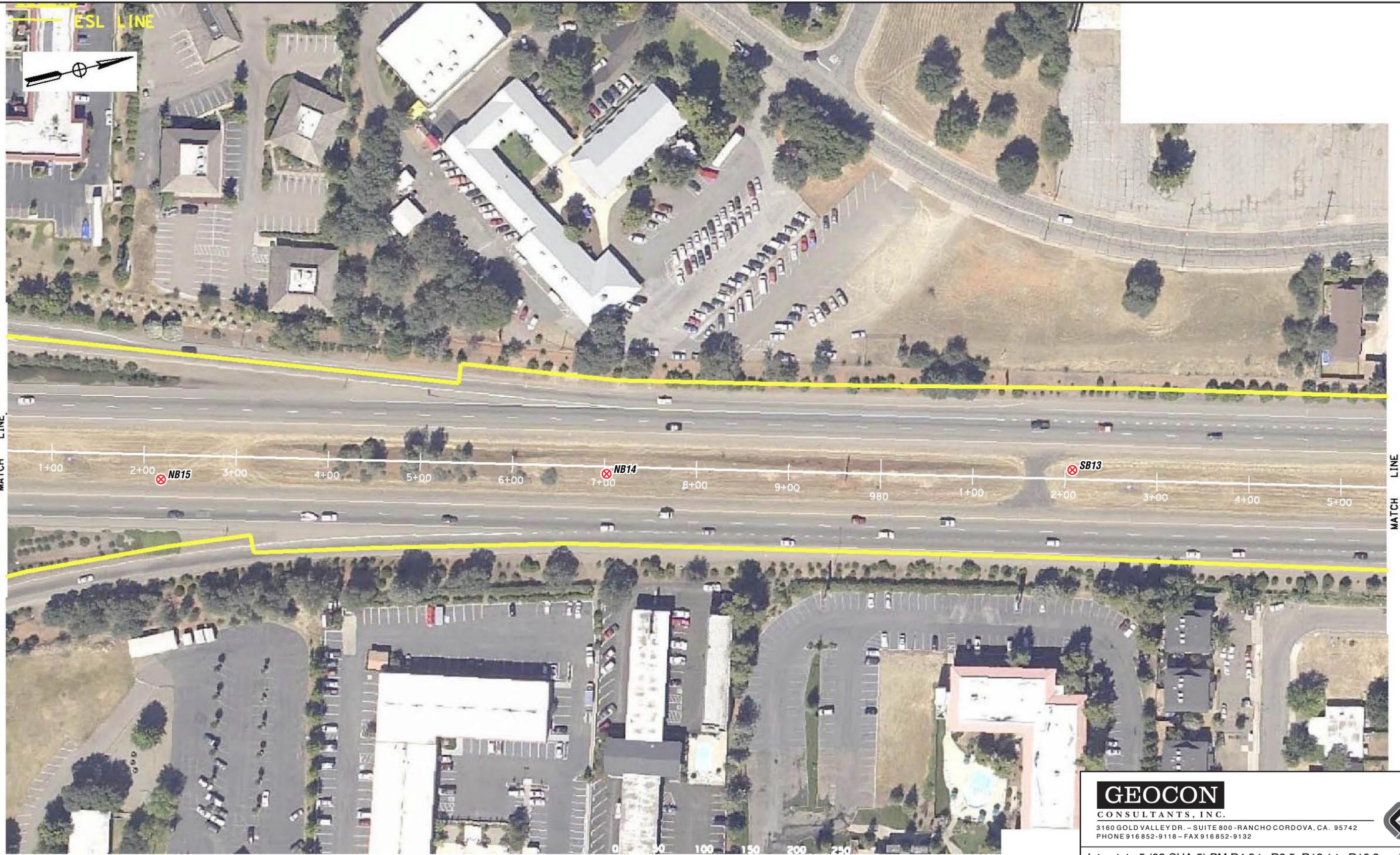
**SITE PLAN**

GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-26



MATCH LINE

MATCH LINE

LEGEND:  
 SB1 ⊗ Approximate Soil Boring Location



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Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3		
Shasta County, California		<b>SITE PLAN</b>
GEOCON Proj. No. S9300-06-47		July 2008    Figure 2-27
Task Order No. 47		



LEGEND:

SB1 ⊗ Approximate Soil Boring Location



**GEOCON**

CONSULTANTS, INC.

3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742  
 PHONE 916 852-9118 - FAX 916 852-9132



Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
California

**SITE PLAN**

GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-28

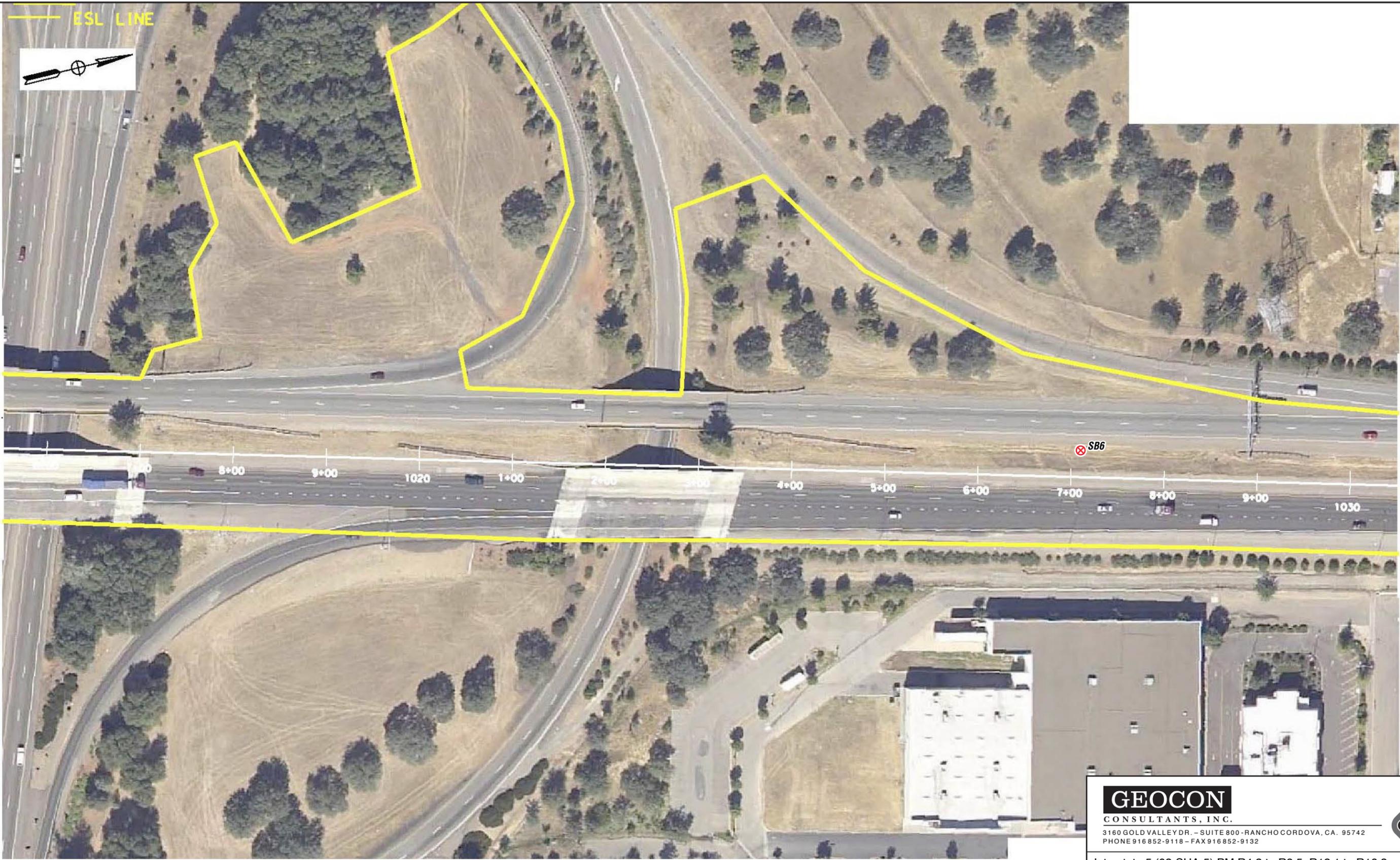


**LEGEND**  
**ESL LINE**

**LEGEND:**  
 SB1 ⊗ Approximate Soil Boring Location



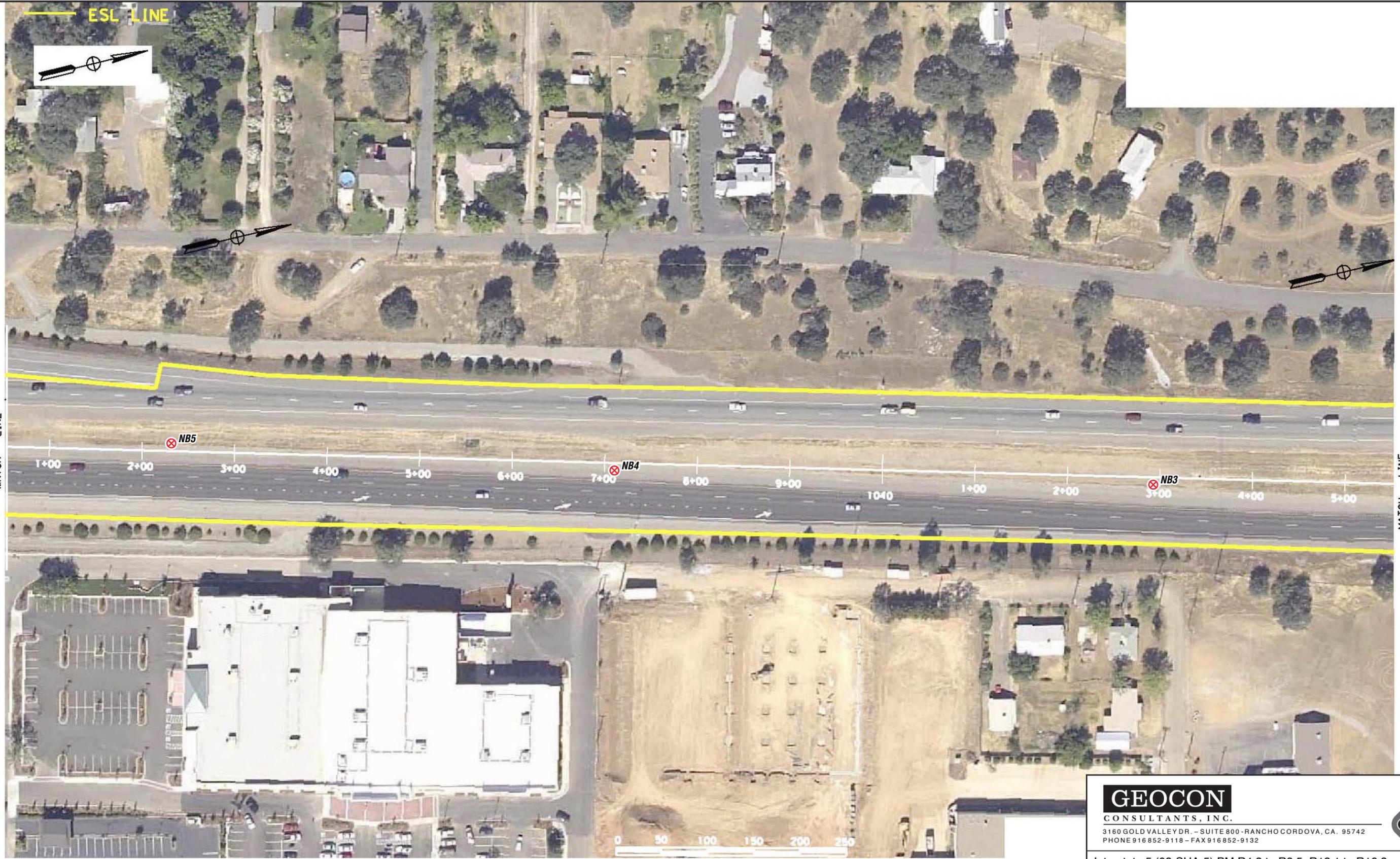
<p><b>GEOCON</b>          CONSULTANTS, INC.  <small>3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742          PHONE 916 852-9118 - FAX 916 852-9132</small></p>		
<p>Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3</p>		
<p>Shasta County,          California</p>		<p><b>SITE PLAN</b></p>
<p>GEOCON Proj. No. S9300-06-47</p>		
<p>Task Order No. 47</p>	<p>July 2008</p>	



LEGEND:  
 SB1 ⊗ Approximate Soil Boring Location



<b>GEOCON</b> CONSULTANTS, INC. <small>3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742          PHONE 916 852-9118 - FAX 916 852-9132</small>		
Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3		
Shasta County, California		<b>SITE PLAN</b>
GEOCON Proj. No. S9300-06-47		
Task Order No. 47	July 2008	



LEGEND:  
 SB1 ⊗ Approximate Soil Boring Location



**GEOCON**  
 CONSULTANTS, INC.  
 3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742  
 PHONE 916 852-9118 - FAX 916 852-9132

Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
 California

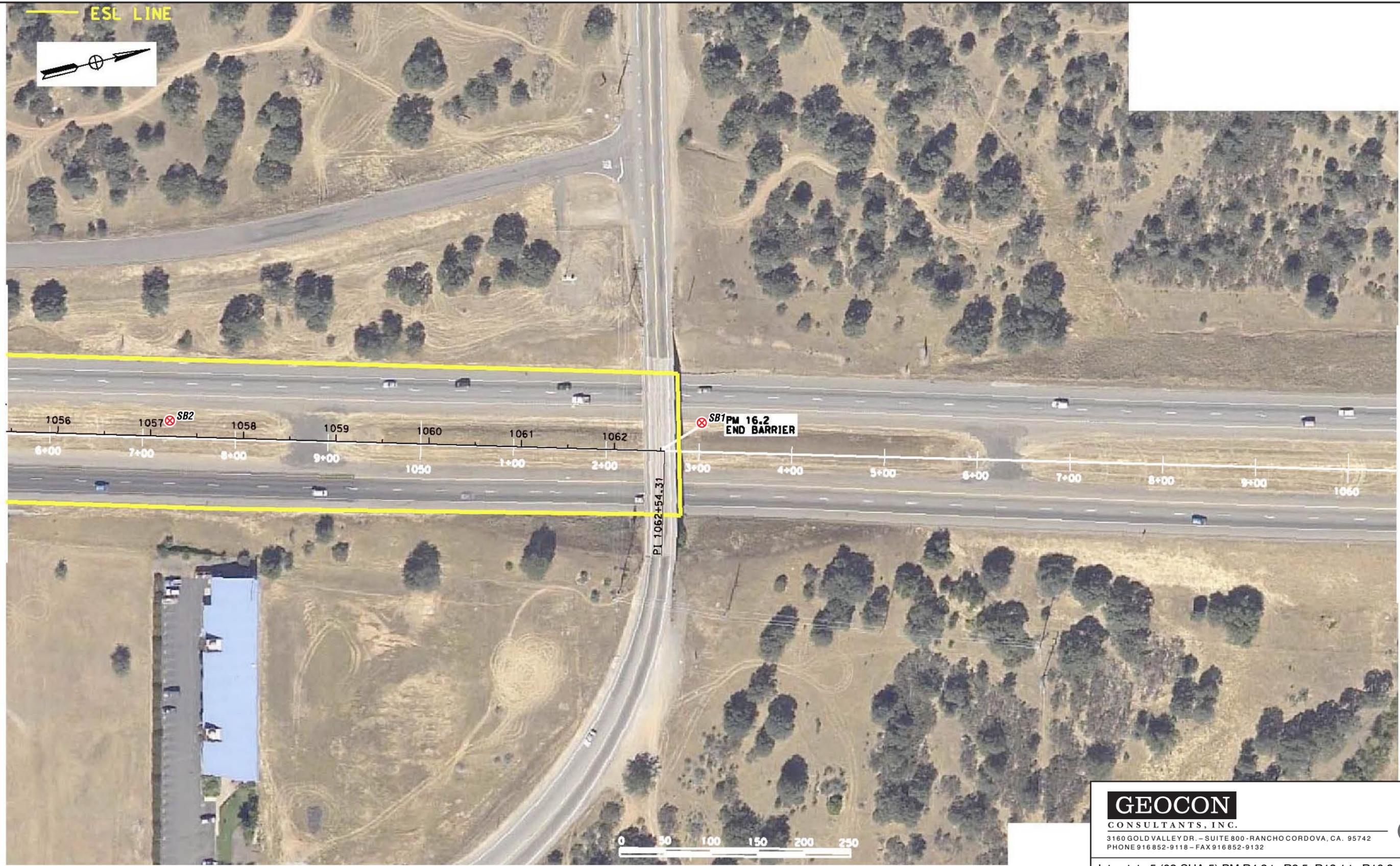
GEOCON Proj. No. S9300-06-47

Task Order No. 47

**SITE PLAN**

July 2008

Figure 2-31



LEGEND:

SB1 ⊗ Approximate Soil Boring Location



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PHONE 916 852-9118 - FAX 916 852-9132



Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
California

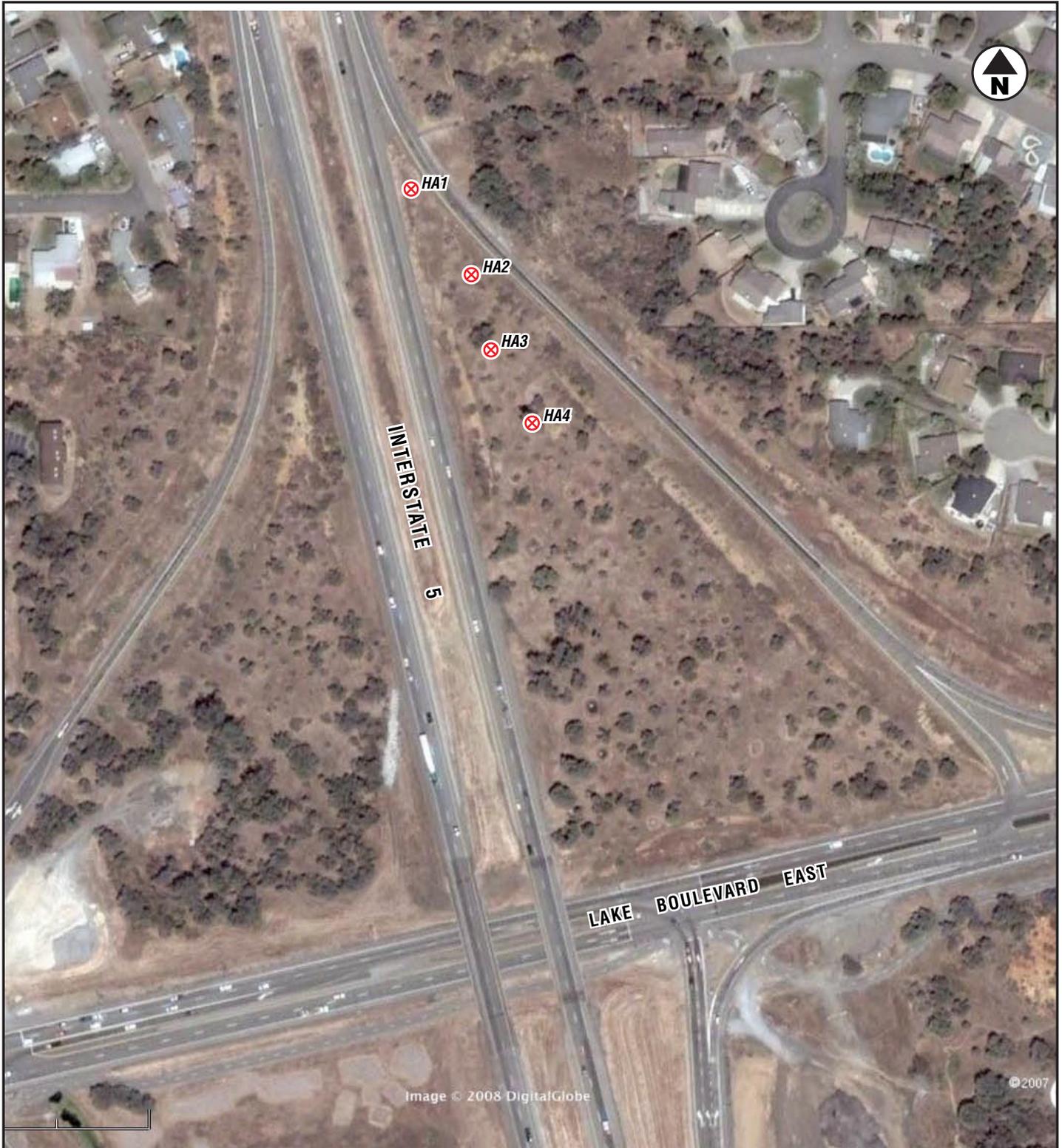
**SITE PLAN**

GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-32



LEGEND:

**SB1** ⊗ Approximate Soil Boring Location



**GEOCON**

CONSULTANTS, INC.

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PHONE 916 852-9118 - FAX 916 852-9132



Interstate 5 (02-SHA-5) PM R4.2 to R8.5, R12.1 to R16.2 and 17.3

Shasta County,  
California

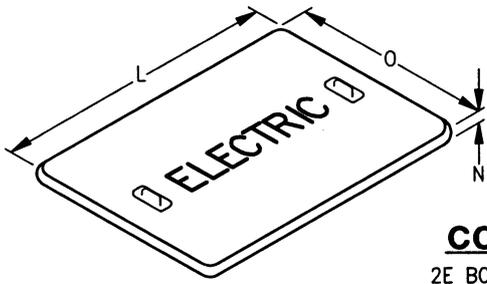
**SITE PLAN**

GEOCON Proj. No. S9300-06-47

Task Order No. 47

July 2008

Figure 2-33



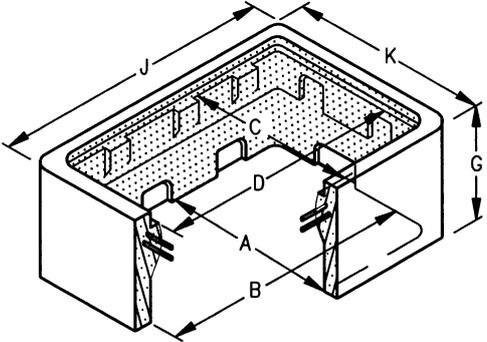
**COVER**

2E BOX-1 PIECE  
3E BOX-1 PIECE  
4E BOX-2 PIECE

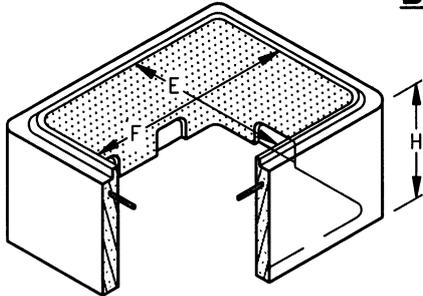
LID WEIGHT CHART

BOX NO.	MAX. LID WEIGHT
2E	90 LBS.
3E	140 LBS.
4E	140 LBS.

**USB-2E**  
**USB-3E**  
**USB-4E**



**BOX**



**EXTENSION**

2E BOX-1 REQUIRED  
3E BOX-1 REQUIRED  
4E BOX-1 REQUIRED

**APPROVED CONCRETE BOX/LID SUPPLIERS**

MANUFACTURER	CAT. NO.	BOX	LID	2E	3E	4E
COOK CONCRETE	2E		X	X		
" "	2E	X		X		
" "	3E		X		X	
" "	3E	X			X	
" "	4E		X			X
" "	4E	X				X
CHRISTY CONCRETE	B-40	X			X	
" "	B-40LT		X		X	
BES CONCRETE	C40	X			X	
" "	C40T		X		X	
" "	C36	X		X		

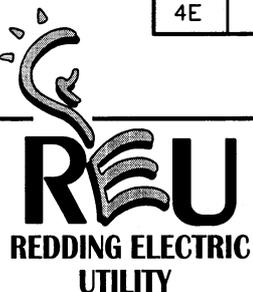
**NOTES:**

- ALL LIDS AND COVERS SHALL BE FURNISHED WITH HOLD-DOWN BOLTS.
- 2E AND 3E LIDS AND COVERS SHALL BE IMPRINTED WITH "R.E.U.". 4E LIDS AND COVERS SHALL BE IMPRINTED WITH "R.E.U. HIGH VOLTAGE".
- BOXES AND LIDS SHALL BE OF CONCRETE AND FROM SUPPLIERS WHO'S BOXES MEET THE NOMINAL DIMENSIONS SHOWN BELOW.
- PRIOR TO ACCEPTANCE OF A BOX AND LID, THE CITY OF REDDING MUST HAVE RECEIVED A REPORT FROM AN INDEPENDANT, STATE OF CALIFORNIA, LICENSED CIVIL OR STRUCTURAL ENGINEER. THE REPORT SHALL BE STAMPED BY THE ENGINEER AND SHALL CERTIFY THAT THE BOX AND LID DESIGN MEETS THE REQUIRED SPECIFICATIONS AND STANDARDS OR TEST REPORTS SHOWING TEST RESULTS MEET OR EXCEED THE REQUIREMENTS OF NOTE 5.
- BOXES AND LIDS SHALL MEET OR EXCEED THE DESIGN STRENGTH FOR VERTICAL LOADING OF ASTM C 857 DESIGNATION A-8 (AASHTO DESIGNATION H10-44) BASED ON 8,000 LBS. PER WHEEL, 10"x10" WHEEL LOAD AREA, AND INCREASED 30% FOR AN IMPACT FACTOR.

BOX NO.	DIMENSIONS (IN INCHES)														
	A	B	C	D	E	F	G	H	J	K	L	M	N	O	
2E	17	30	17	30	--	--	12	12	34.75	21.75	30.5	--	2	17.5	
3E	24	36	21	32.5	24	36	14	10	40	28.5	35	--	3	24	
4E	30	48	27	46	28	46	14	10	52	34	24	--	3	30	

ADD BES CONCRETE C36

**SHEET 1 OF 1**



ELECTRIC CONSTRUCTION STANDARD

**CONCRETE ELECTRIC PULL BOXES 2E, 3E, 4E**

DES/REV RO/TMS	DATE 10-86	DISTRIBUTION SYSTEM MANAGER <i>Chris Russell</i>	REVISED 1/30/03	DWG. NO. CS1110
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