



COMMUNITY DEVELOPMENT AGENCY

TRANSPORTATION DIVISION

<http://www.edcgov.us/DOT/>

PLACERVILLE OFFICES:

MAIN OFFICE:
2850 Fairlane Court, Placerville, CA 95667
(530) 621-5900 / (530) 626-0387 Fax

CONSTRUCTION & MAINTENANCE:
2441 Headington Road, Placerville, CA 95667
(530) 642-4909 / (530) 642-0508 Fax

LAKE TAHOE OFFICES:

ENGINEERING:
924 B Emerald Bay Road, South Lake Tahoe, CA 96150
(530) 573-7900 / (530) 541-7049 Fax

MAINTENANCE:
1121 Shakori Drive, South Lake Tahoe, CA 96150
(530) 573-3180 / (530) 577-8402 Fax

DATE: March 16, 2017

TO: All Prospective Bidders

SUBJECT: Addendum No. 1
2017 Mt. Aukum Rd Sinkhole
Contract No. PW 17-31155, Project No. 78713, P&C No. 443-C1799

Submit proposals for this work with the understanding and full consideration of this Addendum. The revisions declared in this Addendum are essential parts of the Contract.

ITEM NO.	LOCATION, PAGE, OR DRAWING NO.	DESCRIPTION OF CHANGE
1.01	NTB N-1	<p>Replace bid opening date and time in the Notice to Bidders on page N-1 with:</p> <p>Monday, March 20, 2017 at 2:00 P.M.</p>
1.02	SP 17-3.03	<p>Revise Section Title "17-1.03 Construction" to "17-3.03 Construction"</p> <p>Add to Section 17-3.03</p> <p>Cut wood from trees removed that are 4 inches in diameter or greater into 4 foot lengths. Place wood on private property as directed by the Engineer.</p>
1.03	SP 13-5.04	<p>Replace the paragraph under "Delete the 1st sentence of section 13-5.04 and replace the 2nd paragraph of section 13-5.04 with" with:</p> <p>The Department pays for all temporary soil stabilization including stockpiles under section 9-1.04 excluding travel and subsistence allowances paid to workers.</p>
1.04	SP 13-10.04	<p>Replace the sentence under "Replace section 13-10.04 with" with:</p> <p>The Department pays for temporary linear sediment barriers for stockpiles under section 9-1.04 excluding travel and subsistence allowances paid to workers.</p>
1.05	NTB N-2	<p>Add to the Supplemental Project Information in the fourth paragraph on page N-2:</p> <ul style="list-style-type: none"> • WRECO Geotechnical Technical Memorandum for "Mt. Aukum

2017 Mt. Aukum Rd Sinkhole
Contract No. PW 17-31155, CIP No. 78713, P&C No. 443-C1799
Addendum No. 1

County of El Dorado
Page 1 of 3

ITEM NO.	LOCATION, PAGE, OR DRAWING NO.	DESCRIPTION OF CHANGE
		Road Storm Damage - Subsurface Conditions and Construction Considerations".
1.06	SP 2-1.06B	<p>Add Section 2-1.06B of the Special Provisions:</p> <p>The Department makes the following Supplemental Project Information available:</p> <ul style="list-style-type: none"> • WRECO Geotechnical Technical Memorandum for "Mt. Aukum Road Storm Damage - Subsurface Conditions and Construction Considerations".
1.07	SP 14-9.04A(1)	<p>Remove from the second paragraph of 14-9.04A(1) Summary:</p> <p>223-2</p>
1.08	SP 13-1.04	<p>Remove Section 13-1.04 of the Special Provisions.</p>
1.09	Draft Agreement C-12	<p>Remove ITEM NO. 6, "WATER QUALITY SAMPLING AND ANALYSIS DAY" AND ITEM NO. 7, "WATER QUALITY MONITORING REPORT" bid items from the CONTRACTOR'S BID AND BID PRICE SCHEDULE in the Draft Agreement on page C-12.</p>
1.10	Proposal P-3	<p>Remove ITEM NO. 6, "WATER QUALITY SAMPLING AND ANALYSIS DAY" AND ITEM NO. 7, "WATER QUALITY MONITORING REPORT" bid items from the PROPOSAL PAY ITEMS AND BID PRICE SCHEDULE in the Proposal on page P-3.</p>

Indicate receipt of this Addendum No. 1 by filling in the number of this Addendum No. 1 in the space provided on the signature page of the Proposal.

Holders who have already mailed their Proposal can contact Brian Franklin at 530-621-5311 (email: Brian.Franklin@edcgv.us) to arrange return of their Proposal.

Inform all suppliers and subcontractors as necessary.

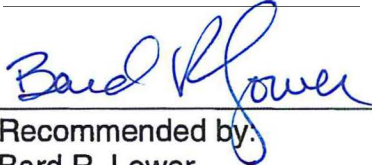
The Community Development Agency, Transportation Division is only sending this addendum by posting on QuestCDN's website at: <https://www.questcdn.com/>.

End of Addendum No. 1



Recommended by:
John Kahling, Deputy Director
Headington Engineering Unit

03/15/17
Date



Recommended by:
Bard R. Lower
Transportation Division Director

3/16/17
Date



Approved by:
Roger Niello, Interim Director
Community Development Agency

3/16/17
Date



Technical Memorandum

Date: March 15, 2016
To: John Kahling, PE
From: David Kitzmann, CEG, PE
Subject: Mt. Aukum Road Storm Damage – Subsurface Conditions and Construction Considerations

Mr. Kahling:

Per your request, WRECO has prepared this Technical Memorandum which provides a summary of the additional work performed, our findings, and construction considerations for use in better quantifying construction costs for the Mt. Aukum Road Storm Damage repair. This technical memorandum is supplemental to the technical memorandum submitted on February 3, 2017.

Background

A sinkhole opened in the southbound lane of Mount Aukum Road on or before February 1, 2017 and was filled with concrete slurry the afternoon of February 1, 2017. WRECO was asked to review the site and provide an evaluation of the sinkhole and recommendations for repairs which were summarized in a February 3, 2017 Technical Memo. El Dorado County requested that WRECO perform a subsurface investigation to evaluate the subsurface conditions and the presence of voids within the roadway embankment. The subsurface investigation began February 7, 2017 and on arrival an additional sinkhole was observed in the northbound lane and an additional sinkhole opened on the west side of the embankment during the investigation. The roadway was closed the afternoon of February 7, 2017 until repairs could be completed.

Field Exploration and Testing

The field investigation involved five boreholes drilled on February 7, 2017 by PC Exploration under the supervision of WRECO personnel. The borings were completed within both lanes of Mt. Aukum Road on either side (north and south) of the existing culvert pipe. WRECO personnel visually classified soil samples and cuttings at the time of drilling in general conformance with Caltrans, Soil and Rock Logging, Classification, and Presentation Manual, 2010 Edition.

The boreholes were advanced with 6 inch diameter hollow-stem augers and soil samplers were driven using a 140-pound auto-trip hammer, falling 30 inches, in general conformance with conducting the Standard Penetration Test (ASTM D1586). Soil samples were collected from the boreholes at 5-foot intervals using a 1.4-inch inside diameter (ID) split spoon sampler. Field blow counts were recorded as the number of hammer blows required to drive the sampler the final 12 inches of an 18-inch drive. Detailed visual descriptions of the recovered soil samples, Standard Penetration Test results are shown on the Boring Records attached. A summary of pertinent boring information is shown in Table 1. The boring locations are shown on Figure 1 Location of Field Tests, attached.



Table 1. Boring Information

Boring ID	Approximate Surface Elevation (Feet)	Hammer Efficiency Ratio (%)	Drilled Depth (feet)	Termination Notes
B-1A	986.5	81	6.5	Auger refusal
B-1B	986.7	81	10.0	Auger refusal
B-2	984.8	81	41.5	Terminated at planned depth
B-3A	986.5	81	5.0	Auger refusal
B-3B	986.8	81	41.5	Terminated at planned depth

Laboratory soil testing for this study included the determination of grain size distribution, plasticity index, and corrosive potential (minimum resistivity, pH, and chloride and sulfate content), and modified Proctor compaction test. The laboratory test results are attached and shown on the Boring Records, also attached. Results of the corrosive potential to buried steel and concrete testing are further discussed below.

Subsurface Conditions

The materials encountered in the exploratory borings are considered consistent with published mapping and can be separated into two units considered significant to the proposed project.

Unit 1 consists of of medium dense and locally loose poorly-graded sand with silt to an approximate elevation of 392 feet in Borings B-2 and B-3B. This unit is interpreted as embankment fill materials likely derived from nearby sources. Borings B-1A, B-1B, and B-3 were terminated at shallow depth (approximately 5-15 feet) due to auger refusal within this unit. Auger refusal was interpreted to occur due to hard cobble or boulder sized materials that could not be drilled through.

Unit 2 underlies Unit 1 and consists of medium dense to very dense silty sand and was encountered to the deepest depth explored in Borings B-2 and B-3B. This unit is interpreted as native material due to the presence of woody roots within samples collected.

Groundwater was not encountered within the drilled borings performed for this study. Surface water was observed to be flowing through the existing culvert during WRECO’s initial site visit on February 1, 2017 and during subsurface exploration on February 7, 2017. It is understand that surface flows are seasonal and do not flow during the summertime.

Construction Considerations

All excavation and backfill work shall be performed in accordance with Section 19, Earthwork, or the State of California Department of Transportation (Caltrans) Standard Specifications (2015 or latest edition). Based on site review and field exploration and testing, encountered materials are considered rippable by typical heavy excavation equipment. However, during exploratory drilling auger refusal occurred while trying to advance borings to proposed depths. This refusal occurred on what is interpreted to be hard, intact cobble/boulder sized materials. Boulder size material was also observed on the embankment slopes in several locations and oversized material should be expected within the existing embankment.



The culvert at the site conveys a seasonal stream below Mount Aukum Road. Groundwater can be expected near and below the channel water level during wet-season (November through April). Groundwater elevation is expected to be lower during dry-season (May through October). For wet-season construction substantial seepage can be expected below channel water level and will require diversion of surface water, sump pumping, and potentially dewatering wells or other means to control groundwater. For dry-season construction encountered seepage is expected to be handled by sump pumping.

Soil type per Cal/OSHA guidelines are likely Type B soils for the undisturbed embankment fill. Within the failed zone disturbed fill consistent with Type C soils are likely to be encountered. The contractor is responsible for design and construction of excavation sloping / shoring in accordance with Cal/OSHA requirements.

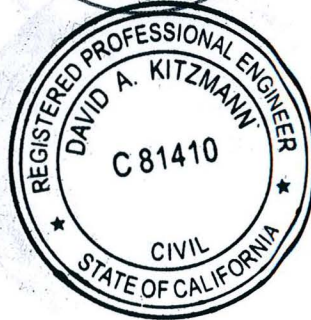
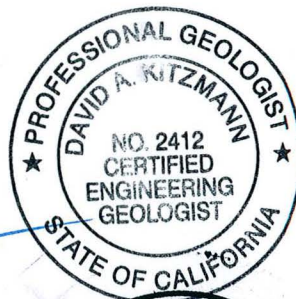
WRECO would like to thank El Dorado County for the opportunity to prepare this Technical Memorandum for the subject project and if you would like to discuss any of the recommendations provided, please feel free to contact WRECO at (916) 757-6150.

Attachments:

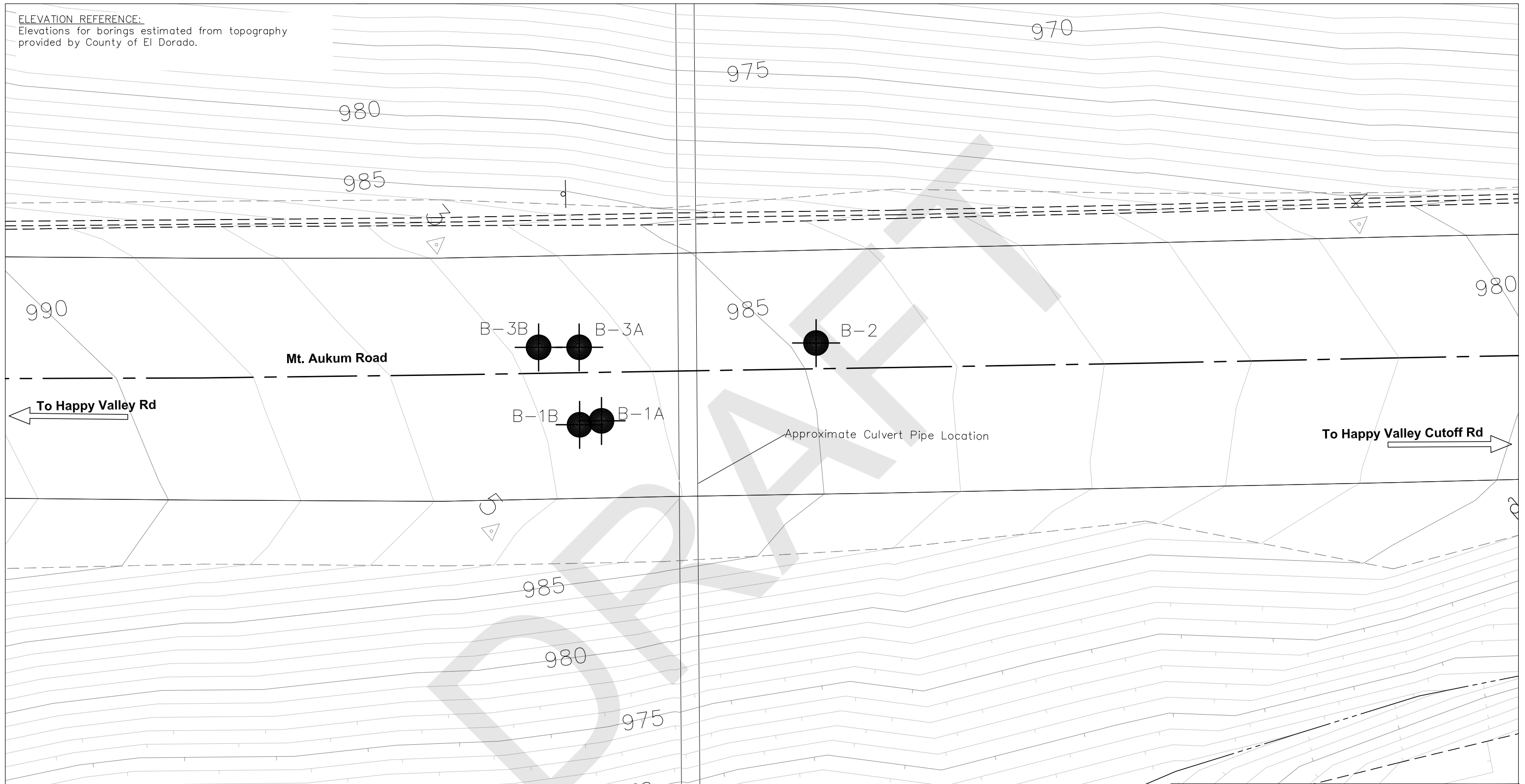
Figure -1 Location of Field Tests

Boring Records

Laboratory Test Results



ELEVATION REFERENCE:
Elevations for borings estimated from topography
provided by County of El Dorado.



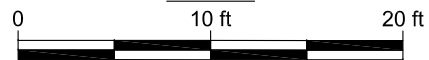
LEGEND:

B-3B
 APPROXIMATE LOCATION OF SOIL BORING

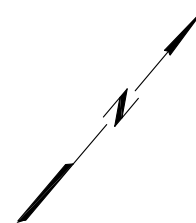
PLAN

1"=10'

PLAN




SCALE



NOTE: All locations are approximate and are referenced from existing site features. Electronic media for plan view provided by County of El Dorado.

17-0217 3A 7 of 19

	WRECO 8331 SIERRA COLLEGE BLVD SUITE 208 ROSEVILLE, CA 95661
	EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION Mount Aukum Road Emergency Repair EL DORADO COUNTY, CALIFORNIA
Location of Field Tests	
P15054-WO-07	Figure - 1

LOGGED BY A. Kahn	BEGIN DATE 2-7-17	COMPLETION DATE 2-7-17	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID B-1A
DRILLING CONTRACTOR PC Exploration			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD Hollow-Stem Auger			DRILL RIG Gefco SS15	BOREHOLE DIAMETER 6"
SAMPLER TYPE(S) AND SIZE(S) (ID) SPT (1.4")			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERI 81%
BOREHOLE BACKFILL AND COMPLETION Soil cuttings.			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING 6.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per ft	Sand (%)	Fines (%)	Plastic Limit	Plasticity Index	Drilling Method	Casing Depth	Remarks
0			ASPHALT CONCRETE (1.5").											
1			AGGREGATE BASE (6.5").					67	30	20	3			CP, PA, PI
2			SILTY SAND (SM); medium dense; light brown; dry; mostly fine to coarse SAND ; few nonplastic fines ; micaceous, (FILL).											
3				S-1	6	14								
4					6									
5			Becomes dense.		8									
6				S-2	4	31								
7					8									
8					23									
9			Bottom of borehole at 6.5 ft bgs Auger refusal at 6.5' depth.											
10			This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010) except as noted on the Soil or Rock Legend or below.											
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														

7 BR - CUSTOM COLUMNS P15054T07 DL 020817 GPJ WRECO - CALTRANS.GLB 3/3/17



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Granite Bay, CA 95661
(916) 757-6150

REPORT TITLE BORING RECORD				HOLE ID B-1A
DIST. 03	COUNTY	ROUTE	POSTMILE	EA 03-P15054 TO7
PROJECT OR BRIDGE NAME Mt. Aukum Road				
BRIDGE NUMBER	PREPARED BY A. Kahn	DATE 2-8-17	SHEET 1 of 1	

LOGGED BY A. Kahn	BEGIN DATE 2-7-17	COMPLETION DATE 2-7-17	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID B-1B
DRILLING CONTRACTOR PC Exploration			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD Hollow-Stem Auger			DRILL RIG Gefco SS15	BOREHOLE DIAMETER 6"
SAMPLER TYPE(S) AND SIZE(S) (ID) SPT (1.4")			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERI 81%
BOREHOLE BACKFILL AND COMPLETION Soil cuttings.			GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS	TOTAL DEPTH OF BORING 15.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location Sample Number	Blows per 6 in.	Blows per ft	Sand (%)	Fines (%)	Plastic Limit	Plasticity Index	Drilling Method	Casing Depth	Remarks
0			ASPHALT CONCRETE (1.5").										
1			AGGREGATE BASE (6.5").	S-1	4	23							
2			Poorly graded SAND with SILT (SP-SM); dense; light brown; dry; mostly fine to coarse SAND ; few nonplastic fines ; (FILL).		8								
3					15								
4													
5													
6													
7													
8													
9													
10			SILTY SAND (SM); loose; light brownish gray; dry; mostly fine to coarse SAND ; little nonplastic fines ; (FILL).	S-2	4	6							
11					3								
12					3								
13													
14													
15			Bottom of borehole at 15.0 ft bgs Auger refusal at 15.0' depth.										
16			This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010) except as noted on the Soil or Rock Legend or below.										
17													
18													
19													
20													
21													
22													
23													
24													
25													

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REPORT TITLE BORING RECORD				HOLE ID B-1B
DIST. 03	COUNTY	ROUTE	POSTMILE	EA 03-P15054 TO7
PROJECT OR BRIDGE NAME Mt. Aukum Road				
BRIDGE NUMBER	PREPARED BY A. Kahn	DATE 2-8-17	SHEET 1 of 1	

LOGGED BY A. Kahn	BEGIN DATE 2-7-17	COMPLETION DATE 2-7-17	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID B-2
DRILLING CONTRACTOR PC Exploration			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD Hollow-Stem Auger			DRILL RIG Gefco SS15	BOREHOLE DIAMETER 6"
SAMPLER TYPE(S) AND SIZE(S) (ID) SPT (1.4")			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERI 81%
BOREHOLE BACKFILL AND COMPLETION Soil cuttings and bentonite chips.			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING 41.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per ft	Sand (%)	Fines (%)	Plastic Limit	Plasticity Index	Drilling Method	Casing Depth	Remarks
0	0		ASPHALT CONCRETE (1.5").											
1	0.5		AGGREGATE BASE (6.5").											
2	1.5		Poorly graded SAND with SILT (SP-SM); loose; light gray; dry; mostly fine to coarse SAND ; few nonplastic fines.											
3	2.5													
4	3.5													
5	4.5			S-1	2	6								
6	5.5				2									
7	6.5				4									
8	7.5													
9	8.5		SILTY SAND (SM); medium dense; mostly fine to coarse SAND ; few low plasticity fines.											
10	9.5			S-2	3	11								
11	10.5				5									
12	11.5				6									
13	12.5													
14	13.5													
15	14.5		Becomes very dense.	S-3	2									
16	15.5			BULK	50			79	18					CP, PA
17	16.5			B										
18	17.5													
19	18.5													
20	19.5													
21	20.5		Becomes medium dense; grayish brown; moist.	S-4	5	12								
22	21.5				5									
23	22.5				7									
24	23.5													
25	24.5													

(continued)

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REPORT TITLE BORING RECORD				HOLE ID B-2
DIST. 03	COUNTY	ROUTE	POSTMILE	EA 03-P15054 TO7
PROJECT OR BRIDGE NAME Mt. Aukum Road				
BRIDGE NUMBER	PREPARED BY A. Kahn	DATE 2-8-17	SHEET 1 of 2	

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per ft	Sand (%)	Fines (%)	Plastic Limit	Plasticity Index	Drilling Method	Casing Depth	Remarks
25			Becomes dense; dark brown 3" SILT lense in sample. SILTY SAND (SM) (continued).	S-5	10 14 14		28							
26														
27														
28														
29														
30			Interbedded dark brown SILT lenses.	S-6	8 11 12		23							
31														
32														
33			SILTY SAND (SM); dense; grayish brown; moist; mostly fine to coarse SAND ; some low plasticity fines ; 3.4" wood root in sample, (NATIVE).	S-7	9 11 12		23							
34														
35														
36														
37														
38														
39														
40			Becomes medium dense.	S-8	4 9 10		19							
41														
42			Bottom of borehole at 41.5 ft bgs Boring terminated at planned depth.											
43			This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010) except as noted on the Soil or Rock Legend or below.											
44														
45														
46														
47														
48														
49														
50														
51														
52														
53														
54														
55														



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REPORT TITLE BORING RECORD				HOLE ID B-2	
DIST. 03	COUNTY	ROUTE	POSTMILE	EA 03-P15054 TO7	
PROJECT OR BRIDGE NAME Mt. Aukum Road					
BRIDGE NUMBER		PREPARED BY A. Kahn		DATE 2-8-17	SHEET 2 of 2

LOGGED BY A. Kahn	BEGIN DATE 2-7-17	COMPLETION DATE 2-7-17	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID B-3A
DRILLING CONTRACTOR PC Exploration			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD Hollow-Stem Auger			DRILL RIG Gefco SS15	BOREHOLE DIAMETER 6"
SAMPLER TYPE(S) AND SIZE(S) (ID) SPT (1.4")			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERI 81%
BOREHOLE BACKFILL AND COMPLETION Soil cuttings.			GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS	TOTAL DEPTH OF BORING 5.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per ft	Sand (%)	Fines (%)	Plastic Limit	Plasticity Index	Drilling Method	Casing Depth	Remarks
0			ASPHALT CONCRETE (1.5").											
1			AGGREGATE BASE (6.5").											
2			Poorly graded SAND with SILT (SP-SM); light gray; dry; mostly fine to coarse SAND ; few fines ; (FILL).											
3														
4														
5			Bottom of borehole at 5.0 ft bgs Auger refusal at 5.0' depth.											
6														
7			This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010) except as noted on the Soil or Rock Legend or below.											
8														
9														
10														
11														
12														
13														
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16														
17														
18														
19														
20														
21														
22														
23														
24														
25														

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REPORT TITLE BORING RECORD				HOLE ID B-3A
DIST. 03	COUNTY	ROUTE	POSTMILE	EA 03-P15054 TO7
PROJECT OR BRIDGE NAME Mt. Aukum Road				
BRIDGE NUMBER	PREPARED BY A. Kahn	DATE 2-8-17	SHEET 1 of 1	

LOGGED BY A. Kahn	BEGIN DATE 2-7-17	COMPLETION DATE 2-7-17	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID B-3B
DRILLING CONTRACTOR PC Exploration			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD Hollow-Stem Auger			DRILL RIG Gefco SS15	BOREHOLE DIAMETER 6"
SAMPLER TYPE(S) AND SIZE(S) (ID) SPT (1.4")			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERI 81%
BOREHOLE BACKFILL AND COMPLETION Soil cuttings and bentonite chips.			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING 41.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per ft	Sand (%)	Fines (%)	Plastic Limit	Plasticity Index	Drilling Method	Casing Depth	Remarks
0			ASPHALT CONCRETE (1.5").											
1			AGGREGATE BASE (6.5").											
2			Poorly graded SAND with SILT (SP-SM); medium dense; light grayish brown; dry; mostly fine to coarse SAND ; few nonplastic fines ; micaceous.											
3														
4														
5														
6														
7														
8														
9														
10														
11				S-1	8 7 8	15								
12														
13														
14														
15			SILTY SAND (SM); dense; light grayish brown; dry; mostly fine to coarse SAND ; some low plasticity fines.											
16														
17														
18														
19														
20														
21				S-2	9 12 14	26								
22														
23														
24														
25														

(continued)



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REPORT TITLE BORING RECORD				HOLE ID B-3B
DIST. 03	COUNTY	ROUTE	POSTMILE	EA 03-P15054 TO7
PROJECT OR BRIDGE NAME Mt. Aukum Road				
BRIDGE NUMBER	PREPARED BY A. Kahn	DATE 2-8-17	SHEET 1 of 2	

7 BR - CUSTOM COLUMNS P15054T07 DL 020817 GPJ WRECO - CALTRANS.GLB 3/3/17

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per ft	Sand (%)	Fines (%)	Plastic Limit	Plasticity Index	Drilling Method	Casing Depth	Remarks
25			SILTY SAND (SM) (continued).											
26														
27														
28														
29														
30														
31			Becomes medium dense; moist; thin dark brown SILT lenses.	S-3	8 8 12	20								
32														
33														
34														
35														
36			SILTY SAND (SM); medium dense; light brown; moist; mostly fine to coarse SAND ; some low plasticity fines ; (NATIVE).											
37														
38														
39														
40														
41				S-4	5 9 12	21								
42			Bottom of borehole at 41.5 ft bgs Boring terminated at planned depth.											
43			This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010) except as noted on the Soil or Rock Legend or below.											
44														
45														
46														
47														
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54														
55														



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REPORT TITLE BORING RECORD				HOLE ID B-3B	
DIST. 03	COUNTY	ROUTE	POSTMILE	EA 03-P15054 TO7	
PROJECT OR BRIDGE NAME Mt. Aukum Road					
BRIDGE NUMBER		PREPARED BY A. Kahn		DATE 2-8-17	SHEET 2 of 2

CLASSIFICATION TEST SUMMARY P15054TO7 DL 020817.GPJ WRECO - NONCALTRANS.GLB 2/9/17

Borehole	Sample ID	Depth (ft)	Gravel (%)	Sand (%)	Fines (%)	Plasticity Index (PI)	Liquid Limit (LL)	Dry Density, ρ_d (pcf)	Moisture Content (%)	Specific Gravity (G_s)	USCS Group Symbol	USCS Group Name
B-1A	Bulk A	0.7	2	67	30	3	23				SM	SILTY SAND
B-2	Bulk B	15.1	2	79	18							

DRAFT

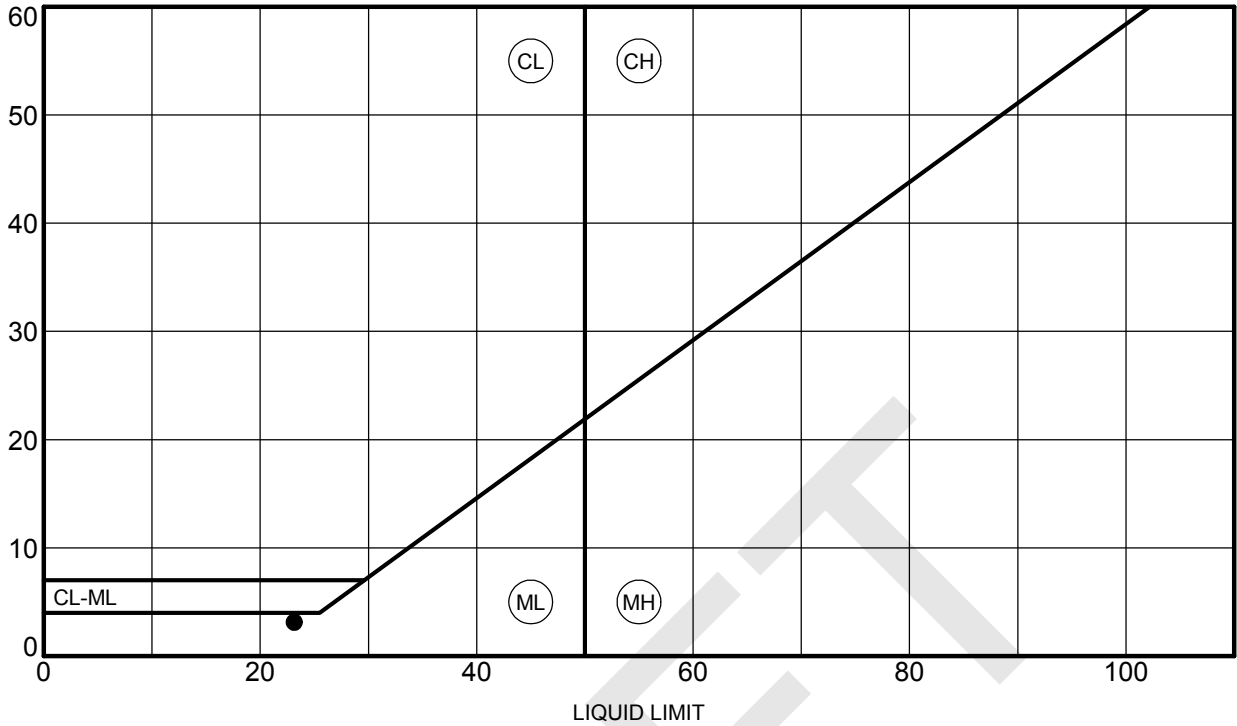


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CLASSIFICATION TEST SUMMARY

DIST. 03	COUNTY El Dorado	ROUTE	POSTMILE	PROJECT NO. P15054 TO7
PROJECT OR BRIDGE NAME Mt. Aukum Road				
BRIDGE NUMBER	PREPARED BY A. Kahn	DATE 2-8-17	SHEET 1 of 1	

P L A S T I C I T Y
I N D E X



Specimen Identification	LL	PL	PI	Fines	Classification	
● B-1A	0.7	23	20	3	30	SILTY SAND (SM)

CALTRANS ATTBERG P15054TO7 DL 020817.GPJ WRECO - NONCALTRANS.GLB 2/9/17



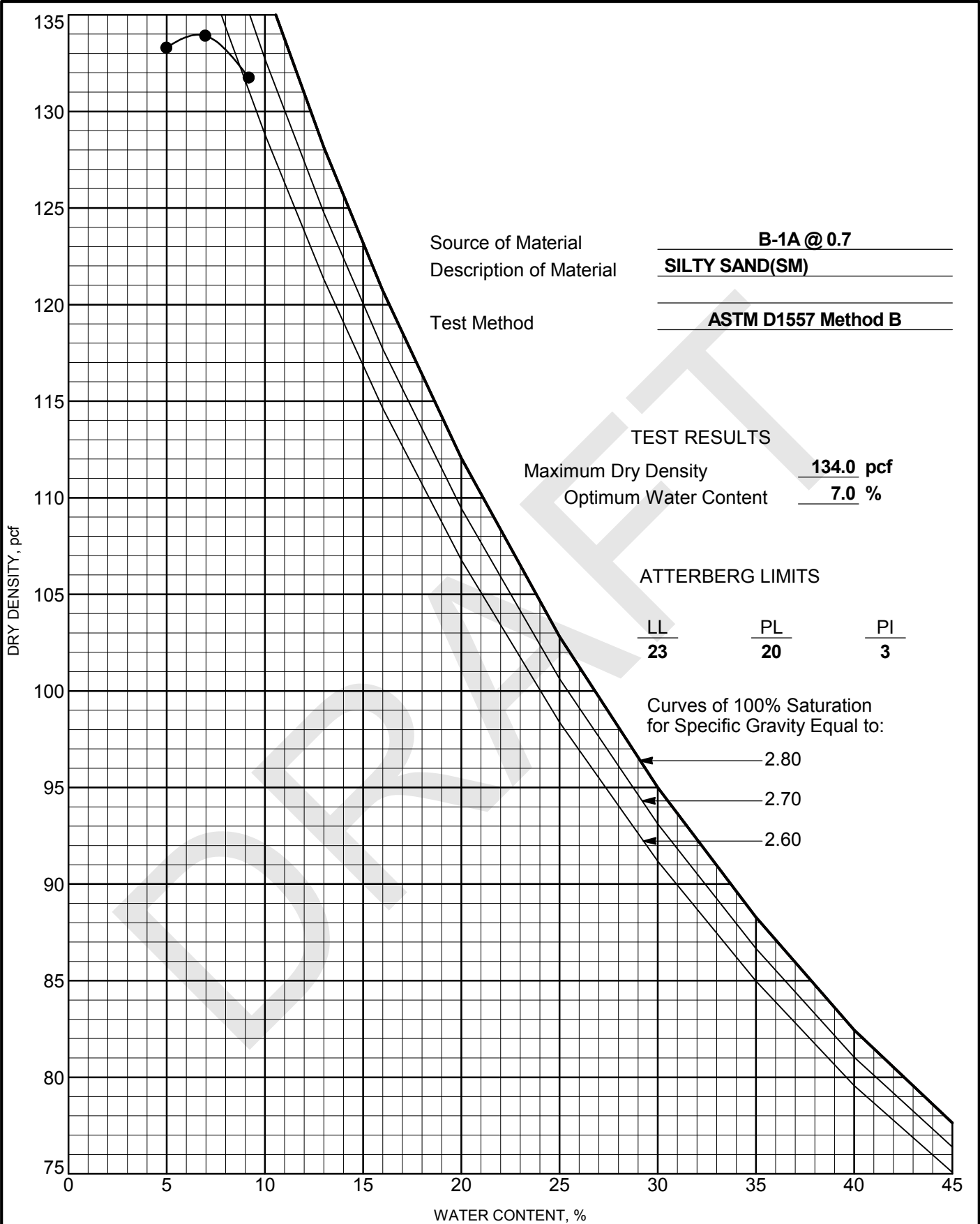
wreco

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ATTERBERG LIMITS RESULTS

DIST. 03	COUNTY El Dorado	ROUTE	POSTMILE	PROJECT NO. P15054 TO7
PROJECT OR BRIDGE NAME Mt. Aukum Road				
BRIDGE NUMBER	PREPARED BY A. Kahn	DATE 2-8-17	SHEET 1 of 1	

CALTRANS COMPACTION-SINGLE CURVE P15054T07 DL 020817.GPJ WRECO - NONCALTRANS.GLB 2/13/17



Source of Material B-1A @ 0.7
 Description of Material SILTY SAND(SM)
 Test Method ASTM D1557 Method B

TEST RESULTS
 Maximum Dry Density 134.0 pcf
 Optimum Water Content 7.0 %

ATTERBERG LIMITS

LL	PL	PI
23	20	3

Curves of 100% Saturation
 for Specific Gravity Equal to:

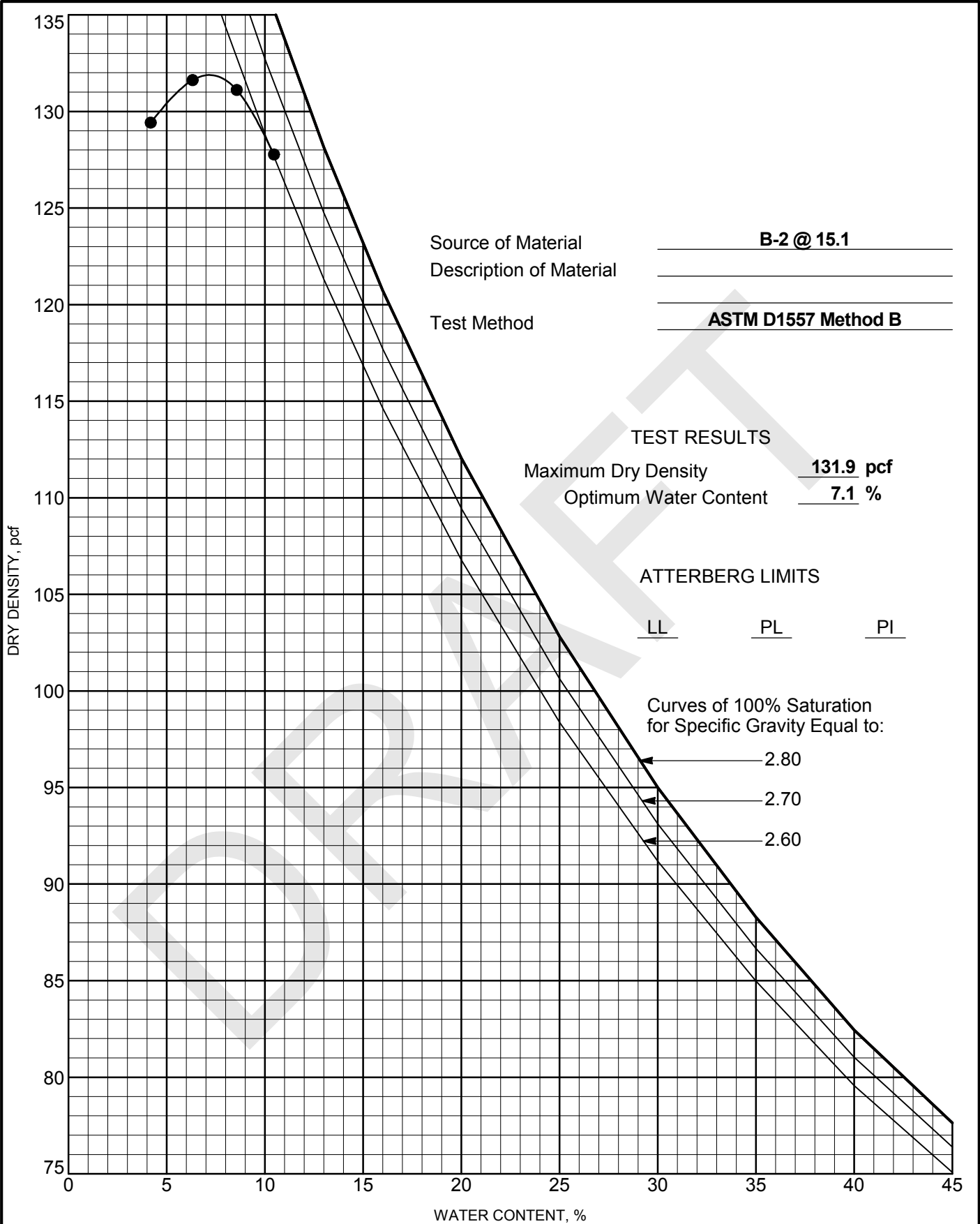
- 2.80
- 2.70
- 2.60



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MOISTURE-DENSITY RELATIONSHIP				
DIST. 03	COUNTY El Dorado	ROUTE	POSTMILE	PROJECT NO. P15054 T07
PROJECT OR BRIDGE NAME Mt. Aukum Road				
BRIDGE NUMBER	PREPARED BY A. Kahn	DATE 2-8-17	SHEET 1 of 2	

CALTRANS COMPACTION-SINGLE CURVE P15054T07 DL 020817.GPJ WRECO - NONCALTRANS.GLB 2/13/17

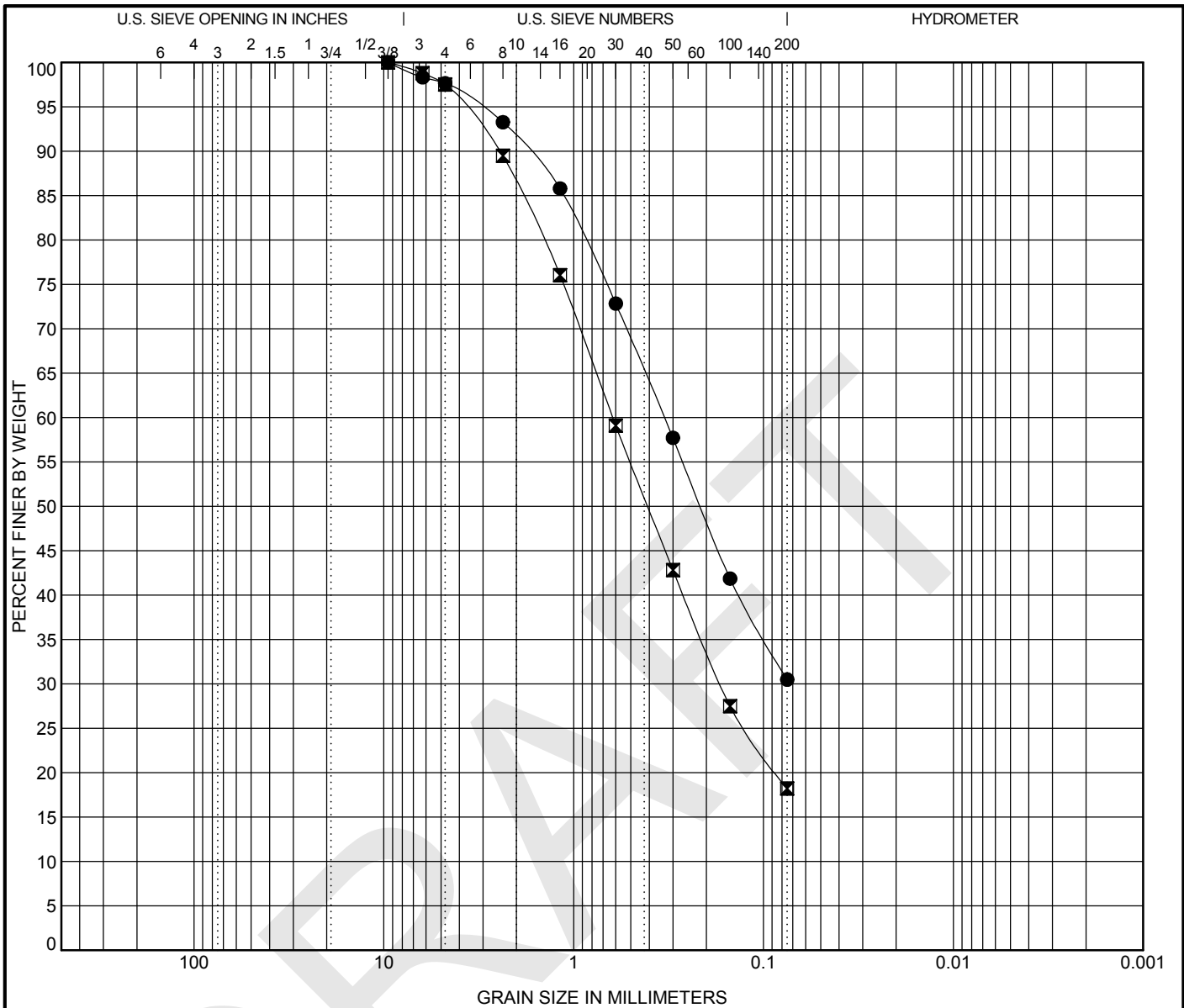


Source of Material B-2 @ 15.1
 Description of Material _____
 Test Method ASTM D1557 Method B



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MOISTURE-DENSITY RELATIONSHIP				
DIST. 03	COUNTY El Dorado	ROUTE	POSTMILE	PROJECT NO. P15054 T07
PROJECT OR BRIDGE NAME Mt. Aukum Road				
BRIDGE NUMBER	PREPARED BY A. Kahn	DATE 2-8-17	SHEET 2 of 2	



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Classification	LL	PL	PI	Cc	Cu
● B-1A 0.7	SILTY SAND (SM)	23	20	3		
☒ B-2 15.1						

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-1A 0.7	9.5	0.333			2.3	67.2	30.5	
☒ B-2 15.1	9.5	0.622	0.168		2.5	79.3	18.2	



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GRAIN SIZE DISTRIBUTION				
DIST. 03	COUNTY El Dorado	ROUTE	POSTMILE	PROJECT NO. P15054 TO7
PROJECT OR BRIDGE NAME Mt. Aukum Road				
BRIDGE NUMBER	PREPARED BY A. Kahn	DATE 2-8-17	SHEET 1 of 1	

CALTRANS GRAIN SIZE P15054T07 DL 020817.GPJ WRECO - NONCALTRANS.GLB 2/9/17