

# INFORMATION HANDOUT

For Contract No. [10-0Y6404](#)

At [Sta - 5 - 17.3/25.5](#)

Identified by

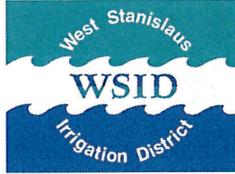
Project ID [1013000270](#)

## MATERIALS INFORMATION

Water Source Information

[Geotechnical Material Information](#)

[High Tension Cable Barrier Information](#)



2015 APR 15 AM 10 58

**WEST STANISLAUS IRRIGATION DISTRICT**

116 E Street  
PO Box 37  
Westley, CA 95387

209/894-3091  
Fax 209/894-3383  
[wsidoffice@weststanislausid.org](mailto:wsidoffice@weststanislausid.org)

April 10, 2015

Hongloan Luong, PE  
Caltrans-Central Region Project Development  
Design IV-Branch L  
1976 E. DMLKJ Blvd  
Stockton, CA 95205

**RE: Walter Availability – Caltrans Project No. 2016)**

Dear Hongloan Luong,

In regards to your request, Non-Potable water may be available at the time of construction and approval to use such water will be contingent upon the Project abiding by Terms and Conditions set forth by the District.

Please see enclosed map which illustrates the location at which the water can be received. More specifically, the Districts Main Canal and Hwy 33 on the west side of the Hwy.

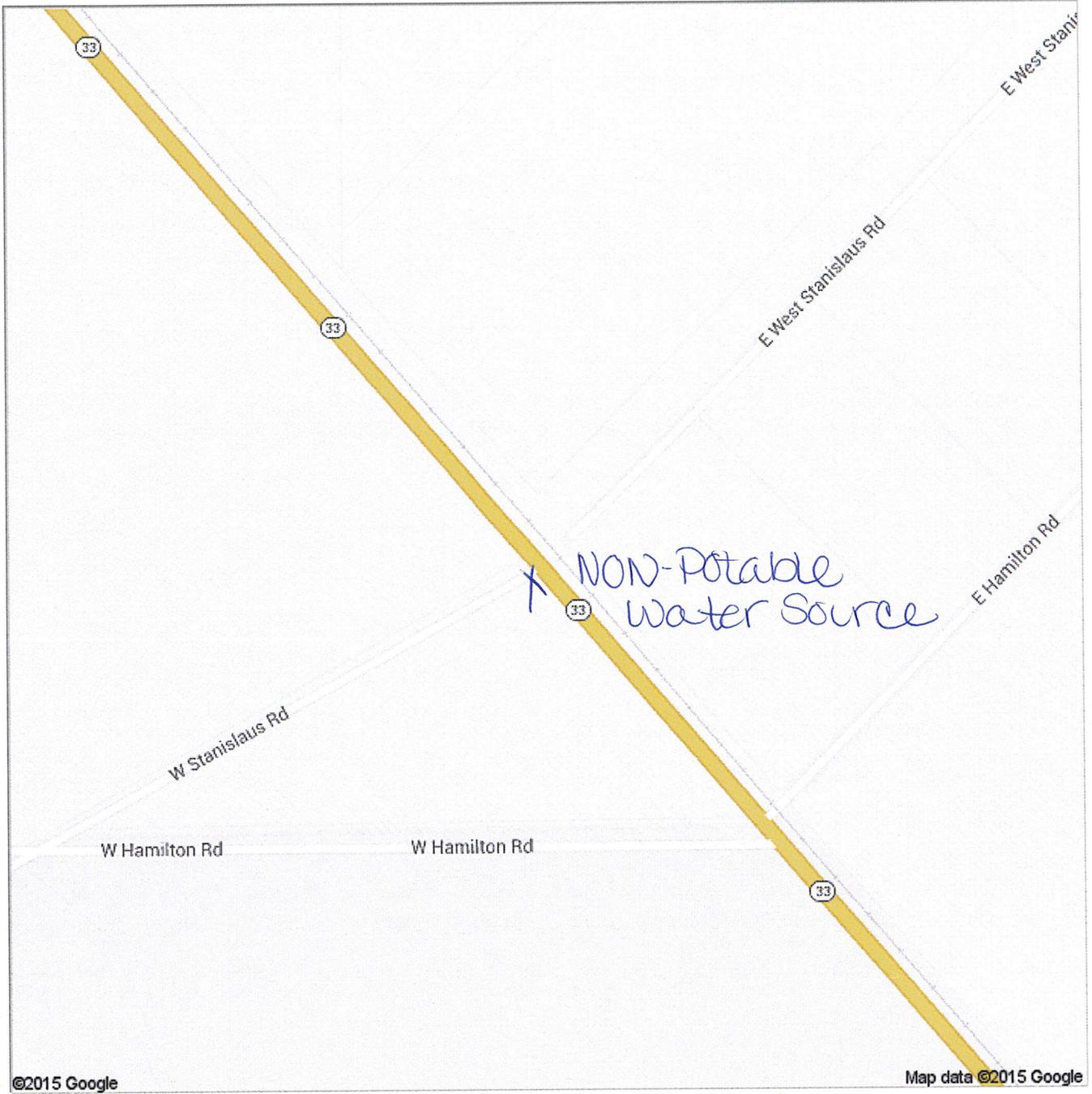
If you have any questions in regards to the enclosed item, please do not hesitate to contact our office at (209)894-3091.

Regards,

A handwritten signature in blue ink, appearing to read "Lisa Lea", is written over the typed name.

Lisa Lea  
District Secretary

Enclosure



**STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING SERVICES  
GEOTECHNICAL SERVICES**

File: 10-Sta-005-17.27/25.52  
EA 10-0Y6401  
Project ID 1013000270  
Median Cable Barrier

**MATERIALS INFORMATION**

In Stanislaus County In And Near Westley from  
Hanson Rd Undercrossing to Hamilton Rd Undercrossing

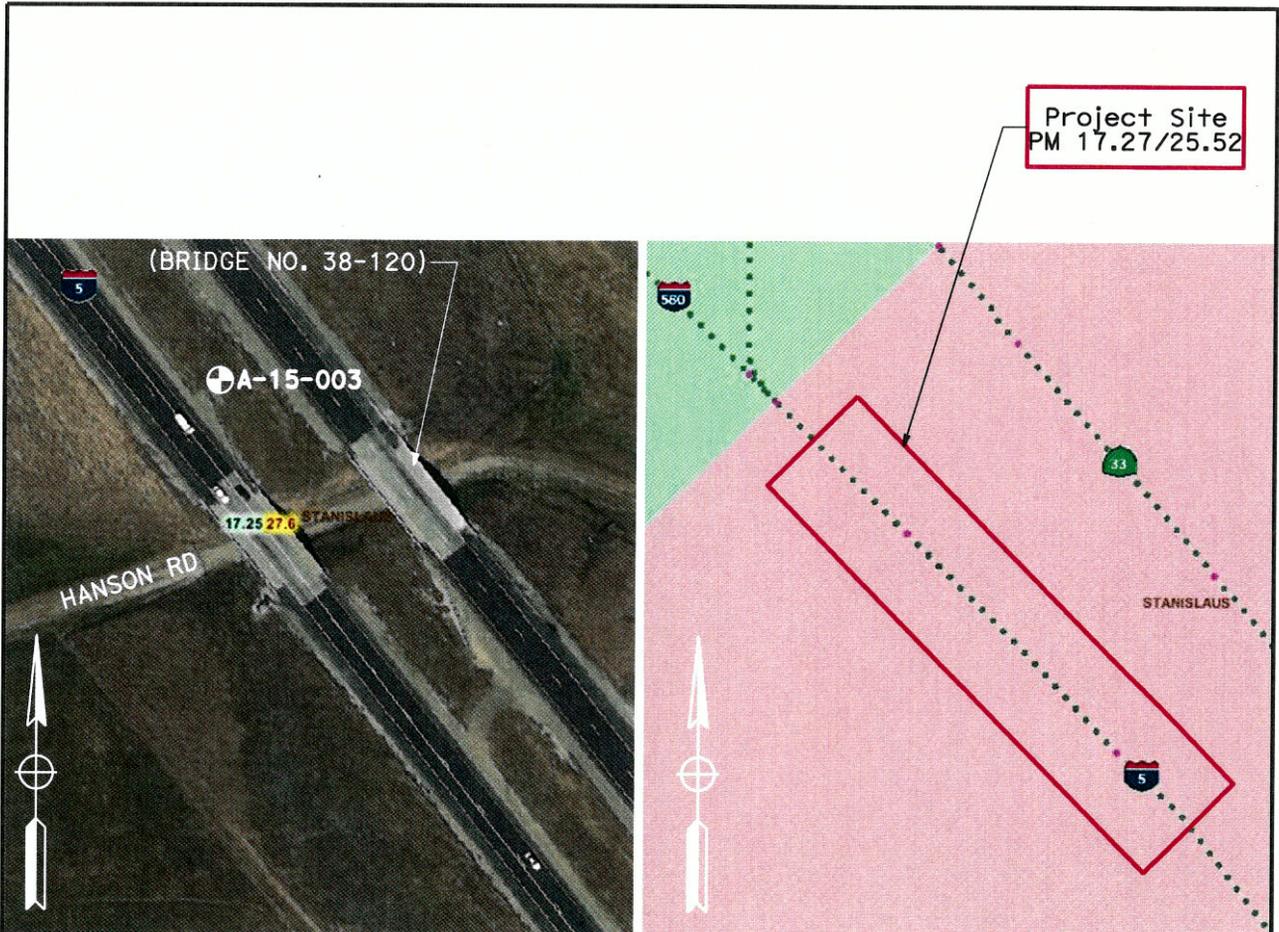
The records from which this  
information was compiled may  
be inspected at:  
The Department of Transportation  
50 Higuera Street  
San Luis Obispo, CA, 93401

Index:

- Boring Location Maps
- Boring Records
- Geologic Map & Seismic Map
- Material Properties Summary

Number of Borings	Drilling Method	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
1	Hollow stem Auger	4.5	15	>100

Number of Soundings	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
0			



LEGEND	
	BORING LOCATION

GPS LOCATION FOR BORING A-15-003 (ASSUMED ELEV 96.60')  
 E5633251.882  
 N3104112.159  
 BENCH MARK LEFT UC SE CORNER DECK (ASSUMED ELEV 100.00')  
 E5633286.594  
 N3104027.585

<b>CALTRANS</b> Division of Engineering Services Geotechnical Services Office of Geotechnical Design-North	EA: 10-0Y6401	Layout Plan Sheet
	Date: 12-17-2014	
	10-Sta-05-PM 17.26 Caltrans Right/Away Hwy OC	Plate No. 1

LOGGED BY <b>J. Scardine</b>	BEGIN DATE <b>2-17-15</b>	COMPLETION DATE <b>2-20-15</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>3104112.2 ft / 5633251.9 ft</b>	HOLE ID <b>A-15-003</b>
DRILLING CONTRACTOR <b>CT Drilling Services</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6"</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Manual</b>	HAMMER EFFICIENCY, ERI <b>ERI=54%;corr60/54=0.90</b>
BOREHOLE BACKFILL AND COMPLETION <b>Neat Cement</b>			GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS <b>&gt;100'</b>	TOTAL DEPTH OF BORING <b>15.5 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
0			SILTY SAND with GRAVEL (SM); dense; yellowish brown; moist; mostly from fine to coarse, subangular SAND; some fines; little fine, subangular GRAVEL.		1	3	34								
1						15									
2						19									
3			COBBLES, 4-6 inches, slightly weathered, hard, subrounded.		2	36	77								
4			SANDY SILT with GRAVEL (ML); medium dense; yellowish brown; moist; mostly fines; some from fine to coarse, subangular SAND; little fine, subangular GRAVEL.		3	12	31								
5						14									
6						17									
7			SILTY SAND (SM); dense; yellowish brown; moist; mostly from fine to coarse, subangular SAND; some fines; trace fine, subangular GRAVEL.		4	10	40								
8						16									
9						24									
10			SANDY SILT (ML); dense; yellowish brown; moist; mostly fines; some from fine to medium SAND.		5	13	46								
11						12									
12						34									
13			SILT (ML); dense; yellowish brown; moist; mostly fines; little from fine to medium SAND.		6	6	38								
14						12									
15			SILT with GRAVEL (ML); medium dense; yellowish brown; moist; mostly fines; little fine, subangular GRAVEL; few from fine to medium SAND.		7	8	27								
16			Bottom of borehole at 15.5 ft bgs			12									
17						26									
18						15									
19															
20															

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.

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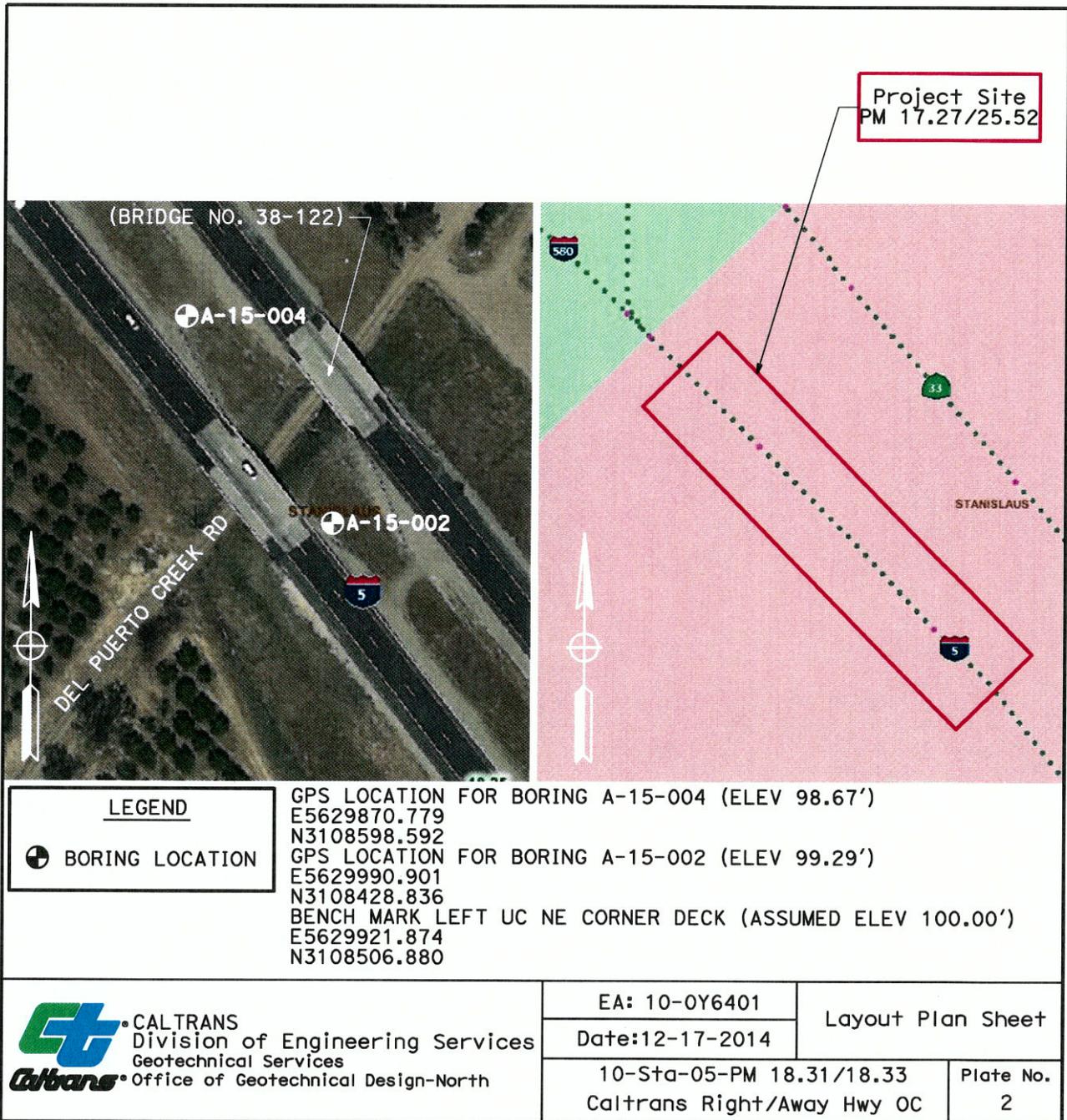


Department of Transportation  
Division of Engineering Services  
Geotechnical Services  
Office of Geotechnical Design - North

REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-15-003</b>	
DIST. <b>10</b>	COUNTY <b>STA</b>	ROUTE <b>05</b>	POSTMILE <b>17.3/25.5</b>	PROJECT ID <b>EA 0Y6401</b>	
PROJECT OR BRIDGE NAME <b>Westley Cable Barrier</b>					
BRIDGE NUMBER		PREPARED BY <b>J. Scardine</b>		DATE	SHEET <b>1 of 1</b>

Number of Borings	Drilling Method	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
2	Hollow Stem Auger	4.5	15	>100

Number of Soundings	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
0			



**Caltrans** CALTRANS  
Division of Engineering Services  
Geotechnical Services  
Office of Geotechnical Design-North

LOGGED BY <b>J. Scardine</b>	BEGIN DATE <b>2-17-15</b>	COMPLETION DATE <b>2-20-15</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>3108428.8 ft / 5629990.9 ft</b>	HOLE ID <b>A-15-002</b>
DRILLING CONTRACTOR <b>CT Drilling Services</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6"</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Manual</b>	HAMMER EFFICIENCY, ERI <b>ERI=54%;corr60/54=0.90</b>
BOREHOLE BACKFILL AND COMPLETION <b>Neat Cement</b>			GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS <b>&gt;100'</b>	TOTAL DEPTH OF BORING <b>15.5 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
0	0		SILTY SAND with GRAVEL (SM); medium dense; brown; moist; mostly from fine to coarse, subangular SAND; some fines; little fine, subangular GRAVEL.		1	7	12								
1	1					5									
2	2					7									
3	3		SANDY SILT with GRAVEL (ML); medium dense; brown; moist; mostly fines; some from fine to coarse, subangular SAND; little fine, subangular GRAVEL.		2	7	26								
4	4					9									
5	5				3	16	36								
6	6					21									
7	7		CLAYEY SAND (SC); dense; yellowish brown; moist; mostly from fine to medium SAND ; little high plasticity fines.												
8	8				4	5	31								
9	9					11									
10	10					20									
11	11				5	16	22								
12	12					12									
13	13		SILTY SAND with GRAVEL (SM); medium dense; brown; moist; mostly from fine to coarse, subangular SAND; some fines; little fine, subangular GRAVEL.												
14	14		CLAYEY SAND (SC); medium dense; yellowish brown; moist; trace fine, subangular GRAVEL ; mostly from fine to medium SAND ; little high plasticity fines.		6	5	32								
15	15		- medium dense; 4" lense fat Clay(CH); PP=4.0 very stiff; trace subangular fine GRAVEL.			11									
16	16					21									
17	17		SANDY SILT (ML); medium dense; yellowish brown; moist; mostly fines; some from fine to medium SAND; trace fine, subangular GRAVEL.		7	7	29								
18	18					12									
19	19					17									
20	20		Bottom of borehole at 15.5 ft bgs												

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.

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

REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-15-002</b>	
DIST. <b>10</b>	COUNTY <b>STA</b>	ROUTE <b>05</b>	POSTMILE <b>17.3/25.5</b>	PROJECT ID <b>EA 0Y6401</b>	
PROJECT OR BRIDGE NAME <b>Westley Cable Barrier</b>					
BRIDGE NUMBER		PREPARED BY <b>J. Scardine</b>		DATE	SHEET <b>1 of 1</b>

LOGGED BY <b>J. Scardine</b>	BEGIN DATE <b>2-17-15</b>	COMPLETION DATE <b>2-20-15</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>3108598.6 ft / 5629870.8 ft</b>	HOLE ID <b>A-15-004</b>
DRILLING CONTRACTOR <b>CT Drilling Services</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6"</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Manual</b>	HAMMER EFFICIENCY, ERI <b>ERi=54%;corr60/54=0.90</b>
BOREHOLE BACKFILL AND COMPLETION <b>Neat Cement</b>			GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS <b>&gt;100'</b>	TOTAL DEPTH OF BORING <b>15.5 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
0	0		SILTY SAND with GRAVEL (SM); loose; brown; moist; mostly from fine to coarse, subangular SAND; some fines; little fine, subangular GRAVEL.		1	5	10								
1	1					5									
2	2					5									
3	3		- reddish brown.		2	8	35								
4	4					22									
5	5				3	20	96								
6	6					47									
7	7					49									
8	8		Poorly graded GRAVEL with SAND (GP); very dense; reddish brown; moist; mostly fine, subangular and subrounded GRAVEL; little from fine to coarse, subangular SAND; few fines.		4	57	72								
9	9		- COBBLES, 4-6 inches, slightly weathered, hard, subrounded.			34									
10	10				5	54	50/3								
11	11					50/3									
12	12					REF									
13	13		SANDY SILT with GRAVEL (ML); brown; moist; mostly fines; some from fine to coarse, subangular SAND; little fine, subangular GRAVEL.		6	34	103/11								
14	14					53									
15	15		SILTY SAND (SM); very loose; brown; moist; mostly from fine to coarse, subangular SAND; some fines; trace fine, subangular GRAVEL.		7	13	74								
16	16					28									
17	17					46									
18	18		Bottom of borehole at 15.5 ft bgs												
19	19		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.												
20	20														

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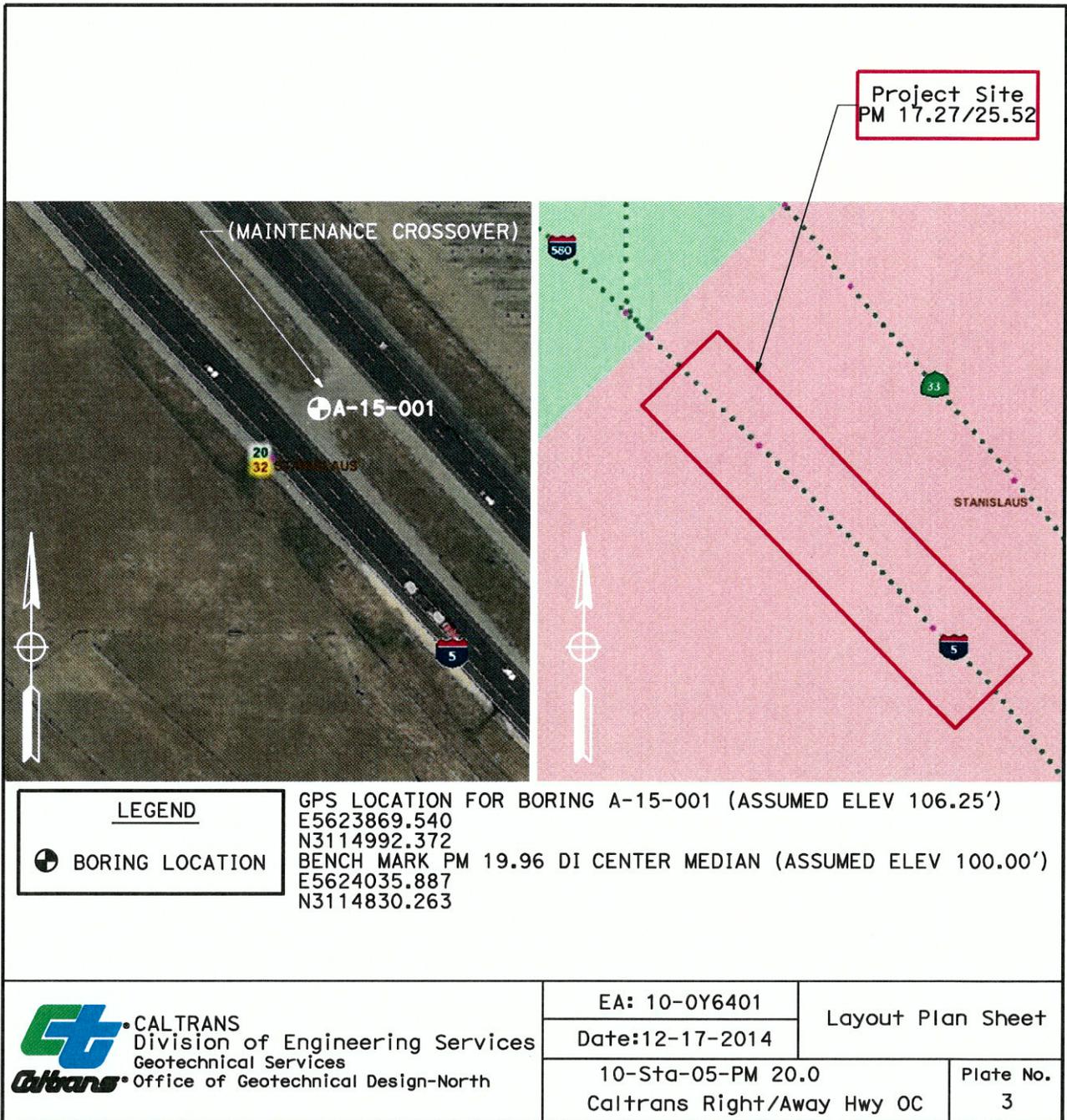


Department of Transportation  
 Division of Engineering Services  
 Geotechnical Services  
 Office of Geotechnical Design - North

REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-15-004</b>
DIST. <b>10</b>	COUNTY <b>STA</b>	ROUTE <b>05</b>	POSTMILE <b>17.3/25.5</b>	PROJECT ID <b>EA 0Y6401</b>
PROJECT OR BRIDGE NAME <b>Westley Cable Barrier</b>				
BRIDGE NUMBER	PREPARED BY <b>J. Scardine</b>	DATE	SHEET <b>1 of 1</b>	

Number of Borings	Drilling Method	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
1	Hollow Stem Auger	4.5	15	>100

Number of Soundings	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
0			



LEGEND	
	BORING LOCATION

GPS LOCATION FOR BORING A-15-001 (ASSUMED ELEV 106.25')  
 E5623869.540  
 N3114992.372  
 BENCH MARK PM 19.96 DI CENTER MEDIAN (ASSUMED ELEV 100.00')  
 E5624035.887  
 N3114830.263

<b>CALTRANS</b> Division of Engineering Services Geotechnical Services Office of Geotechnical Design-North	EA: 10-0Y6401	Layout Plan Sheet
	Date: 12-17-2014	
	10-Sta-05-PM 20.0 Caltrans Right/Away Hwy OC	Plate No. 3

LOGGED BY <b>J. Scardine</b>	BEGIN DATE <b>2-17-15</b>	COMPLETION DATE <b>2-20-15</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>3114992.4 ft / 5623869.5 ft</b>	HOLE ID <b>A-15-001</b>
DRILLING CONTRACTOR <b>CT Drilling Services</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6"</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Manual</b>	HAMMER EFFICIENCY, Eri <b>ERi=54%;corr60/54=0.90</b>
BOREHOLE BACKFILL AND COMPLETION <b>Neat Cement</b>			GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS <b>&gt;100'</b>	TOTAL DEPTH OF BORING <b>15.5 ft</b>

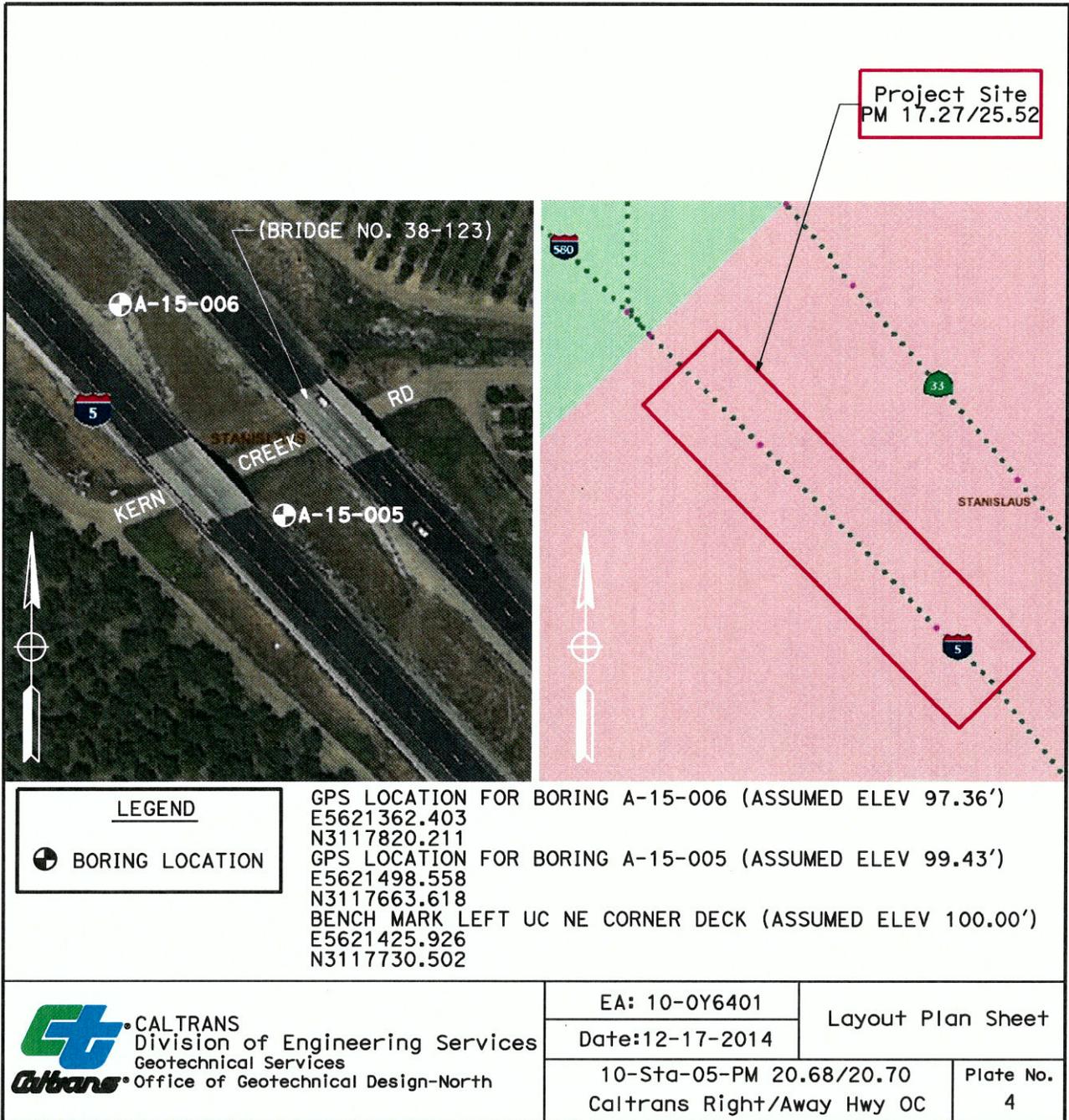
ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
0	0		SILTY SAND with GRAVEL (SM); medium dense; brown; moist; mostly from fine to coarse, subangular SAND; some fines; little fine, subangular GRAVEL.		1	3 5 11	16								
1	1														
2	2														
3	3		CLAYEY SAND with GRAVEL (SC); medium dense; yellowish brown; moist; mostly from fine to medium SAND; little high plasticity fines; little fine, subangular GRAVEL.		2	17 11 12	23								
4	4														
5	5				3	6 11 12	23								
6	6														
7	7														
8	8		CLAYEY SAND (SC); medium dense; yellowish brown; moist; mostly from fine to medium SAND; little high plasticity fines.		4	6 12 16	28								
9	9														
10	10		SILTY SAND with GRAVEL (SM); medium dense; brown; moist; mostly from fine to coarse, subangular SAND; some fines; little fine, subangular GRAVEL.		5	6 9 9	18								
11	11														
12	12		CLAYEY SAND (SC); medium dense; brown; moist; mostly from fine to medium SAND; little high plasticity fines.												
13	13		SILTY SAND (SM); medium dense; brown; moist; mostly from fine to coarse, subangular SAND; some fines.		6	12 13 14	27								
14	14		CLAYEY SAND with GRAVEL (SC); medium dense; brown; moist; mostly from fine to medium SAND; little high plasticity fines; little fine, subangular GRAVEL.												
15	15		SILTY SAND (SM); very dense; brown; moist; mostly from fine to coarse, subangular SAND; some fines.		7	34 48 50/5	98/11								
16	16		Bottom of borehole at 15.5 ft bgs												
17	17		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.												
18	18														
19	19														
20	20														

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	Department of Transportation				REPORT TITLE <b>BORING RECORD</b>		HOLE ID <b>A-15-001</b>		
	Division of Engineering Services				DIST. <b>10</b>	COUNTY <b>STA</b>	ROUTE <b>05</b>	POSTMILE <b>17.3/25.5</b>	
	Geotechnical Services				PROJECT OR BRIDGE NAME <b>Westley Cable Barrier</b>				
	Office of Geotechnical Design - North				BRIDGE NUMBER		PREPARED BY <b>J. Scardine</b>		
						DATE		SHEET <b>1 of 1</b>	

Number of Borings	Drilling Method	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
2	Hollow Stem Auger	4.5	15	>100

Number of Soundings	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
0			



LOGGED BY <b>J. Scardine</b>	BEGIN DATE <b>2-17-15</b>	COMPLETION DATE <b>2-20-15</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>3117663.6 ft / 5621498.6 ft</b>	HOLE ID <b>A-15-005</b>
DRILLING CONTRACTOR <b>CT Drilling Services</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6"</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Manual</b>	HAMMER EFFICIENCY, ERI <b>ERi=54%;corr60/54=0.90</b>
BOREHOLE BACKFILL AND COMPLETION <b>Neat Cement</b>			GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS <b>&gt;100'</b>	TOTAL DEPTH OF BORING <b>15.5 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
0	0		SANDY SILT (ML); loose; brown; moist; mostly fines; some from fine to medium SAND; trace fine, subangular GRAVEL.		1	3	9								
1	1					4									
2	2					5									
3	3				2	4	13								
4	4		CLAYEY SAND (SC); medium dense; brown; moist; mostly fine and trace coarse, subangular SAND; some low plasticity fines.		3	6	21								
5	5					9									
6	6					12									
7	7														
8	8				4	3	12								
9	9					5									
10	10		SANDY SILT (ML); medium dense; brown; moist; mostly fines; some from fine to medium SAND.		5	3	16								
11	11					7									
12	12		CLAYEY SAND (SC); medium dense; dark brown; moist; mostly fine SAND; some low plasticity fines.												
13	13				6	3	16								
14	14		SANDY SILT (ML); medium dense; brown; moist; mostly fines; some from fine to medium SAND.			7									
15	15					9									
16	16		CLAYEY SAND (SC); medium dense; dark brown; moist; mostly fine SAND; some low plasticity fines.			6									
17	17		Bottom of borehole at 15.5 ft bgs			9									
18	18		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.												
19	19														
20	20														

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

REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-15-005</b>	
DIST. <b>10</b>	COUNTY <b>STA</b>	ROUTE <b>05</b>	POSTMILE <b>17.3/25.5</b>	PROJECT ID <b>EA 0Y6401</b>	
PROJECT OR BRIDGE NAME <b>Westley Cable Barrier</b>					
BRIDGE NUMBER		PREPARED BY <b>J. Scardine</b>		DATE	SHEET <b>1 of 1</b>

LOGGED BY <b>J. Scardine</b>	BEGIN DATE <b>2-17-15</b>	COMPLETION DATE <b>2-20-15</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>3117820.2 ft / 5621362.4 ft</b>	HOLE ID <b>A-15-006</b>
DRILLING CONTRACTOR <b>CT Drilling Services</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6"</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Manual</b>	HAMMER EFFICIENCY, ERI <b>ERi=54%;corr60/54=0.90</b>
BOREHOLE BACKFILL AND COMPLETION <b>Neat Cement</b>			GROUNDWATER DURING DRILLING READINGS <b>&gt;100'</b>	AFTER DRILLING (DATE) <b>15.5 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
0	0		SANDY SILT (ML); medium dense; brown; moist; mostly fines; some fine SAND; trace fine, subangular GRAVEL.		1	3	14								
1	1					6									
2	2					8									
3	3				2	5	21								
4	4					10									
5	5		SILTY SAND (SM); medium dense; brown; moist; mostly from fine to coarse SAND; some fines; trace fine, subangular GRAVEL.		3	5	21								
6	6					6									
7	7					15									
8	8				4	8	27								
9	9					12									
10	10					15									
11	11		CLAYEY SAND (SC); medium dense; brown; moist; mostly fine SAND.		5	5	23								
12	12		SANDY SILT (ML); medium dense; brown; moist; mostly fines; some fine SAND; trace fine, subangular GRAVEL.			11									
13	13					12									
14	14		CLAYEY SAND (SC); medium dense; brown; moist; mostly fine SAND.		6	5	20								
15	15					8									
16	16		SANDY SILT (ML); medium dense; brown; moist; mostly fines; some fine SAND; trace fine, subangular GRAVEL.		7	4	25								
17	17					8									
18	18					17									
19	19														
20	20														

Bottom of borehole at 15.5 ft bgs

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.

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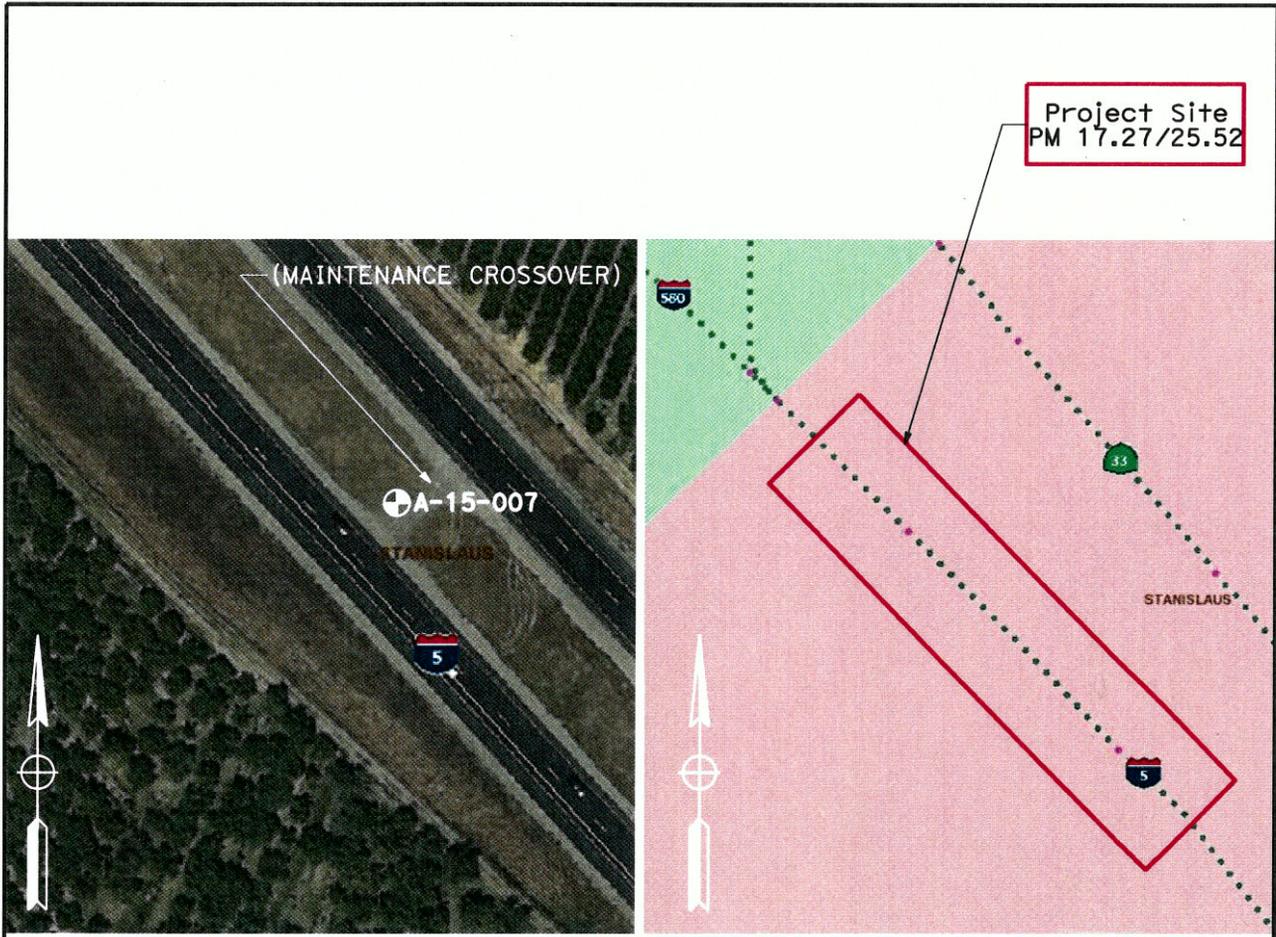


Department of Transportation  
Division of Engineering Services  
Geotechnical Services  
Office of Geotechnical Design - North

REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-15-006</b>	
DIST. <b>10</b>	COUNTY <b>STA</b>	ROUTE <b>05</b>	POSTMILE <b>17.3/25.5</b>	PROJECT ID <b>EA 0Y6401</b>	
PROJECT OR BRIDGE NAME <b>Westley Cable Barrier</b>					
BRIDGE NUMBER		PREPARED BY <b>J. Scardine</b>		DATE	SHEET <b>1 of 1</b>

Number of Borings	Drilling Method	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
1	Hollow Stem Auger	4.5	15	>100

Number of Soundings	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
0			



LEGEND	
	BORING LOCATION

GPS LOCATION FOR BORING A-15-007 (ASSUMED ELEV 108.83')  
 E5618610.496  
 N3120969.255  
 BENCH MARK PM 21.68 DI CENTER MEDIAN (ASSUMED ELEV 100.00')  
 E5618042.770  
 N3121652.827

<b>CALTRANS</b> Division of Engineering Services Geotechnical Services Office of Geotechnical Design-North	EA: 10-0Y6401	Layout Plan Sheet
	Date: 12-17-2014	
	10-Sta-05-PM 21.48 Caltrans Right/Away Hwy OC	Plate No. 5

LOGGED BY <b>J. Scardine</b>	BEGIN DATE <b>2-17-15</b>	COMPLETION DATE <b>2-20-15</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>3120969.3 ft / 5618610.5 ft</b>	HOLE ID <b>A-15-007</b>
DRILLING CONTRACTOR <b>CT Drilling Services</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6"</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Manual</b>	HAMMER EFFICIENCY, ERI <b>ERi=54%;corr60/54=0.90</b>
BOREHOLE BACKFILL AND COMPLETION <b>Neat Cement</b>			GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS <b>&gt;100'</b>	TOTAL DEPTH OF BORING <b>15.5 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks	
0	0		SILTY SAND with GRAVEL (SM); medium dense; brown; moist; mostly from fine to coarse, subangular SAND; some fines; little fine, subangular GRAVEL.	X	1	8	33									
1	1	16														
2	2	17														
3	3		SANDY SILT with GRAVEL (ML); medium dense; brown; moist; mostly fines; some from fine and medium SAND; little fine, subangular GRAVEL.	X	2	15	34									
4	4	19														
5	5	15														
6	6		SILTY SAND (SM); medium dense; brown; moist; mostly from fine to coarse SAND; some fines.	X	3	7	19									
7	7	12														
8	8	7														
9	9		SILT with SAND (ML); medium dense; brown; moist; mostly fines; few fine and medium SAND.	X	4	6	33									
10	10	12														
11	11	21														
12	12		Bottom of borehole at 15.5 ft bgs	X	5	6	30									
13	13	11														
14	14	19														
15	15		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.	X	6	10	53									
16	16	23														
17	17	30														
18	18			X	7	8	51									
19	19	20														
20	20	31														

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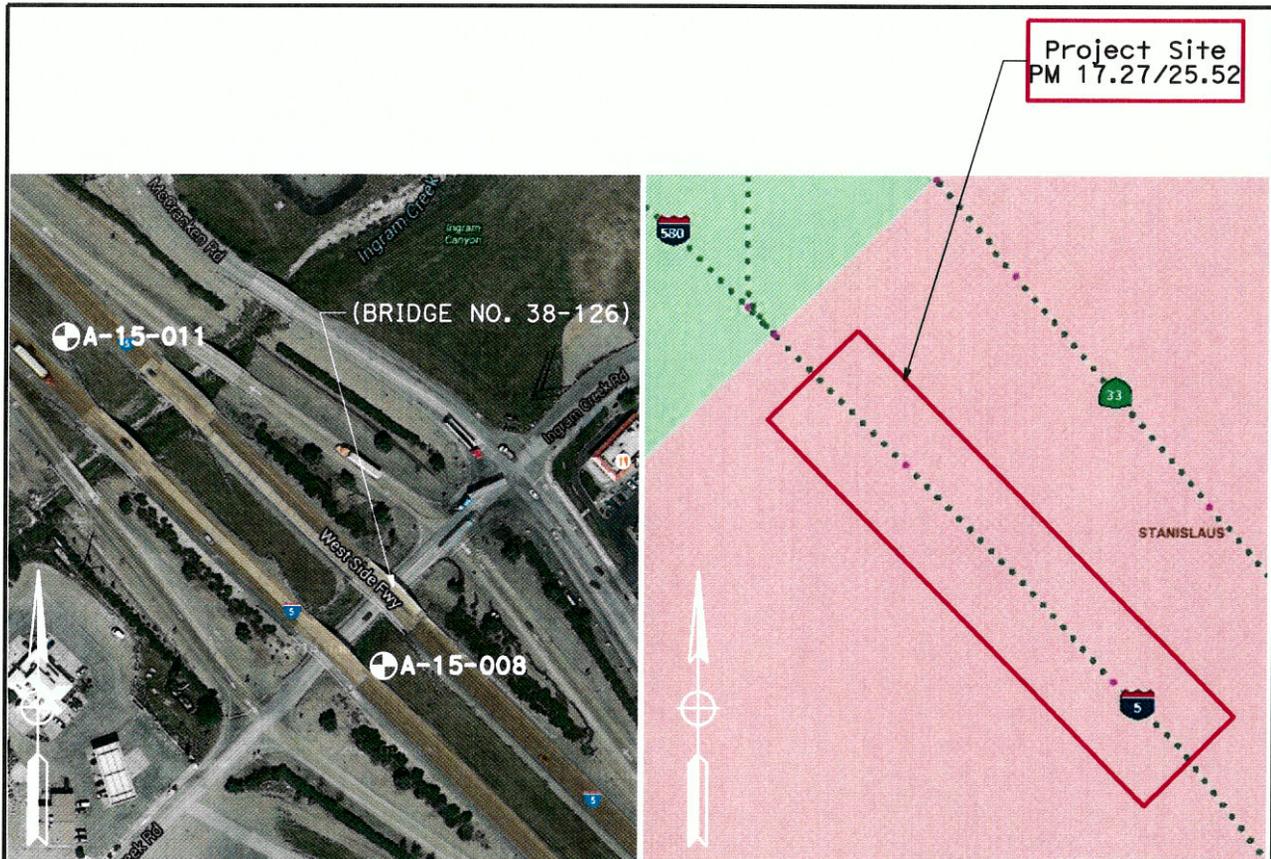


Department of Transportation  
 Division of Engineering Services  
 Geotechnical Services  
 Office of Geotechnical Design - North

REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-15-007</b>
DIST. <b>10</b>	COUNTY <b>STA</b>	ROUTE <b>05</b>	POSTMILE <b>17.3/25.5</b>	PROJECT ID <b>EA 0Y6401</b>
PROJECT OR BRIDGE NAME <b>Westley Cable Barrier</b>				
BRIDGE NUMBER	PREPARED BY <b>J. Scardine</b>		DATE	SHEET <b>1 of 1</b>

Number of Borings	Drilling Method	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
2	Hollow Stem Auger	4.5	15	>100

Number of Soundings	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
0			



LEGEND	
	BORING LOCATION

GPS LOCATION FOR BORING A-15-011 (ASSUMED ELEV 96.71')  
E5612890.196  
N3127192.838  
GPS LOCATION FOR BORING A-15-008 (ASSUMED ELEV 99.10')  
E5613350.787  
N3126713.822  
BENCH MARK INGRAM CR  
LEFT UC NE CORNER DECK (ASSUMED ELEV 100.00')  
E5612957.027 N3127095.813  
BENCH MARK INGRAM RD  
LEFT UC SE CORNER DECK (ASSUMED ELEV 100.00')  
E5613314.643 N3126723.544

<b>CALTRANS</b> Division of Engineering Services Geotechnical Services <b>Caltrans</b> Office of Geotechnical Design-North	EA: 10-0Y6401	Layout Plan Sheet
	Date: 12-17-2014	
	10-Sta-05-PM 22.99/23.09 Caltrans Right/Away Hwy OC	Plate No. 6

LOGGED BY <b>J. Scardine</b>	BEGIN DATE <b>2-17-15</b>	COMPLETION DATE <b>2-20-15</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>3126713.8 ft / 5613350.8 ft</b>	HOLE ID <b>A-15-008</b>
DRILLING CONTRACTOR <b>CT Drilling Services</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6"</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Manual</b>	HAMMER EFFICIENCY, ERI <b>ERi=54%;corr60/54=0.90</b>
BOREHOLE BACKFILL AND COMPLETION <b>Neat Cement</b>			GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS <b>&gt;100'</b>	TOTAL DEPTH OF BORING <b>15.5 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
0			SILTY SAND (SM); medium dense; brown; moist; mostly from fine to coarse SAND; some fines; trace fine, subangular GRAVEL.		1	6 8 8	16								
1															
2															
3					2	6 8 12	20								
4			SILT with SAND (ML); loose; brown; moist; mostly fines; some from fine to coarse SAND; trace fine, subangular GRAVEL.		3	3 3 8	11								
5															
6															
7															
8			SILT with SAND (ML); medium dense; brown; moist; mostly fines; some from fine to coarse SAND.		4	4 10 15	25								
9															
10					5	5 5 7	12								
11															
12															
13			SANDY lean CLAY (CL); very stiff; brown; moist; mostly fines; some fine SAND; tsf pp=2.5.		6	9 16 19	35								
14															
15			- dark brown.		7	5 7 7	14								
16			Bottom of borehole at 15.5 ft bgs												
17			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.												
18															
19															
20															

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Department of Transportation  
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Geotechnical Services  
Office of Geotechnical Design - North

REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-15-008</b>
DIST. <b>10</b>	COUNTY <b>STA</b>	ROUTE <b>05</b>	POSTMILE <b>17.3/25.5</b>	PROJECT ID <b>EA 0Y6401</b>
PROJECT OR BRIDGE NAME <b>Westley Cable Barrier</b>				
BRIDGE NUMBER	PREPARED BY <b>J. Scardine</b>	DATE	SHEET <b>1 of 1</b>	

LOGGED BY <b>J. Scardine</b>	BEGIN DATE <b>2-17-15</b>	COMPLETION DATE <b>2-20-15</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>3127192.8 ft / 5612890.2 ft</b>	HOLE ID <b>A-15-011</b>
DRILLING CONTRACTOR <b>CT Drilling Services</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6"</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Manual</b>	HAMMER EFFICIENCY, Eri <b>ERi=54%;corr60/54=0.90</b>
BOREHOLE BACKFILL AND COMPLETION <b>Neat Cement</b>			GROUNDWATER READINGS <b>&gt;100'</b>	DURING DRILLING AFTER DRILLING (DATE) <b>15.5 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
0	0		SILTY SAND with GRAVEL (SM); dense; brown; mostly from fine to coarse SAND; some fines; little fine, subangular GRAVEL.	1	12 31 21	52								
1	1													
2	2													
3	3			2	8 6 9	15								
4	4		SANDY SILT (ML); medium dense; dark brown; mostly fines; some from fine to coarse SAND.	3	10 10 7	17								
5	5													
6	6													
7	7													
8	8		SANDY SILT with GRAVEL (ML); dense; brown; mostly fines; some from fine to coarse SAND; little fine, subangular GRAVEL.	4	18 23 28	51								
9	9			5	18 22 16	38								
10	10		SANDY SILT (ML); dense; brown; mostly fines; some from fine to coarse SAND.											
11	11													
12	12													
13	13		SANDY SILT with GRAVEL (ML); very dense; brown; mostly fines; some from fine to coarse SAND; little fine, subangular GRAVEL.	6	43 33 28	61								
14	14			7	41 50/4 REF	50/4								
15	15													
16	16		Bottom of borehole at 15.5 ft bgs											
17	17		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.											
18	18													
19	19													
20	20													

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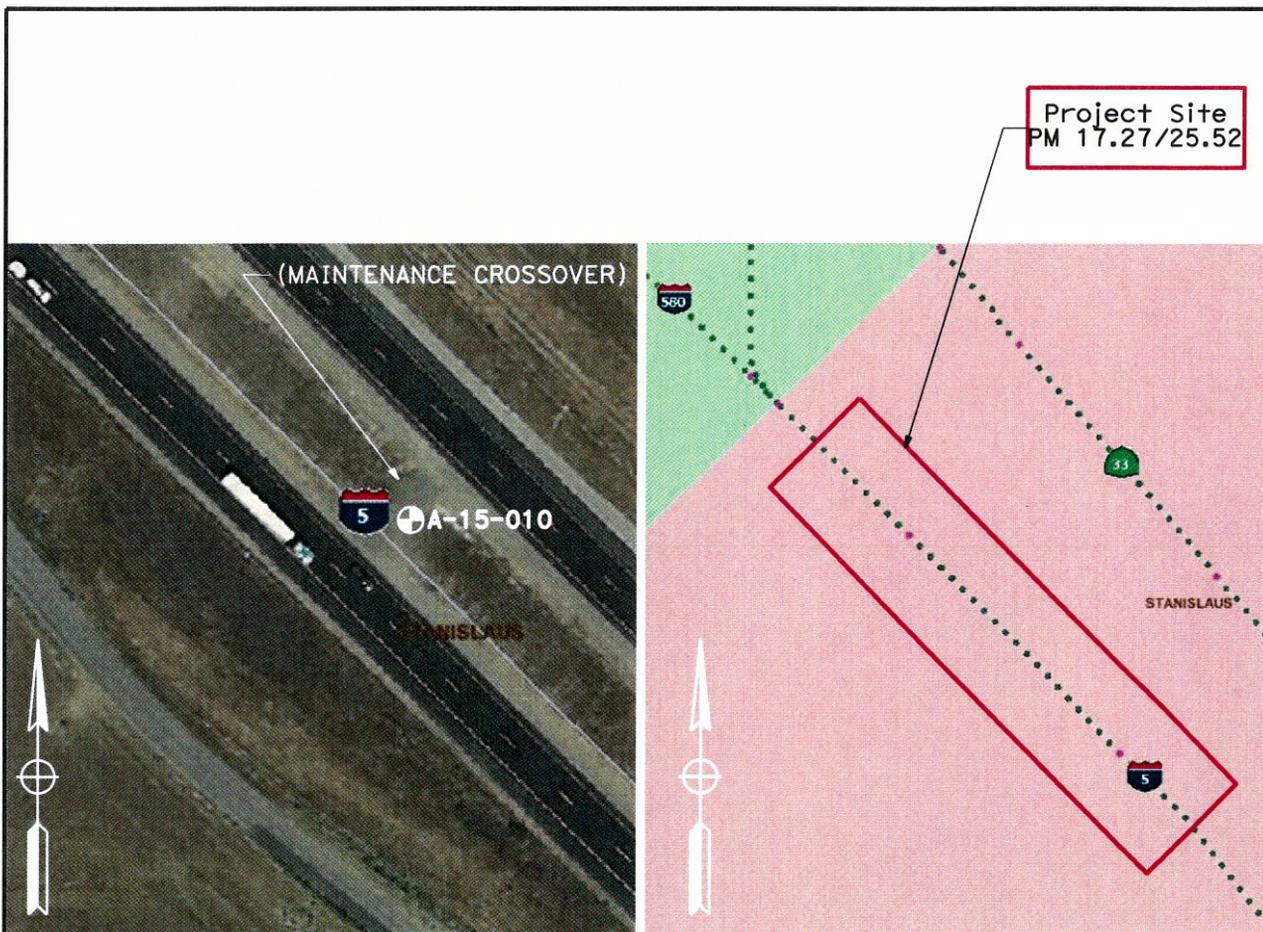


Department of Transportation  
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 Office of Geotechnical Design - North

REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-15-011</b>	
DIST. <b>10</b>	COUNTY <b>STA</b>	ROUTE <b>05</b>	POSTMILE <b>17.3/25.5</b>	PROJECT ID <b>EA 0Y6401</b>	
PROJECT OR BRIDGE NAME <b>Westley Cable Barrier</b>					
BRIDGE NUMBER		PREPARED BY <b>J. Scardine</b>		DATE	SHEET <b>1 of 1</b>

Number of Borings	Drilling Method	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
1	Hollow Stem Auger	4.5	15	>100

Number of Soundings	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
0			



LEGEND	
	BORING LOCATION

GPS LOCATION FOR BORING A-15-010 (ASSUMED ELEV 99.34')  
 E5609313.931  
 N3130894.781  
 BENCH MARK PM 23.96 DI CENTER MEDIAN (ASSUMED ELEV 100.00')  
 E5609811.871  
 N3130412.178

<b>CALTRANS</b> Division of Engineering Services Geotechnical Services <i>Caltrans</i> Office of Geotechnical Design-North	EA: 10-0Y6401	Layout Plan Sheet
	Date: 12-17-2014	
	10-Sta-05-PM 24.08 Caltrans Right/Away Hwy OC	Plate No. 7

LOGGED BY <b>J. Scardine</b>	BEGIN DATE <b>2-17-15</b>	COMPLETION DATE <b>2-20-15</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>3130894.8 ft / 5609313.9 ft</b>	HOLE ID <b>A-15-010</b>
DRILLING CONTRACTOR <b>CT Drilling Services</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6"</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Manual</b>	HAMMER EFFICIENCY, ERI <b>ERi=54%;corr60/54=0.90</b>
BOREHOLE BACKFILL AND COMPLETION <b>Neat Cement</b>			GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS <b>&gt;100'</b>	TOTAL DEPTH OF BORING <b>15.5 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
0	0		SANDY SILT with GRAVEL (ML); very dense; brown; moist; mostly fines; some from fine to coarse SAND; little fine, subangular GRAVEL.		1	12 20 36	56								
1	1														
2	2		SILTY SAND (SM); brown; moist; mostly fine and medium SAND; trace fine, subangular GRAVEL; COBBLES, 4-6 inches, slightly weathered, hard, subrounded.		2	REF	0								
3	3		Well-graded GRAVEL with SILT and SAND (GW-GM); brown; moist; mostly fine, subangular and subrounded, flat and elongated GRAVEL; little fines; little from fine to coarse SAND.			REF									
4	4				3	32	50/5								
5	5					50/5									
6	6					REF									
7	7														
8	8				4	33	83								
9	9		Poorly graded SAND with SILT and GRAVEL (SP-SM); very dense; brown; moist; mostly fine SAND; some fines; little fine, subangular GRAVEL.		5	19	58								
10	10					28									
11	11					30									
12	12		SANDY SILT with GRAVEL (ML); brown; moist; mostly fines; some from fine to coarse SAND; little fine, subangular GRAVEL.												
13	13				6	37	50/5								
14	14		Poorly graded SAND with SILT and GRAVEL (SP-SM); brown; moist; mostly fine SAND; some fines; little fine, subangular GRAVEL.			50/5									
15	15				7	REF	0								
16	16					REF									
17	17					REF									
18	18														
19	19														
20	20														
Bottom of borehole at 15.5 ft bgs															
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.															

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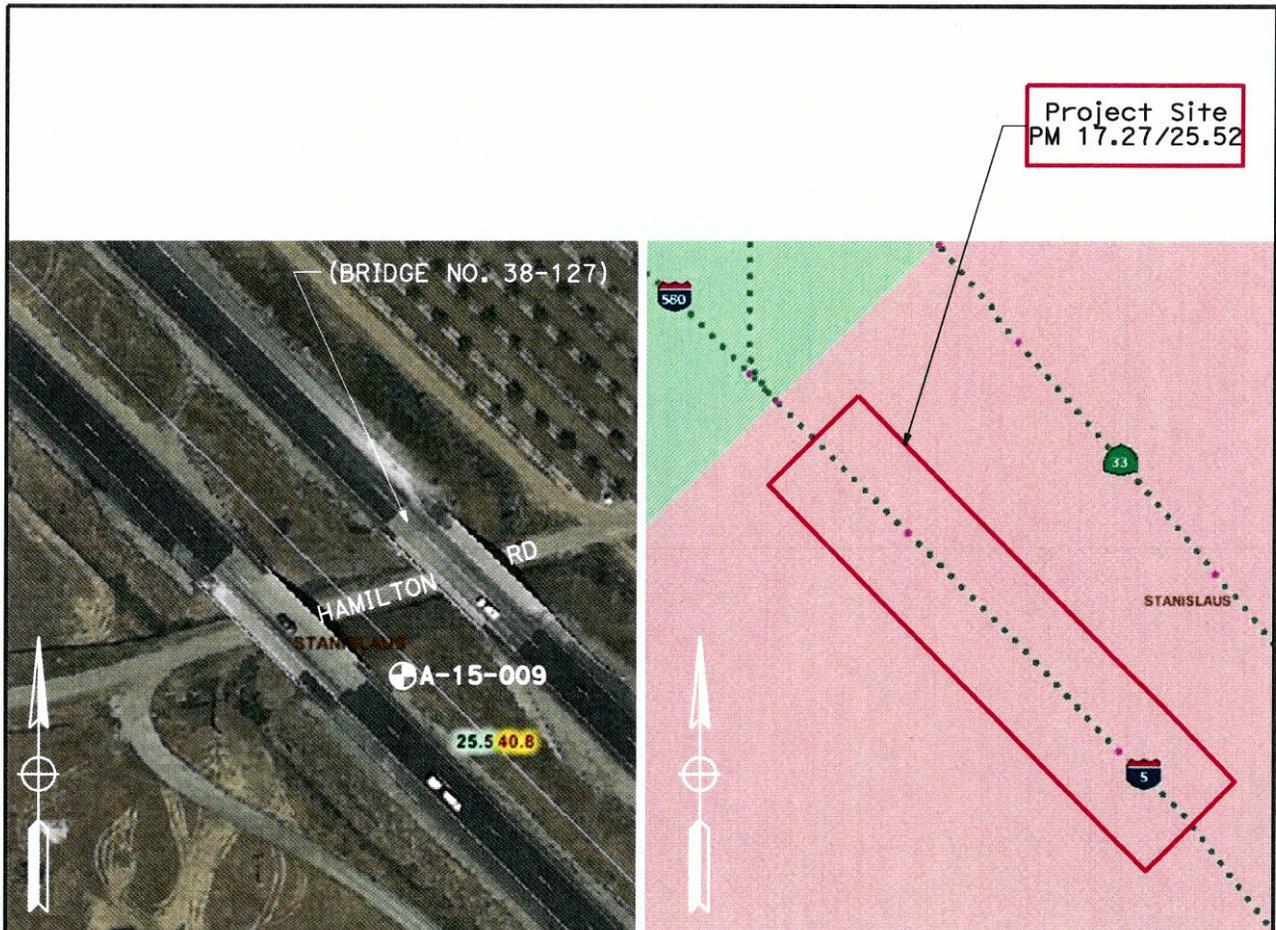


Department of Transportation  
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 Office of Geotechnical Design - North

REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-15-010</b>
DIST. <b>10</b>	COUNTY <b>STA</b>	ROUTE <b>05</b>	POSTMILE <b>17.3/25.5</b>	PROJECT ID <b>EA 0Y6401</b>
PROJECT OR BRIDGE NAME <b>Westley Cable Barrier</b>				
BRIDGE NUMBER	PREPARED BY <b>J. Scardine</b>		DATE	SHEET <b>1 of 1</b>

Number of Borings	Drilling Method	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
1	Hollow Stem Auger	4.5	15	>100

Number of Soundings	Maximum Diameter (in)	Maximum Depth (ft)	Estimated Groundwater Depth (ft)
0			



LEGEND	
	BORING LOCATION

GPS LOCATION FOR BORING A-15-009 (ASSUMED ELEV 98.42')  
 E5604026.340  
 N3136343.792  
 BENCH MARK LEFT UC SE CORNER DECK (ASSUMED ELEV 100.00')  
 E5603987.670  
 N3136368.634

<b>CALTRANS</b> Division of Engineering Services Geotechnical Services Office of Geotechnical Design-North	EA: 10-0Y6401	Layout Plan Sheet
	Date: 12-17-2014	
	10-Sta-05-PM 25.52 Caltrans Right/Away Hwy OC	Plate No. 8

LOGGED BY <b>J. Scardine</b>	BEGIN DATE <b>2-17-15</b>	COMPLETION DATE <b>2-20-15</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum) <b>3136343.8 ft / 5604026.3 ft</b>	HOLE ID <b>A-15-009</b>
DRILLING CONTRACTOR <b>CT Drilling Services</b>			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B47</b>	BOREHOLE DIAMETER <b>6"</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>SPT</b>			SPT HAMMER TYPE <b>Manual</b>	HAMMER EFFICIENCY, ERI <b>ERi=54%;corr60/54=0.90</b>
BOREHOLE BACKFILL AND COMPLETION <b>Neat Cement</b>			GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS <b>&gt;100'</b>	TOTAL DEPTH OF BORING <b>15.5 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
0	0		SILTY SAND with GRAVEL (SM); medium dense; brown; moist; mostly from fine to coarse SAND; little fines; little fine, subangular GRAVEL.		1	5	23								
1	1					12									
2	2					11									
3	3		SANDY SILT (ML); medium dense; brown; moist; mostly fines; some fine and medium SAND; trace fine, subangular GRAVEL.		2	8	24								
4	4					10									
5	5				3	6	31								
6	6					12									
7	7					19									
8	8				4	7	34								
9	9		CLAYEY SAND (SC); medium dense; brown; moist; mostly SAND; some low plasticity fines.			15									
10	10				5	4	19								
11	11					8									
12	12					11									
13	13				6	6	33								
14	14		Lean CLAY with SAND (CL); medium dense; dark brown; moist; mostly medium plasticity fines; little fine SAND.			15									
15	15		SANDY SILT (ML); medium dense; brown; moist; mostly fines; some fine and medium SAND; trace fine, subangular GRAVEL.		7	9	32								
16	16		Bottom of borehole at 15.5 ft bgs			13									
17	17					19									
18	18														
19	19														
20	20														

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.

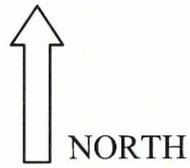
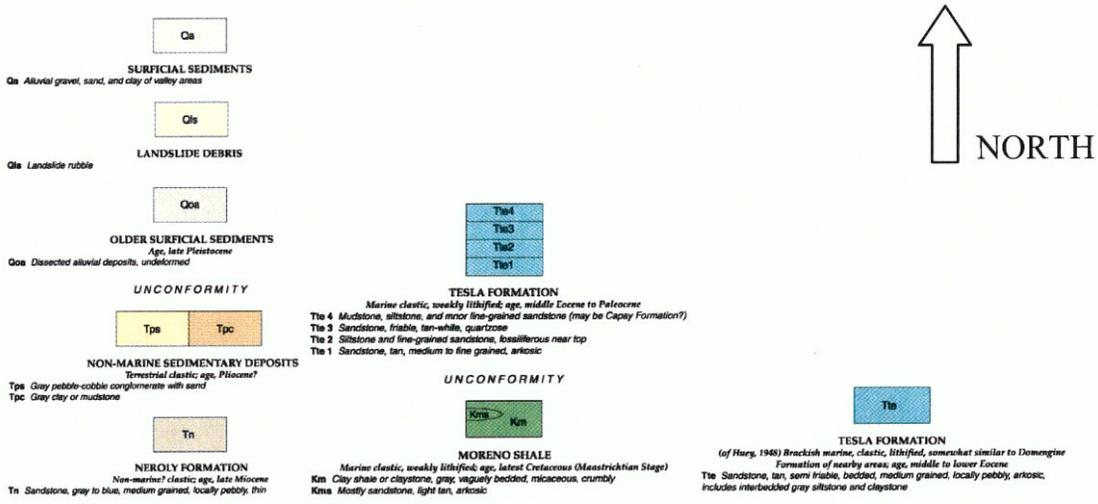
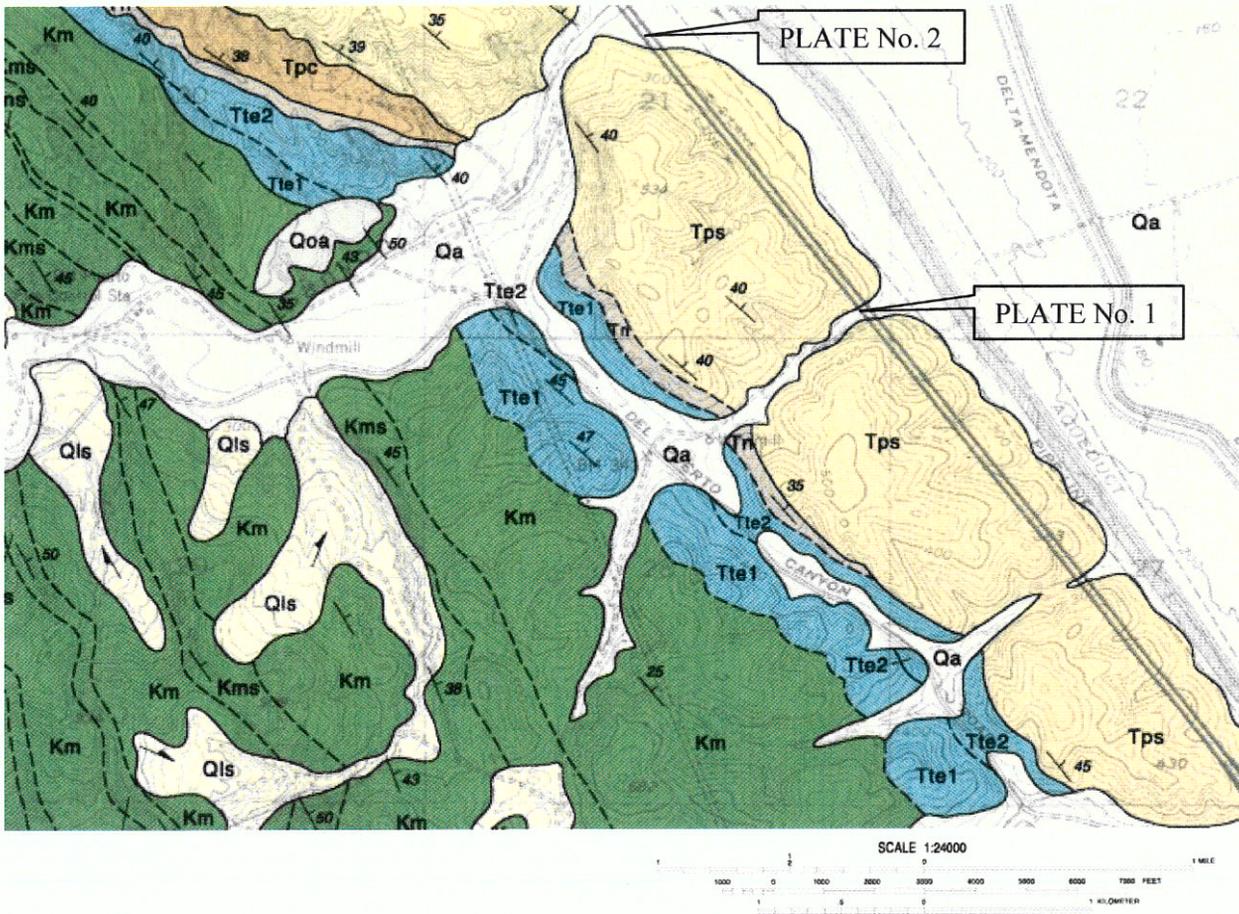
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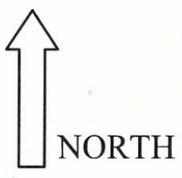
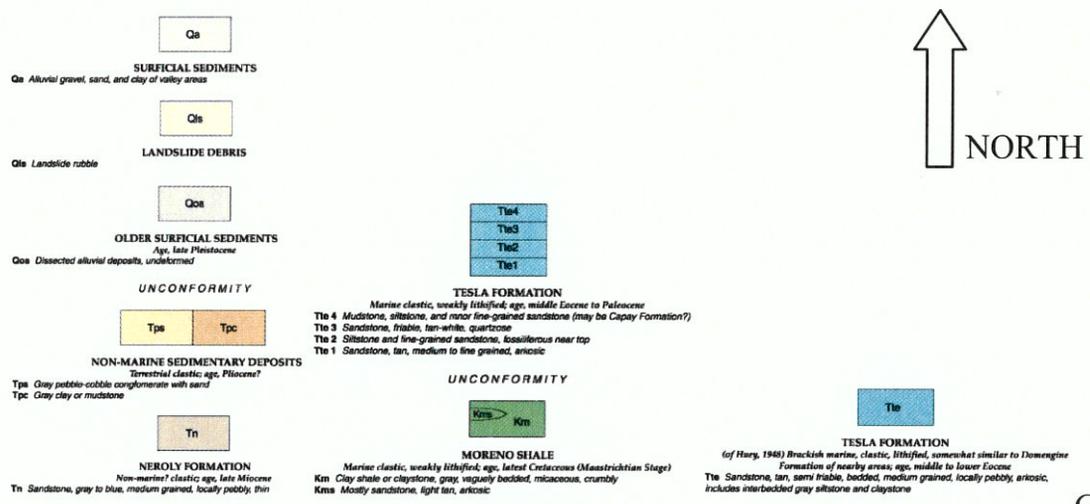
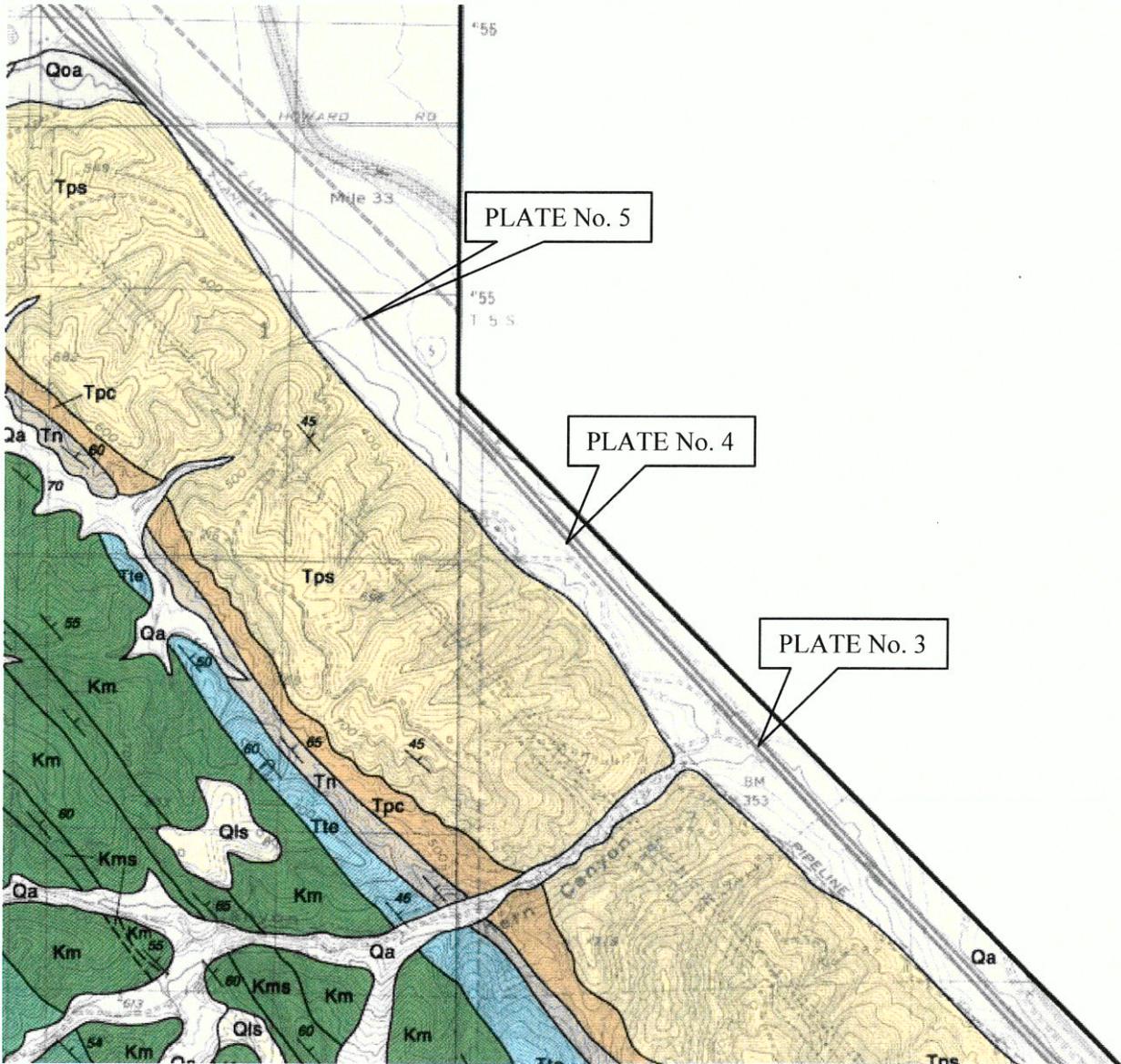
Department of Transportation  
 Division of Engineering Services  
 Geotechnical Services  
 Office of Geotechnical Design - North

REPORT TITLE <b>BORING RECORD</b>				HOLE ID <b>A-15-009</b>
DIST. <b>10</b>	COUNTY <b>STA</b>	ROUTE <b>05</b>	POSTMILE <b>17.3/25.5</b>	PROJECT ID <b>EA 0Y6401</b>
PROJECT OR BRIDGE NAME <b>Westley Cable Barrier</b>				
BRIDGE NUMBER	PREPARED BY <b>J. Scardine</b>	DATE	SHEET <b>1 of 1</b>	

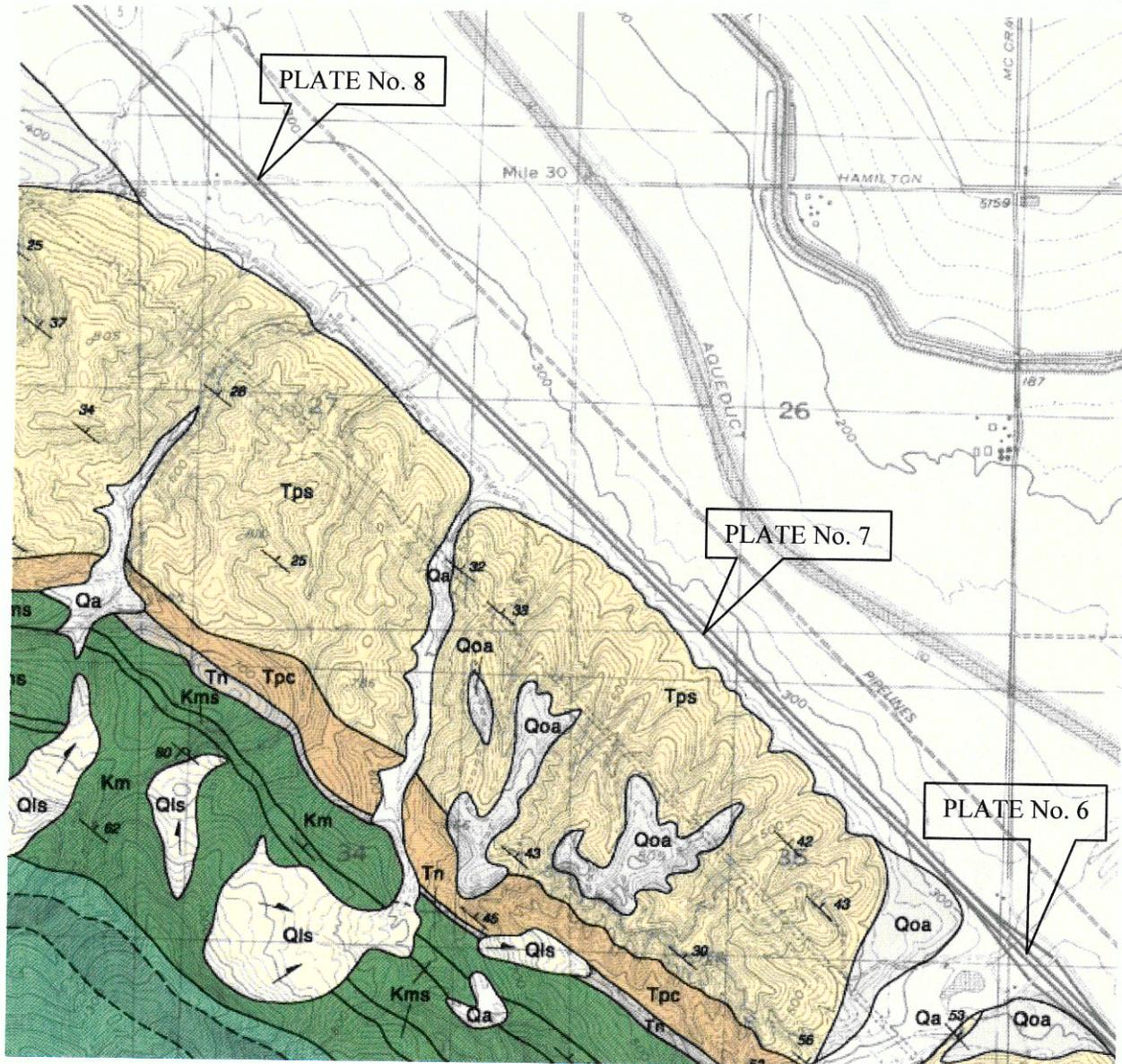
Dibblee, T.W., and Minch, J.A., 2007, Geologic map of the Patterson quadrangle, Stanislaus County, California: Dibblee Geological Foundation, Dibblee Foundation Map DF-342, scale 1:24,000



Dibblee, T.W., and Minch, J.A., 2007, Geologic map of the Solyo and Westerley quadrangles, San Joaquin and Stanislaus Counties: Dibblee Geological Foundation, Dibblee Foundation Map DF-340, scale 1:24,000



Dibblee, T.W., and Minch, J.A., 2007, Geologic map of the Solyo and Westerley quadrangles, San Joaquin and Stanislaus Counties: Dibblee Geological Foundation, Dibblee Foundation Map DF-340, scale 1:24,000



**Qa**  
SURFICIAL SEDIMENTS  
Alluvial gravel, sand, and clay of valley areas

**Qls**  
LANDSLIDE DEBRIS  
Landslide rubble

**Qoa**  
OLDER SURFICIAL SEDIMENTS  
Age, late Pleistocene  
Dissected alluvial deposits, undeformed

**UNCONFORMITY**

**Tps** **Tpc**  
NON-MARINE SEDIMENTARY DEPOSITS  
Terrestrial clastic; age, late Pliocene?  
Tps Gray pebble-cobble conglomerate with sand  
Tpc Gray clay or mudstone

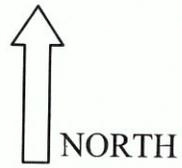
**Tn**  
NEROLEY FORMATION  
Non-marine? clastic; age, late Miocene  
Sandstone, gray to blue, medium grained, locally pebbly, thin

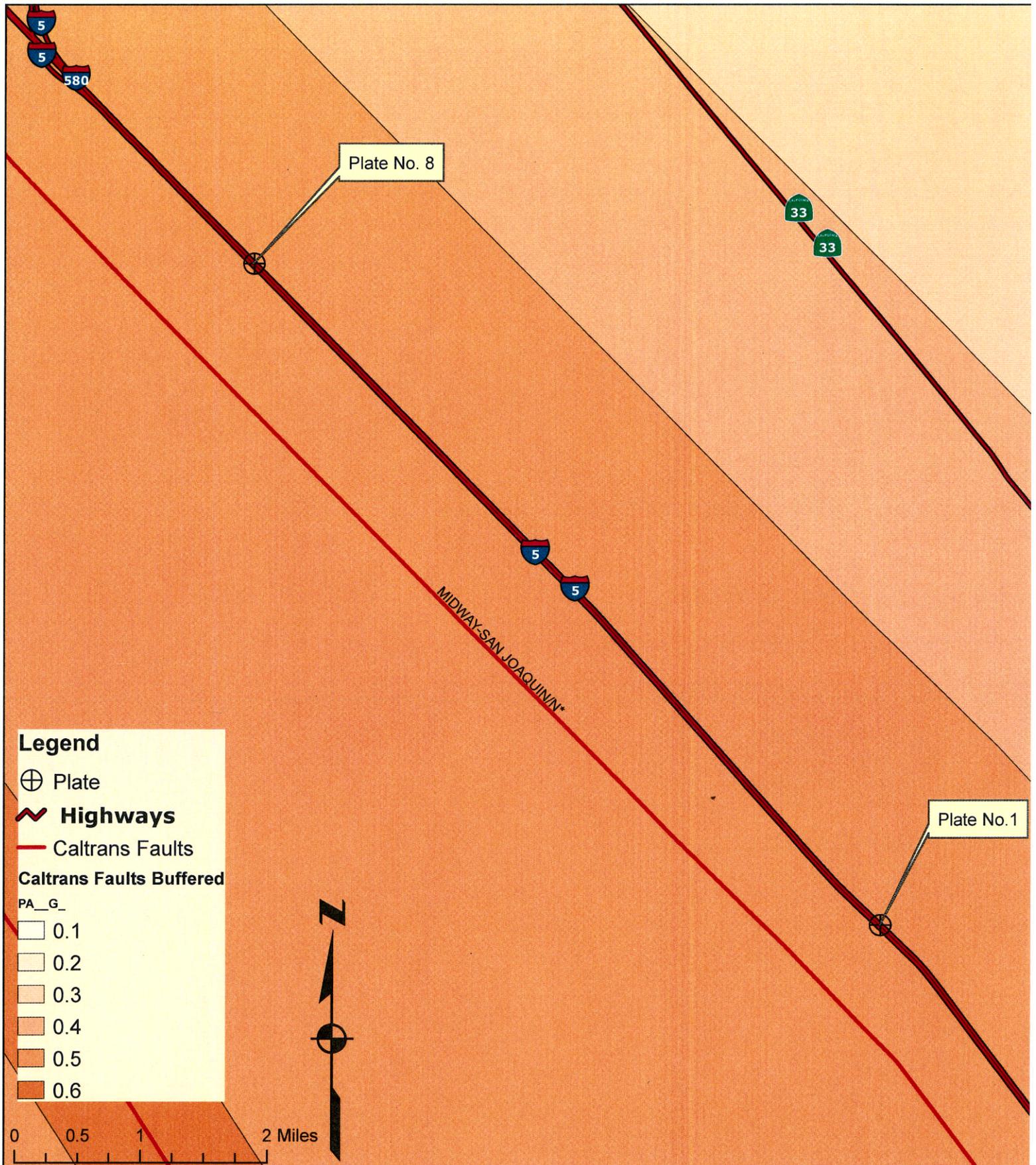
**Tm4**  
**Tm3**  
**Tm2**  
**Tm1**  
TESLA FORMATION  
Marine clastic, weakly lithified; age, middle Eocene to Paleocene  
Tm4 Mudstone, siltstone, and minor fine-grained sandstone (may be Capay Formation?)  
Tm3 Sandstone, friable, tan-white, quartzose  
Tm2 Siltstone and fine-grained sandstone, fossiliferous near top  
Tm1 Sandstone, tan, medium to fine grained, arkosic

**UNCONFORMITY**

**Km**  
MORENO SHALE  
Marine clastic, weakly lithified; age, latest Cretaceous (Maastrichtian Stage)  
Km Clay shale or claystone, gray, vaguely bedded, micaceous, crumbly  
Kms Mostly sandstone, light tan, arkosic

**Tie**  
TESLA FORMATION  
(of Hany, 1968) Brackish marine, clastic, lithified, somewhat similar to Domogney Formation of nearby areas, age, middle to lower Eocene  
Tie Sandstone, tan, very friable, bedded, medium grained, locally pebbly, arkosic; includes interbedded gray siltstone and claystone



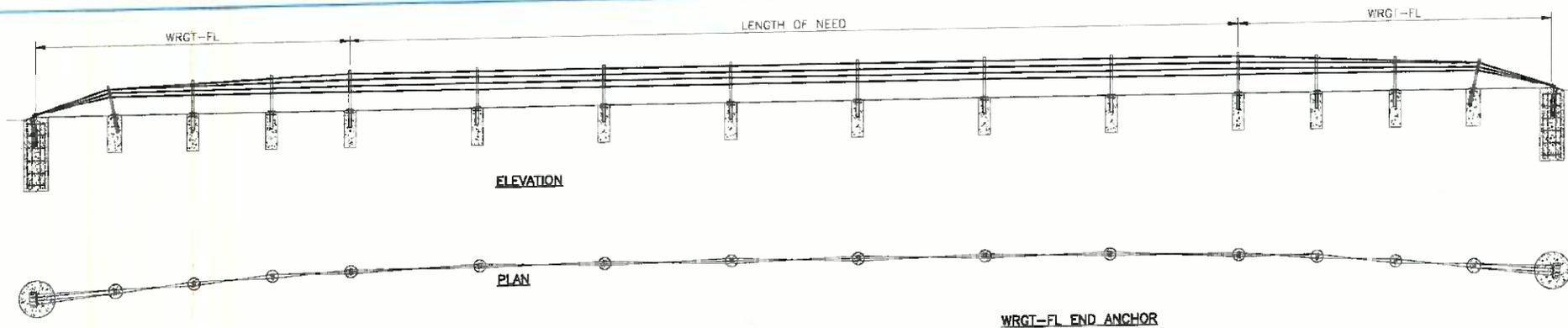


ATTACHMENT 4  
 Regional Seismic Map  
 High Tension Cable Barrier  
 Sta-05-PM 17.27/25.52

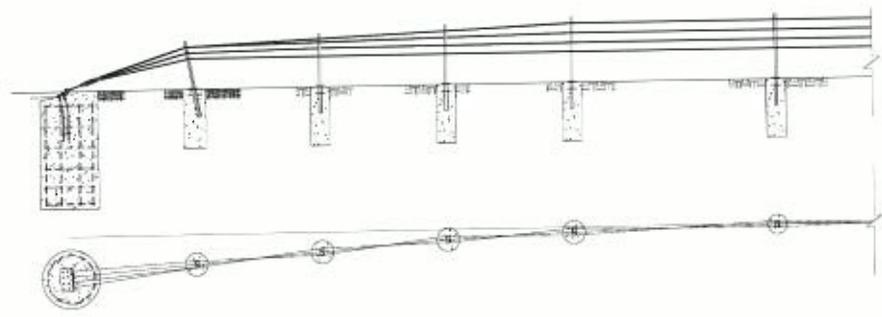
### MATERIAL PROPERTIES SUMMARY

DESCRIPTION	BORING OR SAMPLE No.	A-15-001	A-15-002	A-15-003	A-15-004	A-15-005	A-15-006	A-15-007	A-15-008	A-15-009	A-15-010	A-15-011	
	DATE SAMPLED	2/17/2015	2/17/2015	2/18/2015	2/18/2015	2/18/2015	2/18/2015	2/18/2015	2/18/2015	2/18/2015	2/19/2015	2/19/2015	2/19/2015
	STATION												
	LINE												
	DISTANCE FROM LINE (Rt. OR Lt.)												
	DEPTH (FEET)	0.0'-2.5'	7.0'-8.5'	12.0'-14.5'	12.0'-14.5'	6.0'-8.0'	1.0'-3.0'	12.5'-14.5'	0.0'-2.5'	12.0'-14.5'	8.0'-10.0'	8.5'-10.5'	
	USCS CLASSIFICATION												
SIEVE ANALYSIS	38 mm (1 1/2")												
	19 mm (3/4")												
	12 mm (1/2")												
	9.5 mm (3/8")												
	4.75 mm (No. 4)												
	2.36 mm (No. 8)												
	1.18 mm (No. 16)												
	600 µm (No. 30)												
	300 µm (NO. 50)												
	150 µm (No. 100)												
	75 µm (NO. 200)												
5 µm													
1µm													
CLASSIFICATION TEST SUMMARY	IN-PLACE DENSITY (DRY WT. kN/m3)												
	IN-PLACE MOISTURE (PERCENT)												
	SPECIFIC GRAVITY												
	LIQUID LIMIT												
	PLASTICITY INDEX												
	SAND EQUIVALENT												
SOIL STRENGTH Direct Shear Test	EFFECTIVE STRESS												
	FRICTION ANGLE (DEGREES)												
	COHESION (kPa)												
	TOTAL STRESS												
	FRICTION ANGLE (DEGREES)												
	COHESION (kPa)												
CORROSION	RESISTIVITY (ohm-cm)	2030	1395	1283	2813	1221	1034	2105	1765	4245	986*	3271	
	pH	8.12	7.99	8.04	8.15	7.94	7.82	8.1	7.29	7.67	7.35	6.4	
	SULFATES (ppm)												
	CHLORIDES (ppm)												

\*NOTE: 05-05-2015, Sample sent to Translab for sulfate and chloride testing.



ROPE TENSION TABLE		
ROPE TEMP. (F°)	TENSION (LBS)	TENSION (kN)
0	5700	25.4
5	5550	24.7
10	5400	24.0
15	5250	23.4
20	5100	22.7
25	4950	22.0
30	4800	21.4
35	4650	20.74
40	4500	20.0
45	4350	19.3
50	4200	18.7
55	4050	18.0
60	3900	17.3
65	3750	16.7
70	3600	16.0
75	3450	15.3
80	3300	14.7
85	3150	14.0
90	3000	13.3
95	2850	12.7
100	2700	12.0
105	2550	11.3
110	2400	10.7
115	2250	10.0
120	2100	9.3
125	1950	8.7
130	1800	8.0
135	1650	7.3
140	1500	6.7



\* SEE SHEET 3 OF 3 FOR FURTHER INFORMATION

GENERAL NOTES:

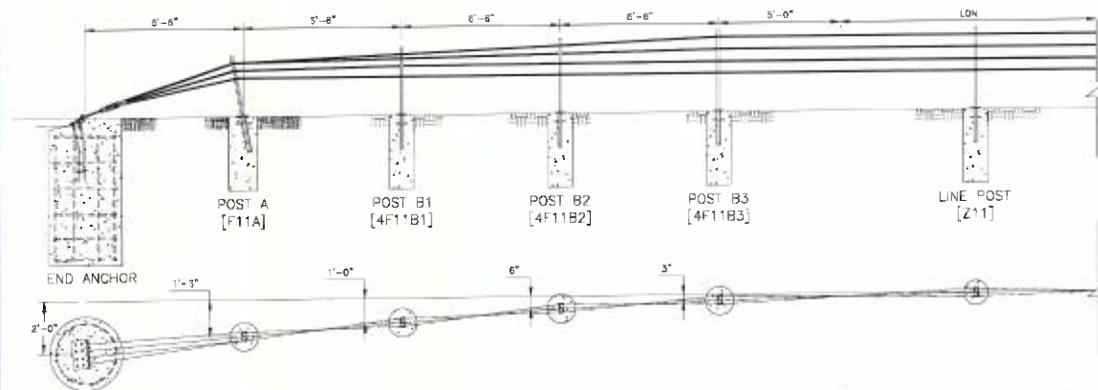
- BRIFEN DRAWINGS, SPECIFICATIONS, AND PRODUCT MANUAL SHOULD BE REVIEWED PRIOR TO STARTING AN INSTALLATION. FOR ADDITIONAL INFORMATION OR QUESTIONS, CONTACT BRIFEN USA, INC. AT 1-866-427-4336.
- THE BRIFEN WRSF HAS BEEN SUCCESSFULLY TESTED TO NCHRP 350 TL-4 CONDITIONS ON SLOPES 6:1 OR FLATTER AND NCHRP 350 TL-3 CONDITIONS ON SLOPES 4:1 TO 6:1.
- THE POST SPACING SHALL BE DETERMINED BY THE SPECIFYING AGENCY. POST SPACING MAY BE DECREASED TO AVOID OBSTRUCTIONS OR UTILITIES. IN NO EVENT SHALL THE POST SPACING EXCEED 21'-0".
- BRIFEN WRSF SHALL BE PLACED ON A SMOOTH SURFACE, WITHOUT HUMPS, DROP-OFFS, HOLES, ETC THAT WOULD INTERFERE WITH THE STABILITY OF THE ERRANT VEHICLE. GRADING, FILL AND COMPACT MAY BE REQUIRED TO ASSURE THAT ROPES ARE INSTALLED AT THE DESIGN HEIGHT.
- THE WRGT-FL END ANCHOR HAS BEEN SUCCESSFULLY TESTED TO NCHRP 350 TL-3 CONDITIONS. THE LENGTH OF NEED BEGINS 31'-0" FROM THE END ANCHOR. POSTS A THROUGH POST B3, SPACED 6'-6" APART, HAVE WEAKENED CUTS AT THE GROUND THAT SHALL FACE THE ANCHOR.
- ANCHOR AND LINE POST DIMENSIONS AND STEEL REINFORCEMENT WILL BE DETERMINED ON PROJECT SPECIFIC SOIL CLASSIFICATION, PROPERTIES AND TEMPERATURE EXTREMES. CONTACT BRIFEN USA, INC. FOR ADDITIONAL INFORMATION.
- ALL REINFORCEMENT AND CONCRETE FOR THE ANCHORS AND LINE POSTS PROVIDED BY OTHERS.
- REINFORCEMENT AND CONCRETE PROPERTIES SHALL MEET AGENCY SPECIFICATIONS.
- FOR PLACEMENT NEAR GUARDRAIL OR OTHER OBSTACLES CONTACT BRIFEN USA, INC. FOR ADDITIONAL DRAWINGS AND SUPPORT.
- TAPER RATES FOR THE BRIFEN WRSF ARE AS FOLLOWS:  
HORIZONTAL: 25:1 MAXIMUM, 50:1 PREFERABLE  
VERTICAL: 25:1 MAXIMUM, 50:1 PREFERABLE

\* ROPE TENSION: ±20% AFTER 2-WEEK INTERVAL

The information herein is proprietary to BRIFEN USA, and shall not be disclosed, duplicated or used otherwise without the express written consent of BRIFEN USA, Inc.

			BRIFEN WRSF NCHRP 350 TL-4 INSTALLATION & LAYOUT DETAILS		
			Date	Drawn By	Scale
1.			6.27.12	Monita Elkondo	None
2.			VERSION 12.1		
3.					
4.			Dwg. No.		WRGTFL-11-001b
5.			Sheet No 1 OF 3		

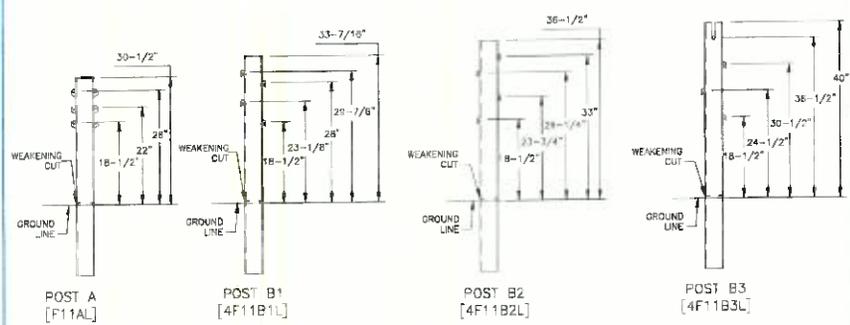
**WRGT-FL END ANCHOR LAYOUT**



**GENERAL NOTES:**

1. BRIFEN DRAWINGS, SPECIFICATIONS, AND PRODUCT MANUAL SHOULD BE REVIEWED PRIOR TO STARTING AN INSTALLATION. FOR ADDITIONAL INFORMATION OR QUESTIONS, CONTACT BRIFEN USA, INC. AT 1-866-427-4336.
2. THE WRGT-FL END ANCHOR HAS BEEN SUCCESSFULLY TESTED TO NCHRP 350 TL-3 CONDITIONS. THE LENGTH OF NEED BEGINS 31'-0" FROM THE END ANCHOR. POSTS A THROUGH POST B3, SPACED 6'-6" APART, HAVE WEAKENED CUTS AT THE GROUND THAT SHALL FACE THE ANCHOR.
3. ANCHOR AND LINE POST DIMENSIONS AND STEEL REINFORCEMENT WILL BE DETERMINED ON PROJECT SPECIFIC SOIL CLASSIFICATION, PROPERTIES AND TEMPERATURE EXTREMES. CONTACT BRIFEN USA, INC. FOR ADDITIONAL INFORMATION.
4. ALL REINFORCEMENT AND CONCRETE FOR THE ANCHORS AND LINE POSTS PROVIDED BY OTHERS.
5. REINFORCEMENT AND CONCRETE PROPERTIES SHALL MEET AGENCY SPECIFICATIONS.
6. FOR PLACEMENT NEAR GUARDRAIL OR OTHER OBSTACLES CONTACT BRIFEN USA, INC. FOR ADDITIONAL DRAWINGS AND SUPPORT.

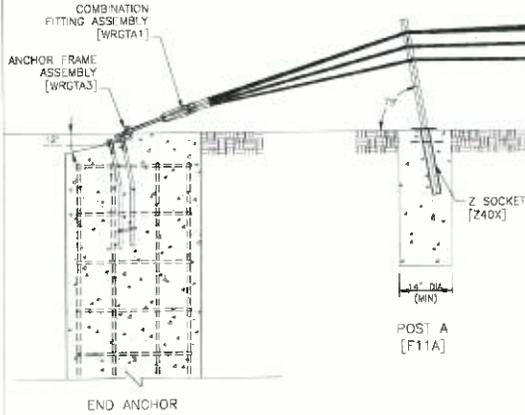
**WRGT-FL POST DETAILS**



**NOTES SPECIFIC TO WRGT-FL POST DETAIL**

1. ROPE HEIGHTS SHALL BE  $\pm 1"$  TO GROUND LINE.
2. POST SHALL BE  $\pm 4"$  FROM VERTICAL PLUMB.
3. POST CAPS SHALL BE USED IF SPECIFIED.
4. REFLECTORS SHALL BE SPACED ACCORDING TO AGENCY SPECIFICATIONS.
5. REFLECTORS CAN BE PLACED ON THE POST CAP OR POST.
6. Z EXCLUDER (Z41) SHALL BE USED.
7. POST A & SOCKET SHALL BE PLACED 79" ( $\pm 4'$ ) TOWARD END ANCHOR FROM THE HORIZONTAL PLANE.
8. POST A SOCKET SHALL BE PLACED IN 14" (MIN) CONCRETE FOUNDATION. DEPTH TO BE DETERMINED FROM SOIL CONDITIONS AND PROJECT CONDITIONS.
9. FOUNDATIONS FOR POST B1 THRU B3 SHALL BE THE SAME AS THE LINE POST ASSEMBLY'S FOR THE PROJECT.
10. WEAKENED CUTS SHALL FACE END ANCHOR.

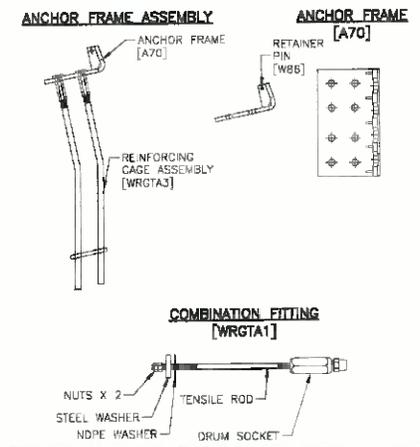
**END ANCHOR DETAILS**



**NOTES SPECIFIC TO END ANCHOR DETAIL**

1. THE END ANCHOR ASSEMBLY SHALL BE PLACED 12' (+3', -1') BELOW HORIZONTAL PLANE.
2. POST A & SOCKET SHALL BE PLACED 79" ( $\pm 4'$ ) TOWARD END ANCHOR FROM THE HORIZONTAL PLANE.
3. POST A SOCKET SHALL BE PLACED IN 14" (MIN) CONCRETE FOUNDATION. DEPTH TO BE DETERMINED FROM SOIL CONDITIONS AND PROJECT CONDITIONS.

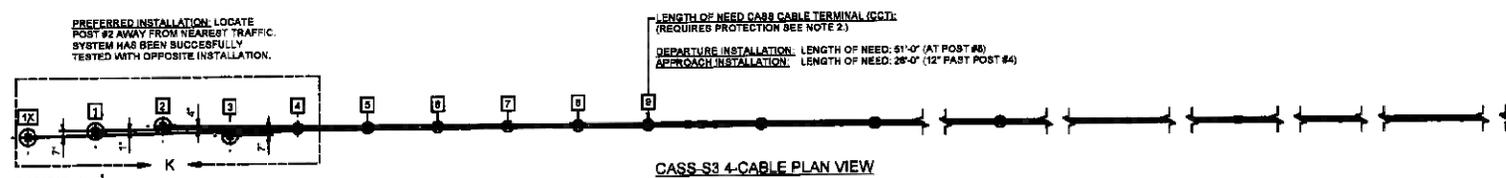
**END ANCHOR COMPONENTS**



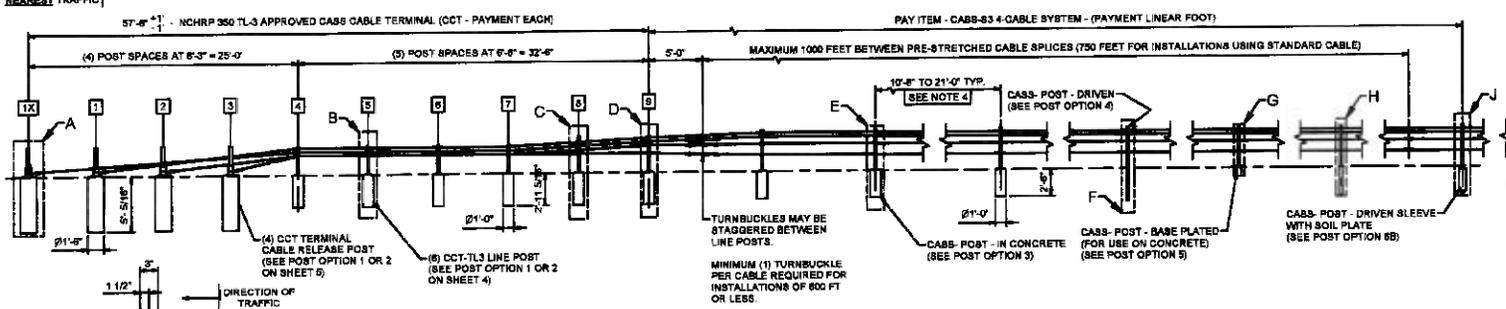
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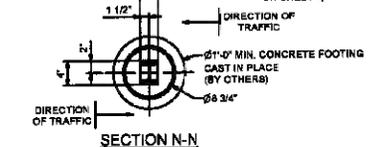
Revision			BRIFEN WRGT-FL END TERMINAL INSTALLATION & LAYOUT DETAILS		
No.	Date	By	Date	Drawn By	Scale
1.			6.27.12	Merita Elzondo	None
2.					
3.					
4.			VERSION 12.1		
5.			Dwg. No.	WRGTFL-11-003b	Sheet No 3 OF 3



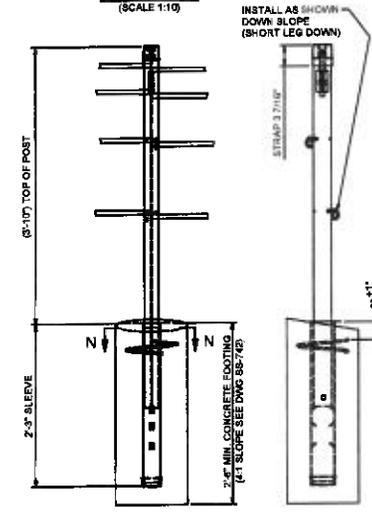
**CASS-S3 4-CABLE PLAN VIEW**



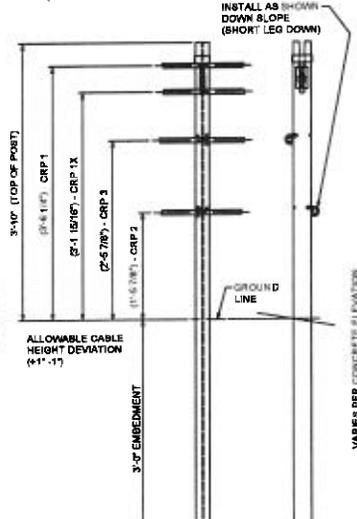
**CASS-S3 4-CABLE ELEVATION VIEW (TYPICAL LAY-OUT)**



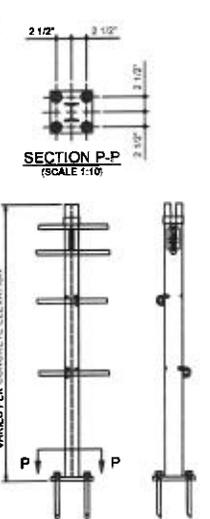
**SECTION N-N (SCALE 1:10)**



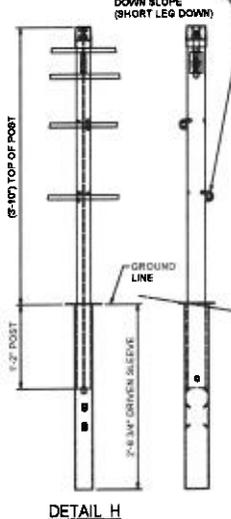
**DETAIL E (CASS POST IN CONCRETE) (POST OPTION #3 SHOWN)**



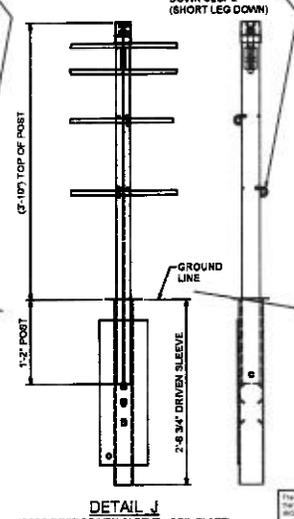
**DETAIL F (CASS POST - DRIVEN) (POST OPTION #4 SHOWN)**



**DETAIL G (CASS POST - BASE-PLATED) (POST OPTION #5 SHOWN)**



**DETAIL H (CASS POST - DRIVEN SLEEVE) (POST OPTION #6A SHOWN)**



**DETAIL J (CASS POST DRIVEN SLEEVE - SOIL PLATE) (POST OPTION #6B SHOWN)**

- NOTES:**
- CASS-S3 4-CABLE (4:1) HAS BEEN SUCCESSFULLY TESTED AND ACCEPTED TO NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 350 TEST LEVEL 4 (NCHRP 350 TL 4) FOR VARIOUS POST SPACING WHEN INSTALLED ON A 4:1 OR FLATTER SLOPE. CASS-S3 4-CABLE (4:1) HAS BEEN SUCCESSFULLY TESTED AND ACCEPTED TO NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 350 TEST LEVEL 4 (NCHRP 350 TL 4) FOR VARIOUS POST SPACING WHEN INSTALLED ON A 6:1 OR FLATTER SLOPE. ADDITIONAL INFORMATION CAN BE FOUND IN FHWA ACCEPTANCE LETTER B-141F.
  - CASS CABLE TERMINAL (CCT) HAS BEEN SUCCESSFULLY TESTED AND ACCEPTED TO NCHRP TL3. AN NCHRP 350 TL3 APPROVED TERMINAL (CCT) OR CASS-S3 4-CABLE (4:1) TRANSITION (VARIOUS) SHALL BE USED ON APPROACH AND DEPARTURE TERMINATIONS WHEN CASS-S3 4-CABLE (4:1) IS INSTALLED ON THE NATIONAL HIGHWAY SYSTEM (NHS). IF A NON-CRASHWORTHY ANCHOR (CCN) IS USED TO TERMINATE THE CABLE SYSTEM, THE NON-CRASHWORTHY ANCHOR MUST BE EITHER SHIELDED OR LOCATED SO THAT A VEHICLE IMPACTING THE CABLE CANNOT IMPACT THE NON-CRASHWORTHY ANCHOR.
  - CASS-S3 4-CABLE (4:1) SHALL BE INSTALLED ON SHOULDERS OR MEDIANS WITH SLOPES OF 4:1 OR FLATTER WITHOUT OBSTRUCTIONS, DEPRESSIONS, ETC. THAT MAY SIGNIFICANTLY AFFECT THE STABILITY OF AN ERRANT VEHICLE. CASS-S3 4-CABLE (4:1) MUST BE INSTALLED A MAXIMUM OF FOUR (4) FEET FROM THE BREAK POINT. GRADING OF SITE AND/OR APPROPRIATE FILL MATERIALS MAY BE REQUIRED. THE DESIGNER/INSTALLER SHALL "FLATTEN" OR "ROUND" VARIOUS TOPOGRAPHICAL INCONSISTENCIES THAT COULD INTERFERE WITH THE ABILITY OF THE INSTALLER TO CONSISTENTLY MAINTAIN THE DESIGN HEIGHT (IN RELATION TO THE TERRAIN) OF THE CABLES. PLEASE CONSULT THE CASS MANUAL(S) FOR INSTALLATIONS IN "DITCH SECTIONS".
  - CASS-S3 4-CABLE (4:1) POST SPACING MAY BE MODIFIED TO AVOID OBSTACLES THAT CONFLICT WITH THE INSTALLATION OF CASS-S3 4-CABLE (4:1) LINE POSTS. NO POST SPACE CAN EXCEED THE MAXIMUM POST SPACE LIMIT OF 21'-0" OR MAXIMUM POST SPACING ALLOWED BY PROJECT ENGINEER, WHICHEVER IS LESS. REDUCING OR INCREASING POST SPACING AFFECTS DEFLECTION. CASS-S3 4-CABLE (4:1) MAY BE LATERALLY TRANSFERRED AT A RATE NOT TO EXCEED 30:1.
  - POST FOUNDATIONS MAY BE DRILLED THROUGH EXISTING PAVEMENT. TRINITY MAY ALLOW THE USE OF ALTERNATE LINE POST FOOTINGS IF SYSTEM IS INSTALLED WITH AN ACCEPTABLE MONSTRIP APPLICATION - PLEASE CONTACT TRINITY.
  - FOR AESTHETIC PURPOSES TRINITY RECOMMENDS ALL SLEEVES, DRIVEN POSTS, AND LOWER CABLE RELEASE POSTS TO BE INSTALLED REASONABLY PLUMB (APPROXIMATELY 1/8" PER FOOT).
  - ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 P.S.I. PRIOR TO TENSIONING THE SYSTEM. TRINITY RECOMMENDS THE CONCRETE TO BE VIBRATED IN ACCORDANCE WITH THE LATEST APPLICABLE AGENCY SPECIFICATION.
  - CASS-S3 4-CABLE (4:1) SHALL BE INSTALLED IN WELL-DRAINED, COMPACTED, NCHRP REPORT 350 STANDARD SOILS. IF SOIL DOESN'T MEET THIS CLASSIFICATION, IF SOIL ROCK/CONCRETE IS ENCOUNTERED BELOW GRADE OR IF SOIL IS SUSCEPTIBLE TO SEVERE FREEZE/THAW CYCLES, PLEASE CONTACT TRINITY ABOUT ALTERNATE FOOTING DESIGN(S). TRINITY SUGGESTS THE USE OF "MON STRIP" FOR EROSION PREVENTION AND EASE OF MAINTENANCE/INSTALLATION.
  - WHEN THE SYSTEM & TERMINAL IS INSTALLED ENTIRELY ON A 4:1 OR FLATTER SLOPE, THE DEPTH OF THE CONCRETE FOOTINGS SHALL BE INCREASED BY 6". (SEE DRAWING SS-742) ALL OTHER DIMENSIONS, VARIOUS SPECIFICATIONS AND SOIL QUALIFICATIONS REMAIN IN PLACE AND MUST BE FOLLOWED.
  - PLEASE SEE SPECIFYING AGENCY (OR MUTCD) FOR PROPER "BARRIER" DELINEATION.
  - PLEASE CONTACT TRINITY OR CONSULT THE DESIGN, INSTALLATION, OR REPAIR MANUAL(S) FOR ADDITIONAL INFORMATION.

**TRINITY HIGHWAY PRODUCTS, LLC. EMAIL:**  
2525 STEMMONS FREEWAY PRODUCT.INFO@TRIN.NET  
DALLAS, TX 75207 PHONE: (800) 644-7976

CONDITION	CASS-S3 POST OPTION
1	SOIL - TERMINAL POST 1.2" - DRIVEN SLEEVE
2	SOIL - TERMINAL POST 1.2" - WITH SOIL PLATE
3	CASS-S3 POST - IN CONCRETE
4	CASS-S3 POST - DRIVEN
5	CASS-S3 POST - BASE PLATED
6	CASS-S3 POST - DRIVEN SLEEVE
7	CASS-S3 POST - DRIVEN SLEEVE WITH SOIL PLATE
8	2-3/4" DRIVEN SLEEVE WITH SOIL PLATE

The design and information herein are approved by Trinity Highway Products, LLC. (2018) and are the property of Trinity Highway Products, LLC. No other party may use this information in any way without the written consent of Trinity Highway Products, LLC. This drawing is a technical drawing and shall be used in accordance with the applicable specifications and standards. For more information, contact Trinity Highway Products, LLC. (800) 644-7976.

**CASS-S3 (6:1 SLOPE) 4-CABLE GUARDRAIL SAFETY SYSTEM**

**TRINITY HIGHWAY PRODUCTS, LLC**

DATE: 01/11/2018  
DRAWN BY: J. L. HARRIS  
CHECKED BY: J. L. HARRIS  
SCALE: 1" = 8'-0"  
PROJECT: CASS-S3-E\_1  
SS-743

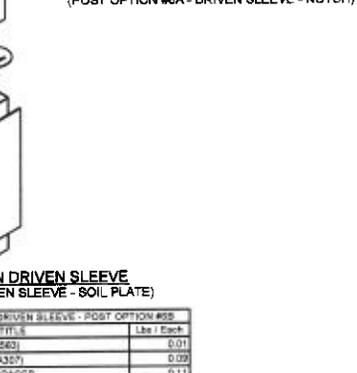
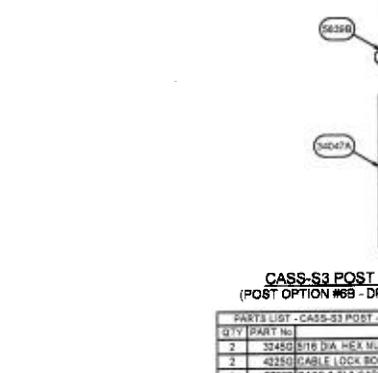
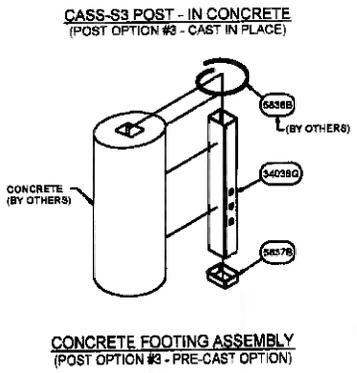
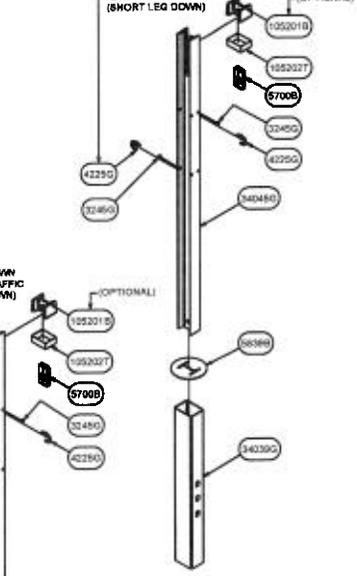
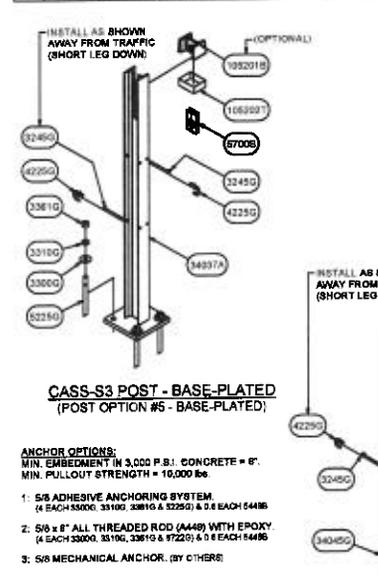
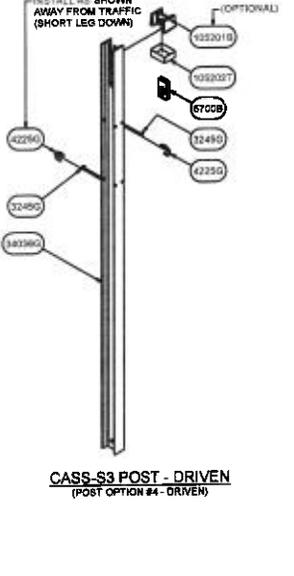
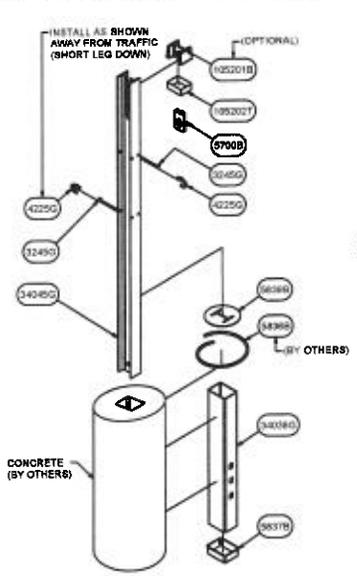
PARTS LIST - CASS-S3 POST - IN CONCRETE - POST OPTION #3			
QTY	PART No.	TITLE	Lbs / Each
2	32450	5/16 DIA. HEX NUT (A563)	0.01
2	42250	CABLE LOCK BOLT (A307)	0.09
1	5700B	CASS & TL3 CABLE SPACER	0.11
1	5838B	CONCRETE REINFORCING RING	0.86
1	5837B	SLEEVE CAP - CASS TERMINAL POST	0.12
1	5838B	SLEEVE COVER - S3 POST	0.11
1	34030G	3/4" POST SLEEVE - IN CONCRETE	12.19
1	34045G	CASS-S3 POST - SHORT	28.09
1	105201B	CASS-S3 POST CAP	0.13
1	105202T	CASS-S3 - POST STRAP	0.19

PARTS LIST - CASS-S3 POST OPTION - OPTION #4			
QTY	PART No.	TITLE	Lbs / Each
2	32450	5/16 DIA. HEX NUT (A563)	0.01
2	42250	CABLE LOCK BOLT (A307)	0.09
1	5700B	CASS & TL3 CABLE SPACER	0.11
1	34030G	CASS-S3 POST - LONG	38.51
1	105201B	CASS-S3 POST CAP	0.13
1	105202T	CASS-S3 - POST STRAP	0.19

PARTS LIST - CASS-S3 POST BASE-PLATED - OPTION #5			
QTY	PART No.	TITLE	Lbs / Each
2	32450	5/16 DIA. HEX NUT (A563)	0.01
4	32050	3/8" PLAIN WASHER - TYPE B - R - (F644)	0.06
4	33100	3/8" LOCK WASHER	0.00
4	33610	3/8" HEX NUT (A563 G1 DR)	0.01
2	42250	CABLE LOCK BOLT (A307)	0.09
4	57200	3/8" x 7 1/2" W&S SUPER ROD CHG. PT. (A183 SD)	2.62
0.6	54480	HT #1150 MAX EPOXY (MIL-T-10073M48)	
1	5700B	CASS & TL3 CABLE SPACER	0.11
1	34037A	CASS-TL3 POST BASE-PLATED	29.52
1	105201B	CASS-S3 POST CAP	0.13
1	58382T	CASS-S3 - POST STRAP	0.19

PARTS LIST - CASS-S3 POST - IN DRIVEN SLEEVE - POST OPTION #6			
QTY	PART No.	TITLE	Lbs / Each
2	32450	5/16 DIA. HEX NUT (A563)	0.01
2	42250	CABLE LOCK BOLT (A307)	0.09
1	5700B	CASS & TL3 CABLE SPACER	0.11
1	58390	SLEEVE COVER - S3 POST	0.11
1	34037A	3/4" POST SLEEVE - DRIVEN	13.87
1	34045G	CASS-S3 POST - SHORT	28.09
1	105201B	CASS-S3 POST CAP	0.13
1	105202T	CASS-S3 - POST STRAP	0.19

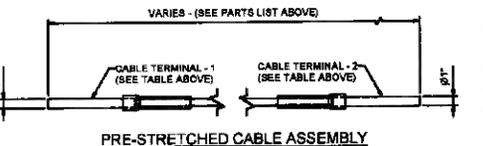
PARTS LIST - PRE-STRETCHED CABLE ASSEMBLY									
QTY	PART No.	TITLE	LENGTH	TERMS	TERMS	TERMS	TERMS	TERMS	TERMS
1	5817	DOT CABLE ASSEMBLY - 1/2" DIA	32.4'	R.H.	L.H.				
1	5818	DOT CABLE ASSEMBLY - 3/4" DIA	48.7'	R.H.	L.H.				
1	5819	DOT CABLE ASSEMBLY - 5/8" DIA	41.16'	R.H.	L.H.				
1	5820	DOT CABLE ASSEMBLY - 3/4" DIA	36.2'	R.H.	L.H.				
1	5821	DOT CABLE ASSEMBLY - 5/8" DIA	10.0'	R.H.	L.H.				
1	5822	DOT CABLE ASSEMBLY - 3/4" DIA	10.0'	R.H.	L.H.				
1	5823	DOT CABLE ASSEMBLY - 5/8" DIA	10.0'	R.H.	L.H.				
1	5824	DOT CABLE ASSEMBLY - 3/4" DIA	10.0'	R.H.	L.H.				
1	5825	DOT CABLE ASSEMBLY - 5/8" DIA	10.0'	R.H.	L.H.				
1	5826	DOT CABLE ASSEMBLY - 3/4" DIA	10.0'	R.H.	L.H.				
1	5827	DOT CABLE ASSEMBLY - 5/8" DIA	10.0'	R.H.	L.H.				
1	5828	DOT CABLE ASSEMBLY - 3/4" DIA	10.0'	R.H.	L.H.				
1	5829	DOT CABLE ASSEMBLY - 5/8" DIA	10.0'	R.H.	L.H.				
1	5830	DOT CABLE ASSEMBLY - 3/4" DIA	10.0'	R.H.	L.H.				
1	5831	DOT CABLE ASSEMBLY - 5/8" DIA	10.0'	R.H.	L.H.				
1	5832	DOT CABLE ASSEMBLY - 3/4" DIA	10.0'	R.H.	L.H.				
1	5833	DOT CABLE ASSEMBLY - 5/8" DIA	10.0'	R.H.	L.H.				
1	5834	DOT CABLE ASSEMBLY - 3/4" DIA	10.0'	R.H.	L.H.				
1	5835	DOT CABLE ASSEMBLY - 5/8" DIA	10.0'	R.H.	L.H.				
1	5836	DOT CABLE ASSEMBLY - 3/4" DIA	10.0'	R.H.	L.H.				
1	5837	DOT CABLE ASSEMBLY - 5/8" DIA	10.0'	R.H.	L.H.				
1	5838	DOT CABLE ASSEMBLY - 3/4" DIA	10.0'	R.H.	L.H.				
1	5839	DOT CABLE ASSEMBLY - 5/8" DIA	10.0'	R.H.	L.H.				
1	5840	DOT CABLE ASSEMBLY - 3/4" DIA	10.0'	R.H.	L.H.				
1	5841	DOT CABLE ASSEMBLY - 5/8" DIA	10.0'	R.H.	L.H.				
1	5842	DOT CABLE ASSEMBLY - 3/4" DIA	10.0'	R.H.	L.H.				
1	5843	DOT CABLE ASSEMBLY - 5/8" DIA	10.0'	R.H.	L.H.				
1	5844	DOT CABLE ASSEMBLY - 3/4" DIA	10.0'	R.H.	L.H.				



PARTS LIST - PRE-CAST CONCRETE FOOTING - OPTION #3			
QTY	PART No.	TITLE	Lbs / Each
1	5838B	CONCRETE REINFORCING RING	0.86
1	5837B	SLEEVE CAP - CASS TERMINAL POST	0.12
1	34038G	3/4" POST SLEEVE - IN CONCRETE	12.19

PARTS LIST - CASS-S3 POST - IN DRIVEN SLEEVE - POST OPTION #6B			
QTY	PART No.	TITLE	Lbs / Each
2	32450	5/16 DIA. HEX NUT (A563)	0.01
2	42250	CABLE LOCK BOLT (A307)	0.09
1	5700B	CASS & TL3 CABLE SPACER	0.11
1	58390	SLEEVE COVER - S3 POST	0.11
1	34045G	CASS-S3 POST - SHORT	28.09
1	34037A	3/4" POST SLEEVE - DRIVEN W/ SOIL PLATE	27.47
1	105201B	CASS-S3 POST CAP	0.13
1	105202T	CASS-S3 - POST STRAP	0.19

NOTE:  
FOR THE STANDARD FIELD SPLICE SECTIONS ABOVE, SUPPLY (1) RIGHT HAND THREADED STUD ASSEMBLY #910G EACH.



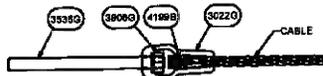
- NOTES:
1. IN LIEU OF BLACK SPACER 5700B SUPPLY YELLOW REFLECTIVE SPACER 5701B OR WHITE REFLECTIVE SPACER 5702 (AS REQUIRED PER PROJECT PLANS)
  2. IF INTERFERENCE OCCURS BETWEEN THE CABLE SPLICE AND CASS-TL3 POST, SUPPLY A SPLICE INTERFERENCE POST. LONG SPLICE POST 34081B IN LIEU OF LONG CASS-S3 POST 34030G. SHORT SPLICE POST 34049G IN LIEU OF SHORT CASS-S3 POST 34045G
  3. IF REQUIRED PER PROJECT PLANS SUPPLY:  
CABLE PULLING TOOL 5850S  
CABLE TENSION METER 5879B  
CABLE THERMOMETER 5709B

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**CASS-S3 (6:1 SLOPE) 4-CABLE GUARDRAIL SAFETY SYSTEM**

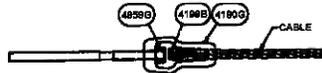
TRINITY HIGHWAY PRODUCTS, LLC

SS-743



**1" CABLE FIELD SPlice - 5908G & 5910G**  
(5910G SHOWN, 5908G SIMILAR)

PARTS LIST - 5910G			
QTY	PART No	TITLE	Lbs / Each
1	3022O	1" CABLE END CASTING	0.58
1	3539G	1" STUD FLATTENED - R.H.T.	2.88
1	3606G	1" HEAVY HEX NUT (A563 DH)	0.47
1	4199B	3/4" CABLE WEDGE (3 x 7)	0.08



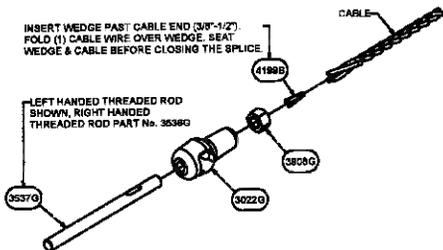
**3/4" CABLE FIELD SPlice - 5634G & 5635G**  
(5634G SHOWN, 5635G SIMILAR)

PARTS LIST - 5634G			
QTY	PART No	TITLE	Lbs / Each
1	10520G	3/4" STUD FLATTENED - L.H.T.	1.82
1	4180G	CABLE END CASTING	3.78
1	4199B	3/4" CABLE WEDGE (3 x 7)	0.08
1	4898G	3/4" HEAVY SQUARE NUT (A563)	0.28



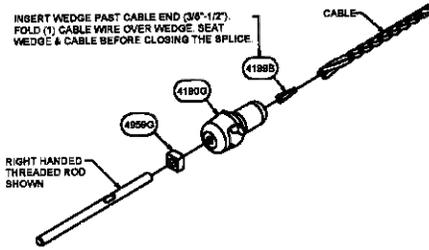
**TORPEDO CABLE SPlice - 4099G**

PARTS LIST - 4099G			
QTY	PART No	TITLE	Lbs / Each
1	4180G	CABLE TERMINAL - THREADED	1.78
1	4199B	RING - THREADED	4.52
2	4199B	3/4" CABLE WEDGE (3 x 7)	0.08



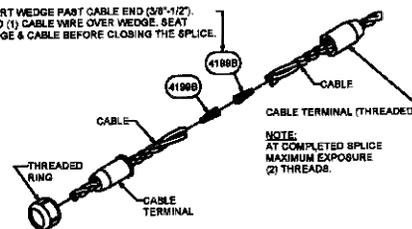
**ASSEMBLY - 1" CABLE FIELD SPlice - 5908G**  
(5908G SHOWN, 5910G SIMILAR)

PARTS LIST - 5908G			
QTY	PART No	TITLE	Lbs / Each
1	3022O	1" CABLE END CASTING	0.58
1	3537G	1" STUD FLATTENED - L.H.T.	2.88
1	3606G	1" HEAVY HEX NUT (A563 DH)	0.47
1	4199B	3/4" CABLE WEDGE (3 x 7)	0.08



**ASSEMBLY - 3/4" CABLE FIELD SPlice - 5635G**  
(5635G SHOWN, 5634G SIMILAR)

PARTS LIST - 5635G			
QTY	PART No	TITLE	Lbs / Each
1	10520G	3/4" STUD FLATTENED - R.H.T.	1.82
1	4180G	CABLE END CASTING	3.78
1	4199B	3/4" CABLE WEDGE (3 x 7)	0.08
1	4898G	3/4" HEAVY SQUARE NUT (A563)	0.28



**ASSEMBLY - TORPEDO CABLE SPlice 4099G**

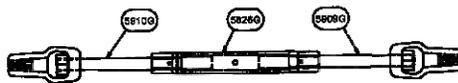
TEMPERATURE (F)	CASS TEMPERATURE & TENSION CHART (NEAREST 100 LBS)	
	STTD. CABLE TENSILE FORCE	PRE-STRETCHED TENSILE FORCE
<= -15	8500	7400
-5	9100	7700
0	9700	8000
5	10300	8300
10	10900	8600
15	11500	8900
20	12100	9200
25	12700	9500
30	13300	9800
35	13900	10100
40	14500	10400
45	15100	10700
50	15700	11000
55	16300	11300
60	16900	11600
65	17500	11900
70	18100	12200
75	18700	12500
80	19300	12800
85	19900	13100
90	20500	13400
95	21100	13700
100	21700	14000
105	22300	14300
110	22900	14600
115	23500	14900
120	24100	15200
125	24700	15500
130	25300	15800
135	25900	16100
140	26500	16400
145	27100	16700
150	27700	17000
155	28300	17300
160	28900	17600
165	29500	17900
170	30100	18200
175	30700	18500
180	31300	18800
185	31900	19100
190	32500	19400
195	33100	19700
200	33700	20000

ALLOWABLE DEVIATION FROM CHART IN TANGENT SECTIONS: +900 -200 POUNDS/FORCE.

CABLE TENSION READINGS ARE TYPICALLY HIGHER IN CURVED CABLE SECTIONS.

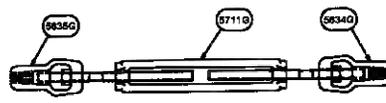
**NOTE:**

- TURBUCKLES SHALL BE INSTALLED WITH A MINIMUM OF 1-1/2" THREAD ENGAGEMENT. TO ALLOW FOR MAINTENANCE/REPAIR ADJUSTMENTS AT A LATER DATE, TRINITY SUGGESTS THE INSTALLER UTILIZE NO MORE THAN 4" THREAD ENGAGEMENT.
- WHEN CUTTING CABLE LENGTHS IN THE FIELD FROM CABLE REELS, IT MAY BE PERMISSIBLE TO UTILIZE A CABLE TORPEDO SPlice (4099G) BETWEEN TURBUCKLES. DO NOT USE FOR CABLE LENGTH SHORTER THAN 100'. PLEASE CONTACT TRINITY, CONSULT TRINITY'S MANUAL OR SPECIFYING AGENCY TO DETERMINE IF APPROPRIATE FOR SPECIFIC APPLICATION.



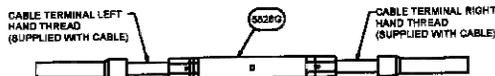
**1" CABLE SPlice - 5633G**  
(CLOSED BODY STYLE)

PARTS LIST - 5633G			
QTY	PART No	TITLE	Lbs / Each
1	5828O	1" CASS TURBUCKLE CLOSED BODY STYLE	4.81
1	5808O	1" STUD ASSEMBLY L.H.T.	3.99
1	5810G	1" STUD ASSEMBLY R.H.T.	3.99



**3/4" CABLE SPlice - 5698G**  
(OPEN BODY STYLE)

PARTS LIST - 5698G			
QTY	PART No	TITLE	Lbs / Each
1	5834O	3/4" STUD ASSEMBLY L.H.T.	5.74
1	5835G	3/4" STUD ASSEMBLY R.H.T.	5.74
1	5711G	3/4" TURBUCKLE OPEN BODY STYLE	10.99



**1" TURBUCKLE - 5828G**  
(CLOSED BODY STYLE)

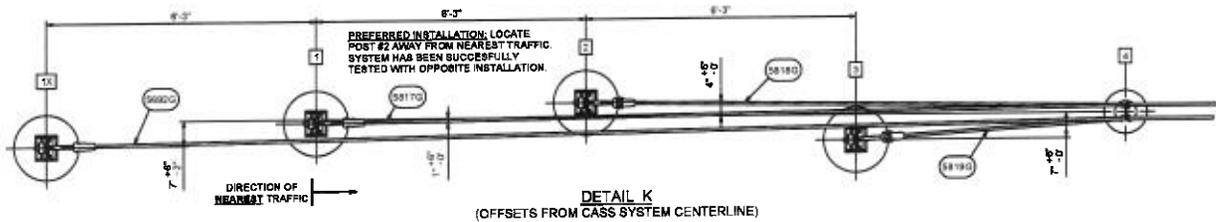
PARTS LIST - 5828G			
QTY	PART No	TITLE	Lbs / Each
1	5828G	1" CASS TURBUCKLE CLOSED BODY STYLE	4.81

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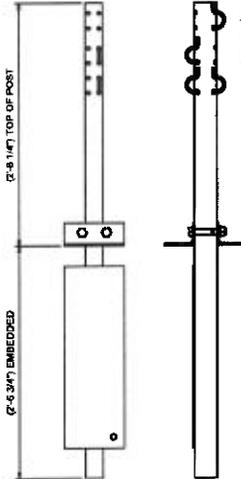
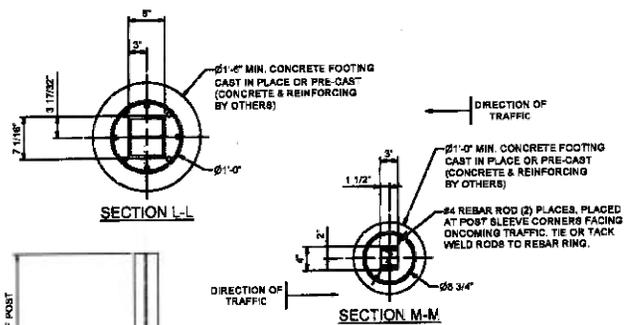
**CASS-S3 (6:1 SLOPE)  
4-CABLE GUARDRAIL  
SAFETY SYSTEM**

DRWG: E.A.R. (1/14/2016)  
CHK: [Signature]  
REV: 3 OF 6  
SS-743

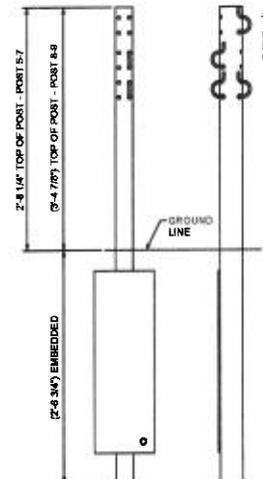
PROJ: CASS-S3\_6:1



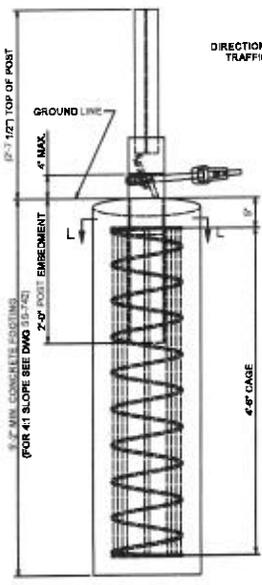
**DETAIL K**  
(OFFSETS FROM CASS SYSTEM CENTERLINE)



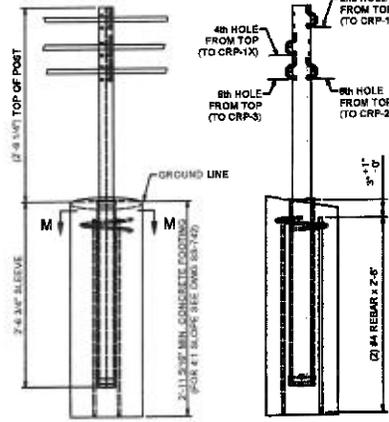
**CCT TERMINAL POST**  
(CCT POST 4)  
(POST OPTION 2 SHOWN)



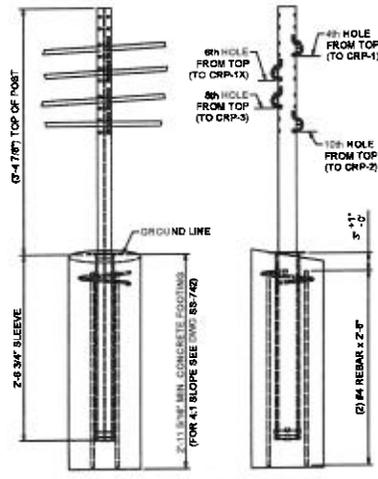
**CCT TERMINAL POST**  
(CCT - POST 5 - 9)  
(POST OPTION #2 SHOWN)



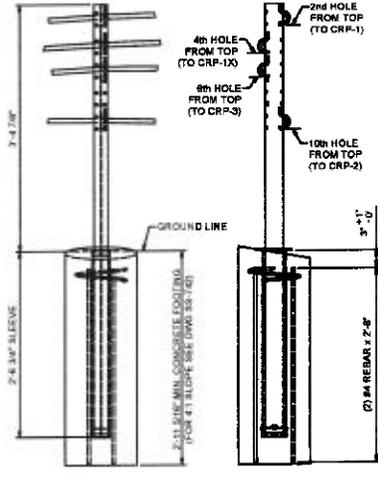
**DETAIL A**  
(CABLE RELEASE POST 1-3)



**DETAIL B**  
(POST 4-7)  
(POST OPTION #1 SHOWN)



**DETAIL C**  
(POST 8)  
(POST OPTION #1 SHOWN)



**DETAIL D**  
(POST 9)  
(POST OPTION #1 SHOWN)

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	<p>DATE</p>	<p>BY</p>	<p>APP. BY</p>
	<p>SCALE</p>	<p>PROJECT</p>	<p>SS-743</p>
	<p>PROJECT</p>	<p>CASS-S3_B1</p>	<p>0</p>

