

FOR CONTRACT NO. 07-250504  
PROJECT NO. 0700000445

## INFORMATION HANDOUT

Site Investigation Report  
North and Southbound Route 605 Between  
The Route 105/605 and The Route 10/605 Interchanges  
Los Angeles County, California  
Task Order No. 07-120721-01  
EA No. 1209A1, dated March 19, 1996

Site Investigation Report  
North and Southbound Route 605 Between  
The Route 105/605 Interchange and The LA/Orange County Line  
Task Order No. 07-120721-01  
EA No. 120911, dated March 19, 1996

**ROUTE: 07-LA-605 R0.1/R16.6**

**SITE INVESTIGATION REPORT**  
**NORTH AND SOUTHBOUND ROUTE 605**  
**BETWEEN**  
**THE ROUTE 105/605 AND**  
**THE ROUTE 10/605 INTERCHANGES**  
**LOS ANGELES COUNTY, CALIFORNIA**

**GEOCON**



**ID # 446**

**SITE INVESTIGATION REPORT**  
**NORTH AND SOUTHBOUND ROUTE 605**  
**BETWEEN**  
**THE ROUTE 105/605 AND**  
**THE ROUTE 10/605 INTERCHANGES**  
**LOS ANGELES COUNTY, CALIFORNIA**

**TASK ORDER NO. 07-120721-01**  
**EA NO. 1209A1**

**PREPARED FOR**  
**DEPARTMENT OF TRANSPORTATION**  
**DISTRICT 7**  
**LOS ANGELES, CALIFORNIA**

**MARCH 1996**



Project No. 08600-06-45F  
TO No. 07-120721-01  
March 19, 1996

Mr. Kanwal Singh  
California Department of Transportation  
District 7  
120 South Spring Street  
Los Angeles, California 90012-3606

Subject: SITE INVESTIGATION REPORT  
NORTH AND SOUTHBOUND ROUTE 605  
BETWEEN THE ROUTE 105/605 AND  
ROUTE 10/605 INTERCHANGES  
TASK ORDER NO. 07-120721-01, EA 1209A1

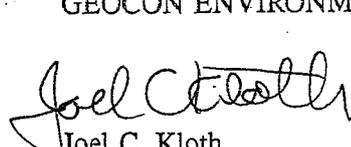
Dear Mr. Singh:

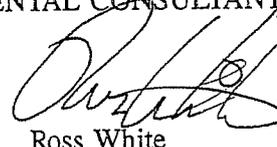
In accordance with Caltrans Contract No. 53W202 and the Task Order (TO) No. 07-120721-01, EA No. 1209A1, Geocon Environmental Consultants Incorporated (Geocon) has performed environmental engineering services at the subject site. The site is located within the Caltrans right-of-way and is comprised of 22 locations on the north and southbound Route 605 between the Route 105/605 and Route 10/605 interchanges in Los Angeles County, California.

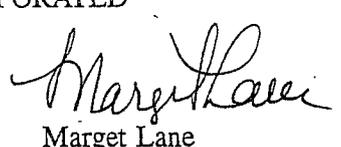
The accompanying report summarizes the services performed including the excavation of hand auger soil borings, limited soil sampling, and laboratory testing. If there are any questions concerning the contents of this report, or if Geocon may be of further service, please contact the undersigned at your convenience.

Very truly yours,

GEOCON ENVIRONMENTAL CONSULTANTS INCORPORATED

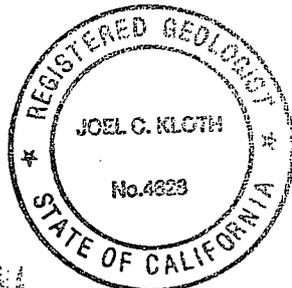
  
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## EXECUTIVE SUMMARY

The objective of the Task Order (TO) Number 07-120721-01 was to evaluate the vertical extent of soils impacted with lead from vehicle emissions at the proposed truck turn outs, conduit locations, and retaining walls on Route 605 between Route 105/605 and Route 10/605 interchanges in Los Angeles County, California. The site length (north and southbound combined) is estimated to be approximately 24.8 miles (130,944 feet). Forty-six soil samples were collected at twenty-two boring locations, borings BF1 through BF22, along portions of the north and southbound shoulders of Route 605. Samples collected at proposed truck turn outs or conduit locations were collected from each borehole at the surface, and at a depth of 1½ feet below the ground surface. Samples at proposed retaining wall locations were collected at the surface, at 2 feet, and at 4½ feet below the ground surface.

The following information summarizes the laboratory analyses results.

- Forty-six soil samples were analyzed for total lead using EPA Test Method 6010 ICAP single element.
- Ten soil samples exhibited total lead concentrations greater than the Total Threshold Limit Concentration (TTLIC) of 1,000 milligrams per kilogram (mg/kg) set forth under Title 22 of the California Code of Regulations (CCR). The maximum total lead concentration exhibited was 2,050 mg/kg (see Table I).
- Twenty-six soil samples exhibited total lead concentrations greater than 50 mg/kg and less than 1,000 mg/kg.
- The 26 soil samples were analyzed for soluble lead by the Waste Extraction Test (WET) utilizing EPA Test Method 7420. Soluble lead concentrations for the 26 samples ranged from 1.6 to 43 milligrams per liter (mg/l). Twenty-two of the twenty-six soil samples exhibited soluble lead concentrations greater than 5.0 mg/l, the Soluble Threshold Limit Concentration (STLC) set forth under Title 22 of the CCR.
- Four soil samples with soluble lead concentrations greater than the STLC were analyzed by the WET utilizing deionized water for extraction (WET-DI). Soluble lead results ranged from 0.27 mg/l to 0.36 mg/l.

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- Based upon laboratory results it is estimated that approximately 885 cubic yards (approximately 1,195 tons) of soil proposed to be excavated during construction of truck turn-outs and retaining walls exhibited hazardous concentrations of total lead (> 1,000 mg/kg) or soluble lead (> 5.0 mg/l).

### Recommendations

Truck Turn Outs and Retaining Walls. On-site soil in proximity to borings BF1 (Figure 2), BF3 (Figure 4), BF5 (Figure 6), BF8 (Figure 9), BF11 from 0.75 to 2 feet bgs (Figure 11), BF14 (Figure 14), BF15 (Figure 15), BF17 (Figure 17) and BF18 (Figure 17) may be re-used according to the Department of Toxic Substances Control (DTSC) by placing the impacted soil beneath at least 1 foot of clean fill at least 5 feet above the maximum groundwater (Plan "B" re-use designation on figures noted above).

Note: Based on WET-DI results, soil samples exhibiting soluble lead concentrations greater than 5.0 mg/l (by the WET) not analyzed by the WET-DI, are assumed to exhibit WET-DI results 1/50 of the WET result if analyzed by the WET-DI.

On-site soil in proximity to borings BF13 (Figure 13), BF21 (Figure 18), BF 22 (Figure 19), and BF 19 and 20 (Figure 17) may be re-used according to the DTSC variance by placing the soil beneath hard cover (i.e. asphalt or concrete) at least 5 feet above the maximum groundwater ("Plan C" re-use designation on figures noted above).

Conduit Trenches. It is understood that data from this site investigation will be used to determine the disposition of soil excavated at the proposed conduit trench areas, BF2 (Figure 3), BF4 (Figure 5), BF6 (Figure 7), BF7 (Figure 8), BF9 and BF10 (Figure 10), BF12 (Figure 12), and BF16 (Figure 16). Based on laboratory analyses, hazardous concentrations of lead are present in soil to be excavated for these trenches. However, according to Caltrans, the soil excavated for conduit trenches may be reused by placing the excavated soil back in the trench.

It is further recommended that Caltrans notify retained subcontractors performing the construction activities that detectable concentrations of lead are present at the site and that necessary health and safety measures should be taken to minimize potential exposure to lead.

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## SITE INVESTIGATION REPORT

### PROJECT DESCRIPTION

The project included the excavation of 22 hand auger borings along the north and southbound shoulders of Route 605 between the Route 105/605 and Route 10/605 interchanges (the site) in the Los Angeles County, California. The approximate location of the site is presented on the Vicinity Map, Figure 1. The approximate boring locations are presented as Figures 2 through 19.

Forty-six soil samples were collected at predetermined locations along the north and southbound shoulders of the site. Twenty of the boreholes were excavated to a maximum depth of approximately 2 feet below the ground surface (bgs), and two of the boreholes were excavated to a maximum depth of 5 feet bgs. Soil samples were collected at the surface (i.e. less than or equal to 3-inches bgs) and at a depth of approximately 1½ feet bgs from the 2-foot-deep boreholes; and at the surface, 2 feet, and 4½ feet bgs from the 5-foot-deep boreholes.

Soil samples obtained were analyzed for total lead by EPA Test Method 6010. Soil samples that exhibited a total lead concentration greater than 50 milligrams per kilogram (mg/kg) and less than 1,000 mg/kg were further analyzed for soluble lead by the Waste Extraction Test (WET) following EPA Test Method 7420. In addition, twenty percent or a minimum of four soil samples

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that exhibited soluble lead concentrations greater than 5.0 milligrams per liter (mg/l) were analyzed for soluble lead by the WET using deionized water for extraction (WET-DI).

#### Purpose and Objectives

The purpose of the environmental engineering services performed by Geocon was to estimate the vertical extent of soils impacted with lead from vehicle emissions within the Caltrans right-of-way along the north and southbound shoulders of the freeway when lead was utilized as a gasoline additive. The information obtained from the limited soil sampling and laboratory testing will be used to estimate the volume of lead impacted soil at the proposed truck turn out, and retaining wall areas.

#### Scope of Work

The work requested by Caltrans, as outlined in TO 07-120721-01, has been previously outlined above. The approximate locations of the boreholes excavated by Geocon are presented on Figures 2 through 19. The soil samples collected by Geocon were relinquished to Advanced Technologies Laboratories (ATL), a state-certified hazardous waste testing laboratory, for the analysis as previously referenced.

The procedures and methods used by Geocon to complete this TO are outlined in the following Geocon Standard Operating Procedures (SOPs):

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SOP No. 01 - Hand Augering Pre-Field Procedures  
SOP No. 11 - Hand Augering and Soil Sample Collection Procedures  
SOP No. 31 - Soil Sample Handling and Analytical Procedures  
SOP No. 41 - Reporting Procedures

The above-referenced SOPs are presented as Appendix A.

## INVESTIGATIVE METHODS

### Task Order Meeting

A pre-work task order meeting was attended by Mr. John Landgard and Mr. Ross White of Geocon and Mr. Kanwal Singh and Mr. Ali Nili of Caltrans on January 25, 1996. Topics covered included: sampling schemes, health and safety, traffic control to be provided to Geocon workers by Caltrans, and the proposed completion schedule.

### Health and Safety Plan

In accordance with the TO, a Health and Safety Plan was prepared by Geocon. The Health and Safety Plan was provided to outline recommendations for personal protective equipment for Geocon workers in the field during the performance of the soil sampling activities. A Health and Safety Plan dated January 25, 1996, was prepared for the site and submitted to Mr. Singh for review.

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### Utility Clearance

On January 30, 1996, a representative of Geocon contacted Underground Service Alert (USA) of Southern California to advise utility companies of the proposed on-site field activities. Geocon was provided with USA Ticket Numbers 257175, 257176, 257177, 257178, 257179, 257180, 257181, 257182, 257183, 257184, 257162, 257166, 257168, 257169, 257170, 257171, 257172, 257173, and 257174.

### HAND AUGERING AND SOIL SAMPLING

#### Rationale of Boring Placement

At the request of Mr. Singh, Geocon excavated 22 boreholes at areas where truck turn out, conduit placement, or retaining wall construction activities are proposed. These areas have been identified by Caltrans as areas that may potentially contain detectable concentrations of lead. Boring identification, sampling depth, total/soluble lead concentrations, and site conditions are summarized in Table I.

#### Field Activities

A hand held 3-inch diameter stainless steel auger was advanced to an initial sample depth. Representatives of Geocon collected soil samples utilizing a stainless steel hand auger and placed each sample into a laboratory provided glass jar and sealed with a teflon lined lid. The glass jars were labeled with the sample identification, date, and project number and placed into a container

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for transport to ATL. The procedure was repeated at subsequent sampling depths. At the request of Mr. Singh, the boreholes were backfilled to surface grade with soil cuttings generated during the excavation activities.

#### Laboratory Analytical Methods

Forty-six soil samples obtained were analyzed for total lead following EPA Test Method 6010. Twenty-six soil samples exhibited detectable concentrations of lead greater than 50 mg/kg and less than 1,000 mg/kg and were analyzed for soluble lead following the WET. Twenty-two soil samples exhibited concentrations of soluble lead greater than 5.0 mg/l, the Soluble Threshold Limit Concentration (STLC). Four of the soil samples with soluble lead concentrations greater than 5.0 mg/l were further analyzed for soluble lead by the WET-DI.

### INVESTIGATIVE RESULTS AND FIELD OBSERVATIONS

#### Field Observations

Field observations, and notes of memoranda are presented in the Project Log sheets utilized during the on-site field activities and are included in Appendix B.

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### Soil Analytical Results

A summary of the analytical results for the soil samples analyzed for total and for soluble lead are presented in Table I. A reproduction of the laboratory reports and chain of custody documentation are presented as Appendix C.

Total Lead. Total lead concentrations for the 46 soil samples analyzed by EPA Test Method 6010 ranged from below the laboratory detection limit to 2,050 mg/kg (see Table I). Ten soil samples exhibited total lead concentrations greater than 1,000 mg/kg, the Total Threshold Limit Concentration (TTLC) set forth by Title 22 of the California Code of Regulations (CCR).

Soluble Lead. Twenty-six soil samples exhibited total lead concentrations greater than 50 mg/kg and less than 1,000 mg/kg and were analyzed for soluble lead by the WET. Soluble lead concentrations for the 26 samples ranged from 1.6 to 43 mg/l. Twenty-two of the twenty-six soil samples exhibited soluble lead concentrations greater than the STLC (see Table I).

Soluble Lead Using Deionized Water. Four soil samples with soluble lead concentrations greater than the STLC were analyzed by the WET-DI. Soluble lead concentrations exhibited by the four soil samples ranged from 0.27 mg/l to 0.36 mg/l (see Table I).

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Data Validation

Prior to submitting the soil samples to the laboratory, the chain-of-custody documentation was reviewed for accuracy and completeness. The laboratory report for the soil samples analyzed was reviewed for accuracy (i.e., units of concentration in mg/kg) and consistency with chain-of-custody documentation. The matrix-spikes and duplicates were reviewed to ensure the laboratory results are within tolerance control limits. Based upon this validation process, the data quality is adequate for the purposes of this report.

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## CONCLUSIONS

Based on laboratory results, soil samples in proximity to borings BF1 (Figure 2), BF3 (Figure 4), BF5 (Figure 6), BF8 (Figure 9), BF11 (Figure 11), BF13 through BF15 (Figures 13, 14, and 15), and BF17 through BF22 (Figures 17, 18, and 19) exhibited either total lead concentrations greater than 1,575 mg/kg and less than 4,150 mg/kg or actual or assumed soluble lead concentrations greater than 0.5 mg/l and less than 50 mg/l (using the WET-DI). Based on these total and soluble lead concentrations, Caltrans is allowed to re-use the lead impacted soil within the Caltrans right-of-way in accordance with the "Plans for Soil Re-use Following Guidelines Set by the DTSC," Appendix D.

Based on laboratory results, soil in the proposed conduit trench areas, BF2 (Figure 3), BF4 (Figure 5), BF6 (Figure 7), BF7 (Figure 8), BF9 and BF10 (Figure 10), and BF16 (Figure 16), exhibited hazardous concentrations of total lead or soluble lead. However, according to Caltrans, soil excavated from conduit trenches may be re-used.

### Estimate of Lead Impacted Soil Volume

Based upon the laboratory results for the soil samples collected during the on-site field activities approximately 885 cubic yards (approximately 1,195 tons) of soil is impacted with hazardous concentrations of total lead or soluble lead at the proposed truck turn out and retaining wall areas investigated.

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## RECOMMENDATIONS

### Discussion of Remediation Options

Based upon a review of the laboratory analysis for the soil samples obtained by Geocon, three remedial alternatives are available.

- Excavation and disposal to a landfill facility.
- Excavation, fixation, and replacement of soil.
- Excavation as required for construction purposes and re-use of lead impacted soil.

Excavation and Disposal. This method would involve the excavation of the identified lead impacted soil and transportation of the soil to a permitted Class I or II landfill for proper disposal. The advantage of this method is that it could be performed in conjunction with the proposed construction activities. The disadvantage of this method is the cost to perform these activities. It is estimated that the cost for soil disposal would range from approximately \$170 to \$185 per ton. The estimated cost to perform excavation and disposal is approximately \$203,150.00 (\$170 x 1195 tons) to \$221,100.00 (\$185 x 1195 tons).

Excavation and Fixation. This method would involve the excavation of the impacted soil. The soil would be relocated to a staging area and mixed with a cement or asphalt additive. Prior to curing of the mixture, the soil would be placed back into the excavation as engineered fill

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material. This alternative is not recommended due to the staging area necessary and the physical constraints of the site.

Excavation and Re-use. This method would involve the excavation of soil as required for construction activities. The soil would be re-used as backfill within the project limits and placed beneath at least 1 foot of clean soil or asphalt/concrete, at least 2-feet above maximum groundwater. The advantage of this method is that the cost for Class I or II landfill disposal would be eliminated. Costs associated with this method would be minimized to the time and materials necessary for health and safety, Caltrans oversight and requirements, over-excavation, backfilling, and compaction.

#### Recommended Alternative

It is understood that Caltrans has negotiated with the DTSC to allow guidelines for the re-use of lead impacted soil within the State right-of-way. It is further understood that Caltrans has obtained a variance allowing re-use and placement of lead-impacted soil at the site.

Based upon the results of the field investigation, Geocon recommends the remedial alternative of excavation and re-use at areas containing soil concentrations of total lead less than 4,150 mg/kg and/or soluble lead concentrations less than 50.0 mg/l (by WET-DI). The following is the recommendation for re-use and placement of lead-impacted soil:

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Truck Turn Outs and Retaining Walls. Locations underlain by soil that exhibited total lead concentrations less than the TTLC and soluble lead concentrations less than the STLC can be re-used as clean fill material ( see Appendix D - "Plan A" re-use designation) following the DTSC guidelines. The top 0.75 feet of soil in proximity to boring BF11 is identified on Figure 11 (BF11) with "Plan A" as the recommendation for re-use of the impacted soil interval.

The following recommendations are for areas that contain soil exhibiting hazardous lead concentrations as set forth under Title 22 of the CCR. Title 22 of the CCR designates concentrations to be hazardous if total lead concentrations exceed the TTLC of 1,000 mg/kg or if soluble lead concentrations exceed the STLC of 5.0 mg/l (using the WET).

Locations underlain by soil that exhibited total lead concentrations less than 1,575 mg/kg or actual or assumed soluble lead concentrations less than 0.5 mg/l (using the WET-DI) can be re-used following the DTSC variance by placing the impacted soil beneath at least 1 foot of clean fill material, at least 5 feet above the maximum groundwater (see Appendix D - "Plan B" re-use designation). These locations are identified on borings BF1 (Figure 2), BF3 (Figure 4), BF5 (Figure 6), BF8 (Figure 9), BF11 from 0.75 to 2 feet bgs (Figure 11), BF14 (Figure 14), BF 15 (Figure 15), BF17 (Figure 17), and BF18 (Figure 17) with "Plan B" as the recommendation for re-use of the impacted soil interval.

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Locations underlain by soil that exhibited hazardous total lead concentrations greater than 1,575 mg/kg and less than 4,150 mg/kg or soluble lead concentrations greater than 0.5 mg/l and less than 50 mg/l (by WET-DI) can be re-used following the DTSC variance by placing the impacted soil beneath hard cover (i.e., asphalt/concrete), at least 5 feet above maximum groundwater (see Appendix D - "Plan C" re-use designation). These locations are identified on borings BF13 (Figure 13), BF 22 (Figure 19), and BF 19 and 20 (Figure 17) as the recommendation for re-use of the impacted soil interval.

Conduit Trenches. It is understood that data from this site investigation will be used to determine the disposition of soil excavated at the proposed conduit trench areas, BF2 (Figure 2), BF4 (Figure 5), BF6 (Figure 7), BF7 (Figure 8), BF9 and BF10 (Figure 10), BF12 (Figure 12), and BF16 (Figure 16). Based on laboratory analyses, hazardous concentrations of lead are present in soil to be excavated for these trenches. However, according to Caltrans, the soil excavated for conduit trenches may be reused by placing the excavated soil back in the trench.

Prior to the initiation of the proposed on-site construction activities, it is recommended that Caltrans notify retained subcontractors performing the construction activities that detectable concentrations of lead are present at the site. Necessary health and safety measures should be taken to minimize potential exposure to lead.

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#### REPORT LIMITATIONS

This report has been prepared exclusively for Caltrans. The information obtained is only relevant for the dates of the records reviewed or as of the date of the latest site visit. The information contained herein is only valid as of the date of the report, and will require an update to reflect additional information obtained.

The Client should recognize that this report is not a comprehensive site characterization and should not be construed as such. The DTSC or Los Angeles County HMMD may require additional soil sampling. The findings and conclusions as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein.

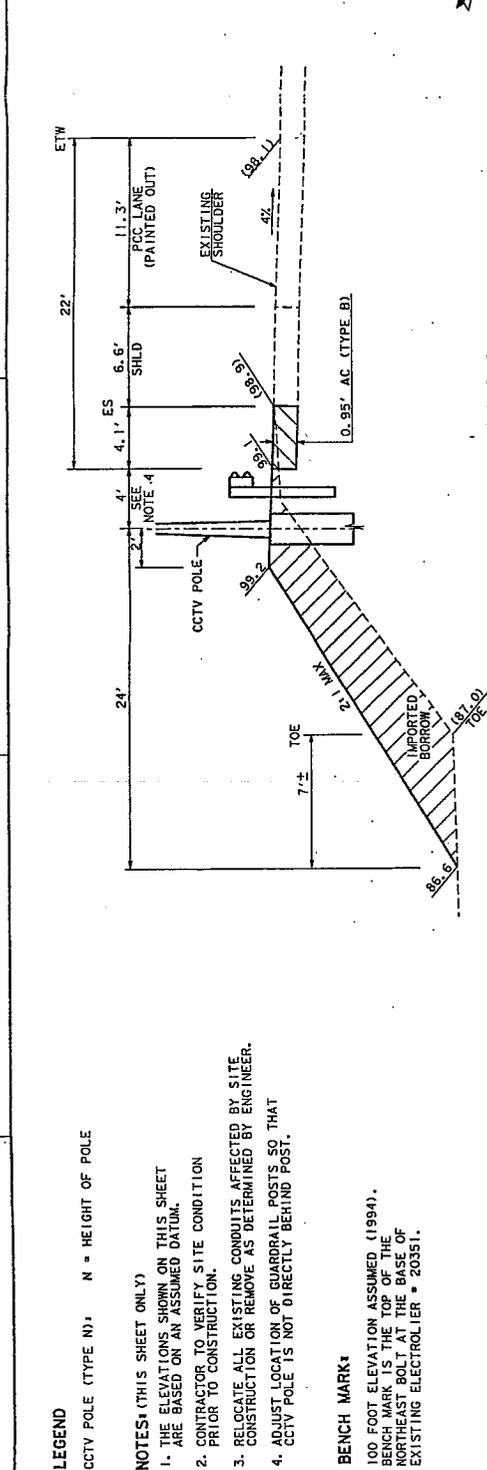
Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of the report is implied within the intent of this report or any subsequent reports, correspondence or consultation, either expressed or implied. Geocon strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.



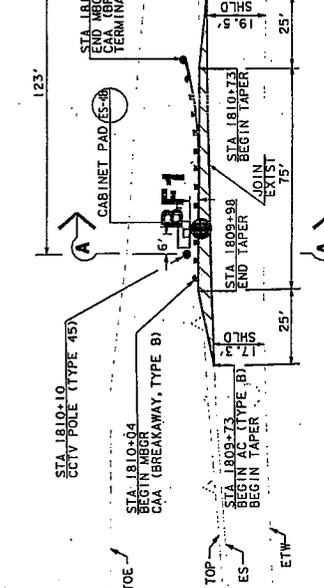
DIST	COUNTY	ROUTE	TOTAL PROJECT	SHEET TOTAL
07	LA	605		

REGISTERED CIVIL ENGINEER (00794)  
 PLANS APPROVAL DATE  
 NATIONAL ENGINEERING TECHNOLOGY  
 14320 FIRESTONE BLVD., SUITE 100  
 LA MIRADA, CA 90638  
 IN ASSOCIATION WITH  
 RAYTHEON INFRASTRUCTURE SERVICES, INC.  
 ABRATIQUO AND ASSOCIATES, INC.  
 KATZ OKITSO AND ASSOCIATES, INC.  
 WRANER ENGINEERING AND SURVEY, INC.

The Sign of California or its officers or agents  
 is hereby acknowledged in compliance with the  
 requirements of electronic copies of this plan sheet.



**SECTION A-A**  
NO SCALE



**PLAN B**  
PLACE IMPACTED SOIL BENEATH AT LEAST 1 FOOT OF CLEAN FILL MATERIAL

Sample No.	Top Soil Depth (ft.)	Soil Type	Soil Color	Moisture Content (%)	Plasticity Index (PI)	Soil Description
BF1- S	2.6	12	0.27	S	S	5.5 W
BF1- 1.5	2.27	11	S	S	S	5.5 W

Note:  
 ft. = feet  
 cwt = cubic yards  
 Recommendation for reuse of impacted soil interval:  
 Approximate Length of Sampling Area (ft.) : 125  
 Approximate Width of Sampling Area (ft.) : 3.5  
 Approximate Interval of Impacted Soil (ft.) : 0 to 2  
 Approximate Volume of Impacted Soil (cwt) : 51

**LEGEND**  
 ●.....APPROX. LOCATION OF BORING  
 BORING LOCATION MAP

**ROUTE 605**  
 414.20'  
 1807  
 1808  
 1809  
 1810

DESIGNED BY	DATE	REVISIONS	DESIGNED BY	DATE	REVISIONS
SAW	10/94		SAW	10/94	
CHECKED BY	DATE	REVISIONS	CHECKED BY	DATE	REVISIONS
PAT SULLIVAN			PAT SULLIVAN		









POST MILES	ROUTE	TOTAL PROJECT	PRICE
07	LA	605	NO. SHEETS

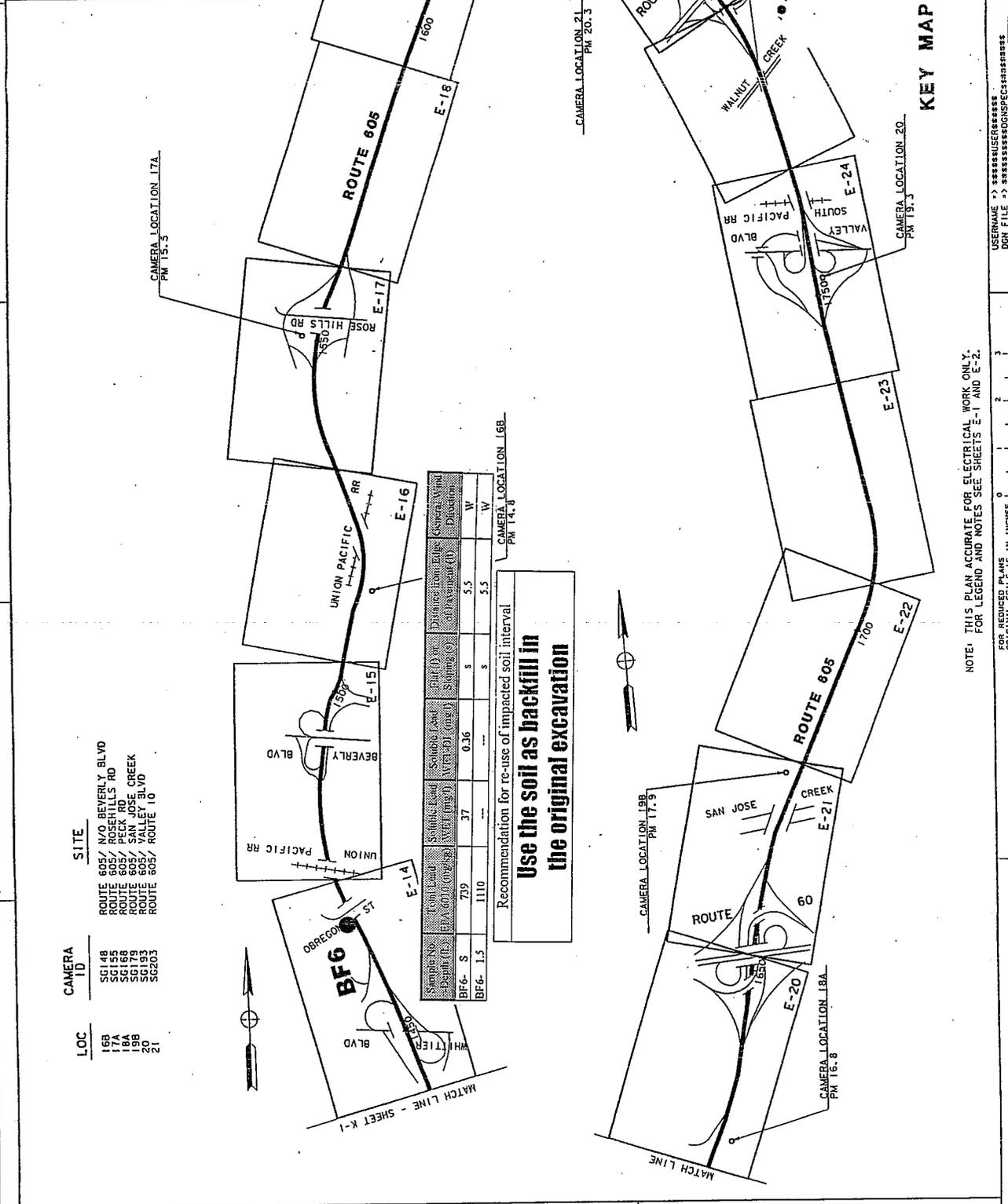
REGISTERED CIVIL ENGINEER (date)

PLANS APPROVAL DATE

NATIONAL ENGINEERING TECHNOLOGY  
14320 FIRESTONE BLVD., SUITE 100  
LA MIRADA, CA 90638

IN ASSOCIATION WITH:  
RANTHEON INFRASTRUCTURE SERVICES, INC.  
ABRATIOLIE AND ASSOCIATES, INC.  
KATZ OKITSU AND ASSOCIATES  
WAGNER ENGINEERING AND SURVEY, INC.

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DESIGNED BY	DATE	REVISIONS
DESIGNED BY	DATE	REVISIONS
DESIGNED BY	DATE	REVISIONS

CHECKED BY ES 3/95 DATE REVISED

DESIGN OVERSIGHT PAT SULLIVAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

XXXXXX

FORM 35-00-02-04 (REV. 3/88) 08-50-30

P. UEBERLEP00765.USA/EA12356002 - AC# 3, 1995

LOC	CAMERA ID	SITE
16B	SG148	ROUTE 605/ N/O BEVERLY BLVD
18A	SG149	ROUTE 605/ ROSEHILLS RD
18B	SG168	ROUTE 605/ PECK RD
20	SG179	ROUTE 605/ SAN JOSE CREEK
21	SG193	ROUTE 605/ VALLEY BLVD
	SG203	ROUTE 605/ ROUTE 70

Sample No	Depth (ft)	Soils (ASTM)	Soils (ASTM)	Dist. from Edge of Pavement (ft)	Camera Well Diameter
BF6-S	7.9	37	0.36	5.5	W
BF6-1.5	11.0	5	5	5.5	W

Recommendation for re-use of impacted soil interval

**Use the soil as backfill in the original excavation**



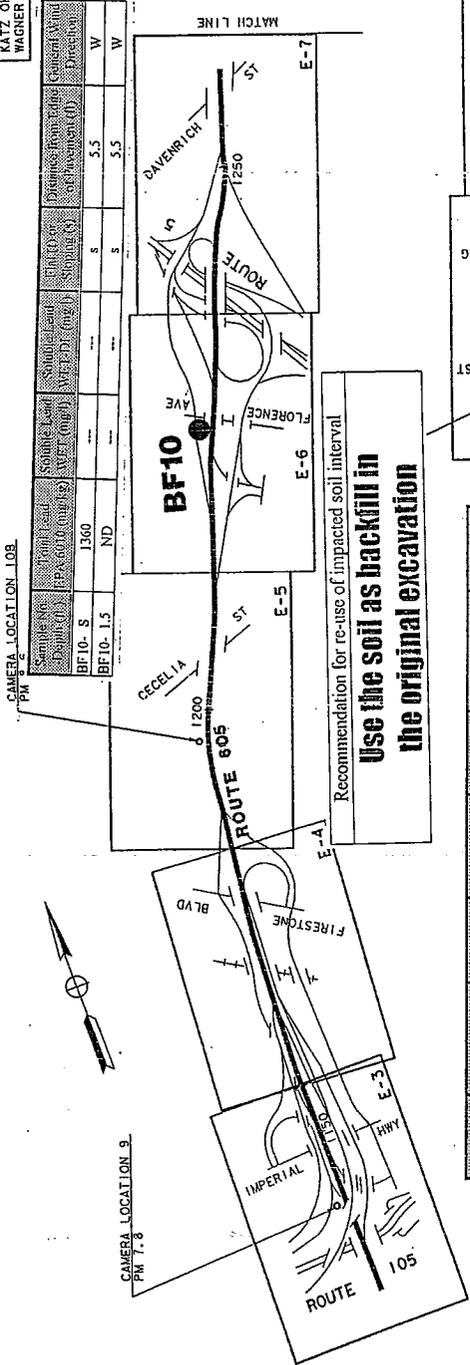
LOC	CAMERA ID	SITE
9	SG078	ROUTE 605/ ROUTE 105
10B	SG086	ROUTE 605/ S/O CECELIA ST
12	SG103	ROUTE 605/ TELEGRAPH RD
13C	SG114	ROUTE 605/ SLAUSON AVE
14	SG124	ROUTE 605/ WHITTIER BL
15	SG134	ROUTE 605/ WHITTIER BL

LOC	CAMERA ID	SITE
9	SG078	ROUTE 605/ ROUTE 105
10B	SG086	ROUTE 605/ S/O CECELIA ST
12	SG103	ROUTE 605/ TELEGRAPH RD
13C	SG114	ROUTE 605/ SLAUSON AVE
14	SG124	ROUTE 605/ WHITTIER BL
15	SG134	ROUTE 605/ WHITTIER BL

DIST	COUNTY	ROUTE	POST MILES	LINE NO.	SHEET
07	LA	605			

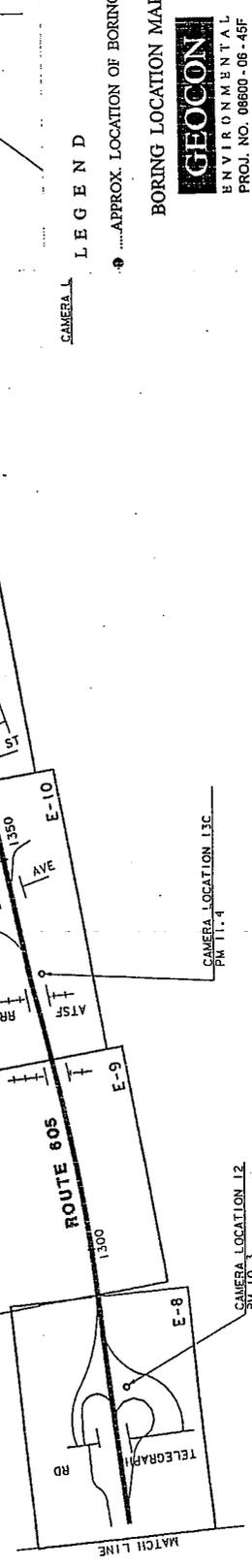
REGISTERED CIVIL ENGINEER (here)  
 PLANS APPROVAL DATE  
 NATIONAL ENGINEERING TECHNOLOGY  
 1420 FIRESTONE BLVD., SUITE 100  
 LA MIRADA, CA 90638  
 IN ASSOCIATION WITH:  
 RAYTHEON INFRASTRUCTURE SERVICES, INC.  
 ABRATTIQUE AND ASSOCIATES, INC.  
 KATZ OKITSU AND ASSOCIATES  
 WAGNER ENGINEERING AND SURVEY, INC.

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 are not responsible for the accuracy or  
 relevance of electronic copies of this plan sheet.



Sample No.	Depth (ft)	Total Lead	Relative Lead	Soil Resist. Lead	Priority	Distance from Edge	General Void
		EPD (0.016 mg/sp)	AVET (mg)	AVET (mg)	AVET (mg)	AVET (mg)	AVET (mg)
BF9- S	1.5	493	23	37	S	5.5	W
BF9- I.5	890				S	5.5	W

Sample No.	Depth (ft)	Total Lead	Relative Lead	Soil Resist. Lead	Priority	Distance from Edge	General Void
		EPD (0.016 mg/sp)	AVET (mg)	AVET (mg)	AVET (mg)	AVET (mg)	AVET (mg)
BF10- S	1.5	1360	ND	ND	S	5.5	W
BF10- I.5	5.5				S	5.5	W



**LEGEND**  
 ..... APPROX. LOCATION OF BORING

**BORING LOCATION MAP**

**GEOCON**  
 ENVIRONMENTAL  
 PROJ. NO. 08600-06-46F  
 FIGURE 10 DATE 3-19-1996

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.  
 FOR LEGEND AND NOTES SEE SHEETS E-1 AND E-2.

DIST	COUNTY	ROUTE	SHEET NO.	TOTAL SHEETS
07	LA	605		

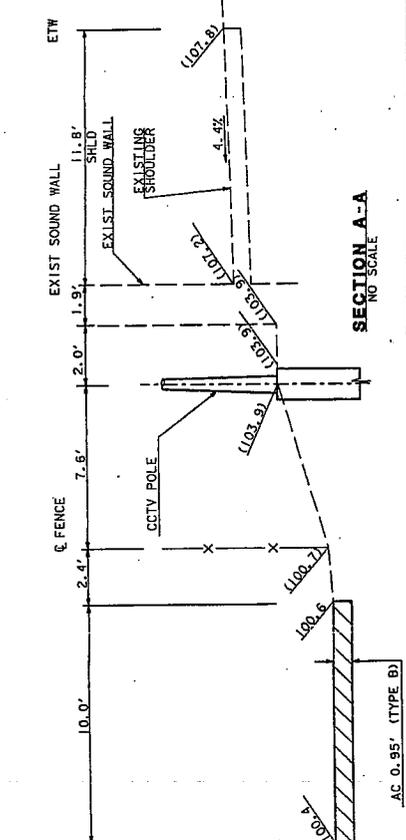
REGISTERED CIVIL ENGINEER (Date)

PLANS APPROVAL DATE

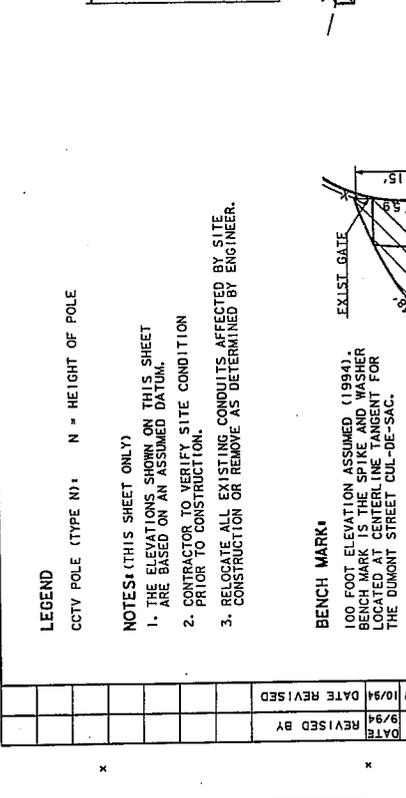
NATIONAL ENGINEERING TECHNOLOGY  
 14320 FIRESTONE BLVD., SUITE 100  
 LA MIRADA, CA 90628

IN ASSOCIATION WITH  
 RAYTHEON INFRASTRUCTURE SERVICES, INC.  
 ABRATTIQUO AND ASSOCIATES, INC.  
 KATZ OKITSU AND ASSOCIATES  
 WAGNER ENGINEERING AND SURVEY, INC.

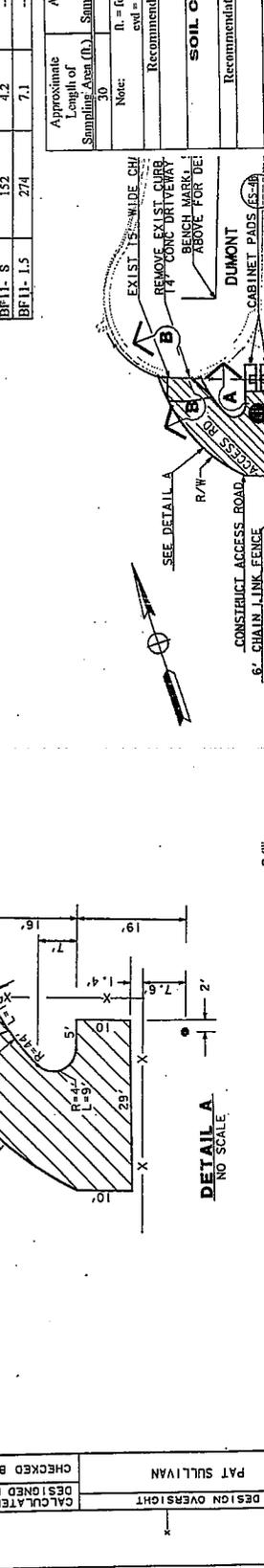
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**SECTION A-A**  
NO SCALE



**DETAIL A**  
NO SCALE

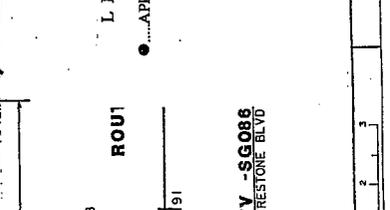


**PLAN A**  
SOIL CAN BE REUSED AS CLEAN FILL MATERIAL

**PLAN B**  
PLACE IMPACTED SOIL BENEATH AT LEAST 1 FOOT OF CLEAN FILL MATERIAL

Note:  
 ft. = feet  
 cyl = cubic yards  
 Recommendation for raise of soil interval 0 to 0.75 feet

Sample No.	Soil Depth (ft.)	Soil Type	Soil Description	Approximate Length of Sampling Area (ft.)	Approximate Width of Sampling Area (ft.)	Approximate Volume of Impacted Soil (cu yd)	General Location
BF11- S	152	4.2	7.1	5.5	5.5	56	W
BF11- S	274	4.2	7.1	5.5	5.5	56	W



**SECTION B-B**  
NO SCALE

**LEGEND**

● APPROX. LOCATION OF BORING

**LOCATION 10B TV -SG088**  
 ROUTE 605, NORTH OF FIRESTONE BLVD

**GFOCON**  
 ENVIRONMENTAL  
 PROJ. NO. 08600-06-45F  
 FIGURE 11 DATE 3-19-1996

**BORING LOCATION MAP**

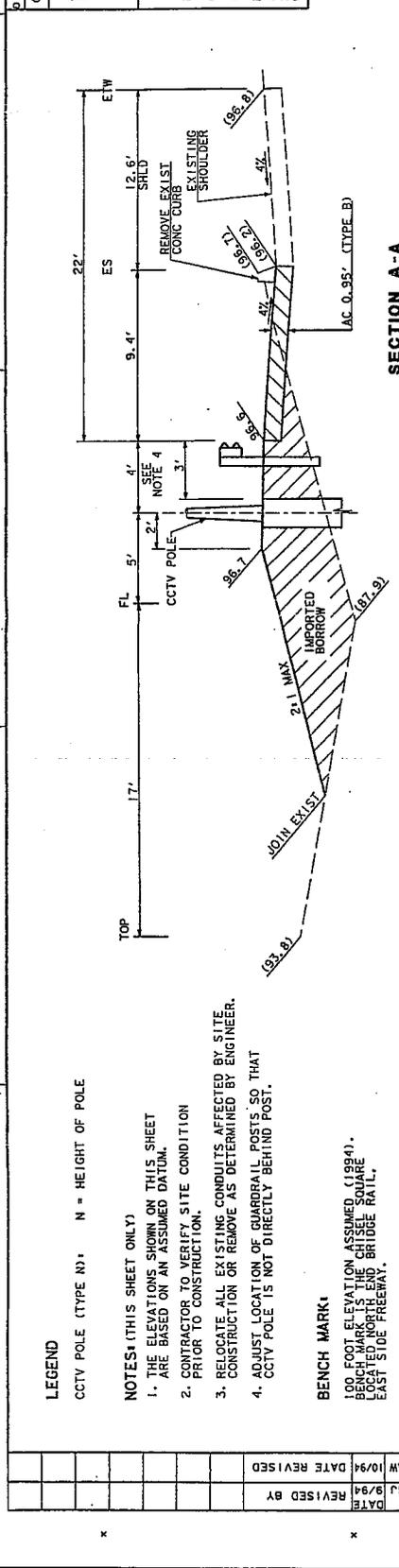
**LAYOUT 10B (LOCATION 10B)**  
 SCALE: 1" = 20'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN OVERSIGHT  
 PAT SULLIVAN  
 CHECKED BY: SAH 10/94  
 DATE REVISD: 10/94

DATE REVISD BY: JSJ 9/94  
 DATE REVISD BY: JSJ 9/94

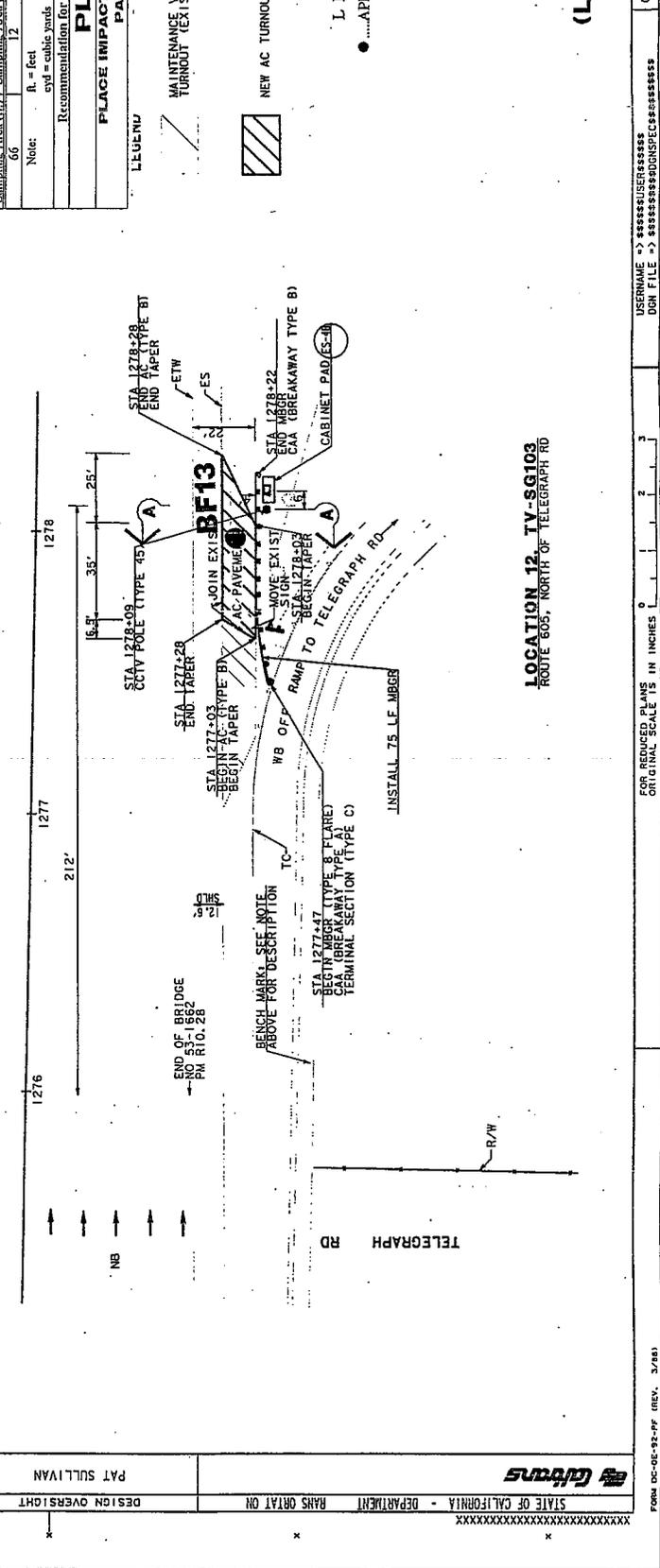


PROJECT NO.	LA 605	ROUTE	605	TOTAL SHEETS	12
COUNTY	LA	SECTION	12	NO. OF SHEETS	12
DATE	4/3/95	REGISTERED CIVIL ENGINEER (Seal)			
PLANS APPROVAL DATE					
NATIONAL ENGINEERING TECHNOLOGY 14320 FIRESTONE BLVD., SUITE 100 LA MIRADA, CA 90638 IN ASSOCIATION WITH: RAYTHEON INFRASTRUCTURE SERVICES, INC. ABRATTIQUE AND ASSOCIATES, INC. KATZ OKITSU AND ASSOCIATES WAGNER ENGINEERING AND SURVEY, INC.					
The State of California or its officers or agents shall not be liable for the consequences of compliance of electronic copies of this plan sheet.					



**SECTION A-A**  
 SUB-CRATE

Sample No.	Soil Type	Soil Description	Soil Color	Soil Moisture (%)	Soil Plasticity (%)	Soil Liquid Limit (%)	Soil Shrinkage (%)	Soil Swell (%)	Soil Compaction (%)	Soil Density (pcf)	Soil Unit Weight (pcf)
BF13-S	S	Subgrade	Light Brown	12	12	12	12	12	12	12	12
BF13-L5	L5	Subgrade	Light Brown	12	12	12	12	12	12	12	12



**LEGEND**  
 CCTV POLE (TYPE N): N = HEIGHT OF POLE

**NOTES:** (THIS SHEET ONLY)  
 1. THE ELEVATIONS SHOWN ON THIS SHEET ARE BASED ON AN ASSUMED DATUM.  
 2. CONTRACTOR TO VERIFY SITE CONDITION PRIOR TO CONSTRUCTION.  
 3. RELOCATE ALL EXISTING CONDUITS AFFECTED BY SITE CONSTRUCTION OR REMOVE AS DETERMINED BY ENGINEER.  
 4. ADJUST LOCATION OF GUARDRAIL POSTS SO THAT CONSTRUCTION IS NOT DIRECTLY BEHIND POST.

**BENCH MARK:**  
 100 FOOT ELEVATION ASSUMED (1994).  
 BENCH MARK IS THE CHISEL SQUARE EAST SIDE FREEWAY.

**PLAN C**  
 PLACE IMPACTED SOIL BENEATH PAVEMENT

**LEGEND**  
 MAINTENANCE VEHICLE TURNOUT (EXIST AC)  
 NEW AC TURNOUT

**LEGEND**  
 ●.....APPROX. LOCATION OF BORING  
 BORING LOCATION MAP

**LOCATION 12, TV-SG103**  
 ROUTE 605, NORTH OF TELEGRAPH RD

SCALE: 1" = 20'

DATE: 3-19-1996

PROJECT NO. 08600-06-45F

FIGURE 13

ENVIRONMENTAL

PROJ. NO. 08600-06-45F

DATE 3-19-1996

FIGURE 13

ENVIRONMENTAL

PROJ. NO. 08600-06-45F







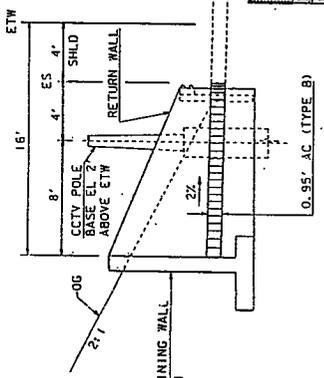
DIST	COUNTY	ROUTE	POST MILES	PROJECT	DATE
07	LA	605	R. 7, B/P20.2	12	141

REGISTERED CIVIL ENGINEER 100499  
 6/17/95  
 10-2-95  
 PLEASE APPROVAL DATE

NATIONAL ENGINEERING TECHNOLOGY  
 14320 FIRESTONE BLVD., SUITE 100  
 LA MIRADA, CA 90638

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 completeness of electronic copies of this plan sheet.

ROUTE 605 NB



TYPE 1A RETAINING WALL  
 SEE SHEET R-1

Sample No.	Point Lead (FPA 6010 (mg/g))	Soil Lead (WTE (mg/g))	Soil Lead (NCE DT (mg/g))	Flat Top Stop (G)	Distances from Edge of Pavement (ft)	Client Wind Direction
BF17- S	339	8.6	---	S	7	W
BF17- 2	69	1.6	---	S	7	W
BF17- 4.5	8.2	---	---	S	7	W

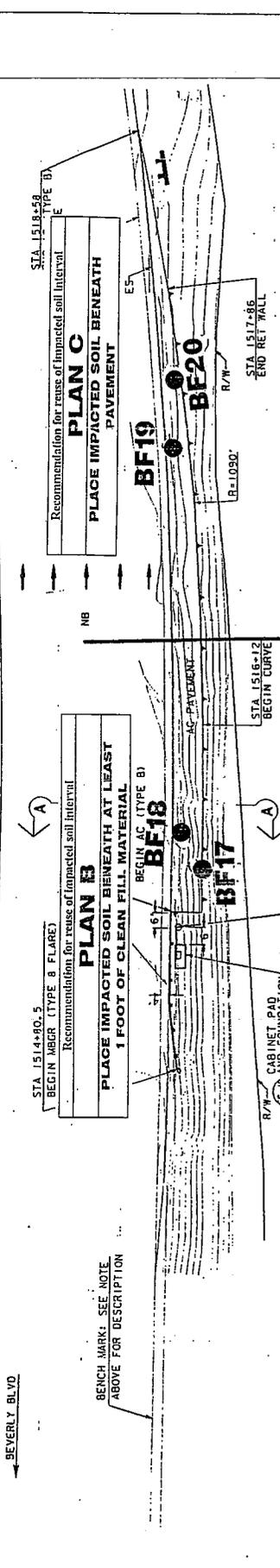
Sample No.	Point Lead (FPA 6010 (mg/g))	Soil Lead (WTE (mg/g))	Soil Lead (NCE DT (mg/g))	Flat Top Stop (G)	Distances from Edge of Pavement (ft)	Client Wind Direction
BF18- S	453	39	---	S	5.5	W
BF18- 1.5	108	8.7	---	S	5.5	W

Sample No.	Point Lead (FPA 6010 (mg/g))	Soil Lead (WTE (mg/g))	Soil Lead (NCE DT (mg/g))	Flat Top Stop (G)	Distances from Edge of Pavement (ft)	Client Wind Direction
BF19- S	1310	---	---	S	5.5	W
BF19- 1.5	1180	---	---	S	5.5	W

ROUTE 605

ROUTE 605 NB

Sample No.	Point Lead (FPA 6010 (mg/g))	Soil Lead (WTE (mg/g))	Soil Lead (NCE DT (mg/g))	Flat Top Stop (G)	Distances from Edge of Pavement (ft)	Client Wind Direction
B 20- S	1460	---	---	S	7	W
B 20- 2	29	---	---	S	7	W
B 20- 4.5	ND	---	---	S	7	W



PLAN E3  
 Recommendation for reuse of impacted soil interval  
 PLACE IMPACTED SOIL BENEATH AT LEAST  
 1 FOOT OF CLEAN FILL MATERIAL

PLAN C  
 Recommendation for reuse of impacted soil interval  
 PLACE IMPACTED SOIL BENEATH  
 PAVEMENT

Approximate Length of Sampling Area (ft.)	Approximate Width of Sampling Area (ft.)	Approximate Volume of Impacted Soil (ft <sup>3</sup> )
400	12	0 to 2
Note:		ft <sup>3</sup> = cubic feet
		cyd = cubic yards





DIST	COUNTY	ROUTE	POST MILES	SHEET TOTAL
07	LA	605		10/15

REGISTERED CIVIL ENGINEER (date)

PLANS APPROVAL DATE

NATIONAL ENGINEERING TECHNOLOGY  
14520 B FRESTONE BLVD., SUITE 100  
LA MIRADA, CA 90638

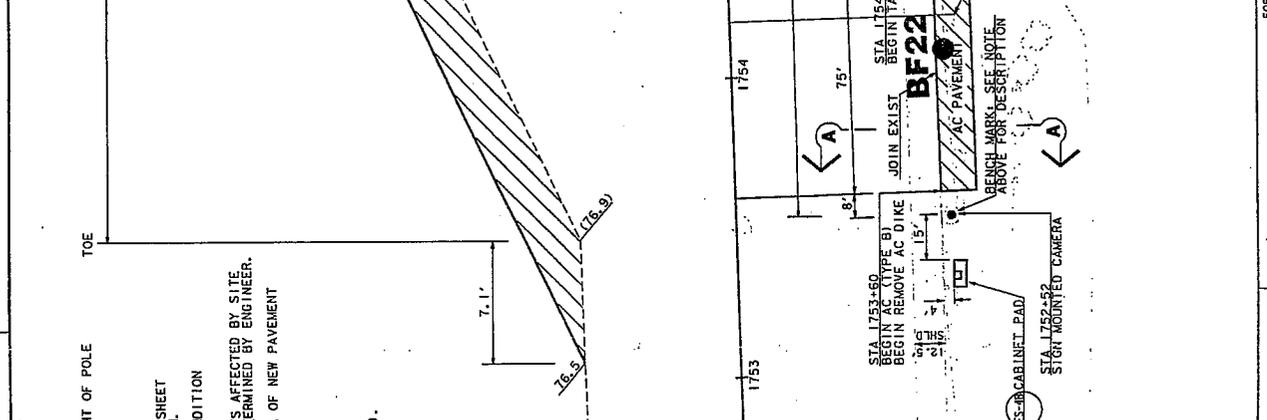
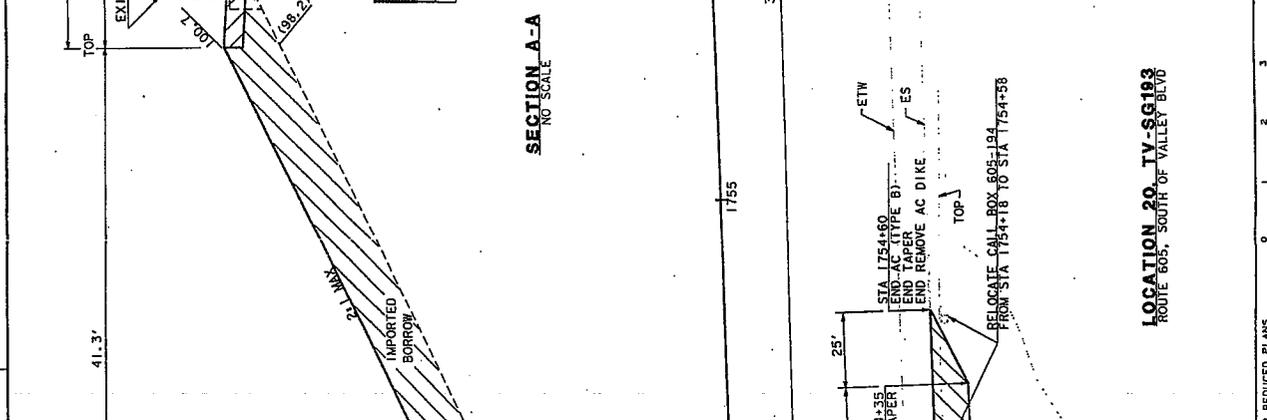
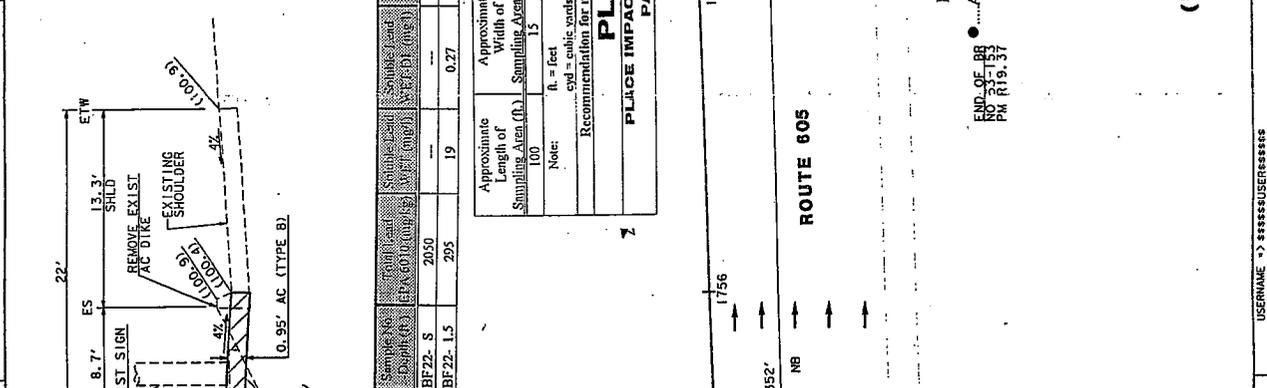
IN ASSOCIATION WITH:  
RAYTHEON INFRASTRUCTURE SERVICES, INC.  
ABRATIQUE AND ASSOCIATES, INC.  
KATZ OKITSU AND ASSOCIATES, INC.  
WAGNER ENGINEERING AND SURVEY, INC.

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Sample No.	Approximate Depth (ft)	Approximate Length of Sampling Area (ft)	Approximate Interval of Sampling Area (ft)	Approximate Volume of Impacted Soil (cu yd)
BF22-S	2030	19	0.27	111
BF22-I.S	295	15	0.27	111

**PLAN C**  
PLACE IMPACTED SOIL BENEATH PAVEMENT

Note: r = feet  
... cgd = cubic yards  
Recommendation for reuse of impacted soil interval.



**LEGEND**  
CCTV POLE (TYPE N): N = HEIGHT OF POLE

**NOTES:** (THIS SHEET ONLY)  
1. THE ELEVATIONS SHOWN ON THIS SHEET ARE BASED ON AN ASSUMED DATUM.  
2. CONTRACTOR TO VERIFY SITE CONDITION PRIOR TO CONSTRUCTION.  
3. RELOCATE ALL EXISTING CONDUITS AFFECTED BY SITE CONSTRUCTION OR REMOVE AS DETERMINED BY ENGINEER.  
4. ADJUST 3 WATER VALVES IN AREA OF NEW PAVEMENT TO NEW GRADE

**BENCH MARK:**  
100 FOOT ELEVATION ASSUMED (1994).  
BENCH MARK IS THE TOP OF THE CURB OR THE BASE OF EXISTING BRIDGE SIGN.

**REVISIONS:**

DATE	REVISIONS
9/94	DESIGNED BY USJ
10/94	CHECKED BY SAH
	DATE REVISIO

DESIGN OVERSIGHT: PAT SULLIVAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

PROJECT NO. 08600-06-45F  
FIGURE 19 DATE 3-19-1996

**GEOCON ENVIRONMENTAL**

**LAYOUT (LOCATION 20)**  
SCALE: 1" = 20'

TABLE I  
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS

Sample No. Depth (ft.)	Total Lead EPA 6010 (mg/kg)	Sample Lead WET (mg/l)	Soluble Lead WET-DI (mg/l)	Flat (F) or Slipping (S)	Distance from Edge of Pavement (ft.)	General Wind Direction
BF1- S	236	12	0.27	s	5.5	W
BF1- 1.5	227	11	---	s	5.5	W
BF2- S	562	43	---	s	5.5	W
BF2- 1.5	12	---	---	s	5.5	W
BF3- S	113	11	---	s	5.5	W
BF3- 1.5	94	4.3	---	s	5.5	W
BF4- S	1020	---	---	s	5.5	W
BF4- 1.5	1730	---	---	s	5.5	W
BF5- S	178	6.4	---	s	5.5	W
BF5- 1.5	307	14	---	s	5.5	W
BF6- S	739	37	0.36	s	5.5	W
BF6- 1.5	1110	---	---	s	5.5	W
BF7- S	107	8.1	---	s	5.5	W
BF7- 1.5	578	5.8	---	s	5.5	W
BF8- S	133	12	---	s	5.5	W
BF8- 1.5	10	---	---	s	5.5	W
BF9- S	493	23	---	s	5.5	W
BF9- 1.5	890	37	---	s	5.5	W
BF10- S	1360	---	---	s	5.5	W
BF10- 1.5	ND	---	---	s	5.5	W
BF11- S	152	4.2	---	s	5.5	W
BF11- 1.5	274	7.1	---	s	5.5	W
BF12- S	54	2	---	s	5.5	W
BF12- 1.5	26	---	---	s	5.5	W
BF13- S	1820	---	---	s	5.5	W
BF13- 1.5	1660	---	---	s	5.5	W
BF14- S	479	20	0.3	s	5.5	W
BF14- 1.5	636	36	---	s	5.5	W
BF15- S	385	13	---	s	5.5	W
BF15- 1.5	6.1	---	---	s	5.5	W
BF16- S	602	10	---	s	5.5	W
BF16- 1.5	22	---	---	s	5.5	W
BF17- S	339	8.6	---	s	7	W
BF17- 2	69	1.6	---	s	7	W
BF17- 4.5	8.2	---	---	s	7	W
BF18- S	453	39	---	s	5.5	W
BF18- 1.5	108	8.7	---	s	5.5	W
BF19- S	1310	---	---	s	5.5	W
BF19- 1.5	1180	---	---	s	5.5	W
BF20- S	1460	---	---	s	7	W
BF20- 2	29	---	---	s	7	W
BF20- 4.5	ND	---	---	s	7	W
BF21- S	313	43	---	s	5.5	W
BF21- 1.5	25	---	---	s	5.5	W
BF22- S	2050	---	---	s	5.5	W
BF22- 1.5	295	19	0.27	s	5.5	W

NOTE:mg/kg = milligrams per kilogram

mg/l = milligrams per liter

ND = not detected above the laboratory detection limit

APPENDIX A

## APPENDIX A

### GEOCON ENVIRONMENTAL CONSULTANTS INCORPORATED STANDARD OPERATING PROCEDURE (SOP) NO. 01 HAND AUGERING PRE-WORK ACTIVITIES

#### Purpose

The purpose of this SOP is to outline pre-work activities to be performed prior to advancing hand augered borings at the project site.

#### Pre-field Activities

1. Conducted a pre-work site visit with Caltrans Contract Manager to inspect work area and excavation sites.
2. Completed Site Visit Checklist with Caltrans Contract Manager.
3. Review proposed borehole locations with Mr. Kanwal Singh as outlined in the Site Plans provided by Caltrans.
4. Record borehole locations on base map and mark excavation locations.
5. Reviewed information and site maps provided by Caltrans.
6. Submitted a Health and Safety Plan to Caltrans Contract Manager for review and approval.
7. Obtained Notice to Proceed from Caltrans Contract manager, countersign and return to Caltrans.
8. Boring permits are not required from environmental agencies for this work.
9. Provided 72 hour notification to Underground Service Alert prior to job site mobilization.
10. Provide notification to Advanced Technology Laboratories.

## APPENDIX A

### GEOCON ENVIRONMENTAL CONSULTANTS INCORPORATED STANDARD OPERATING PROCEDURE (SOP) NO. 11 HAND AUGERING AND SOIL SAMPLE COLLECTION

#### Purpose

The purpose of this SOP is to outline procedures and methods to be used to advance hand augers and collect soil samples for chemical analyses.

#### Hand Augering and Soil Sample Collection Procedures

1. Initiated coring using a hand held 3-inch diameter stainless steel auger.
2. Advanced borings to initial sample depth of less than or equal to 1-inch below the ground surface (bgs).
3. Collected relatively undisturbed soil samples from the hand auger and place the soil samples into glass jars supplied by the laboratory.
4. Repeated procedure and collected soil samples at depths as specified in Task Order No. 07-120721-01.
5. At the request of the Caltrans project manager, backfilled the boreholes to surface grade with soil cuttings generated.
6. Cleansed and rinsed sampling equipment prior to the collection of each soil sample by washing the equipment with a trisodium phosphate solution followed by subsequent tap water and deionized water rinses.

## APPENDIX A

### GEOCON ENVIRONMENTAL CONSULTANTS INCORPORATED STANDARD OPERATING PROCEDURE (SOP) NO. 31 SOIL SAMPLE HANDLING AND ANALYTICAL PROCEDURES

#### Purpose

The purpose of this SOP is to outline procedures and methods to be used to package and transport soil samples to an analytical laboratory.

#### Soil Sample Handling and Analytical Procedures

1. Soil samples collected from below the ground surface will be retrieved using a stainless steel spade from the hand auger.
2. After extracting the sample from the auger/trowel, the soil sample will be placed in laboratory supplied glass containers with teflon lined lids.
3. Sample labels will be placed on the outside of the jar to indicate the job name, date, sample number and name of person performing sampling.
4. Each prepared sample jar will be placed in into a cooler for transport to Advanced Technology Laboratory. Blue ice is not required to preserve soil samples.

APPENDIX A

**GEOCON ENVIRONMENTAL CONSULTANTS INCORPORATED  
STANDARD OPERATING PROCEDURE (SOP) NO. 41  
REPORTING PROCEDURES**

Purpose

The purpose of this SOP is to outline the reporting procedures to be implemented to prepare the Site Assessment report.

Reporting Procedures

Reporting procedures will be performed in accordance with contract specifications as outlined in Caltrans Contract 53W202 for Site Assessment reports and the requirements of Caltrans as outlined in Task Order No. 07-120721-01.

APPENDIX B

Date: 2-7-96

Page 1 of 1

PROJECT NAME: Route 605 North

CALTRANS ONSITE REP:

GEC PROJECT MANAGER: Ross White

FIELD ACTIVITY: mob/demob, auger, sample BID ITEM NO: 32, 33, 51 BID ITEM UNITS: 1, 50, 46

SUBCONTRACTOR:

BID ITEM UNITS COMP. THIS DATE

Briefly describe field activities (i.e. soil sampling collection, continuous casing, casing installation, etc.) that verify the number of bid items completed this date.

7:30 Mobilizing to commence sampling on Route 605

2:30 Demobilizing to inventory samples Completed two EA's on Route 605 today

B.I. 32

1

B.I. 33

50 ft

B.I. 51

46 samples

PREPARED BY:

mml

APPROVED BY:

GEC PROJECT 3500-08-45F

APPENDIX C

February 12, 1996

ELAP No.: 1838

Geocon Environmental  
6970 Flanders Drive  
San Diego, CA 92121

ATTN: Mr. Ross White

Client's Project: Rtes 605 North, 8600 - 06 - 45F  
Lab No.: 9746-001/046

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 - 4045 if I can be of further assistance to your company.

Sincerely,



Edgar P. Caballero  
Laboratory Director  
EPC/cb

Enclosures

This cover letter is an integral part of this analytical report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purpose without authorization is prohibited.

Client: Geocon Environmental

Attn: Mr. Ross White

Client's Project: Rtes 605 North, 8600 - 06 - 45F

Date Received: 02/08/96

Date Sampled: 02/07/96

Date Digested: 02/10/96

Digestion Method: EPA 3050

Lab No.	Sample I.D.	Analysis	Date Analyzed	Results	Matrix, Units	MDL	DLR	Analyst
9746-001	BF1 - S	EPA 6010 (Lead)	02/12/96	236	Soil, mg/kg	5.0	5.0	CDR/OL
9746-002	BF1 - 1.5	EPA 6010 (Lead)	02/12/96	227	Soil, mg/kg	5.0	5.0	CDR/OL
9746-003	BF2 - S	EPA 6010 (Lead)	02/12/96	562	Soil, mg/kg	5.0	5.0	CDR/OL
9746-004	BF2 - 1.5	EPA 6010 (Lead)	02/12/96	12	Soil, mg/kg	5.0	5.0	CDR/OL
9746-005	BF3 - S	EPA 6010 (Lead)	02/12/96	113	Soil, mg/kg	5.0	5.0	CDR/OL
9746-006	BF3 - 1.5	EPA 6010 (Lead)	02/12/96	94	Soil, mg/kg	5.0	5.0	CDR/OL
9746-007	BF4 - S	EPA 6010 (Lead)	02/12/96	1020	Soil, mg/kg	5.0	5.0	CDR/OL
9746-008	BF4 - 1.5	EPA 6010 (Lead)	02/12/96	1730	Soil, mg/kg	5.0	5.0	CDR/OL
9746-009	BF5 - S	EPA 6010 (Lead)	02/12/96	178	Soil, mg/kg	5.0	5.0	CDR/OL
9746-010	BF5 - 1.5	EPA 6010 (Lead)	02/12/96	307	Soil, mg/kg	5.0	5.0	CDR/OL
9746-011	BF6 - S	EPA 6010 (Lead)	02/12/96	739	Soil, mg/kg	5.0	5.0	CDR/OL
9746-012	BF6 - 1.5	EPA 6010 (Lead)	02/12/96	1110	Soil, mg/kg	5.0	5.0	CDR/OL
9746-013	BF7 - S	EPA 6010 (Lead)	02/12/96	107	Soil, mg/kg	5.0	5.0	CDR/OL
9746-014	BF7 - 1.5	EPA 6010 (Lead)	02/12/96	578	Soil, mg/kg	5.0	5.0	CDR/OL
9746-015	BF8 - S	EPA 6010 (Lead)	02/12/96	133	Soil, mg/kg	5.0	5.0	CDR/OL
9746-016	BF8 - 1.5	EPA 6010 (Lead)	02/12/96	10	Soil, mg/kg	5.0	5.0	CDR/OL
9746-017	BF9 - S	EPA 6010 (Lead)	02/12/96	493	Soil, mg/kg	5.0	5.0	CDR/OL

MDL = Method Detection Limit

ND = Not Detected (Below DLR)

DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: Cheryl De Los Reyes Date: 2/12/96  
Cheryl De Los Reyes  
Department Supervisor

Beverly Isa Date: 2/20/96  
Beverly Isa  
QA/QC Officer

The cover letter is an integral part of this analytical report.

Client: Geocon Environmental  
Attn: Mr. Ross White

Client's Project: Rtes 605 North, 8600 - 06 - 45F

Date Received: 02/08/96  
Date Sampled: 02/07/96  
Date Digested: 02/10/96  
Digestion Method: EPA 3050

Lab No.	Sample I.D.	Analysis	Date Analyzed	Results	Matrix, Units	MDL	DLR	Analyst
9746-018	BF9 - 1.5	EPA 6010 (Lead)	02/12/96	890	Soil, mg/kg	5.0	5.0	CDR/OL
9746-019	BF10 - S	EPA 6010 (Lead)	02/12/96	1360	Soil, mg/kg	5.0	5.0	CDR/OL
9746-020	BF10 - 1.5	EPA 6010 (Lead)	02/12/96	ND	Soil, mg/kg	5.0	5.0	CDR/OL
9746-021	BF11 - S	EPA 6010 (Lead)	02/12/96	152	Soil, mg/kg	5.0	5.0	CDR/OL
9746-022	BF11 - 1.5	EPA 6010 (Lead)	02/12/96	274	Soil, mg/kg	5.0	5.0	CDR/OL
9746-023	BF12 - S	EPA 6010 (Lead)	02/12/96	54	Soil, mg/kg	5.0	5.0	CDR/OL
9746-024	BF12 - 1.5	EPA 6010 (Lead)	02/12/96	26	Soil, mg/kg	5.0	5.0	CDR/OL
9746-025	BF13 - S	EPA 6010 (Lead)	02/12/96	1820	Soil, mg/kg	5.0	5.0	CDR/OL
9746-026	BF13 - 1.5	EPA 6010 (Lead)	02/12/96	1660	Soil, mg/kg	5.0	5.0	CDR/OL
9746-027	BF14 - S	EPA 6010 (Lead)	02/12/96	479	Soil, mg/kg	5.0	5.0	CDR/OL
9746-028	BF14 - 1.5	EPA 6010 (Lead)	02/12/96	636	Soil, mg/kg	5.0	5.0	CDR/OL
9746-029	BF15 - S	EPA 6010 (Lead)	02/12/96	385	Soil, mg/kg	5.0	5.0	CDR/OL
9746-030	BF15 - 1.5	EPA 6010 (Lead)	02/12/96	6.1	Soil, mg/kg	5.0	5.0	CDR/OL
9746-031	BF16 - S	EPA 6010 (Lead)	02/12/96	602	Soil, mg/kg	5.0	5.0	CDR/OL
9746-032	BF16 - 1.5	EPA 6010 (Lead)	02/12/96	22	Soil, mg/kg	5.0	5.0	CDR/OL
9746-033	BF17 - S	EPA 6010 (Lead)	02/12/96	339	Soil, mg/kg	5.0	5.0	CDR/OL
9746-034	BF17 - 2	EPA 6010 (Lead)	02/12/96	69	Soil, mg/kg	5.0	5.0	CDR/OL

MDL = Method Detection Limit  
ND = Not Detected (Below DLR)  
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: Cheryl De Los Reyes  
Cheryl De Los Reyes  
Department Supervisor

Date: 2/12/96

Beverly Isa  
Beverly Isa  
QA/QC Officer

Date: 2/20/96

The cover letter is an integral part of this analytical report.

Client: Geocon Environmental  
Attn: Mr. Ross White

Client's Project: Rtes 605 North, 8600 - 06 - 45F

Date Received: 02/08/96  
Date Sampled: 02/07/96  
Date Digested: 02/10/96

Digestion Method: EPA 3050

Lab No.	Sample I.D.	Analysis	Date Analyzed	Results	Matrix, Units	MDL	DLR	Analyst
9746-035	BF17 - 4.5	EPA 6010 (Lead)	02/12/96	8.2	Soil, mg/kg	5.0	5.0	CDR/OL
9746-036	BF18 - S	EPA 6010 (Lead)	02/12/96	453	Soil, mg/kg	5.0	5.0	CDR/OL
9746-037	BF18 - 1.5	EPA 6010 (Lead)	02/12/96	108	Soil, mg/kg	5.0	5.0	CDR/OL
9746-038	BF19 - S	EPA 6010 (Lead)	02/12/96	1310	Soil, mg/kg	5.0	5.0	CDR/OL
9746-039	BF19 - 1.5	EPA 6010 (Lead)	02/12/96	1180	Soil, mg/kg	5.0	5.0	CDR/OL
9746-040	BF20 - S	EPA 6010 (Lead)	02/12/96	1460	Soil, mg/kg	5.0	5.0	CDR/OL
9746-041	BF20 - 2	EPA 6010 (Lead)	02/12/96	29	Soil, mg/kg	5.0	5.0	CDR/OL
9746-042	BF20 - 4.5	EPA 6010 (Lead)	02/12/96	ND	Soil, mg/kg	5.0	5.0	CDR/OL
9746-043	BF21 - S	EPA 6010 (Lead)	02/12/96	313	Soil, mg/kg	5.0	5.0	CDR/OL
9746-044	BF21 - 1.5	EPA 6010 (Lead)	02/12/96	25	Soil, mg/kg	5.0	5.0	CDR/OL
9746-045	BF22 - S	EPA 6010 (Lead)	02/12/96	2050	Soil, mg/kg	5.0	5.0	CDR/OL
9746-046	BF22 - 1.5	EPA 6010 (Lead)	02/12/96	295	Soil, mg/kg	5.0	5.0	CDR/OL

MDL = Method Detection Limit  
ND = Not Detected (Below DLR)  
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: Cheryl De Los Reyes Date: 2/12/96  
Cheryl De Los Reyes  
Department Supervisor

Beverly Isa Date: 2/20/96  
Beverly Isa  
QA/QC Officer

The cover letter is an integral part of this analytical report.



Client: Geocon Environmental  
Attn: Mr. Ross White

Client's Project: Rtes 605 North, 8600 - 06 - 45F

Date Received: 02/08/96  
Date Sampled: 02/07/96  
Date Extracted: 02/12/96

Extraction Method: WET (Title 22, CCR, 66261.100, Appendix II)

Lab No.	Sample I.D.	Analysis	Date Analyzed	Results	Matrix, Units	MDL	DER	Analyst Initials
9746-001	BF1 - S	EPA 7420 (Lead)	02/14/96	12	STLC Extract, mg/l	0.15	0.30	CDR/DJ
9746-002	BF1 - 1.5	EPA 7420 (Lead)	02/14/96	11	STLC Extract, mg/l	0.15	0.15	CDR/DJ
9746-003	BF2 - S	EPA 7420 (Lead)	02/14/96	43	STLC Extract, mg/l	0.15	1.5	CDR/DJ
9746-005	BF3 - S	EPA 7420 (Lead)	02/14/96	11	STLC Extract, mg/l	0.15	0.15	CDR/DJ
9746-006	BF3 - 1.5	EPA 7420 (Lead)	02/14/96	4.3	STLC Extract, mg/l	0.15	0.15	CDR/DJ
9746-009	BF5 - S	EPA 7420 (Lead)	02/14/96	6.4	STLC Extract, mg/l	0.15	0.15	CDR/DJ
9746-010	BF5 - 1.5	EPA 7420 (Lead)	02/14/96	14	STLC Extract, mg/l	0.15	0.75	CDR/DJ
9746-011	BF6 - S	EPA 7420 (Lead)	02/14/96	37	STLC Extract, mg/l	0.15	1.5	CDR/DJ
9746-013	BF7 - S	EPA 7420 (Lead)	02/14/96	8.1	STLC Extract, mg/l	0.15	0.15	CDR/DJ
9746-014	BF7 - 1.5	EPA 7420 (Lead)	02/14/96	5.8	STLC Extract, mg/l	0.15	0.15	CDR/DJ
9746-015	BF8 - S	EPA 7420 (Lead)	02/14/96	12	STLC Extract, mg/l	0.15	0.30	CDR/DJ
9746-017	BF9 - S	EPA 7420 (Lead)	02/14/96	23	STLC Extract, mg/l	0.15	0.75	CDR/DJ
9746-018	BF9 - 1.5	EPA 7420 (Lead)	02/14/96	37	STLC Extract, mg/l	0.15	1.5	CDR/DJ
9746-021	BF11 - S	EPA 7420 (Lead)	02/14/96	4.2	STLC Extract, mg/l	0.15	0.15	CDR/DJ
9746-022	BF11 - 1.5	EPA 7420 (Lead)	02/14/96	7.1	STLC Extract, mg/l	0.15	0.15	CDR/DJ
9746-023	BF12 - S	EPA 7420 (Lead)	02/14/96	2.0	STLC Extract, mg/l	0.15	0.15	CDR/DJ
9746-027	BF14 - S	EPA 7420 (Lead)	02/14/96	20	STLC Extract, mg/l	0.15	0.75	CDR/DJ

MDL = Method Detection Limit  
ND = Not Detected (Below DLR)  
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: *Cheryl De Los Reyes*  
Cheryl De Los Reyes  
Department Supervisor

Date: 2/14/96

*Beverly Janaka*  
Beverly Janaka  
QA/QC Officer

Date: 2/20/96

The cover letter is an integral part of this analytical report.









# CHAIN OF CUSTODY RECORD



1510 E. 33rd Street  
Signal Hill, CA 90807  
(310) 989-4045 • FAX (310) 989-4040

### FOR LABORATORY USE ONLY:

Batch #: 9746 D.O.# \_\_\_\_\_  
 P.O.#: \_\_\_\_\_  
 Logged By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Method of Transport  
 Walk-in  
 Courier  
 UPS  
 FED. EXP.  
 ATL

Sample Condition Upon Receipt  
 1. COOLER TEMP °C (2-6)  5. SEALED  Y  N   
 2. CHILLED  Y  N  6. # OF SPLS MATCH COC  Y  N   
 3. HEADSPACE (VOA)  Y  N  7. PRESERVED  Y  N   
 4. CONTAINER INTACT  Y  N  8. CONTR. LOT # \_\_\_\_\_

Client: Geocon Address: 6970 Flanders Dr State: CA Zip Code: 92121 TEL: 619 558 6100  
 Attn: Ross City: San Diego State: CA Zip Code: 92121 FAX: 619 558 8437  
 Project Name: Rtes DENWorth Project # 8600-06-15F Sampler: M Lane (Printed Name)  
 Relinquished by: M Lane (Signature and Printed Name) Date: 2/7/96 Time: 11A  
 Relinquished by: \_\_\_\_\_ (Signature and Printed Name) Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ (Signature and Printed Name) Date: \_\_\_\_\_ Time: \_\_\_\_\_

I hereby authorize ATL to perform the work indicated below:  
 Project Mgr / Submitter: M Lane Date: 2, 7, 96  
 Unless otherwise requested, all samples will be disposed 60 days after receipt.

LAB USE ONLY:	SHIP TO LAB: (SUB CONTRACT)	SHIP TO LAB: (SUB CONTRACT)	Signature	Special Instructions/Comments:
Batch #:	TEST:	TEST:		
Lab No.	ATL #:	ATL #:		
	DATE:	DATE:		
	CLIENT I.D.:	CLIENT I.D.:		
	Sample Description	Sample Description		
	Sample I.D.	Sample I.D.		
	Date	Date		
	Time	Time		
9746-001	BFI-S	BFI-S	<u>M Lane</u>	Special Instructions/Comments: <u>DO 6010 Total lead on all samples. Samples with total lead <del>less</del> &gt; 250 and &lt; 1000 mg/kg may need WET on approval from Geocon</u>
002	BFI-1.5	BFI-1.5		
003	BF2-S	BF2-S		
004	BF2-1.5	BF2-1.5		
005	BF3-S	BF3-S		
006	BF3-1.5	BF3-1.5		
007	BF4-S	BF4-S		
008	BF4-1.5	BF4-1.5		
009	BF5-S	BF5-S		
010	BF6-1.5	BF6-1.5		

CIRCLE APPROPRIATE MATRIX	Container(s)	TAT	Type	REMARKS
OTHER	#			
<input checked="" type="checkbox"/> SOLID • SOIL • SLUDGE	1	48	GS	
<input type="checkbox"/> OIL • SOLVENT • LIQUID	1			
<input type="checkbox"/> WATER • WASTEWATER	1			
<input type="checkbox"/> DRINKING WATER	1			
<input type="checkbox"/> AIR	1			
<input type="checkbox"/> WIFE • FILTER	1			
<input type="checkbox"/> OTHER	1			

Send Report To: Ross  
 Attn: \_\_\_\_\_  
 Co: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Circle or Add Analysis(es) Requested:  
 801010 (Halogenated Volatiles-GC)  
 809000 (Pesticides/CB-GC)  
 82440250 (Volatiles-GC)  
 8239270 (BNA-GCMS)  
 8015M TPH/TEX (COMBINATION)  
 8015M TPH/TEX (COMBINATION)  
 416.1 (TPH-IR)  
 Metals Total (CAC-80107000)

Preservatives:  
 H=HCl N=HNO<sub>3</sub> S=H<sub>2</sub>SO<sub>4</sub> C=4°C  
 Z=Zn(AC)<sub>2</sub> O=NaOH T=Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>

\* \$10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL. DISTRIBUTION: White with report, Green to organic, Yellow to inorganic, Pink to Biology, Gold to submitter.



# CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY:

No. H09254



1510 E. 33rd Street  
Signal Hill, CA 90807  
(310) 989-4045 • FAX (310) 989-4040

**Method of Transport**

- Walk-in
- Courier
- UPS
- FED. EXP.
- ATL

**Sample Condition Upon Receipt**

- CHILLED  Y  N  CONTAINER INTACT  Y  N
- SEALED  Y  N  # OF SPLS MATCH COC  Y  N
- SEAL INTACT  Y  N  \* HAZARDOUS FEE  Y  N
- PRESERVED  Y  N  HEADSPACE(VOA)  Y  N
- CONTR. LOT # \_\_\_\_\_ COOLER TEMP °C \_\_\_\_\_ (2-6)

Client: Beacon Address: \_\_\_\_\_ TEL: ( ) \_\_\_\_\_  
 Attn: \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_ FAX: ( ) \_\_\_\_\_

Project Name: Rte 605 North Project # 8000-06-45F Sampler: Mr Lane (Printed Name) M Lane (Signature)  
 Relinquished by: (Signature and Printed Name) Mr Lane Date: 2/7/96 Time: 11A  
 Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

I hereby authorize ATL to perform the work indicated below:  
 Project Mgr /Submitter: Mr Lane Date: 2/7/96  
 Unless otherwise requested, all samples will be disposed 60 days after receipt.

SHIP TO LAB: (SUB CONTRACT) \_\_\_\_\_  
 TEST: \_\_\_\_\_ ATL #: \_\_\_\_\_ DATE: \_\_\_\_\_ CLIENT I.D.: \_\_\_\_\_  
 SHIP TO LAB: (SUB CONTRACT) \_\_\_\_\_  
 TEST: \_\_\_\_\_ ATL #: \_\_\_\_\_ DATE: \_\_\_\_\_ CLIENT I.D.: \_\_\_\_\_

ITEM	LAB USE ONLY:		Sample Description	Date	Time
	Batch #:	Lab No.			
	9746-021		BF11-S	2/7	
	022		BF11-1.5		
	023		BF12-S		
	024		BF12-1.5		
	025		BF13-S		
	026		BF13-1.5		
	027		BF14-S		
	028		BF14-1.5		
	029		BF15-S		
	030		BF15-1.5		

Special Instructions/Comments: See Pg 1

Send Report To: \_\_\_\_\_  
 Attn: \_\_\_\_\_  
 Co: \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Circle or Add Analysis(es) Requested: \_\_\_\_\_  
 60180 (Halogenated Volatiles-GC)  
 60200 (Aromatic Volatiles-GC)  
 60400 (Pesticides/CB-GC)  
 62500 (BNA-GCMS)  
 8015M TPH/TEX (COMBINATION)  
 8015M TPH/D (Desal-GC)  
 4181 TPH (H)  
 Metals Total (CAC-6010/000) Lab

MATRIX: \_\_\_\_\_  
 WATER/SLURRY \_\_\_\_\_  
 GAS/AIR \_\_\_\_\_  
 WIP/FILTER \_\_\_\_\_  
 MULTIPHASE \_\_\_\_\_  
 OTHER \_\_\_\_\_

CIRCLE APPROPRIATE MATRIX

Container(s) # \_\_\_\_\_ Type \_\_\_\_\_

QA/QC: RTNE  RWQCB  WIP  NAVY  CT  OTHER  REMARKS \_\_\_\_\_

Preservatives: H=HCl N=HNO<sub>3</sub> S=H<sub>2</sub>SO<sub>4</sub> C=4°C Z=Zn(AC)<sub>2</sub> O=NaOH T=Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>

\* TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: B=Brass V=VOA L=Liter P=Pint J=Jar T=Tedlar G=Glass P=Plastic M=Metal

DISTRIBUTION: White with report, Blue with file folder, Green to organic, Yellow to inorganic, Pink to sample control, Gold to submitter.

\* \$10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

# CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY:

**Advanced Technology Laboratories**  
 1510 E. 33rd Street  
 Signal Hill, CA 90807  
 (310) 989-4045 • FAX (310) 989-4040

Batch #: 9746 D.O. # \_\_\_\_\_  
 P.O.#: \_\_\_\_\_  
 Logged By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Method of Transport  
 Walk-in  
 Courier  
 UPS  
 FED. EXP.  
 ATL

Sample Condition Upon Receipt  
 1. COOLER TEMP °C \_\_\_\_\_ (2-6) 5. SEALED Y  N   
 2. CHILLED Y  N  6. # OF SPLS MATCH COG Y  N   
 3. HEADSPACE (VOA) Y  N  7. PRESERVED Y  N   
 4. CONTAINER INTACT Y  N  8. CONTR. LOT # \_\_\_\_\_

Client: Secon Address: \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
 Attn: \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Project Name: Rte 605 North Project # 800-0645F Sampler: Mary Jane (Printed Name) \_\_\_\_\_ (Signature) \_\_\_\_\_  
 Relinquished by: (Signature and Printed Name) Mary Jane Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

I hereby authorize ATL to perform the work indicated below:  
 Project Mgr / Submitter: Mary Jane Date: 2/7/96

SHIP TO LAB: (SUB CONTRACT) \_\_\_\_\_  
 TEST: \_\_\_\_\_ ATL #: \_\_\_\_\_ DATE: \_\_\_\_\_ CLIENT I.D.: \_\_\_\_\_  
 SHIP TO LAB: (SUB CONTRACT) \_\_\_\_\_  
 TEST: \_\_\_\_\_ ATL #: \_\_\_\_\_ DATE: \_\_\_\_\_ CLIENT I.D.: \_\_\_\_\_

ITEM	LAB USE ONLY:		Sample Description	Date	Time	TAT: A= Overnight ≤ 24 hr B= Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays	Container Types: T=Tube V=VOA L=Liter P=Pin J=Jar B=Tedlar G=Glass P=Plastic M=Metal	Preservatives: H=HCl N=HNO <sub>3</sub> S=H <sub>2</sub> SO <sub>4</sub> C=4°C Z=Zn(AC) <sub>2</sub> O=NaOH T=Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>
	Batch #	Lab No.						
	9746-031		BF16-S	2/7				
	032		BF16-1.5					
	033		BF17-S					
	034		BF17-2					
	035		BF17-4.5					
	036		BF18-S					
	037		BF18-1.5					
	038		BF19-S					
	039		BF19-1.5					
	040		BF20-S					

Special Instructions/Comments: see page 1

Send Report To: \_\_\_\_\_  
 Attn: \_\_\_\_\_  
 Co: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

SHIP TO LAB: (SUB CONTRACT) \_\_\_\_\_  
 TEST: \_\_\_\_\_ ATL #: \_\_\_\_\_ DATE: \_\_\_\_\_ CLIENT I.D.: \_\_\_\_\_

# CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY:

**Advanced Technology Laboratories**  
 1510 E. 33rd Street  
 Signal Hill, CA 90807  
 (310) 989-4045 • FAX (310) 989-4040

Batch #: 9746 D.O. # \_\_\_\_\_

P.O. #: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Logged By: \_\_\_\_\_

Method of Transport  
 Walk-in  Courier  UPS  FED. EXP.  ATL

Sample Condition Upon Receipt  
 1. COOLER TEMP °C (2-6) 5. SEALED  Y  N   
 2. CHILLED  Y  N  6. # OF SPLS MATCH COC  Y  N   
 3. HEADSPACE (VOA)  Y  N  7. PRESERVED  Y  N   
 4. CONTAINER INTACT  Y  N  8. CONTR. LOT # \_\_\_\_\_

Client: Gecon Address: \_\_\_\_\_ TEL: ( ) \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_ FAX: ( ) \_\_\_\_\_

Project Name: Rte 605 North Project #: 800-06-485F Sampler: Maureen Milane (Printed Name) (Signature)  
 Received by: (Signature and Printed Name) Maureen Milane Date: 2/7/96 Time: 11A  
 Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Special Instructions/Comments: See page 1

Send Report To: \_\_\_\_\_

Attn: \_\_\_\_\_

Co: \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Circle or Add Analysis(es) Requested:  
 60/8010 (Halogenated Volatiles-GC)  
 60/8000 (Pesticides/PCB-GC)  
 62/8240/8250 (Volatiles-GC)  
 80/5M TPH/8TEX (COMBINATION)  
 80/5M TPH/8 (Presel-GC)  
 418.1 (TPH-IR)  
 Metals Total (CAC-6010/7000) (BEST TEST)

LAB USE ONLY: Batch #: Lab No.	SHIP TO LAB: (SUB CONTRACT) TEST: ATL #: DATE: CLIENT I.D.	SHIP TO LAB: (SUB CONTRACT) TEST: ATL #: DATE: CLIENT I.D.	Sample Description Sample I.D.	Date	Time	CIRCLE APPROPRIATE MATRIX		PRESERVATION		REMARKS	
						OTHER	WIRE-FILTER	AIR DRINKING WATER	WATER-WASTEWATER		Oil-Solvent-Liquid
9746-041			BF20-2	2/7							
042			BF20-4.5								
043			BF21-5								
044			BF21-1.5								
045			BF22-5								
046			BF22-1.5								

QA/QC  
 RTNE   
 RWQCB   
 WIP   
 NAVY   
 CT   
 OTHER

Preservatives:  
 H=HCl N=HNO<sub>3</sub> S=H<sub>2</sub>SO<sub>4</sub> C=4°C  
 Z=Zn(AC)<sub>2</sub> O=NaOH T=Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>

\* TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pin J=Jar B=Tedlar G=Glass P=Plastic M=Metal

DISTRIBUTION: White with report, Green to organic, Yellow to inorganic, Pink to Biology, Gold to submitter.

\* \$10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

APPENDIX D

## PLANS FOR SOIL RE-USE FOLLOWING GUIDELINES SET BY THE DTSC

### PLAN A

The soil sample(s) analyzed exhibited total lead concentrations less than the TTLC, and exhibited soluble lead concentrations less than the STLC. Therefore, assuming the soil samples analyzed are representative of the remaining area, the soil at this location is non-hazardous and can be re-used as clean fill material.

### PLAN B

The soil sample(s) analyzed exhibited total lead concentrations less than 1,575 mg/kg and hazardous soluble lead concentrations greater than the STLC. However, when re-analyzed for soluble lead by the WET with deionized water used as the extractant, the sample(s) exhibited soluble lead concentrations less than 0.5 mg/l. The impacted soil at this location can be re-used following the DTSC variance by placing the soil from within the impacted interval under at least 1 foot of clean fill material at least 5 feet above the maximum groundwater.

### PLAN C

The soil sample(s) analyzed exhibited either hazardous total lead concentrations greater than the TTLC and less than 4,150 mg/kg, or hazardous soluble lead concentrations greater than the STLC. When soil samples with soluble lead concentrations greater than the STLC were re-analyzed for soluble lead by the WET with deionized water used as the extractant, soluble lead concentrations were greater than 0.5 mg/l and less than 50 mg/l\*. The impacted soil at this location can be re-used following the DTSC variance, by placing the soil from within the impacted interval under paved areas at least 5 feet above the maximum groundwater.

### PLAN D

The soil sample(s) analyzed exhibited either total lead concentrations greater than 4,150 mg/kg, or soluble lead concentrations in the deionized water extract, greater than 50 mg/l. According to the DTSC variance, this impacted soil cannot be reused.

\* Only select soil samples exhibiting standard WET results greater than the STLC were reanalyzed by the WET with deionized water used as the extractant (WET-DI). Those soil samples with standard WET results greater than the STLC not analyzed by the WET-DI are assumed to fall within this range if analyzed by the WET-DI.

**SITE INVESTIGATION REPORT**  
**NORTHBOUND AND SOUTHBOUND**  
**ROUTE 605 BETWEEN THE ROUTE**  
**105/605 INTERCHANGE AND THE**  
**L.A./ORANGE COUNTY LINE**



#1447

**SITE INVESTIGATION REPORT**

**NORTHBOUND AND SOUTHBOUND  
ROUTE 605 BETWEEN THE ROUTE  
105/605 INTERCHANGE AND THE  
L.A./ORANGE COUNTY LINE**

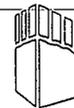
**TASK ORDER NO. 07-120721-01  
EA #120911**

**PREPARED FOR**

**DEPARTMENT OF TRANSPORTATION  
DISTRICT 7**

**LOS ANGELES, CALIFORNIA**

**MARCH 1996**



Project No. 08600-06-45G  
TO No. 07-120721-01  
March 19, 1996

Mr. Kanwal Singh  
California Department of Transportation  
District 7  
120 South Spring Street  
Los Angeles, California 90012-3606

Subject: SITE INVESTIGATION REPORT  
NORTH AND SOUTHBOUND ROUTE 605 BETWEEN THE ROUTE  
105/605 INTERCHANGE AND THE L.A./ORANGE COUNTY LINE  
TASK ORDER NO. 07-120721-01, EA 120911

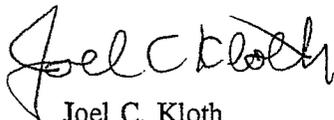
Dear Mr. Singh:

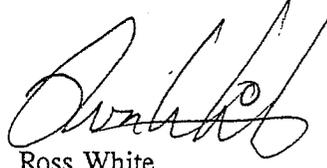
In accordance with Caltrans Contract No. 53W202 and the Task Order (TO) No. 07-120721-01, EA No. 120911, Geocon Environmental Consultants Incorporated (Geocon) has performed environmental engineering services at the subject site. The site is comprised of various locations on the north and southbound shoulders of Route 605 between the Route 105/605 interchange and the L.A./Orange County Line in Los Angeles County, California.

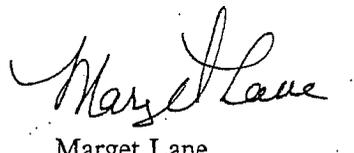
The accompanying report summarizes the services performed including the excavation of 14 hand auger soil borings, limited soil sampling, and laboratory testing. If there are any questions concerning the contents of this report, or if Geocon may be of further service, please contact the undersigned at your convenience.

Very truly yours,

GEOCON ENVIRONMENTAL CONSULTANTS INCORPORATED

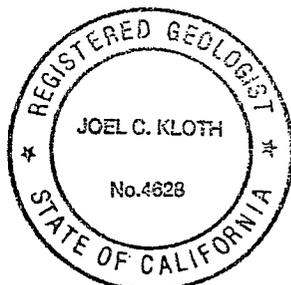
  
Joel C. Kloth  
RG 4628

  
Ross White  
Staff Env. Geologist

  
Marget Lane  
Staff Chemical Engineer

MML:RJW:JCK:mml

(5) Addressee



6970 Flanders Drive  
San Diego, CA 92121-2974  
619 558-6100  
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- A. Geocon Standard Operating Procedures
- B. Project Field Logs
- C. Laboratory Reports and Chain of Custody Documentation
- D. Plans for Soil Re-Use Following Guidelines Set by the DTSC

Task Order No. 07-120721-01  
Project No. 08600-06-45G  
March 19, 1996

## EXECUTIVE SUMMARY

The objective of the Task Order (TO) Number 07-120721-01 was to excavate hand auger soil borings, and perform laboratory analysis to evaluate the vertical extent of soils impacted with lead from vehicle emissions at the proposed truck turn-outs and conduit locations on Route 605 between the Route 105/605 interchange and the L.A./Orange County Line in Los Angeles County, California. The site length (north and southbound combined) is estimated to be approximately 15.4 miles (81,312 feet). Twenty-eight soil samples were collected at fourteen boring locations, borings BG1 through BG14, along portions of the north and southbound shoulders of Route 605. Samples were collected from each borehole at the surface, and at a depth of 1½ feet below the ground surface.

The following information summarizes the laboratory analysis results.

- The 28 soil samples collected were analyzed for total lead using EPA Test Method 6010 ICAP single element.
- Six soil samples exhibited total lead concentrations greater than 1,000 milligrams per kilogram (mg/kg); BG4-S (1,030 mg/kg), BG7-1.5 (1,100 mg/kg), BG9-1.5 (1,440 mg/kg), BG11-1.5 (2,110 mg/kg), BG12-S (1,700 mg/kg), and BG13-S (1,060 mg/kg).
- Thirteen soil samples exhibited total lead concentrations greater than 50 mg/kg and less than 1,000 mg/kg and were analyzed for soluble lead by the Waste Extraction Test [(WET) EPA Test Method 7420]. Soluble lead results for the 13 samples ranged from 1.5 to 103 milligrams per liter (mg/l). Eleven of the thirteen soil samples exhibited soluble lead concentrations greater than 5.0 mg/l, the Soluble Limit Threshold Concentration (STLC) set forth in Title 22 of the California Code of Regulations (CCR).
- Four soil samples with soluble lead concentrations greater than the STLC were analyzed by the WET utilizing deionized water for extraction (WET-DI). Soluble lead concentrations for the four samples ranged from below the laboratory detection limits to 0.33 mg/l.
- Based upon laboratory analysis, it is estimated that approximately 696 cubic yards (940 tons) of soil exhibited hazardous concentrations of total lead (> 1,000 mg/kg) and/or soluble lead (> 5.0 mg/l).

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March 19, 1996

### Recommendations

It is understood that Caltrans has negotiated with the DTSC to allow guidelines for the re-use of lead impacted soil within the State right of way. It is further understood that Caltrans has obtained a variance allowing re-use and placement of lead-impacted soil at the site.

Based upon the results of the field investigation, Geocon recommends the remedial alternative of excavation and re-use at areas containing soil concentrations of total lead less than 4,150 mg/kg and/or soluble lead concentrations less than 50.0 mg/l (by WET-DI). The following is the recommendation for re-use and placement of lead-impacted soil.

Truck Turn Outs. The following recommendations are for areas that contain soil exhibiting hazardous lead concentrations as set forth in Title 22 of the CCR. Title 22 of the CCR designates lead concentrations to be hazardous if total lead concentrations exceed the TTLC of 1,000 mg/kg or if soluble lead concentrations exceed the STLC of 5.0 mg/l (utilizing the WET).

Locations underlain by soil that exhibited soluble lead concentrations greater than 5.0 mg/l by the WET and exhibited actual or assumed soluble lead concentrations less than 0.5 mg/l by the WET-DI can be re-used following the DTSC variance by placing the impacted soil beneath at least 1 foot of clean fill material, at least 5 feet above the maximum groundwater. These locations include borings BG3 (Figure 3), BG6 (Figure 5), and BG14 (Figure 12) and are identified with "Plan B" as the recommendation for re-use of the impacted soil interval.

Note: Based on WET-DI results, soil samples exhibiting soluble lead concentrations greater than 5.0 mg/l (by the WET), not analyzed by the WET-DI are assumed to exhibit WET-DI soluble lead concentrations approximately 1/100 of the WET results if analyzed by the WET-DI.

Locations underlain by soil that exhibited hazardous total lead concentrations greater than 1,575 mg/kg and less than 4,150 mg/kg or soluble lead concentrations greater than 0.5 mg/l and less than 50 mg/l (using the WET-DI) can be re-used following the DTSC variance by placing the impacted soil beneath hard cover (i.e., asphalt/concrete), at least 5 feet above maximum groundwater (Plan C re-use designation). These locations include borings BG9 through BG13 and are identified on Figures 7 through 11 with "Plan C" as the recommendation for re-use of the impacted soil interval.

Conduit Trenches. It is understood that the data from this site investigation will be used to determine the disposition of soil excavated for conduit trenches. Based on laboratory analyses, hazardous concentrations of lead are present in soil to be excavated for these trenches. However, according to Caltrans, the soil excavated for conduit trenches may be re-used by placing the excavated soil back in the trench. Proposed conduit trenching areas are in proximity to borings BG1 and BG2 (Figure 2), BG4 and BG5 (Figure 4), and BG7 and BG8 (Figure 6).

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March 19, 1996

## SITE INVESTIGATION REPORT

### PROJECT DESCRIPTION

The project included the excavation of 14 hand auger borings along the north and southbound shoulders of Route 605 between the Route 105/605 interchange and the L.A./Orange County Line (the site) in the Los Angeles County, California. The approximate location of the site is presented on the Vicinity Map, Figure 1. The approximate boring locations are presented as Figures 2 through 12.

Twenty-eight soil samples were collected at the north and southbound shoulders of the site at predetermined locations. Fourteen boreholes were excavated to a maximum depth of approximately 2 feet below the ground surface (bgs). Soil samples were collected at the surface (i.e. less than or equal to 3-inches bgs) and at a depth of approximately 1½ feet bgs.

Soil samples obtained were analyzed for total lead by EPA Test Method 6010. Soil samples that exhibited a total lead concentration greater than 50 milligrams per kilogram (mg/kg) and less than 1,000 mg/kg were subjected to the Waste Extraction Test (WET) for soluble lead following EPA Test Method 7420. In addition, twenty percent or a minimum of four soil samples that exhibited soluble lead concentrations greater than 5.0 milligrams per liter (mg/l) were subjected to the WET for soluble lead using deionized water for extraction (WET-DI).

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Purpose and Objectives

The purpose of the environmental engineering services performed by Geocon was to estimate the vertical extent of soils impacted with lead from vehicle emissions within the Caltrans right-of-way along the north and southbound shoulders of the freeway when lead was utilized as a gasoline additive. The information obtained from the limited soil sampling and laboratory testing will be used to estimate the volume of lead impacted soil at the proposed truck turn out locations.

Scope of Work

The work requested by Caltrans, as outlined in TO 07-120721-01, has been previously outlined above. The approximate locations of the boreholes excavated by Geocon are presented on Figures 2 through 12. The soil samples collected by Geocon were relinquished to Advanced Technologies Laboratories (ATL), a state-certified hazardous waste testing laboratory, for the analysis as previously referenced.

The procedures and methods used by Geocon to complete this TO are outlined in the following

Geocon Standard Operating Procedures (SOPs):

- SOP No. 01 - Hand Augering Pre-Field Procedures
- SOP No. 11 - Hand Augering and Soil Sample Collection Procedures
- SOP No. 31 - Soil Sample Handling and Analytical Procedures
- SOP No. 41 - Reporting Procedures

The above-referenced SOPs are presented as Appendix A.

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## INVESTIGATIVE METHODS

### Task Order Meeting

A pre-work task order meeting was attended by Mr. John Landgard and Mr. Ross White of Geocon and Mr. Kanwal Singh and Mr. Ali Nili of Caltrans on January 25, 1996. Topics covered included: sampling schemes, health and safety, traffic control to be provided to Geocon workers by Caltrans, and the proposed completion schedule.

### Health and Safety Plan

In accordance with the TO, a Health and Safety Plan was prepared by Geocon. The Health and Safety Plan was provided to outline recommendations for personal protective equipment for Geocon workers in the field during the performance of the soil sampling activities. A Health and Safety Plan dated January 25, 1996, was prepared for the site and submitted to Mr. Singh for review.

### Utility Clearance

On January 30, 1996, a representative of Geocon contacted Underground Service Alert (USA) of Southern California to advise utility companies of the proposed on-site field activities. Geocon was provided with USA Ticket Numbers 257186, 257189, 257190, 257191, 257193, 257195, 257187, 257188, 257197, 257198, 257194, 257185, 257192, and 257196.

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## HAND AUGERING AND SOIL SAMPLING

### Rationale of Boring Placement

At the request of Mr. Singh, Geocon excavated 14 boreholes at areas where truck turn out construction or conduit trenching activities are proposed. These areas have been identified by Caltrans as areas that may potentially contain detectable concentrations of lead. Boring identification, sampling depth, total/soluble lead concentrations, and site conditions are summarized in Table I.

### Field Activities

A hand held 3-inch diameter stainless steel auger was advanced to an initial sample depth. Representatives of Geocon collected soil samples utilizing a stainless steel hand auger and placed each sample into a laboratory provided glass jar and sealed with a teflon lined lid. The glass jars were labeled with the sample identification, date, and project number and placed into a container for transport to ATL. The procedure was repeated at subsequent sampling depths. At the request of Mr. Singh, the boreholes were backfilled to surface grade with soil cuttings generated during the excavation activities.

### Laboratory Analytical Methods

Twenty-eight soil samples obtained were analyzed for total lead following EPA Test Method 6010. Six soil samples exhibited total lead concentrations greater than the Total Limit Threshold

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Concentration (TTLC) of 1,000 mg/kg. Thirteen soil samples exhibited detectable concentrations of lead greater than 50 mg/kg and less than 1,000 mg/kg and were analyzed for soluble lead following the WET by EPA Test Method 7420. Eleven soil samples exhibited concentrations of soluble lead greater than the Soluble Threshold Limit Concentration (STLC) of 5.0 mg/l. Four of the soil samples with soluble lead concentrations greater than 5.0 mg/l were analyzed by the WET-DI following EPA Test Method 7420.

## INVESTIGATIVE RESULTS AND FIELD OBSERVATIONS

### Field Observations

Field observations, and notes of memoranda are presented in the Project Log sheets utilized during the on-site field activities and are included in Appendix B.

### Soil Analytical Results

A summary of the analytical results of the soil samples analyzed for total and for soluble lead are presented in Table I. A reproduction of the laboratory reports and chain of custody documentation are presented as Appendix C.

Total Lead. Total lead concentrations for the 28 soil samples analyzed by EPA Test Method 6010 ranged from 6.4 mg/kg to 2,110 mg/kg. Six soil samples exhibited total lead

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concentrations greater than the TTLC with concentrations ranging from 1,030 mg/kg to 2,110 mg/kg.

Soluble Lead. Thirteen soil samples exhibited total lead concentrations greater than 50 mg/kg and less than 1,000 mg/kg and were analyzed by the WET. Soluble lead results for the 13 soil samples ranged from 1.5 to 103 mg/l. Eleven of the thirteen soil samples exhibited soluble lead concentrations greater than the STLC established by Title 22 of the California Code of Regulations (CCR).

Soluble Lead Using Deionized Water. Four soil samples with soluble lead concentrations greater than 5 mg/l were analyzed by the WET-DI. Soluble lead concentrations exhibited by the four soil samples ranged from below the laboratory detection limit to 1.4 mg/l.

#### Data Validation

Prior to submitting the soil samples to the laboratory, the chain-of-custody documentation was reviewed for accuracy and completeness. The laboratory report of the soil samples analyzed was reviewed for accuracy (i.e., units of concentration in mg/kg) and consistency with chain-of-custody documentation. The matrix-spikes and duplicates were reviewed to ensure the laboratory results are within tolerance control limits. Based upon this validation process, the data quality is adequate for the purposes of this report.

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## CONCLUSIONS

Based on laboratory results, soil samples collected at proposed truck turn-out locations exhibited total lead concentrations less than 4,150 mg/kg and known or assumed soluble lead concentrations (utilizing the WET-DI) less than 50 mg/l. Based on these total and soluble lead concentrations, Caltrans is allowed to re-use the lead impacted soil within the Caltrans right-of-way in accordance with the "Plans for Soil Re-use Following Guidelines Set by the DTSC", Appendix D.

Based on laboratory results, soil in the following proposed conduit trench areas; BG4 (Figure 4), and BG7 and BG8 (Figure 6), exhibited hazardous concentrations of total or soluble lead. However, according to Caltrans, this soil may be re-used by placing the excavated soil back in the excavation.

### Estimate of Lead Impacted Soil Volume

Based upon the laboratory results for the soil samples collected during the on-site field activities approximately 696 cubic yards (approximately 940 tons) of soil is impacted with hazardous concentrations of total lead and/or soluble lead at the proposed truck turn out areas investigated.

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March 19, 1996

## RECOMMENDATIONS

### Discussion of Remediation Options

Based upon a review of the laboratory analysis for the soil samples obtained by Geocon, three remedial alternatives are available.

- Excavation and disposal to a landfill facility.
- Excavation, fixation, and replacement of soil.
- Excavation as required for construction purposes and re-use of lead impacted soil.

Excavation and Disposal. This method would involve the excavation of the identified lead impacted soil and transportation of the soil to a permitted Class I or II landfill for proper disposal. The advantage of this method is that it could be performed in conjunction with the proposed construction activities. The disadvantage of this method is the cost to perform these activities. It is estimated that the cost for soil disposal would range from approximately \$170 to \$185 per ton. The estimated cost to perform excavation and disposal is approximately \$160,000.00 (\$170 x 940 tons) to \$174,000.00 (\$185 x 940 tons).

Excavation and Fixation. This method would involve the excavation of the impacted soil. The soil would be relocated to a staging area and mixed with a cement or asphalt additive. Prior to curing of the mixture, the soil would be placed back into the excavation as engineered fill

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March 19, 1996

material. This alternative is not recommended due to the staging area necessary and the physical constraints of the site.

Excavation and Re-use. This method would involve the excavation of soil as required for construction activities. The soil would be re-used as backfill within the project limits and placed beneath at least 1 foot of clean soil or asphalt/concrete, at least 2-feet above maximum groundwater. The advantage of this method is that the cost for Class I or II landfill disposal would be eliminated. Costs associated with this method would be minimized to the time and materials necessary for health and safety, Caltrans oversight and requirements, over-excavation, backfilling, and compaction.

#### Recommended Alternative

It is understood that Caltrans has negotiated with the DTSC to allow guidelines for the re-use of lead impacted soil within the State right of way. It is further understood that Caltrans has obtained a variance allowing re-use and placement of lead-impacted soil at the site.

Based upon the results of the field investigation, Geocon recommends the remedial alternative of excavation and re-use at areas containing soil concentrations of total lead less than 4,150 mg/kg and/or soluble lead concentrations less than 50.0 mg/l (by WET-DI). The following is the recommendation for re-use and placement of lead-impacted soil:

Task Order No. 07-120721-01  
Project No. 08600-06-45G  
March 19, 1996

Truck Turn Outs. The following recommendations are for areas that contain soil exhibiting hazardous lead concentrations as set forth in Title 22 of the CCR. Title 22 of the CCR designates lead concentrations to be hazardous if total lead concentrations exceed the TTLC of 1,000 mg/kg or if soluble lead concentrations exceed the STLC of 5.0 mg/l (utilizing the WET).

Locations underlain by soil that exhibited soluble lead concentrations greater than 5.0 mg/l by the WET and exhibited actual or assumed soluble lead concentrations less than 0.5 mg/l by the WET-DI can be re-used following the DTSC variance by placing the impacted soil beneath at least 1 foot of clean fill material, at least 5 feet above the maximum groundwater. These locations include borings BG3 (Figure 3), BG6 (Figure 5), and BG14 (Figure 12) and are identified with "Plan B" as the recommendation for re-use of the impacted soil interval.

Note: Based on WET-DI results, soil samples exhibiting soluble lead concentrations greater than 5.0 mg/l (by the WET), not analyzed by the WET-DI are assumed to exhibit WET-DI soluble lead concentrations approximately 1/100 of the WET results if analyzed by the WET-DI.

Locations underlain by soil that exhibited hazardous total lead concentrations greater than 1,575 mg/kg and less than 4,150 mg/kg or soluble lead concentrations greater than 0.5 mg/l and less than 50 mg/l (using the WET-DI) can be re-used following the DTSC variance by placing the

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March 19, 1996

impacted soil beneath hard cover (i.e., asphalt/concrete), at least 5 feet above maximum groundwater (Plan C re-use designation). These locations include borings BG9 through BG13 and are identified on Figures 7 through 11 with "Plan C" as the recommendation for re-use of the impacted soil interval.

Conduit Trenches. It is understood that the data from this site investigation will be used to determine the disposition of soil excavated for conduit trenches. Based on laboratory analyses, hazardous concentrations of lead are present in soil to be excavated for these trenches. However, according to Caltrans, the soil excavated for conduit trenches may be re-used by placing the excavated soil back in the trench. Proposed conduit trenching areas are in proximity to borings BG1 and BG2 (Figure 2), BG4 and BG5 (Figure 4), and BG7 and BG8 (Figure 6).

It is further recommended that Caltrans notify retained subcontractors performing the construction activities that detectable concentrations of lead are present at the site. Necessary health and safety measures should be taken to minimize potential exposure to lead.

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March 19, 1996

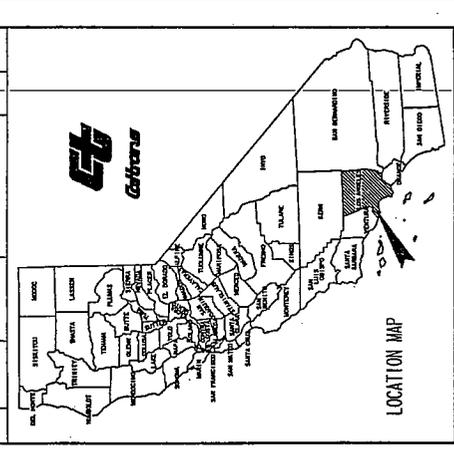
#### REPORT LIMITATIONS

This report has been prepared exclusively for Caltrans. The information obtained is only relevant for the dates of the records reviewed or as of the date of the latest site visit. The information contained herein is only valid as of the date of the report, and will require an update to reflect additional information obtained.

The Client should recognize that this report is not a comprehensive site characterization and should not be construed as such. The DTSC or Los Angeles County HMMD may require additional soil sampling. The findings and conclusions as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein.

Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of the report is implied within the intent of this report or any subsequent reports, correspondence or consultation, either expressed or implied. Geocon strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	605			



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PROJECT PLANS FOR CONSTRUCTION ON  
STATE HIGHWAY**

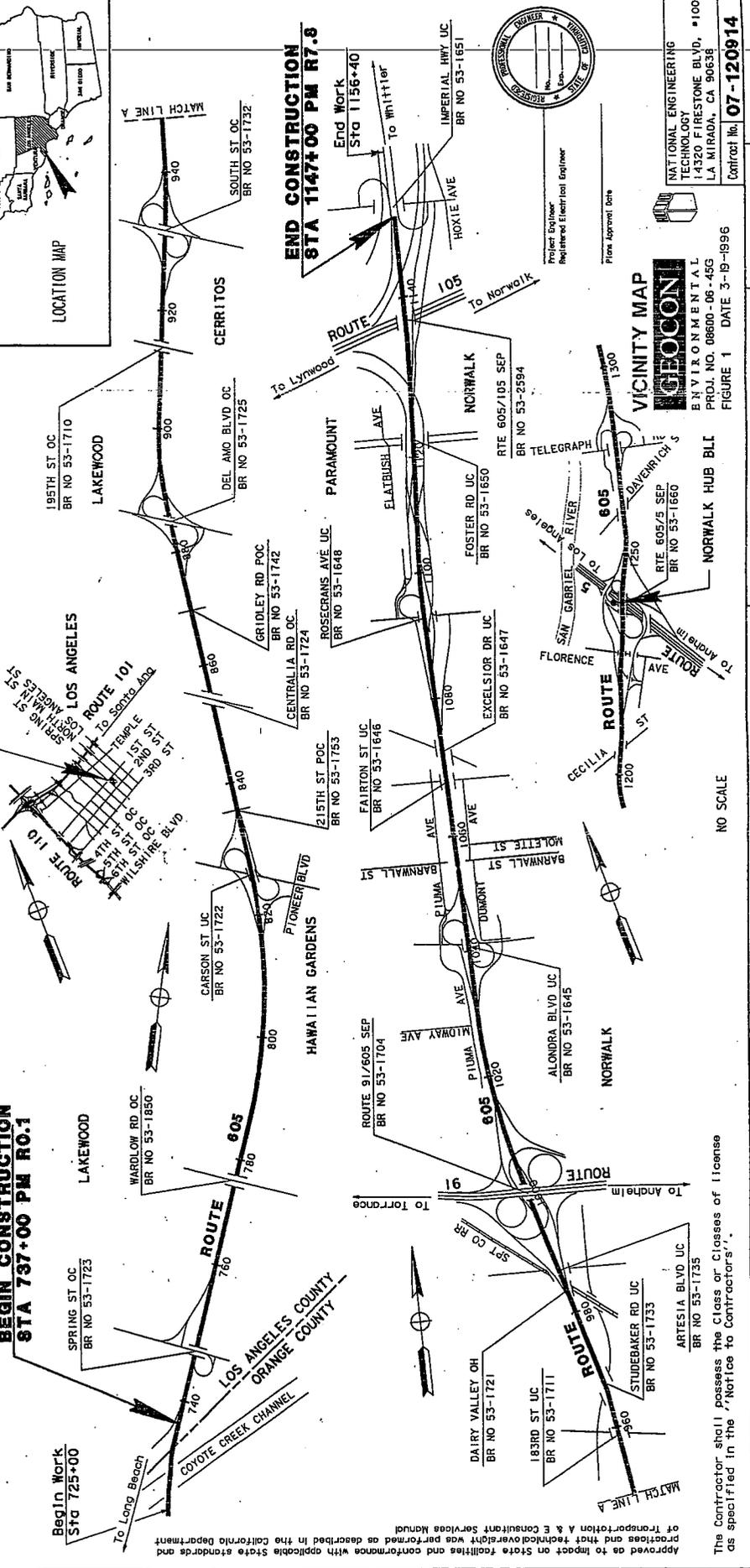
**IN LOS ANGELES COUNTY, IN LAKEWOOD, HAWAIIAN GARDENS,  
CERRITOS AND NORWALK FROM THE ORANGE COUNTY LINE  
TO THE ROUTE 105/605 SEPARATION**

To be supplemented by Standard Plans dated July, 1992

TRAFFIC MANAGEMENT CENTER (TMC)

**BEGIN CONSTRUCTION  
STA 737+00 PM R0.1**

**END CONSTRUCTION  
STA 1147+00 PM R7.3**



Project Engineer  
Registered Electrical Engineer

From approval date

**CECON**  
NATIONAL ENGINEERING  
TECHNOLOGY  
14320 FIRESTONE BLVD, #100  
LA MIRADA, CA 90636  
Contract No. **07-120914**  
FIGURE 1 DATE 3-19-1996

The Contractor shall possess the Class or Classes of License as specified in the "Notice to Contractors".

PROJECT NO.	DATE
DESIGN OVERSIGHT APPROVAL	
REGISTERED PROFESSIONAL ENGINEER	
REGISTERED PROFESSIONAL ARCHITECT	
REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT	
REGISTERED PROFESSIONAL CIVIL ENGINEER	
REGISTERED PROFESSIONAL ELECTRICAL ENGINEER	
REGISTERED PROFESSIONAL MECHANICAL ENGINEER	
REGISTERED PROFESSIONAL CHEMICAL ENGINEER	
REGISTERED PROFESSIONAL INDUSTRIAL ENGINEER	
REGISTERED PROFESSIONAL AERONAUTICAL ENGINEER	
REGISTERED PROFESSIONAL METALLURGICAL ENGINEER	
REGISTERED PROFESSIONAL NUCLEAR ENGINEER	
REGISTERED PROFESSIONAL SURVEYOR	
REGISTERED PROFESSIONAL GEOLOGICAL ENGINEER	
REGISTERED PROFESSIONAL ENVIRONMENTAL ENGINEER	
REGISTERED PROFESSIONAL AGRICULTURAL ENGINEER	
REGISTERED PROFESSIONAL FORESTRY ENGINEER	
REGISTERED PROFESSIONAL MINING ENGINEER	
REGISTERED PROFESSIONAL PETROLEUM ENGINEER	
REGISTERED PROFESSIONAL TRANSPORTATION ENGINEER	
REGISTERED PROFESSIONAL WATER RESOURCES ENGINEER	
REGISTERED PROFESSIONAL CIVIL ENGINEER (SPECIALTY)	
REGISTERED PROFESSIONAL ELECTRICAL ENGINEER (SPECIALTY)	
REGISTERED PROFESSIONAL MECHANICAL ENGINEER (SPECIALTY)	
REGISTERED PROFESSIONAL CHEMICAL ENGINEER (SPECIALTY)	
REGISTERED PROFESSIONAL INDUSTRIAL ENGINEER (SPECIALTY)	
REGISTERED PROFESSIONAL AERONAUTICAL ENGINEER (SPECIALTY)	
REGISTERED PROFESSIONAL METALLURGICAL ENGINEER (SPECIALTY)	
REGISTERED PROFESSIONAL NUCLEAR ENGINEER (SPECIALTY)	
REGISTERED PROFESSIONAL SURVEYOR (SPECIALTY)	
REGISTERED PROFESSIONAL GEOLOGICAL ENGINEER (SPECIALTY)	
REGISTERED PROFESSIONAL ENVIRONMENTAL ENGINEER (SPECIALTY)	
REGISTERED PROFESSIONAL AGRICULTURAL ENGINEER (SPECIALTY)	
REGISTERED PROFESSIONAL FORESTRY ENGINEER (SPECIALTY)	
REGISTERED PROFESSIONAL MINING ENGINEER (SPECIALTY)	
REGISTERED PROFESSIONAL PETROLEUM ENGINEER (SPECIALTY)	









**LEGEND**  
 CCTV POLE (TYPE N): N = HEIGHT OF POLE

**NOTES (THIS SHEET ONLY)**  
 1. THE ELEVATIONS SHOWN ON THIS SHEET ARE BASED ON AN ASSUMED DATUM.  
 2. CONTRACTOR TO VERIFY SITE CONDITION PRIOR TO CONSTRUCTION.  
 3. RELOCATE ALL EXISTING CONDUITS AFFECTED BY SITE CONSTRUCTION OR REMOVE AS DETERMINED BY ENGINEER.  
 4. ADJUST LOCATION OF GUARDRAIL POSTS SO THAT CCTV POLE IS NOT DIRECTLY BEHIND POST.  
 5. ADJUST 1 PULL-BOX WITHIN NEW PAVEMENT AREA TO NEW GRADE.

**BENCH MARK**  
 100 FOOT ELEVATION ASSUMED (1994).  
 BENCH MARK IS THE NORTHEAST BOLT OF CALL BOX NO 605-29.

Sample No. (Depth (ft))	Total Lead (Pb) (mg/kg)	Statistical Lead (Pb) (mg/kg)	Distance from Edge of Pavement (ft)						
BG 6- S	664	27	---	S	S	5.5	5.5	W	W
BG 6- I.S	54	1.5	---	S	S	5.5	5.5	W	W

Approximate Length of Sampling Area (ft.)	Approximate Width of Sampling Area (ft.)	Approximate Interval of Impacted Soil (ft.)	Approximate Volume of Impacted Soil (cu ft)
115	12	0.10/0.75	38

Note:  
 ft. = feet  
 yd = cubic yards

Recommendation for reuse of impacted soil interval  
**PLAN B**  
 PLACE IMPACTED SOIL BENEATH AT LEAST 1 FOOT OF CLEAN FILL MATERIAL

**LEGEND**  
 ●.....APPROX. LOCATION OF BORING

**BORING LOCATION MAP**

**GEOCON**  
 ENVIRONMENTAL  
 PROJ. NO. 08600-06-45G  
 FIGURE 5 DATE 3-19-1996

**LEGEND**  
 ●.....APPROX. LOCATION OF BORING

**BORING LOCATION MAP**

**GEOCON**  
 ENVIRONMENTAL  
 PROJ. NO. 08600-06-45G  
 FIGURE 5 DATE 3-19-1996

**LEGEND**  
 ●.....APPROX. LOCATION OF BORING

**BORING LOCATION MAP**

**GEOCON**  
 ENVIRONMENTAL  
 PROJ. NO. 08600-06-45G  
 FIGURE 5 DATE 3-19-1996

**LEGEND**  
 ●.....APPROX. LOCATION OF BORING

**BORING LOCATION MAP**

**GEOCON**  
 ENVIRONMENTAL  
 PROJ. NO. 08600-06-45G  
 FIGURE 5 DATE 3-19-1996

**LEGEND**  
 ●.....APPROX. LOCATION OF BORING

**BORING LOCATION MAP**

**GEOCON**  
 ENVIRONMENTAL  
 PROJ. NO. 08600-06-45G  
 FIGURE 5 DATE 3-19-1996



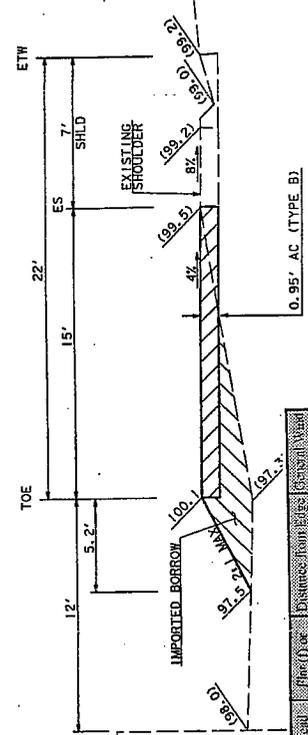
**LEGEND**

CCTV POLE (TYPE N): N = HEIGHT OF POLE

**NOTES (THIS SHEET ONLY)**

1. THE ELEVATIONS SHOWN ON THIS SHEET ARE BASED ON AN ASSUMED DATUM.
2. CONTRACTOR TO VERIFY SITE CONDITION PRIOR TO CONSTRUCTION.
3. RELOCATE ALL EXISTING CONDUITS AFFECTED BY SITE CONSTRUCTION OR REMOVE AS DETERMINED BY ENGINEER.
4. ADJUST J. PULL-BOX AND J. WATER VALVE WITHIN NEW PAVEMENT AREA TO NEW GRADE.

**BENCH MARK**  
 100 FOOT ELEVATION ASSUMED (1994).  
 BENCH MARK IS THE NORTHWEST BOLT  
 OF CALL BOX 605-4.



DIST	COUNTY	ROUTE	POST-MILES	SHEET TOTAL
07	LA	605		

REGISTERED CIVIL ENGINEER (00761)  
PLANS APPROVAL DATE

NATIONAL ENGINEERING TECHNOLOGY  
14320 FIRESTONE BLVD., SUITE 100  
LA MIRADA, CA 90638  
IN ASSOCIATION WITH  
RAYTHEON INFRASTRUCTURE SERVICES  
ABRAHAMSON AND ASSOCIATES  
WAGNER ENGINEERING AND SURVEY INC.

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07 LA 605

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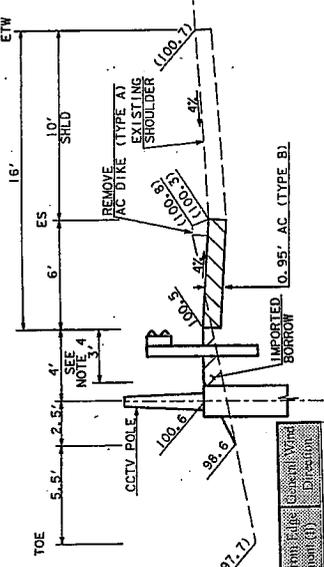
07 LA 605

REGISTERED CIVIL ENGINEER (00761)  
PLANS APPROVAL DATE

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07 LA 605



SECTION A-A  
NO SCALE

Stationing	Approximate Length of Sampling Area (ft.)	Approximate Width of Sampling Area (ft.)	Approximate Volume of Impacted Soil (cu yd)
BG 10- S	388	50	5.5
BG 10- L S	43	6	5.5

Approximate Length of Sampling Area (ft.)	Approximate Width of Sampling Area (ft.)	Approximate Volume of Impacted Soil (cu yd)
125	6	21

Note: n = feet  
cu yd = cubic yards

Recommendation for reuse of impacted soil interval

**PLAN C**  
PLACE IMPACTED SOIL BENEATH  
PAVED AREAS

**LEGEND**  
CCTV POLE (TYPE N): N = HEIGHT OF POLE

**NOTES** (THIS SHEET ONLY)  
1. THE ELEVATIONS SHOWN ON THIS SHEET ARE BASED ON AN ASSUMED DATUM.  
2. CONTRACTOR TO VERIFY SITE CONDITION PRIOR TO CONSTRUCTION.  
3. RELOCATE ALL EXISTING CONDUITS AFFECTED BY SITE CONSTRUCTION OR REMOVE AS DETERMINED BY ENGINEER.  
4. ADJUST LOCATION OF GUARDRAIL POSTS SO THAT CCTV POLE IS NOT DIRECTLY BEHIND POST.

**BENCH MARK:**  
100 FOOT ELEVATION ASSUMED (1994).  
BENCH MARK IS SPIKE IN EAST LEG OF SIGN (HAWAIIAN GARDENS).

WARDLOW RD. CC  
BR NO 55-1650 PM RD. 75

EDGE OF STRUCTURE

ROUTE 605 NB

HAWAIIAN GARDENS  
NEXT EXIT SIGN

BENCH MARK\* SEE NOTE ABOVE FOR DESCRIPTION

STA 791+69  
BEGIN MBOR (TYPE B FLARE)  
CAA (BREAKAWAY TYPE A)  
TERMINAL SECTION (TYPE C)

STA 791+69  
BEGIN AC DIKE  
JOIN EXIST

STA 791+69  
BEGIN AC DIKE  
REMOVE AC DIKE

DATE	REVISOR	BY
9/94	JSL	
03/95	JSL	

CHECKED BY	DATE
SAM	10/94

DESIGNED BY  
PAT SULLIVAN

DESIGN OVERSIGHT

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONTRACT NO. 55-1650 PM RD. 75

DATE: 12-22-23

07 LA 605

REGISTERED CIVIL ENGINEER (00761)  
PLANS APPROVAL DATE

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PLANS APPROVAL DATE

07 LA 605

07 LA 605 TOTAL PROJECT SHEETS 105 SHEETS

PLANS APPROVAL DATE

PROFESSIONAL ENGINEER



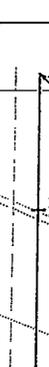
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LA MIRADA, CA 90638  
IN ASSOCIATION WITH:  
BAYTHEON INFRASTRUCTURE SERVICES  
ARRATTOLE AND ASSOCIATES  
KATZ OKITSU AND ASSOCIATES  
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07 LA 605 TOTAL PROJECT SHEETS 105 SHEETS

PLANS APPROVAL DATE

PROFESSIONAL ENGINEER



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07 LA 605 TOTAL PROJECT SHEETS 105 SHEETS

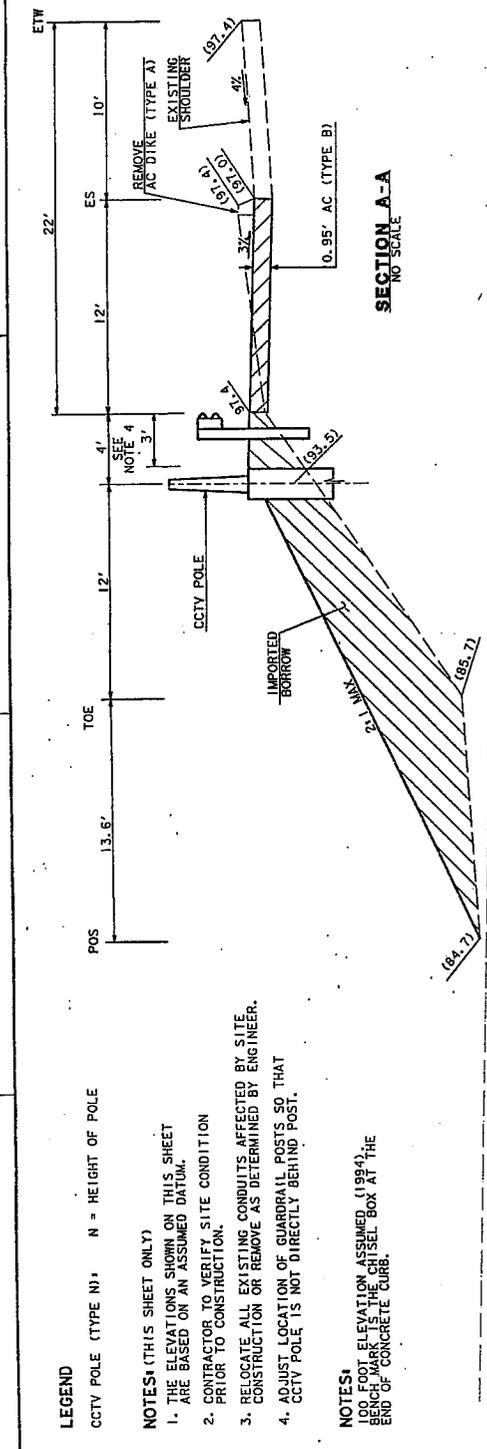
PLANS APPROVAL DATE

PROFESSIONAL ENGINEER



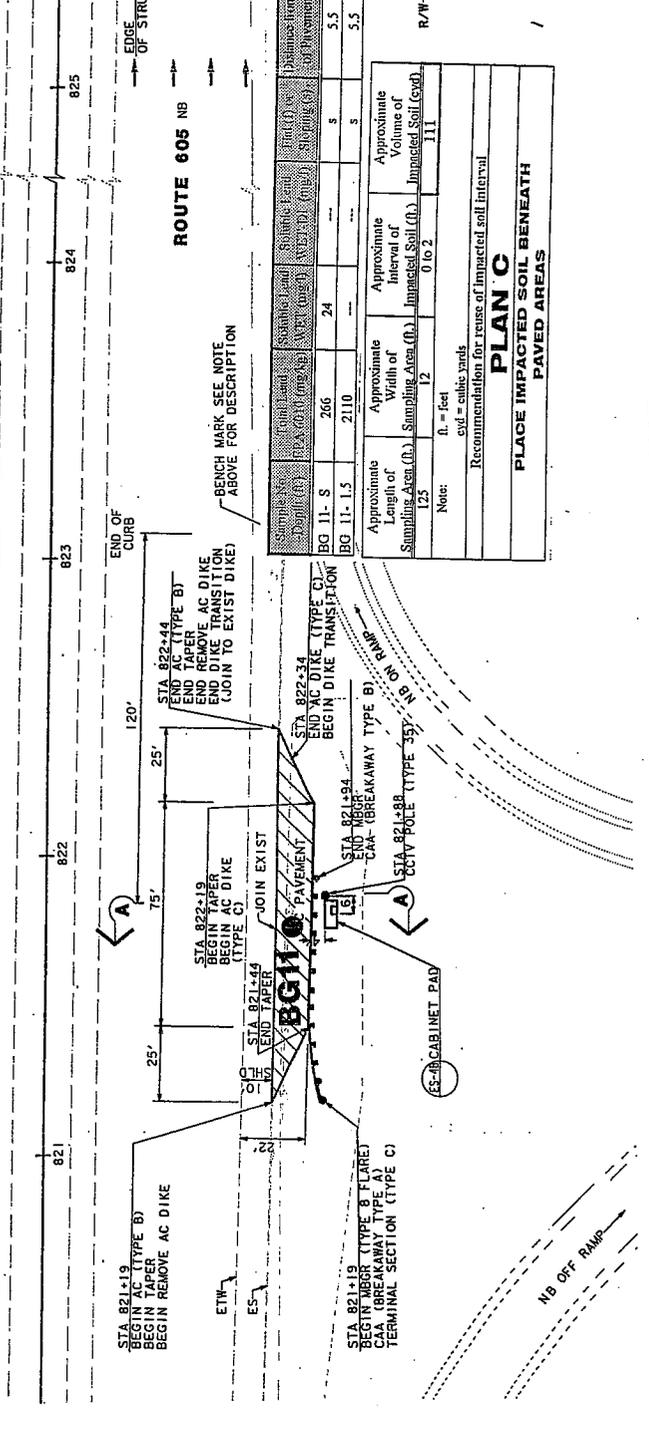
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14320 FIRESTONE BLVD., SUITE 100  
LA MIRADA, CA 90638  
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KATZ OKITSU AND ASSOCIATES  
WAGNER ENGINEERING AND SURVEY INC

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SECTION A-A  
NO SCALE

CALCULATED/DESIGNED BY	DATE	REVISOR	DATE
DESIGNED BY	9/94	REVISOR	9/94
CHECKED BY	10/94	DATE REVISED	03/95
DESIGN OVERSIGHT	PAT SULLIVAN		



STATION	APPROXIMATE LENGTH OF SAMPLING AREA (ft.)	APPROXIMATE WIDTH OF SAMPLING AREA (ft.)	APPROXIMATE INTERVAL OF IMPACTED SOIL (ft.)	APPROXIMATE VOLUME OF IMPACTED SOIL (cu yd)
BG 11-S	266	24	5	5.5
BG 11-L5	2110	5	5	5.5

PLAN C  
PLACE IMPACTED SOIL BENEATH  
PAVED AREAS

LEGEND

.....APPROX. LOCATION OF BORING

BORING LOCATION MAP



PROJ. NO. 08600-06-45G  
FIGURE 9 DATE 3-19-1996

CAMERA LOCATION S6017  
ROUTE 605, SOUTH OF CARSON ST

SCALE: 1" = 20'

L-3

EA 12091

CU 07396

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN OVERSIGHT

PAT SULLIVAN

CHECKED BY

DATE

DESIGNED BY

DATE

REVISOR

DATE

FORM 08-08-29-89 (REV. 3/80)

DIST	COUNTY	ROUTE	POST MILES	SHEET TOTALS
07	LA	605		
			TOTAL PROJECT	NO. SHEETS

REGISTERED CIVIL ENGINEER (0676)

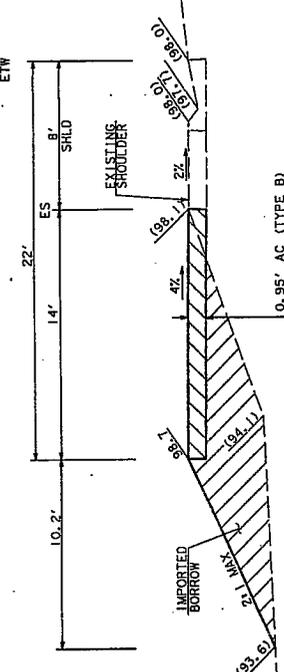
PLANS APPROVAL DATE

NATIONAL ENGINEERING TECHNOLOGY  
14320 FIRESTONE BLVD., SUITE 100  
LA MIRADA, CA 90638

IN ASSOCIATION WITH:

RAYTHEON INFRASTRUCTURE SERVICES  
ABRA TOLLES AND ASSOCIATES  
VANDERKAM AND ASSOCIATES  
WAGNER ENGINEERING AND SURVEY INC.

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**SECTION A-A**  
NO SCALE

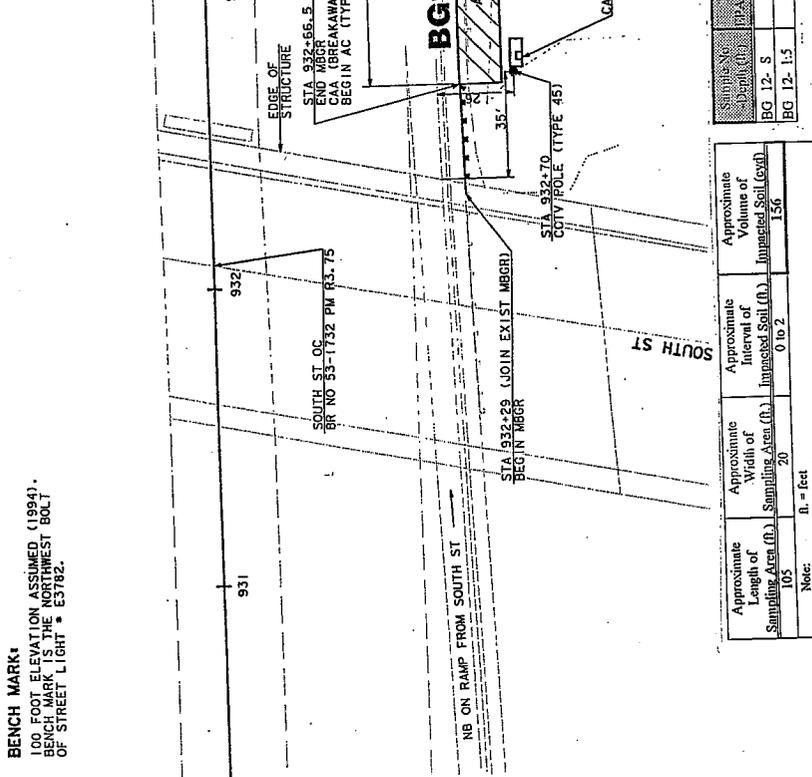
**LEGEND**

CCTV POLE (TYPE N): N = HEIGHT OF POLE

**NOTES (THIS SHEET ONLY)**

- THE ELEVATIONS SHOWN ON THIS SHEET ARE BASED ON AN ASSUMED DATUM.
- CONTRACTOR TO VERIFY SITE CONDITION PRIOR TO CONSTRUCTION.
- RELOCATE ALL EXISTING CONDUITS AFFECTED BY SITE CONSTRUCTION OR REMOVE AS DETERMINED BY ENGINEER.

**BENCH MARK:**  
100 FOOT ELEVATION ASSUMED (1994).  
BENCH MARK IS THE NORTHWEST BOLT OF STREET LIGHT # E3782.



Approximate Length of Sampling Area (ft.)	Approximate Width of Sampling Area (ft.)	Approximate Interval of Impacted Soil (ft.)	Approximate Volume of Impacted Soil (Cyd)
105	20	0 to 2	156
BG 12-S	1700	103	5.5
BG 12-S	781	1.4	5.5

Note: ft = feet  
cyd = cubic yards  
Recommendation for reuse of impacted soil interval

**PLAN C**  
PLACE IMPACTED SOIL BENEATH PAVED AREAS

**GEOCON**  
ENVIRONMENTAL  
PROJ. NO. 08600-06-46G  
FIGURE 10 DATE 3-19-1996

**LAYOUT**  
SCALE: 1" = 20'

**L-5**

EA 120911  
CU 07396

**LEGEND**

..... APPROX. LOCATION OF BORING

**BORING LOCATION MAP**

**CAMERA LOCATION S6038**  
ROUTE 605, NORTH OF SOUTH STREET

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN OVERSIGHT

PAT SULLIVAN

CHECKED BY: SAW 10/94  
DESIGNED BY: JSJ 9/94  
DATE: 03/95  
DATE REVISID: 03/95

FOR REVISION: USERNAME -> \*\*\*\*\*USER\*\*\*\*\*  
DGN FILE -> \*\*\*\*\*DGN\*\*\*\*\*

FORM DC-05-92-PF (REV. 3/78)





TABLE I  
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS

Sample No. -Depth (ft.)	Total Lead EPA 6010 (mg/kg)	Soluble Lead WET (mg/l)	Soluble Lead WET-DI (mg/l)	Flat (f) or Sloping (s)	Distance from Edge of Pavement (ft)	General Wind Direction
BG 1- S	14	---	---	s	5.5	W
BG 1- 1.5	12	---	---	s	5.5	W
BG 2- S	22	---	---	s	5.5	W
BG 2- 1.5	19	---	---	s	5.5	W
BG 3- S	149	6.7	---	s	5.5	W
BG 3- 1.5	173	7.7	---	s	5.5	W
BG 4- S	1030	---	---	s	5.5	W
BG 4- 1.5	458	41	0.33	s	5.5	W
BG 5- S	139	2.1	---	s	5.5	W
BG 5- 1.5	23	---	---	s	5.5	W
BG 6- S	664	27	---	s	5.5	W
BG 6- 1.5	54	1.5	---	s	5.5	W
BG 7- S	14	---	---	s	5.5	W
BG 7- 1.5	1100	---	---	s	5.5	W
BG 8- S	24	---	---	s	5.5	W
BG 8- 1.5	624	24	ND	s	5.5	W
BG 9- S	549	35	---	s	5.5	W
BG 9- 1.5	1440	---	---	s	5.5	W
BG 10- S	388	50	---	s	5.5	W
BG 10- 1.5	43	---	---	s	5.5	W
BG 11- S	266	24	---	s	5.5	W
BG 11- 1.5	2110	---	---	s	5.5	W
BG 12- S	1700	---	---	s	5.5	W
BG 12- 1.5	781	103	1.4	s	5.5	W
BG 13- S	1060	---	---	s	5.5	W
BG 13- 1.5	6.4	---	---	s	5.5	W
BG 14- S	78	7.6	---	s	5.5	W
BG 14- 1.5	94	6.3	0.29	s	5.5	W

NOTE: mg/kg = milligrams per kilogram

mg/l = milligrams per liter

ND = not detected above the laboratory detection limit

APPENDIX A

## APPENDIX A

### GEOCON ENVIRONMENTAL CONSULTANTS INCORPORATED STANDARD OPERATING PROCEDURE (SOP) NO. 01 HAND AUGERING PRE-WORK ACTIVITIES

#### Purpose

The purpose of this SOP is to outline pre-work activities to be performed prior to advancing hand augered borings at the project site.

#### Pre-field Activities

1. Conducted a pre-work site visit with Caltrans Contract Manager to inspect work area and excavation sites.
2. Completed Site Visit Checklist with Caltrans Contract Manager.
3. Review proposed borehole locations with Mr. Kanwal Singh as outlined in the Site Plans provided by Caltrans.
4. Record borehole locations on base map and mark excavation locations.
5. Reviewed information and site maps provided by Caltrans.
6. Submitted a Health and Safety Plan to Caltrans Contract Manager for review and approval.
7. Obtained Notice to Proceed from Caltrans Contract manager, countersign and return to Caltrans.
8. Boring permits are not required from environmental agencies for this work.
9. Provided 72 hour notification to Underground Service Alert prior to job site mobilization.
10. Provide notification to Advanced Technology Laboratories.

## APPENDIX A

### GEOCON ENVIRONMENTAL CONSULTANTS INCORPORATED STANDARD OPERATING PROCEDURE (SOP) NO. 11 HAND AUGERING AND SOIL SAMPLE COLLECTION

#### Purpose

The purpose of this SOP is to outline procedures and methods to be used to advance hand augers and collect soil samples for chemical analyses.

#### Hand Augering and Soil Sample Collection Procedures

1. Initiated coring using a hand held 3-inch diameter stainless steel auger.
2. Advanced borings to initial sample depth of less than or equal to 1-inch below the ground surface (bgs).
3. Collected relatively undisturbed soil samples from the hand auger and place the soil samples into glass jars supplied by the laboratory.
4. Repeated procedure and collected soil samples at depths as specified in Task Order No. 07-120721-01.
5. At the request of the Caltrans project manager, backfilled the boreholes to surface grade with soil cuttings generated.
6. Cleansed and rinsed sampling equipment prior to the collection of each soil sample by washing the equipment with a trisodium phosphate solution followed by subsequent tap water and deionized water rinses.

## APPENDIX A

### GEOCON ENVIRONMENTAL CONSULTANTS INCORPORATED STANDARD OPERATING PROCEDURE (SOP) NO. 31 SOIL SAMPLE HANDLING AND ANALYTICAL PROCEDURES

#### Purpose

The purpose of this SOP is to outline procedures and methods to be used to package and transport soil samples to an analytical laboratory.

#### Soil Sample Handling and Analytical Procedures

1. Soil samples collected from below the ground surface will be retrieved using a stainless steel spade from the hand auger.
2. After extracting the sample from the auger/trowel, the soil sample will be placed in laboratory supplied glass containers with teflon lined lids.
3. Sample labels will be placed on the outside of the jar to indicate the job name, date, sample number and name of person performing sampling.
4. Each prepared sample jar will be placed in into a cooler for transport to Advanced Technology Laboratory. Blue ice is not required to preserve soil samples.

APPENDIX A

**GEOCON ENVIRONMENTAL CONSULTANTS INCORPORATED  
STANDARD OPERATING PROCEDURE (SOP) NO. 41  
REPORTING PROCEDURES**

Purpose

The purpose of this SOP is to outline the reporting procedures to be implemented to prepare the Site Assessment report.

Reporting Procedures

Reporting procedures will be performed in accordance with contract specifications as outlined in Caltrans Contract 53W202 for Site Assessment reports and the requirements of Caltrans as outlined in Task Order No. 07-120721-01.

APPENDIX B

Date: 2-7-96

Page 1 of 1

PROJECT NAME: Rte 605 South

GEC PROJECT MANAGER: Ross White

CALTRANS ONSITE REF:

FIELD ACTIVITY: Auger, sample

BID ITEM NO: 33, 51 | BID ITEM UNITS: 28, 28

SUBCONTRACTOR:

BID ITEM UNITS COMP. THIS DATE:

Briefly describe field activities (i.e. soil sampling collection, continuous coring, casing installation, etc.) that verify the number of bid items completed this date.

Mobilizing to site from 605 North - Commence sampling at Foster Rd / Route 605 / Route 105

Demobilizing to inventory samples at 2:30 pm

B.I. 33 28 feet

B.I. 51 28 samples

PREPARED BY:

mmf

APPROVED BY:

Small text at bottom right corner

APPENDIX C

 *Advanced Technology*  
*Laboratories*

February 12, 1996

ELAP No.: 1838

Geocon Environmental  
6970 Flanders Drive  
San Diego, CA 92121

ATTN: Mr. Ross White

Client's Project: Rte 605 South, 8600 - 06 - 45G  
Lab No.: 9747-001/028

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 - 4045 if I can be of further assistance to your company.

Sincerely,



Edgar P. Caballero  
Laboratory Director  
EPC/cb

Enclosures

This cover letter is an integral part of this analytical report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purpose without authorization is prohibited.

Client: Geocon Environmental  
Attn: Mr. Ross White

Client's Project: Rte 605 South, 8600 - 06 - 45G

Date Received: 02/08/96  
Date Sampled: 02/07/96  
Date Digested: 02/12/96  
Digestion Method: EPA 3050

Lab No.	Sample ID	Analysis	Date Analyzed	Results	Matrix, Units	MDL	DLR	Analyst
9747-001	BG1 - S	EPA 6010 (Lead)	02/12/96	14	Soil, mg/kg	5.0	5.0	CDR/OL
9747-002	BG1 - 1.5	EPA 6010 (Lead)	02/12/96	12	Soil, mg/kg	5.0	5.0	CDR/OL
9747-003	BG2 - S	EPA 6010 (Lead)	02/12/96	22	Soil, mg/kg	5.0	5.0	CDR/OL
9747-004	BG2 - 1.5	EPA 6010 (Lead)	02/12/96	19	Soil, mg/kg	5.0	5.0	CDR/OL
9747-005	BG3 - S	EPA 6010 (Lead)	02/12/96	149	Soil, mg/kg	5.0	5.0	CDR/OL
9747-006	BG3 - 1.5	EPA 6010 (Lead)	02/12/96	173	Soil, mg/kg	5.0	5.0	CDR/OL
9747-007	BG4 - S	EPA 6010 (Lead)	02/12/96	1030	Soil, mg/kg	5.0	5.0	CDR/OL
9747-008	BG4 - 1.5	EPA 6010 (Lead)	02/12/96	458	Soil, mg/kg	5.0	5.0	CDR/OL
9747-009	BG5 - S	EPA 6010 (Lead)	02/12/96	139	Soil, mg/kg	5.0	5.0	CDR/OL
9747-010	BG5 - 1.5	EPA 6010 (Lead)	02/12/96	23	Soil, mg/kg	5.0	5.0	CDR/OL
9747-011	BG6 - S	EPA 6010 (Lead)	02/12/96	664	Soil, mg/kg	5.0	5.0	CDR/OL
9747-012	BG6 - 1.5	EPA 6010 (Lead)	02/12/96	54	Soil, mg/kg	5.0	5.0	CDR/OL
9747-013	BG7 - S	EPA 6010 (Lead)	02/12/96	14	Soil, mg/kg	5.0	5.0	CDR/OL
9747-014	BG7 - 1.5	EPA 6010 (Lead)	02/12/96	1100	Soil, mg/kg	5.0	5.0	CDR/OL
9747-015	BG8 - S	EPA 6010 (Lead)	02/12/96	24	Soil, mg/kg	5.0	5.0	CDR/OL
9747-016	BG8 - 1.5	EPA 6010 (Lead)	02/12/96	642	Soil, mg/kg	5.0	5.0	CDR/OL
9747-017	BG9 - S	EPA 6010 (Lead)	02/12/96	549	Soil, mg/kg	5.0	5.0	CDR/OL

MDL = Method Detection Limit  
ND = Not Detected (Below DLR)  
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By:

*Cheryl De Los Reyes*  
Cheryl De Los Reyes  
Department Supervisor

Date: 2/12/96

*Beverly Isaacs*  
Beverly Isaacs  
QA/QC Officer

Date: 2/20/96

The cover letter is an integral part of this analytical report.

Client: Geocon Environmental  
Attn: Mr. Ross White

Client's Project: Rte 605 South, 8600 - 06 - 45G

Date Received: 02/08/96

Date Sampled: 02/07/96

Date Digested: 02/12/96

Digestion Method: EPA 3050

Lab No.	Sample I.D.	Analysis	Date Analyzed	Results	Matrix, Units	MDL	DLR	Analyst
9747-018	BG9 - 1.5	EPA 6010 (Lead)	02/12/96	1440	Soil, mg/kg	5.0	5.0	CDR/OL
9747-019	BG10 - S	EPA 6010 (Lead)	02/12/96	388	Soil, mg/kg	5.0	5.0	CDR/OL
9747-020	BG10 - 1.5	EPA 6010 (Lead)	02/12/96	43	Soil, mg/kg	5.0	5.0	CDR/OL
9747-021	BG11 - S	EPA 6010 (Lead)	02/12/96	266	Soil, mg/kg	5.0	5.0	CDR/OL
9747-022	BG11 - 1.5	EPA 6010 (Lead)	02/12/96	2110	Soil, mg/kg	5.0	5.0	CDR/OL
9747-023	BG12 - S	EPA 6010 (Lead)	02/12/96	1700	Soil, mg/kg	5.0	5.0	CDR/OL
9747-024	BG12 - 1.5	EPA 6010 (Lead)	02/12/96	781	Soil, mg/kg	5.0	5.0	CDR/OL
9747-025	BG13 - S	EPA 6010 (Lead)	02/12/96	1060	Soil, mg/kg	5.0	5.0	CDR/OL
9747-026	BG13 - 1.5	EPA 6010 (Lead)	02/12/96	6.4	Soil, mg/kg	5.0	5.0	CDR/OL
9747-027	BG14 - S	EPA 6010 (Lead)	02/12/96	78	Soil, mg/kg	5.0	5.0	CDR/OL
9747-028	BG14 - 1.5	EPA 6010 (Lead)	02/12/96	94	Soil, mg/kg	5.0	5.0	CDR/OL

MDL = Method Detection Limit  
ND = Not Detected (Below DLR)  
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: *Cheryl De Los Reyes* Date: 2/12/96  
Cheryl De Los Reyes  
Department Supervisor

*Beverly Isa* Date: 2/20/96  
Beverly Isa  
QA/QC Officer

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report

Method: EPA 6010 (Lead)  
 Analyst: CDR/OIL  
 Data File: ICP 60212 - 1  
 QA File: 6041 - 3

Date Analyzed: 02/12/96  
 Date Digested: 02/10/96  
 Sample ID: See below  
 Matrix: Soil

SAMPLE ID	UNITS	LCS Conc	LCS Res	% Rec	METH BLANK	SPL CONC	SPL DUP	% Dev	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% REC Limit	RPD	RPD Limit	MDL
9743 - 010	mg/kg	5.0	5.1	102	ND	5.8	ND	**	250	209	210	81	82	54 - 124	0	24	5.0
9743 - 020	mg/kg	5.0	5.4	108	ND	395	371	6	250	589	600	78	82	54 - 124	6	24	5.0
9743 - 030 *	mg/kg	5.0	5.2	104	ND	368	385	5	250	691	415	129	19	54 - 124	149	24	5.0
9743 - 036	mg/kg	5.0	5.3	106	ND	31	27	14	250	213	243	73	85	54 - 124	15	24	5.0
9747 - 010	mg/kg	5.0	5.3	106	ND	23	13	56	250	232	232	84	84	54 - 124	0	24	5.0
9747 - 020 *	mg/kg	5.0	5.3	106	ND	43	100	80	250	413	337	148	118	54 - 124	23	24	5.0
9747 - 028 *	mg/kg	5.0	5.2	104	ND	94	104	10	250	318	207	90	45	54 - 124	66	24	5.0
9742 - 010 *	mg/kg	5.0	5.1	102	ND	95	25	117	250	291	242	78	59	54 - 124	28	24	5.0
9742 - 020 *	mg/kg	5.0	5.0	100	ND	1180	1540	26	250	1670	1710	196	212	54 - 124	8	24	5.0
9745 - 010	mg/kg	5.0	5.4	108	ND	ND	15	**	250	219	231	88	92	54 - 124	5	24	5.0
9745 - 020	mg/kg	5.0	5.0	100	ND	ND	ND	**	250	202	208	81	83	54 - 124	3	24	5.0

\* Spike recoveries and RPD not within acceptance limits due to sample non homogeneity.  
 \*\* Percent deviation not calculated; results near/ at detection limit.

Approved by: *Cheryl de la Cruz*  
 Cheryl De los Reyes  
 Inorganics Supervisor

Date: 2/12/96

Client: Geocon Environmental  
Attn: Mr. Ross White

Client's Project: Rte 605 South, 8600 - 06 - 45G

Date Received: 02/08/96

Date Sampled: 02/07/96

Date Extracted: 02/12/96

Extraction Method: WET (Title 22, CCR, 66261.100, Appendix II)

Lab No.	Sample I.D.	Analysis	Date Analyzed	Results	Matrix, Units	MDL	DLR	Analyst Initials
9747-005	BG3 - S	EPA 7420 (Lead)	02/14/96	6.7	STLC Extract, mg/l	0.15	0.15	CDR/DJ
9747-006	BG3 - 1.5	EPA 7420 (Lead)	02/14/96	7.7	STLC Extract, mg/l	0.15	0.15	CDR/DJ
9747-008	BG4 - 1.5	EPA 7420 (Lead)	02/14/96	41	STLC Extract, mg/l	0.15	1.5	CDR/DJ
9747-009	BG5 - S	EPA 7420 (Lead)	02/14/96	2.1	STLC Extract, mg/l	0.15	0.15	CDR/DJ
9747-011	BG6 - S	EPA 7420 (Lead)	02/14/96	27	STLC Extract, mg/l	0.15	1.5	CDR/DJ
9747-012	BG6 - 1.5	EPA 7420 (Lead)	02/14/96	1.5	STLC Extract, mg/l	0.15	0.15	CDR/DJ
9747-016	BG8 - 1.5	EPA 7420 (Lead)	02/14/96	24	STLC Extract, mg/l	0.15	0.75	CDR/DJ
9747-017	BG9 - S	EPA 7420 (Lead)	02/14/96	35	STLC Extract, mg/l	0.15	1.5	CDR/DJ
9747-019	BG10 - S	EPA 7420 (Lead)	02/14/96	50	STLC Extract, mg/l	0.15	3.0	CDR/DJ
9747-021	BG11 - S	EPA 7420 (Lead)	02/14/96	24	STLC Extract, mg/l	0.15	1.5	CDR/DJ
9747-024	BG12 - 1.5	EPA 7420 (Lead)	02/14/96	103	STLC Extract, mg/l	0.15	3.0	CDR/DJ
9747-027	BG14 - S	EPA 7420 (Lead)	02/14/96	7.6	STLC Extract, mg/l	0.15	0.15	CDR/DJ
9747-028	BG14 - 1.5	EPA 7420 (Lead)	02/14/96	6.3	STLC Extract, mg/l	0.15	0.15	CDR/DJ

MDL = Method Detection Limit  
ND = Not Detected (Below DLR)  
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: *Cheryl De Los Reyes*  
Cheryl De Los Reyes  
Department Supervisor

Date: 2/14/96

*Beverly Tanaka*  
Beverly Tanaka  
QA/QC Officer

Date: 2/20/96

The cover letter is an integral part of this analytical report.







# CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY: **No. H092774**



1510 E. 33rd Street  
Signal Hill, CA 90807  
(310) 989-4045 • FAX (310) 989-4040

Batch #: 9747 D.O.# \_\_\_\_\_  
 P.O.#: \_\_\_\_\_  
 Logged By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Method of Transport  
 Walk-in  Courrier  UPS  FED. EXP.  ATL

Sample Condition Upon Receipt  
 CHILLED  SEALED  SEAL INTACT  PRESERVED  CONTAINER INTACT  # OF SPLS MATCH COC  \* HAZARDOUS FEE  HEADSPACE(VOA)  COOLER TEMP °C (2-6)

Client: Geacan Address: 6970 Flanders Dr TEL: 619 5586600  
 Attn: Bross White City: San Diego State: CA Zip Code: 92124 FAX: 619 5588437  
 Project Name: Rte 605 south Project #: 8600-06-456 Sampler: M. Lane  
 Relinquished by: (Signature and Printed Name) M. Lane Date: 2/7/96 Time: 11:00 AM  
 Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

I hereby authorize ATL to perform the work indicated below:  
 Project Mgr./Submitter: M. Lane Date: 2/7/96  
 Signature: M. Lane  
 Special Instructions/Comments: DO GO TO TOTAL CADON all samples. Samples with total lead > 50 and < 1000 mg/kg may need the WET upon approval from Geacan

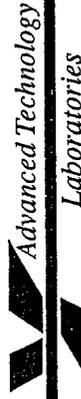
LAB USE ONLY: Batch #: Lab No.	SHIP TO LAB: (SUB CONTRACT) TEST: ATL #: DATE: CLIENT I.D.	Sample Description Sample I.D.	Date Time	CIRCLE APPROPRIATE MATRIX							Q.A./Q.C. RTNE <input type="checkbox"/> RWQCB <input type="checkbox"/> WIP <input type="checkbox"/> NAVY <input type="checkbox"/> CT <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>	REMARKS	
				SOLID	LIQUID	GAS/AIR	WIP/FILTER	MULTI-PHASE	OTHER	CONTAINER(S) #			TYPE
9747-001		BG1-1.5	2/7								48M		
002		BG1-1.5											
003		BG2-1.5											
004		BG2-1.5											
005		BG3-1.5											
006		BG3-1.5											
007		BG4-1.5											
008		BG4-1.5											
009		BG5-1.5											
010		BG5-1.5											

Send Report To: \_\_\_\_\_  
 Attn: Bross White  
 Co: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Circle or Add Analysis(es) Requested: \_\_\_\_\_  
 60100 (Halogenated Volatiles-GC)  
 60200 (Aromatic Volatiles-GC)  
 62420 (Pastorizer-PCB-GC)  
 62520 (Volatiles-GC)  
 6015M TPH/G/TEX (COMBINATION)  
 6015M TPH (H)  
 418.1 (TPH-H)  
 Metals - Total (CAC-6010/7000)  
 (WET 2/12/96)

Preservatives:  
 H=HCl N=HNO<sub>3</sub> S=H<sub>2</sub>SO<sub>4</sub> C=4°C  
 Z=Zn(AC)<sub>2</sub> O=NaOH T=NazS<sub>2</sub>O<sub>3</sub>  
 M=Metal P=Plastic G=Glass J=Jar T=Tedlar L=Liter P=Pint V=VOA L=Liter  
 Container Types: B=Brass V=VOA L=Liter P=Pint J=Jar T=Tedlar G=Glass P=Plastic M=Metal  
 \* TAT starts 8 a.m. following day if samples received after 3 p.m.  
 Routine Workdays E=7 Urgent Workdays D=3 Critical Workdays C=2 Emergency Next workday B=Next overnight ≤ 24 hr  
 TAT: A=Overnight ≤ 24 hr B=Next workday C=2 Critical Workdays D=3 Urgent Workdays E=7 Routine Workdays  
 Sample Archive/Disposal:  
 Laboratory Standard  
 Other  
 Return To: \_\_\_\_\_  
 \* \$10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.  
 DISTRIBUTION: White with report, Blue with file folder, Green to organic, Yellow to inorganic, Pink to sample control, Gold to submitter.



# CHAIN OF CUSTODY RECORD



1510 E. 33rd Street  
Signal Hill, CA 90807  
(310) 989-4045 • FAX (310) 989-4040

### FOR LABORATORY USE ONLY:

Method of Transport  
 Walk-in  
 Courier  
 UPS  
 FED. EXP.  
 ATL

Sample Condition Upon Receipt  
 1. COOLER TEMP °C (2-6) 5. SEALED Y  N   
 2. CHILLED Y  N  6. # OF SPLS MATCH COC Y  N   
 3. HEADSPACE (VOA) Y  N  7. PRESERVED Y  N   
 4. CONTAINER INTACT Y  N  8. CONTR. LOT # \_\_\_\_\_

Client: Gecon Address: \_\_\_\_\_ TEL: ( ) \_\_\_\_\_  
 Attn: \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_ FAX: ( ) \_\_\_\_\_

Project Name: \_\_\_\_\_ Project #: 8600-06-455 Sampler: M Lane (Signature)  
 Received by: (Signature and Printed Name) M Lane Date: 2/7/96 Time: 100A  
 Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: (Signature and Printed Name) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

I hereby authorize ATL to perform the work indicated below:  
 Project Mgr /Submitter: \_\_\_\_\_  
 M. Lane Date: 2.7.96  
 Signature \_\_\_\_\_  
 Special Instructions/Comments: See page 1

LAB USE ONLY: Batch #: Lab No.	Sample Description	Sample I.D.	Date	Time	SHIP TO LAB: (SUB CONTRACT)		SHIP TO LAB: (SUB CONTRACT)		CIRCLE APPROPRIATE MATRIX	CONTAINER(S)	TAT #	Type	REMARKS
					TEST:	ATL #:	DATE:	CLIENT I.D.:					
9747-021	BG-11-S												
022	BG-11-1.5												
023	BG-12-S												
024	BG-12-1.5												
025	BG-13-S												
026	BG-13-1.5												
027	BG-14-S												
028	BG-14-1.5												

Send Report To: Ross  
 Attn: \_\_\_\_\_  
 Co: \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Circle or Add Analysts(es) Requested:  
 601801 (Halogenated Vials-GC)  
 602020/TEX (Aromatic Vials-GC)  
 604080 (Residues/CB-GC)  
 6250270 (Vials-GCMS)  
 6015M TPH/TEX (COMBINATION)  
 6015M TPH/D (Diesel-GC)  
 4181 (TPH-IR)  
 Metals-Total (CAC-6017/000)  
 WASTE FLUID

QA/QC  
 RTNE   
 RWQCB   
 WIP   
 NAVY   
 CT   
 OTHER

LAB USE ONLY:  
 TAT: A= Overnight ≤ 24 hr B= Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays  
 Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal  
 Sample Archive/Disposal:  
 Laboratory Standard  
 Other  
 Return To: \_\_\_\_\_  
 Preservatives:  
 H=HCl N=HNO<sub>3</sub> S=H<sub>2</sub>SO<sub>4</sub> C=4°C  
 Z=Zn(AC)<sub>2</sub> O=NaOH T=Nas<sub>2</sub>O<sub>3</sub>

\* \$10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL. DISTRIBUTION: White with report, Green to organic, Yellow to inorganic, Pink to Biology, Gold to submitter.

APPENDIX D

## PLANS FOR SOIL RE-USE FOLLOWING GUIDELINES SET BY THE DTSC

### PLAN A

The soil sample(s) analyzed exhibited total lead concentrations less than the TTLC, and exhibited soluble lead concentrations less than the STLC. Therefore, assuming the soil samples analyzed are representative of the remaining area, the soil at this location is non-hazardous and can be re-used as clean fill material.

### PLAN B

The soil sample(s) analyzed exhibited total lead concentrations less than 1,575 mg/kg and hazardous soluble lead concentrations greater than the STLC. However, when re-analyzed for soluble lead by the WET with deionized water used as the extractant, the sample(s) exhibited soluble lead concentrations less than 0.5 mg/l. The impacted soil at this location can be re-used following the DTSC variance by placing the soil from within the impacted interval under at least 1 foot of clean fill material at least 5 feet above the maximum groundwater.

### PLAN C

The soil sample(s) analyzed exhibited either hazardous total lead concentrations greater than the TTLC and less than 4,150 mg/kg, or hazardous soluble lead concentrations greater than the STLC. When soil samples with soluble lead concentrations greater than the STLC were re-analyzed for soluble lead by the WET with deionized water used as the extractant, soluble lead concentrations were greater than 0.5 mg/l and less than 50 mg/l\*. The impacted soil at this location can be re-used following the DTSC variance, by placing the soil from within the impacted interval under paved areas at least 5 feet above the maximum groundwater.

### PLAN D

The soil sample(s) analyzed exhibited either total lead concentrations greater than 4,150 mg/kg, or soluble lead concentrations in the deionized water extract, greater than 50 mg/l. According to the DTSC variance, this impacted soil cannot be reused.

\* Only select soil samples exhibiting standard WET results greater than the STLC were reanalyzed by the WET with deionized water used as the extractant (WET-DI). Those soil samples with standard WET results greater than the STLC not analyzed by the WET-DI are assumed to fall within this range if analyzed by the WET-DI.