FOR CONTRACT NO.: 03-318001

INFORMATION HANDOUT

MATERIALS INFORMATION

Foundation Investigation for Resident Mechanic Facility at Nevada City MS
California Laboratory Services Dated 10/24/2008

ROUTE: 03-Nev-L5717

Memorandum *Flex your power!*
Be energy efficient!

To: MR. SEAN SAMUEL
Branch Chief – Structure Design Section 2
Office of Transportation Architecture
Structure Design Service & Earthquake Engineering
Division of Engineering Services

Attention: Mr. Joseph Camilleri

Date: July 26, 2007

File: 03-NEV-L5171
Nevada City MS
EA: 03-318001

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

Subject: Foundation Investigation for Resident Mechanic Facility at Nevada City MS

1. Introduction

This report is provided in response to your December 4, 2006 Geotechnical Service Request Memo and the Preliminary Design Plans dated on 03/17/03 for this project.

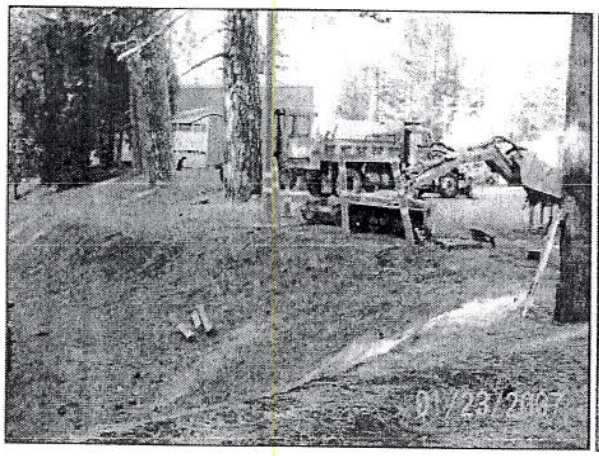
The scope of this project is to construct a new Resident Mechanic Facility at Nevada City Maintenance Station, near Route 20 in Nevada City, Nevada County, California. A vicinity map (**Plate 1**) showing the project location is attached. It is our understanding that the proposed Resident Mechanic Facility building will be a single story structure with an area of 5500 square feet with concrete masonry walls as shown in the plans prepared by the Office of Transportation Architecture. The roof of the proposed structure will have pre-fabricated I joists with a plywood deck. This building will have continuous and isolated concrete footings requiring a minimum of 2000 and 3000 pounds per square foot allowable bearing pressure, respectively. The following information has been requested by your Office:

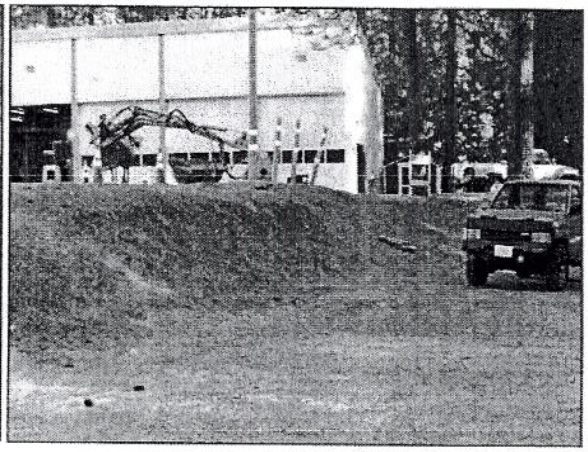
1. Maximum allowable bearing pressure
2. Maximum allowable active and passive lateral pressure
3. Moisture barrier requirements
4. Ground water elevation
5. The seismic design criteria
6. Frost depth elevation

7. Corrosive soil consideration
8. Liquefaction possibility

2. Site Visits

A site visit for this project was performed on January 23, 2007. The project site is located within the Caltrans Maintenance Station at Nevada City near Highway 20, approximately PM 15.3. The existing structures within this maintenance yard limits consist of an equipment building, a vehicle wash building, a sand storage building, warehouses, and the employee offices. The cut slope just near the southeast corner of the footprint of the proposed Resident Mechanic Building was at a slope ratio of 1.5H:1V or flatter and it appeared to be performing well with no indications of instability. Generally, a large number of trees up to 3 feet in diameter were observed in the area surrounding the facility, and some of those trees will be removed prior to construction of the new Resident Mechanic Building. Also, there are overhead power lines and underground utilities, such as gas lines, water lines, and communication cables throughout the project area. Most of the flat ground in the facility is paved asphalt concrete (AC) or Portland Cement Concrete (PCC). The surface soils observed appear comprised of soft brown to reddish brown silty clay with fine to coarse gravels. See photos below for project site features.





3. Subsurface Conditions

Our subsurface exploration program was performed on February 21, 2007. Two borings, B-1-07 and B-2-07, were accomplished with a Mobile Drill B-47 trailer mounted drill rig utilizing mud rotary core drilling method. The boring location is shown on the attached Site Plan, **Plate 2**. An engineer maintained a log of the borings and visually classified encountered soils in accordance with Caltrans Soil & Rock Logging Classification Manual. Sampling was achieved at 5 feet intervals by utilizing the Standard Penetration Test (SPT) sampler (2.0 inch O.D.). Continuous core samples were also collected from borings and kept in core boxes for laboratory testing and future review. The maximum

depth of the investigation was approximately 26.5 feet below the existing ground surface. The selected samples at different elevations from the borings were tested for soil classification and corrosion.

Boreholes were backfilled with in-situ material and bentonite chips after boring logging and the measurement of groundwater depth. A more detailed description of the subsurface conditions encountered during our field exploration is presented graphically on the log of test borings (**see attachment**).

Based on the field investigation, the soils underlying the site generally consist of stiff to very stiff silty clay or clayey silt with fine sand to the depth of about 11 feet below the ground surface. Then, a moderately soft to moderately hard, decomposed to intensely weathered rocks were also noted below the silty clay layer to the maximum depth of borehole approximately 26.5 feet. No groundwater was encountered in any borehole during our field investigation.

4. Laboratory Testing

The following laboratory tests were performed on selected samples obtained from the borings.

- Sieve Analysis - CTM 202
- Mechanical Analysis - CTM 203
- Moisture Content – CTM 226
- pH - CTM 643
- Sulfate Content - CTM 417
- Chloride Content - CTM 422
- Corrosion - CTM 643

The results of the tests for Moisture Content, #200 Sieve, Liquid Limit, and Plasticity Index are presented in the table below at the corresponding sample locations. Graphical results from the mechanical analysis are attached on **Plates 3**.

Proposed Structure	Sample ID	Sample Location Below GS (ft)	Moisture Content (%)	Percent Passing #200 Sieve	LL	PI
Resident Mechanic Building	B1-2	8	27.1	93	58	29
	B1-3	14	21.6	82	50	15
	B2-2	8	30.1	75	53	13

Chemical tests were performed to determine the corrosion potential of the soil. The results of the corrosion testing are included in the table below:

Sample No.	Sample Depth (feet)	PH	Resistivity (ohm-cm)	Sulfate Content (ppm)	Chloride Content (ppm)
B-1-1	3	6.66	4400	N/A	N/A
B-2-1	3	4.89	3800	N/A	N/A
Corrosive if		<5.5	<1000	>2000	>500

The tests for sulfate and chloride are usually not performed unless the resistivity of the soil is 1,000 ohm-cm or less. If the soil has a resistivity of 1,000 ohm-cm or greater then the soil is not considered corrosive and no further tests are required.

Based on the test result of pH value in boring B-2-1 indicated in above table, the site should be considered corrosive with respect to the proposed foundations. Therefore, it is our opinion that District Environmental Office should be consulted for this issue.

5. Ground Water

use Type II modified with note(b)

No groundwater was encountered during our field investigation. The water table may fluctuate with seasonal rainfall and runoff. Generally, groundwater should not be a concern for the proposed excavations if the work is performed outside of the rainy season.

6. Seismic Data

Type B

We have reviewed the *Caltrans California Seismic Hazard Map* dated 1996. The map indicates that the Bear Mountain/W (BMW) is located approximately 1.2 miles to the southeast with normal style and could produce a maximum credible earthquake of magnitude 6.5. The map indicates that the maximum credible earthquake from this site would result in a peak horizontal bedrock acceleration of 0.5g. The potential for surface rupture at the site due to fault movement is considered insignificant since there are no known faults projecting towards or passing directly through the project site. Liquefaction potential of the soil beneath the site is considered insignificant due to the high fine content of clayey material noted at this location. Based on our investigation, the subsurface materials may be classified as Soil Profile Type D of the Caltrans Seismic Design Criteria.

7. Conclusions and Recommendations

The following recommendations are based on our subsurface investigation, review of information relevant to the project physical setting, and information forwarded by your Office.

Based on our subsurface investigation, and soil test results for the samples retrieved from the site, the foundation soil could provide the allowable soil bearing capacities for the proposed shallow footing foundations as indicated in following Table. The allowable bearing pressures presented in the table below reflect a design factor of safety of 3.

Proposed Structure	Type of Footing	Minimum Footing width (ft)	Minimum Footing Thickness (ft)	Allowable Bearing Pressure (psf)
Resident Mechanic Building	Continuous	1.5	2	2000
	Square	8 x 8	2	3000

We anticipate that frost and/or frozen ground conditions to occur at this location is estimated at a depth of approximately 12 inches per a conversation with an Engineer from the Code Compliance Division of Nevada County, California. We recommend that the footing be embedded a minimum 3 feet as measured from the bottom of footing to the lowest adjacent finished grade. For footings constructed next to the fill slope, we recommend a minimum horizontal distance of 4 feet from the top of the footing to the face of the finished slope.

Resistance to lateral loads can be obtained from sliding resistance at the bottom of footing and passive earth pressures. However, foundations are typically designed using only the sliding resistance unless the footing is placed below a zone of disturbance. We recommend an allowable coefficient of friction of 0.4 for stiff to very stiff clayey foundation material be used to calculate sliding resistance. If insufficient sliding resistance results, then a keyed footing should be considered to activate passive resistance behind the key only. For footings founded in this foundation soil with level ground in front of the footings, an equivalent passive fluid pressure of fluid weight of 360 pcf is recommended.

For design of the slab-on-grade, we would estimate a modulus of subgrade reaction, k, of 100 lbs/in^3 based on the typical property of stiff to very stiff clayey foundation material.

A moisture barrier should be used for the proposed structure with the slab-on-grade floor. A vinyl membrane with a minimum thickness of 0.016 inches should be placed over a 4 inches thickness of washed sand or crushed rock. The membrane should be covered by 3 inches of sand to aid in uniform curing of the concrete. Care should be taken not to puncture the membrane.

Based on conversation with the District Project Engineer and after reviewing provided topographic maps, AC grindings were placed on a shallow slope (10 degrees), increasing

the slope angle to 30 degrees (slightly greater than 2:1 H:V). It is unclear if this was an engineered fill with benching and water conditioning, 8 inch maximum lifts and using adequate compaction methods. However, since the fill is granular, was placed over a period of several years by heavy equipment, and heavy equipment drove over this road for years, we don't recommend removing this fill. This Office recommends that the remaining fill be placed no steeper than 2:1 and that all earthwork be performed in accordance with Section 19 of the Standard Specifications.

Project Log-of-Test-Borings are currently being drafted by our Drafting Services Department. Your Office will be notified once they have been completed.

Project Information

Standard Special Provision S5-280, "Project Information", discloses to bidders and contractors a list of pertinent information available for their inspection prior to bid opening. The following is an excerpt from SSP S5-280 disclosing information originating from Geotechnical Services. Items listed to be included in the Information Handout will be provided in Acrobat (.pdf) format to the addressee(s) of this report via electronic mail.

Data and information attached with the project plans are:

1. *Log of Test Borings for the Resident Mechanic Building*

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

A. *Foundation Report for the Resident Mechanic Building, dated July 26, 2007*

Data and Information available for inspection at the District Office:

A. *None*

Data and Information available for inspection at the Transportation Laboratory are:

A. *Borehole Core Samples for all boreholes*

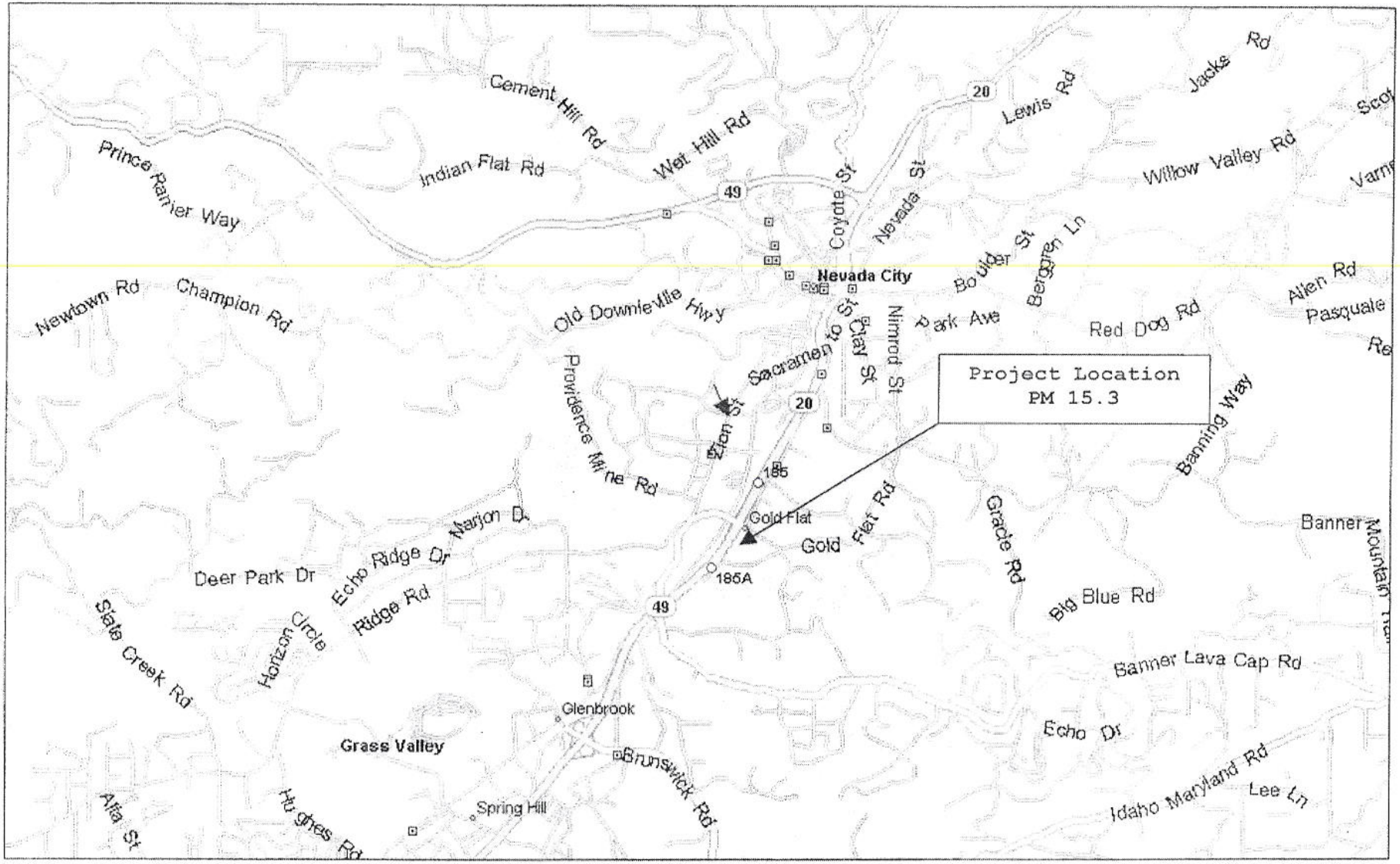
If you have any questions regarding the above recommendations, you may contact Yue Wu at (916) 227-7141 or Doug Brittsan at (916) 227-7181.

Yue Wu

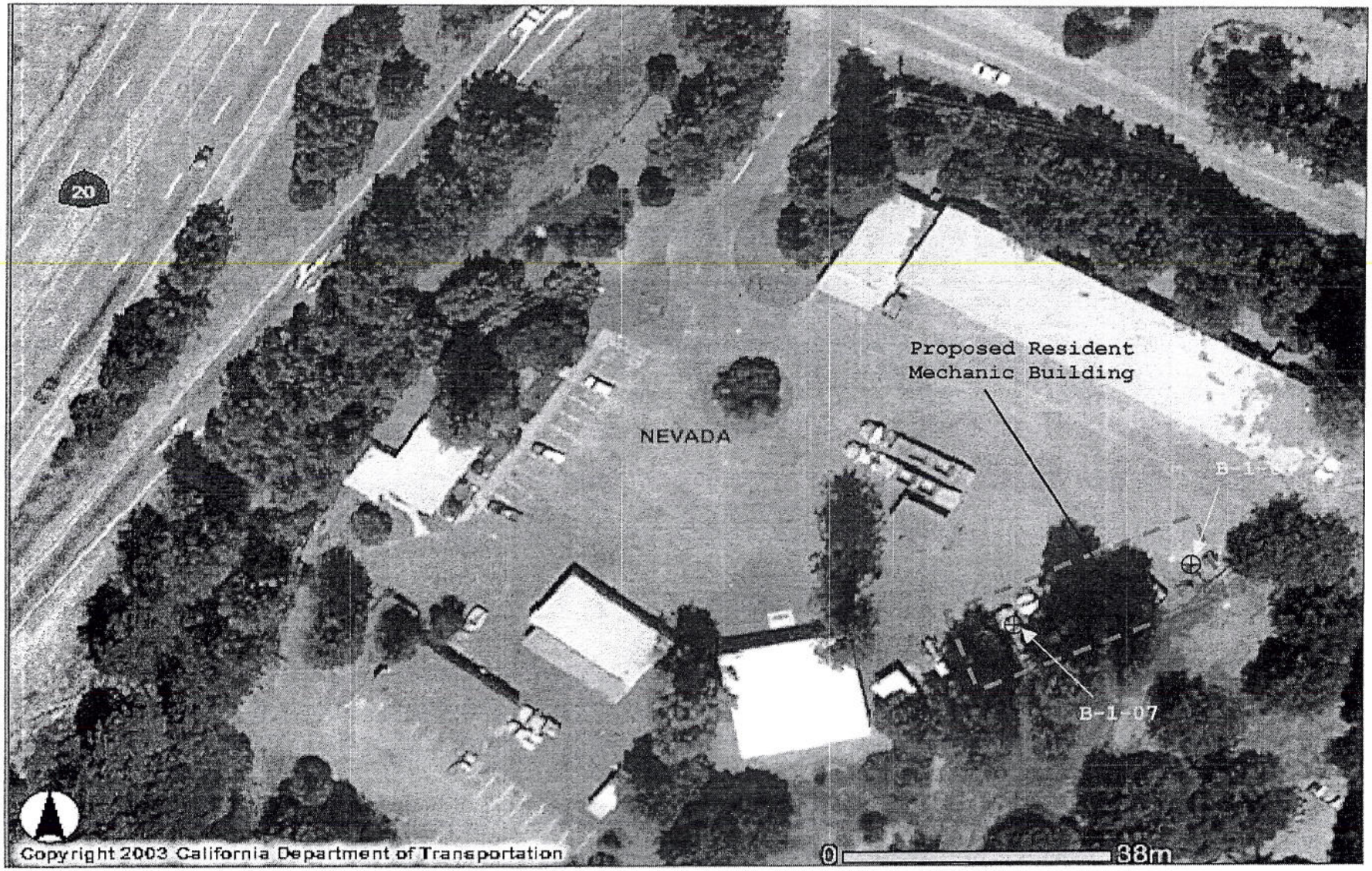
YUE WU P.E.
Transportation Engineer
Office of Geotechnical Design - North

Attachments

c: DBrittsan
JMorris
GDN.02
RE Pending File



CALTRANS Division of Engineering Services Geotechnical Services Office of Geotechnical Design - North	EA: 03-318001 Date: June 2007	**VICINITY MAP**	**Plate 1**
		03-NEV-L5717 **FOUNDATION INVESTIGATION REPORT**	



CALTRANS Division of Engineering Services Geotechnical Services Office of Geotechnical Design - North	EA: 03-318001 Date: June 2007	**BORING LOCATION MAP**	Plate 2
		03-NEV-L5717, Nevada City Maintenance Station FOUNDATION INVESTIGATION REPORT	

GRAPHIC SYMBOLS


Bulk Sample


Rock Core


Modified California Sampler


Standard Penetration Sampler


Shelby Tube


Vane Shear


Auger


Diamond Core


Jetting


Rotary


Water Level - 1st Reading

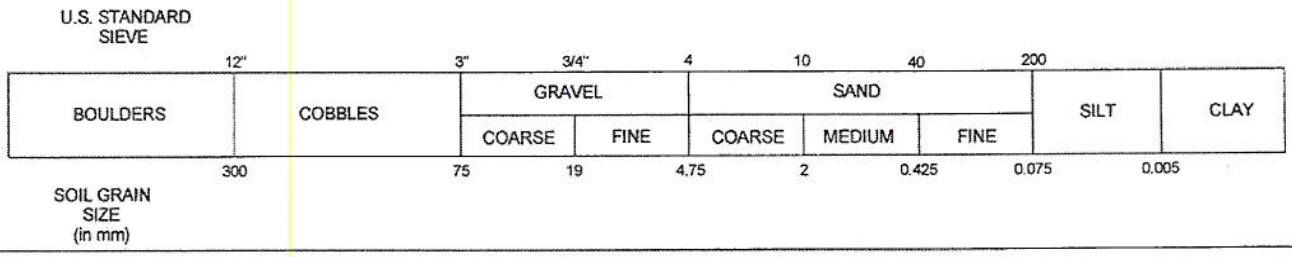

Water Level - 2nd Reading


Water Level - 3rd Reading

TESTING

CONS	Consolidation (Cal Test 219)	RQD	Rock Quality Designation (ASTM D6032)
UU	Unconsolidated Undrained Triaxial (Cal Test 230)	CP	Compaction Test (Cal Test 216)
CU	Consolidated Undrained Triaxial (Cal Test 230)	PERM	Permeability (Cal Test 220)
DS	Direct Shear (ASTM D3080)	COR	Corrosivity Testing (Cal Test 532/643)
UC	Unconfined Compression (Cal Test 221)	GRAD	Gradation Analysis (Cal Tests 202/203)
LL	Liquid Limit-% (Cal Test 204)	EP	Expansion Pressure (Cal Test 354)
PI	Plasticity Index-% (Cal Test 204)	OC	Organic Content-% (ASTM D2974)
PP	Pocket Penetrometer	SE	Sand Equivalent (Cal Test 217)
TV	Pocket Torvane		

SOIL GRAIN SIZE



GENERAL NOTES

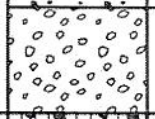
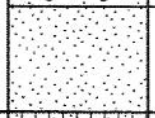
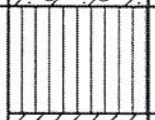
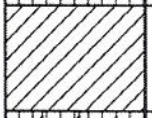
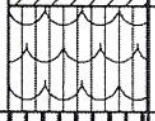
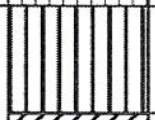
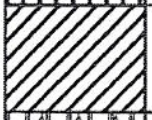
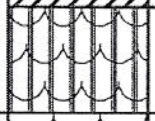
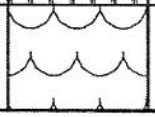
1. Logs represent general subsurface conditions observed at the point of exploration on the date indicated.
2. In general, USCS designations presented on logs were established by visual methods only; therefore, actual designations (based on laboratory tests) may vary.
3. No warranty is provided as to the continuity of soil conditions between individual sample locations.
4. Lines separating strata on the logs represent approximate boundaries only; actual transitions may be different or gradual.
5. Pocket penetrometer values reported on the logs under shear strength are actual values as recorded in the field. (To be used in analysis, the pocket penetrometer value should be divided by two)

Department of Transportation
Division of Engineering Services
Geotechnical Services
Office of Geotechnical Design - North

EA: 03-318001
Date: 2-21-07

BORING LOG LEGEND

03-NEV-20 / KP 24.62 (PM 15.30)
Resident Mechanic Facility at Nevada City MS

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES		SM	SILTY SANDS, SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

Equipment:	Station/KP:	Boring ID.:
Mobile B47		B-2-07
Hammer:	Offset Distance/Line:	Date Completed:
Safety automatic drop (140#/ 30")		2-21-07
Drilling Method:	North/East:	Hole Diameter:
Rotary wash		4in
Sampling Method:	Ground Surface Elevation:	Total Depth:
SPT, Bulk, and core	~2650.0ft	26.5ft
Notes:	Depth to GW/date measured:	Logged By:
		yue wu

ELEVATION (m)	DEPTH (m)	DEPTH (ft)	Graphic Log	Description	Sample Type	Sample Number	Sample Blows	Blows per Foot	Recovery (%)	RQD (%)	w/c (%)	Dry Density (pcf)	Shear Strength (tsf)	Drilling Method/ Casing	Remarks
807.42	0.30	1		ASPHALT CONCRETE											
807.11	0.61	2		silty CLAY with gravelly sand (CL/ML): stiff to very stiff, reddish brown to yellowish brown, dry, fine sand, medium plasticity.											
806.81	0.91	3			X	1	3 1 1	2							Cor-corrosion Test
806.50	1.22	4													
806.20	1.52	5													
805.89	1.83	6			X	2	5 8 10	18					P = 1.50		
805.59	2.13	7													
805.28	2.44	8		clayey SILT with sand, and decomposed rock or shale (ML/CL): yellowish brown to reddish brown, dry, decomposed to very intensely weathered, soft to moderately soft, very intensely fractured, fine sand, medium plasticity, fissured.											
804.98	2.74	9			X	3					30.1				MA-mechanical analysis
804.67	3.05	10													
804.37	3.35	11			X	4	11 16 26	42					P = 1.00		
804.06	3.66	12													
803.76	3.96	13													
803.45	4.27	14													
803.15	4.57	15													
802.84	4.88	16			X	5	8 14 13	27					P = 0.50		
802.54	5.18	17													
802.23	5.49	18													
801.93	5.79	19													
801.62	6.10	20													
801.32	6.40	21			X	6	10 14 16	30					P = 0.50		
801.01	6.71	22													
800.71	7.01	23													
800.40	7.32	24													
800.10	7.62	25													
799.80	7.92	26			X	7	25 46 50	96					P = 1.50		
799.49	8.23	27		Bottom of Hole at 8.08 m (26.5 ft) on 2-21-07											
799.19	8.53	28													
798.88	8.84	29													
798.58	9.14	30													

Department of Transportation
Division of Engineering Services
Geotechnical Services
Office of Geotechnical Design - North

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Drafted By:	Yue Wu

B-2-07

03-NEV-20 / (PM 15.30)

Resident Mechanic Facility at Nevada City MS

Equipment:	Station/KP:	Boring ID.:
Mobile B47		B-1-07
Hammer:	Offset Distance/Line:	Date Completed:
Safety automatic drop (140#/ 30")		2-21-07
Drilling Method:	North/East:	Hole Diameter:
Rotary wash		4in
Sampling Method:	Ground Surface Elevation:	Total Depth:
SPT, Bulk, and core	~2650.0ft	26.5ft
Notes:	Depth to GW/date measured:	Logged By:
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ELEVATION (m)	DEPTH (m)	DEPTH (ft)	Graphic Log	Description	Sample Type	Sample Number	Sample Blows	Blows per Foot	Recovery (%)	RQD (%)	w/c (%)	Dry Density (pcf)	Shear Strength (tsf)	Drilling Method/ Casing	Remarks
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807.11	0.61	2		silty CLAY with sand (CL/ML): stiff to very stiff, brown to reddish brown, dry, fine sand, medium plasticity.											
806.81	0.91	3			X	1	7 13 15	28							
806.50	1.22	4													
806.20	1.52	5				2									Cor-corrosion Test
805.89	1.83	6			X	3	23 20 17	37					P = 3.00		
805.59	2.13	7													
805.28	2.44	8		silty CLAY with sand (CL/ML): stiff to very stiff, yellowish brown, dry, fine to medium sand, medium plasticity.											
804.98	2.74	9				4					27.1				MA-mechanical analysis
804.67	3.05	10													
804.37	3.35	11			X	5	13 13 18	31					P = 1.50		
804.06	3.66	12		clayey SILT with sand, and decomposed rock or shale (ML/CL): yellowish brown to reddish brown, dry, decomposed, moderately soft to moderately hard, very intensely fractured, fine sand, medium plasticity, fissured.											
803.76	3.96	13													
803.45	4.27	14													
803.15	4.57	15				6					21.6				MA-mechanical analysis
802.84	4.88	16			X	7	16 46 39	85					P = 1.50		
802.54	5.18	17													
802.23	5.49	18													
801.93	5.79	19													
801.62	6.10	20													
801.32	6.40	21			X	8	10 16 17	33					P = 1.00		
801.01	6.71	22													
800.71	7.01	23													
800.40	7.32	24													
800.10	7.62	25													
799.80	7.92	26			X	9	11 12 14	26							
799.49	8.23	27		Bottom of Hole at 8.08 m (26.5 ft) on 2-21-07											
799.19	8.53	28													
798.88	8.84	29													
798.58	9.14	30													

Department of Transportation
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Geotechnical Services
Office of Geotechnical Design - North

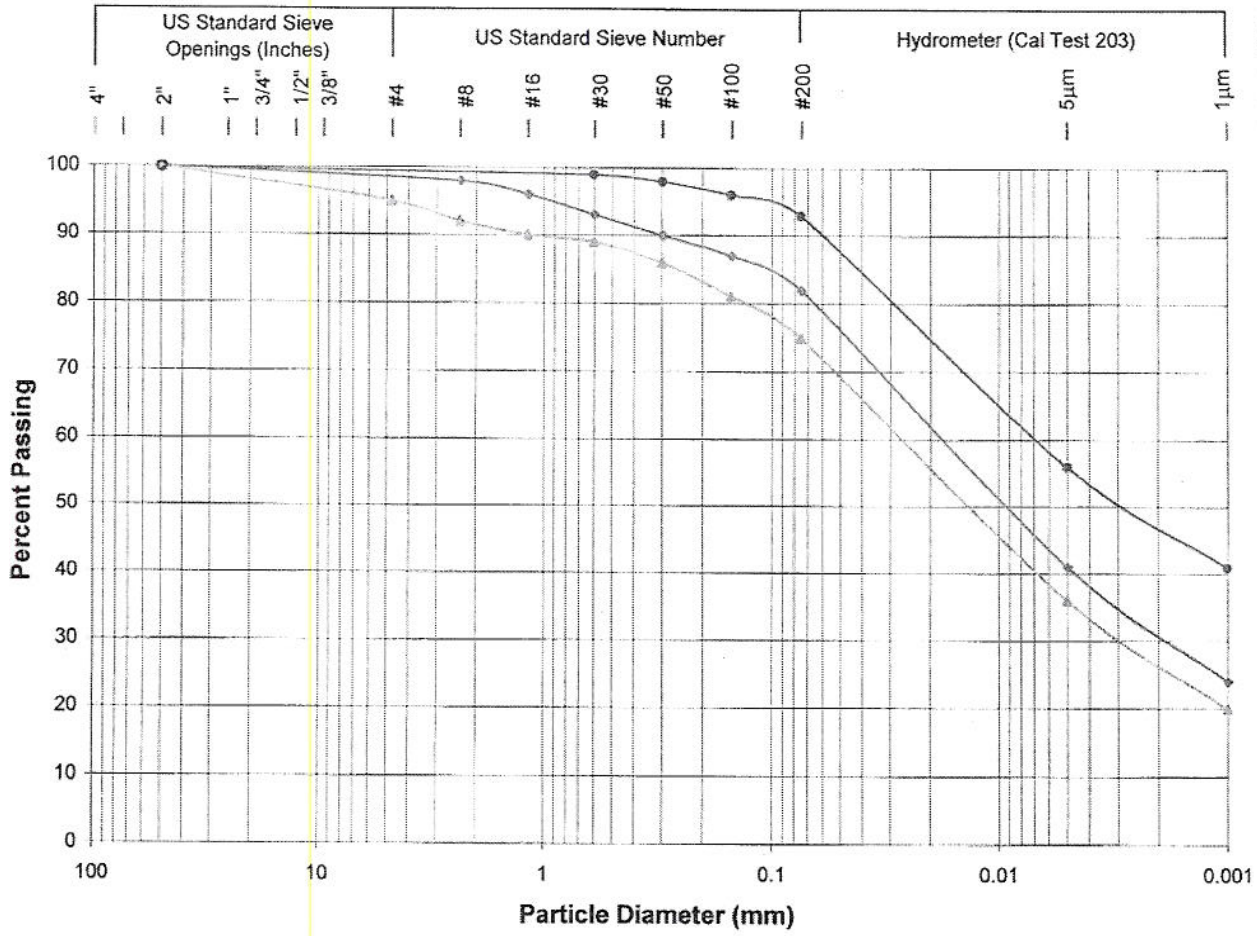
EA:	03-318001
Date:	2-21-07
Drafted By:	Yue Wu

B-1-07

03-NEV-20 / (PM 15.30)

Resident Mechanic Facility at Nevada City MS

Gradation Analysis Test Results



GRAVELS		SANDS			SILT	CLAY
Coarse	Fine	Coarse	Medium	Fine		

Sample ID: B-1-2, B-1-3, B-2-2

Division of Engineering Service
Geotechnical Services
Office of Geotechnical Design - North

Caltrans

Resident Mechanic Facility at Nevada City MS

EA 03-318001 | *Date: June 2007*

03-NEV-L5717

Plate No. 3

CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

October 24, 2008

CLS Work Order #: CRJ0626
COC #: 100138

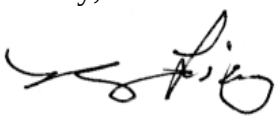
Doug Coleman
Caltrans Dist. 3 - Marysville
703 B Street
Marysville, CA 95901

Project Name: 03-NEV-20 PM 15.9 Nevada Maintenance Facility

Enclosed are the results of analyses for samples received by the laboratory on 10/15/08 13:05. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,



James Liang, Ph.D.
Laboratory Director

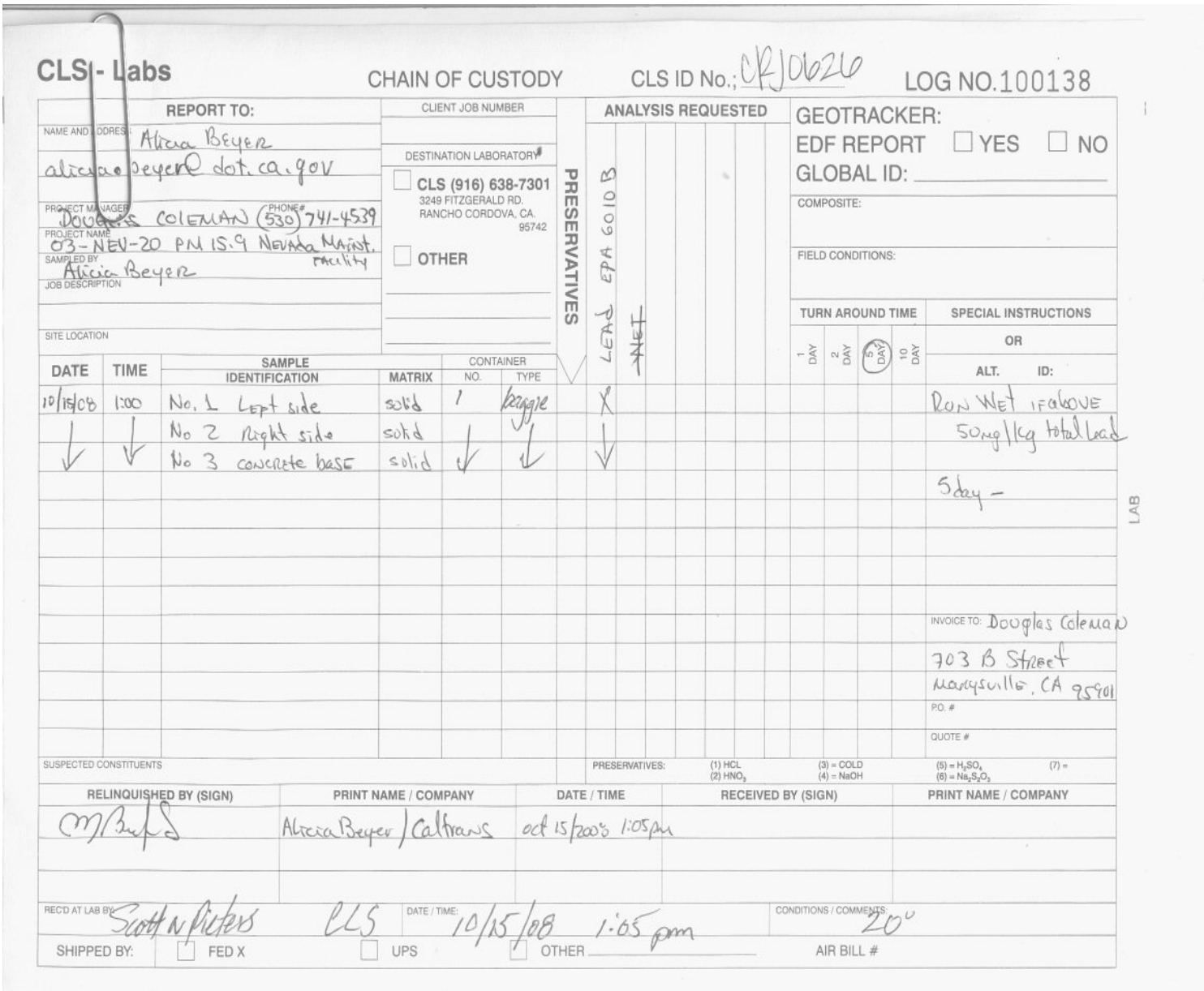
CA DOHS ELAP Accreditation/Registration number 1233

CALIFORNIA LABORATORY SERVICES

Caltrans Dist. 3 - Marysville
703 B Street
Marysville, CA 95901

Project: 03-NEV-20 PM 15.9 Nevada Maintenance Facility
Project Number: [none]
Project Manager: Doug Coleman

CLS Work Order #: CRJ0626
COC #: 100138



CLS - Labs

CHAIN OF CUSTODY CLS ID No.: CRJ0626 LOG NO. 100138

REPORT TO:
NAME AND ADDRESS: Alicia Beyer
alicia.beyer@dot.ca.gov
PROJECT MANAGER: Douglas Coleman PHONE#: (530) 741-4539
PROJECT NAME: 03-NEV-20 PM 15.9 Nevada Maint. Facility
SAMPLED BY: Alicia Beyer
JOB DESCRIPTION:
SITE LOCATION:

CLIENT JOB NUMBER:
DESTINATION LABORATORY:
☐ CLS (916) 638-7301
3249 FITZGERALD RD.
RANCHO CORDOVA, CA.
95742
☐ OTHER

PRESERVATIVES

ANALYSIS REQUESTED: LEAD EPA 6010 B; WET

GEOTRACKER:
EDF REPORT ☐ YES ☐ NO
GLOBAL ID:
COMPOSITE:
FIELD CONDITIONS:

TURN AROUND TIME: 1 DAY, 2 DAY, (5 DAY), 10 DAY
SPECIAL INSTRUCTIONS
OR
ALT. ID:

DATE	TIME	SAMPLE IDENTIFICATION	MATRIX	CONTAINER NO.	CONTAINER TYPE	ANALYSIS
10/15/08	1:00	No. 1 Left side	solid	1	baggie	X
↓	↓	No 2 Right side	solid	↓	↓	↓
↓	↓	No 3 concrete base	solid	↓	↓	↓

Run WET if above 50mg/kg total Lead
5 day -

LAB

INVOICE TO: Douglas Coleman
703 B Street
Marysville, CA 95901
P.O. #
QUOTE #

SUSPECTED CONSTITUENTS:

PRESERVATIVES: (1) HCL (2) HNO_3 (3) = COLD (4) = NaOH (5) = H_2SO_4 (6) = $Na_2S_2O_3$ (7) =

RELINQUISHED BY (SIGN)	PRINT NAME / COMPANY	DATE / TIME	RECEIVED BY (SIGN)	PRINT NAME / COMPANY
[signature]	Alicia Beyer / Caltrans	oct 15/2008 1:05pm		

REC'D AT LAB BY: Scott N Pickens CLS DATE / TIME: 10/15/08 1:05 pm CONDITIONS / COMMENTS: 20°

SHIPPED BY: ☐ FED X ☐ UPS ☐ OTHER AIR BILL #

Caltrans Dist. 3 - Marysville
703 B Street
Marysville, CA 95901

Project: 03-NEV-20 PM 15.9 Nevada Maintenance Facility
Project Number: [none]
Project Manager: Doug Coleman

CLS Work Order #: CRJ0626
COC #: 100138

Metals by EPA 6000/7000 Series Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
No. 1 Left Side (CRJ0626-01) Solid Sampled: 10/15/08 13:00 Received: 10/15/08 13:05									
Lead	**16**	2.5	mg/kg	1	CR08681	10/16/08	10/16/08	EPA 6010B	
No. 2 Right Side (CRJ0626-02) Solid Sampled: 10/15/08 13:00 Received: 10/15/08 13:05									
Lead	**40**	2.5	mg/kg	1	CR08681	10/16/08	10/16/08	EPA 6010B	
No. Concrete Base (CRJ0626-03) Solid Sampled: 10/15/08 13:00 Received: 10/15/08 13:05									
Lead	**14**	2.5	mg/kg	1	CR08681	10/16/08	10/16/08	EPA 6010B	

Caltrans Dist. 3 - Marysville
703 B Street
Marysville, CA 95901

Project: 03-NEV-20 PM 15.9 Nevada Maintenance Facility
Project Number: [none]
Project Manager: Doug Coleman

CLS Work Order #: CRJ0626
COC #: 100138

Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CR08681 - EPA 3050B										
Blank (CR08681-BLK1)				Prepared & Analyzed: 10/16/08						
Lead	ND	2.5	mg/kg							
LCS (CR08681-BS1)				Prepared & Analyzed: 10/16/08						
Lead	24.3	2.5	mg/kg	25.0		97	75-125			
LCS Dup (CR08681-BSD1)				Prepared & Analyzed: 10/16/08						
Lead	24.3	2.5	mg/kg	25.0		97	75-125	0.06	25	
Matrix Spike (CR08681-MS1)		**Source: CRJ0590-01**		Prepared & Analyzed: 10/16/08						
Lead	27.6	2.5	mg/kg	25.0	5.19	90	75-125			
Matrix Spike Dup (CR08681-MSD1)		**Source: CRJ0590-01**		Prepared & Analyzed: 10/16/08						
Lead	27.4	2.5	mg/kg	25.0	5.19	89	75-125	0.7	30	

Caltrans Dist. 3 - Marysville	Project: 03-NEV-20 PM 15.9 Nevada Maintenance Facility	
703 B Street	Project Number: [none]	**CLS Work Order #: CRJ0626**
Marysville, CA 95901	Project Manager: Doug Coleman	COC #: 100138

Notes and Definitions

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