Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	201	515

Bang Q. Hua 12-23-11
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BANG Q. HUA No. C 71273 Exp. 12/31/13 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

ROADSIDE SIGNS

SHEET	SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	POST SIZE & LENGTH (N) 4"x4"	4"x6"	6"x6"	ROADSIDE SIGN (ONE POST)	ROADSIDE SIGN (TWO POST)	INSTALL SIGN (STRAP & SADDLE BRACKET METHOD)	INSTALL ROADSIDE SIGN PANEL ON EXISTING POST	RELOCATE ROADSIDE SIGN ONE POST	REMOVE ROADSIDE SIGN	REMOVE ROADSIDE SIGN (STRAP & SADDLE BRACKET METHOD)	REMOVE ROADSIDE SIGN PANEL	INSTALL SIGN (MAST ARM MOUNTED) (N)	INSTALL SIGN ON PEDESTRIAN BARRICADE (N)	RESET ROADSIDE SIGN (ONE POST)	REMARK
			inch x inch	ft	ft	ft	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
S-1	13B	SR56(CA) ; R5-2											1					
		R20D-1(CA)																
		M6-1																
	13C	R3-8a	48 x 30												1			
	13D	R73-3(CA)	36 x 36												1			
	13E	R9-3a	18 x 18													1		
		R9-3b	18 x 12															
	13F	W11-2	30 x 30		16		1											
		W16-9p	24 x 12															
	13G	R3-7R	30 x 30		16		1											
	13H	G77-4(CA)	66 x 54		(2)16			1										
	13J	W14-2	30 x 30						1									
	13K	R13A(CA)	24 x 36				1											
S-2	21C	I-7	24 x 24						1									
		G97A(CA)	24 x 6															
		G97A(CA)Mod	24 x 6															
		G33-1(CA)	24 x 6															Arrow points WEST
	21D	R5-1	36 x 36			16	1											
		R5-1a	36 x 24															
	21E	R6-1L	36 x 12	6			1											
		R6-1R	36 x 12															
	21F	R61-13(CA)Mod	66 x 30		(2)16			1										
	21G	R5-1	36 x 36			16	1											
		R5-1a	36 x 24															
	21H	R6-1L	36 x 12	6			1											
		R6-1R	36 x 12															
	21J	R61-13(CA)Mod	66 x 30		(2)16			1										
	21K	R2-1	36 x 48		16		1											
	21L	R73-6(CA)	36 x 36															
	21M	R5-2	24 x 24		16		1											
		R20D-1(CA)	24 x 6															
		M6-1	21 x 15															
SUB-TOTAL (SQ-3)							9	3	2				1					

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

SIGN QUANTITIES

SQ-3

REVISED BY | DATE REVISED
BANG HUA | LAWRENCE LE
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR | SON NGUYEN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 15-APR-2012 | TIME PLOTTED => 12:15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	202	515

Bang Q. Hua 12-23-11
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BANG Q. HUA No. C 71273 Exp. 12/31/13 CIVIL STATE OF CALIFORNIA

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ROADSIDE SIGNS

SHEET	SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	POST SIZE & LENGTH (N) 4"x4"	4"x6"	6"x6"	ROADSIDE SIGN (ONE POST)	ROADSIDE SIGN (TWO POST)	INSTALL SIGN (STRAP & SADDLE BRACKET METHOD)	INSTALL ROADSIDE SIGN PANEL ON EXISTING POST	RELOCATE ROADSIDE SIGN ONE POST	REMOVE ROADSIDE SIGN	REMOVE ROADSIDE SIGN (STRAP & SADDLE BRACKET METHOD)	REMOVE ROADSIDE SIGN PANEL	INSTALL SIGN ON PEDESTRIAN BARRICADE (N)	INSTALL SIGN (MAST ARM MOUNTED) (N)	RESET ROADSIDE SIGN (ONE POST)	REMARK
			inch x inch	ft	ft	ft	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
S-2	21N	R9-3a	18 x 18												1			
		R9-3b	18 x 12															
	22A	R9-3a	18 x 18												1			
		R9-3b	18 x 12															
	22B	W12-1	30 x 30		14		1											
	22C	G92(CA)	36 x 24		13		1											
		M1-1	24 x 24															
		M3-3	24 x 12															
		G44(CA)	21 x 15															
	22D	G92(CA)	36 x 24		13		1											
		M1-1	24 x 24															
		M3-3	24 x 12															
		G44(CA)	21 x 15															
	22E	W11-2	30 x 30		16		1											
		W16-7pL	24 x 12															
	22F	R1-2	36x36x36	14			1											
	22G	R5-10a	30 x 36		14		1											
	22H	G92(CA)	36 x 24		13		1											
		M1-1	24 x 24															
		M3-3	24 x 12															
		G43(CA)	21 x 15															
	22J	R9-3a	18 x 18												1			
		R9-3b	18 x 12															
	22K	R3-3	24 x 24													1		
	22L	R61-13(CA)Mod	66 x 30													1		
	22M	W4-1R	48 x 48			18	1											
	22N	G11-4.1(CA)	44 x 18	13			1											
	23A	R89-1(CA)	36 x 16													1		
	23B	R89-1(CA)	36 x 16													1		
	23C	W11-2	30 x 30		16		1											
		W16-9p	24 x 12															
	23D	R10-6	24 x 36				1											
	23E	R10-6	24 x 36				1											
	23F	G78-1(CA)	66 x 48		(2)16			1										
	23G	R9-3a	18 x 18												1			
		R9-3b	18 x 12															
SUB-TOTAL (SQ-4)							12	1										

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

SIGN QUANTITIES

SQ-4

REVISED BY | DATE REVISED
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FUNCTIONAL SUPERVISOR
SON NGUYEN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 15-APR-2012 | TIME PLOTTED => 12:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	203	515

Bang Q. Hua 12-23-11
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BANG Q. HUA No. C 71273 Exp. 12/31/13 CIVIL STATE OF CALIFORNIA

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ROADSIDE SIGNS

SHEET	SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	POST SIZE & LENGTH (N) 4"x4"	4"x6"	6"x6"	ROADSIDE SIGN (ONE POST)	ROADSIDE SIGN (TWO POST)	INSTALL SIGN (STRAP & SADDLE BRACKET METHOD)	INSTALL ROADSIDE SIGN PANEL ON EXISTING POST	RELOCATE ROADSIDE SIGN ONE POST	REMOVE ROADSIDE SIGN	REMOVE ROADSIDE SIGN (STRAP & SADDLE BRACKET METHOD)	REMOVE ROADSIDE SIGN PANEL	INSTALL SIGN ON PEDESTRIAN BARRICADE (N)	INSTALL SIGN (MAST ARM MOUNTED) (N)	RESET ROADSIDE SIGN (ONE POST)	REMARK
			inch x inch	ft	ft	ft	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
S-2	23H	W11-2	30 x 30		16		1											
		W16-7pL	24 x 12															
	23J	W4-14(CA)Rt	48 x 48			18	1											
	23K	G92(CA)	36 x 24		13		1											
		M1-1	24 x 24															
		M3-1	24 x 12															
		G43(CA)	21 x 15															
	23L	G92(CA)	36 x 24		13		1											
		M1-1	24 x 24															
		M3-1	24 x 12															
		G44(CA)	21 x 15															
	23M	R61-19(CA)	36 x 30													1		
	23N	W1-8R	36 x 48		16		1											
	23P	W1-8R	36 x 48		16		1											
	23Q	W1-8R	36 x 48		16		1											
	23R	W1-8R	36 x 48		16		1											
	23S	W1-8R	36 x 48		16		1											
	23T	R61-3(CA)	45 x 45			16	1											
	24A	R61-30(CA)	36 x 30		14		1											
	24B	R61-30(CA)	36 x 30		14		1											
	24C	I-7	24 x 24		16		1											
		G97A(CA)	24 x 6															
		G97A(CA)Mod	24 x 6															
		G33-1(CA)	24 x 6															Arrow points WEST
	24D	G72(CA)Mod	102 x 36	See remark				1										Two 20-ft 6"x8" posts
		G8(CA)	102 x 48															
	24E	R5-1	36 x 36			16	1											
		R5-1a	36 x 24															
	24F	R6-1L	36 x 12	6			1											
		R6-1R	36 x 12															
	24G	R61-30(CA)	36 x 30		14		1											
	24H	R5-1	36 x 36			16	1											
		R5-1a	36 x 24															
	24J	R6-1L	36 x 12	6			1											
		R6-1R	36 x 12															
SUB-TOTAL (SQ-5)							18	1										

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SIGN QUANTITIES

SQ-5

REVISED BY | DATE REVISED
BANG HUA | LAWRENCE LE
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR
SON NGUYEN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 15-APR-2012 | TIME PLOTTED => 12:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	204	515

Bang Q. Hua 12-23-11
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BANG Q. HUA No. C 71273 Exp. 12/31/13 CIVIL STATE OF CALIFORNIA

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ROADSIDE SIGNS

SHEET	SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	POST SIZE & LENGTH (N) 4"x4"	4"x6"	6"x6"	ROADSIDE SIGN (ONE POST)	ROADSIDE SIGN (TWO POST)	INSTALL SIGN (STRAP & SADDLE BRACKET METHOD)	INSTALL ROADSIDE SIGN PANEL ON EXISTING POST	RELOCATE ROADSIDE SIGN ONE POST	REMOVE ROADSIDE SIGN	REMOVE ROADSIDE SIGN (STRAP & SADDLE BRACKET METHOD)	REMOVE ROADSIDE SIGN PANEL	INSTALL SIGN ON PEDESTRIAN BARRICADE (N)	INSTALL SIGN (MAST ARM MOUNTED) (N)	RESET ROADSIDE SIGN (ONE POST)	REMARK
			inch x inch	ft	ft	ft	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
S-2	24K	R61-30(CA)	36 x 30		14		1											
	24L	R3-18	24 x 24													1		
	25A	R61-3(CA)	45 x 45						1									
	25B	R73-3	36 x 36													1		
	25C	R2-1	36 x 48		16		1											
	25D	W7-2b(Mod)	42 x 60			20	1											
		W7-3a	42 x 24															
	25E	W73A(Rt)(CA)	48 x 48			18	1											
	25F	D3	42 x 18							1								Install sign below existing W2-2R sign
	25G	R10-7	24 x 30	14			1											
	25H	R2-1	36 x 48		16		1											
	26A	W14-2	30 x 30	14			1											
	26B	R61-30(CA)	36 x 30													1		
	26C	R61-19(CA)	36 x 30		16		1											
		G82(CA)	42 x 12															
	26D	R3-7R	30 x 30		16		1											
	26E	G77-4(CA)	66 x 54		(2)16			1										
	26F	R9-3a	18 x 18												1			
		R9-3b	18 x 12															
	27A	W11-2	30 x 30		16		1											
		W16-7pL	24 x 12															
	27B	G92(CA)	36 x 24		13		1											
		M1-1	24 x 24															
		M3-1	24 x 12															
		G44(CA)	21 x 15															
	27C	R5-10a	30 x 36		14		1											
	27D	G92(CA)	36 x 24		13		1											
		M1-1	24 x 24															
		M3-1	24 x 12															
		G43(CA)	21 x 15															
	27E	G78-1(CA)	66 x 48		(2)16			1										
	28A	G11-4.1(CA)	44 x 18	13			1											
	28B	R3-1	30 x 30						1									
	28C	R9-3a	18 x 18												1			
		R9-3b	18 x 12															
SUB-TOTAL (SQ-6)							14	2	2	1								

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SIGN QUANTITIES

SQ-6

REVISED BY | DATE REVISED
BANG HUA | LAWRENCE LE
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: SON NGUYEN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 15-APR-2012 | TIME PLOTTED => 12:23

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	205	515

Bang Q. Hua 12-23-11
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BANG Q. HUA No. C 71273 Exp. 12/31/13 CIVIL STATE OF CALIFORNIA

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ROADSIDE SIGNS

SHEET	SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	POST SIZE & LENGTH (N) 4"x4"	4"x6"	6"x6"	ROADSIDE SIGN (ONE POST)	ROADSIDE SIGN (TWO POST)	INSTALL SIGN (STRAP & SADDLE BRACKET METHOD)	INSTALL ROADSIDE SIGN PANEL ON EXISTING POST	RELOCATE ROADSIDE SIGN ONE POST	REMOVE ROADSIDE SIGN	REMOVE ROADSIDE SIGN (STRAP & SADDLE BRACKET METHOD)	REMOVE ROADSIDE SIGN PANEL	INSTALL SIGN ON PEDESTRIAN BARRICADE (N)	INSTALL SIGN (MAST ARM MOUNTED) (N)	RESET ROADSIDE SIGN (ONE POST)	REMARK
			inch x inch	ft	ft	ft	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
S-3	31A	R10-6	24 x 36				1											
	31B	R10-6	24 x 36				1											
	31C	R89-1(CA)	36 x 16													1		
	31D	R89-1(CA)	36 x 16													1		
	31E	W4-1R	48 x 48			18	1											
	31F	W4-1R										1						
	32A	G66-56(CA)	30 x 30		18		1											
		G66-56A(CA)	30 x 30															
	32B	G66-56(CA)										1						
		D9-8; G33-1(CA)																
	32C	E5-1a	72 x 60			(2)18		1										
	32D	G84-2(CA)										1						
	32E	W3-3	48 x 48			18	1											
	32F	W3-3	48 x 48			18	1											
	32G	W3-3										1						
	32H	W3-3											1					
	32J	G66-56(CA)	24 x 24		16		1											
		D9-8	24 x 24															
		G33-1(CA)	24 x 6															Arrow points EAST
	32K	I-7; G97A(CA)										1						
		G97A(CA)Mod																
		G33-1(CA)																
	32L	G13-1(CA)	36 x 36		16		1											
	32M	W13-2	48 x 60						1									Strap on overhead sign post
S-4	41A	W13-2	48 x 60						1									Strap on light pole
	41B	W13-2											1					
	41C	G13-1(CA)	36 x 36						1									
	41D	G84-2(CA)										1						
	41E	E5-1a	72 x 60			(2)18		1										
	41F	W3-3										1						
	41G	W3-3	48 x 48			18	1											
	41H	W3-3	48 x 48			18	1											
	41J	R61-28(CA)										1						
	41K	R61-28(CA)										1						
	41L	G66-56(CA)	24 x 24	14			1											
		G33-1(CA)	24 x 6															Arrow points EAST
	41M	R61-13(CA)Mod	66 x 30			(2)18		1										
	41N	R61-13(CA)Mod	66 x 30			(2)18		1										
SUB-TOTAL (SQ-7)							11	4	3			9	2					

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SIGN QUANTITIES

SQ-7

REVISED BY | DATE REVISED
BANG HUA | LAWRENCE LE
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR | SON NGUYEN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 15-APR-2012 | TIME PLOTTED => 12:23

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	206	515

Bang Q. Hua 12-23-11
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
BANG Q. HUA
No. C 71273
Exp. 12/31/13
CIVIL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

ROADSIDE SIGNS

SHEET	SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	POST SIZE & LENGTH (N) 4"x4"	4"x6"	6"x6"	ROADSIDE SIGN (ONE POST)	ROADSIDE SIGN (TWO POST)	INSTALL SIGN (STRAP & SADDLE BRACKET METHOD)	INSTALL ROADSIDE SIGN PANEL ON EXISTING POST	RELOCATE ROADSIDE SIGN ONE POST	REMOVE ROADSIDE SIGN	REMOVE ROADSIDE SIGN (STRAP & SADDLE BRACKET METHOD)	REMOVE ROADSIDE SIGN PANEL	INSTALL SIGN ON PEDESTRIAN BARRICADE (N)	INSTALL SIGN (MAST ARM MOUNTED) (N)	RESET ROADSIDE SIGN (ONE POST)	REMARK
			inch x inch	ft	ft	ft	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
S-4	42A	W4-3R										1						
	42B	R10-6	24 x 36				1											
	42C	R10-6	24 x 36				1											
	42D	R89-1(CA)	36 x 16													1		
	42E	R89-1(CA)	36 x 16													1		
	42F	W4-3R	48 x 48			18	1											
	42G	G81-66(CA)									1							
S-5	51A	G66-56(CA)	30 x 30		18		1											Install sign behind MBGR at soundwall
		G66-56A(CA)	30 x 30															
	51B	G66-56(CA)												1				Protect G72(CA) sign in place
		G200-19(CA)																
		G200-18(CA)																
		G33-1(CA)																
S-6	61A	G66-56(CA)										1						
		G33-1(CA)																
	61B	I-7										1						
		G97A(CA)																
		G97A(CA)Mod																
		G33-1(CA)																
	61C	G13-1(CA)										1						
	61D 61E	R61-28(CA)										2						
	61F	G8(CA)										1						
	61G	R5-1 ; R5-1a										1						
	61H	R6-1										1						
	61J	R5-1 ; R5-1a										1						
	61K	R6-1										1						
	61L	R2-1 ; R9-3a										1						
		R26A(CA)Mod																
	61M	R61-34(CA)										1						
	62A	G77(CA)										1						
	62B 62C	G92(CA) ; M1-1										2						
		M3-3 ; G44(CA)																
	62D	R5-10a										1						
	62E	R61-34(CA)Mod										1						
	63A	G11-4.1(CA)										1						
	63B	G78(CA)										1						
	63C	R16B(CA)											1					
		R9-3a																
SUB-TOTAL (SQ-8)							4				1	20	1	1				

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

SIGN QUANTITIES

SQ-8

REVISED BY | DATE REVISED
BANG HUA | LAWRENCE LE
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FUNCTIONAL SUPERVISOR | SON NGUYEN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 15-APR-2012 | TIME PLOTTED => 12:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	207	515

Bang Q. Hua 12-23-11
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
BANG Q. HUA
No. C 71273
Exp. 12/31/13
CIVIL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

ROADSIDE SIGNS

SHEET	SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	POST SIZE & LENGTH (N) 4"x4"	4"x6"	6"x6"	ROADSIDE SIGN (ONE POST)	ROADSIDE SIGN (TWO POST)	INSTALL SIGN (STRAP & SADDLE BRACKET METHOD)	INSTALL ROADSIDE SIGN PANEL ON EXISTING POST	RELOCATE ROADSIDE SIGN ONE POST	REMOVE ROADSIDE SIGN	REMOVE ROADSIDE SIGN (STRAP & SADDLE BRACKET METHOD)	REMOVE ROADSIDE SIGN PANEL	INSTALL SIGN ON PEDESTRIAN BARRICADE (N)	INSTALL SIGN (MAST ARM MOUNTED) (N)	RESET ROADSIDE SIGN (ONE POST)	REMARK
			inch x inch	ft	ft	ft	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
S-6	63D	G66-56(CA)										1						
		G33-1(CA)																
	63E 63F	R61-30(CA)										2						
	63G	G8(CA)										1						
	63H 63J	R6-1L ; R6-1R										2						
	63K 63L	R5-1 ; R5-1a										2						
	64A	R3-7R										1						
	64B	R2-1										1						
	64C	W7-2b(Mod)										1						
		W7-3a																
	64D	R3-7R										1						
	64E	R10-7										1						
	64F	R3-7R										1						
	64G	R9-3 ; R9-3a											1					
	64H 64J	G92(CA) ; M1-1										2						
		M3-1 ; G44(CA)																
	64K	G77A(CA)										1						
	64L	W4-7										1						
	64M	R5-10a										1						
	65A	R16B(CA)											1					
	65B	R61-34(CA)Mod										1						
	65C	G78(CA)										1						
	65D	G11-4.1(CA)										1						
SUB-TOTAL (SQ-9)												22	2					
SUB-TOTAL (SQ-8)							4		2		1	20	1	1				
SUB-TOTAL (SQ-7)							11	4	3			9	2					
SUB-TOTAL (SQ-6)							14	2	2	1								
SUB-TOTAL (SQ-5)							18	1										
SUB-TOTAL (SQ-4)							12	1										
SUB-TOTAL (SQ-3)							9	3	2				1					
SUB-TOTAL (SQ-2)							3		2			7	6				2	
SUB-TOTAL (SQ-1)							5					4						
TOTAL							76	11	11	1	1	62	12	1			2	

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

SIGN QUANTITIES

SQ-9

REVISED BY | DATE REVISED
BANG HUA | LAWRENCE LE
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR
SON NGUYEN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 18-APR-2012
TIME PLOTTED => 05:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	208	515

Bang Q. Hua 12-23-11
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BANG Q. HUA No. C 71273 Exp. 12/31/13 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

MATERIAL SUMMARY (CONTRACTOR FURNISHED SIGNS)

SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	SINGLE FACED	SIGN FACING MATERIAL						OVERHEAD	ROADSIDE				DESCRIPTION (REMARKS)
				BACKGROUND		LEGEND		PROTECTIVE FILM		FURNISH LAMINATED PANEL SIGN	FURNISH SINGLE SHEET ALUMINUM SIGN				
				SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	STANDARD	PREMIUM	1"	0.063"		0.080"		
										TYPE A	UNFRAMED	FRAMED	UNFRAMED	FRAMED	
		inch x inch								SQFT	SQFT	SQFT	SQFT	SQFT	
11B	R32(CA)	12 x 18	X	W	II	G	II	X			1.5				
	R81A(CA)	12 x 5	X	W	II	Blk	non		X		0.5				
11D	R2-1	36 x 48	X	W	IV	Blk	non		X		12.0				SPEED LIMIT 25
11E	SR56(CA)	36 x 54	X	W	IV	Blk	non		X		13.5				
11H	R30E(CA)Mod	12 x 18	X	W	IV	Blk	non		X		1.5				ARROW POINTS LEFT
11J	R3-8a	48 x 30	X	W	IV	Blk	non		X				10.0		
	G82(CA)Mod	42 x 12	X	G	IV	W	IV		X		3.5				(Arrow on left side points left)
11K	R26S(CA)	12 x 18	X	W	IV	R	IV	X			1.5				
11L	R3-18	24 x 24	X	W	IV	Blk	non		X		4.0				
11M	R2-1	36 x 48	X	W	IV	Blk	non		X		12.0				
12K	R9-3a	18 x 18	X	W	IV	Blk	non		X		2.5				
	R9-3b	18 x 12	X	W	IV	Blk	non		X		1.5				USE CROSSWALK (180° arrow)
12N	R3-7R	30 x 30	X	W	IV	Blk	non		X		6.5				
12R	SR56(CA)	36 x 54	X	W	IV	Blk	non		X		13.5				
13A	SR56(CA)	36 x 54	X	W	IV	Blk	non		X		13.5				
	R5-2	24 x 24	X	W	IV	Blk	non		X		4.0				
	R20D-1(CA)	24 x 6	X	W	IV	Blk	non		X		1.0				
	M6-1	21 x 15	X	W	IV	Blk	non		X		2.5				
13C	R3-8a	48 x 30	X	W	IV	Blk	non		X				10.0		
13D	R73-3(CA)	36 x 36	X	W	IV	Blk	non		X		9.0				
13E	R9-3a	18 x 18	X	W	IV	Blk	non		X		2.5				
	R9-3b	18 x 12	X	W	IV	Blk	non		X		1.5				
13F	W11-2	30 x 30	X	FYG	IV	Blk	non		X		6.5				
	W16-9p	24 x 12	X	FYG	IV	Blk	non		X		2.0				
13G	R3-7R	30 x 30	X	W	IV	Blk	non		X		6.5				
13H	G77-4(CA)	66 x 54	X	G	IV	W	IV	X				25.0			
13J	W14-2	30 x 30	X	Y	IV	Blk	non		X		6.5				
13K	R13A(CA)	24 x 36	X	W	IV	Blk	non		X		6.0				(Prohibitive symbol - RED (reflective))
21C	I-7	24 x 24	X	G	IV	W	IV		X		4.0				
	G97A(CA)	24 x 6	X	G	IV	W	IV		X		1.0				
	G97A(CA)Mod	24 x 6	X	G	IV	W	IV		X		1.0				METROLINK
	G33-1(CA)	24 x 6	X	G	IV	W	IV		X		1.0				
21D	R5-1	36 x 36	X	W	IV	W	IV	X			9.0				
	R5-1a	36 x 24	X	R	IV	W	IV	X			6.0				
SUB-TOTAL (SQ-10)											157.5	25.0	20.0		

ABBREVIATIONS:

B = BLUE
Blk = BLACK
Br = BROWN
FYG = FLUORESCENT YELLOW GREEN
G = GREEN
R = RED
W = WHITE
Y = YELLOW
non = Non-Reflective

SIGN QUANTITIES (CONTRACTOR FURNISHED SIGNS) SQ-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
FUNCTIONAL SUPERVISOR: SON NGUYEN
CALCULATED-DESIGNED BY: BANG HUA
CHECKED BY: LAWRENCE LE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 13:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	209	515

Bang Q. Hua 12-23-11
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BANG Q. HUA No. C 71273 Exp. 12/31/13 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

MATERIAL SUMMARY (CONTRACTOR FURNISHED SIGNS)

SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	SINGLE FACED	SIGN FACING MATERIAL						OVERHEAD	ROADSIDE				DESCRIPTION (REMARKS)
				BACKGROUND		LEGEND		PROTECTIVE FILM		FURNISH LAMINATED PANEL SIGN	FURNISH SINGLE SHEET ALUMINUM SIGN				
				SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	STANDARD	PREMIUM	1"	0.063"		0.080"		
										TYPE A	UNFRAMED	FRAMED	UNFRAMED	FRAMED	
		inch x inch								SQFT	SQFT	SQFT	SQFT	SQFT	
21E	R6-1L	36 x 12	X	Blk	non	Blk	non		X		3.0				(Retroreflective white arrow)
	R6-1R	36 x 12	X	Blk	non	Blk	non		X		3.0				(Retroreflective white arrow)
21F	R61-13(CA)Mod	66 x 30	X	W	IV	Blk	non		X			14.0			
21G	R5-1	36 x 36	X	W	IV	W	IV		X		9.0				
	R5-1a	36 x 24	X	R	IV	W	IV		X		6.0				
21H	R6-1L	36 x 12	X	Blk	non	Blk	non		X		3.0				(Retroreflective white arrow)
	R6-1R	36 x 12	X	Blk	non	Blk	non		X		3.0				(Retroreflective white arrow)
21J	R61-13(CA)Mod	66 x 30	X	W	IV	Blk	non		X			14.0			
21K	R2-1	36 x 48	X	W	IV	Blk	non		X		12.0				SPEED LIMIT 25
21L	R73-6(CA)	36 x 36	X	W	IV	Blk	non		X		9.0				
21M	R5-2	24 x 24	X	W	IV	Blk	non		X		4.0				
	R20D-1(CA)	24 x 6	X	W	IV	Blk	non		X		1.0				
	M6-1	21 x 15	X	W	IV	Blk	non		X		2.5				
21N	R9-3a	18 x 18	X	W	IV	Blk	non		X		2.5				
	R9-3b	18 x 12	X	W	IV	Blk	non		X		1.5				
22A	R9-3a	18 x 18	X	W	IV	Blk	non		X		2.5				
	R9-3b	18 x 12	X	W	IV	Blk	non		X		1.5				
22B	W12-1	30 x 30	X	Y	IV	Blk	non		X		6.5				
22C	G92(CA)	36 x 24	X	G	IV	W	IV		X		6.0				
	M1-1	24 x 24	X	B	IV	W	IV		X		4.0				
	M3-3	24 x 12	X	B	IV	W	IV		X		2.0				
	G44(CA)	21 x 15	X	B	IV	W	IV		X		2.5				
22D	G92(CA)	36 x 24	X	G	IV	W	IV		X		6.0				
	M1-1	24 x 24	X	B	IV	W	IV		X		4.0				
	M3-3	24 x 12	X	B	IV	W	IV		X		2.0				
	G44(CA)	21 x 15	X	B	IV	W	IV		X		2.5				
22E	W11-2	30 x 30	X	FYG	IV	Blk	non		X		6.5				
	W16-7pL	24 x 12	X	FYG	IV	Blk	non		X		2.0				
22F	R1-2	36x36x36	X	W	IV	R	IV		X		9.0				
22G	R5-10a	30 x 36	X	W	IV	Blk	non		X		7.5				
22H	G92(CA)	36 x 24	X	G	IV	W	IV		X		6.0				
	M1-1	24 x 24	X	B	IV	W	IV		X		4.0				
	M3-3	24 x 12	X	B	IV	W	IV		X		2.0				
	G43(CA)	21 x 15	X	B	IV	W	IV		X		2.5				
SUB-TOTAL (SQ-11)											138.5	28.0			

ABBREVIATIONS:

B = BLUE
Blk = BLACK
Br = BROWN
FYG = FLUORESCENT YELLOW GREEN
G = GREEN
R = RED
W = WHITE
Y = YELLOW
non = Non-Reflective

SIGN QUANTITIES (CONTRACTOR FURNISHED SIGNS)

SQ-11

REVISED BY | DATE REVISED
BANG HUA | LAWRENCE LE
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: SON NGUYEN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 15-APR-2012 | TIME PLOTTED => 13:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	210	515

Bang Q. Hua 12-23-11
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BANG Q. HUA No. C 71273 Exp. 12/31/13 CIVIL STATE OF CALIFORNIA

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MATERIAL SUMMARY (CONTRACTOR FURNISHED SIGNS)

SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	SINGLE FACED	SIGN FACING MATERIAL						OVERHEAD	ROADSIDE				DESCRIPTION (REMARKS)
				BACKGROUND		LEGEND		PROTECTIVE FILM		FURNISH LAMINATED PANEL SIGN	FURNISH SINGLE SHEET ALUMINUM SIGN				
				SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	STANDARD	PREMIUM	1"	0.063"		0.080"		
										TYPE A	UNFRAMED	FRAMED	UNFRAMED	FRAMED	
		inch x inch								SQFT	SQFT	SQFT	SQFT	SQFT	
22J	R9-3a	18 x 18	X	W	IV	Blk	non		X		2.5				
	R9-3b	18 x 12	X	W	IV	Blk	non		X		1.5				
22K	R3-3	24 x 24	X	W	IV	Blk	non		X		4.0				
22L	R61-13(CA)Mod	66 x 30	X	W	IV	Blk	non		X			14.0			
22M	W4-1R	48 x 48	X	Y	IV	Blk	non		X				16.0		
22N	G11-4.1(CA)	44 x 18	X	W	IV	Blk	non		X		5.5				
23A	R89-1(CA)	36 x 16	X	W	IV	Blk	non		X		4.0				
23B	R89-1(CA)	36 x 16	X	W	IV	Blk	non		X		4.0				
23C	W11-2	30 x 30	X	FYG	IV	Blk	non		X		6.5				
	W16-9p	24 x 12	X	FYG	IV	Blk	non		X		2.0				
23D	R10-6	24 x 36	X	W	IV	Blk	non		X		6.0				(Arrow points lower right corner)
23E	R10-6	24 x 36	X	W	IV	Blk	non		X		6.0				
23F	G78-1(CA)	66 x 48	X	G	IV	W	IV		X			22.0			
23G	R9-3a	18 x 18	X	W	IV	Blk	non		X		2.5				
	R9-3b	18 x 12	X	W	IV	Blk	non		X		1.5				USE CROSSWALK (180° arrow)
23H	W11-2	30 x 30	X	FYG	IV	Blk	non		X		6.5				
	W16-7pL	24 x 12	X	FYG	IV	Blk	non		X		2.0				
23J	W4-14(CA)R†	48 x 48	X	Y	IV	Blk	non		X				16.0		20 (270° loop/Advisory speed)
23K	G92(CA)	36 x 24	X	G	IV	W	IV		X		6.0				
	M1-1	24 x 24	X	B	IV	W	IV		X		4.0				
	M3-1	24 x 12	X	B	IV	W	IV		X		2.0				
	G43(CA)	21 x 15	X	B	IV	W	IV		X		2.5				
23L	G92(CA)	36 x 24	X	G	IV	W	IV		X		6.0				
	M1-1	24 x 24	X	B	IV	W	IV		X		4.0				
	M3-1	24 x 12	X	B	IV	W	IV		X		2.0				
	G44(CA)	21 x 15	X	B	IV	W	IV		X		2.5				
23M	R61-19(CA)	36 x 30	X	W	IV	Blk	non		X		7.5				
23N	W1-8R	36 x 48	X	Y	IV	Blk	non		X		12.0				
23P	W1-8R	36 x 48	X	Y	IV	Blk	non		X		12.0				
23Q	W1-8R	36 x 48	X	Y	IV	Blk	non		X		12.0				
23R	W1-8R	36 x 48	X	Y	IV	Blk	non		X		12.0				
23S	W1-8R	36 x 48	X	Y	IV	Blk	non		X		12.0				
23T	61-13(CA)	45 x 45	X	W	IV	Blk	non		X		14.0				
24A	R61-30(CA)	36 x 30	X	W	IV	Blk	non		X		7.5				
24B	R61-30(CA)	36 x 30	X	W	IV	Blk	non		X		7.5				
SUB-TOTAL (SQ-12)											180.0	36.0	32.0		

ABBREVIATIONS:

B = BLUE
Blk = BLACK
Br = BROWN
FYG = FLUORESCENT YELLOW GREEN
G = GREEN
R = RED
W = WHITE
Y = YELLOW
non = Non-Reflective

SIGN QUANTITIES (CONTRACTOR FURNISHED SIGNS)

SQ-12

REVISED BY | DATE REVISED
BANG HUA | LAWRENCE LE
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: SON NGUYEN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 18-APR-2012 | TIME PLOTTED => 16:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	211	515

Bang Q. Hua 12-23-11
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BANG Q. HUA No. C 71273 Exp. 12/31/13 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

MATERIAL SUMMARY (CONTRACTOR FURNISHED SIGNS)

SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	SINGLE FACED	SIGN FACING MATERIAL						OVERHEAD	ROADSIDE				DESCRIPTION (REMARKS)
				BACKGROUND		LEGEND		PROTECTIVE FILM		FURNISH LAMINATED PANEL SIGN	FURNISH SINGLE SHEET ALUMINUM SIGN				
				SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	STANDARD	PREMIUM	1"	0.063"		0.080"		
										TYPE A	UNFRAMED	FRAMED	UNFRAMED	FRAMED	
		inch x inch								SQFT	SQFT	SQFT	SQFT	SQFT	
24C	I-7	24 x 24	X	G	IV	W	IV		X		4.0				
	G97A(CA)	24 x 6	X	G	IV	W	IV		X		1.0				
	G97A(CA)Mod	24 x 6	X	G	IV	W	IV		X		1.0				METROLINK
	G33-1(CA)	24 x 6	X	G	IV	W	IV		X		1.0				
24D	G72(CA)Mod	102 x 36	X	Br	II	W	II		X					25.5	
	G8(CA)	102 x 48	X	G	IV	W	IV		X					34.0	
24E	R5-1	36 x 36	X	W	IV	W	IV		X		9.0				
	R5-1a	36 x 24	X	R	IV	W	IV		X		6.0				
24F	R6-1L	36 x 12	X	Blk	non	Blk	non		X		3.0				(Retroreflective white arrow)
	R6-1R	36 x 12	X	Blk	non	Blk	non		X		3.0				(Retroreflective white arrow)
24G	R61-30(CA)	36 x 30	X	W	IV	Blk	non		X		7.5				
24H	R5-1	36 x 36	X	W	IV	W	IV		X		9.0				
	R5-1a	36 x 24	X	R	IV	W	IV		X		6.0				
24J	R6-1L	36 x 12	X	Blk	non	Blk	non		X		3.0				(Retroreflective white arrow)
	R6-1R	36 x 12	X	Blk	non	Blk	non		X		3.0				(Retroreflective white arrow)
24K	R61-30(CA)	36 x 30	X	W	IV	Blk	non		X		7.5				
24L	R3-18	24 x 24	X	W	IV	Blk	non		X		4.0				
25A	R61-3(CA)	45 x 45	X	W	IV	Blk	non		X		14.0				
25B	R73-3(CA)	36 x 36	X	W	IV	Blk	non		X		9.0				
25C	R2-1	36 x 48	X	W	IV	Blk	non		X		12.0				SPEED LIMIT 40
25D	W7-2b(Mod)	42 x 60	X	Y	IV	Blk	non		X		17.5				
	W7-3a	42 x 24	X	Y	IV	Blk	non		X		7.0				
25E	W73A(R†)(CA)	48 x 48	X	Y	IV	Blk	non		X				16.0		
25F	D3	42 x 18	X	G	IV	W	IV		X		5.5				
25G	R10-7	24 x 30	X	W	IV	Blk	non		X		5.0				
25H	R2-1	36 x 48	X	W	IV	Blk	non		X		12.0				SPEED LIMIT 35
26A	W14-2	30 x 30	X	Y	IV	Blk	non		X		6.5				
26B	R61-30(CA)	36 x 30	X	W	IV	Blk	non		X		7.5				
26C	R61-19(CA)	36 x 30	X	W	IV	Blk	non		X		7.5				
	G82(CA)	42 x 12	X	G	IV	W	IV		X		3.5				
26D	R3-7R	30 x 30	X	W	IV	Blk	non		X		6.5				
26E	G77-4(CA)	66 x 54	X	G	IV	W	IV		X			25.0			
26F	R9-3a	18 x 18	X	W	IV	Blk	non		X		2.5				
	R9-3b	18 x 12	X	W	IV	Blk	non		X		1.5				
SUB-TOTAL (SQ-13)											185.5	25.0	16.0	59.5	

ABBREVIATIONS:

B = BLUE
Blk = BLACK
Br = BROWN
FYG = FLUORESCENT YELLOW GREEN
G = GREEN
R = RED
W = WHITE
Y = YELLOW
non = Non-Reflective

SIGN QUANTITIES (CONTRACTOR FURNISHED SIGNS)

SQ-13

REVISED BY | DATE REVISED
BANG HUA | LAWRENCE LE
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: SON NGUYEN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 15-APR-2012 | TIME PLOTTED => 13:36

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	212	515

Bang Q. Hua 12-23-11
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BANG Q. HUA No. C 71273 Exp. 12/31/13 CIVIL STATE OF CALIFORNIA

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MATERIAL SUMMARY (CONTRACTOR FURNISHED SIGNS)

SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	SINGLE FACED	SIGN FACING MATERIAL						OVERHEAD	ROADSIDE				DESCRIPTION (REMARKS)
				BACKGROUND		LEGEND		PROTECTIVE FILM		FURNISH LAMINATED PANEL SIGN	FURNISH SINGLE SHEET ALUMINUM SIGN				
				SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	STANDARD	PREMIUM	1"	0.063"		0.080"		
										TYPE A	UNFRAMED	FRAMED	UNFRAMED	FRAMED	
		inch x inch								SQFT	SQFT	SQFT	SQFT	SQFT	
27A	W11-2	30 x 30	X	FYG	IV	Blk	non		X		6.5				
	W16-7pL	24 x 12	X	FYG	IV	Blk	non		X		2.0				
27B	G92(CA)	36 x 24	X	G	IV	W	IV		X		6.0				
	M1-1	24 x 24	X	B	IV	W	IV		X		4.0				
	M3-1	24 x 12	X	B	IV	W	IV		X		2.0				
	G44(CA)	21 x 15	X	B	IV	W	IV		X		2.5				
27C	R5-10a	30 x 36	X	W	IV	Blk	non		X		7.5				
27D	G92(CA)	36 x 24	X	G	IV	W	IV		X		6.0				
	M1-1	24 x 24	X	B	IV	W	IV		X		4.0				
	M3-1	24 x 12	X	B	IV	W	IV		X		2.0				
	G43(CA)	21 x 15	X	B	IV	W	IV		X		2.5				
27E	G78-1(CA)	66 x 48	X	G	IV	W	IV		X			22.0			
28A	G11-4.1(CA)	44 x 18	X	W	IV	Blk	non		X		5.5				
28B	R3-1	30 x 30	X	W	IV	Blk	non		X		6.5				
28C	R9-3a	18 x 18	X	W	IV	Blk	non		X		2.5				
	R9-3b	18 x 12	X	W	IV	Blk	non		X		1.5				
203	G83-5(CA)	276 x 100	X	G	IV	W	IV		X	192					
204	G83-5(CA)	276 x 100	X	G	IV	W	IV		X	192					
205	G72(CA)Mod	132 x 40	X	Br	II	W	II		X	37					
	R59(CA)L†	42 x 48	X	W	IV	Blk	non		X	14					
	G8(CA)	84 x 40	X	G	IV	W	IV		X	23.5					
	R59(CA)L†	42 x 48	X	W	IV	Blk	non		X	14					
	R59(CA)R†	42 x 48	X	W	IV	Blk	non		X	14					ADD UP ARROW
	R59(CA)R†	42 x 48	X	W	IV	Blk	non		X	14					
	G8(CA)	96 x 40	X	G	IV	W	IV		X	27					
31A	R10-6	24 x 36	X	W	IV	Blk	non		X		6.0				(Arrow points lower right corner)
31B	R10-6	24 x 36	X	W	IV	Blk	non		X		6.0				
31C	R89-1(CA)	36 x 16	X	W	IV	Blk	non		X		4.0				
31D	R89-1(CA)	36 x 16	X	W	IV	Blk	non		X		4.0				
31E	W4-1R	48 x 48	X	Y	IV	Blk	non		X				16.0		
32A	G66-56(CA)	30 x 30	X	B	IV	W	IV		X		6.5				
	G66-56A(CA)	30 x 30	X	B	IV	W	IV		X		6.5				
32C	E5-1a	72 x 60	X	G	IV	W	IV		X			30.0			
SUB-TOTAL (SQ-14)										527.5	94.0	52.0	16.0		

ABBREVIATIONS:

B = BLUE
Blk = BLACK
Br = BROWN
FYG = FLUORESCENT YELLOW GREEN
G = GREEN
R = RED
W = WHITE
Y = YELLOW
non = Non-Reflective

SIGN QUANTITIES (CONTRACTOR FURNISHED SIGNS)

SQ-14

REVISED BY | DATE REVISED
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Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 18-APR-2012 | TIME PLOTTED => 05:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	213	515

Bang Q. Hua 12-23-11
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
BANG Q. HUA
No. C 71273
Exp. 12/31/13
CIVIL
STATE OF CALIFORNIA

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MATERIAL SUMMARY (CONTRACTOR FURNISHED SIGNS)

SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	SINGLE FACED	SIGN FACING MATERIAL						OVERHEAD	ROADSIDE				DESCRIPTION (REMARKS)
				BACKGROUND		LEGEND		PROTECTIVE FILM		FURNISH LAMINATED PANEL SIGN	FURNISH SINGLE SHEET ALUMINUM SIGN				
				SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	STANDARD	PREMIUM	1"	0.063"		0.080"		
										TYPE A	UNFRAMED	FRAMED	UNFRAMED	FRAMED	
		inch x inch								SQFT	SQFT	SQFT	SQFT	SQFT	
32E	W3-3	48 x 48	X	Y	IV	Blk	non		X				16.0		
32F	W3-3	48 x 48	X	Y	IV	Blk	non		X				16.0		
32J	G66-56(CA)	24 x 24	X	B	IV	W	IV		X		4.0				
	D9-3	24 x 24	X	B	IV	W	IV		X		4.0				
	G33-1(CA)	24 x 6	X	B	IV	W	IV		X		1.0				
32L	G13-1(CA)	36 x 36	X	Cream	non	Br	non		X		9.0				(Arrow on left side, points left)
32M	W13-2	48 x 60	X	Y	IV	Blk	non		X				20.0		EXIT 30 MPH
300	G85-11(CA)	288 x 110	X	G	IV	W	IV		X	220					
41A	W13-2	48 x 60	X	Y	IV	Blk	non		X				20.0		EXIT 30 MPH
41C	G13-1(CA)	36 x 36	X	Cream	non	Br	non		X		9.0				
41E	E5-1a	72 x 60	X	G	IV	W	IV		X			30.0			
41G	W3-3	48 x 48	X	Y	IV	Blk	non		X				16.0		
41H	W3-3	48 x 48	X	Y	IV	Blk	non		X				16.0		
41L	G66-56(CA)	24 x 24	X	B	IV	W	IV		X		4.0				
	G33-1(CA)	24 x 6	X	B	IV	W	IV		X		1.0				
41M	R61-13(CA)Mod	66 x 30	X	W	IV	Blk	non		X			14.0			
41N	R61-13(CA)Mod	66 x 30	X	W	IV	Blk	non		X			14.0			
42B	R10-6	24 x 36	X	W	IV	Blk	non		X		6.0				(Arrow points lower right corner)
42C	R10-6	24 x 36	X	W	IV	Blk	non		X		6.0				
42D	R89-1(CA)	36 x 16	X	W	IV	Blk	non		X		4.0				
42E	R89-1(CA)	36 x 16	X	W	IV	Blk	non		X		4.0				
42F	W4-3R	48 x 48	X	Y	IV	Blk	non		X				16.0		
SUB-TOTAL (SQ-15)										220.0	52.0	58.0	120.0		
SUB-TOTAL (SQ-14)										527.5	94.0	52.0	16.0		
SUB-TOTAL (SQ-13)											185.5	25.0	16.0	59.5	
SUB-TOTAL (SQ-12)											180.0	36.0	32.0		
SUB-TOTAL (SQ-11)											138.5	28.0			
SUB-TOTAL (SQ-10)											157.5	25.0	20.0		
TOTAL										747.5	821.5	210.0	204.0	59.5	

ABBREVIATIONS:

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Blk = BLACK
Br = BROWN
FYG = FLUORESCENT YELLOW GREEN
G = GREEN
R = RED
W = WHITE
Y = YELLOW
non = Non-Reflective

SIGN QUANTITIES (CONTRACTOR FURNISHED SIGNS)

SQ-15

REVISED BY | DATE REVISED
BANG HUA | LAWRENCE LE
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR | SON NGUYEN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 18-APR-2012 | TIME PLOTTED => 05:51

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	214	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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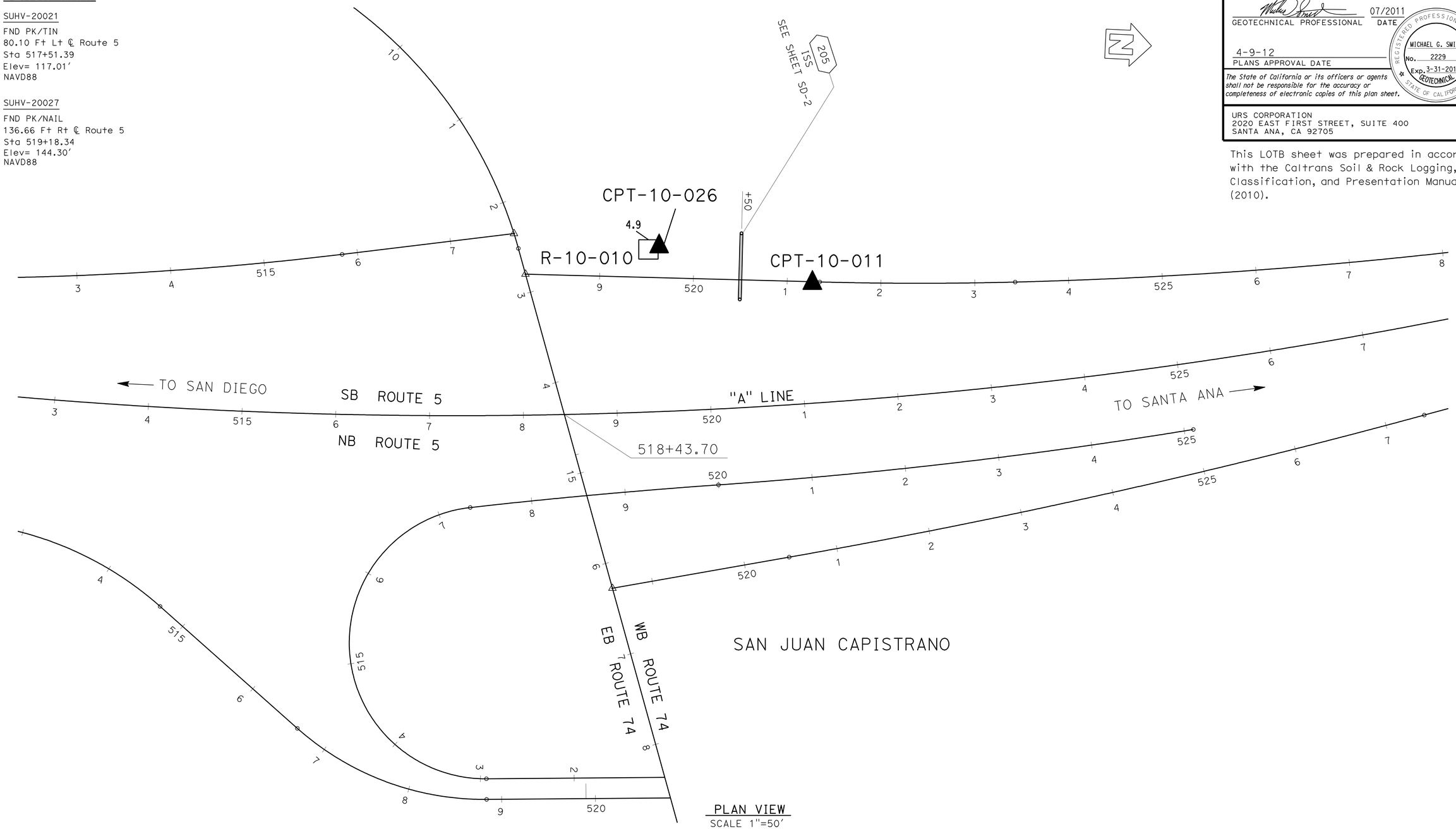
URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).

BENCH MARK

SUHV-20021
FND PK/TIN
80.10 Ft Lt ℄ Route 5
Sta 517+51.39
Elev= 117.01′
NAVD88

SUHV-20027
FND PK/NAIL
136.66 Ft Rt ℄ Route 5
Sta 519+18.34
Elev= 144.30′
NAVD88



PLAN VIEW
SCALE 1"=50′

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X	SIGN STRUCTURE 205
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			POST MILES X	LOG OF TEST BORINGS SHEET 1 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES → REVISION DATES X | SHEET X OF X

FILE => 1200000102oa007.dgn

USERNAME => s121614 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 13:36

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	215	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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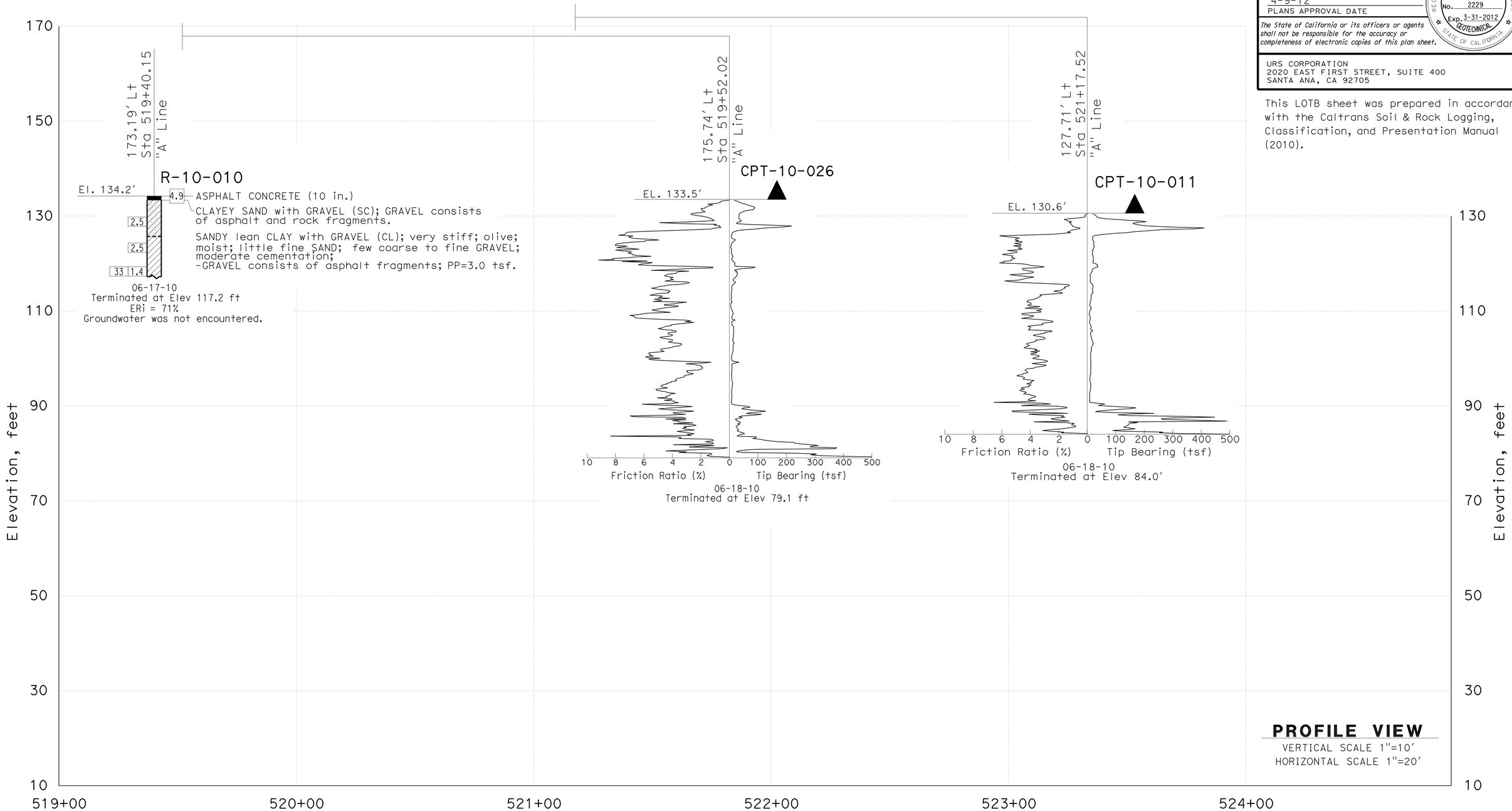
URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS" 1 OF 4



X DESIGN OVERSIGHT	DRAWN BY	P.OUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			POST MILES X

SIGN STRUCTURE 205

LOG OF TEST BORINGS SHEET 2 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X

SHEET X OF X

FILE => 1200000102aa008.dgn

USERNAME => s12614 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 13:36

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	216	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

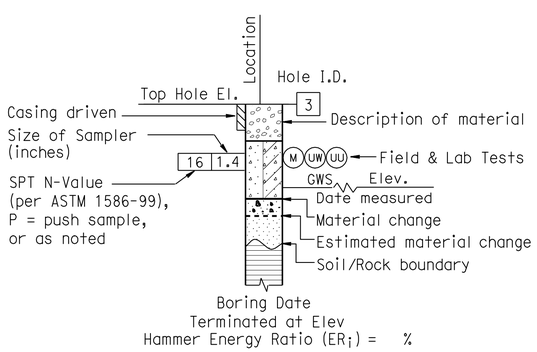
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring (hollow or solid stem bucket)
Size	R RW RC P	Rotary drilled boring (conventional) Rotary drilled with self-casing wire-line Rotary core with continuously-sampled, self-casing wire-line Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778)
⬚	O	Other (note on LOTB)

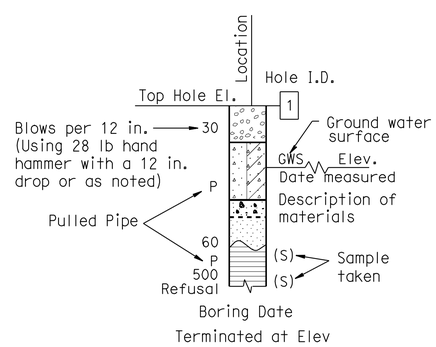
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

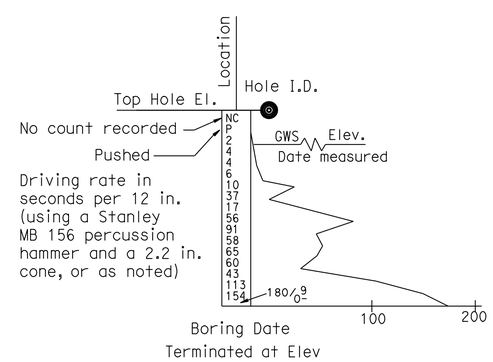
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



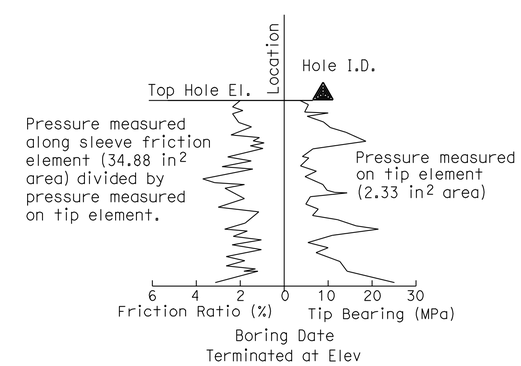
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

SIGN STRUCTURE 205

LOG OF TEST BORINGS SHEET 3 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X | SHEET X | OF X

FILE => 1200000102oa009.dgn

USERNAME => s12614 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 13:36

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	217	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE

Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% - 10%
Little	15% - 25%
Some	30% - 45%
Mostly	50% - 100%

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

X
DESIGN OVERSIGHT
X
SIGN OFF DATE

DRAWN BY P.OUACH
CHECKED BY P.YERRA

EJ.JEON
FIELD INVESTIGATION BY:
DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

SIGN STRUCTURE 205

LOG OF TEST BORINGS SHEET 4 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X

SHEET X OF X

FILE => 1200000102oa010.dgn

USERNAME => s121614 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 13:37

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	218	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

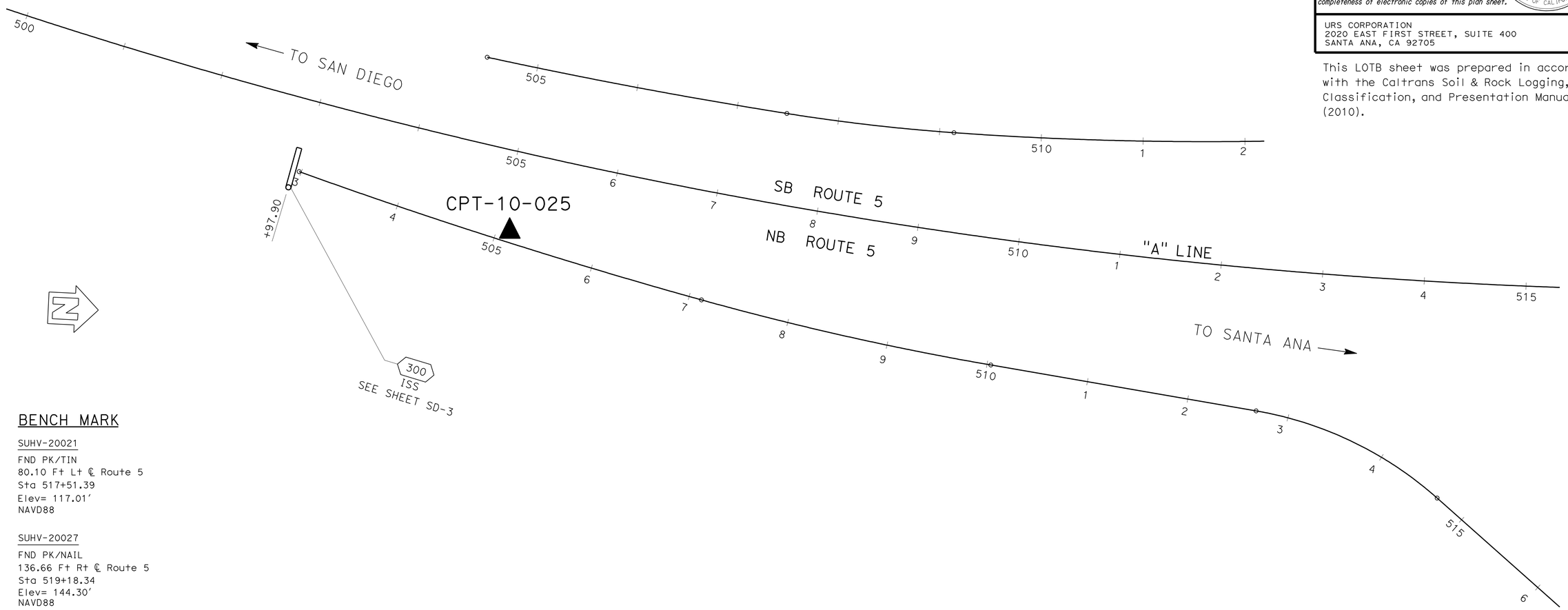
4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).



BENCH MARK

SUHV-20021

FND PK/TIN
80.10 Ft Lt ℄ Route 5
Sta 517+51.39
Elev= 117.01'
NAVD88

SUHV-20027

FND PK/NAIL
136.66 Ft Rt ℄ Route 5
Sta 519+18.34
Elev= 144.30'
NAVD88

PLAN VIEW
SCALE 1"=50'

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

SIGN STRUCTURE 300

LOG OF TEST BORINGS SHEET 1 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
X				X	X

FILE => 1200000102oa011.dgn

USERNAME => s121614 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 13:37

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	219	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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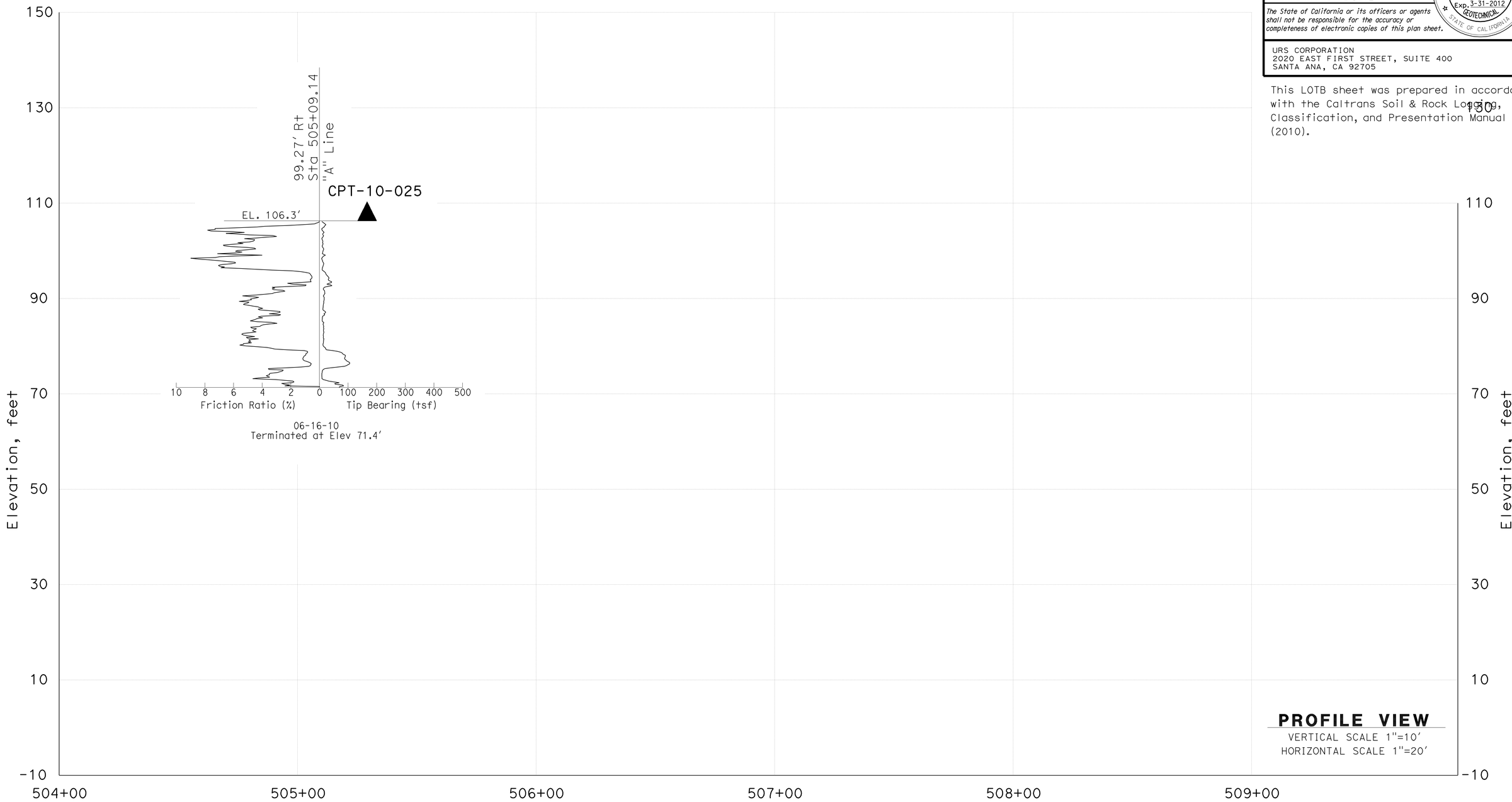
URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS" 1 OF 5

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).



X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			POST MILES X

SIGN STRUCTURE 300

LOG OF TEST BORINGS SHEET 2 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X

SHEET X OF X

FILE => 1200000102oa012.dgn

USERNAME => s121614 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 13:37

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	220	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

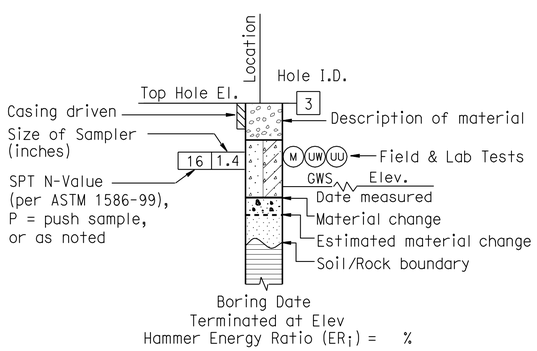
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring (hollow or solid stem bucket)
Size	R RW RC P	Rotary drilled boring (conventional) Rotary drilled with self-casing wire-line Rotary core with continuously-sampled, self-casing wire-line Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778)
⬚	O	Other (note on LOTB)

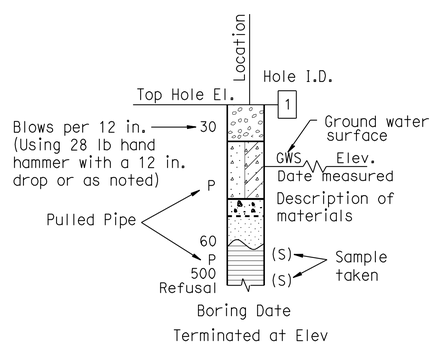
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

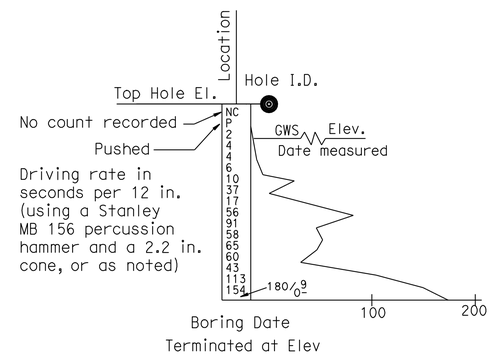
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



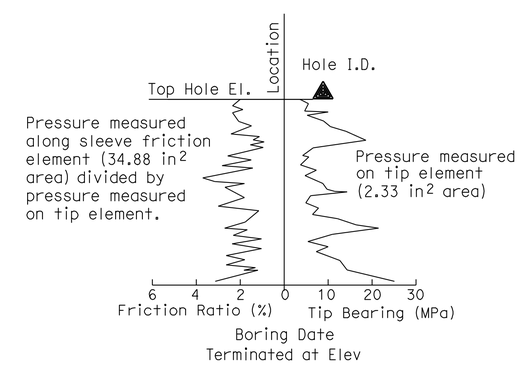
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

SIGN STRUCTURE 300

LOG OF TEST BORINGS SHEET 3 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X — SHEET X OF X

FILE => 1200000102oa013.dgn

USERNAME => s121614 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 13:37

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	221	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

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Description	SPT N_{60} (Blows / 12 in.)
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Moist	Moisture present, but no free water
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PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
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Little	15% - 25%
Some	30% - 45%
Mostly	50% - 100%

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

X
DESIGN OVERSIGHT

X
SIGN OFF DATE

DRAWN BY P.QUACH
CHECKED BY P.YERRA

EJ.JEON
FIELD INVESTIGATION BY:
DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

SIGN STRUCTURE 300

LOG OF TEST BORINGS SHEET 4 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X

SHEET X OF X

FILE => 1200000102oa014.dgn

USERNAME => s121614 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 13:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	222	515

REGISTERED CIVIL ENGINEER 12-23-11 DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp.09-30-12 CIVIL STATE OF CALIFORNIA

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REMOVE METAL BEAM GUARD RAILING

SHEET No.	LOCATION	STATION LIMITS	REMOVE METAL BEAM GUARD RAILING
			LF
C-1	Near Del Obispo & Rte 74	"H" 7+73.00 To "B" 11+00.00	326
C-2	Rte 74, Lt	"B" 11+00.00 To "B" 11+70.00	70
C-2	SB OFF RAMP	"D" 519+13.79 To "D" 522+00.00	287
C-2	SB ON RAMP	"B" 12+43.00 To "B" 12+95.00	64
C-2	NB ON RAMP	"B" 15+70.93 To "B" 16+25.87	82
C-2	NB ON RAMP	"E" 521+00.00 To "E" 521+80.00	80
C-3	NB OFF RAMP	"G" 508+48.48 To "G" 509+28.37	80
C-4	SB OFF RAMP	"D" 522+00.00 To "D" 527+85.12	585
C-5	NB Rte 5, Shld	"A" 536+54.57 To "A" 537+29.73	76
		TOTAL	1,650

REMOVE BLOCK WALL

SHEET No.	LOCATION	STATION LIMITS	REMOVE BLOCK WALL
			SQFT
C-1	Near Horno Creek	"B" 8+39.00 To "B" 10+66.00	2365
C-2	Capistrano Inn Entrance	"B" 20+48.00 To "B" 20+54.00	110
		TOTAL	2475

REMOVE CRIB WALL

SHEET No.	LOCATION	STATION LIMITS	REMOVE CRIB WALL
			SQFT
C-2	NB OFF RAMP	"G" 516+13.00 To "G" 519+50.00	2860
		TOTAL	2860

REMOVE RETAINING WALL

SHEET No.	LOCATION	STATION LIMITS	REMOVE RETAINING WALL
			SQFT
C-5	NB ROUTE 5	"A" 537+29.73 To "A" 538+40.00	110.3
		TOTAL	110.3

REMOVE CONCRETE BARRIER

SHEET No.	LOCATION	STATION LIMITS	REMOVE CONCRETE BARRIER (TYPE 60E)	REMOVE CONCRETE BARRIER (TYPE 50)
			LF	LF
C-2	Route 5, Median	"A" 517+47.60 To "A" 519+40.00	192.40	
C-5	Route 5, Shoulder	"A" 537+29.73 To "A" 538+40.00		110.27
		TOTAL	192.40	110.27

REMOVE CONCRETE

SHEET No.	LOCATION	STATION LIMITS	REMOVE CONCRETE		
			CURB	SIDEWALK AND DRIVEWAY	CROSS GUTTER
			LF	CY	CY
C-1	"H" LINE, Lt	"H" 5+00.00 To "H" 6+08.00	108	9.34	
C-1	"H" LINE, Rt & Lt	"B" 5+45.35 To "H" 5+40.00	815	106.47	
C-1	"B" LINE, Lt				
C-1	"B" LINE, Rt & Lt	"B" 5+03.32 To "B" 11+00.00	674	65.00	
C-2	"B" LINE, Rt	"B" 11+00.00 To "B" 11+90.00	90	7.78	
C-2	"D" LINE, Lt	"D" 518+35.76 To "D" 519+14.96	80	1.70	
C-2	"D" LINE, Rt	"D" 518+70.00 To "D" 519+11.46	42		
C-2	"B" LINE, Rt	"B" 12+40.00 To "B" 13+13.00	92	12.18	
C-2	"C" LINE, Lt	"C" 515+00.00 To "C" 517+04.00	204		
C-2	"C" LINE, Rt	"C" 515+00.00 To "C" 517+14.00	214		
C-2	"B" LINE, Lt	"B" 12+94.00 To "B" 13+20.00	26	2.40	
C-2	"B" LINE, Lt	"B" 15+57.14 To "B" 16+29.52	110	11.76	
C-2	"B" LINE, Lt	"B" 16+65.10 To "B" 18+51.08	238	36.52	
C-2	"B" LINE, Lt	"B" 19+00.00 To "B" 20+00.00	149		
C-2	"B" LINE, Rt	"B" 15+37.61 To "B" 16+13.85	77	10.41	
C-2	"B" LINE, Rt	"B" 16+39.26 To "B" 21+31.94	493	45.63	
C-2	NB OFF RAMP, Lt	"G" 515+00.00 To "B" 16+10.66	337		
C-2	NB OFF RAMP, Rt	"G" 515+00.00 To "B" 16+39.14	362		
C-2	SHELL STATION DRIVEWAY	"B" 18+27.00 To "B" 19+35.00			25.73
C-3	"C" LINE, Rt	"C" 510+30.46 To "C" 515+00.00	470		
C-3	"C" LINE, Lt	"C" 511+23.18 To "C" 515+00.00	377		
C-3	NB OFF RAMP, Lt	"G" 510+76.51 To "G" 515+00.00	456		
C-3	NB OFF RAMP, Rt	"G" 512+81.60 To "G" 515+00.00	238		
		TOTAL	5,652	309.19	25.73

SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY / DATE REVISED

LAST REVISION 11-14-11 | DATE PLOTTED => 15-APR-2012 | TIME PLOTTED => 13:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	223	515

REGISTERED CIVIL ENGINEER 12-23-11 DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REMOVE CHAIN LINK FENCE

SHEET No.	LOCATION	STATION LIMITS	REMOVE CHAIN LINK FENCE
			LF
C-1	NEAR HORNO CREEK	"B" 9+55.01 To "B 10+89.00	162
C-2	NB OFF RAMP	"G" 515+50 To "B"16+79.74	323
C-3	NB OFF RAMP	"G" 514+18.44 To "G" 515+50.00	132
C-4	NB ON RAMP	"E" 525+93.89 To "E" 528+72.40	284
		TOTAL	901

CHAIN LINK FENCE

SHEET No.	LOCATION	STATION LIMITS	CHAIN LINK FENCE (TYPE CL-6)
			LF
L-2	NB OFF RAMP	"G" 516+80 To "G" 520+10.53	330.53
L-4	NB ON RAMP	"E" 525+93.89 To "E" 528+72.40	284
		TOTAL	614.53

REMOVE ASPHALT CONCRETE PAVEMENT

SHEET No.	LOCATION	STATION LIMITS	REMOVE ASPHALT CONCRETE PAVEMENT (0.67' MAX)
			CY
C-1	"H" & "B" LINE	"H" 6+08.00 To "B" 11+00.00	677.70
C-2	"B" LINE	"B" 11+00.00 To "B" 13+23.00	452.18
C-2	"C" LINE	"C" 515+00.00 To "C" 517+25.00	166.52
C-2	"D" LINE	"D" 518+75.00 To "D" 521+70.00	335.57
C-3	"C" LINE	"C" 513+04.00 To "C" 515+00.00	172.50
C-2	"E" LINE	"E" 519+00 To "E" 521+63.00	254.84
		TOTAL	2059.31

CRASH CUSHION

SHEET No.	LOCATION	STATION LIMITS	CRASH CUSHION (TYPE CAT)	CRASH CUSHION (TYPE CAT) BACKUP	CRASH CUSHION (REACT 9CBB)
			EA	EA	EA
C-9	NB OFF RAMP/ NB LOOP ON RAMP	"G" 511+85.50 To "G" 512+30.00	1	1	
L-4	SB OFF RAMP	"D" 524+20.10 To "D" 524+50.83			1
		TOTAL	1	1	1

SUMMARY OF QUANTITIES

Q-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN
FUNCTIONAL SUPERVISOR MATTHEW CUGINI
CALCULATED-DESIGNED BY DAVID LAM
CHECKED BY FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION 11-14-11
DATE PLOTTED => 18-APR-2012
TIME PLOTTED => 05:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	224	515

12-23-11
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp.09-30-12 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

METAL BEAM GUARD RAILING QUANTITIES

SHEET No.	LOCATION	STATION LIMITS	MBGR (WOOD POST)	ALTERNATIVE IN-LINE TERMINAL SYSTEM	ALTERNATIVE FLARED TERMINAL SYSTEM	VEGETATION CONTROL (MINOR CONCRETE)	END ANCHOR ASSEMBLY (TYPE SFT)	Trans RAILING (TYPE WB)	GUARD RAILING DELINEATOR	END CAP (TYPE A)
			LF	EA	EA	SQYD	EA	EA	EA	EA
L-2	SB ON RAMP, L†	"C" 515+00.00 To "C" 516+85.56	186			109			18	
L-2	SB ON RAMP, R†	"C" 516+80.00 To "C" 517+05.00				12.90		1	3	
L-2	SB ON RAMP, R†	"C" 515+00.00 To "C" 516+80.00	180			93.10			15	
L-2	NB ON RAMP, L†	"E" 520+50.00 To "E"520+75.00	25			32.90			3	1
L-2	NB ON RAMP, L†	"E" 520+75.00 To "E"522+00.00	125			64.65			11	
L-3	NB OFF RAMP, R†	"G" 502+13.63 To "G" 502+63.63		1		32.22			5	
L-3	NB OFF RAMP, R†	"G" 502+63.625 To "G" 512+85.00	1021.5			530			85	
L-3	NB OFF RAMP, R†	"G" 512+85.00 To "G" 513+10.00				12.90		1	3	
L-3	SB ON RAMP, L†	"C" 510+70.00 To "C" 511+20.00 "C" 512+80.00 To "C" 515+00.00	220		1	146.2	2		39	
L-3	SB ON RAMP, R†	"C" 512+80.00 To "C" 515+00.00	220			114	1		19	
L-4	SB OFF RAMP, L†	"D" 523+46.75 To "D" 523+73.88				12.90		1	3	
L-4	SB OFF RAMP, L†	"D" 523+73.875 To "D" 527+85.12	413			214			34	
L-4	NB ON RAMP, R†	"E" 528+08.10 To "E" 528+58.10		1		32.22			5	
L-4	NB ON RAMP, R†	"E" 528+58.10 To "E" 528+95.60	37.5			20.0			4	
L-4	NB ON RAMP, R†	"E" 528+95.60 To "E" 529+20.60				12.90	1	1	3	
L-4	NB LOOP ON RAMP, R†	"F" 522+62.50 To "F" 523+25.00	25		1	32.90	1		7	
L-4	NB ON RAMP, L†	"E" 522+00.00 To "E" 522+50.00	50			25.86	1		5	
L-4	NB ON RAMP, R†	"E" 524+10.00 To "E" 526+20.00	210			116			17	1
		TOTAL	2713	2	2	1614.65	6	4	279	2

CONCRETE BARRIER

SHEET No.	LOCATION	STATION LIMITS	CONCRETE BARRIER (TYPE 60)	CONCRETE BARRIER (TYPE 60C)	CONCRETE BARRIER (TYPE 60D)	CONCRETE BARRIER (TYPE 60E)	MINOR CONCRETE (MINOR STRUCTURE)*	(N) CONCRETE ** BARRIER MARKER	PREPARE AND ** STAIN CONCRETE
			LF	LF	LF	LF	CY	EA	SQFT
L-2	ROUTE 5, Median	"A" 517+31.04 To "A" 519+56.33				225.29		18	
L-2	NB OFF RAMP	"G" 516+80.00 To "G" 518+83.96	203.96					16	1436
L-2	NB LOOP ON RAMP	"F" 512+30.00 To "F" 513+70.00		140				9	1197
L-2	NB LOOP ON RAMP	"F" 513+70.00 To "F" 514+60.00	90					6	634
L-4	SB OFF RAMP	"D" 523+10.00 To "D" 524+20.10	110.10					7	
L-4	NB ON RAMP	"E" 529+30.00 To "A" 533+60.00			460			21	
L-4	NB ON RAMP	"E" 529+20.60 To "A" 529+30.00					13		
L-4	SB OFF RAMP	"D" 522+30.00 To "A" 522+87.97			58			5	
L-4	SB OFF RAMP	"D" 522+87.97 To "A" 523+10.00		22				5	
L-5	ROUTE 5, Shld	"A" 536+59.93 To "A" 537+19.45	59.52					5	
		FROM Q-8						66	
		FROM DQ-8					174.47		
		TOTAL	463.58	162	518	225.29	187.47	158	3267

*: ANCHOR BLOCK
**: SEE SHEET Q-8 FOR ADDITIONAL QUANTITIES
(N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

SUMMARY OF QUANTITIES
Q-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN
FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY / DATE REVISED

LAST REVISION 11-14-11 | DATE PLOTTED => 18-APR-2012 | TIME PLOTTED => 16:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	225	515

REGISTERED CIVIL ENGINEER 12-23-11 DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp.09-30-12 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

HOT MIX ASPHALT DIKE

SHEET No.	LOCATION	STATION LIMITS	PLACE HMA DIKE (TYPE A)	(TYPE C)	(TYPE D)	(TYPE F)	HOT MIX ASPHALT
			LF	LF	LF	LF	TON
L-2	SB ON RAMP, L†	"C" 515+00.00 To "C" 516+85.56				166	2.14
L-2	SB RTE 5, L†	"A" 515+00.00 To "A" 522+00.00	700				18.50
L-2	NB LOOP ON RAMP	"F" 512+12.69 To "F" 522+00.00			988		56.67
L-2	NB OFF RAMP, L†	"G" 515+00.00 To "G" 518+60.00			360		20.65
L-2	NB ON RAMP, L†	"E" 520+50.00 To "E" 522+00.00				150	1.94
L-3	NB OFF RAMP, L†	"G" 507+08.53 To "G" 509+53.75			245.22		14.06
L-3	NB OFF RAMP, L†	"G" 513+68.07 To "G" 515+00.00			131.93		7.57
L-3	NB OFF RAMP, R†	"A" 501+88.625 To "A" 502+63.625		75			0.57
L-3	NB OFF RAMP, R†	"A" 502+63.625 To "A" 502+76.125				12.5	0.20
L-3	NB OFF RAMP, R†	"A"502+76.125 To"A" 502+97.90 "G" 502+97.90 To "G" 513+10.00				1034	26.15
L-3	SB ON RAMP, L†	"C" 512+80.00 To "C" 515+00.00				220	3.76
L-3	SB ON RAMP, L†	"C" 508+00.00 To "C" 512+80.00			480		27.53
L-3	SB RTE 5, L†	"A" 510+40.00 To "A" 515+00.00	460				12.16
L-4	SB OFF RAMP, L†	"D" 523+46.75 To "D" 523+73.88				25	0.33
L-4	SB OFF RAMP, L†	"D" 523+73.88 To "D" 527+85.12				413	5.38
L-4	NB ON RAMP, R†	"E" 528+08.10 To "E" 528+58.10		50			0.37
L-4	NB ON RAMP, R†	"E" 528+58.10 To "E" 528+95.60				37.5	0.49
L-4	NB ON RAMP, R†	"E" 528+95.60 To "E" 529+20.60				25	0.33
L-4	SB RTE 5, L†	"A" 522+00.00 To "A" 524+66.00	266				7.03
L-4	NB LOOP ON RAMP	"F" 522+00.00 To "A" 526+70.00			470		26.97
L-4	NB ON RAMP, L†	"E" 522+00.00 To "E" 522+50.00				50	0.66
L-4	NB ON RAMP, L†	"E" 522+50.00 To "E" 524+32.00			182		10.44
		TOTAL	1426.00	125.00	2857.15	2133.00	243.90 *

CURB RAMP DETECTABLE WARNING SURFACE

SHEET No.	LOCATION	STATION LIMITS	CURB RAMP DETECTABLE WARNING SURFACE (N)
			SQFT
L-1	INTERSECTION OF "B" & "H" LINES,	NORTH-EAST CORNER	12
L-1	INTERSECTION OF "B" & "H" LINES,	NORTH-WEST CORNER	12
L-1	INTERSECTION OF "B" & "H" LINES,	SOUTH-EAST CORNER	12
L-1	INTERSECTION OF "B" & "H" LINES,	SOUTH-WEST CORNER	12
L-2	INTERSECTION OF "B" & "C" LINES,	RAISED ISLAND	24
L-2	INTERSECTION OF "B" & "C" LINES,	SOUTH-WEST CORNER	12
L-2	INTERSECTION OF "B" & "C" LINES,	SOUTH-EAST CORNER	12
L-2	INTERSECTION OF "B" & "D" LINES,	NORTH-EAST CORNER	12
L-2	INTERSECTION OF "B" & "D" LINES,	NORTH-WEST CORNER	12
L-2	INTERSECTION OF "B" & "E" LINES,	NORTH-EAST CORNER	12
L-2	INTERSECTION OF "B" & "E" LINES,	NORTH-WEST CORNER	12
L-2	INTERSECTION OF "B" & "F" LINES,	SOUTH-WEST CORNER	12
L-2	INTERSECTION OF "B" & "G" LINES,	SOUTH-EAST CORNER	24
L-2	"B" LINE & "J" LINE & SHELL GAS STA	NORTH-EAST CORNER	12
L-2	"B" LINE & "J" LINE & SHELL GAS STA	NORTH-WEST CORNER	12
		TOTAL	204

(*) - SEE SHEET Q-6, FOR GRAND TOTAL

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

SUMMARY OF QUANTITIES

Q-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION 11-14-11
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 13:38

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	226	515

REGISTERED CIVIL ENGINEER 12-23-11 DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

ROADWAY QUANTITIES

SHEET No.	LOCATION	STATION LIMITS	MINOR CONCRETE (Misc CONSTRUCTION) CURB	SIDEWALK/ DRIVEWAY/ CURB RAMPS	CROSS GUTTER	CLASS 2 AGGREGATE BASE	RUBBERIZED HMA (GAP GRADE)	HMA	CLASS 2 AGGREGATE SUBBASE	CLASS 3 AGGREGATE SUBBASE	JPCP (RAMP TERMINI)	LEAN CONCRETE BASE	TACK COAT	DOWEL BAR (N)	TIE BAR (N)	COLD PLANE AC PVMT	PLACE HMA (Misc AREA)	CONCRETE PVMT TRANSITION PANELS
			CY	CY	CY	CY	TON	TON	CY	CY	CY	CY	TON	EA	EA	SQYD	SQYD	CY
L-1	"H" LINE, L+	"H" 5+00.00 To "H" 9+00.00	26.08	31.46		79.07												
L-1	"H" LINE, R+	"H" 5+40.00 To "H" 9+00.00	23.82	28.74		72.23												
L-1	"B" LINE, L+	"B" 5+45.35 To "B" 8+24.05	17.78	21.45		53.91												
L-1	"B" LINE, L+	"B" 9+77.86 To "B" 11+00.00	7.79	9.40		23.62												
L-1	"B" & "I" LINE, R+	"B" 5+03.32 To "I" 6+02.15	22.35	30.60		73.88												
L-1	"B" & "I" LINE, R+	"B" 7+95.00 To "B" 9+11.56	7.44	12.40		28.32												
L-1	"B" & "I" LINE, R+	"I" 6+02.15 To "B" 11+00.00	15.00	21.73		51.60												
L-2	"B" & "D" LINE, L+	"B" 11+00.00 To "D" 519+59.35	15.88	14.23		39.84												
L-2	"B" LINE, L+ & "D" LINE, R+	"B" 13+22.12 To "D" 519+93.76	7.35	0.84		8.77												
L-2	"B" & "C" LINE, R+	"B" 11+00.00 To "C" 516+64.31	4.02	5.24		12.84												
L-2	"B" LINE, RAISED ISLAND		5.23	2.87														
L-2	"B" LINE, R+	"B" 12+50.43 To "B" 12+93.85	3.48	7.81		16.64												
L-2	"B" LINE, L+ "E" LINLE, R+	"B" 16+00.00 To "E" 519+75.00	5.74	1.91		8.96												
L-2	"B" LINE, L+ "E" LINLE, R+	"E" 520+56.00 To "B" 18+50.51	19.83	15.67		46.22												
L-2	"B" LINE, L+	"B" 18+99.70 To "B" 20+00.00	9.54	14.80		24.34												
L-2	"B" & "F" LINE, R+	"B" 15+71.87 To "F" 512+12.69	13.67	19.17		32.84												
L-2	"G" & "B" LINE, R+	"G" 518+83.96 To "B" 21+31.94	26.21	38.21		64.42												
L-1	"H" LINE	"H" 5+00.00 To "H" 7+60.00					1399.25						0.06			1072.22		
L-1	"H" LINE	"H" 6+00.00 To "H" 9+30.00					234.61	762.48	209.74	1677.93								
L-1	"B" LINE	"B" 5+03.32 To "B" 7+70.00					1410.31						0.07			1394.44		
L-1	"B" LINE	"B" 5+03.32 To "B" 11+00.00					568.40	2984.10		3992.59								
L-2	"B" LINE	"B" 11+00.00 To "B" 12+97.01					351.15	1633.67		2185.78								
L-2	"C" LINE	"C" 515+00.00 To "C" 517+20.00					170.96	812.07		1244.55							175.67	
L-2	"D" LINE	"D" 518+75.00 To "D" 520+50.00							237.13		316.17	138.32		768	310		109.12	22.05
L-2	"D" LINE	"D" 520+50.00 To "D" 522+00.00					134.84	640.48		981.57								
L-2	"G" LINE	"G" 518+50.00 To "G" 520+30.00							146.67		195.56	85.55		336	216			13.63
		SHEET TOTAL	231.21	276.53		637.50	4269.52	6832.80	593.54	10082.42	511.73	223.87	0.13	1104	526	2466.66	284.79	35.67

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

SUMMARY OF QUANTITIES

Q-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans
FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION 11-14-11
DATE PLOTTED => 18-APR-2012
TIME PLOTTED => 16:52

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	227	515

REGISTERED CIVIL ENGINEER 12-23-11 DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

ROADWAY QUANTITIES

SHEET No.	LOCATION	STATION LIMITS	MINOR CONCRETE (Misc CONSTRUCTION) CURB	SIDEWALK/ DRIVEWAY/ CURB RAMPS	CROSS GUTTER	CLASS 2 AGGREGATE BASE	RUBBERIZED HMA (GAP GRADE)	HMA	CLASS 2 AGGREGATE SUBBASE	CLASS 3 AGGREGATE SUBBASE	JPCP (RAMP TERMINI)	LEAN CONCRETE BASE	TACK COAT	DOWEL BAR (N)	TIE BAR (N)	COLD PLANE AC PVMT	PLACE HMA (Misc AREA)	CONCRETE PVMT TRANSITION PANELS
			CY	CY	CY	CY	TON	TON	CY	CY	CY	CY	TON	EA	EA	SQYD	SQYD	CY
L-2	"B" LINE	"B" 15+95.59 To "B" 21+31.94					497.98	2614.43		3497.99								
L-2	"B" LINE	"B" 17+34.63 To "B" 18+77.62					19.72	103.52		138.50								
L-2	"B" LINE, Lt	"B" 18+07.36To "B" 19+23.42			20.29			34.39		83.29								
L-2	"B" LINE, Rt	"B" 17+16.83 To "B" 18+91.03			15.46			26.20		63.47								
L-2	"J" LINE	"J" 28+97.36 To "J" 29+55.00					33.98	127.44		73.78								
L-2	"B" Line, Hotel's Driveway	"B" 20+01.82 To "B" 20+54.06					47.54	46.56		26.96			0.02			269.11		
L-2	"B" LINE	"B" 18+88.00 To "B" 20+00.00					609.21						0.05			933.67		
L-2	"B" LINE	"B" 20+00.00 To "B" 21+31.94					79.92						0.03			612.36		
L-2	"A" LINE, Center	"A" 517+31.04 To "A" 519+56.33					17.24	60.36		136.56								
L-2	"A" LINE, Lt	"A" 515+00.00 To "A" 522+00.00					155.19	1008.75		991.00								
L-2	"A" LINE, Rt	"A" 515+00.00 To "A" 517+89.00					67.56	439.11		431.39								
L-2	"E" LINE	"E" 519+15.00 To "A" 522+00.00					174.91	830.83		1273.30							179.33	
L-2 & L-4	"F" LINE	"F" 511+56.00 To "F" 525+09.74					608.05	3229.97		4950.13								
L-2	"G" LINE	"G" 515+00.00 To "G" 518+50.00					205.00	973.76		1492.34								
L-3	"A" LINE, Lt	"A" 510+40.00 To "A" 515+00.00					81.14	527.42		518.15								
L-3	"A" LINE, Rt	"A" 507+00.00 To "A" 515+00.00					124.70	810.55		796.30								
L-3	"C" LINE	"C" 508+00.00 To "C" 515+00.00					244.17	1159.79		1777.45								
L-3	"C" LINE	"C" 510+38.00 To "C" 511+44.00					193.50						0.03			296.56		
L-3	"G" LINE	"G" 502+97.90 To "G" 515+00.00					549.03	2607.88		3996.76								
L-4	"D" LINE	"D" 522+00.00 To "D" 528+98.59					225.69	1072.04		1642.98								
L-4	"D" LINE	"D" 523+80.00 To "D" 525+05.00					243.24						0.02			250.56		
L-4	"E" LINE	"E" 522+00.00 To "E" 532+99.24					436.49	2073.36		3177.56								
L-4	"E" LINE	"E" 523+55.00 To "E" 524+73.00					150.12						0.02			230.06		
L-4	"A" LINE, Rt	"A" 532+98.47 To "A" 535+00.00					61.68	303.64		443.55								
L-5	"A" LINE, Rt	"A" 535+00.00 To "A" 539+00.00					79.83	347.51		597.28								
		SHEET TOTAL			35.75		4905.89	18397.51		26108.74			0.17			2592.32	179.33	
		FROM Q-5	231.21	276.53		637.50	4269.52	7840.80	593.53	10082.42	511.73	223.87	0.13	1104	526	2466.66	284.79	35.67
		FROM Q-4						243.90										
		FROM Q-8		10.10														
		FROM DQ-8						2.32									12.16	
		FROM SC9-9						998.00										
		GRAND TOTAL		553.59		637.50	9175.41	26484.53	593.54	36191.16	511.73	223.87	0.30	1104	526	5058.98	476.28	35.67

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

SUMMARY OF QUANTITIES

Q-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: DAVID LAM
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION 11-14-11
DATE PLOTTED => 18-APR-2012
TIME PLOTTED => 16:52

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	228	515

REGISTERED CIVIL ENGINEER 12-23-11 DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAVID H. LAM No. C63493 Exp. 09-30-12 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

EARTHWORK QUANTITIES SUMMARY

SHEET No.	LOCATION	STATION LIMITS	ROADWAY EXCAVATION	EMBANKMENT (N)	IMPORTED BORROW	LIGHTWEIGHT FILL (EPS BLOCK)	GEOMEMBRANE (GASOLINE RESISTANT)	SAND BEDDING	CONTINUOUSLY REINFORCED CONCRETE PAVEMENT	CONTINUOUSLY REINFORCED Conc PVMT (RAPID STRENGTH Conc)	INTERLOCKING PAVERS	SURCHARGE EMBANKMENT
			CY	CY	CY	CY	SQYD	CY	CY	CY	SQFT	CY
L-1	"H" & "B" LINES	"H" 5+00.00 To "B" 11+00.00 (L+) "B" 5+45.35 To "H" 5+40.00 (L+ & R+)									9913	
L-1	"I" & "B" LINES	"B" 5+03.32 To "I" 6+02.17 (R+) "I" 6+02.17 To "B" 11+00.00 (R+)									4340	
L-2, C-8, C-9	"B & C " LINES	"B" 11+00.00 To "B"12+36.00 (L+) "B" 11+00.00 To "C" 516+85.56 (R+)									1761	
L-1	"H" LINE	"H" 5+00.00 To "H" 9+60.00	3,761	2,055	2,055							
L-1 & L-2	"B" LINE	"B" 5+03.32 To "B" 21+31.94	11,654	26,772	20,278						1995	
L-2 & L-4	"D" LINE	"D" 518+20.90 To "D" 528+98.59	2,695	6,275	6,275							
L-2 & L-3	"C" LINE	"C" 508+00.00 To "C" 517+60.00	1,770	4,854	4,854							
L-2 & L-4	"E" LINE	"E" 519+10.00 To "E" 532+90.00	7,764	3,424								
L-2 & L-4	"F" LINE	"F" 511+80.00 To "F" 525+00.00	24,206	57								
L-2 & L-3	"G" LINE	"G" 502+97.90 To "G" 520+70.00	4,388	20,123								
L-2, L-3, & L-4	"A" LINE	"A" 510+60.00 To "A" 526+00.00	5685	7								
L-4 & L-5	"A" LINE	"A" 532+80.00 To "A" 539+00.00	1,960	115								
L-2 & L-3	EXIST NB OFF RAMP	"A" 514+50.00 To "A" 516+00.00	2,300									
C-17	"C" LINE	"C" 513+50.00 To "C" 517+20.00				3358	3370	567	489.93			
C-17	"B" LINE	"B" 10+30.00 To "B" 12+97.01				3670	4965	833	633.12	480		
C-17	"D" LINE	"D" 519+00.00 To "D" 521+20.00				3940	2075	367	449.33			
C-17	"G" LINE	"G" 512+00.00 To "G" 513+10.00				569	853	143	321.27			
C-17	"G" LINE	"G" 513+10.00 To "G" 516+40.00				9778	1557	283				
SCD-5	"G" LINE	"G" 513+10.22 To "G" 516+70.00										5219
		TOTAL	66,183	63,682	33,462	21315	12820	2193	1893.65	480	18009	5219

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

SUMMARY OF QUANTITIES

Q-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans
DAVID LAM | FRED FAIZI | MATTHEW CUGINI | CALCULATED-DESIGNED BY | CHECKED BY | REVISED BY | DATE REVISED | FUNCTIONAL SUPERVISOR

LAST REVISION 11-14-11 | DATE PLOTTED => 15-APR-2012 | TIME PLOTTED => 13:38

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	229	515

REGISTERED CIVIL ENGINEER 12-23-11 DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER STEVEN LE No. C75534 Exp. 06-30-12 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

RETAINING WALL

WALL No.	SHEET No.	STATION	STRUCTURE EXCAVATION (Ret WALL)	STRUCTURE BACKFILL (Ret WALL)	STRUCTURAL CONCRETE (Ret WALL)	PERVIOUS BACKFILL MATERIAL (Ret WALL)	BAR REINFORCING STEEL (Ret WALL)	MINOR CONCRETE (Misc CONSTRUCTION) * GUTTER	CABLE RAILING	CONCRETE BARRIER (TYPE 80A)	CONCRETE BARRIER (TYPE 736A)	(N) CONCRETE BARRIER ** MARKER	PORTLAND CEMENT PLASTER	ARCHITECTURAL TEXTURE (ROCK STRATA)	ARCHITECTURAL TEXTURE (FRACTURED RIB)	PREPARE AND STAIN ** CONCRETE
			CY	CY	CY	CY	LB	CY	LF	LF	LF	EA	SQFT	SQFT	SQFT	SQFT
80	R-1	"B" 5+69.50 TO "B" 7+67.87	440.0	237.0	121.0	30.7	10235.0	6.93	182.46					954.0		954.0
67	R-2	"B" 20+54.06 TO "B" 20+86.90	325.0	232.0	70.0	21.2	6392.0	3.2	90				683.0			
914	R-3	"E" 519+17.64 TO "E" 520+89.53	256.0	181.0	111.1	5.0	9590.0			138.85		7		657.0		796
954	R-4	"E" 519+36.31 TO "E" 524+10	791.0	659.0	412.0	33.5	42305.0			497.0		22		3032		3032
930	R-5	"E" 519+00 TO "A" 533+60	1100.0	440.0	298.0	59.0	24000.0		429					2401		2401
533B	R-6	"A" 534+45 TO "A" 536+59.93	227.0	79.4	114.7		7623.0				285.0	11			370	
533C	R-6	"A" 537+19.45 TO "A" 538+40	235.4	143.0	89.73	5.0	4735.0				1244.44	7			670	
	L-4	"A" 533+60.00 TO "A" 533+80.00									20					
		FROM DQ-8							72							
		FROM Q-3														3267
		TOTAL	3374.4	1971.4	1216.5	154.4	104880.0	10.1	773.46	635.8	355.48	47	683.0	7044.0	1040	10,450

*: SEE SHEET Q-6, FOR GRAND TOTAL
**: SEE SHEET Q-3 FOR ADDITIONAL QUANTITIES
(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

SUMMARY OF QUANTITIES
Q-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN DESIGN
FUNCTIONAL SUPERVISOR FRED FAIZI
CALCULATED-DESIGNED BY STEVEN LE CHECKED BY FRED FAIZI
REVISED BY DATE REVISED

LAST REVISION 04-05-11 DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 16:52

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	230	515

Reza Aurasteh 02-07-12
REGISTERED CIVIL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
REZA AURASTEH
No. C41725
Exp. 03-31-12
CIVIL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REMOVE OF UNDERGROUND STORAGE TANK

SHEET No.	STATION	REMOVAL OF UNDERGROUND STORAGE TANK SYSTEM	REMOVAL OF HYDRAULIC LIFT	REMOVAL OF UNDERGROUND WASTE OIL TANK SYSTEM	REMOVAL OF REMEDIATION VAPOR EXTRACTION SYSTEM	REMOVAL AND DISPOSAL OF PETROLEUM HYDROCARBON CONTAMINATED SOIL	REMOVAL AND DISPOSAL OF PEA GRAVEL	BACKFILLING AND COMPACTION OF SOIL	DESTRUCTION OF MONITORING OR REMEDIATION WELL	INSTALLATION OF MONITORING WELL	MANAGEMENT OF CONTAMINATED GROUNDWATER	MOBILIZATION/DEMOBILIZATION FOR PUMPING OF CONTAMINATED GROUNDWATER
		EA	EA	EA	EA	TON	TON	CY	EA	EA	Gal	EA
C-21 & C-22	"B" 8+50.00 TO "B" 10+50.00 "B" 17+00.00 TO "B" 18+50.00	7	3	1	1	6500	770	4500	12	12	70,000	3

SUMMARY OF QUANTITIES

Q-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ENVIRONMENTAL ENGINEERING

CALCULATED-DESIGNED BY: MANOUCHEHR KHALILIFAR
CHECKED BY: REZA AURASTEH
FUNCTIONAL SUPERVISOR: REZA AURASTEH
REVISED BY
DATE REVISED

LAST REVISION 02-07-12
DATE PLOTTED => 18-APR-2012
TIME PLOTTED => 05:52

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	231	515

REGISTERED CIVIL ENGINEER 12-23-11 DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER STEVEN LE No. C75534 Exp. 06-30-12 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

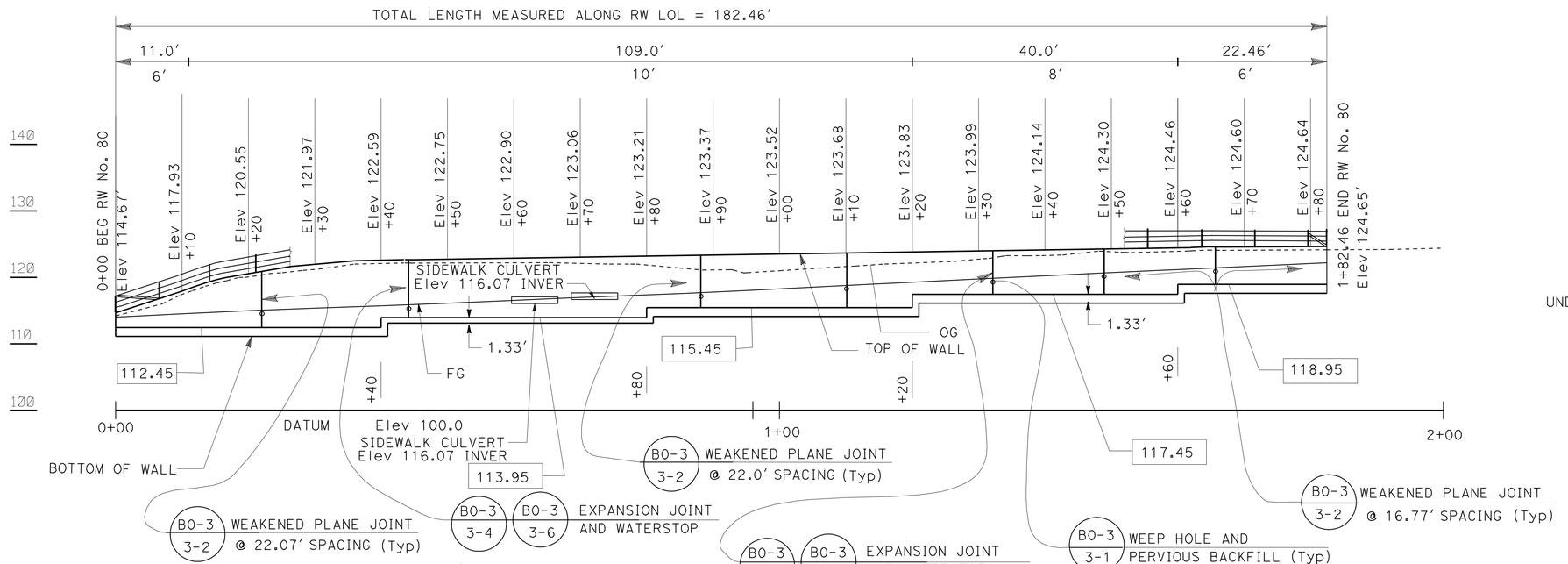
1. TOP OF WALL ELEVATIONS MEASURED ALONG RET WALL LOL @ 20' EXCEPT AS NOTED.
2. ALL DIMENSIONS MEASURED RADIAL ALONG Ret WALL LOL.
3. EXPANSION JOINT AND WATERSTOP SHALL BE PLACED AT THE JOINT OF OF RW No. 80.

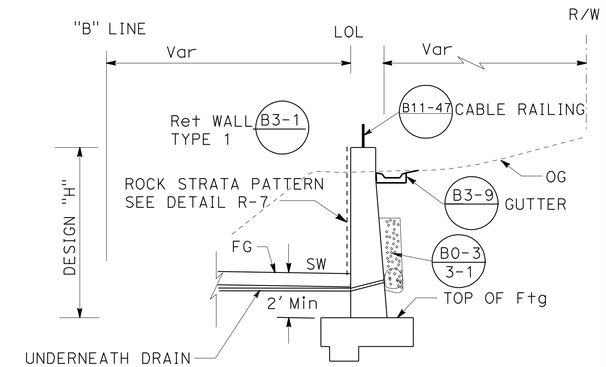
LEGEND:

- XX.XX — DENOTES TOP OF FOOTING ELEVATION
- STD PLAN SHEET No.
- DETAIL No.
- STRUCTURAL EXCAVATION LIMITS
- STRUCTURAL BACKFILL LIMITS

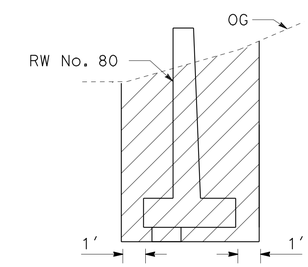
MIRRORED ELEVATION

SCALE: 1" = 10' Horiz
1" = 10' Vert

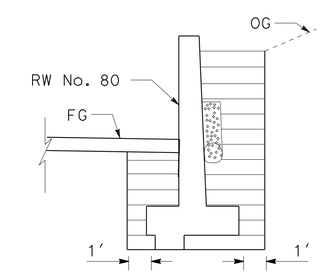




TYPICAL SECTION
NO SCALE

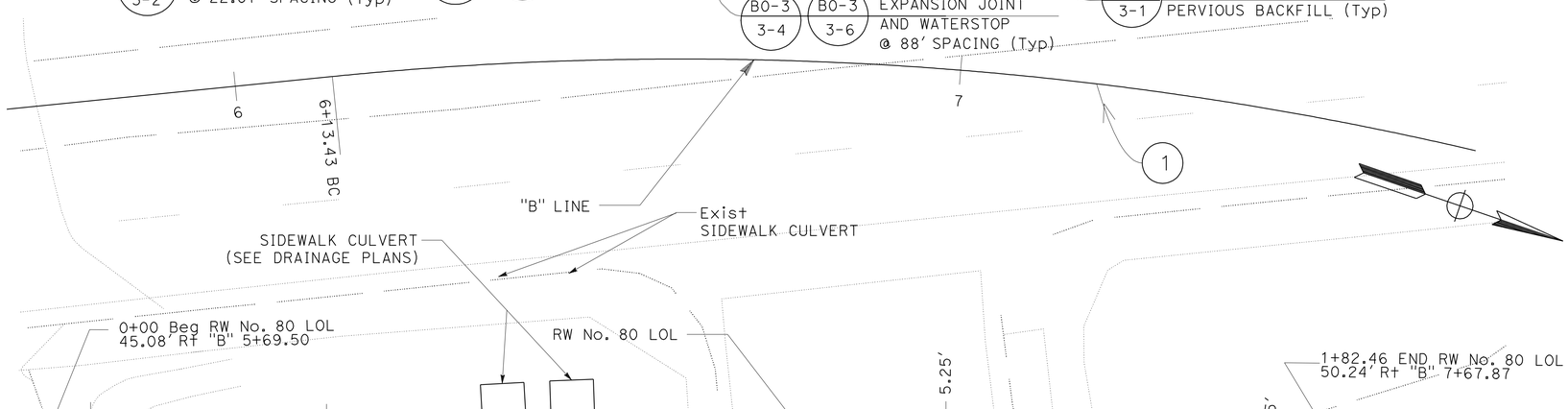


STRUCTURAL EXCAVATION
NO SCALE



STRUCTURAL BACKFILL
NO SCALE

RETAINING WALL No. 80



CURVE DATA

No.	R	Δ	T	L
1	480.00'	76°10'36"	376.21'	638.17'
2	435.00'	14°58'47"	57.19'	113.73'

PLAN
SCALE: 1" = 10'

RETAINING WALL PLAN
SCALE AS SHOWN

R-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
STEVEN LE
FRED FAIZI
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED

LAST REVISION 12-12-11
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 14:13

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	232	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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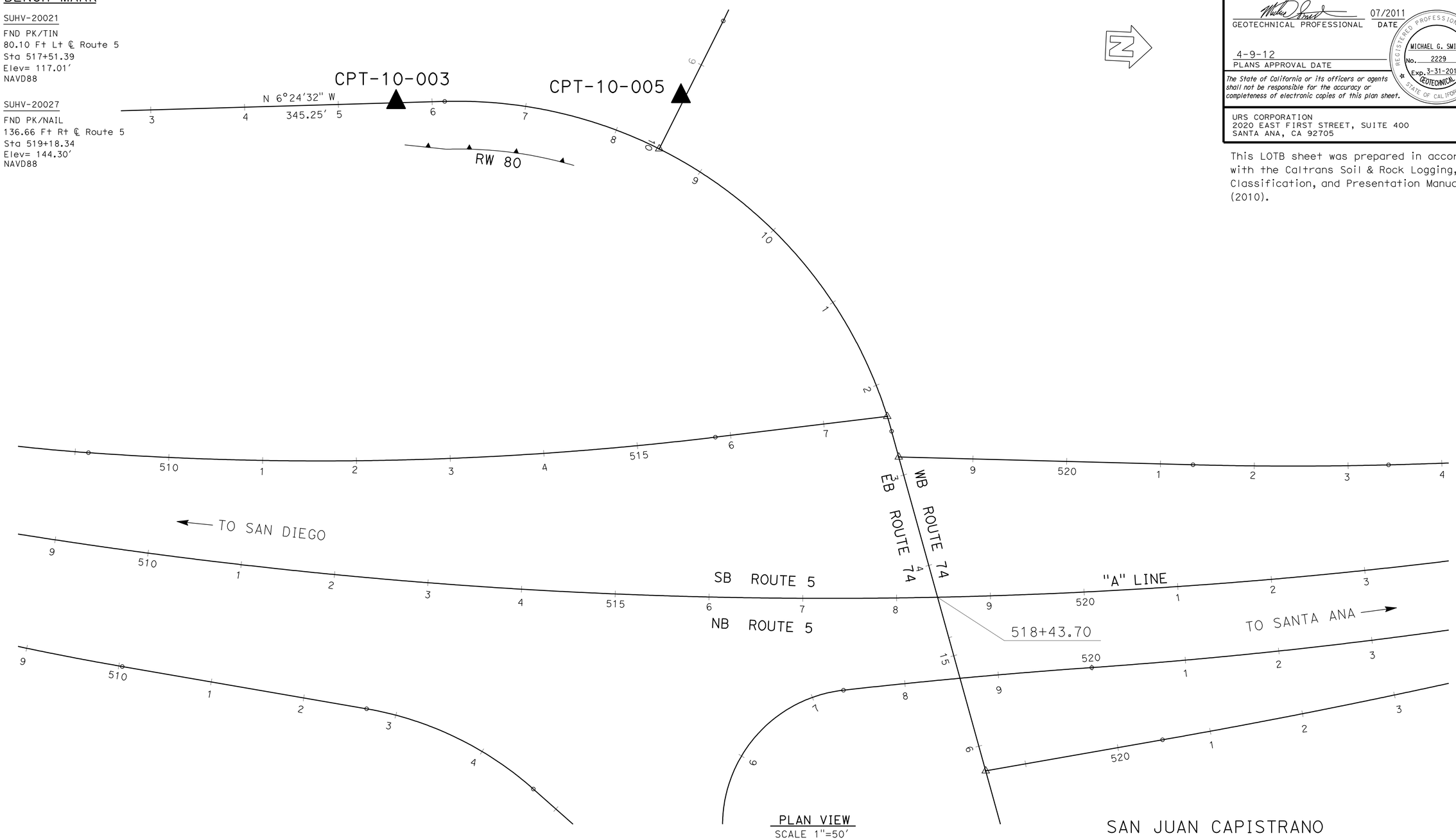
URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).

BENCH MARK

SUHV-20021
FND PK/TIN
80.10 Ft Lt ℄ Route 5
Sta 517+51.39
Elev= 117.01′
NAVD88

SUHV-20027
FND PK/NAIL
136.66 Ft Rt ℄ Route 5
Sta 519+18.34
Elev= 144.30′
NAVD88



PLAN VIEW
SCALE 1"=50′

R-2

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON/D.ORRIS FIELD INVESTIGATION BY:
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 80

LOG OF TEST BORINGS SHEET 1 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X | SHEET X | OF X

FILE => 1200000102qa002.dgn

USERNAME => s114926 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:13

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	233	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

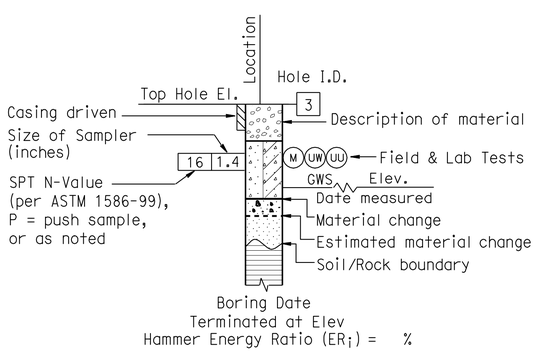
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring (hollow or solid stem bucket)
Size	R RW RC P	Rotary drilled boring (conventional) Rotary drilled with self-casing wire-line Rotary core with continuously-sampled, self-casing wire-line Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778)
⬚	O	Other (note on LOTB)

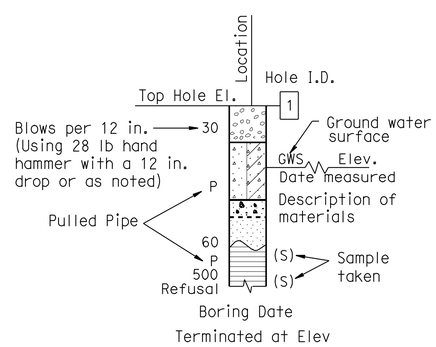
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

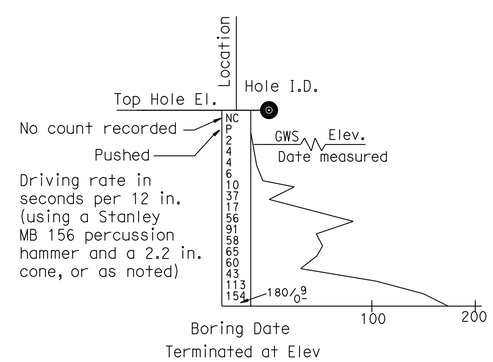
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



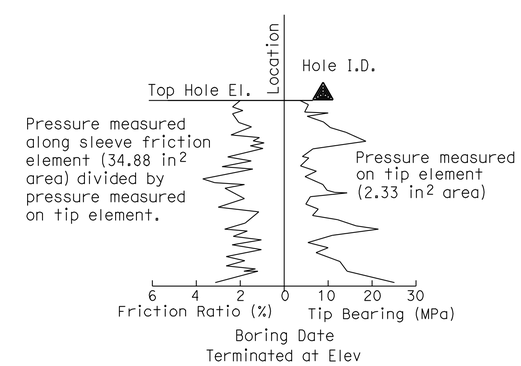
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

R-3

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON/D.ORRIS FIELD INVESTIGATION BY:
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 80

LOG OF TEST BORINGS SHEET 3 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X | SHEET X | OF X

FILE => 1200000102qa003.dgn

USERNAME => s114926 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:13

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	234	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE

Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% - 10%
Little	15% - 25%
Some	30% - 45%
Mostly	50% - 100%

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

R-4

X
DESIGN OVERSIGHT
X
SIGN OFF DATE

DRAWN BY P.OUACH
CHECKED BY P.YERRA

EJ.JEON/D.ORRIS
FIELD INVESTIGATION BY:
DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 80

LOG OF TEST BORINGS SHEET 4 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X

SHEET X OF X

FILE => 1200000102ga004.dgn

USERNAME => s114926 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:14

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	235	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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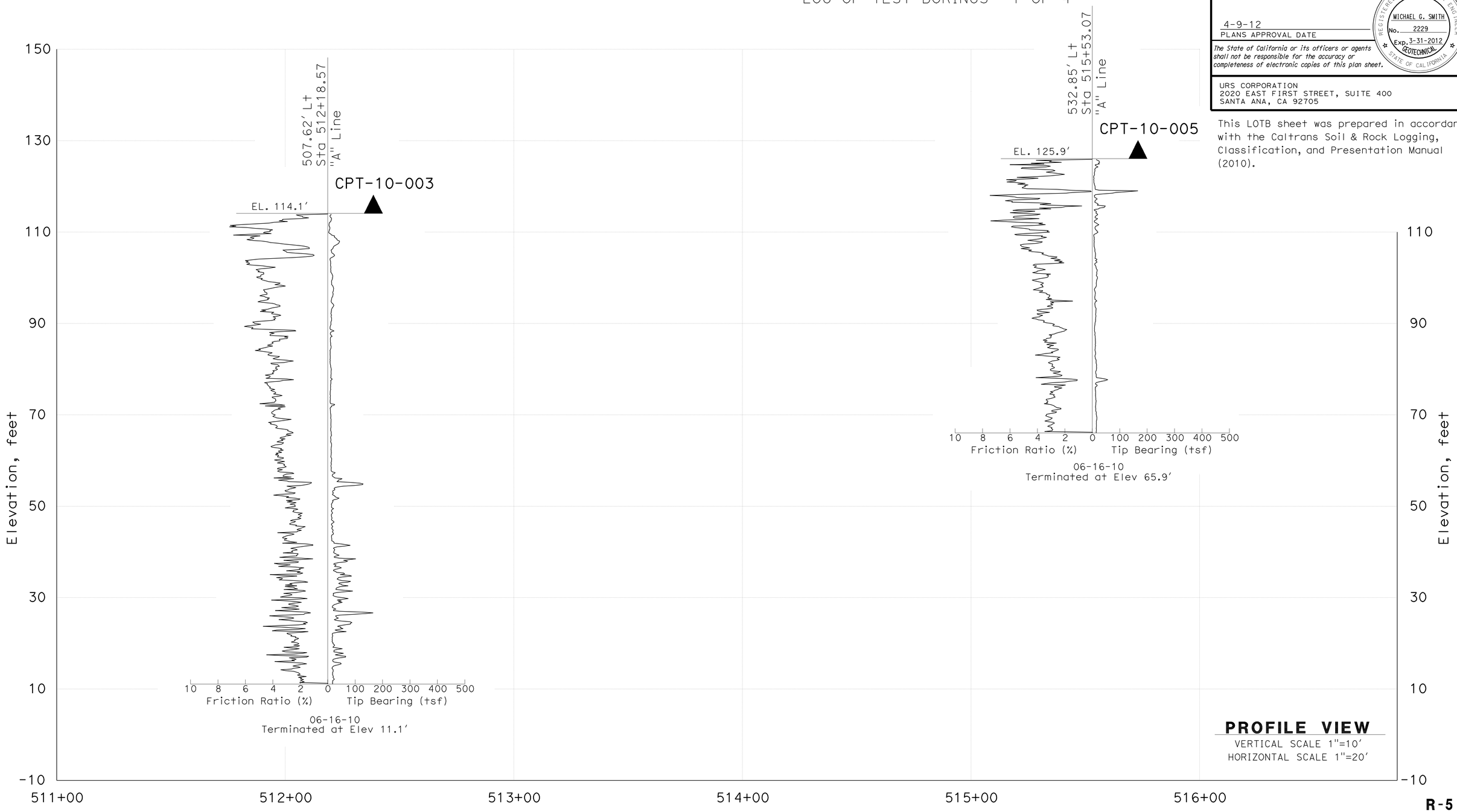
URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS" 1 OF 4

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).



PROFILE VIEW
VERTICAL SCALE 1"=10'
HORIZONTAL SCALE 1"=20'

R-5

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON/D.ORRIS FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X	RETAINING WALL 80
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			POST MILES X	LOG OF TEST BORINGS SHEET 2 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X

SHEET X OF X

FILE => 1200000102qa005.dgn

USERNAME => s114926 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	236	515

REGISTERED CIVIL ENGINEER 12-23-11 DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER STEVEN LE No. C75534 Exp. 06-30-12 CIVIL STATE OF CALIFORNIA

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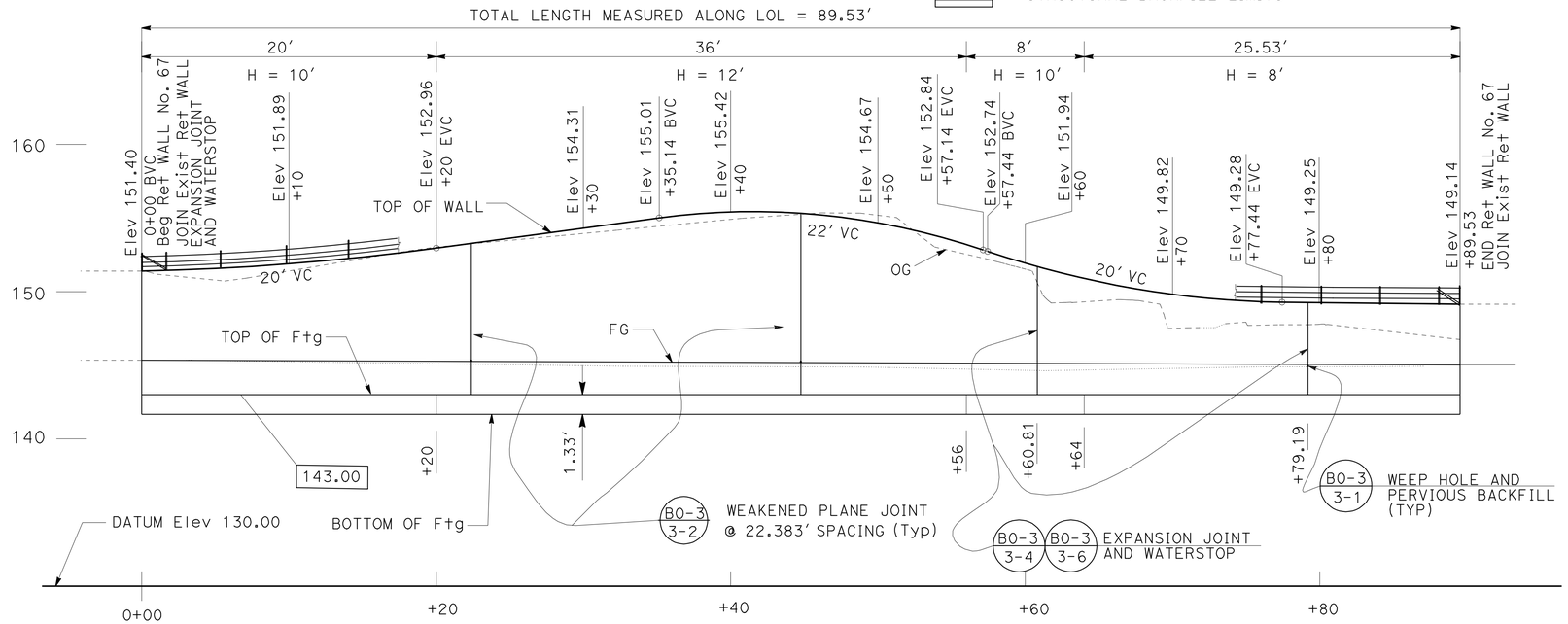
NOTES:

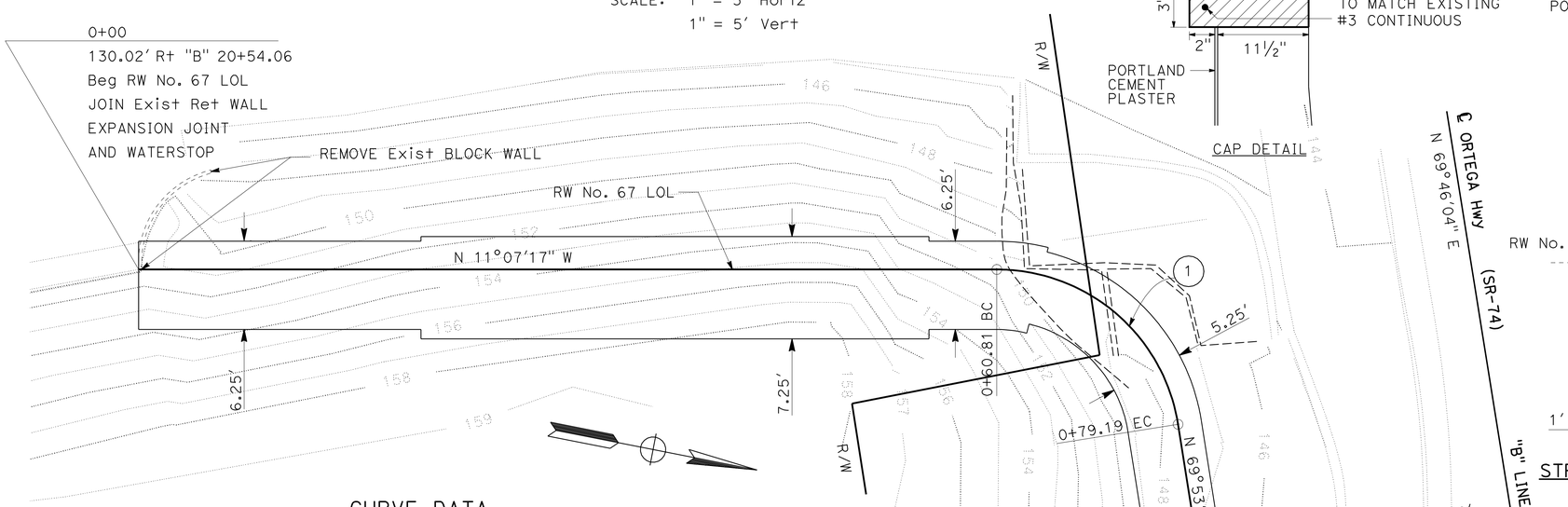
1. TOP OF WALL ELEVATIONS MEASURED ALONG Ret WALL LOL @ 20' EXCEPT AS NOTED.
2. ALL DIMENSIONS MEASURED RADIAL ALONG Ret WALL LOL.
3. EXPANSION JOINT AND WATERSTOP SHALL BE PLACED AT THE JOINT OF OF RW No. 67 AND Exist Ret WALL.

LEGEND:
- XX.XX — DENOTES TOP OF FOOTING ELEVATION
- STD PLAN SHEET No.
- DETAIL No.
- STRUCTURAL EXCAVATION LIMITS
- STRUCTURAL BACKFILL LIMITS



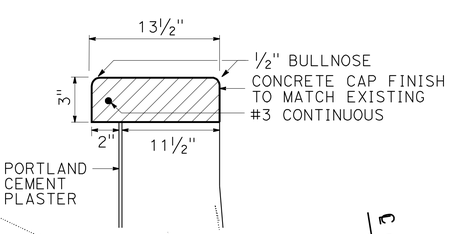
MIRRORED ELEVATION

SCALE: 1" = 5' Horiz
1" = 5' Vert



PLAN

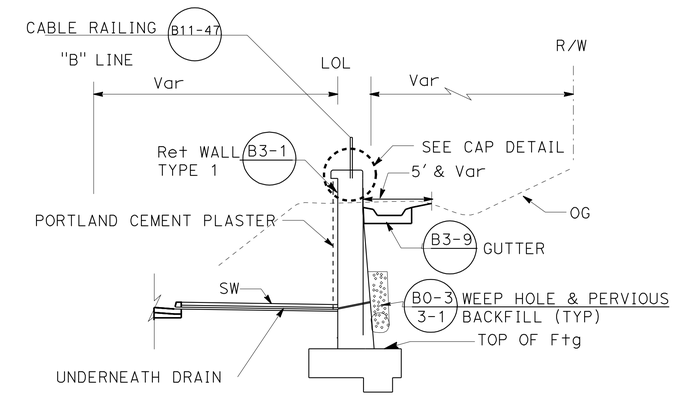
SCALE: 1" = 5'



CAP DETAIL

CURVE DATA

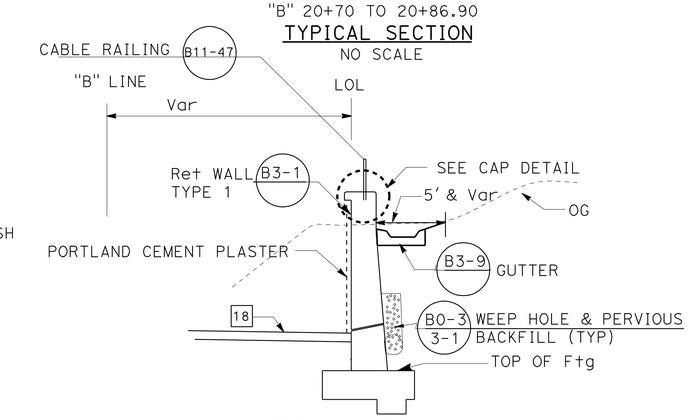
No.	R	Δ	T	L
1	13'	81°0'36"	11.10'	18.38'



"B" 20+70 TO 20+86.90

TYPICAL SECTION

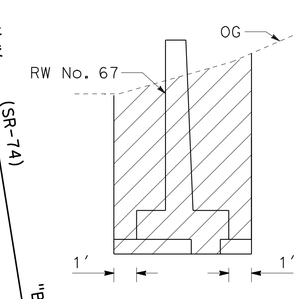
NO SCALE



"B" 20+54.06 TO 20+70

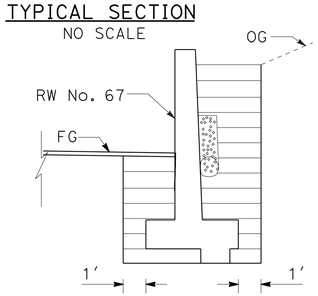
TYPICAL SECTION

NO SCALE



STRUCTURAL EXCAVATION

NO SCALE



STRUCTURAL BACKFILL

NO SCALE

RETAINING WALL No. 67

RETAINING WALL PLAN

SCALE AS SHOWN

R-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: STEVEN LE
CHECKED BY: FRED FAIZI
REVISED BY / DATE REVISED

LAST REVISION 04-05-11
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 15:05

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	237	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH — No. 2229 — Exp. 3-31-2012 — GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

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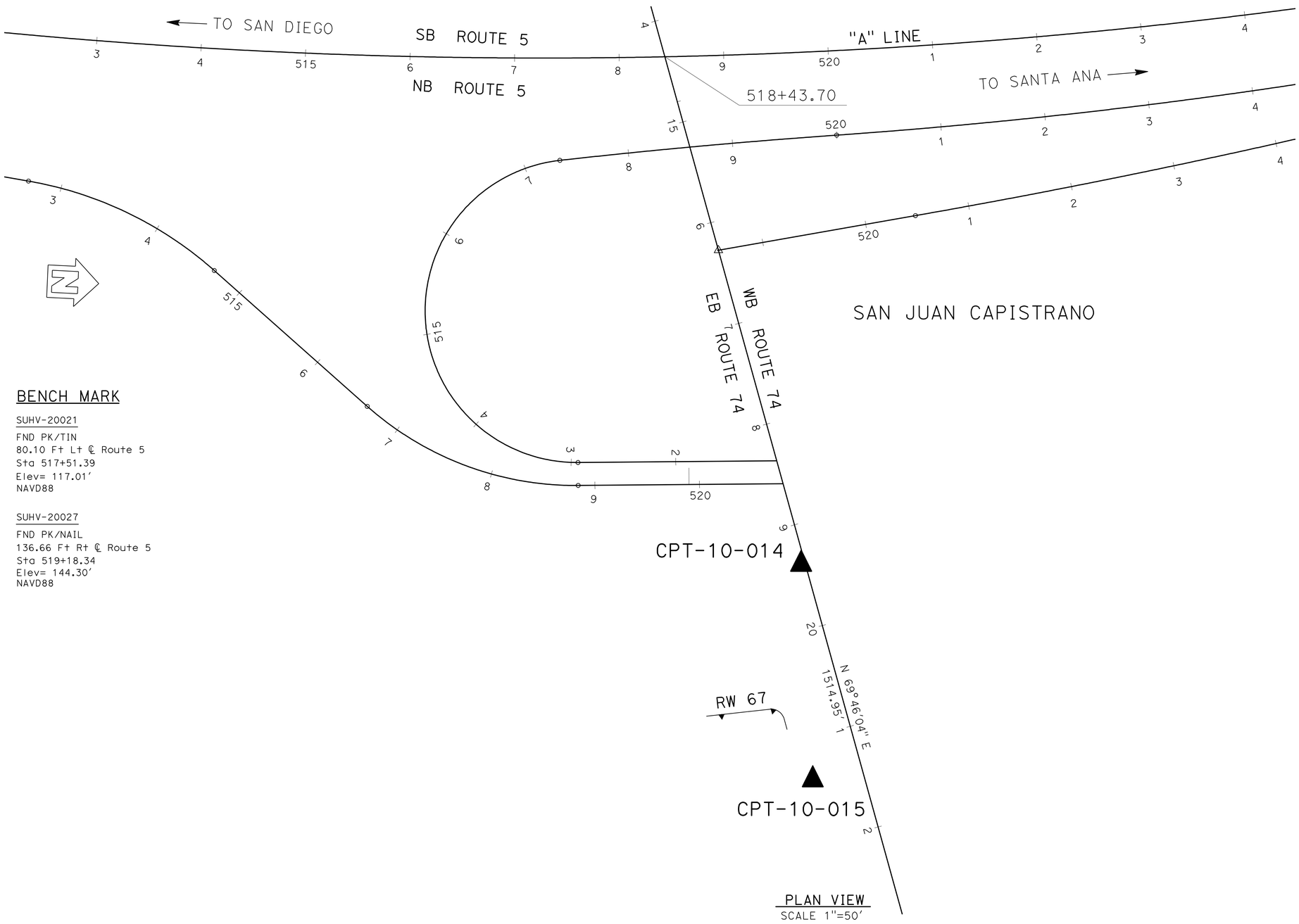

BENCH MARK

SUHV-20021
FND PK/TIN
80.10 Ft Lt ℄ Route 5
Sta 517+51.39
Elev= 117.01'
NAVD88

SUHV-20027
FND PK/NAIL
136.66 Ft Rt ℄ Route 5
Sta 519+18.34
Elev= 144.30'
NAVD88

PLAN VIEW
SCALE 1"=50'

R-7

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			POST MILES X

RETAINING WALL 67

LOG OF TEST BORINGS SHEET 1 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X

SHEET X OF X

FILE => 1200000102qb002.dgn

USERNAME => s114926 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:14

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	238	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

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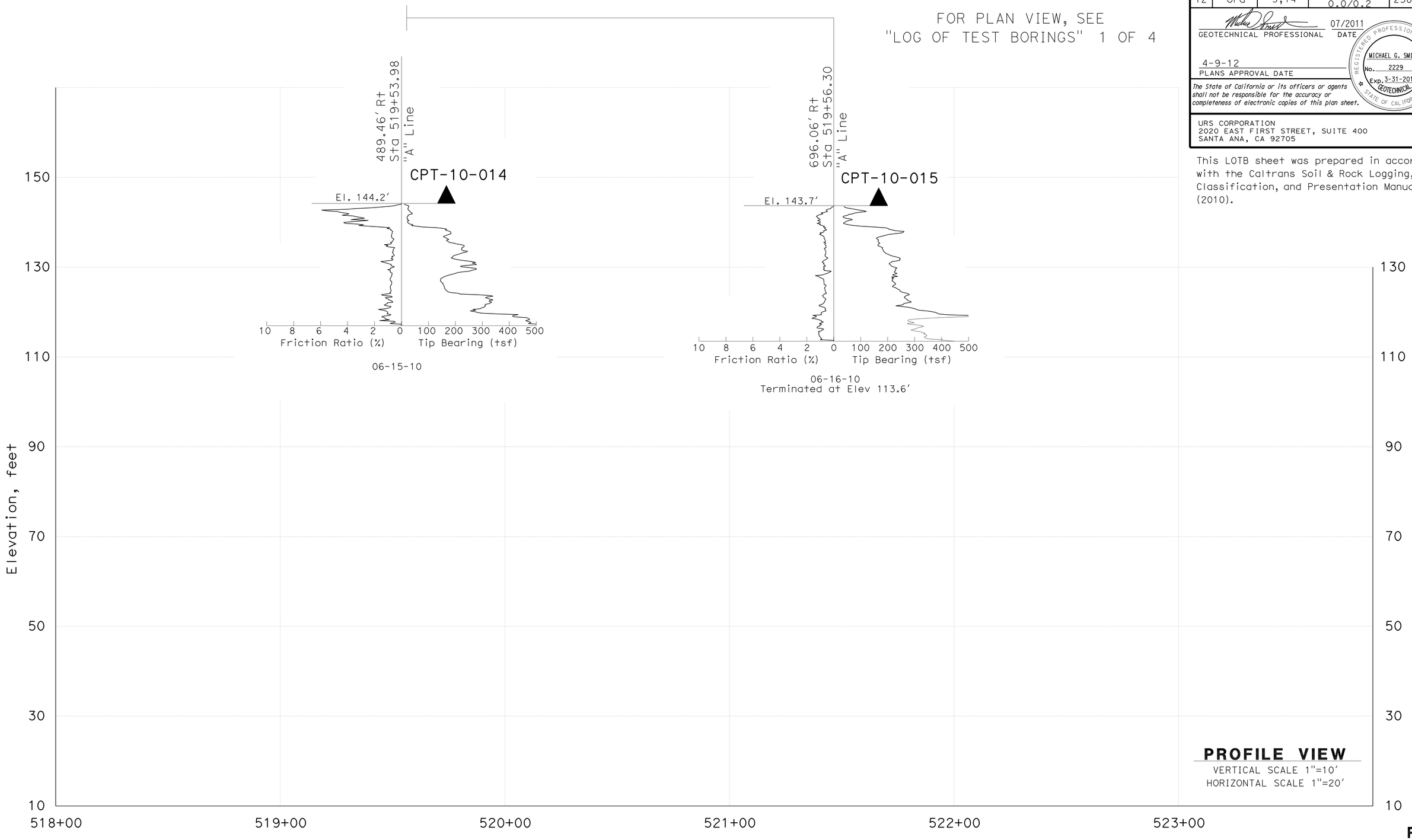
FOR PLAN VIEW, SEE "LOG OF TEST BORINGS" 1 OF 4



R-8

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			POST MILES X

RETAINING WALL 67

LOG OF TEST BORINGS SHEET 2 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X

SHEET X OF X

FILE => 1200000102qb005.dgn

USERNAME => s114926 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:14

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	239	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

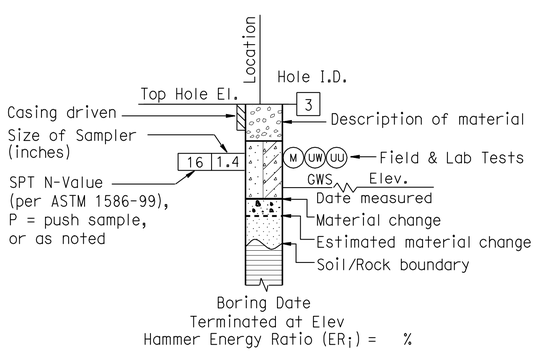
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring (hollow or solid stem bucket)
Size	R RW RC P	Rotary drilled boring (conventional) Rotary drilled with self-casing wire-line Rotary core with continuously-sampled, self-casing wire-line Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778)
⬚	O	Other (note on LOTB)

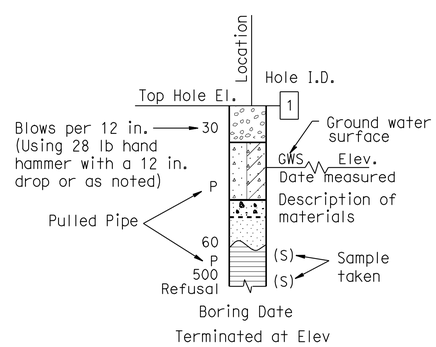
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

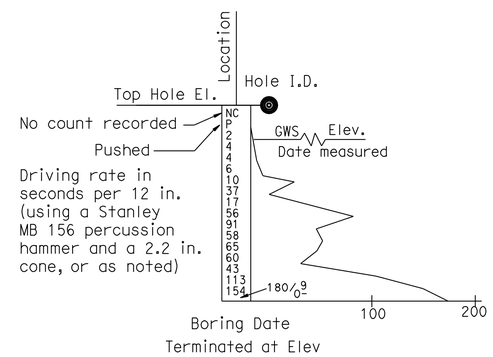
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



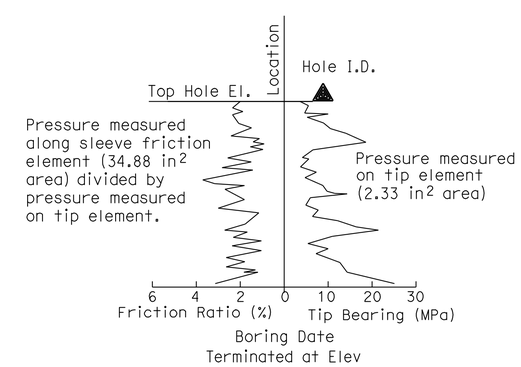
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

R-9

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X		

BRIDGE NO. X
POST MILES X

RETAINING WALL 67
LOG OF TEST BORINGS SHEET 3 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X | SHEET X | OF X

FILE => 1200000102qb003.dgn

USERNAME => s114926 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:14

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	240	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE

Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% - 10%
Little	15% - 25%
Some	30% - 45%
Mostly	50% - 100%

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

R-10

X
DESIGN OVERSIGHT
X
SIGN OFF DATE

DRAWN BY P.OUACH
CHECKED BY P.YERRA

EJ.JEON
FIELD INVESTIGATION BY:
DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 67
LOG OF TEST BORINGS SHEET 4 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X

SHEET X OF X

USERNAME => s114926 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:14

FILE => 1200000102qb004.dgn

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	241	515

REGISTERED CIVIL ENGINEER 12-23-11 DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER STEVEN LE No. C75534 Exp.06-30-12 CIVIL STATE OF CALIFORNIA

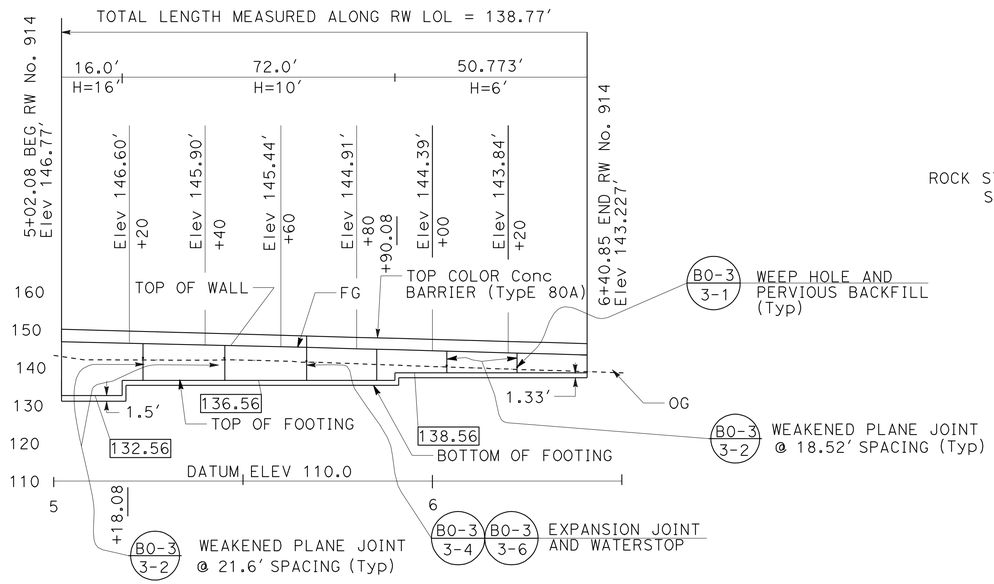
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

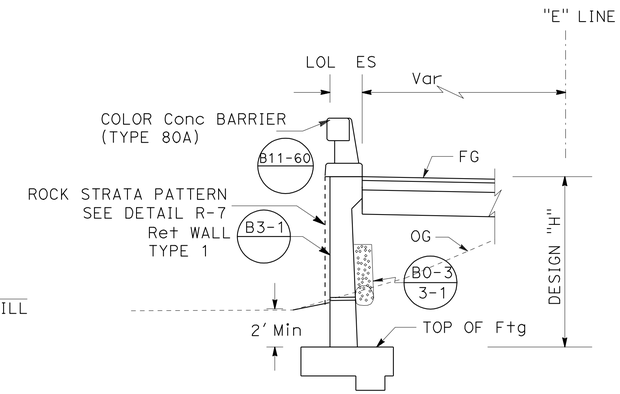
1. TOP OF WALL ELEVATIONS MEASURED ALONG RET WALL LOL @ 20′ EXCEPT AS NOTED.
2. ALL DIMENSIONS MEASURED RADIAL ALONG RET WALL LOL.
3. EXPANSION JOINT AND WATERSTOP SHALL BE PLACED AT THE JOINT OF OF RW Nos.914.

LEGEND:

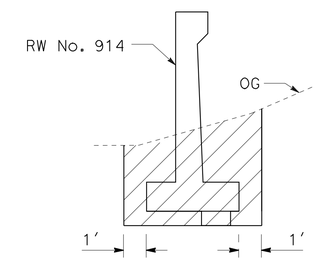
- XX.XX — DENOTES TOP OF FOOTING ELEVATION
- STD PLAN SHEET No.
- DETAIL No.
- STRUCTURAL EXCAVATION LIMITS
- STRUCTURAL BACKFILL LIMITS



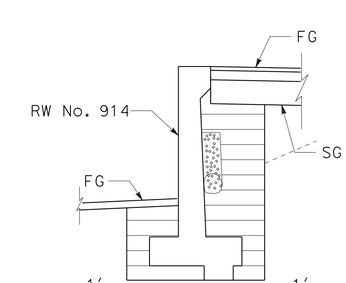
MIRRORED ELEVATION
SCALE: 1"=20′ Horiz
1"=20′ Vert



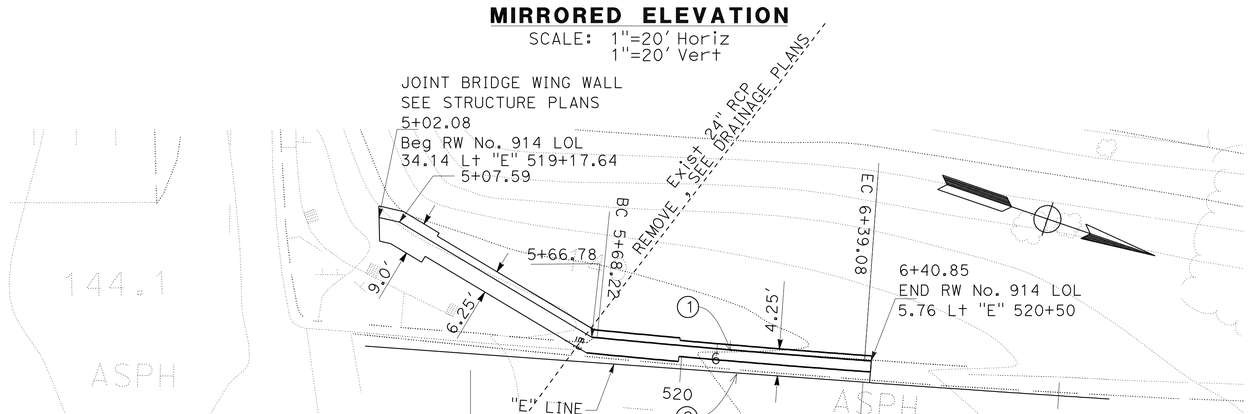
TYPICAL SECTION
NO SCALE



STRUCTURAL EXCAVATION
NO SCALE



STRUCTURAL BACKFILL
NO SCALE



CURVE DATA

No.	R	Δ	T	L
1	2895.94′	1°24′07"	35.43′	70.86′
2	7556.28′	5°15′45"	347.26′	694.03′

PLAN
SCALE: 1"=20′

RETAINING WALL No. 914

RETAINING WALL PLAN

SCALE AS SHOWN

R-11

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN
FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: STEVEN LE
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION 04-05-11
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 14:15

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	242	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

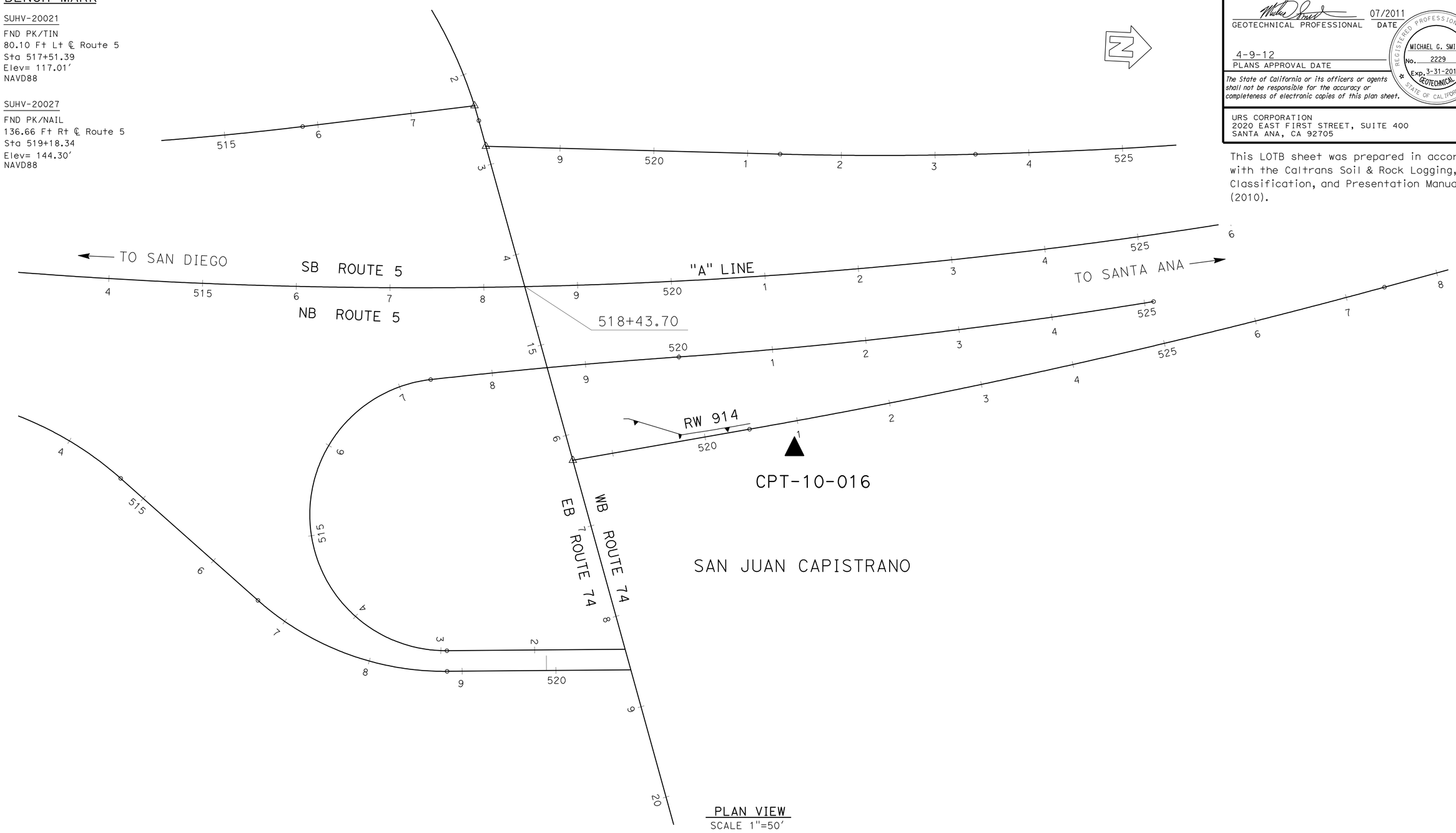
URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).

BENCH MARK

SUHV-20021
FND PK/TIN
80.10 Ft Lt ℄ Route 5
Sta 517+51.39
Elev= 117.01′
NAVD88

SUHV-20027
FND PK/NAIL
136.66 Ft Rt ℄ Route 5
Sta 519+18.34
Elev= 144.30′
NAVD88



PLAN VIEW
SCALE 1"=50′

R-12

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 914
LOG OF TEST BORINGS SHEET 1 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X

SHEET X OF X

FILE => 1200000102qc002.dgn

USERNAME => s114926 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:15

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	243	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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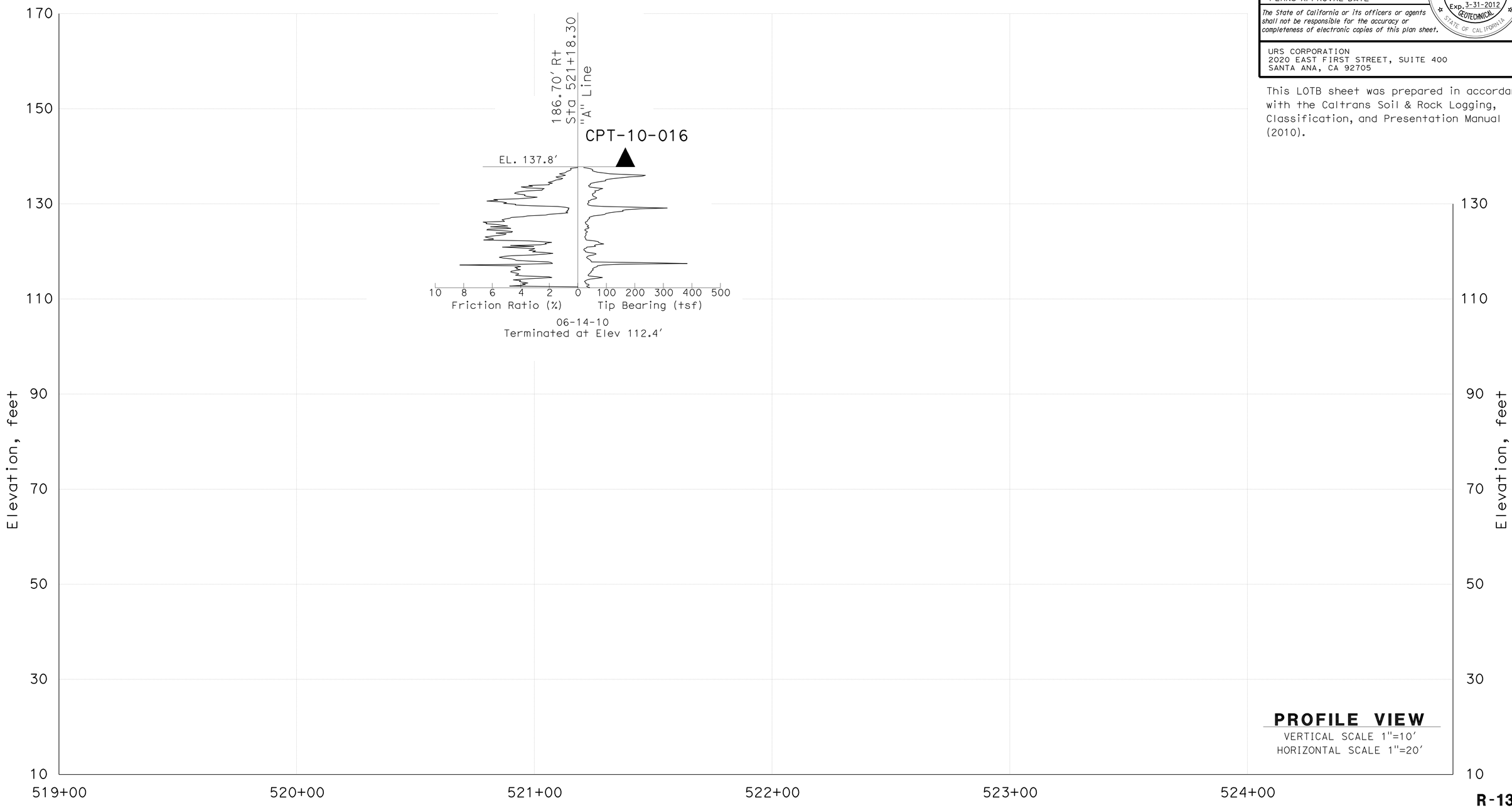
URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS" 1 OF 4



R-13

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			POST MILES X

RETAINING WALL 914

LOG OF TEST BORINGS SHEET 2 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X — SHEET X OF X

FILE => 1200000102qc005.dgn

USERNAME => s114926 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:15

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	244	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

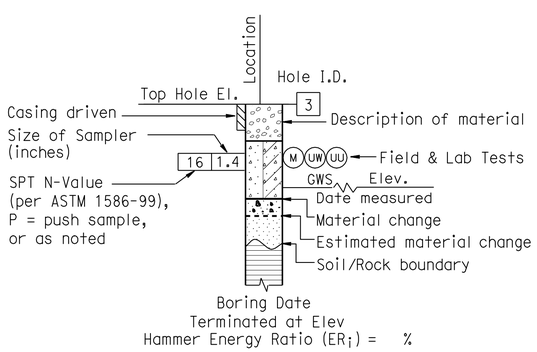
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring (hollow or solid stem bucket)
Size	R RW RC P	Rotary drilled boring (conventional) Rotary drilled with self-casing wire-line Rotary core with continuously-sampled, self-casing wire-line Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778)
⬚	O	Other (note on LOTB)

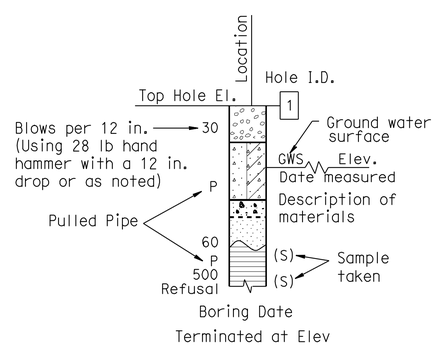
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

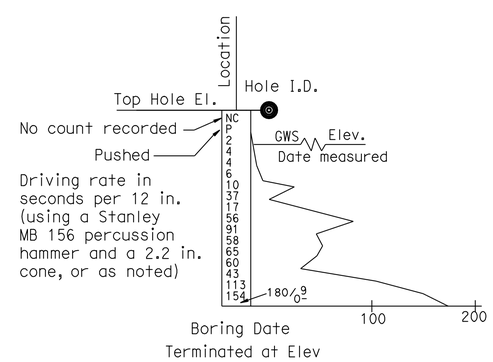
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



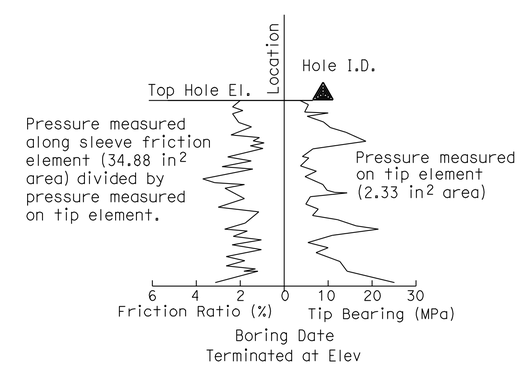
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

R-14

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X POST MILES X
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			

RETAINING WALL 914

LOG OF TEST BORINGS SHEET 3 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X | SHEET X | OF X

FILE => 1200000102qc003.dgn

USERNAME => s114926 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:15

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	245	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE

Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% - 10%
Little	15% - 25%
Some	30% - 45%
Mostly	50% - 100%

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

R-15

X
DESIGN OVERSIGHT
X
SIGN OFF DATE

DRAWN BY P.OUACH
CHECKED BY P.YERRA

EJ.JEON
FIELD INVESTIGATION BY:
DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 914
LOG OF TEST BORINGS SHEET 4 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X | SHEET X | OF X

FILE => 1200000102qc004.dgn

USERNAME => s109838 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:06

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	246	515

REGISTERED CIVIL ENGINEER 12-23-11 DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER STEVEN LE No. C75534 Exp. 06-30-12 CIVIL STATE OF CALIFORNIA

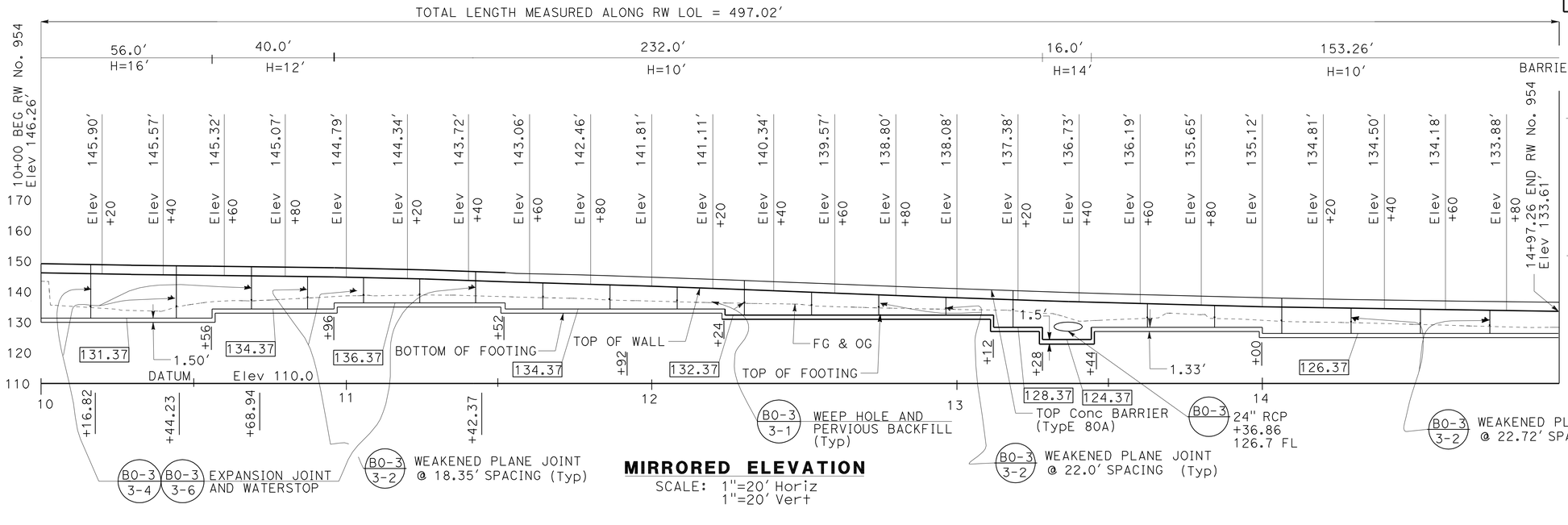
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

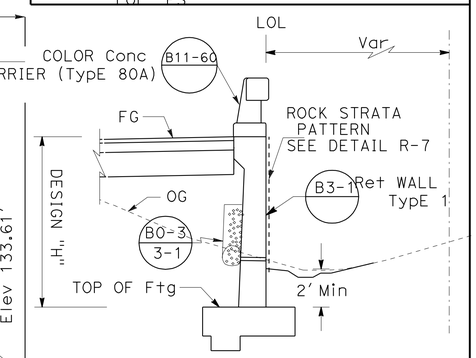
1. TOP OF WALL ELEVATIONS MEASURED ALONG RET WALL LOL @ 20' EXCEPT AS NOTED.
2. ALL DIMENSIONS MEASURED RADIAL ALONG RET WALL LOL
3. THE WATERSTOP IN THE EXPANSION JOINTS SHALL BE EXTENDED 0.5' INTO THE CONCRETE BARRIER (TypE 736A).
4. EXPANSION JOINT AND WATERSTOP SHALL BE PLACED AT THE JOINT OF OF RW Nos.954.

LEGEND:

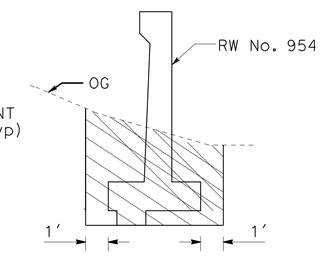
- [xx.xx] DENOTES TOP OF FOOTING ELEVATION
- STD PLAN SHEET No.
- DETAIL No.
- STRUCTURAL EXCAVATION LIMITS
- STRUCTURAL BACKFILL LIMITS



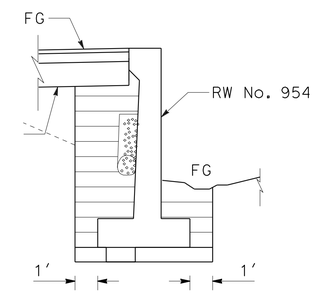
MIRRORED ELEVATION
SCALE: 1"=20' Horiz
1"=20' Vert



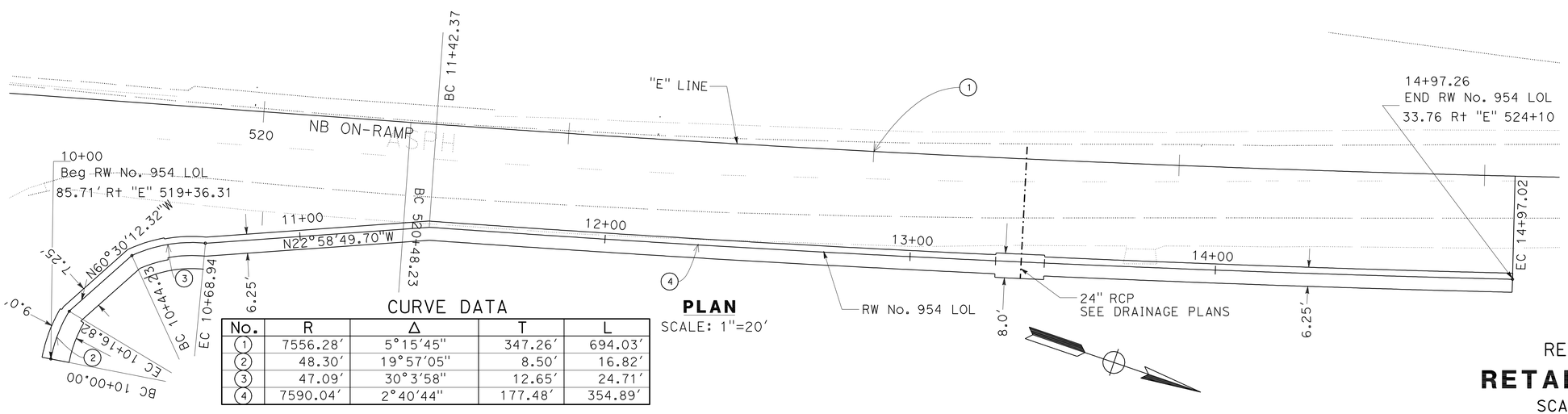
TYPICAL SECTION
NO SCALE



STRUCTURAL EXCAVATION
NO SCALE



STRUCTURAL BACKFILL
NO SCALE



PLAN
SCALE: 1"=20'

CURVE DATA

No.	R	Δ	T	L
1	7556.28'	5°15'45"	347.26'	694.03'
2	48.30'	19°57'05"	8.50'	16.82'
3	47.09'	30°3'58"	12.65'	24.71'
4	7590.04'	2°40'44"	177.48'	354.89'

RETAINING WALL No. 954

RETAINING WALL PLAN

SCALE AS SHOWN

R-16

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans®

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: STEVEN LE
CHECKED BY: FRED FAIZI
REVISED BY / DATE REVISED

LAST REVISION 04-05-11
DATE PLOTTED => 18-APR-2012
TIME PLOTTED => 05:52

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	247	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH — No. 2229 — Exp. 3-31-2012 — GEOTECHNICAL — STATE OF CALIFORNIA

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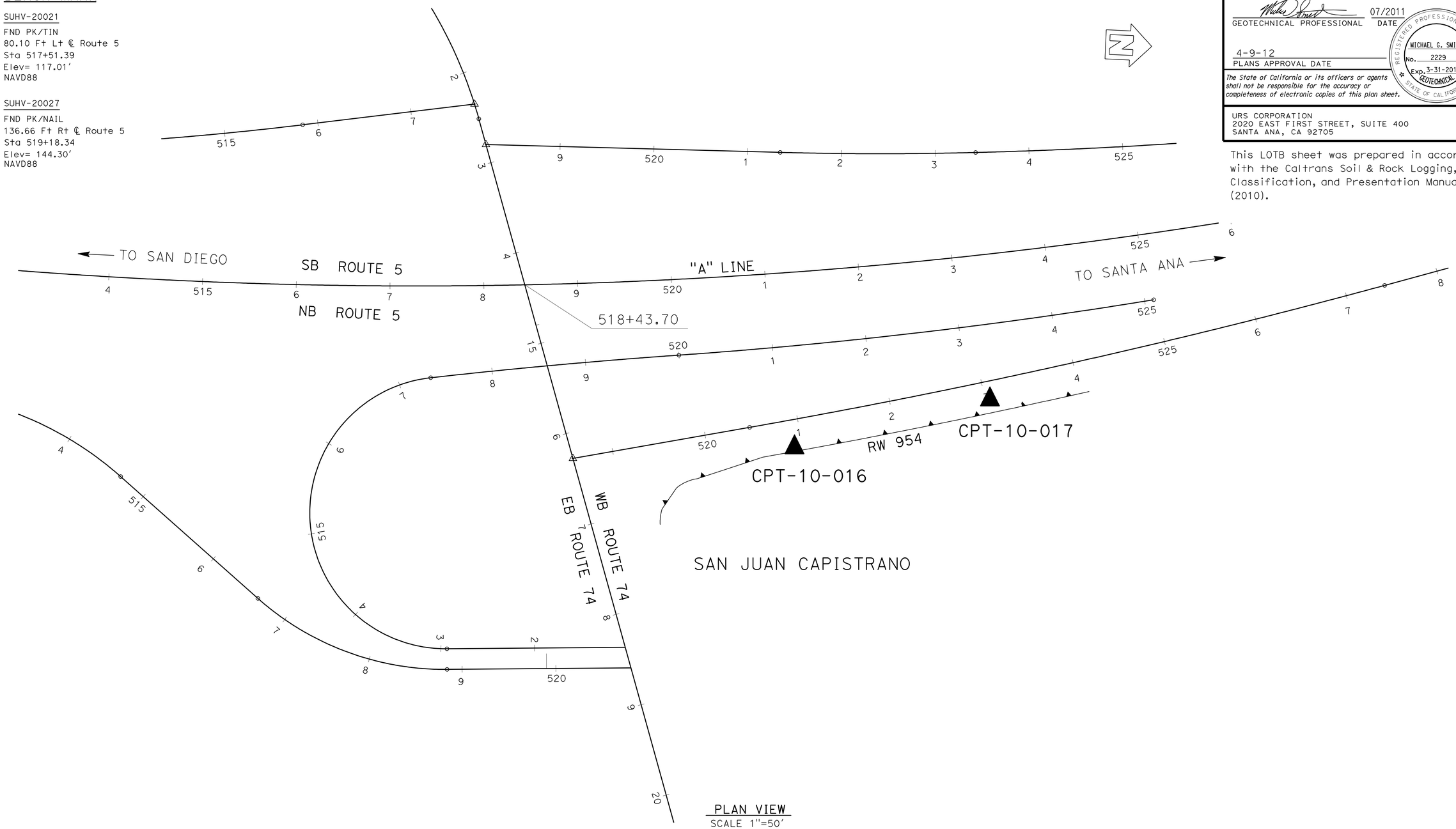
URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).

BENCH MARK

SUHV-20021
FND PK/TIN
80.10 Ft Lt ℄ Route 5
Sta 517+51.39
Elev= 117.01′
NAVD88

SUHV-20027
FND PK/NAIL
136.66 Ft Rt ℄ Route 5
Sta 519+18.34
Elev= 144.30′
NAVD88



PLAN VIEW
SCALE 1"=50′

R-17

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X	RETAINING WALL 954
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			POST MILES X	LOG OF TEST BORINGS SHEET 1 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X | SHEET X | OF X

FILE => 1200000102qd002.dgn

USERNAME => s109858 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:06

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	248	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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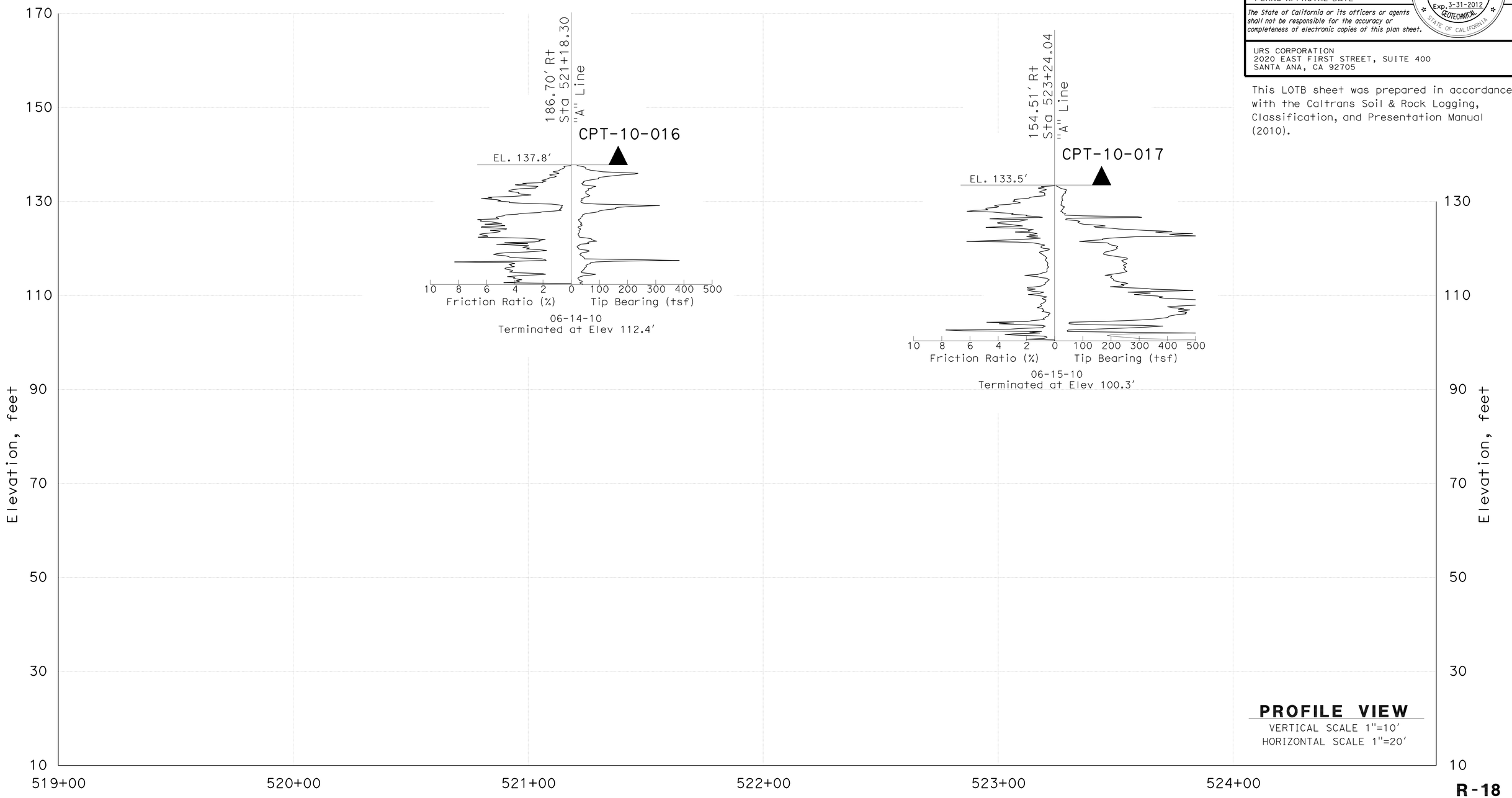
URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS" 1 OF 4



R-18

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 954
LOG OF TEST BORINGS SHEET 2 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X | SHEET X | OF X

FILE => 1200000102qd003.dgn

USERNAME => s109858 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:06

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	249	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

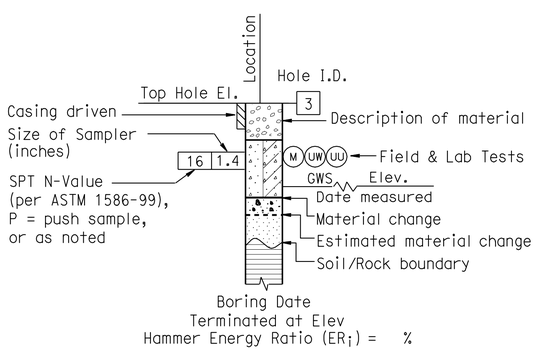
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring (hollow or solid stem bucket)
Size	R RW RC P	Rotary drilled boring (conventional) Rotary drilled with self-casing wire-line Rotary core with continuously-sampled, self-casing wire-line Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778)
⬚	O	Other (note on LOTB)

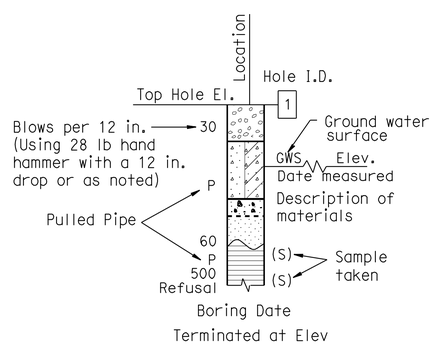
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

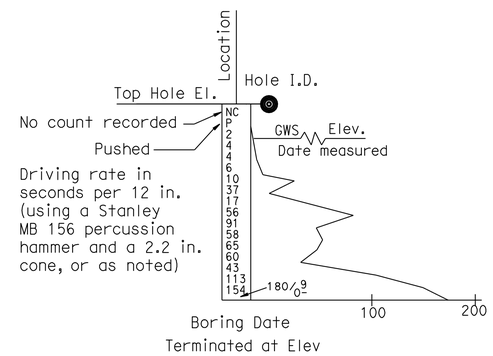
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



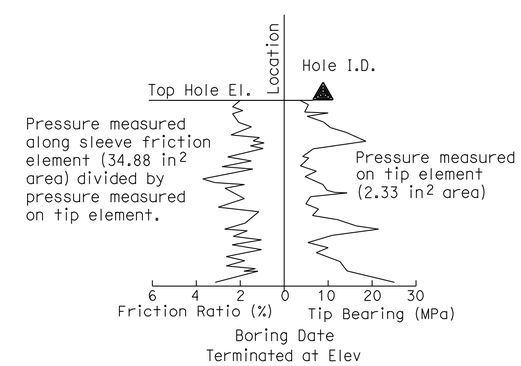
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

R-19

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 954

LOG OF TEST BORINGS SHEET 3 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X — SHEET X OF X

FILE => 1200000102qd004.dgn

USERNAME => s109858 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:06

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	250	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE

Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% - 10%
Little	15% - 25%
Some	30% - 45%
Mostly	50% - 100%

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

R-20

X
DESIGN OVERSIGHT
X
SIGN OFF DATE

DRAWN BY P.QUACH
CHECKED BY P.YERRA

EJ.JEON
FIELD INVESTIGATION BY:
DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 954
LOG OF TEST BORINGS SHEET 4 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X | SHEET X | OF X

FILE => 1200000102qd005.dgn

USERNAME => s109838 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:06

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	251	515

REGISTERED CIVIL ENGINEER 12-23-11 DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER STEVEN LE No. C75534 Exp. 06-30-12 CIVIL STATE OF CALIFORNIA

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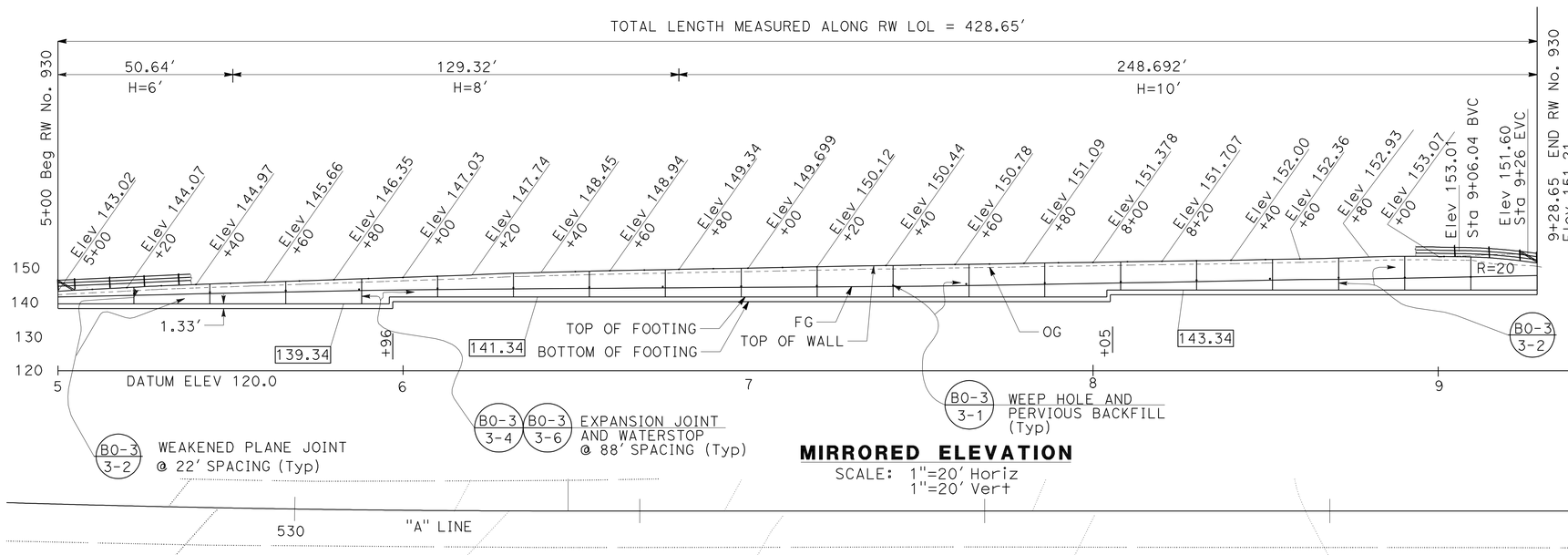
NOTES:

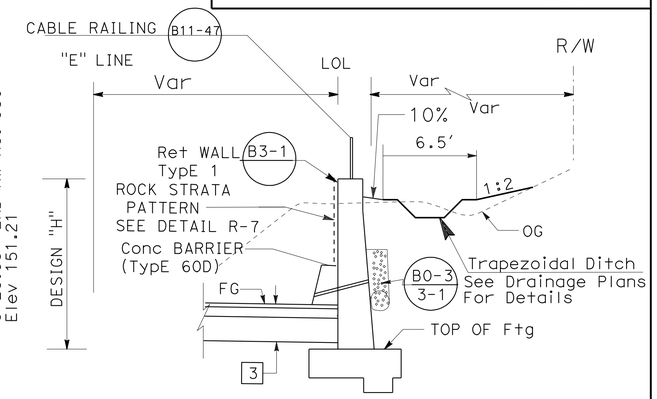
1. TOP OF WALL ELEVATIONS MEASURED ALONG RET WALL LOL @ 20′ EXCEPT AS NOTED.
2. ALL DIMENSIONS MEASURED RADIAL ALONG RET WALL LOL
3. THE WATERSTOP IN THE EXPANSION JOINTS SHALL BE EXTENDED 0.5′ INTO THE CONCRETE BARRIER (TypE 60D).

LEGEND:

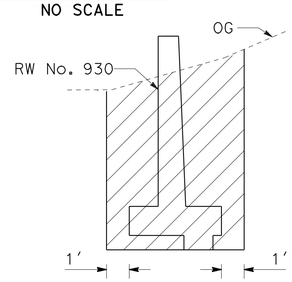
- [xx.xx] DENOTES TOP OF FOOTING ELEVATION
- STD PLAN SHEET No. / DETAIL No.
- STRUCTURAL EXCAVATION LIMITS
- STRUCTURAL BACKFILL LIMITS



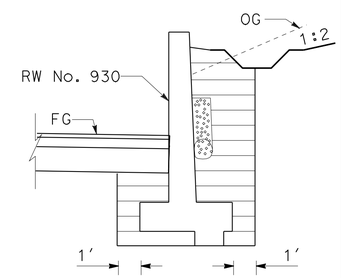
MIRRORED ELEVATION
SCALE: 1"=20′ Horiz
1"=20′ Vert



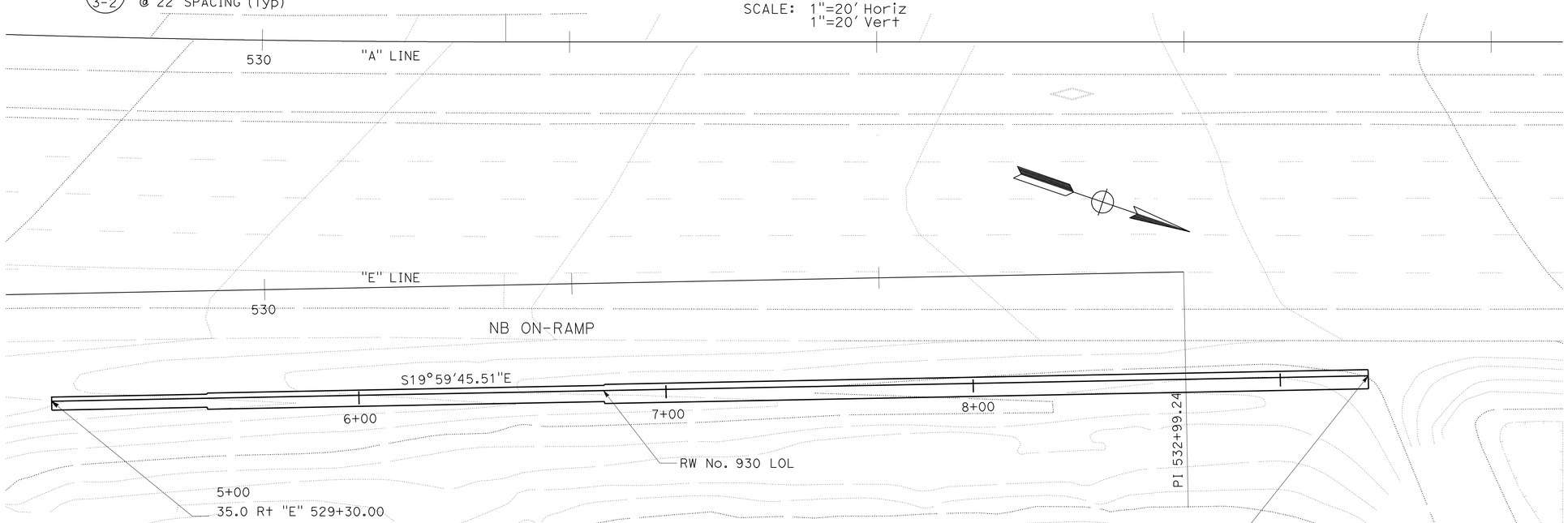
TYPICAL SECTION
NO SCALE



STRUCTURAL EXCAVATION
NO SCALE



STRUCTURAL BACKFILL
NO SCALE



PLAN
SCALE: 1"=20′

RETAINING WALL No. 930

RETAINING WALL PLAN

SCALE AS SHOWN

R-21

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

FUNCTIONAL SUPERVISOR: MATTHEW CUGINI
CALCULATED-DESIGNED BY: STEVEN LE
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION 04-05-11
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 14:07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	252	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH — No. 2229 — Exp. 3-31-2012 — GEOTECHNICAL — STATE OF CALIFORNIA

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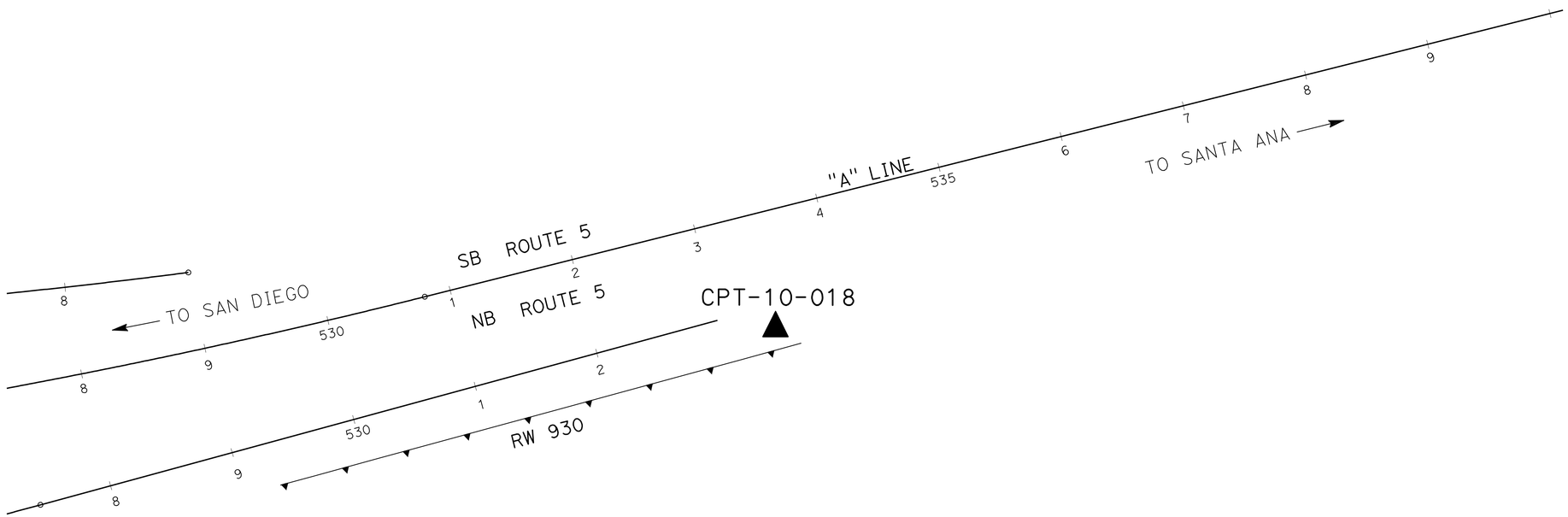
URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).

BENCH MARK

SUHV-20021
FND PK/TIN
80.10 Ft Lt ℄ Route 5
Sta 517+51.39
Elev= 117.01′
NAVD88

SUHV-20027
FND PK/NAIL
136.66 Ft Rt ℄ Route 5
Sta 519+18.34
Elev= 144.30′
NAVD88



PLAN VIEW
SCALE 1"=50′

R-22

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X	RETAINING WALL 930
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			POST MILES X	LOG OF TEST BORINGS SHEET 1 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: X | SHEET X | OF X

FILE => 1200000102qe002.dgn

USERNAME => s109858 DATE PLOTTED => 16-APR-2012 TIME PLOTTED => 14:18

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	253	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

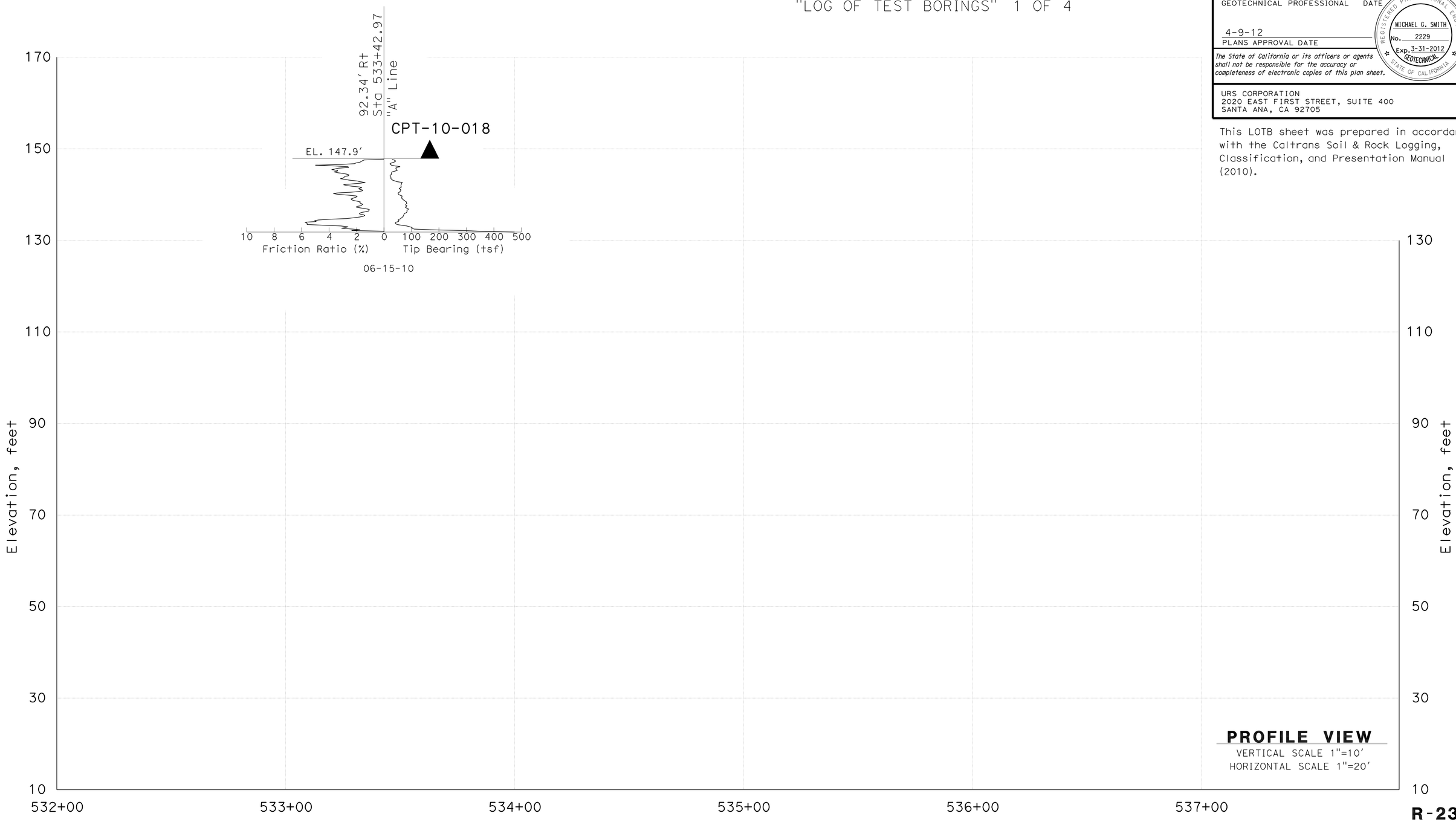
REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS" 1 OF 4



R-23

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			POST MILES X

RETAINING WALL 930

LOG OF TEST BORINGS SHEET 2 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X

SHEET X OF X

FILE => 1200000102qe003.dgn

USERNAME => s109858 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	254	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

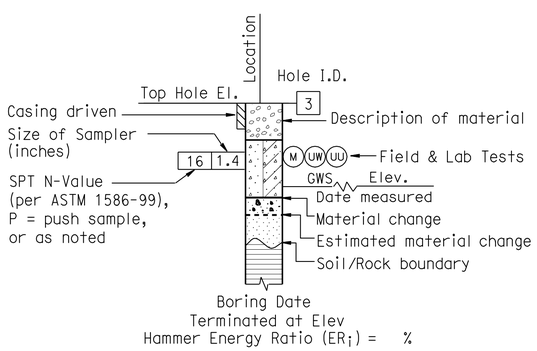
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring (hollow or solid stem bucket)
Size	R RW RC P	Rotary drilled boring (conventional) Rotary drilled with self-casing wire-line Rotary core with continuously-sampled, self-casing wire-line Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778)
⬚	O	Other (note on LOTB)

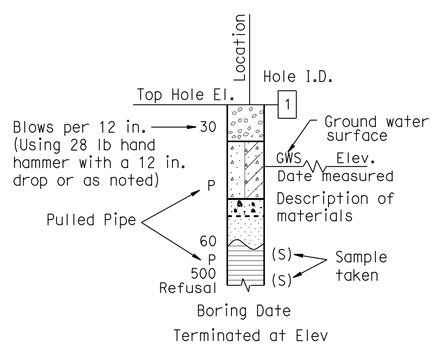
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

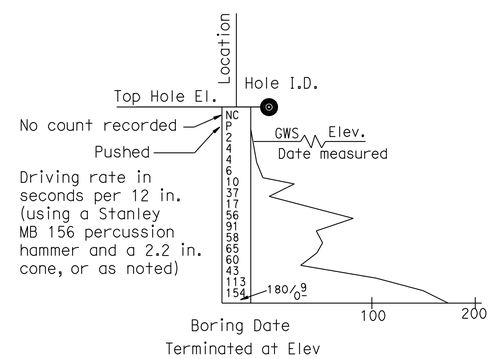
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



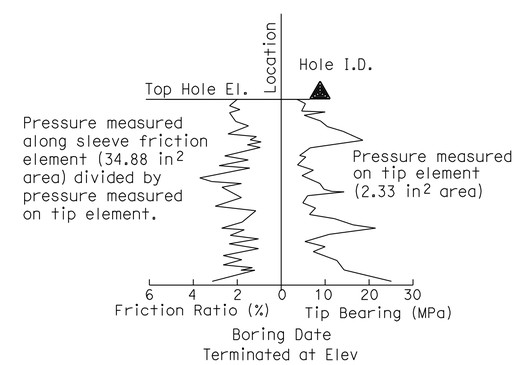
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

R-24

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 930

LOG OF TEST BORINGS SHEET 3 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X — SHEET X OF X

FILE => 1200000102ge004.dgn

USERNAME => s109858 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:07

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	255	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE

Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% - 10%
Little	15% - 25%
Some	30% - 45%
Mostly	50% - 100%

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

R-25

X
DESIGN OVERSIGHT
X
SIGN OFF DATE

DRAWN BY P.OUACH
CHECKED BY P.YERRA

EJ.JEON
FIELD INVESTIGATION BY:
DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 930
LOG OF TEST BORINGS SHEET 4 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X | SHEET X | OF X

FILE => 1200000102qe005.dgn

USERNAME => s109838 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	256	515

REGISTERED CIVIL ENGINEER 12-23-11 DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER STEVEN LE No. C75534 Exp. 06-30-12 CIVIL STATE OF CALIFORNIA

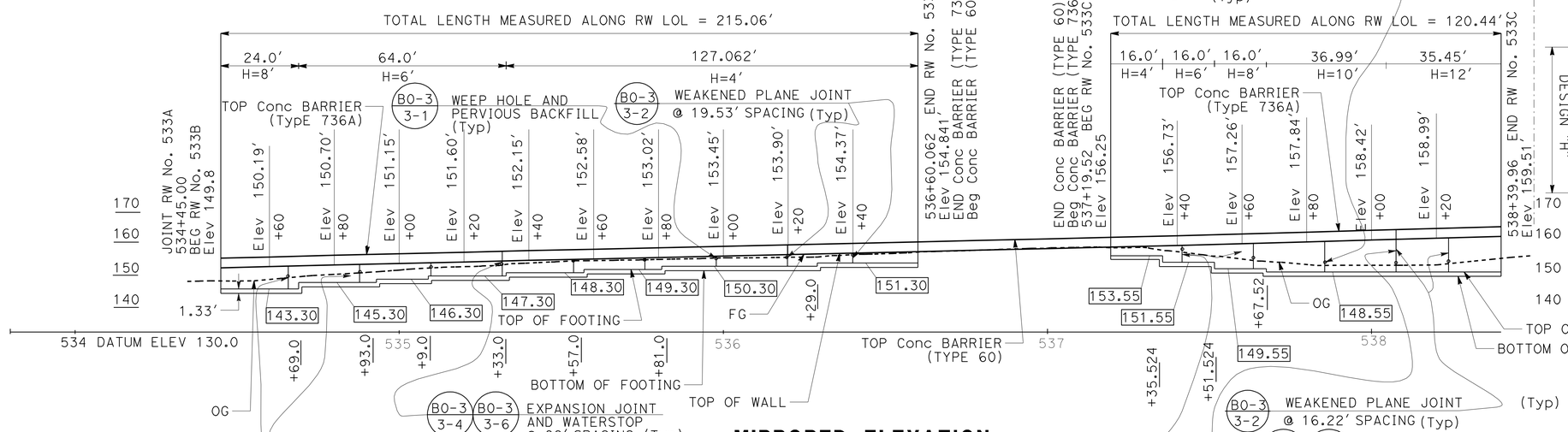
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

1. TOP OF WALL ELEVATIONS MEASURED ALONG RET WALL LOL @ 20' EXCEPT AS NOTED.
2. ALL DIMENSIONS MEASURED RADIAL ALONG RET WALL LOL
3. EXPANSION JOINT AND WATERSTOP SHALL BE PLACED AT THE JOINT OF OF RW No 533B AND 533C.

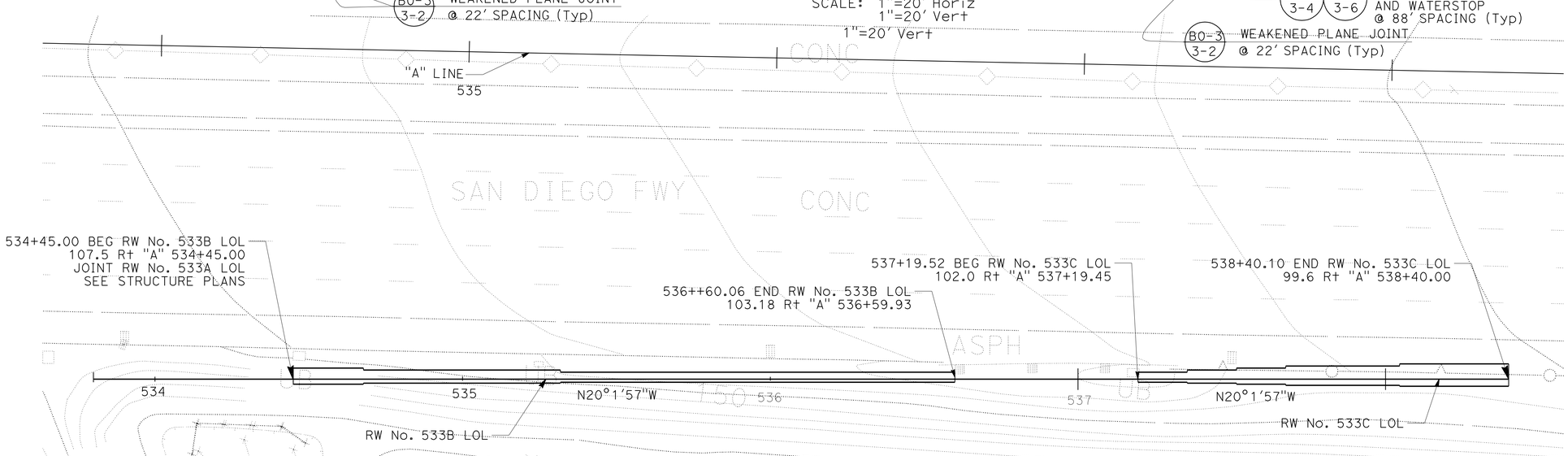
LEGEND:

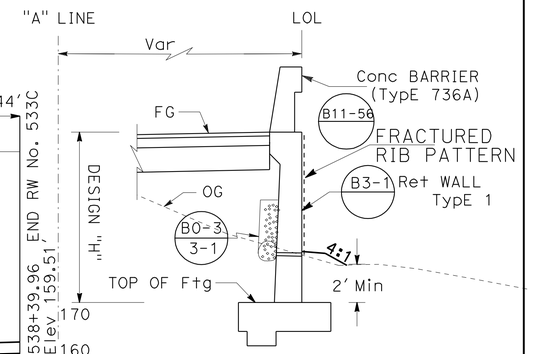
- xx.xx — DENOTES TOP OF FOOTING ELEVATION
- STD PLAN SHEET No.
- DETAIL No.
- STRUCTURAL EXCAVATION LIMITS
- STRUCTURAL BACKFILL LIMITS



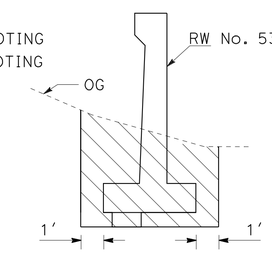
MIRRORED ELEVATION

SCALE: 1"=20' Horiz
1"=20' Vert
1"=20' Vert

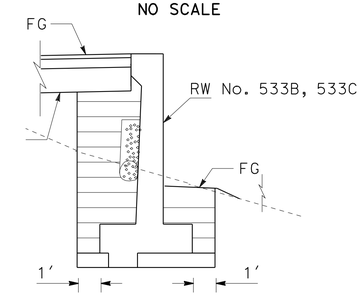




TYPICAL SECTION
NO SCALE



STRUCTURAL EXCAVATION
NO SCALE



STRUCTURAL BACKFILL
NO SCALE

RETAINING WALL 533B & 533C

SCALE AS SHOWN

R-26

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

FUNCTIONAL SUPERVISOR: FRED FAIZI
CALCULATED-DESIGNED BY: STEVEN LE
CHECKED BY: FRED FAIZI
REVISED BY
DATE REVISED

LAST REVISION 04-05-11
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 14:07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	257	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).

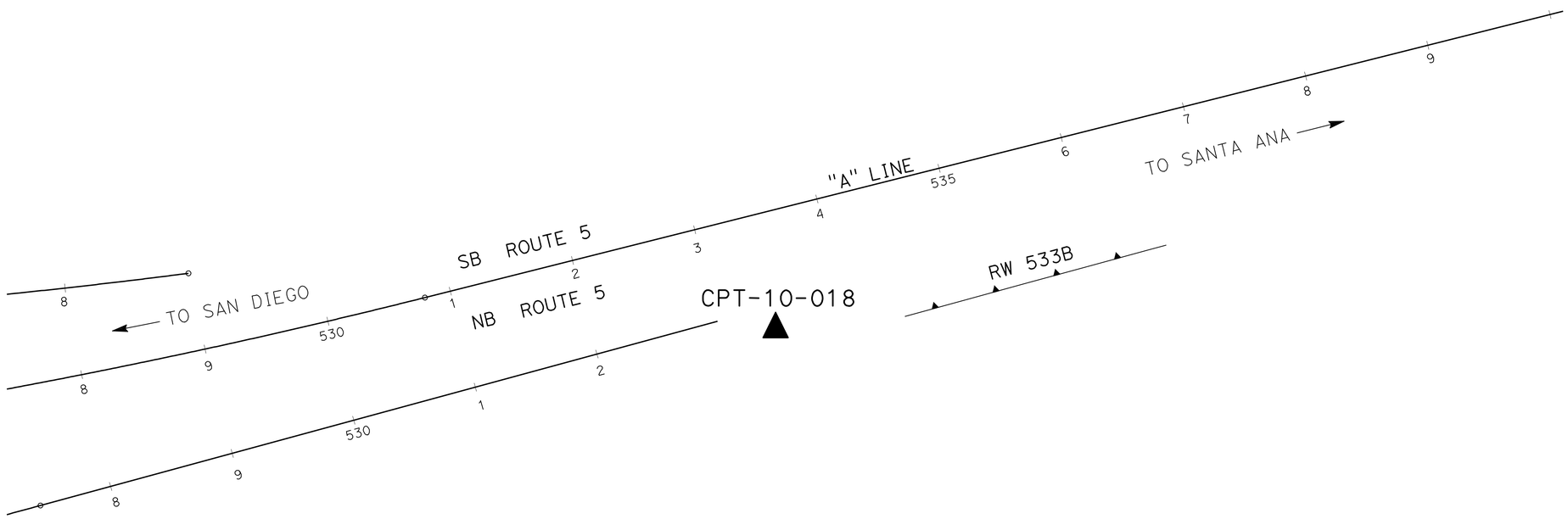
BENCH MARK

SUHV-20021

FND PK/TIN
80.10 Ft Lt ℄ Route 5
Sta 517+51.39
Elev= 117.01′
NAVD88

SUHV-20027

FND PK/NAIL
136.66 Ft Rt ℄ Route 5
Sta 519+18.34
Elev= 144.30′
NAVD88



PLAN VIEW
SCALE 1"=50′

R-27

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			POST MILES X

RETAINING WALL 533B

LOG OF TEST BORINGS SHEET 1 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X

SHEET X OF X

FILE => 1200000102qf002.dgn

USERNAME => S109858 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	258	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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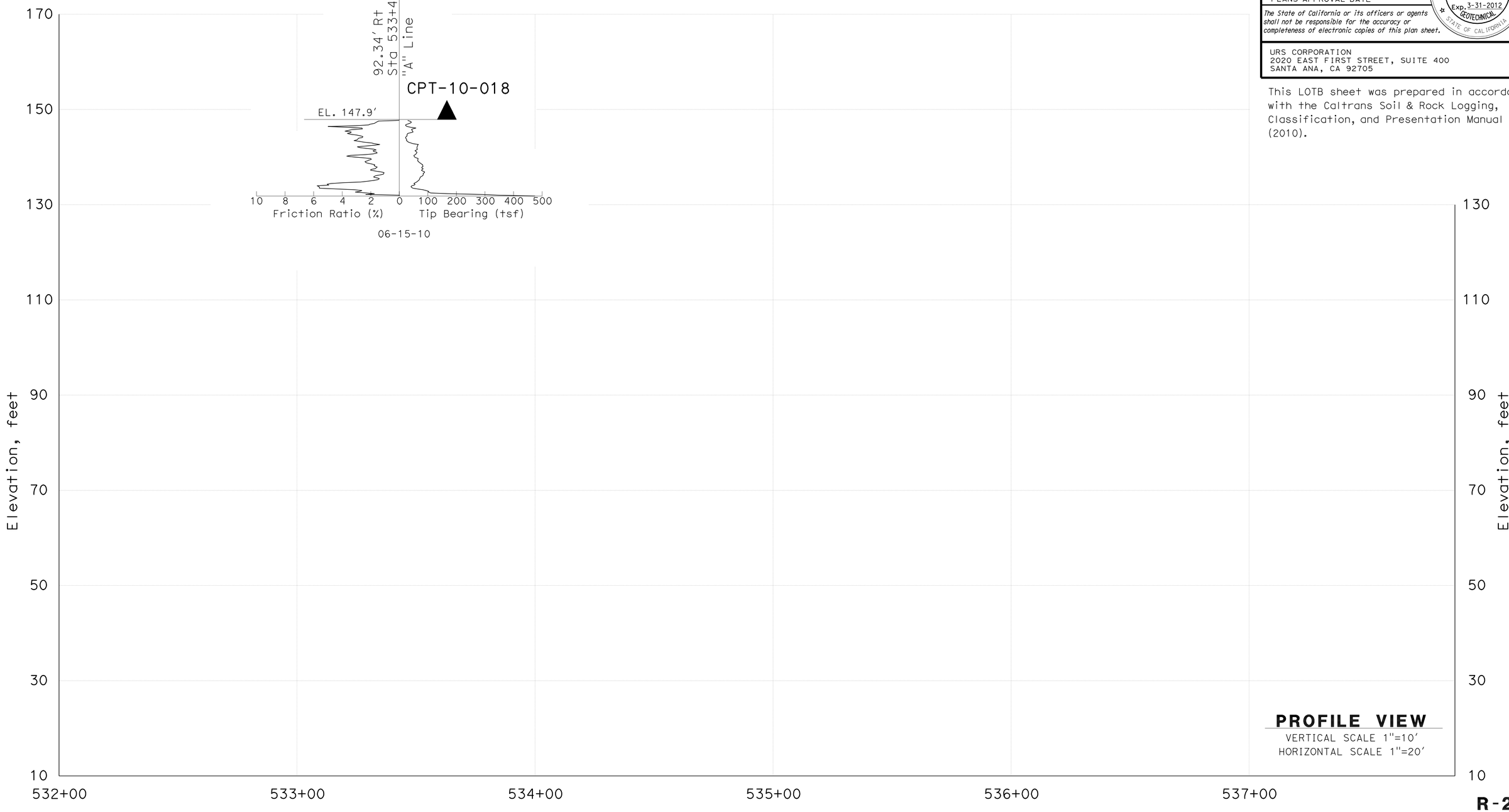
URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS" 1 OF 4



R-28

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			POST MILES X

RETAINING WALL 533B

LOG OF TEST BORINGS SHEET 2 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X — SHEET X OF X

FILE => 1200000102qf003.dgn

USERNAME => s109858 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	259	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

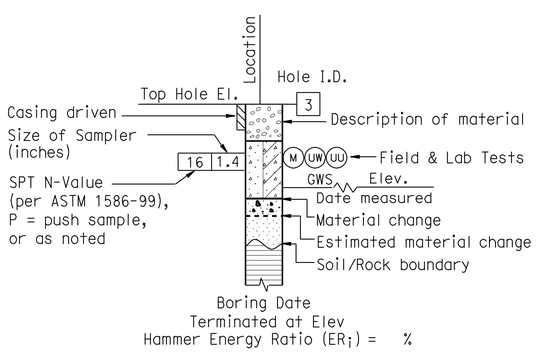
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring (hollow or solid stem bucket)
Size	R RW RC P	Rotary drilled boring (conventional) Rotary drilled with self-casing wire-line Rotary core with continuously-sampled, self-casing wire-line Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778)
⬚	O	Other (note on LOTB)

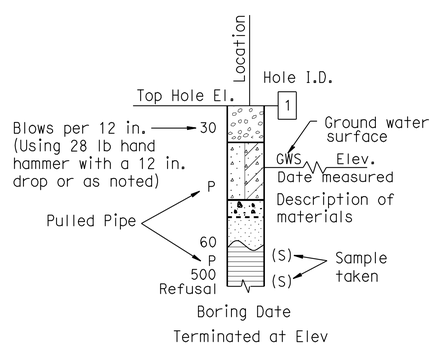
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

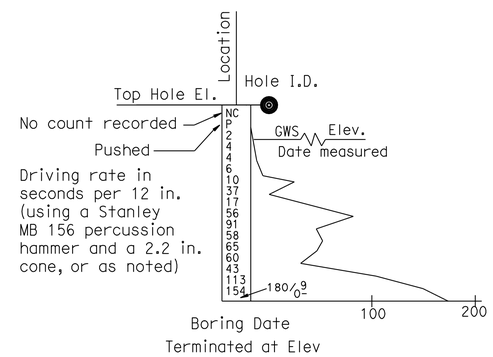
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



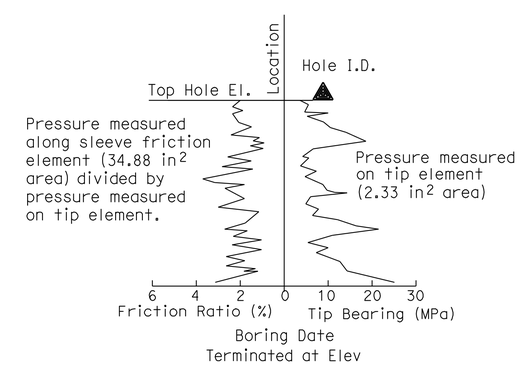
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

R-29

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 533B

LOG OF TEST BORINGS SHEET 3 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X — SHEET X OF X

FILE => 1200000102qf004.dgn

USERNAME => s109858 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:08

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	260	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE

Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% - 10%
Little	15% - 25%
Some	30% - 45%
Mostly	50% - 100%

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

R-30

X
DESIGN OVERSIGHT
X
SIGN OFF DATE

DRAWN BY P.QUACH
CHECKED BY P.YERRA

EJ.JEON
FIELD INVESTIGATION BY:
DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 533B

LOG OF TEST BORINGS SHEET 4 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X

SHEET X OF X

FILE => 1200000102qf005.dgn

USERNAME => s109838 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	261	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH — No. 2229 — Exp. 3-31-2012 — GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).

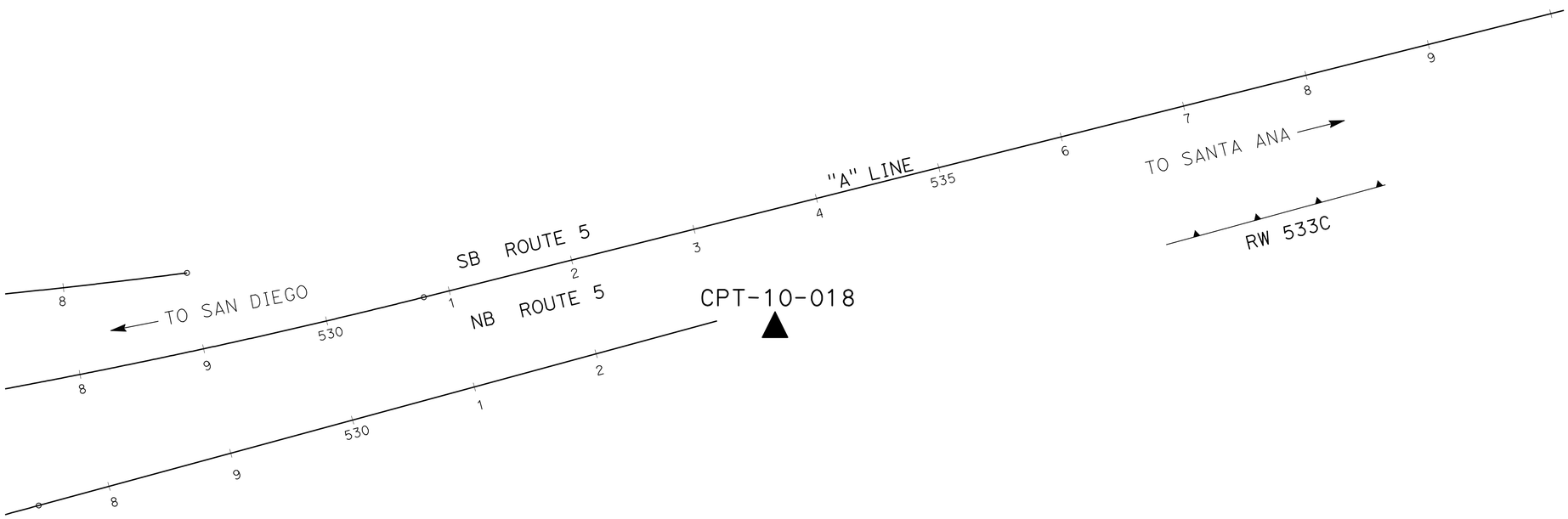
BENCH MARK

SUHV-20021

FND PK/TIN
80.10 Ft Lt ℄ Route 5
Sta 517+51.39
Elev= 117.01′
NAVD88

SUHV-20027

FND PK/NAIL
136.66 Ft Rt ℄ Route 5
Sta 519+18.34
Elev= 144.30′
NAVD88



PLAN VIEW
SCALE 1"=50′

R-31

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			POST MILES X

RETAINING WALL 533C

LOG OF TEST BORINGS SHEET 1 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X

SHEET X OF X

FILE => 1200000102qf006.dgn

USERNAME => S109858 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	262	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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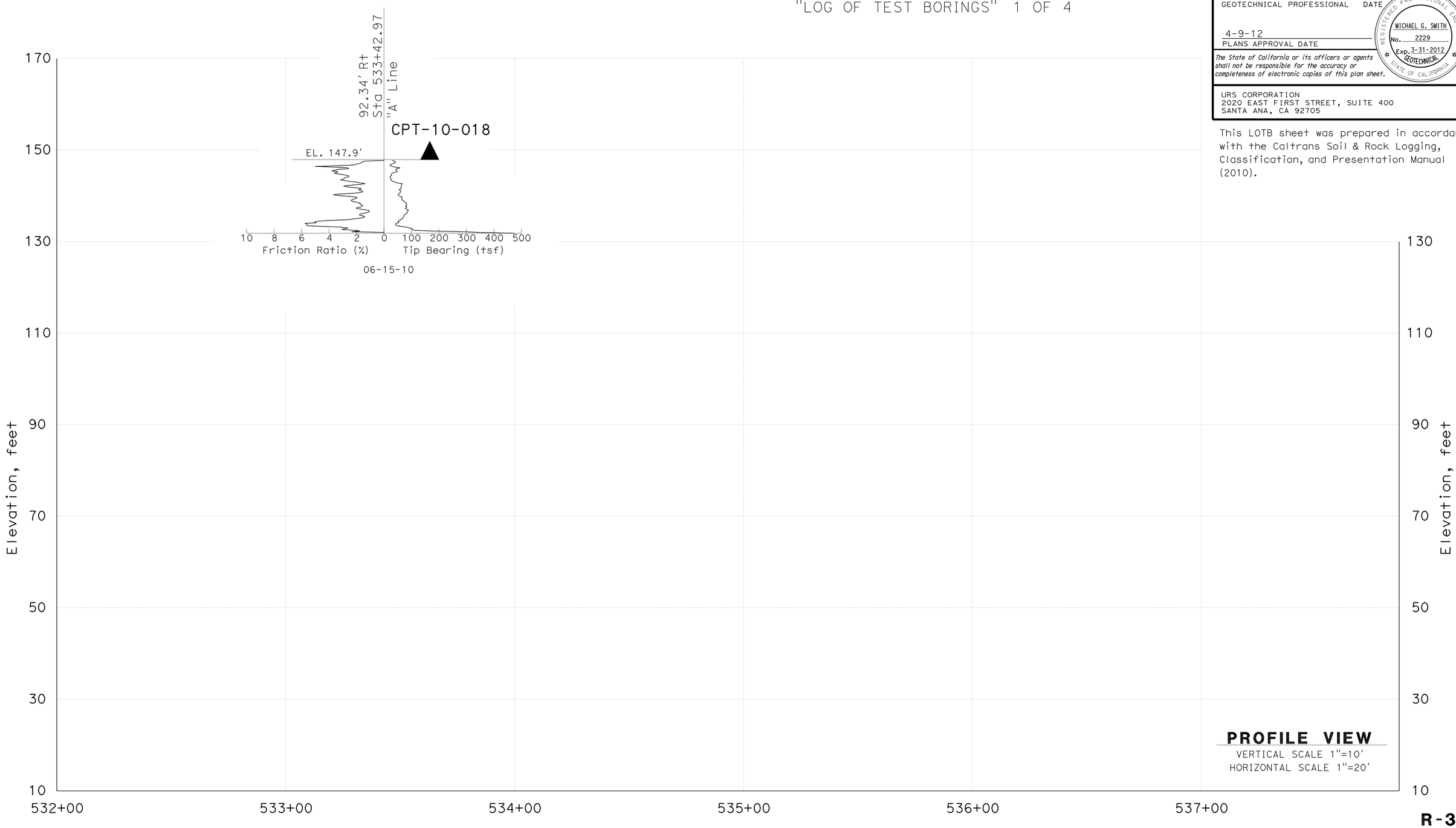
URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS" 1 OF 4



R-32

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X PROJECT ENGINEER	BRIDGE NO. X
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X			POST MILES X

RETAINING WALL 533C

LOG OF TEST BORINGS SHEET 2 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X | SHEET X | OF X

FILE => 1200000102qf007.dgn

USERNAME => s109858 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	263	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

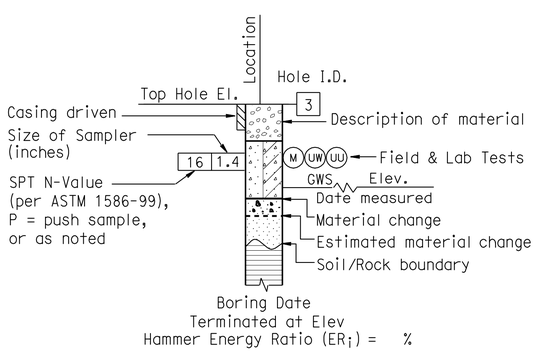
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring (hollow or solid stem bucket)
Size	R RW RC P	Rotary drilled boring (conventional) Rotary drilled with self-casing wire-line Rotary core with continuously-sampled, self-casing wire-line Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778)
⬚	O	Other (note on LOTB)

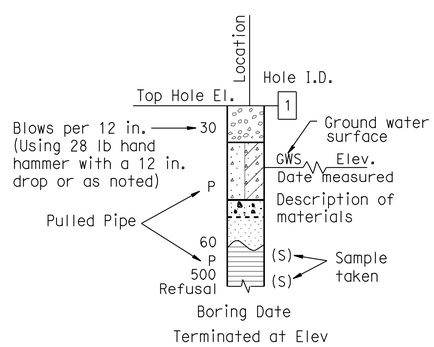
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

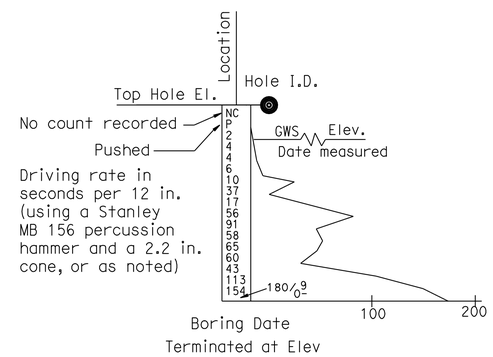
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



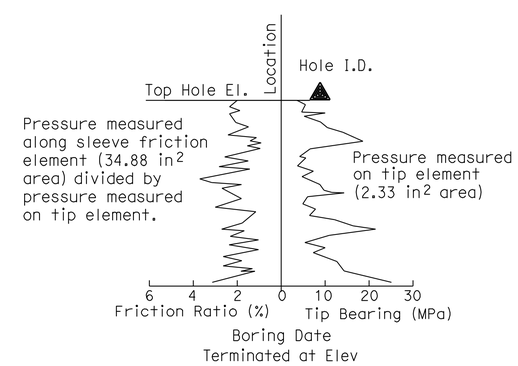
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

R-33

X DESIGN OVERSIGHT	DRAWN BY	P.QUACH	EJ.JEON FIELD INVESTIGATION BY:
X SIGN OFF DATE	CHECKED BY	P.YERRA	DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 533C

LOG OF TEST BORINGS SHEET 3 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X — SHEET X OF X

FILE => 1200000102qf008.dgn

USERNAME => s109858 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:08

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	264	515

GEOTECHNICAL PROFESSIONAL — DATE 07/2011

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MICHAEL G. SMITH No. 2229 Exp. 3-31-2012 GEOTECHNICAL — STATE OF CALIFORNIA

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URS CORPORATION
2020 EAST FIRST STREET, SUITE 400
SANTA ANA, CA 92705

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
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- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE

Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% - 10%
Little	15% - 25%
Some	30% - 45%
Mostly	50% - 100%

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

R-34

X
DESIGN OVERSIGHT
X
SIGN OFF DATE

DRAWN BY P.QUACH
CHECKED BY P.YERRA

EJ.JEON
FIELD INVESTIGATION BY:
DATE: X

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

X
PROJECT ENGINEER

BRIDGE NO. X
POST MILES X

RETAINING WALL 533C
LOG OF TEST BORINGS SHEET 4 OF 4

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3658
PROJECT NUMBER & PHASE: 1200000102 & 4 CONTRACT NO.: 12-0E3104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES X | SHEET X | OF X

FILE => 1200000102qf009.dgn

USERNAME => s109838 DATE PLOTTED => 15-APR-2012 TIME PLOTTED => 14:09

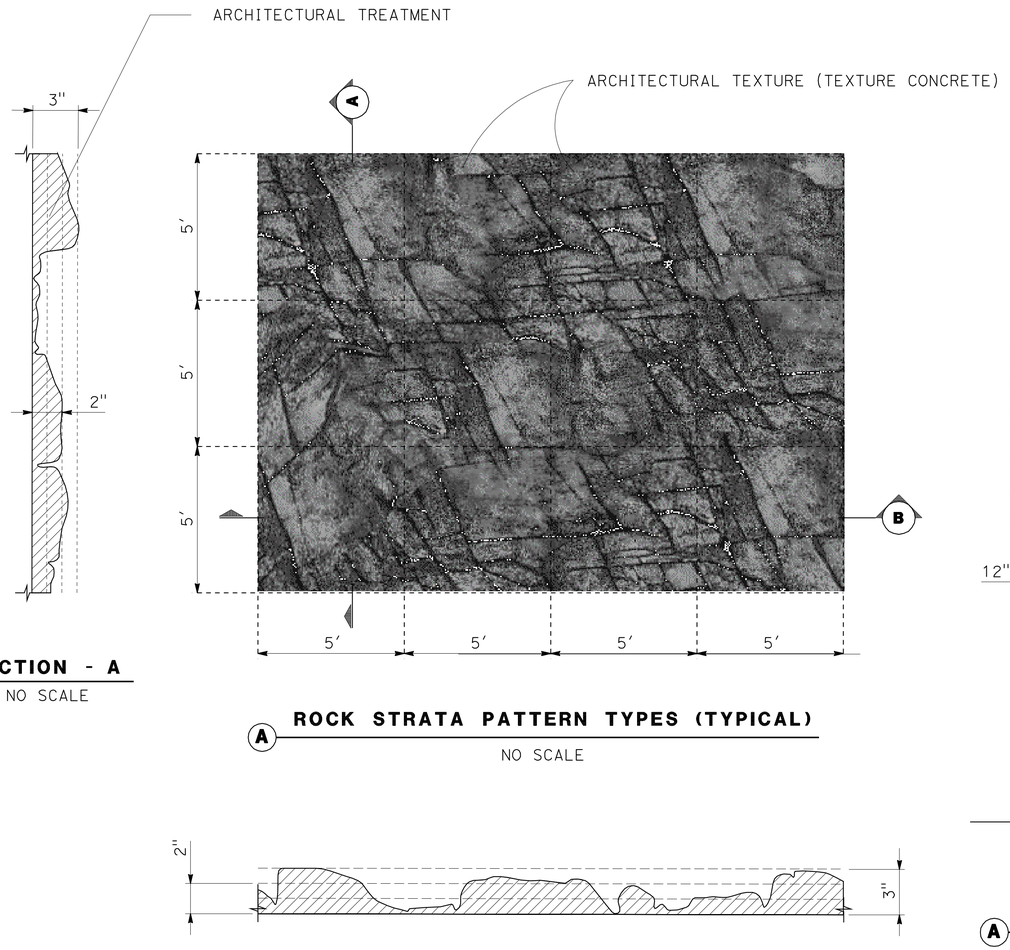
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	265	515

Ronald Wong 03-14-12
LICENSED LANDSCAPE ARCHITECT

4-9-12
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT RONALD WONG NO. 1555 Signature 01-31-14 Renewal Date 03-14-12 Date STATE OF CALIFORNIA

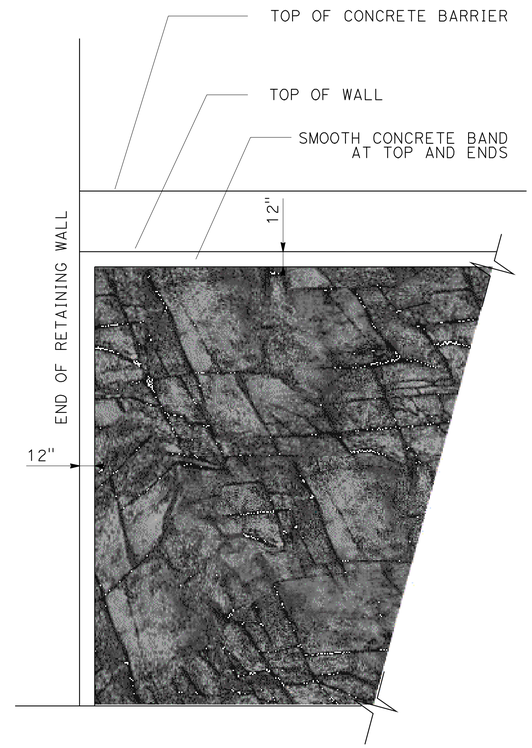
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



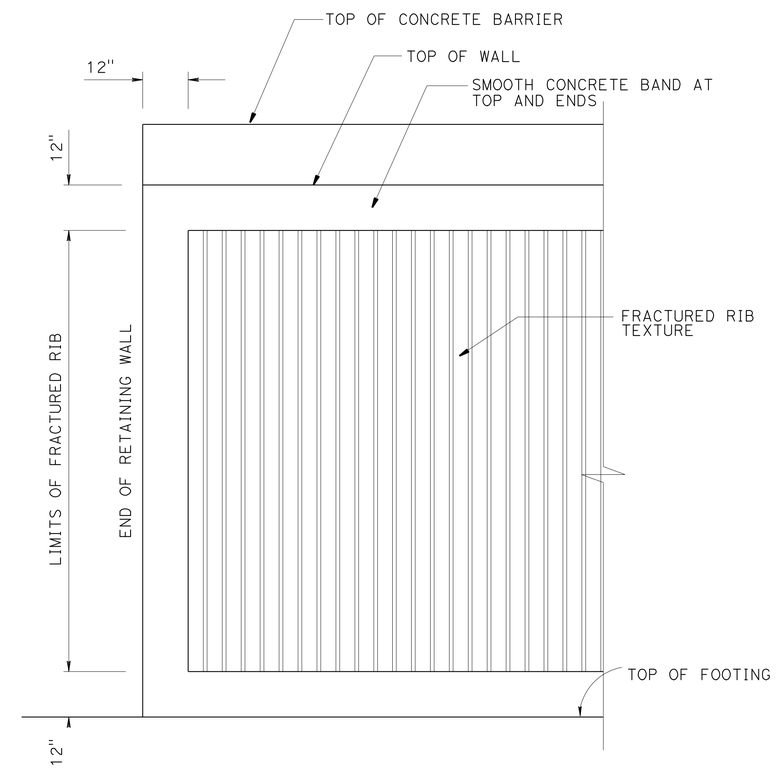
SECTION - A
NO SCALE

A ROCK STRATA PATTERN TYPES (TYPICAL)
NO SCALE

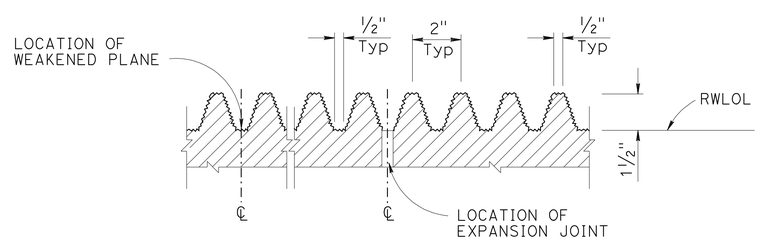
SECTION - B
NO SCALE



A ROCK STRATA WALL TREATMENT AT TOP AND ENDS OF RETAINING WALL
NO SCALE



B FRACTURED RIB WALL TREATMENT AT TOP AND ENDS OF RETAINING WALL NO SCALE



B FRACTURED RIB DETAIL
NO SCALE

NOTE:

1. ARCHITECTURAL TREATMENT VARIES FROM 0" TO 3" MAXIMUM THICKNESS.
2. FORMLINER ROCK STRATA PATTERN SHOULD BE ABLE TO ROTATE 90 DEGREES AND/OR 180 DEGREES AND HAVE MATCH POINTS ON ALL MATCHING ADJACENT SIDES.
3. FRACTURED RIB DETAIL: WEAKENED PLANES AND EXPANSION JOINTS TO BE CENTERED ON VALLEYS.

RETAINING WALL DETAILS- ARCHITECTURAL TREATMENT (CAST IN PLACE)

APPLY FOR WALL #80, #914, #954, #930

NO SCALE

R-35

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: VATHANA CHY
CHECKED BY: RONALD WONG
SENIOR LANDSCAPE ARCHITECT: ERIC DICKSON

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
LANDSCAPE ARCHITECTURE

LAST REVISION 04-14-11
DATE PLOTTED => 18-APR-2012
TIME PLOTTED => 05:52

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	266	515

12-23-11
LICENSED LANDSCAPE ARCHITECT

4-9-12
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT STEPHEN SHUN-MIN SU NO. 4838 Signature 9-30-13 Renewal date 12-23-11 Date STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

ABBREVIATIONS

AMEND — amendment
B & B — balled and burlapped
Dia — diameter
EA — each
lb — pound
oz. — ounce
Ft — foot/feet
SQFT — square feet
CF — cubic feet
Max — maximum
Min — minimum
NCN — no common name
No. — number
Pkt — packet
PLT ESTB — plant establishment
Pvmt — pavement
— right of way
SF — state furnished
TRVD — traveled

PLANT LIST AND PLANTING SPECIFICATIONS

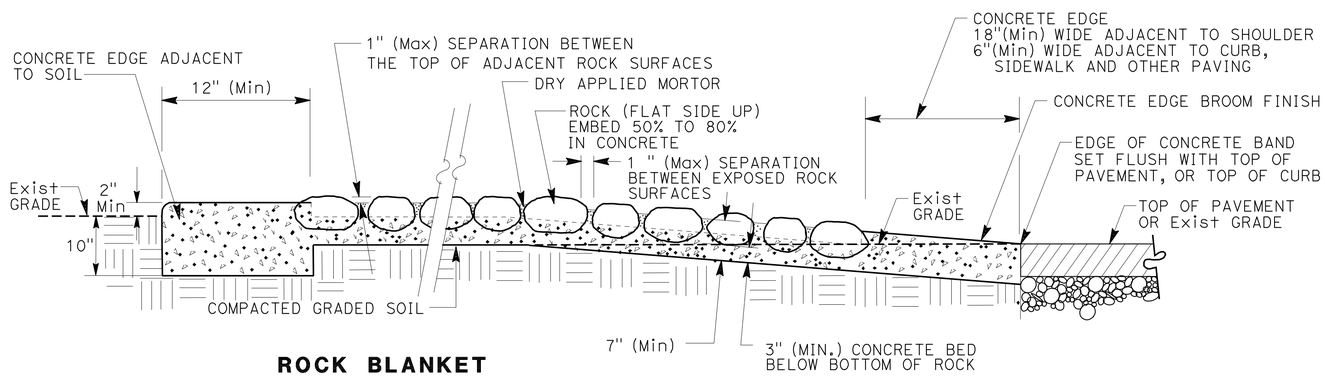
PLANT GROUP	PLANT No.	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY EACH (SQYD)	HOLE SIZE (INCH) Dia	HOLE SIZE (INCH) DEPTH	BASIN TYPE	IRON SULFATE	SOIL AMEND	COMMERCIAL FERTILIZER ① PLANTING	COMMERCIAL FERTILIZER ① PLT ESTB	BASIN MULCH	STAKING	PLANTING LIMITS MINIMUM DISTANCE (Ft) FROM TRVD WAY	PVMT	FENCE	WALL	PAVED DITCH	EARTH DITCH	ON CENTER (Ft)	REMARKS
A	1		MYOPORUM PARVIFOLIUM	PROSTRATE MYOPORUM	1 gal	860	12	12	II	-	0.4 CF	4 Oz	4 Oz	0.4 CF	-	-	3	4	4	4	4	5	GROUNDCOVER ⑨
B	2	⊕	RHUS INTEGRIFOLIA	LEMONADE BERRY	5 gal	19	16	16	II	-	0.7 CF	4 Oz	4 Oz	0.7 CF	-	-	4	5	5	-	-	④	SHRUB ⑨
T	3		FESTUCA RUBRA 'MOLATE' NASELLA PULCHRA HORDEUM CALIFORNICUM HOROEUM BRANCHYANTHERUM	MOLATE RED FESCUE PURPLE NEEDLEGRASS CALIFORNIA BARLEY MEADOW BARLEY	SOD	1360	-	-	-	-	-	0.21lb/ SQYD	-	-	-	-	-	-	-	-	-	-	⑦ ⑧

NOTE:
Underlined portions of botanical name indicate abbreviations used on Planting Plans.

APPLICABLE WHEN CIRCLED:
① - Quantities shown are "per plant" unless shown as SQFT or SQYD application rates.
2 - Sufficient to receive root ball.
3 - Does not apply to mulch areas.
④ - As shown on plans.
5 - Unless otherwise shown on plans.
⑥ - See detail.
⑦ - See Special Provisions.
⑧ - apply Weed Germination within the area, see Special Provision for pesticide.
⑨ - Provide 2" thick layer of mulch outside of planting basin area.

CONSTRUCTION LEGEND

DESCRIPTION	QUANTITY
ROCK BLANKET ⑥	3990 SQYD
EROSION CONTROL (COMPOST BLANKET) ⑦ ⑧	309 CY
REMOVE EXISTING TREE	N/A



ROCK BLANKET

NO SCALE

PLANT LIST AND DETAILS
PL-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
SENIOR LANDSCAPE ARCHITECT ERIC DICKSON
CALCULATED-DESIGNED BY STEPHEN SU
CHECKED BY STEPHEN SU
REVISED BY
DATE REVISED

LAST REVISION 09-01-10
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 14:23

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	267	515

12-23-11
LICENSED LANDSCAPE ARCHITECT

4-9-12
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
STEPHEN SHUN-MIN SU
NO. 4838
Signature
9-30-13
Renewal Date
12-23-11
Date
STATE OF CALIFORNIA

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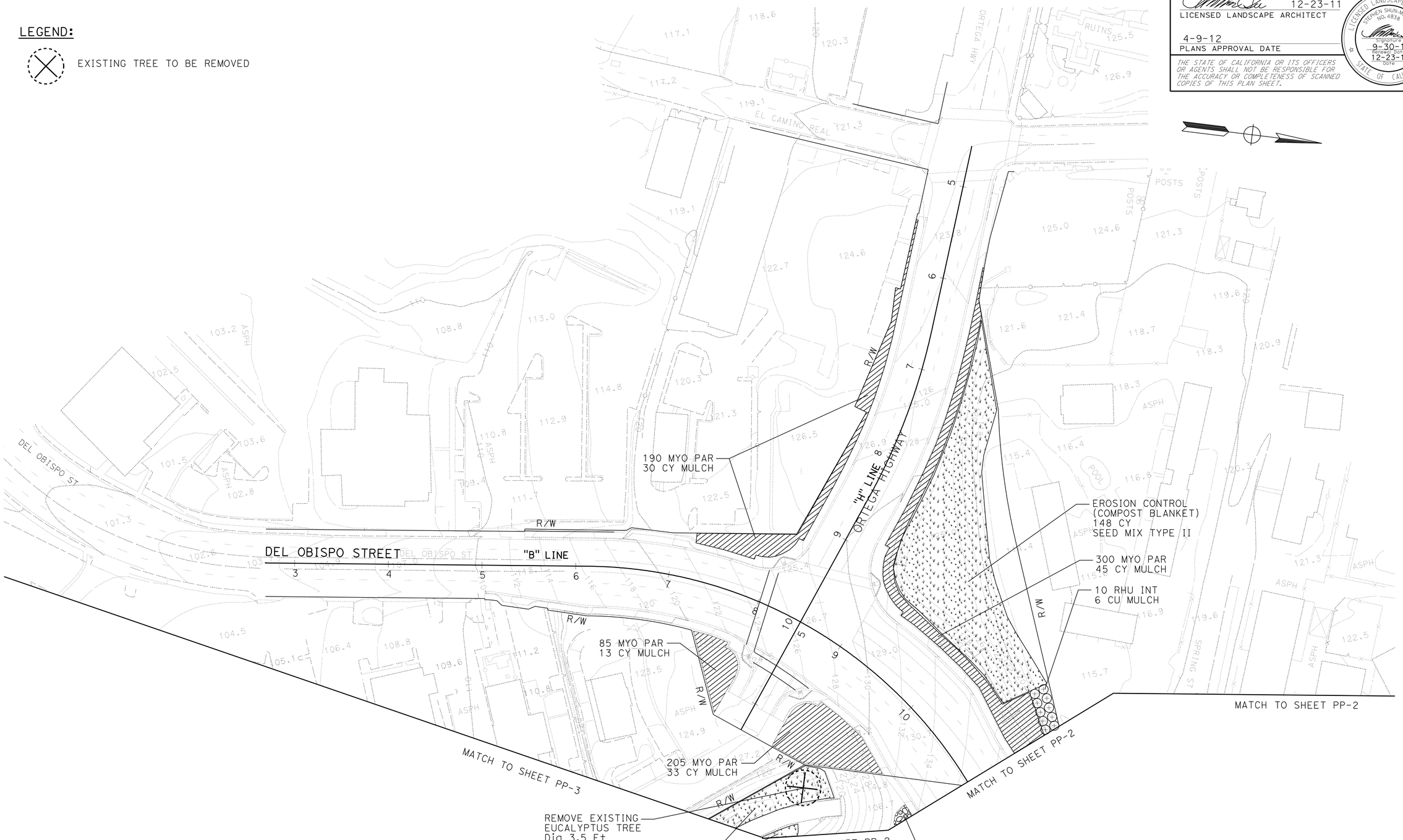
LEGEND:

EXISTING TREE TO BE REMOVED



APPROVED FOR PLANTING WORK ONLY

PLANTING PLAN

SCALE : 1"=50'

PP-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT: ERIC DICKSON

CALCULATED-DESIGNED BY: STEPHEN SU
CHECKED BY: STEPHEN SU

REVISED BY | DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 14:32

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	268	515

12-23-11
LICENSED LANDSCAPE ARCHITECT

4-9-12
PLANS APPROVAL DATE

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LICENSED LANDSCAPE ARCHITECT
STEPHEN SHUN-MIN SU
NO. 4838
Signature
9-30-13
Renewal Date
12-23-11
Date
STATE OF CALIFORNIA

NOTE: FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

APPROVED FOR PLANTING WORK ONLY

PLANTING PLAN PP-2

SCALE : 1"=50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT: ERIC DICKSON

CALCULATED-DESIGNED BY: STEPHEN SU
CHECKED BY: STEPHEN SU

REVISED BY
DATE REVISED

LAST REVISION: 00-00-00
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 14:32

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	269	515

12-23-11
LICENSED LANDSCAPE ARCHITECT

4-9-12
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
STEPHEN SHUN-MIN SU
NO. 4838
Signature
9-30-13
Renewal Date
12-23-11
Date
STATE OF CALIFORNIA

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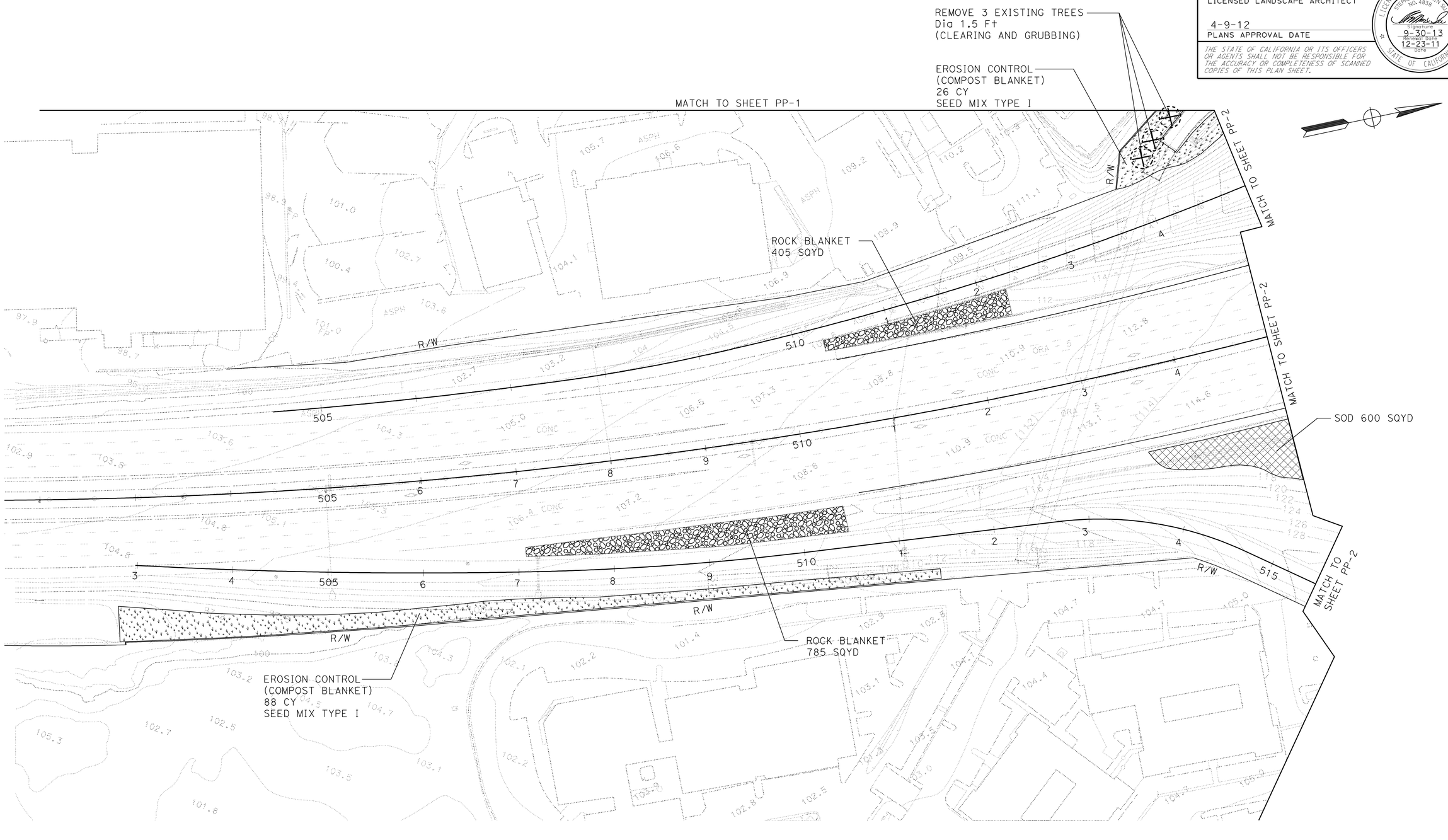

APPROVED FOR PLANTING WORK ONLY

PLANTING PLAN

SCALE : 1"=50'

PP-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT: ERIC DICKSON

CALCULATED-DESIGNED BY: STEPHEN SU
CHECKED BY: STEPHEN SU

REVISED BY | DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 14:32

NOTE: FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	270	515

12-23-11
LICENSED LANDSCAPE ARCHITECT

4-9-12
PLANS APPROVAL DATE

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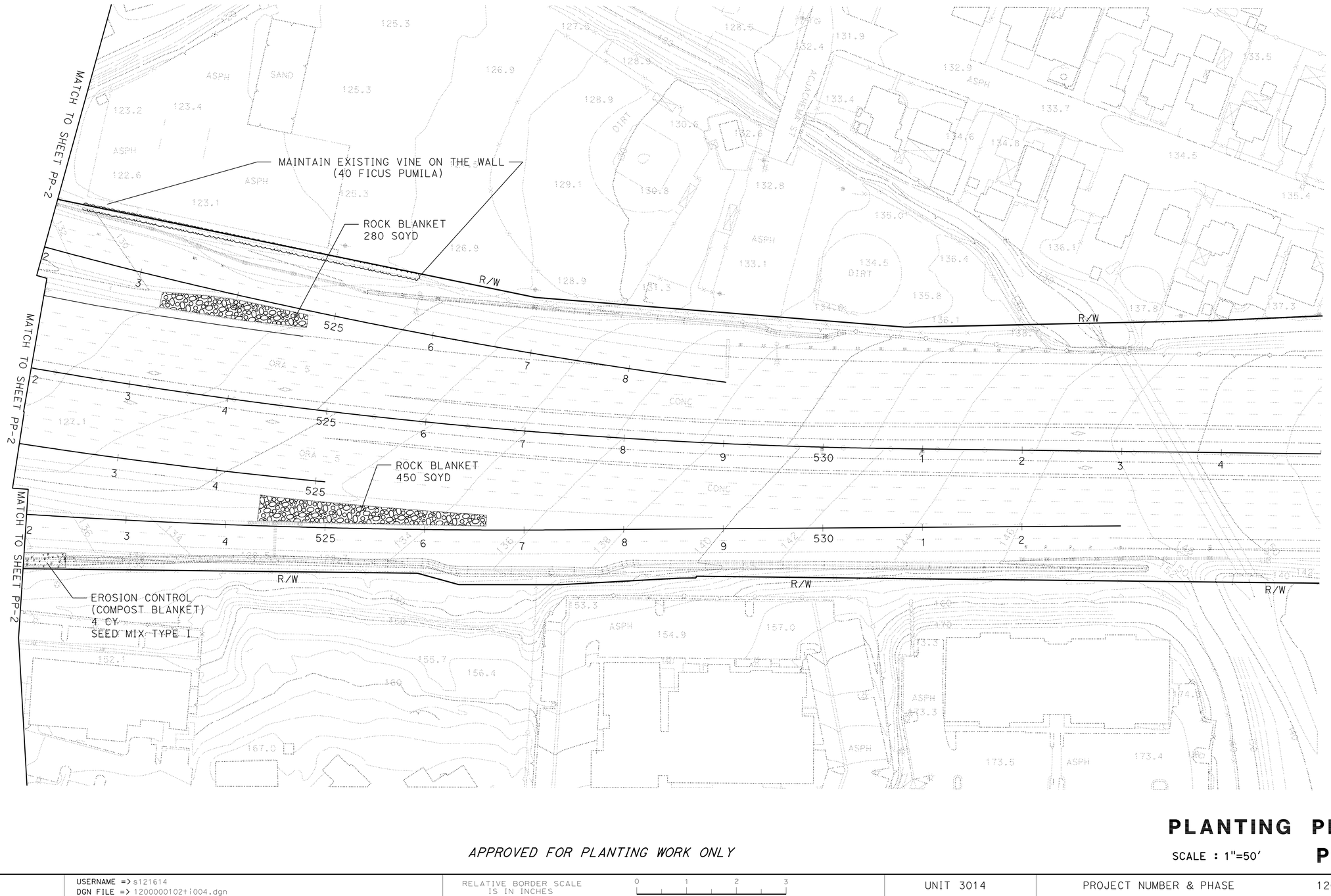
LICENSED LANDSCAPE ARCHITECT
STEPHEN SHUN-MIN SU
NO. 4838
Signature
9-30-13
Renewal Date
12-23-11
Date
STATE OF CALIFORNIA



APPROVED FOR PLANTING WORK ONLY

PLANTING PLAN

SCALE : 1"=50'

PP-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT: ERIC DICKSON

CALCULATED-DESIGNED BY: STEPHEN SU
CHECKED BY: STEPHEN SU
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 14:32

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	271	515

12-23-11
LICENSED LANDSCAPE ARCHITECT

4-9-12
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT STEPHEN SHUN-MIN SU NO. 4838 Signature 9-30-13 Renewal Date 12-23-11 Date STATE OF CALIFORNIA

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NOTE: FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

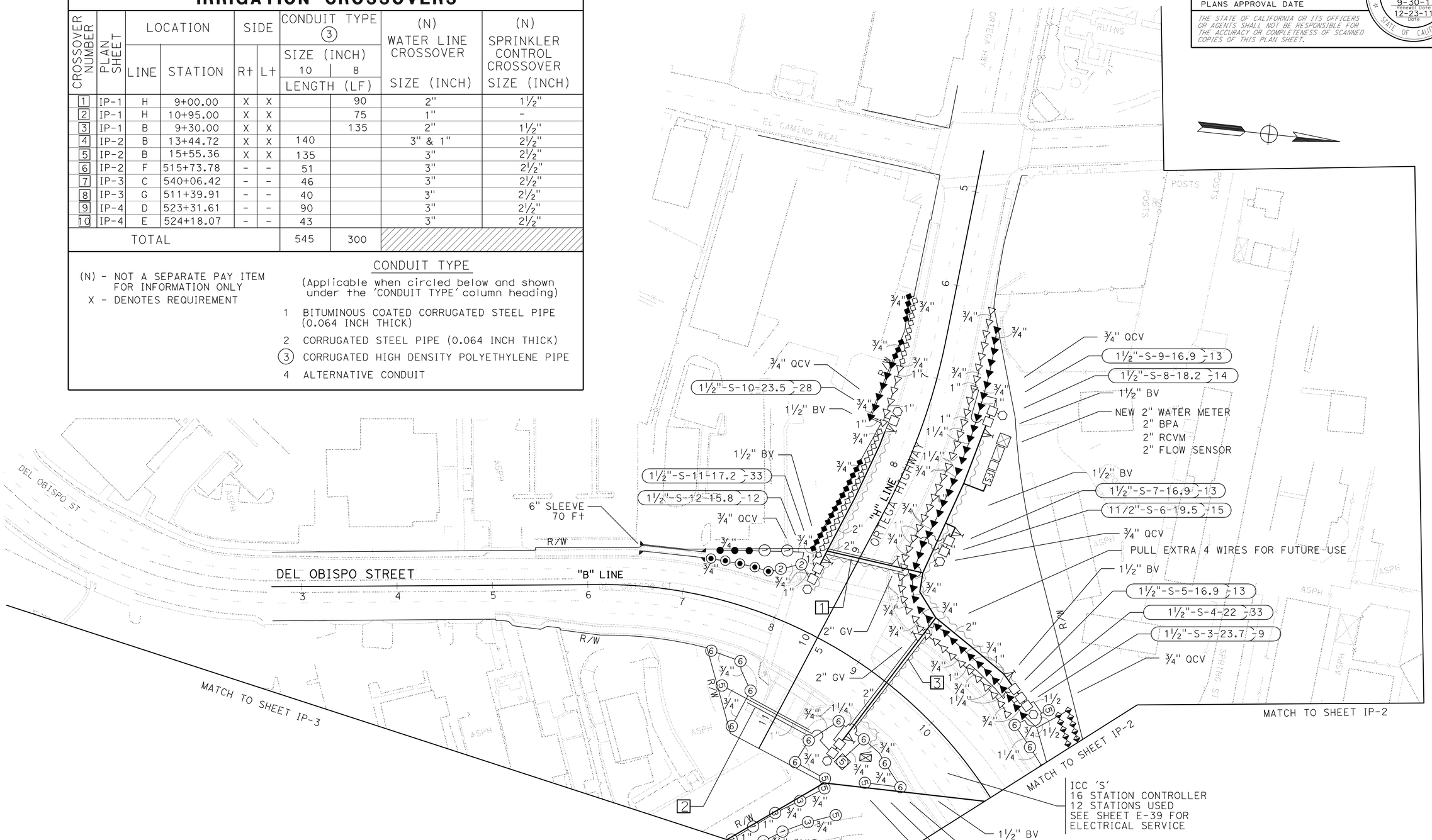
IRRIGATION CROSSOVERS

CROSSOVER NUMBER	PLAN SHEET	LOCATION LINE	LOCATION STATION	SIDE R+	SIDE L+	CONDUIT TYPE (3) SIZE (INCH) 10 LENGTH (LF)	CONDUIT TYPE (3) SIZE (INCH) 8 LENGTH (LF)	(N) WATER LINE CROSSOVER SIZE (INCH)	(N) SPRINKLER CONTROL CROSSOVER SIZE (INCH)
1	IP-1	H	9+00.00	X	X		90	2"	1½"
2	IP-1	H	10+95.00	X	X		75	1"	-
3	IP-1	B	9+30.00	X	X		135	2"	1½"
4	IP-2	B	13+44.72	X	X	140		3" & 1"	2½"
5	IP-2	B	15+55.36	X	X	135		3"	2½"
6	IP-2	F	515+73.78	-	-	51		3"	2½"
7	IP-3	C	540+06.42	-	-	46		3"	2½"
8	IP-3	G	511+39.91	-	-	40		3"	2½"
9	IP-4	D	523+31.61	-	-	90		3"	2½"
10	IP-4	E	524+18.07	-	-	43		3"	2½"
TOTAL						545	300		

(N) - NOT A SEPARATE PAY ITEM FOR INFORMATION ONLY
X - DENOTES REQUIREMENT

CONDUIT TYPE
(Applicable when circled below and shown under the 'CONDUIT TYPE' column heading)

1 BITUMINOUS COATED CORRUGATED STEEL PIPE (0.064 INCH THICK)
2 CORRUGATED STEEL PIPE (0.064 INCH THICK)
(3) CORRUGATED HIGH DENSITY POLYETHYLENE PIPE
4 ALTERNATIVE CONDUIT



APPROVED FOR IRRIGATION WORK ONLY

IRRIGATION PLAN
SCALE : 1"=50'
IP-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
SENIOR LANDSCAPE ARCHITECT ERIC DICKSON
CALCULATED-DESIGNED BY STEPHEN SU
CHECKED BY STEPHEN SU
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 14:33

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	272	515

12-23-11
LICENSED LANDSCAPE ARCHITECT

4-9-12
PLANS APPROVAL DATE

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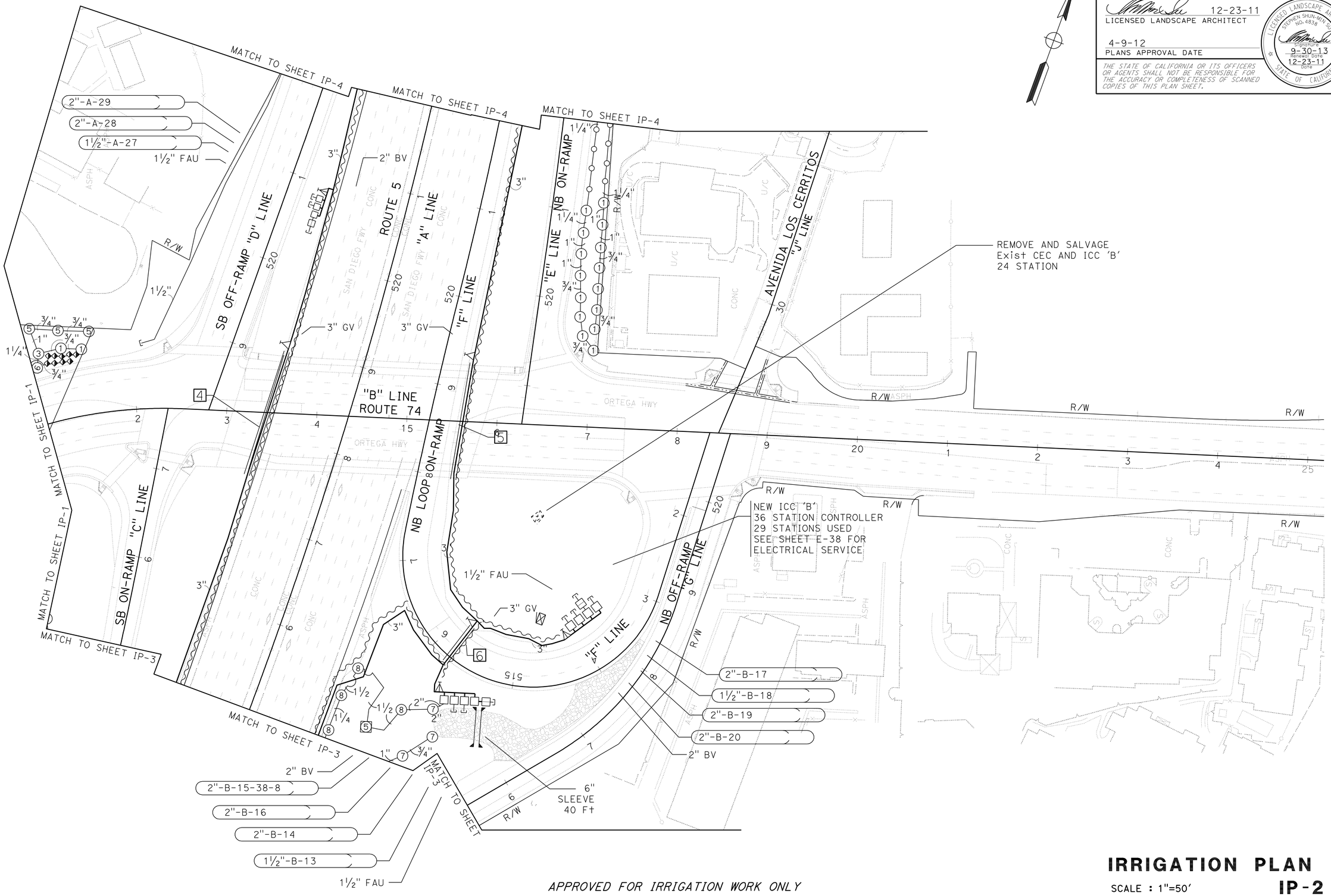
LICENSED LANDSCAPE ARCHITECT
STEPHEN SHUN-MIN SU
NO. 4838
Signature
9-30-13
Renewal Date
12-23-11
Date
STATE OF CALIFORNIA

NOTE: FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



APPROVED FOR IRRIGATION WORK ONLY

IRRIGATION PLAN

SCALE : 1"=50'

IP-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT: ERIC DICKSON

CALCULATED-DESIGNED BY: STEPHEN SU
CHECKED BY: STEPHEN SU
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 14:33

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	273	515

12-23-11
LICENSED LANDSCAPE ARCHITECT

4-9-12
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
STEPHEN SHUN-MIN SU
NO. 4838
Signature
9-30-13
Renewal Date
12-23-11
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STATE OF CALIFORNIA

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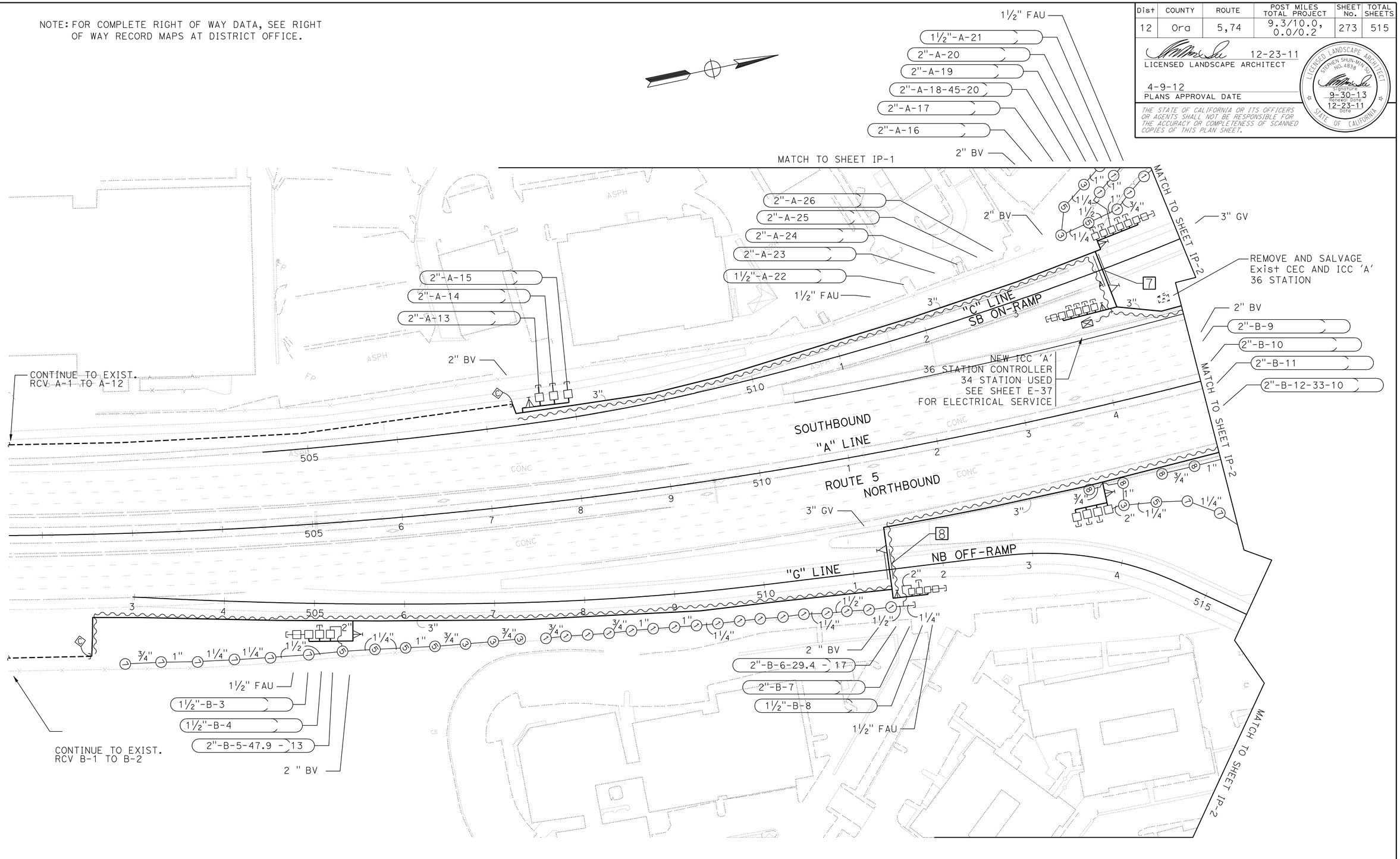

APPROVED FOR IRRIGATION WORK ONLY

IRRIGATION PLAN

SCALE : 1"=50'

IP-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT: ERIC DICKSON

CALCULATED-DESIGNED BY: STEPHEN SU
CHECKED BY: STEPHEN SU
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 14:33

NOTE: FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	274	515

12-23-11
LICENSED LANDSCAPE ARCHITECT

4-9-12
PLANS APPROVAL DATE

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LICENSED LANDSCAPE ARCHITECT
STEPHEN SHUN-MIN SU
NO. 4838
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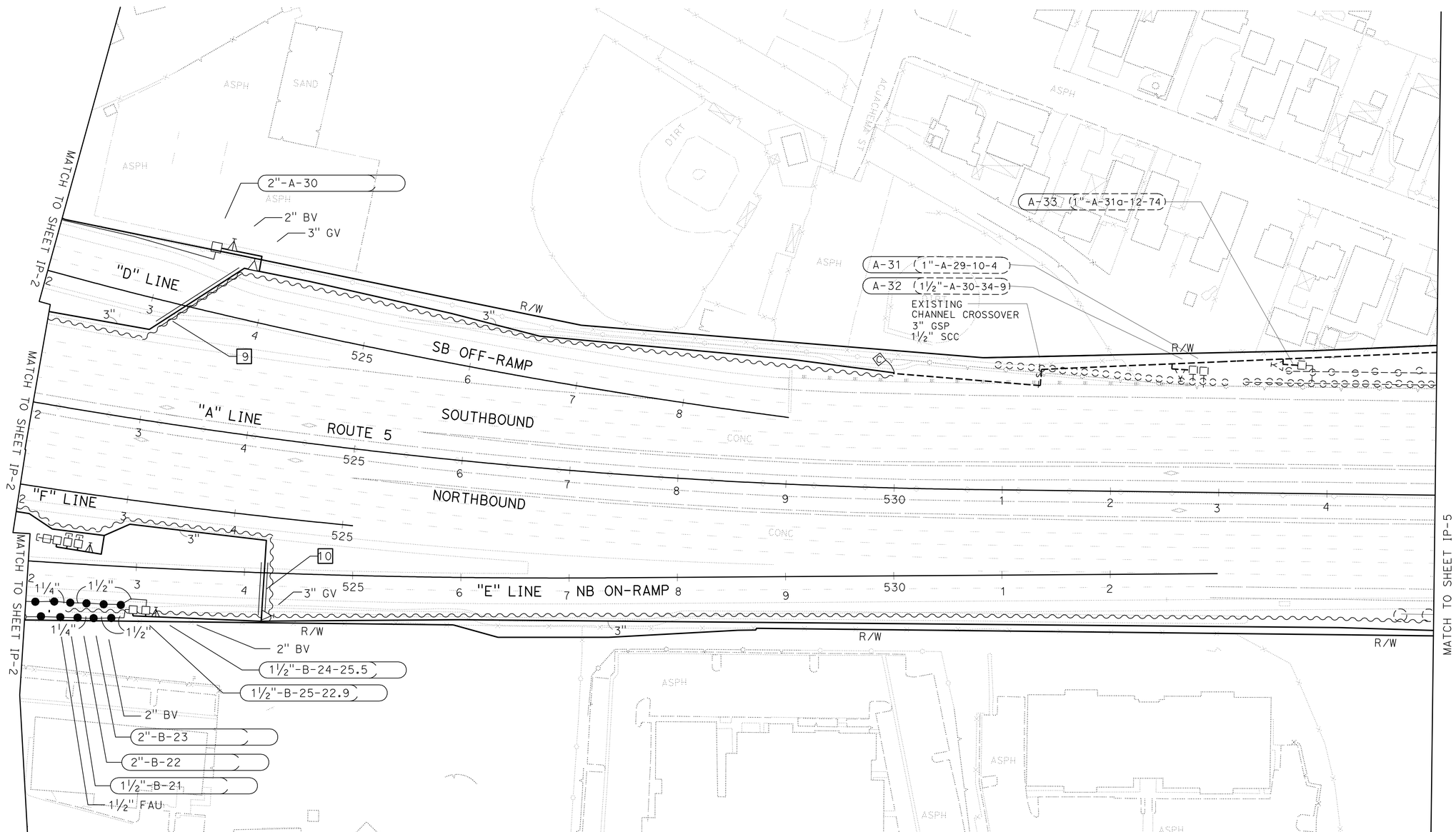

APPROVED FOR IRRIGATION WORK ONLY

IRRIGATION PLAN

SCALE : 1"=50'

IP-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT: ERIC DICKSON

CALCULATED-DESIGNED BY: STEPHEN SU
CHECKED BY: STEPHEN SU

REVISED BY | DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 15-APR-2012 | TIME PLOTTED => 14:33

NOTE: FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	275	515

12-23-11
LICENSED LANDSCAPE ARCHITECT

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STEPHEN SHUN-MIN SU
NO. 4838
Signature
9-30-13
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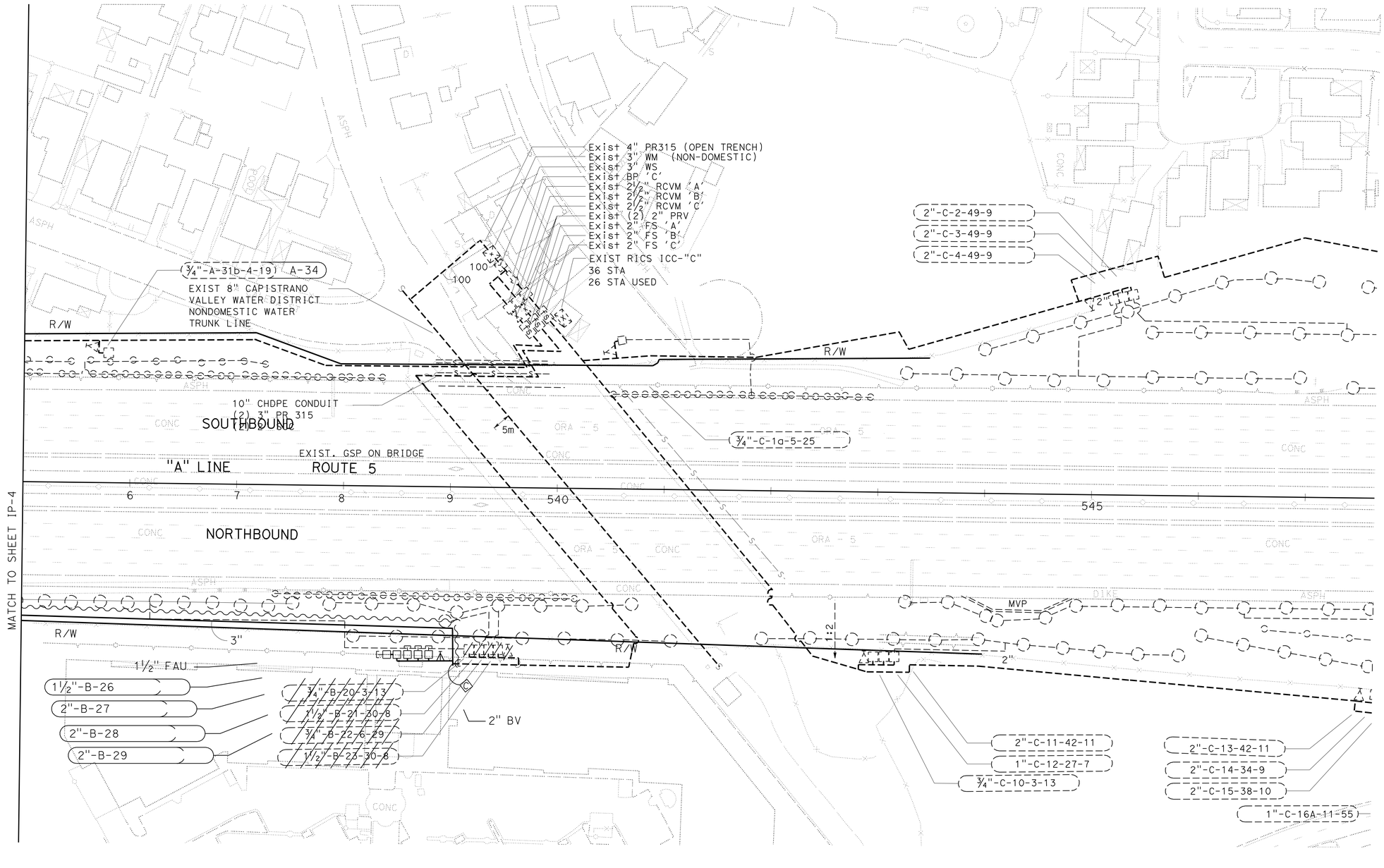
12-23-11
Date
STATE OF CALIFORNIA



APPROVED FOR IRRIGATION WORK ONLY

IRRIGATION PLAN

SCALE : 1"=50'

IP-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT: ERIC DICKSON

CALCULATED-DESIGNED BY: STEPHEN SU
CHECKED BY: STEPHEN SU
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 14:33

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	276	515

12-23-11
LICENSED LANDSCAPE ARCHITECT

4-9-12
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT STEPHEN SHUN-MIN SU NO. 4838 Signature 9-30-13 Renewal Date 12-23-11 Date STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

SPRINKLER SCHEDULE

SYMBOL	TYPE	DESCRIPTION	SPRAY PATTERN	OPERATING PRESSURE (PSI)	PRESSURE COMPENSATING	PLUS/MINUS 5% ② DISCHARGE: GALLONS PER MINUTE (GPM)	GALLONS PER HOUR (GPH)	RADIUS (Ft)	WIDTH x LENGTH (Ft)	MATERIAL	NOZZLE SIZE (INCH)	INLET CONNECTION (NPT INCH)	POSITIVE-LOCKING ADJ ARC STOP	BACKSPLASH PREVENTER	DIFFUSER PIN	DISTANCE CONTROL FLAP	ADJ DISCHARGE	RISER: TYPE	MATERIAL: PLASTIC	MATERIAL: GALVANIZED	SIZE (IPS INCH)	HEIGHT (INCH)	FLOW SHUTOFF DEVICE	⑤ SWING JOINT (TYPE)	RISER SUPPORT	SPRINKLER PROTECTOR (TYPE)	REMARKS
①	A-1	Gear driven	H/T/Q	35	X	1.73/1.21/0.88		24		PL		¾"						IV	X		¾"	16"		I		--	
②	A-2	12" Pop-up Gear driven	H/T/Q	35	X	1.73/1.21/0.88		24		PL		¾"						--	--		--	--		I		--	
③	A-3	Gear driven	H/T/Q	35	X	2.59/1.62/1.23		30		PL		¾"						IV	X		¾"	16"		I		--	
⑤	A-5	Gear driven	H/T/Q	35	X	3.33/2.15/1.67		34		PL		¾"						IV	X		¾"	16"		I		--	
⑥	A-6	12" Pop-up Gear driven	H/T/Q	35	X	3.33/2.15/1.67		34		PL		¾"						--	X		¾"	16"		I		--	
[5]	A-5	Gear driven	F	35	X	6.62		34		PL		¾"						IV	X		¾"	16"		I		--	
⑦	A-7	Gear driven	P	35	X	4.47		41		PL		¾"						IV	X		¾"	16"		I		--	
⑧	A-8	12" Pop-up Gear driven	P	35	X	4.47		41		PL		¾"						--	--		--	--		I		II	
○	B-1	Rotary Spray	H/T/Q	35	X	1.62/1.08/0.81		22		PL		½"						IV	X		½"	12"		I		--	
◉	B-2	12" Pop-up Rotary Spray	H/T/Q	35	X	0.86/0.58/0.43		16		PL		½"						--	X		½"	12"		I		--	
●	B-3	Rotary Spray	H/T/Q	35	X	0.86/0.58/0.43		16		PL		½"						IV	X		½"	12"		I		--	
△	B-4	12" Pop-up Spray	H/Q	30		1.30/0.65		12		PL		½"						--	X		½"	12"		I		--	
▲	B-5	Spray	H/Q	30		1.30/0.65		12		PL		½"						IV	X		½"	12"		I		--	
◇	B-6	12" Pop-up Spray	H/Q	30		0.52/0.26		8		PL		½"						--	X		½"	12"		I		--	
◆	B-7	Spray	H/Q	30		0.52/0.26		8		PL		½"						IV	X		½"	12"		I		--	
◐	C-3	Stream Bubbler	H/Q	30		0.2		5		PL		½"						IV	X		½"	6"		I		--	

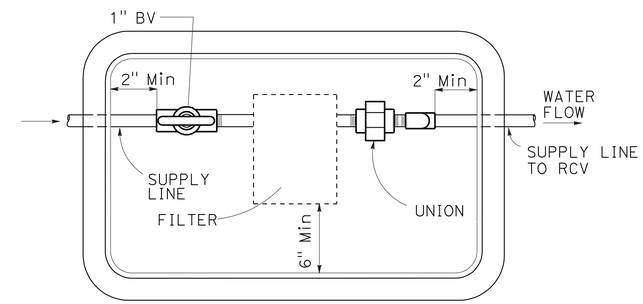
ABBREVIATIONS

F — full circle
P — part circle
F/P — full/part circle
Q — quarter circle
T — third circle
H — half circle
TT — two third circle
TQ — three quarter circle
CST — center strip
SST — side strip
EST — end strip
Ft — feet/foot
GPM — gallons per minute
GPH — gallons per hour
Adj — adjustable
PL — plastic
B/B — brass/bronze
B/PL — brass/plastic
B/B/PL — brass/bronze/plastic
NPT — national pipe thread
IPS — iron pipe size
PSI — pounds per square inch

X IN BOX DENOTES REQUIREMENT

APPLICABLE WHEN CIRCLED BELOW:

1 - See Special Provisions.
② - If a pressure compensating device is specified, the discharge and radii shown reflect its use.
3 - Arc Stop shall be fitted with a nut and bolt.
4 - Vinyl-coated cast iron housing.
⑤ - Swing Joints required adjacent to shoulders, curbs, sidewalks, and dikes.
6 - Unless otherwise shown on plans.



TOP OF FILTER SHALL BE 2" BELOW VALVE BOX COVER

PLAN VIEW

FILTER ASSEMBLY UNIT

NO SCALE

APPROVED FOR IRRIGATION WORK ONLY

SPRINKLER SCHEDULE AND DETAIL

NO SCALE

LD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE
SENIOR LANDSCAPE ARCHITECT: ERIC DICKSON
CALCULATED-DESIGNED BY: STEPHEN SU
CHECKED BY: STEPHEN SU
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 15-APR-2012
TIME PLOTTED => 14:33

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	277	515

Vanessa Van Truong 03-19-12
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

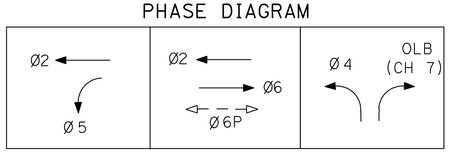
REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp. 6/30/12 ELECTRICAL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

PHASE DIAGRAM



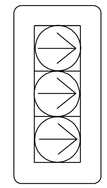
EXISTING POLE AND EQUIPMENT SCHEDULE

No.	STANDARD Type	SMA	LMA	VEH SIG MTG Mast Arm	Pole	PED SIGNAL MTG	PPB Ø	ARROW	HPS LUMINAIRE	SNS
A	III	18′	8′	MAS	SV-2-TA	-	-	-	250 W	-
B	1-A	-	-	-	TV-1-T	-	-	-	-	-
C	17	20′	8′	MAS	SV-1-T	-	-	-	250 W	ORTEGA Hwy
D	III (R) (**)	18′	8′	MAS(R)	SV-1-T(R)	SP-1-T(*)	-	-	250 W(*)	(*)DEL OBISPO →
E	1-A (R)	-	-	-	TV-1-T(R)	-	6(*) →		-	-
F	PPB POST	-	-	-	-	-	6 ←		-	-
G	1-A 7′	-	-	-	-	TP-1-T	-	-	-	-
H	33 (**)	12′	-	MAS	SV-1-T	-	-	-	-	← DEL OBISPO
I J	EXISTING PHOTO ENFORCEMENT POLES (**)									

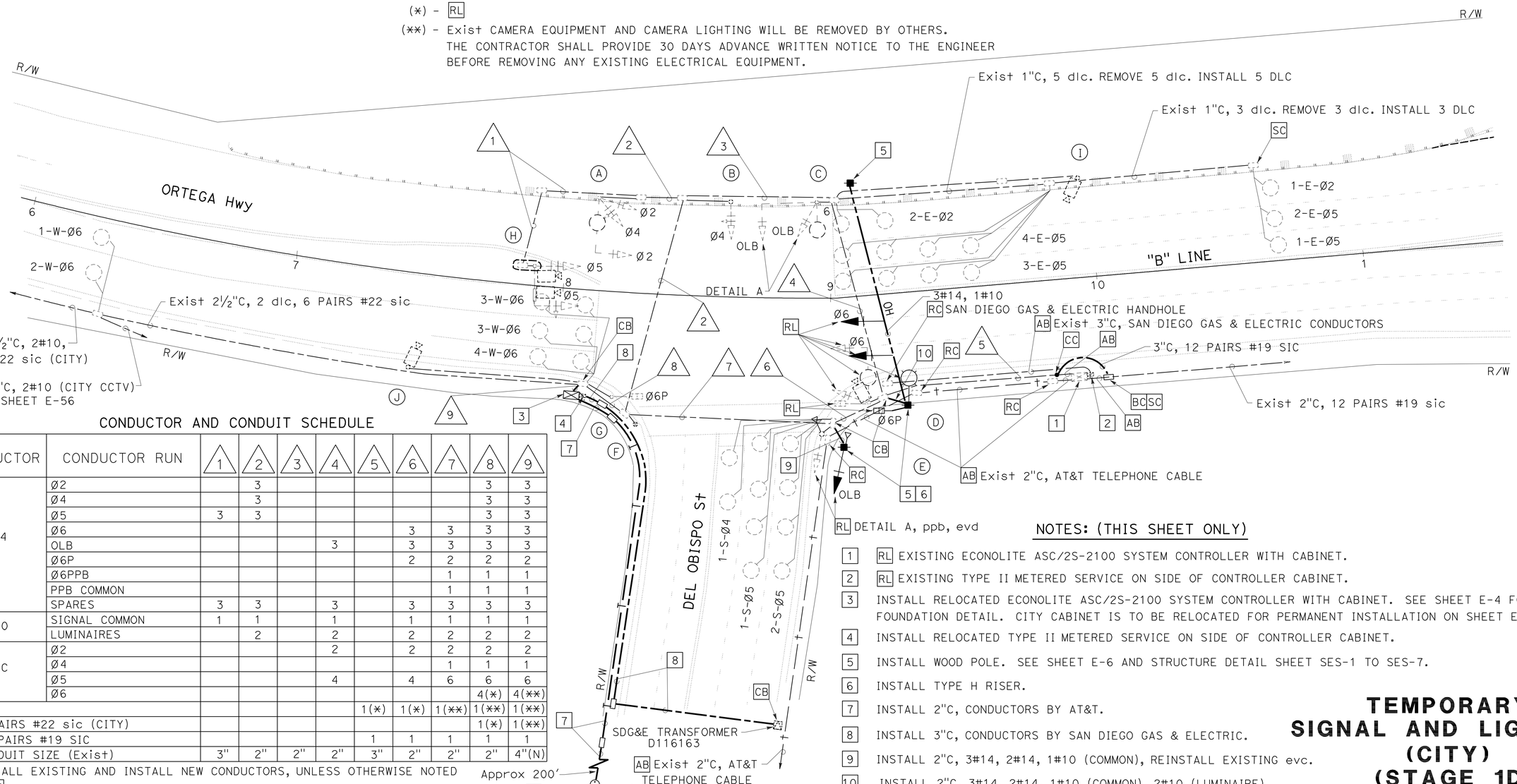
(R) - RC

(*) - RL

(**) - Exist CAMERA EQUIPMENT AND CAMERA LIGHTING WILL BE REMOVED BY OTHERS. THE CONTRACTOR SHALL PROVIDE 30 DAYS ADVANCE WRITTEN NOTICE TO THE ENGINEER BEFORE REMOVING ANY EXISTING ELECTRICAL EQUIPMENT.



DETAIL A
NTS



CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6	7	8	9
#14	Ø2		3						3	3
	Ø4		3						3	3
	Ø5	3	3						3	3
	Ø6						3	3	3	3
	OLB				3		3	3	3	3
	Ø6P						2	2	2	2
	Ø6PPB							1	1	1
	PPB COMMON							1	1	1
	SPARES	3	3		3		3	3	3	3
#10	SIGNAL COMMON	1	1		1		1	1	1	1
	LUMINAIRES		2		2		2	2	2	2
DLC	Ø2				2		2	2	2	2
	Ø4							1	1	1
	Ø5				4		4	6	6	6
	Ø6								4(*)	4(**)
evc						1(*)	1(*)	1(**)	1(**)	1(**)
6 PAIRS #22 sic (CITY)									1(*)	1(**)
12 PAIRS #19 SIC						1	1	1	1	1
CONDUIT SIZE (Exist)		3"	2"	2"	2"	3"	2"	2"	2"	4"(N)

REMOVE ALL EXISTING AND INSTALL NEW CONDUCTORS, UNLESS OTHERWISE NOTED

(*) - RR

(**) - REINSTALL EXISTING CABLE

(N) - NEW

APPROVED FOR ELECTRICAL WORK ONLY

NOTES: (THIS SHEET ONLY)

1. RL EXISTING ECONOLITE ASC/2S-2100 SYSTEM CONTROLLER WITH CABINET.
2. RL EXISTING TYPE II METERED SERVICE ON SIDE OF CONTROLLER CABINET.
3. INSTALL RELOCATED ECONOLITE ASC/2S-2100 SYSTEM CONTROLLER WITH CABINET. SEE SHEET E-4 FOR FOUNDATION DETAIL. CITY CABINET IS TO BE RELOCATED FOR PERMANENT INSTALLATION ON SHEET E-2.
4. INSTALL RELOCATED TYPE II METERED SERVICE ON SIDE OF CONTROLLER CABINET.
5. INSTALL WOOD POLE. SEE SHEET E-6 AND STRUCTURE DETAIL SHEET SES-1 TO SES-7.
6. INSTALL TYPE H RISER.
7. INSTALL 2"C, CONDUCTORS BY AT&T.
8. INSTALL 3"C, CONDUCTORS BY SAN DIEGO GAS & ELECTRIC.
9. INSTALL 2"C, 3#14, 2#14, 1#10 (COMMON), REINSTALL EXISTING evc.
10. INSTALL 2"C, 3#14, 2#14, 1#10 (COMMON), 2#10 (LUMINAIRE).
11. RC ALL EQUIPMENT AFTER TEMPORARY STAGING IS FINISHED, UNLESS OTHERWISE NOTED.

TEMPORARY SIGNAL AND LIGHTING (CITY) (STAGE 1D)

SCALE: 1" = 20′

E-1

REVISED BY | DATE REVISED
VANESSA TRUONG | SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR | SHAHRAM SHAHRIARI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN

LAST REVISION 03-16-12 | DATE PLOTTED => 16-APR-2012 | TIME PLOTTED => 07:43

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	278	515

Vanessa Van Truong 03-19-12
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp. 6/30/12 ELECTRICAL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

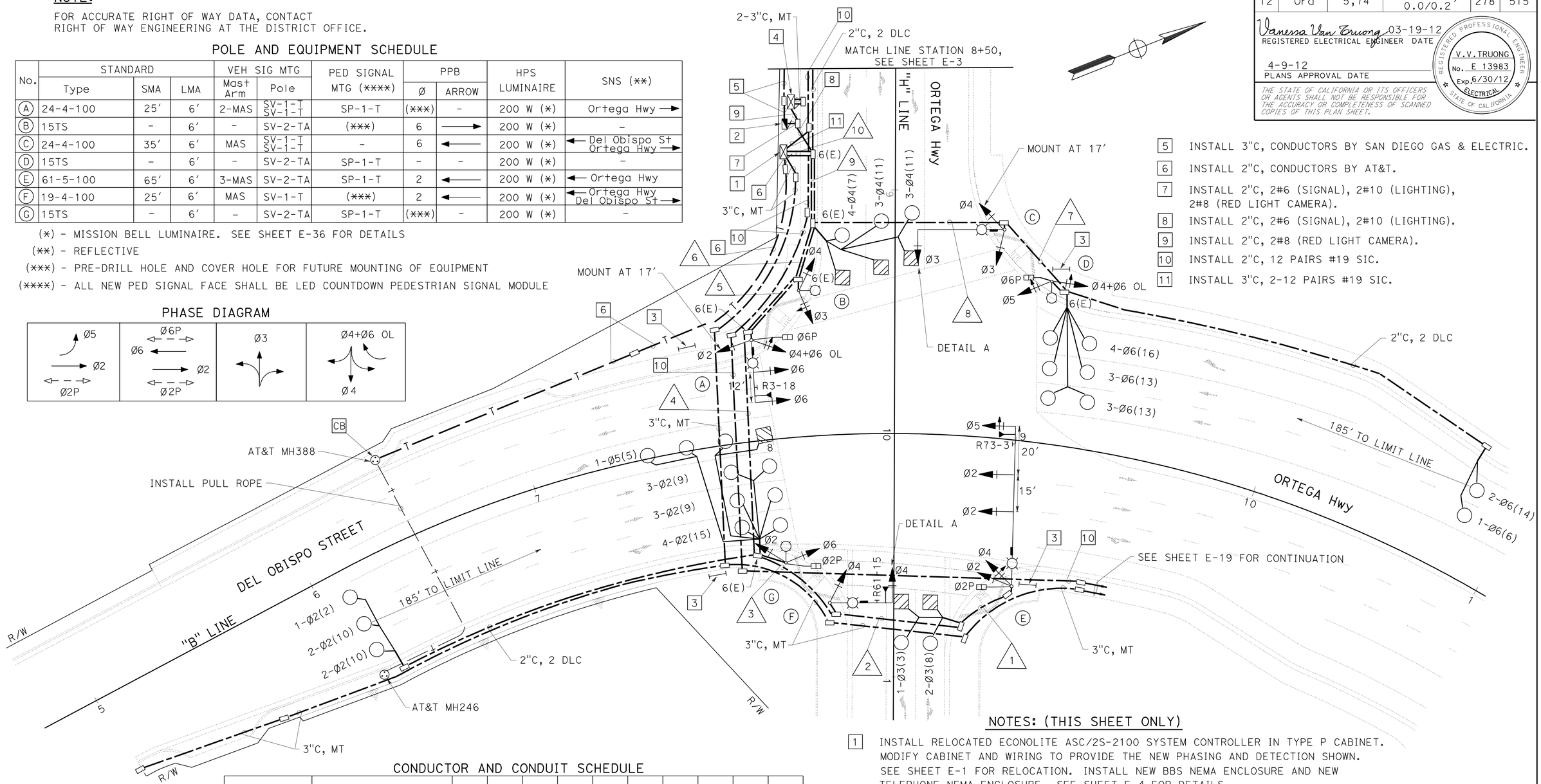
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

POLE AND EQUIPMENT SCHEDULE

No.	STANDARD Type	STANDARD SMA	STANDARD LMA	VEH SIG MTG Mast Arm	VEH SIG MTG Pole	PED SIGNAL MTG (****)	PPB Ø	PPB ARROW	HPS LUMINAIRE	SNS (**)
A	24-4-100	25′	6′	2-MAS	SV-1-T SV-1-T	SP-1-T	(***)	-	200 W (*)	Ortega Hwy →
B	15TS	-	6′	-	SV-2-TA	(***)	6	→	200 W (*)	-
C	24-4-100	35′	6′	MAS	SV-1-T SV-1-T	-	6	←	200 W (*)	← Del Obispo St Ortega Hwy →
D	15TS	-	6′	-	SV-2-TA	SP-1-T	-	-	200 W (*)	-
E	61-5-100	65′	6′	3-MAS	SV-2-TA	SP-1-T	2	←	200 W (*)	← Ortega Hwy
F	19-4-100	25′	6′	MAS	SV-1-T	(***)	2	←	200 W (*)	← Ortega Hwy Del Obispo St →
G	15TS	-	6′	-	SV-2-TA	SP-1-T	(***)	-	200 W (*)	-

(*) - MISSION BELL LUMINAIRE. SEE SHEET E-36 FOR DETAILS
(**) - REFLECTIVE
(***) - PRE-DRILL HOLE AND COVER HOLE FOR FUTURE MOUNTING OF EQUIPMENT
(****) - ALL NEW PED SIGNAL FACE SHALL BE LED COUNTDOWN PEDESTRIAN SIGNAL MODULE

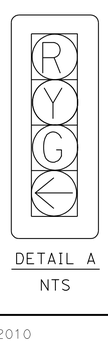
PHASE DIAGRAM



5 INSTALL 3"C, CONDUCTORS BY SAN DIEGO GAS & ELECTRIC.
6 INSTALL 2"C, CONDUCTORS BY AT&T.
7 INSTALL 2"C, 2#6 (SIGNAL), 2#10 (LIGHTING), 2#8 (RED LIGHT CAMERA).
8 INSTALL 2"C, 2#6 (SIGNAL), 2#10 (LIGHTING).
9 INSTALL 2"C, 2#8 (RED LIGHT CAMERA).
10 INSTALL 2"C, 12 PAIRS #19 SIC.
11 INSTALL 3"C, 2-12 PAIRS #19 SIC.

CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6	7	8	9	10
12CSC	VEHICLE SIGNALS	2	2	3	5	7	8	1	2	10	10
3CSC	PPB	1	1	2	3	4	5		1	6	6
#6	SERVICE										2
#10	LUMINAIRE	2	2	2	2	2	2	2	2	2	
DLC	Ø2 DETECTOR				4	4	4			4	4
	Ø3 DETECTOR		2	2	2	2	2			2	2
	Ø4 DETECTOR									2	4
	Ø5 DETECTOR				1	1	1			1	1
	Ø6 DETECTOR							4	4	4	4
EVC		1	1	2	2	3	3			3	3
CONDUIT SIZE		3"	3"	3"	4"	2-4"	2-4"	3"	3"	2-4"	2-4"



DETAIL A
NTS

NOTES: (THIS SHEET ONLY)

1 INSTALL RELOCATED ECONOLITE ASC/2S-2100 SYSTEM CONTROLLER IN TYPE P CABINET. MODIFY CABINET AND WIRING TO PROVIDE THE NEW PHASING AND DETECTION SHOWN. SEE SHEET E-1 FOR RELOCATION. INSTALL NEW BBS NEMA ENCLOSURE AND NEW TELEPHONE NEMA ENCLOSURE. SEE SHEET E-4 FOR DETAILS.

2 INSTALL 120/240 V, METERED SERVICE, TYPE III-BF SERVICE EQUIPMENT ENCLOSURE.
100 A, 240 V, 2P, CB (MAIN)
40 A, 120 V, 1P, CB (SIGNAL)
30 A, 120 V, 1P, CB (RED LIGHT CAMERA)
30 A, 120 V, 1P, CB (LIGHTING)
15 A, 120 V, 1P, CB (SPARE)
15 A, 120 V, 1P, CB (PEC)

3 INSTALL TYPE I PEDESTRIAN BARRICADE WITH 2-SIGN R9-3A AND 2-SIGN R9-3B BACK TO BACK.

4 INSTALL RED-LIGHT CAMERA CONTROLLER CABINET FOUNDATION. SEE SHEET E-4 FOR DETAILS. RED-LIGHT CAMERA CONTROLLER CABINET TO BE INSTALLED BY OTHERS.

SIGNAL AND LIGHTING (CITY)

SCALE: 1" = 20′

APPROVED FOR ELECTRICAL WORK ONLY

E-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 03-16-12
DATE PLOTTED => 16-APR-2012
TIME PLOTTED => 07:43

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	279	515

Vanessa Van Truong 03-19-12
REGISTERED ELECTRICAL ENGINEER DATE

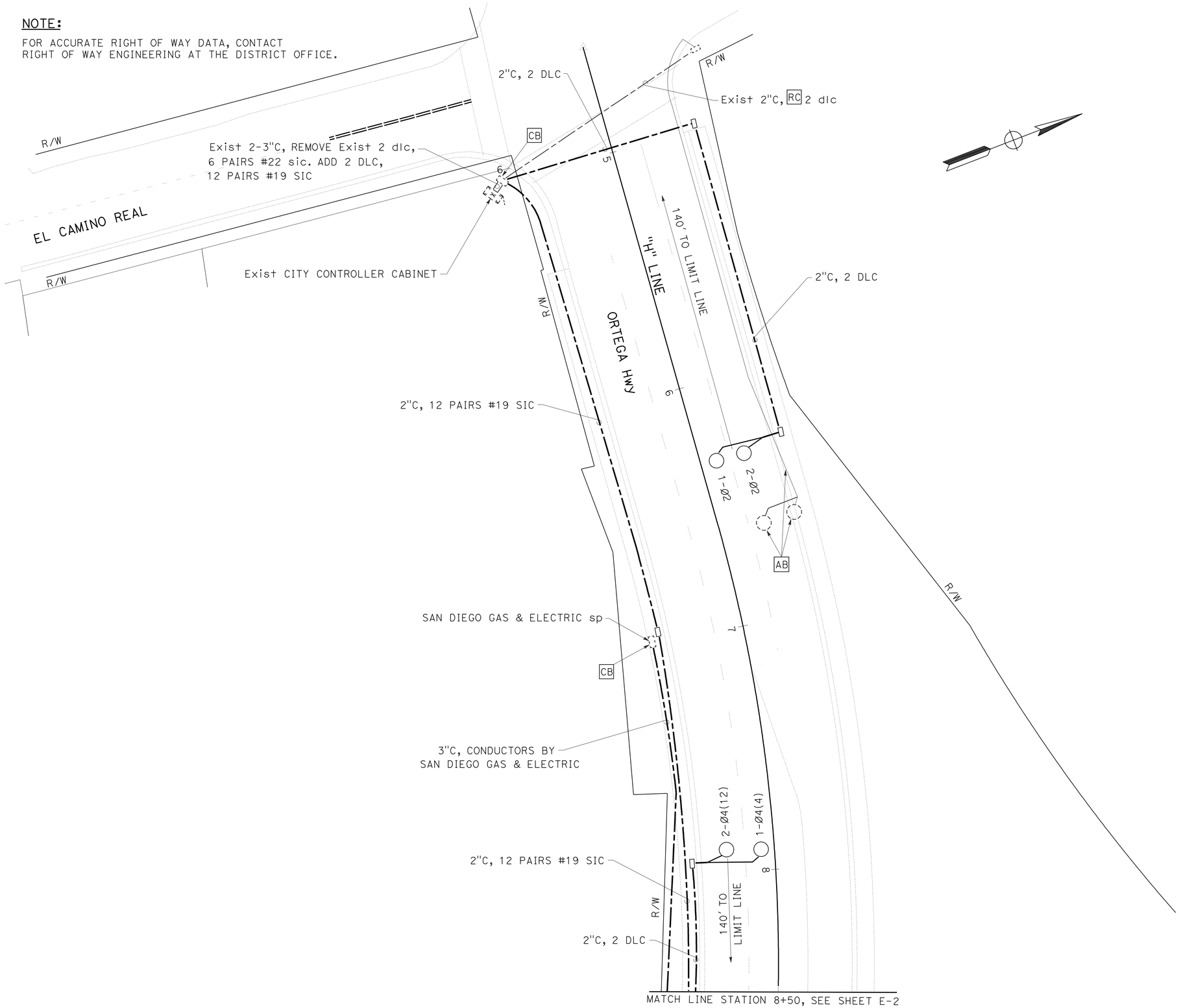
4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
V.V. TRUONG
No. E 13983
Exp. 6/30/12
ELECTRICAL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



APPROVED FOR ELECTRICAL WORK ONLY

SIGNAL AND LIGHTING (CITY)

SCALE: 1" = 20'

E-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® **ELECTRICAL DESIGN**

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 03-16-12
DATE PLOTTED => 16-APR-2012
TIME PLOTTED => 07:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	280	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

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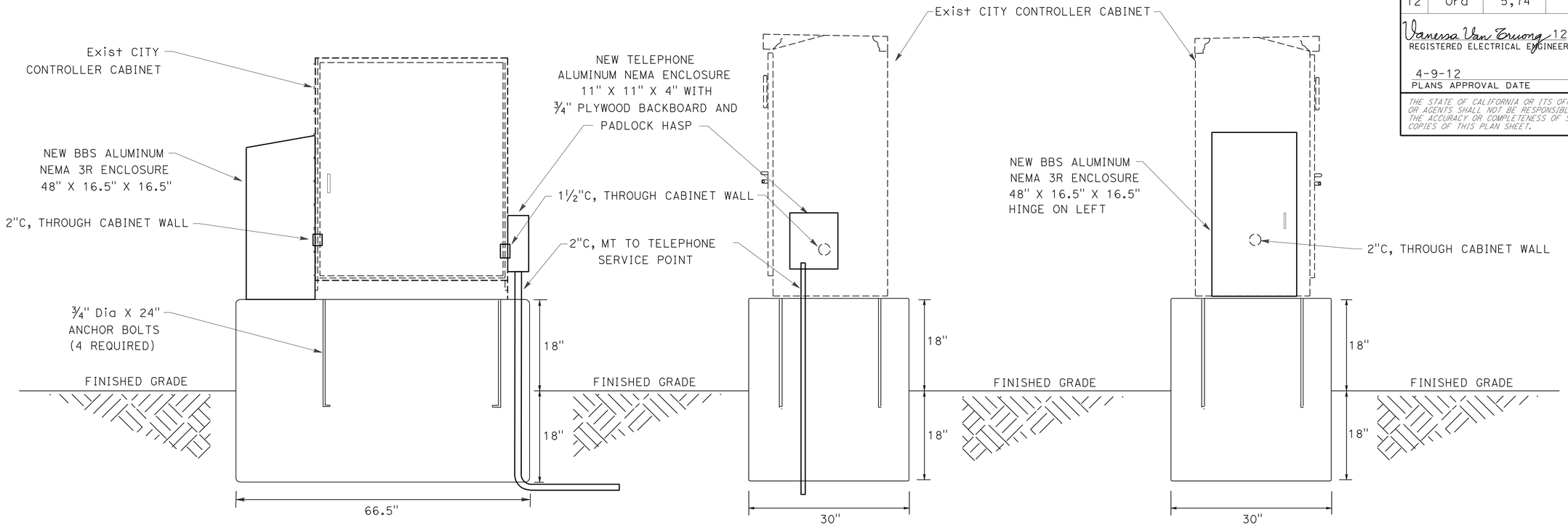
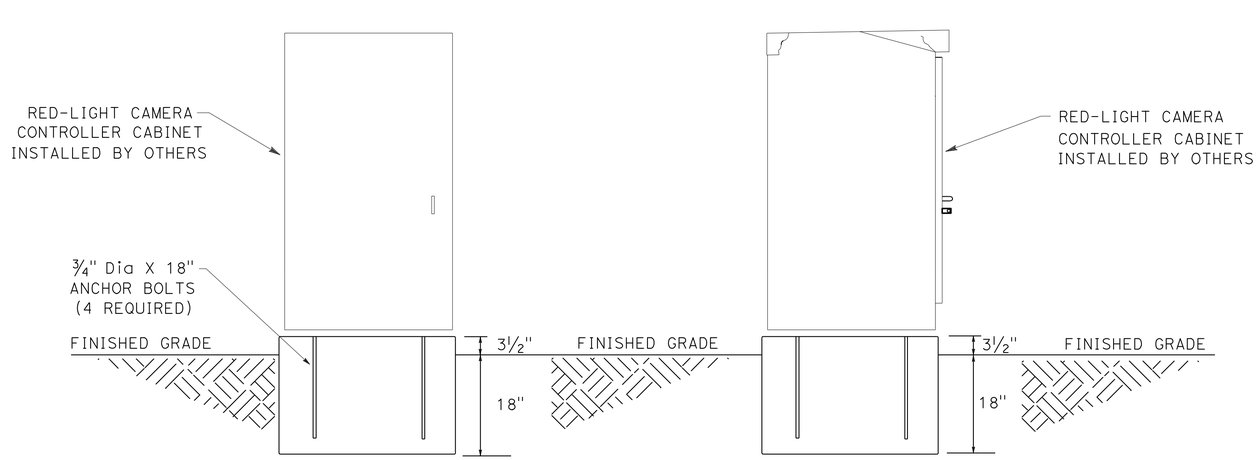


FRONT VIEW
CITY SIGNAL CONTROLLER CABINET

RIGHT SIDE VIEW
CITY SIGNAL CONTROLLER CABINET

LEFT SIDE VIEW
CITY SIGNAL CONTROLLER CABINET

NOTE: FOR ADDITIONAL BBS DETAILS, SEE INFORMATION HANDOUT AS DESCRIBED IN "SUPPLEMENTAL PROJECT INFORMATION"



FRONT VIEW
RED-LIGHT CAMERA CONTROLLER CABINET

SIDE VIEW
RED-LIGHT CAMERA CONTROLLER CABINET

SIGNAL AND LIGHTING (CITY) (CONTROLLER FOUNDATION DETAILS)

NO SCALE

APPROVED FOR ELECTRICAL WORK ONLY

E-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 12-16-11
DATE PLOTTED => 16-APR-2012
TIME PLOTTED => 07:43

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	281	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

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NOTE:

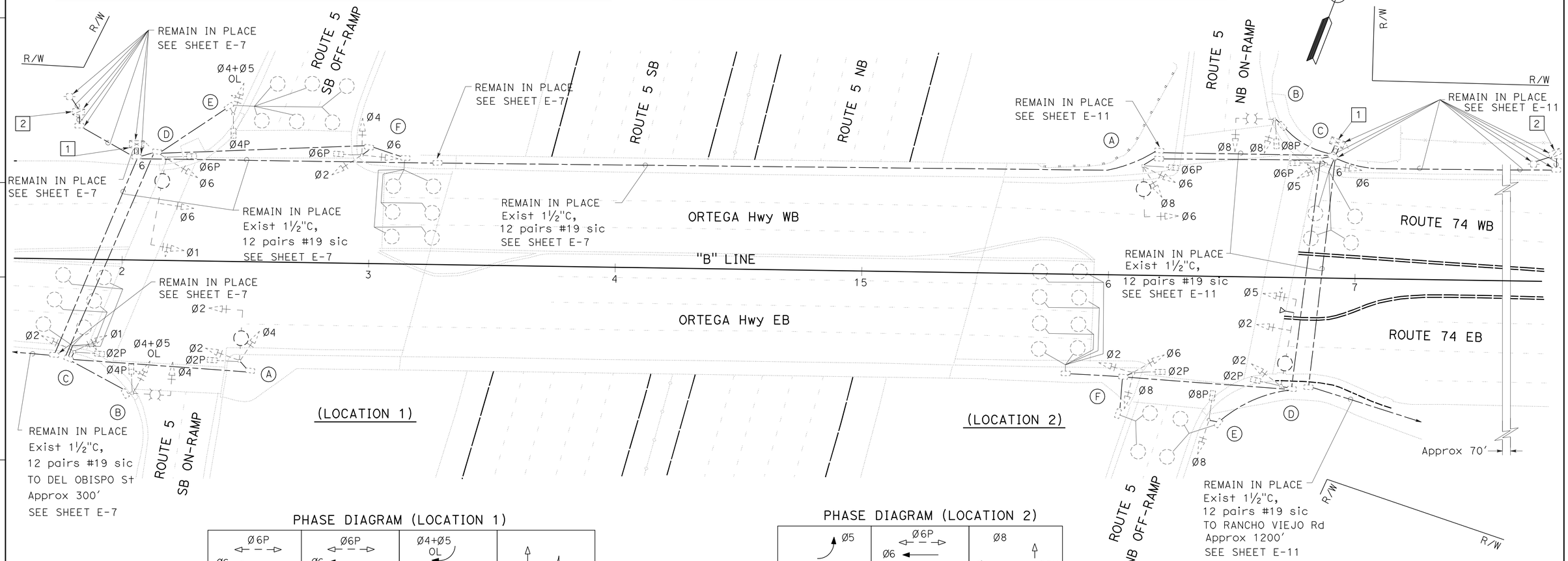
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

EXISTING POLE AND EQUIPMENT SCHEDULE (LOCATION 1)

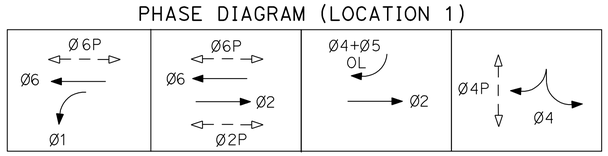
No.	STANDARD			VEH SIG MTG		PED SIGNAL MTG	PPB		HPS LUMINAIRE
	Type	SMA	LMA	Mast Arm	Pole		Ø	ARROW	
A	17-2-70	20′	12′	MAT	SV-2-TA	SP-1-CS	2	←	200 W
B	17-2-70	15′	12′	MAT	SV-1-T	SP-1-CS	2	→	200 W
C	1-A	–	–	–	TV-2-T	SP-1-CS	4	→	–
D	24-3-70	35′	12′	2-MAT	SV-1-T	SP-1-CS	4	←	200 W
E	1-A	–	–	–	TV-1-T	SP-1-CS	6	→	–
F	1-A	–	–	–	TV-3-T	SP-1-CS	6	→	–

EXISTING POLE AND EQUIPMENT SCHEDULE (LOCATION 2)

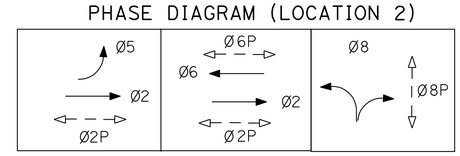
No.	STANDARD			VEH SIG MTG		PED SIGNAL MTG	PPB		HPS LUMINAIRE
	Type	SMA	LMA	Mast Arm	Pole		Ø	ARROW	
A	17-2-70	20′	12′	MAT	SV-2-TA	SP-1-CS	6	→	200 W
B	17-2-70	15′	12′	MAT	SV-1-T	SP-1-CS	6	←	200 W
C	1-A	–	–	–	TV-2-T	SP-1-CS	8	→	–
D	24-3-70	35′	12′	2-MAT	SV-1-T	SP-1-CS	8	←	200 W
E	1-A	–	–	–	TV-1-T	SP-1-CS	2	←	–
F	1-A	–	–	–	TV-3-T	SP-1-CS	2	→	–



PHASE DIAGRAM (LOCATION 1)



PHASE DIAGRAM (LOCATION 2)



NOTES: (THIS SHEET ONLY)

1. EXISTING MODEL 332 CABINET WITH MODEL 170 CONTROLLER AND bbs.
2. EXISTING 120/240 V, METERED SERVICE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
3. RC ALL EXISTING PULL BOXES, SIGNAL POLES, TRAFFIC AND PEDESTRIAN SIGNAL HEADS, ppb, evd, LUMINAIRES AND SIGNS ATTACHED TO POLES, UNLESS OTHERWISE NOTED.
4. AB ALL EXISTING LOOP DETECTORS AND CONDUITS, UNLESS OTHERWISE NOTED.

SIGNAL AND LIGHTING (REMOVE)

SCALE: 1" = 20′

APPROVED FOR ELECTRICAL WORK ONLY

E-5

REVISED BY | DATE REVISED
VANESSA TRUONG | SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR | SHAHRAM SHAHRIARI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN

LAST REVISION 12-01-11 | DATE PLOTTED => 17-APR-2012 | TIME PLOTTED => 17:34

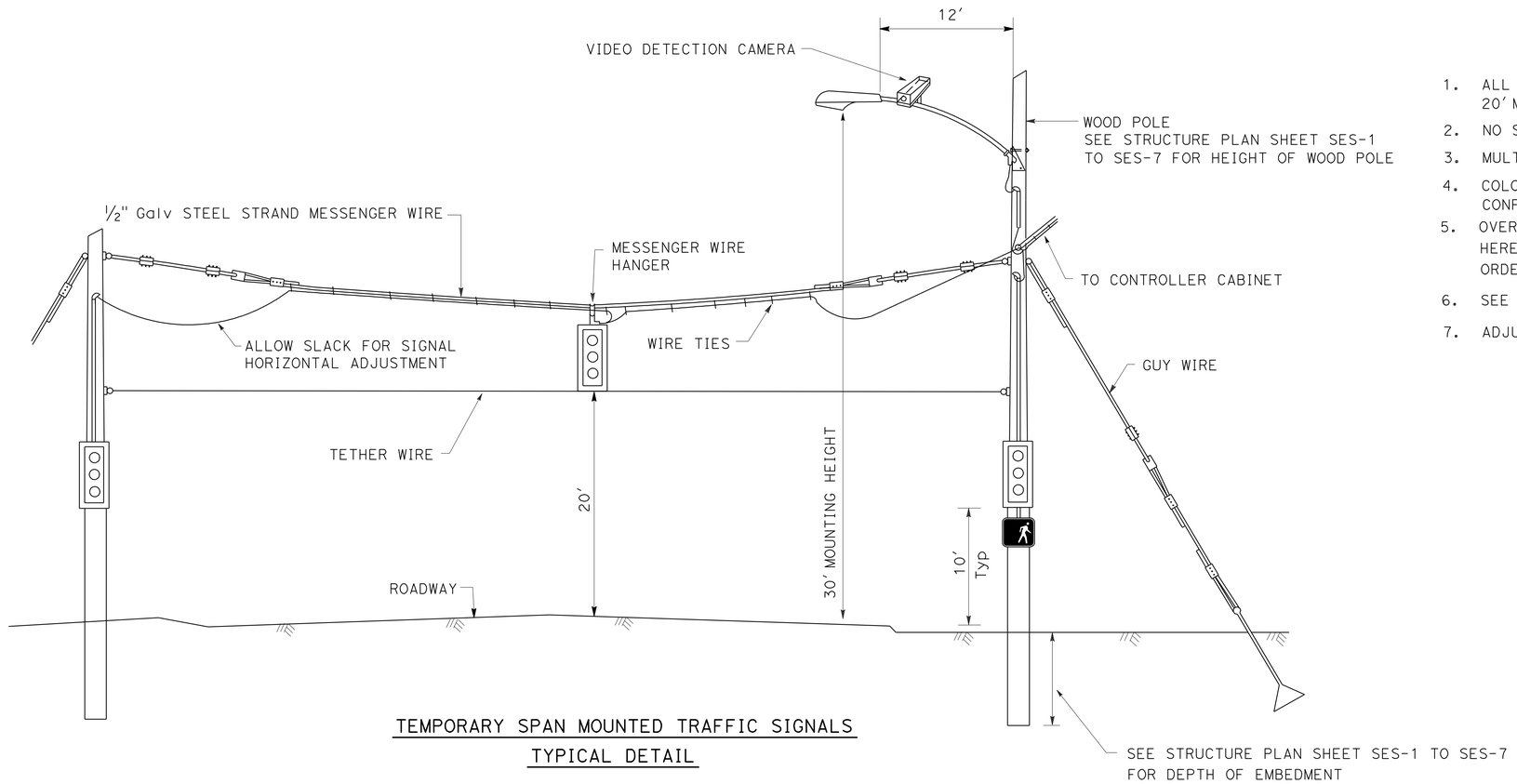
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	282	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
V.V. TRUONG
No. E 13983
Exp 6/30/12
ELECTRICAL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



TEMPORARY SPAN MOUNTED TRAFFIC SIGNALS
TYPICAL DETAIL

NOTES: (THIS SHEET ONLY)

1. ALL OVERHEAD CABLE SHALL BE SLACK SPANNED WITH 20′ MINIMUM OVERHEAD CLEARANCE.
2. NO SPARE CONDUCTOR REQUIRED EXCEPT AS NOTED.
3. MULTI-CONDUCTOR OR SINGLE CONDUCTOR CABLE MAY BE USED.
4. COLOR CODING ON MULTI-CONDUCTOR CABLE NEED NOT CONFORM TO THE STANDARD SPECIFICATIONS REQUIREMENT.
5. OVERHEAD LINE CONSTRUCTION NOT SPECIFICALLY COVERED HEREON SHALL CONFORM WITH THE PROVISIONS OF GENERAL ORDER NO. 95 OF PUBLIC UTILITIES COMMISION.
6. SEE STRUCTURE PLAN SHEET SES-1 TO SES-7 FOR ADDITIONAL DETAILS.
7. ADJUST SIGNAL HEADS AS NEEDED WHEN GRADING ARE CHANGED.

TEMPORARY SIGNAL AND LIGHTING (DETAILS)

NO SCALE

APPROVED FOR ELECTRICAL WORK ONLY

E-6

REVISED BY | DATE REVISED
VANESSA TRUONG | SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR | SHAHRAM SHAHRIARI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL DESIGN

LAST REVISION 12-16-11 | DATE PLOTTED => 16-APR-2012 | TIME PLOTTED => 07:43

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	283	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

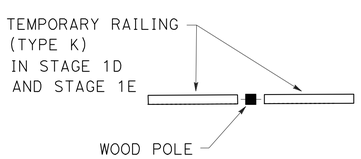
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

POLE AND EQUIPMENT SCHEDULE

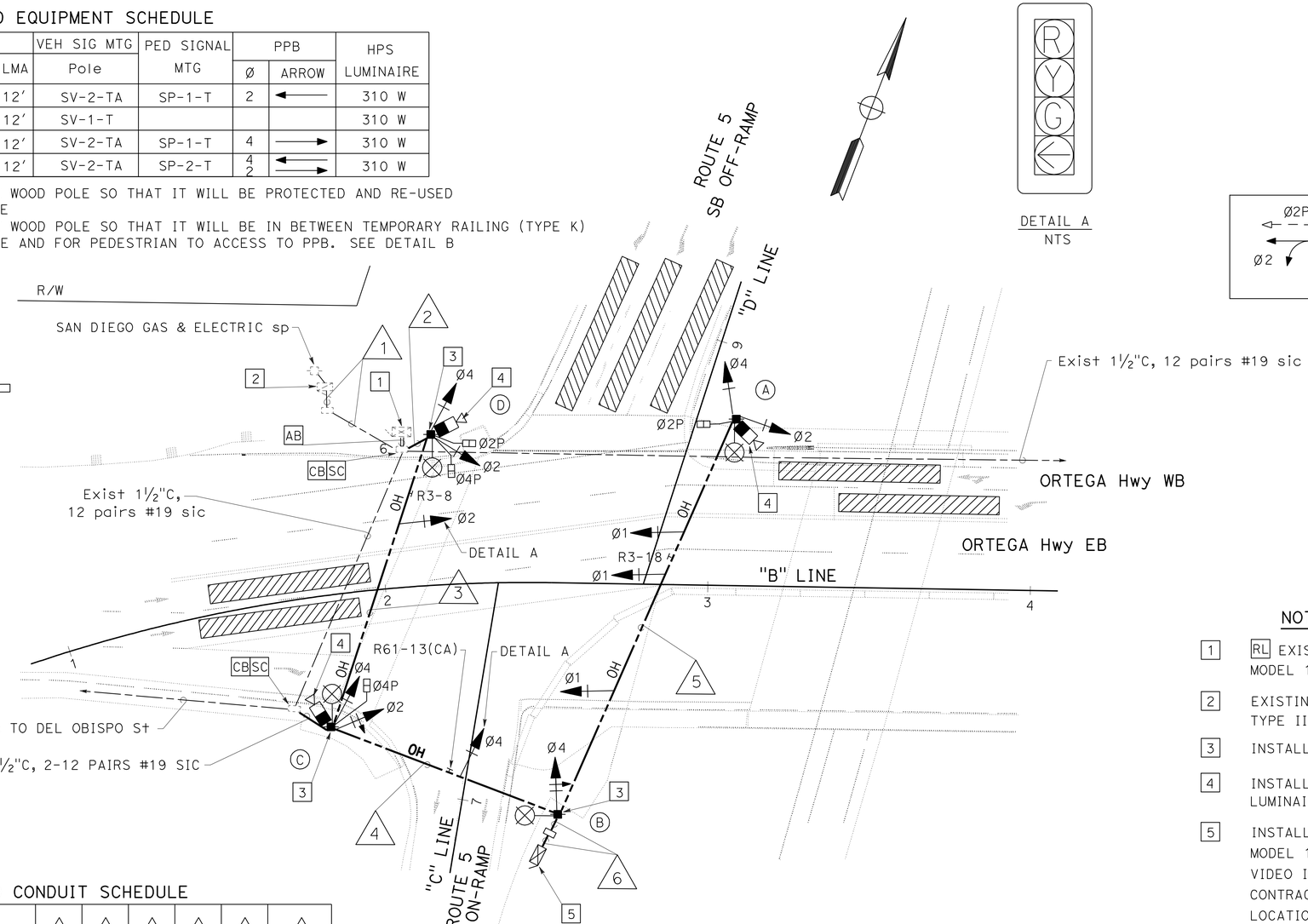
No.	STANDARD Type	STANDARD SMA	STANDARD LMA	VEH SIG MTG Pole	PED SIGNAL MTG	PPB Ø	PPB ARROW	HPS LUMINAIRE
A	WOOD (*)	OVERHEAD WIRE	12'	SV-2-TA	SP-1-T	2	←	310 W
B	WOOD (*)	OVERHEAD WIRE	12'	SV-1-T				310 W
C	WOOD (**)	OVERHEAD WIRE	12'	SV-2-TA	SP-1-T	4	→	310 W
D	WOOD (**)	OVERHEAD WIRE	12'	SV-2-TA	SP-2-T	4 2	← →	310 W

(*) - CONTRACTOR IS TO LOCATE WOOD POLE SO THAT IT WILL BE PROTECTED AND RE-USED IN STAGE 1D AND STAGE 1E

(**) - CONTRACTOR IS TO LOCATE WOOD POLE SO THAT IT WILL BE IN BETWEEN TEMPORARY RAILING (TYPE K) IN STAGE 1D AND STAGE 1E AND FOR PEDESTRIAN TO ACCESS TO PPB. SEE DETAIL B

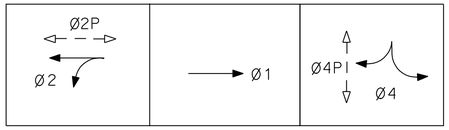


DETAIL B
(TYPICAL)
NTS



DETAIL A
NTS

PHASE DIAGRAM



NOTES: (THIS SHEET ONLY)

1. RL EXISTING MODEL 332 CABINET WITH MODEL 170 CONTROLLER AND BBS.
2. EXISTING 120/240 V, METERED SERVICE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
3. INSTALL TYPE H RISER.
4. INSTALL VIDEO DETECTION CAMERA ON LUMINAIRE MAST ARM.
5. INSTALL RELOCATED MODEL 332 CABINET WITH MODEL 170 CONTROLLER AND BBS. INSTALL VIDEO IMAGE VEHICLE DETECTION SYSTEM. CONTRACTOR IS TO LOCATE NEW CONTROLLER LOCATION SO THAT IT CAN BE PROTECTED AND USED IN STAGE 1D AND STAGE 1E.

6' X 50' VIDEO DETECTION CAMERA ZONE

CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6
#14	Ø1					3	3
	Ø2			3	3	3	3
	Ø4			3	3	3	3
	Ø2P			2	2	2	2
	Ø4P			2	2		2
	Ø2P PPB			1	1	1	1
	Ø4P PPB			1	1		1
	PPB COMMON			1	1	1	1
#10	SIGNAL COMMON			1	1	1	1
	LUMINAIRE	2(E)	2	2	2	2	
#6	SERVICE	2(E)	2	2	2		2
12 PAIRS #19	SIC				2		2
VIDEO DETECTION CAMERA CABLE				1	2	1	3
CONDUIT SIZE		2"(E)	1½"	*	*	*	4"

* - OVERHEAD WIRE

TEMPORARY SIGNAL AND LIGHTING (LOCATION 1) (STAGE 1A, 1B, 1C)

SCALE: 1" = 20'

E-7

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 12-01-11
DATE PLOTTED => 16-APR-2012
TIME PLOTTED => 07:44

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	284	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

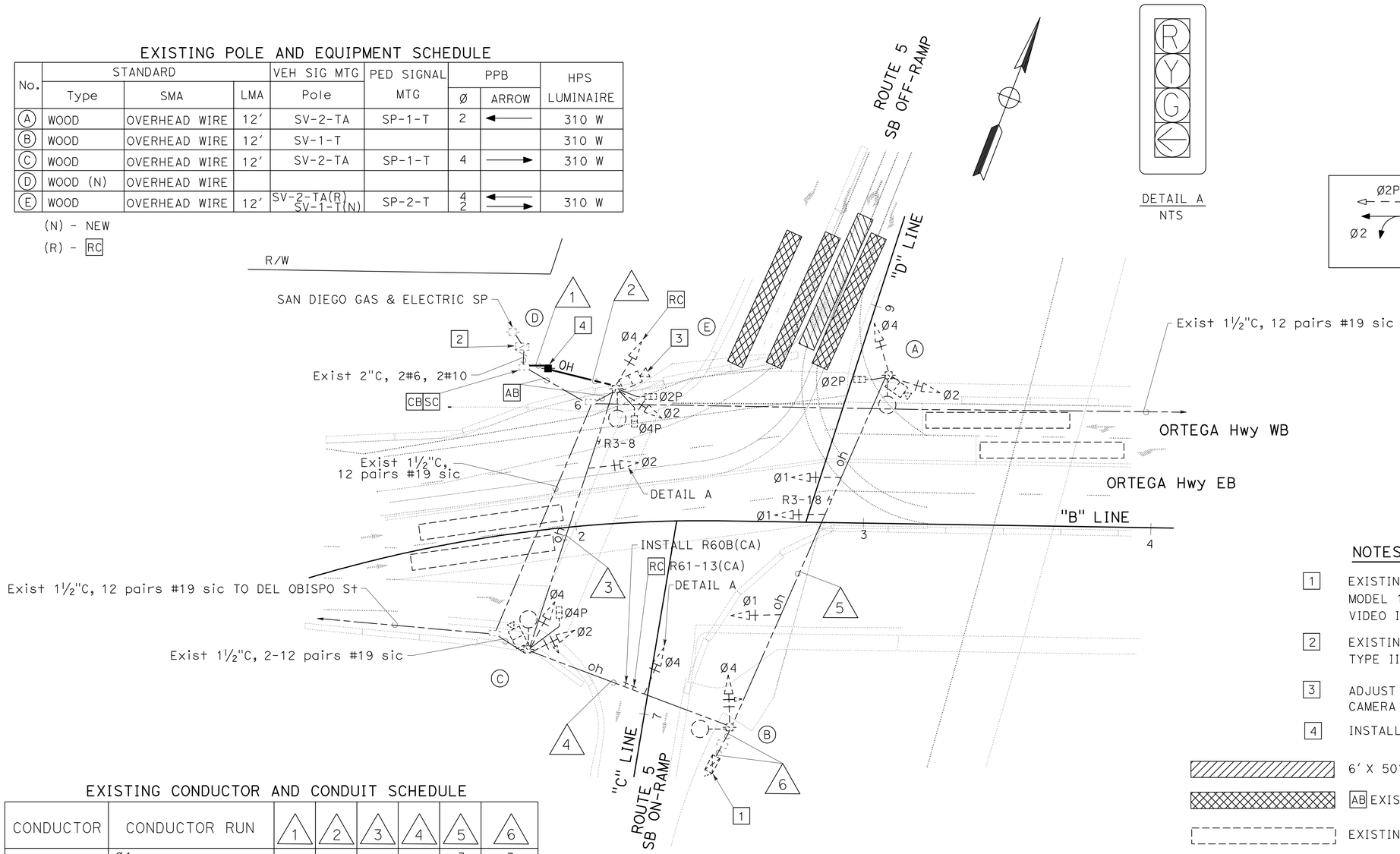
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

EXISTING POLE AND EQUIPMENT SCHEDULE

No.	STANDARD			VEH SIG MTG	PED SIGNAL	PPB		HPS
	Type	SMA	LMA	Pole	MTG	Ø	ARROW	LUMINAIRE
A	WOOD	OVERHEAD WIRE	12'	SV-2-TA	SP-1-T	2	←	310 W
B	WOOD	OVERHEAD WIRE	12'	SV-1-T				310 W
C	WOOD	OVERHEAD WIRE	12'	SV-2-TA	SP-1-T	4	→	310 W
D	WOOD (N)	OVERHEAD WIRE						
E	WOOD	OVERHEAD WIRE	12'	SV-2-TA(R) SV-1-T(N)	SP-2-T	4 2	← →	310 W

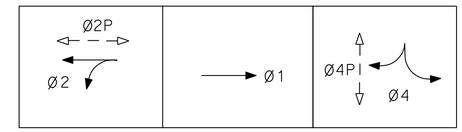
(N) - NEW

(R) - RC



DETAIL A
NTS

PHASE DIAGRAM



NOTES: (THIS SHEET ONLY)

1. EXISTING MODEL 332 CABINET WITH MODEL 170 CONTROLLER, BBS, AND VIDEO IMAGE VEHICLE DETECTION SYSTEM.
2. EXISTING 120/240 V METERED SERVICE IN TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
3. ADJUST EXISTING VIDEO IMAGE VEHICLE DETECTION CAMERA FOR NEW DETECTION CAMERA ZONE.
4. INSTALL TYPE H RISER.

6' X 50' VIDEO DETECTION CAMERA ZONE

AB EXISTING 6' X 50' VIDEO DETECTION CAMERA ZONE

EXISTING 6' X 50' VIDEO DETECTION CAMERA ZONE

EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6
#14	Ø1					3	3
	Ø2			3	3	3	3
	Ø4			3(R)	3	3	3
	Ø2P			2	2	2	2
	Ø4P			2	2		2
	Ø2P PPB			1	1	1	1
	Ø4P PPB			1	1		1
	PPB COMMON			1	1	1	1
#10	SIGNAL COMMON			1	1	1	1
	LUMINAIRE	2(N)	2(N)	2	2	2	
#6	SERVICE	2(N)	2(N)	2	2		2
12 PAIRS #19	SIC				2		2
VIDEO DETECTION CAMERA CABLE				1	2	1	3
CONDUIT SIZE		2"(N)	*(N)	*	*	*	4"

* - OVERHEAD WIRE

(R) - RC

(N) - NEW

APPROVED FOR ELECTRICAL WORK ONLY

TEMPORARY SIGNAL AND LIGHTING (LOCATION 1) (STAGE 1D)

SCALE: 1" = 20'

E-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 12-01-11
DATE PLOTTED => 24-APR-2012
TIME PLOTTED => 08:07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	285	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

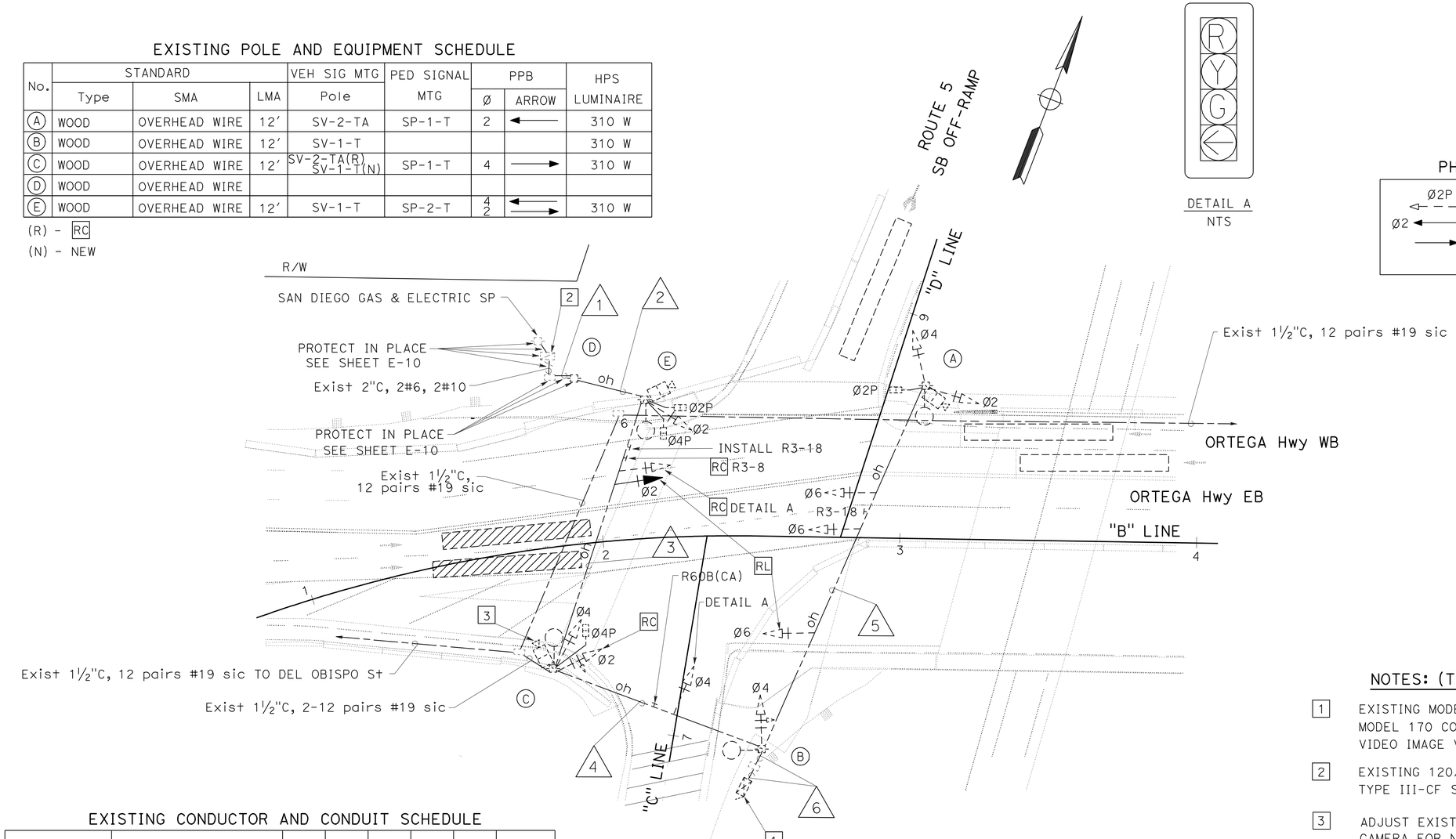
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

EXISTING POLE AND EQUIPMENT SCHEDULE

No.	STANDARD			VEH SIG MTG	PED SIGNAL	PPB		HPS
	Type	SMA	LMA	Pole	MTG	Ø	ARROW	LUMINAIRE
A	WOOD	OVERHEAD WIRE	12'	SV-2-TA	SP-1-T	2	←	310 W
B	WOOD	OVERHEAD WIRE	12'	SV-1-T				310 W
C	WOOD	OVERHEAD WIRE	12'	SV-2-TA(R) SV-1-T(N)	SP-1-T	4	→	310 W
D	WOOD	OVERHEAD WIRE						
E	WOOD	OVERHEAD WIRE	12'	SV-1-T	SP-2-T	4 2	← →	310 W

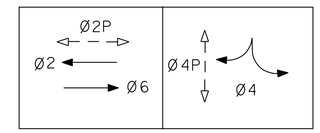
(R) - RC

(N) - NEW



DETAIL A
NTS

PHASE DIAGRAM



EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6
#14	Ø2			3	3	3	3
	Ø4				3	3	3
	Ø6					3	3
	Ø2P			2	2	2	2
	Ø4P			2	2		2
	Ø2P PPB			1	1	1	1
	Ø4P PPB			1	1		1
	PPB COMMON			1	1	1	1
#10	SIGNAL COMMON			1	1	1	1
	LUMINAIRE	2	2	2	2	2	
#6	SERVICE	2	2	2	2		2
12 PAIRS #19	SIC				2		2
VIDEO DETECTION CAMERA CABLE				1	2	1	3
CONDUIT SIZE		2"	*	*	*	*	4"

* - OVERHEAD WIRE

NOTES: (THIS SHEET ONLY)

1. EXISTING MODEL 332 CABINET WITH MODEL 170 CONTROLLER, BBS, AND VIDEO IMAGE VEHICLE DETECTION SYSTEM.
2. EXISTING 120/240 V, METERED SERVICE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
3. ADJUST EXISTING VIDEO IMAGE VEHICLE DETECTION CAMERA FOR NEW DETECTION CAMERA ZONE.
4. RC ALL EQUIPMENT, AB CONDUIT AFTER TEMPORARY STAGING IS FINISHED, UNLESS OTHERWISE NOTED.

ADJUST EXISTING 6' X 50' VIDEO DETECTION CAMERA ZONE

EXISTING 6' X 50' VIDEO DETECTION CAMERA ZONE

TEMPORARY SIGNAL AND LIGHTING (LOCATION 1) (STAGE 1E)

SCALE: 1" = 20'

E-9

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 12-01-11
DATE PLOTTED => 24-APR-2012
TIME PLOTTED => 08:07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	286	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

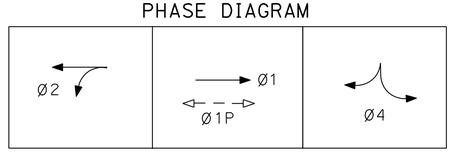
NOTE:

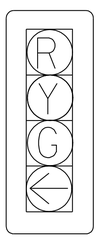
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

POLE AND EQUIPMENT SCHEDULE

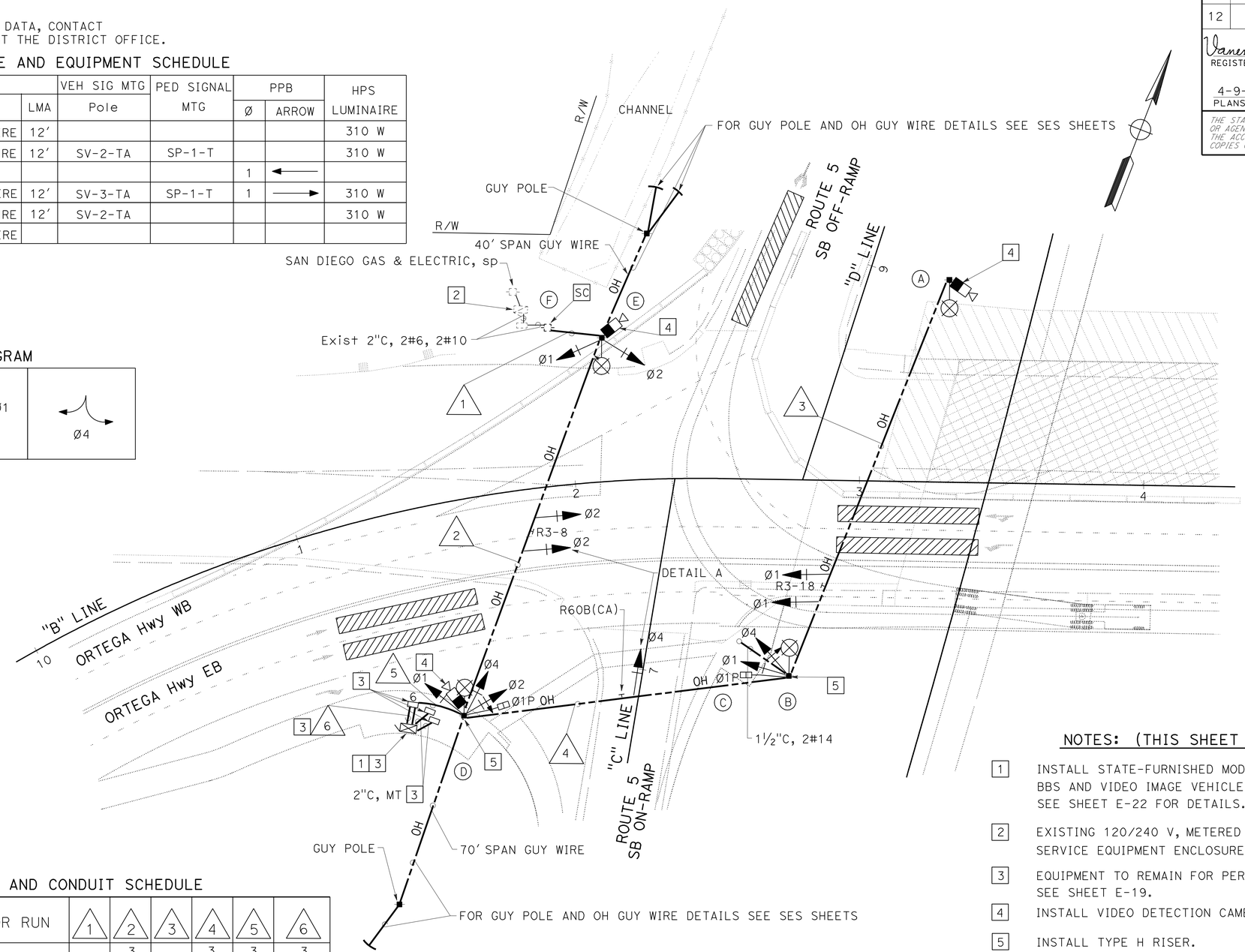
No.	STANDARD Type	STANDARD SMA	STANDARD LMA	VEH SIG MTG Pole	PED SIGNAL MTG	PPB Ø	PPB ARROW	HPS LUMINAIRE
A	WOOD	OVERHEAD WIRE	12′					310 W
B	WOOD	OVERHEAD WIRE	12′	SV-2-TA	SP-1-T			310 W
C	PPB POST					1	←	
D	WOOD	OVERHEAD WIRE	12′	SV-3-TA	SP-1-T	1	→	310 W
E	WOOD	OVERHEAD WIRE	12′	SV-2-TA				310 W
F	WOOD (E)	OVERHEAD WIRE						

PHASE DIAGRAM





DETAIL A
NTS



CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6
#14	Ø1		3		3	3	3
	Ø2		3			3	3
	Ø4				3	3	3
	Ø1P				2	2	2
	Ø1P PPB				1	1	1
	PPB COMMON				1	1	1
#10	SIGNAL COMMON		1		1	1	1
	LUMINAIRE	2	2	2	2		
#6	SERVICE	2	2			2	2
VIDEO DETECTION CAMERA CABLE			1	1	1	3	3
CONDUIT SIZE		*	*	*	*	3"	2-4"

* - OVERHEAD WIRE

NOTES: (THIS SHEET ONLY)

1. INSTALL STATE-FURNISHED MODEL 2070L CONTROLLER ASSEMBLY, BBS AND VIDEO IMAGE VEHICLE DETECTION SYSTEM. SEE SHEET E-22 FOR DETAILS.
2. EXISTING 120/240 V, METERED SERVICE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
3. EQUIPMENT TO REMAIN FOR PERMANENT INSTALLATION. SEE SHEET E-19.
4. INSTALL VIDEO DETECTION CAMERA ON LUMINAIRE MAST ARM.
5. INSTALL TYPE H RISER.
6. RC ALL EQUIPMENT, AB CONDUIT AFTER TEMPORARY STAGING IS FINISHED, UNLESS OTHERWISE NOTED.

6′ X 50′ VIDEO DETECTION CAMERA ZONE

TEMPORARY SIGNAL AND LIGHTING (LOCATION 1) (STAGE 2A, 2B)

SCALE: 1" = 20′

E-10

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY / DATE REVISED

LAST REVISION 12-14-11 | DATE PLOTTED => 18-APR-2012 | TIME PLOTTED => 07:36

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	287	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

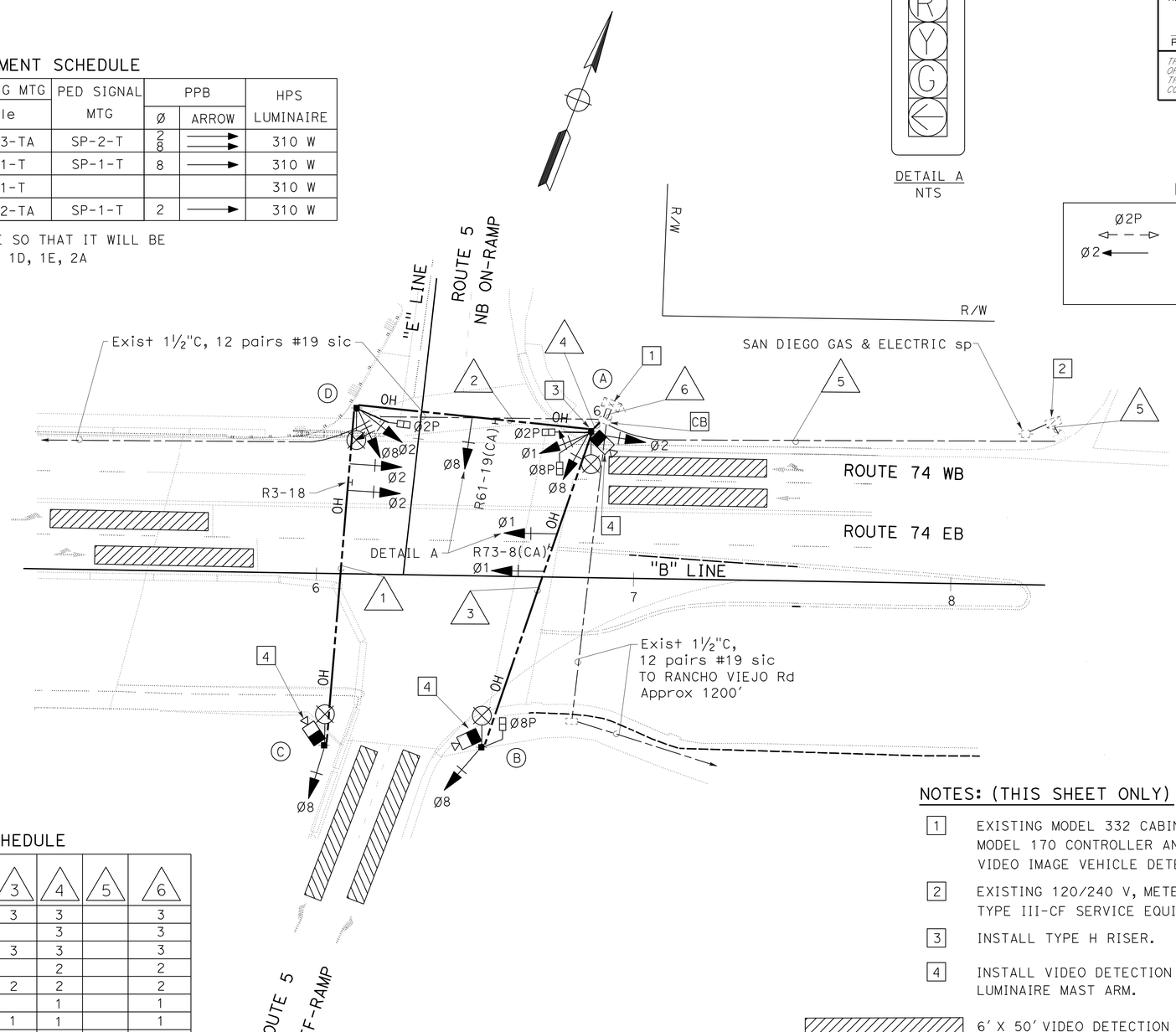
NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

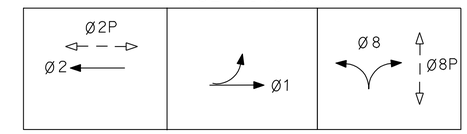
POLE AND EQUIPMENT SCHEDULE

No.	STANDARD			VEH SIG MTG	PED SIGNAL	PPB		HPS
	Type	SMA	LMA	Pole	MTG	Ø	ARROW	LUMINAIRE
A	WOOD (*)	OVERHEAD WIRE	12'	SV-3-TA	SP-2-T	2 8	→ →	310 W
B	WOOD (*)	OVERHEAD WIRE	12'	SV-1-T	SP-1-T	8	→	310 W
C	WOOD (*)	OVERHEAD WIRE	12'	SV-1-T				310 W
D	WOOD (*)	OVERHEAD WIRE	12'	SV-2-TA	SP-1-T	2	→	310 W

(*) - CONTRACTOR IS TO LOCATE WOOD POLE SO THAT IT WILL BE PROTECTED AND REUSED IN STAGE 1C, 1D, 1E, 2A



PHASE DIAGRAM



CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6
#14	Ø1			3	3		3
	Ø2	3	3		3		3
	Ø8	3	3	3	3		3
	Ø2P		2		2		2
	Ø8P			2	2		2
	Ø2P PPB		1		1		1
	Ø8P PPB			1	1		1
	PPB COMMON		1	1	1		1
#10	SIGNAL COMMON	1	1	1	1		1
	LUMINAIRE	2	2	2	2	2(E)	
#6	SERVICE					2(E)	2(E)
12 PAIRS #19	SIC						2(E)
VIDEO DETECTION CAMERA CABLE		1	1	1	3		3
CONDUIT SIZE		*	*	*	3"	2"(E)	2-3"(E)

* - OVERHEAD WIRE

NOTES: (THIS SHEET ONLY)

1. EXISTING MODEL 332 CABINET WITH MODEL 170 CONTROLLER AND BBS. INSTALL VIDEO IMAGE VEHICLE DETECTION SYSTEM.
2. EXISTING 120/240 V, METERED SERVICE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
3. INSTALL TYPE H RISER.
4. INSTALL VIDEO DETECTION CAMERA ON LUMINAIRE MAST ARM.

6' X 50' VIDEO DETECTION CAMERA ZONE

TEMPORARY SIGNAL AND LIGHTING (LOCATION 2) (STAGE 1A, 1B)

SCALE: 1" = 20'

E-11

APPROVED FOR ELECTRICAL WORK ONLY

REVISED BY | DATE REVISED
VANESSA TRUONG | SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR | SHAHRAM SHAHRIARI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL DESIGN

LAST REVISION 12-01-11 | DATE PLOTTED => 17-APR-2012 | TIME PLOTTED => 17:34

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	288	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

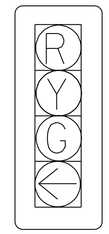
NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

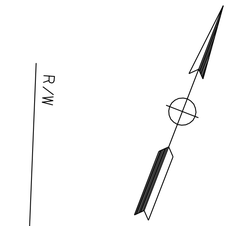
EXISTING POLE AND EQUIPMENT SCHEDULE

No.	STANDARD Type	STANDARD SMA	STANDARD LMA	VEH SIG MTG Pole	PED SIGNAL MTG	PPB Ø	PPB ARROW	HPS LUMINAIRE
A	WOOD	OVERHEAD WIRE	12′	SV-3-TA(R) SV-2-TA(N)	SP-2-T	2 8	→ →	310 W
B	WOOD	OVERHEAD WIRE	12′	SV-1-T(R)	SP-1-T	8	→	310 W
C	WOOD	OVERHEAD WIRE	12′	SV-1-T(R)				310 W
D	WOOD	OVERHEAD WIRE	12′	SV-2-TA(R) SV-1-T(N)	SP-1-T	2	→	310 W

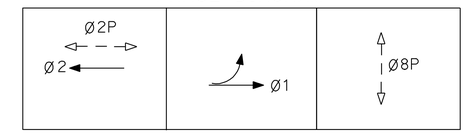
(R) - RC
(N) - NEW

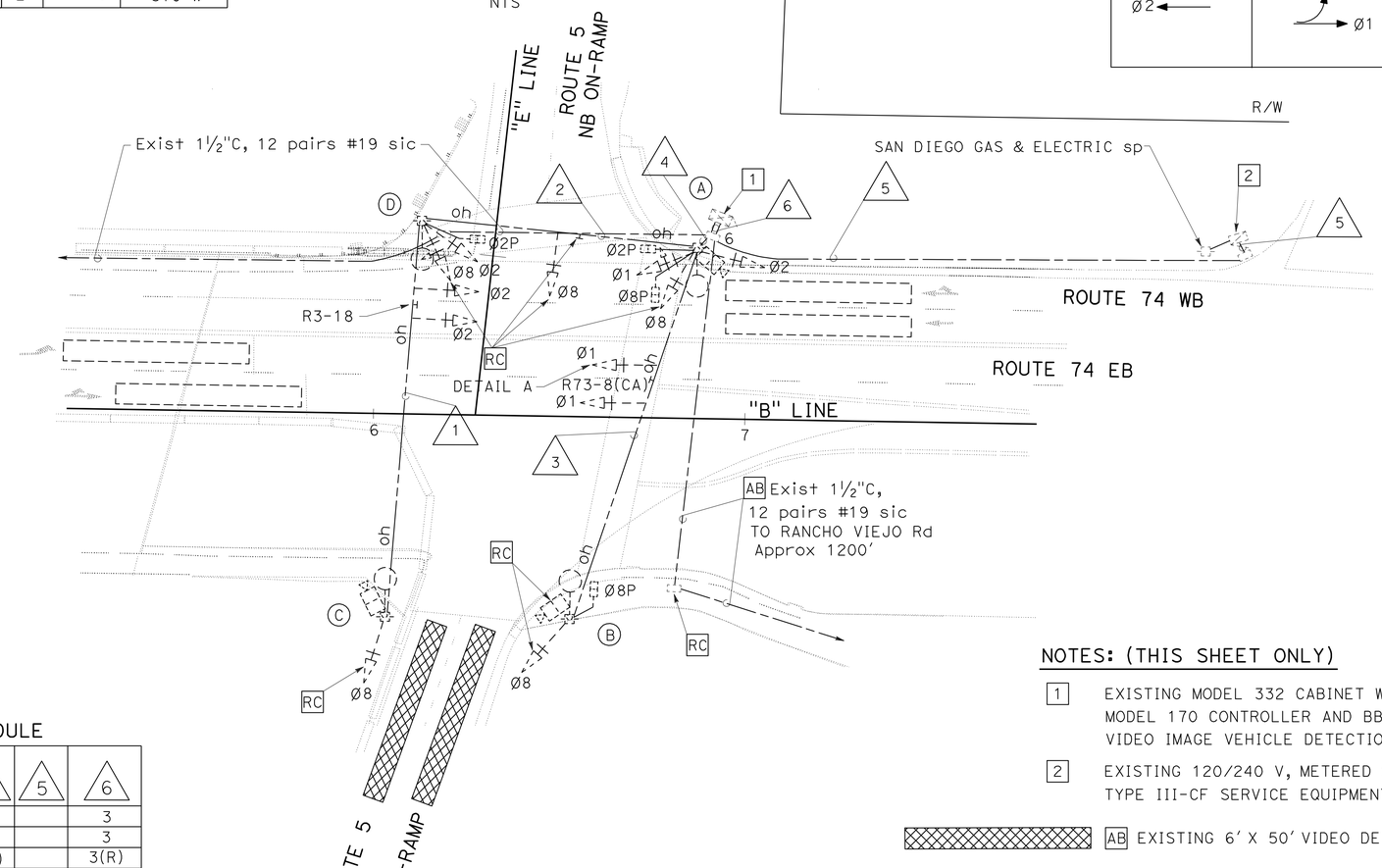


DETAIL A
NTS



PHASE DIAGRAM





EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6
#14	Ø1			3	3		3
	Ø2	3	3		3		3
	Ø8	3(R)	3(R)	3(R)	3(R)		3(R)
	Ø2P		2		2		2
	Ø8P			2	2		2
	Ø2P PPB		1		1		1
	Ø8P PPB			1	1		1
	PPB COMMON		1	1	1		1
#10	SIGNAL COMMON	1	1	1	1		1
	LUMINAIRE	2	2	2	2	2	
#6	SERVICE					2	2
12 PAIRS #19	SIC						1/1(R)
VIDEO DETECTION CAMERA CABLE		1	1	1(R)	2/1(R)		2/1(R)
CONDUIT SIZE		*	*	*	3"	2"	2-3"

* - OVERHEAD WIRE
(R) - RC

NOTES: (THIS SHEET ONLY)

1. EXISTING MODEL 332 CABINET WITH MODEL 170 CONTROLLER AND BBS WITH VIDEO IMAGE VEHICLE DETECTION SYSTEM.
2. EXISTING 120/240 V, METERED SERVICE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.

AB EXISTING 6′ X 50′ VIDEO DETECTION CAMERA ZONE

EXISTING 6′ X 50′ VIDEO DETECTION CAMERA ZONE

TEMPORARY SIGNAL AND LIGHTING (LOCATION 2) (STAGE 1C)

SCALE: 1" = 20′

E-12

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 12-01-11
DATE PLOTTED => 16-APR-2012
TIME PLOTTED => 06:15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	289	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

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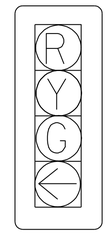
NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

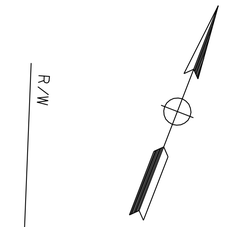
EXISTING POLE AND EQUIPMENT SCHEDULE

No.	STANDARD			VEH SIG MTG	PED SIGNAL	PPB		HPS
	Type	SMA	LMA	Pole	MTG	Ø	ARROW	LUMINAIRE
A	WOOD	OVERHEAD WIRE	12′	SV-2-TA	SP-2-T(R) SP-1-T(N)	2 8(R)	→ →	310 W
B	WOOD	OVERHEAD WIRE	12′		SP-1-T(R)	8(R)	→	310 W
C	WOOD	OVERHEAD WIRE	12′					310 W
D	WOOD	OVERHEAD WIRE	12′	SV-1-T	SP-1-T	2	→	310 W

(R) - RC
(N) - NEW



DETAIL A
NTS



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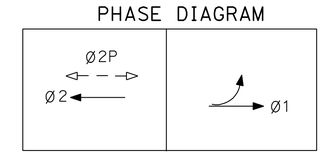

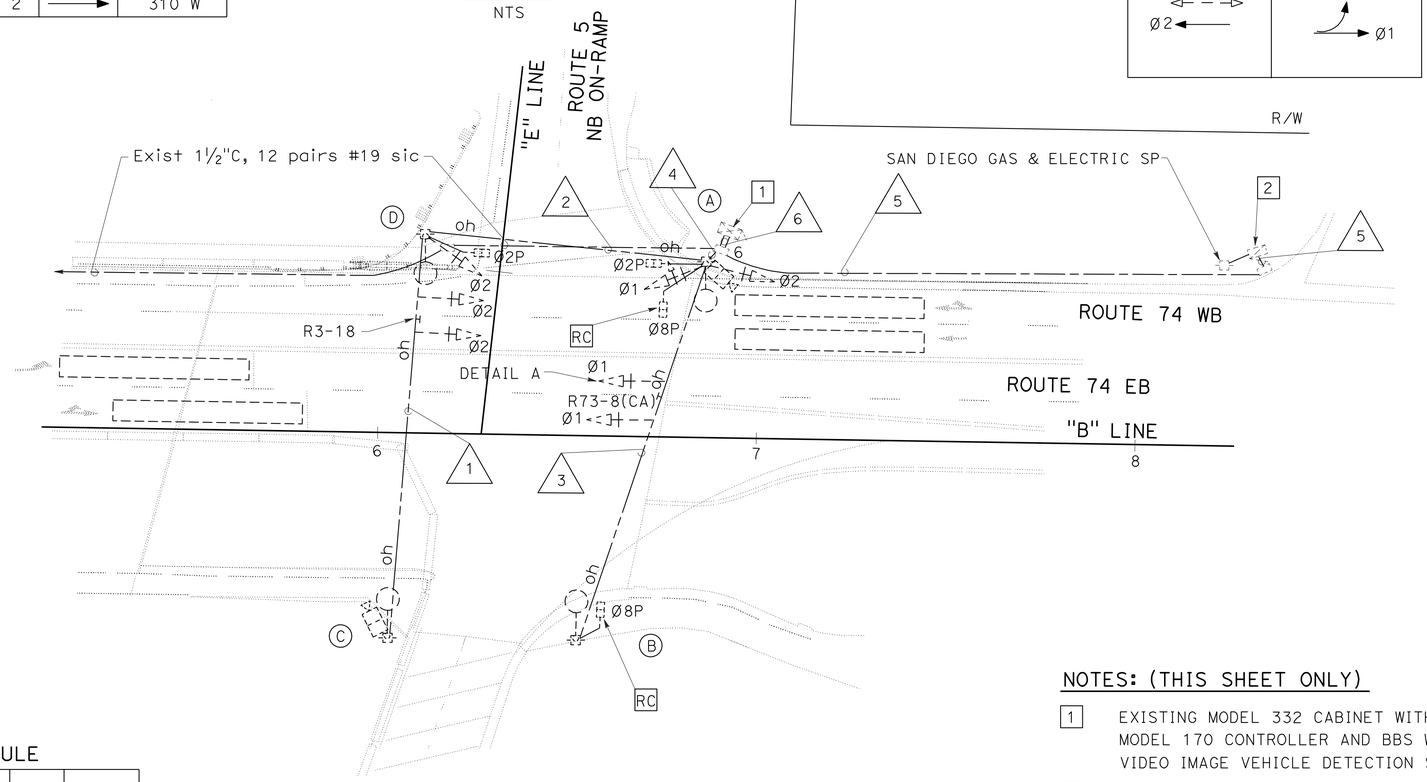

NOTES: (THIS SHEET ONLY)

1. EXISTING MODEL 332 CABINET WITH MODEL 170 CONTROLLER AND BBS WITH VIDEO IMAGE VEHICLE DETECTION SYSTEM.
2. EXISTING 120/240 V, METERED SERVICE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.

EXISTING 6′ X 50′ VIDEO DETECTION CAMERA ZONE

EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6
#14	Ø1			3	3		3
	Ø2	3	3		3		3
	Ø2P		2		2		2
	Ø8P			2(R)	2(R)		2(R)
	Ø2P PPB		1		1		1
	Ø8P PPB			1(R)	1(R)		1(R)
	PPB COMMON		1	1(R)	1		1
#10	SIGNAL COMMON	1	1	1	1		1
	LUMINAIRE	2	2	2	2	2	
#6	SERVICE					2	2
12 PAIRS #19	SIC						1
VIDEO DETECTION CAMERA CABLE		1	1		2		2
CONDUIT SIZE		*	*	*	3"	2"	2-3"

* - OVERHEAD WIRE
(R) - RC

TEMPORARY SIGNAL AND LIGHTING (LOCATION 2) (STAGE 1D, 1E)

SCALE: 1" = 20′

E-13

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 12-01-11
DATE PLOTTED => 16-APR-2012
TIME PLOTTED => 06:15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	290	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

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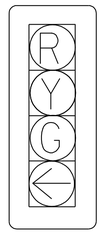
NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

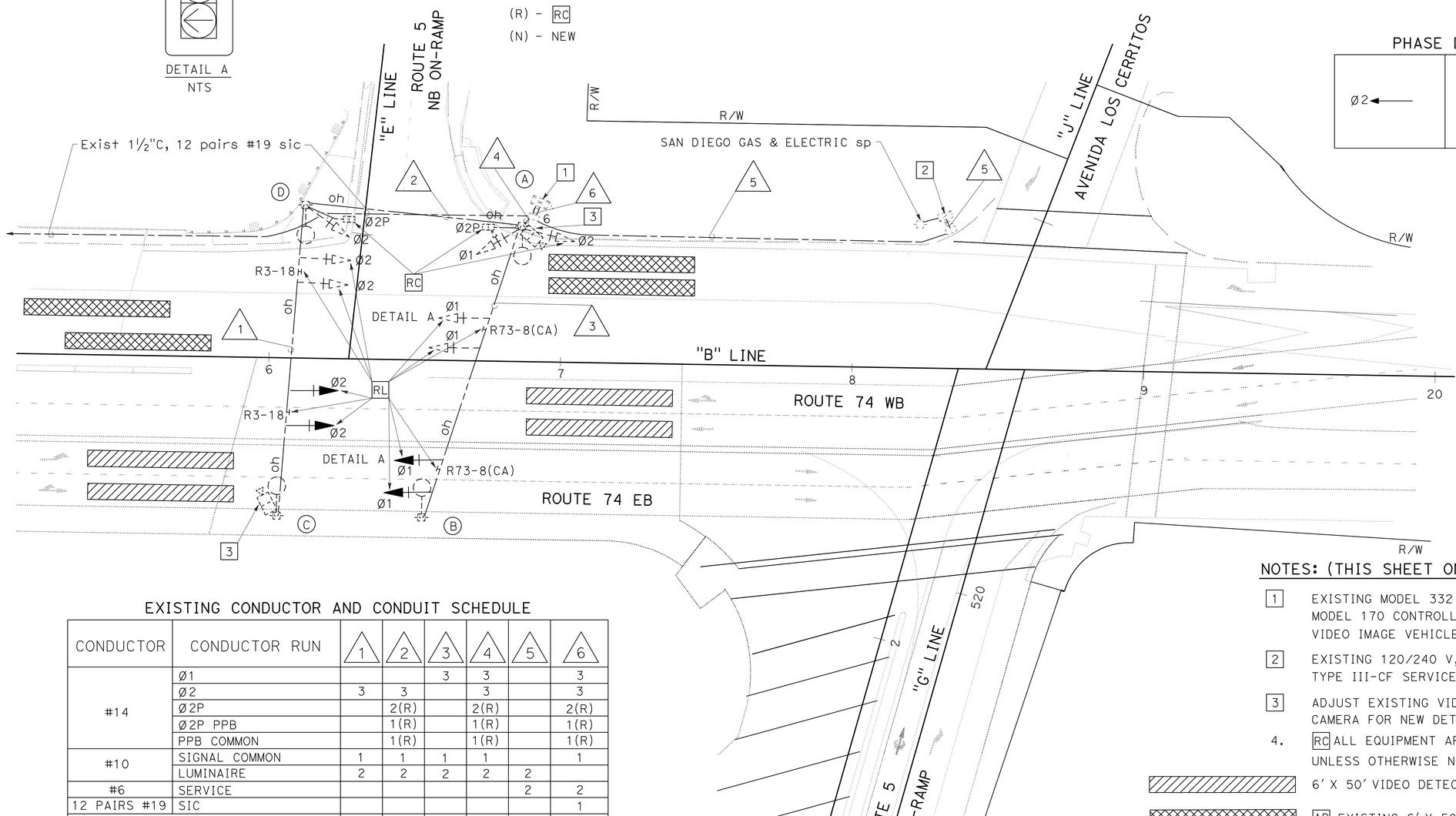


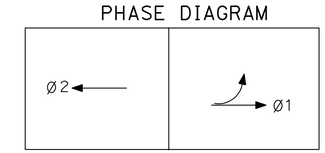
DETAIL A
NTS

EXISTING POLE AND EQUIPMENT SCHEDULE

No.	STANDARD Type	STANDARD SMA	STANDARD LMA	VEH SIG MTG Pole	PED SIGNAL MTG	PPB Ø	PPB ARROW	HPS LUMINAIRE
(A)	WOOD	OVERHEAD WIRE	12′	SV-2-TA(R) SV-1-T(N)	SP-1-T(R)	2(R)	→	310 W
(B)	WOOD	OVERHEAD WIRE	12′					310 W
(C)	WOOD	OVERHEAD WIRE	12′					310 W
(D)	WOOD	OVERHEAD WIRE	12′	SV-1-T	SP-1-T(R)	2(R)	→	310 W

(R) - RC
(N) - NEW





EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6
#14	Ø1			3	3		3
	Ø2	3	3		3		3
	Ø2P		2(R)		2(R)		2(R)
	Ø2P PPB		1(R)		1(R)		1(R)
	PPB COMMON		1(R)		1(R)		1(R)
#10	SIGNAL COMMON	1	1	1	1		1
	LUMINAIRE	2	2	2	2	2	
#6	SERVICE					2	2
12 PAIRS #19	SIC						1
VIDEO DETECTION CAMERA CABLE		1	1		2		2
CONDUIT SIZE		*	*	*	3"	2"	2-3"

* - OVERHEAD WIRE
(R) - RC

NOTES: (THIS SHEET ONLY)

1. EXISTING MODEL 332 CABINET WITH MODEL 170 CONTROLLER AND BBS WITH VIDEO IMAGE VEHICLE DETECTION SYSTEM.
2. EXISTING 120/240 V, METERED SERVICE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
3. ADJUST EXISTING VIDEO IMAGE VEHICLE DETECTION CAMERA FOR NEW DETECTION CAMERA ZONE.
4. RC ALL EQUIPMENT AFTER TEMPORARY STAGING IS FINISHED, UNLESS OTHERWISE NOTED.

6′ X 50′ VIDEO DETECTION CAMERA ZONE

AB EXISTING 6′ X 50′ VIDEO DETECTION CAMERA ZONE

TEMPORARY SIGNAL AND LIGHTING (LOCATION 2) (STAGE 2A)

SCALE: 1" = 20′

E-14

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN
FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 12-01-11
DATE PLOTTED => 16-APR-2012
TIME PLOTTED => 06:16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	291	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

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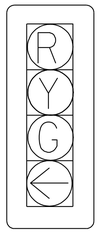
NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

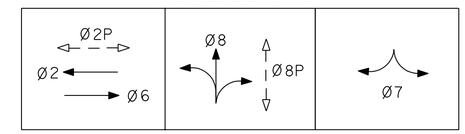
POLE AND EQUIPMENT SCHEDULE

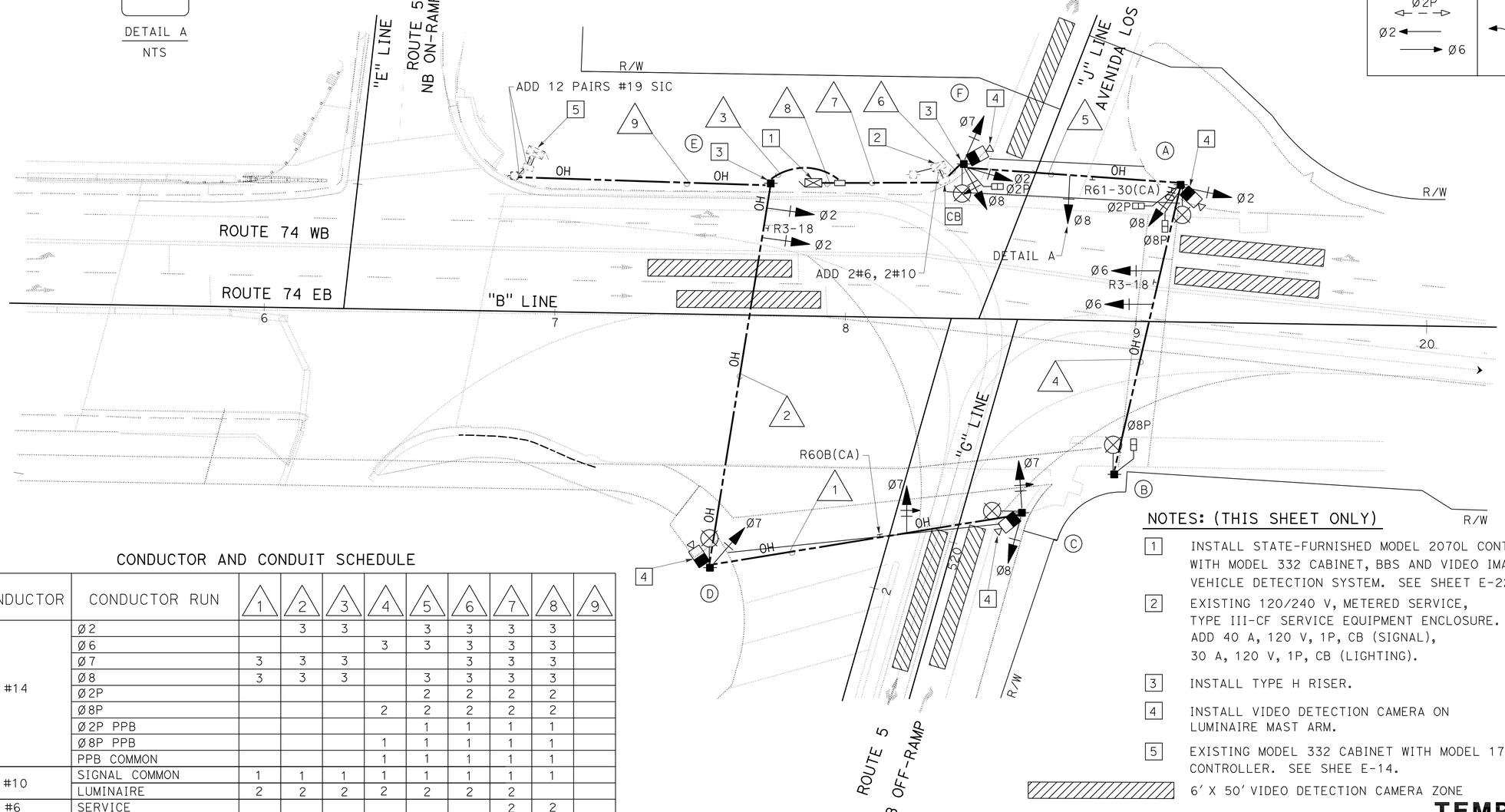
No.	STANDARD			VEH SIG MTG	PED SIGNAL	PPB		HPS
	Type	SMA	LMA	Pole	MTG	Ø	ARROW	LUMINAIRE
A	WOOD	OVERHEAD WIRE	12′	SV-2-TA	SP-2-T	2 8	← →	310 W
B	WOOD	OVERHEAD WIRE	12′		SP-1-T	8	→	310 W
C	WOOD	OVERHEAD WIRE	12′	SV-2-TA				310 W
D	WOOD	OVERHEAD WIRE	12′	SV-1-T				310 W
E	WOOD	OVERHEAD WIRE						
F	WOOD	OVERHEAD WIRE	12′	SV-3-TA	SP-1-T	2	→	310 W



DETAIL A
NTS

PHASE DIAGRAM





NOTES: (THIS SHEET ONLY)

1. INSTALL STATE-FURNISHED MODEL 2070L CONTROLLER WITH MODEL 332 CABINET, BBS AND VIDEO IMAGE VEHICLE DETECTION SYSTEM. SEE SHEET E-22.
2. EXISTING 120/240 V, METERED SERVICE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE. ADD 40 A, 120 V, 1P, CB (SIGNAL), 30 A, 120 V, 1P, CB (LIGHTING).
3. INSTALL TYPE H RISER.
4. INSTALL VIDEO DETECTION CAMERA ON LUMINAIRE MAST ARM.
5. EXISTING MODEL 332 CABINET WITH MODEL 170 CONTROLLER. SEE SHEE E-14.

6′ X 50′ VIDEO DETECTION CAMERA ZONE

CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6	7	8	9
#14	Ø2		3	3		3	3	3	3	
	Ø6				3	3	3	3	3	
	Ø7	3	3	3			3	3	3	
	Ø8	3	3	3		3	3	3	3	
	Ø2P					2	2	2	2	
	Ø8P				2	2	2	2	2	
	Ø2P PPB					1	1	1	1	
	Ø8P PPB				1	1	1	1	1	
	PPB COMMON				1	1	1	1	1	
#10	SIGNAL COMMON	1	1	1	1	1	1	1	1	
	LUMINAIRE	2	2	2	2	2	2	2		
#6	SERVICE							2	2	
12 PAIRS #19	SIC			1					1	1
VIDEO DETECTION CAMERA CABLE		1	2	2		1	2	2	4	
CONDUIT SIZE		*	*	3"	*	*	4"	4"	4"	*

* - OVERHEAD WIRE

TEMPORARY SIGNAL AND LIGHTING (LOCATION 3) (STAGE 1D, 1E)

SCALE: 1" = 20′

E-15

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 12-01-11
DATE PLOTTED => 17-APR-2012
TIME PLOTTED => 17:34

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	292	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

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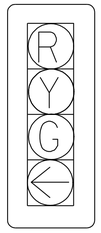


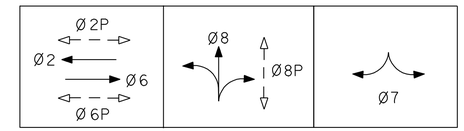
DETAIL A
NTS

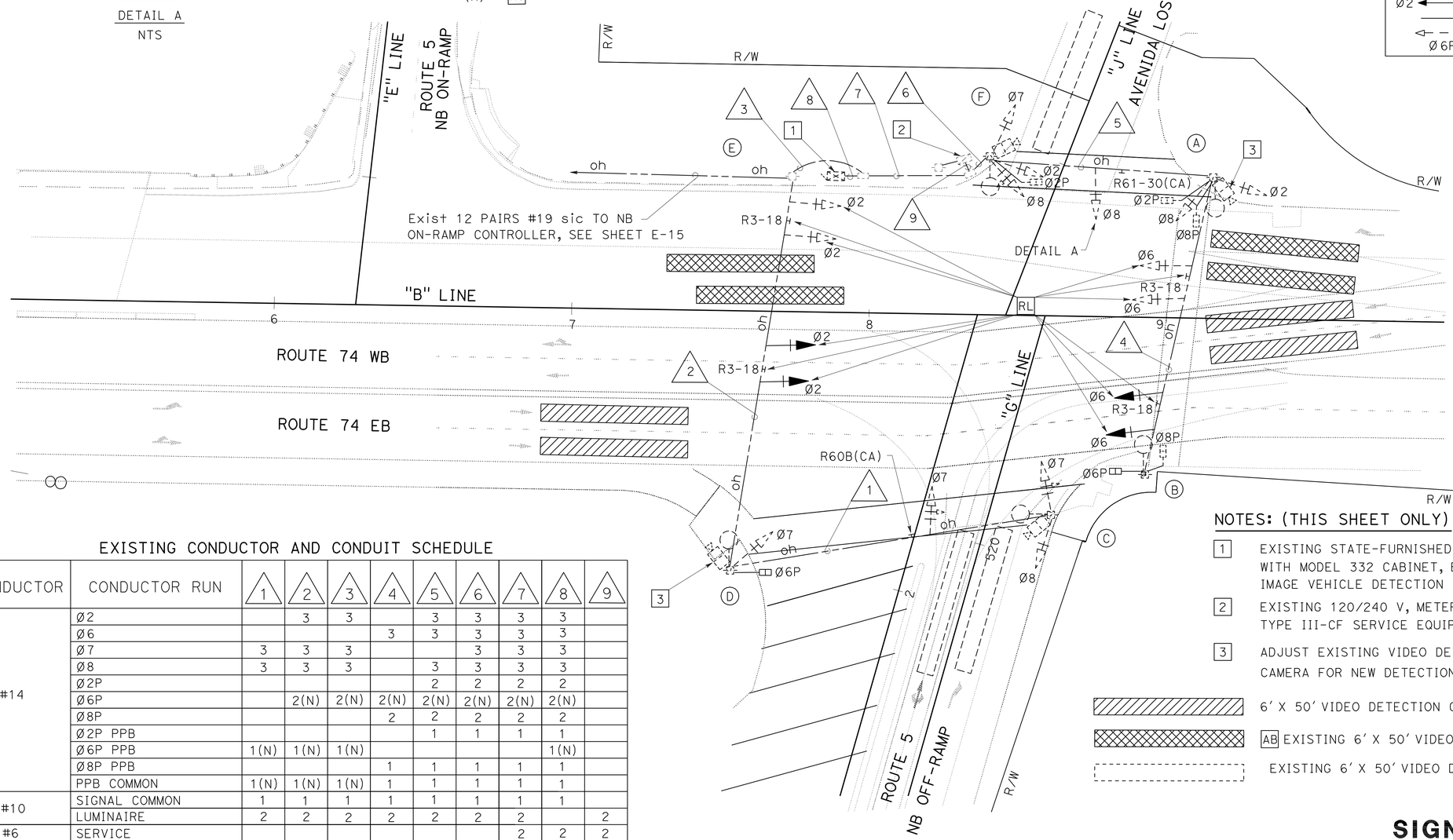
EXISTING POLE AND EQUIPMENT SCHEDULE

No.	STANDARD Type	SMA	LMA	VEH SIG MTG Pole	PED SIGNAL MTG	PPB Ø	PPB ARROW	HPS LUMINAIRE
A	WOOD	OVERHEAD WIRE	12′	SV-2-TA	SP-2-T	2 8	← →	310 W
B	WOOD	OVERHEAD WIRE	12′		SP-1-T(R) SP-2-T(N)	8	→	310 W
C	WOOD	OVERHEAD WIRE	12′	SV-2-TA		6(N)	→	310 W
D	WOOD	OVERHEAD WIRE	12′	SV-1-T	SP-1-T(N)	6(N)	←	310 W
E	WOOD	OVERHEAD WIRE						
F	WOOD	OVERHEAD WIRE	12′	SV-3-TA	SP-1-T	2	→	310 W

(N) - NEW
(R) - RC

PHASE DIAGRAM





EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6	7	8	9
#14	Ø2		3	3		3	3	3	3	
	Ø6				3	3	3	3	3	
	Ø7	3	3	3			3	3	3	
	Ø8	3	3	3		3	3	3	3	
	Ø2P					2	2	2	2	
	Ø6P		2(N)	2(N)	2(N)	2(N)	2(N)	2(N)	2(N)	
	Ø8P				2	2	2	2	2	
	Ø2P PPB					1	1	1	1	
	Ø6P PPB	1(N)	1(N)	1(N)					1(N)	
	Ø8P PPB				1	1	1	1	1	
	PPB COMMON	1(N)	1(N)	1(N)	1	1	1	1	1	
#10	SIGNAL COMMON	1	1	1	1	1	1	1	1	
	LUMINAIRE	2	2	2	2	2	2	2		2
#6	SERVICE							2	2	2
12 PAIRS #19	SIC			1					1	
VIDEO DETECTION CAMERA CABLE		1	2	2		1	2	2	4	
CONDUIT SIZE		*	*	3"	*	*	4"	4"	4"	2"

* - OVERHEAD WIRE
(N) - NEW

NOTES: (THIS SHEET ONLY)

1. EXISTING STATE-FURNISHED MODEL 2070L CONTROLLER WITH MODEL 332 CABINET, BBS AND VIDEO IMAGE VEHICLE DETECTION SYSTEM.
2. EXISTING 120/240 V, METERED SERVICE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
3. ADJUST EXISTING VIDEO DETECTION CAMERA FOR NEW DETECTION CAMERA ZONE.

6′ X 50′ VIDEO DETECTION CAMERA ZONE

AB EXISTING 6′ X 50′ VIDEO DETECTION CAMERA ZONE

EXISTING 6′ X 50′ VIDEO DETECTION CAMERA ZONE

TEMPORARY SIGNAL AND LIGHTING (LOCATION 3) (STAGE 2A)

SCALE: 1" = 20′

E-16

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 12-01-11
DATE PLOTTED => 16-APR-2012
TIME PLOTTED => 06:16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	293	515

Vanessa Van Truong 03-19-12
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

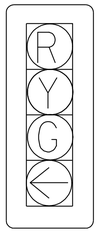
EXISTING POLE AND EQUIPMENT SCHEDULE

No.	STANDARD Type	SMA	LMA	VEH SIG MTG Pole	PED SIGNAL MTG	PPB Ø	PPB ARROW	HPS LUMINAIRE
A	WOOD	OVERHEAD WIRE	12′	SV-2-TA	SP-2-T	2 8	← →	310 W
B	WOOD	OVERHEAD WIRE	12′	SV-1-T(N)	SP-2-T	8	→	310 W
C	WOOD	OVERHEAD WIRE	12′	SV-2-TA		1	→	310 W
D	WOOD	OVERHEAD WIRE	12′	SV-1-T(R) SV-2-TA(N)	SP-1-T	1	←	310 W
E	WOOD(*)	OVERHEAD WIRE						
F	WOOD(*)	OVERHEAD WIRE	12′	SV-3-TA(*)	SP-1-T(*)	2(*)	→	310 W(*)

(*) - RL ALL EXISTING EQUIPMENT, UNLESS OTHERWISE NOTED

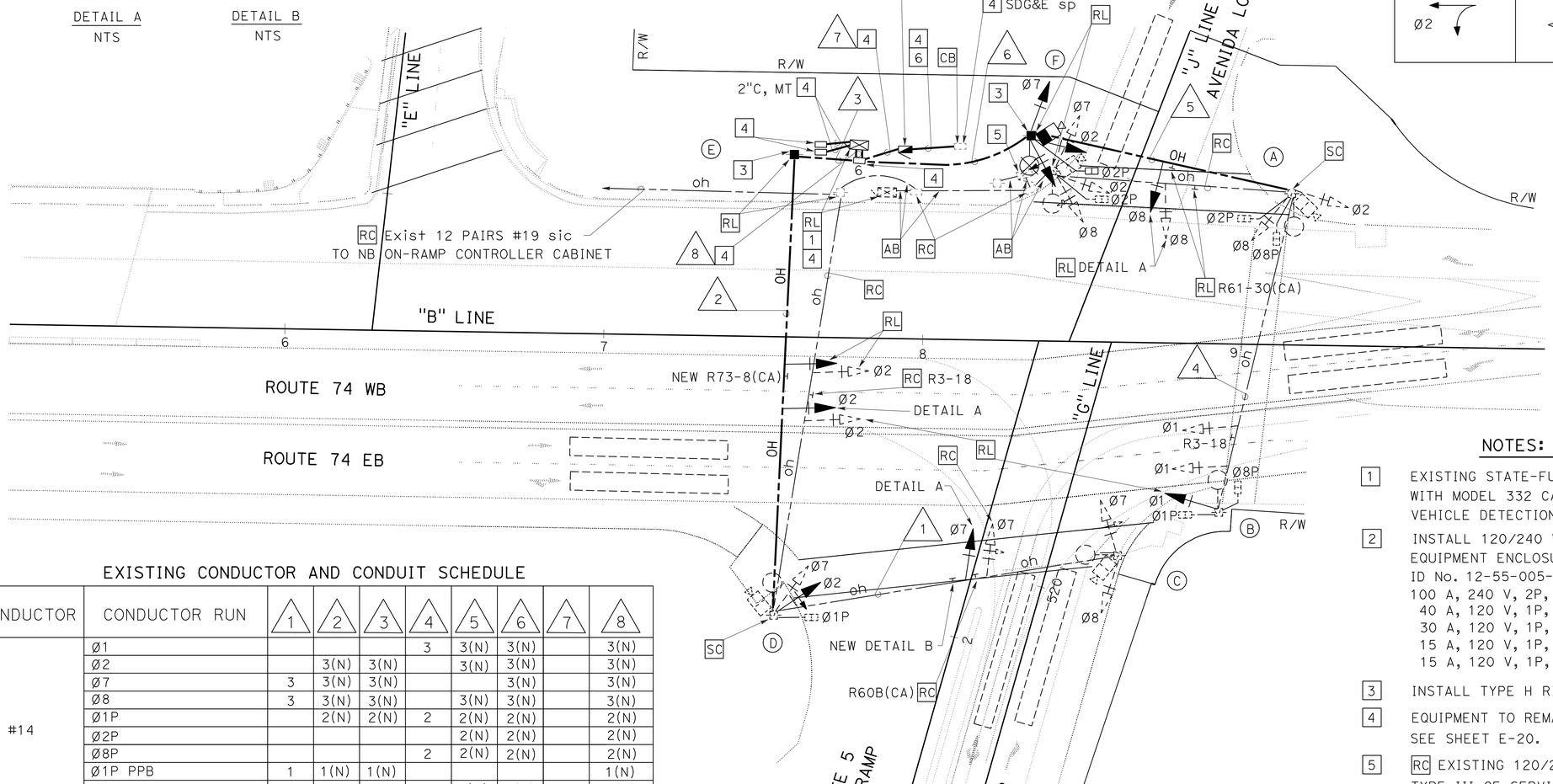
(R) - RC

(N) - NEW

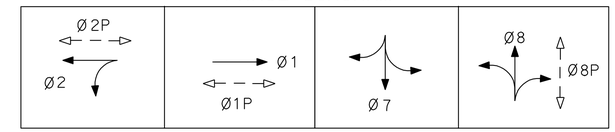


DETAIL A
NTS

DETAIL B
NTS



PHASE DIAGRAM



NOTES: (THIS SHEET ONLY)

1. EXISTING STATE-FURNISHED MODEL 2070L CONTROLLER WITH MODEL 332 CABINET, BBS AND VIDEO IMAGE VEHICLE DETECTION SYSTEM. SEE SHEET E-22.
2. INSTALL 120/240 V, METERED SERVICE, TYPE III-BF SERVICE EQUIPMENT ENCLOSURE.
   ID No. 12-55-005-0-009.600
   100 A, 240 V, 2P, CB (MAIN)
   40 A, 120 V, 1P, CB (SIGNAL)
   30 A, 120 V, 1P, CB (LIGHTING)
   15 A, 120 V, 1P, CB (IISNS)
   15 A, 120 V, 1P, CB (PEC)
3. INSTALL TYPE H RISER.
4. EQUIPMENT TO REMAIN FOR PERMANENT INSTALLATION. SEE SHEET E-20.
5. RC EXISTING 120/240 V, METERED SERVICE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
6. INSTALL 3"C, CONDUCTORS BY SAN DIEGO GAS & ELECTRIC.

EXISTING 6′ X 50′ VIDEO DETECTION CAMERA ZONE

EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6	7	8
#14	Ø1				3	3(N)	3(N)		3(N)
	Ø2		3(N)	3(N)		3(N)	3(N)		3(N)
	Ø7	3	3(N)	3(N)			3(N)		3(N)
	Ø8	3	3(N)	3(N)		3(N)	3(N)		3(N)
	Ø1P		2(N)	2(N)	2	2(N)	2(N)		2(N)
	Ø2P					2(N)	2(N)		2(N)
	Ø8P				2	2(N)	2(N)		2(N)
	Ø1P PPB	1	1(N)	1(N)					1(N)
	Ø2P PPB					1(N)	1(N)		1(N)
	Ø8P PPB				1	1(N)	1(N)		1(N)
	PPB COMMON	1	1(N)	1(N)	1	1(N)	1(N)		1(N)
#10	SIGNAL COMMON	1	1(N)	1(N)	1	1(N)	1(N)		1(N)
	LUMINAIRE	2	2(N)	2(N)	2	2(N)	2(N)	2(N)	
#6	SERVICE							2(N)	2(N)
VIDEO DETECTION CAMERA CABLE		1(**)	2(N)	2(N)		1(N)	2(N)		4(N)
CONDUIT SIZE		*	*(N)	3"(N)	*	*(N)	3"(N)	2"(N)	2-4"(N)

* - OVERHEAD WIRE

** - REMOVE EXISTING AND INSTALL NEW CABLE

(N) - NEW

TEMPORARY SIGNAL AND LIGHTING (LOCATION 3) (STAGE 2B)

SCALE: 1" = 20′

E-17

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 03-16-12
DATE PLOTTED => 24-APR-2012
TIME PLOTTED => 08:07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	294	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

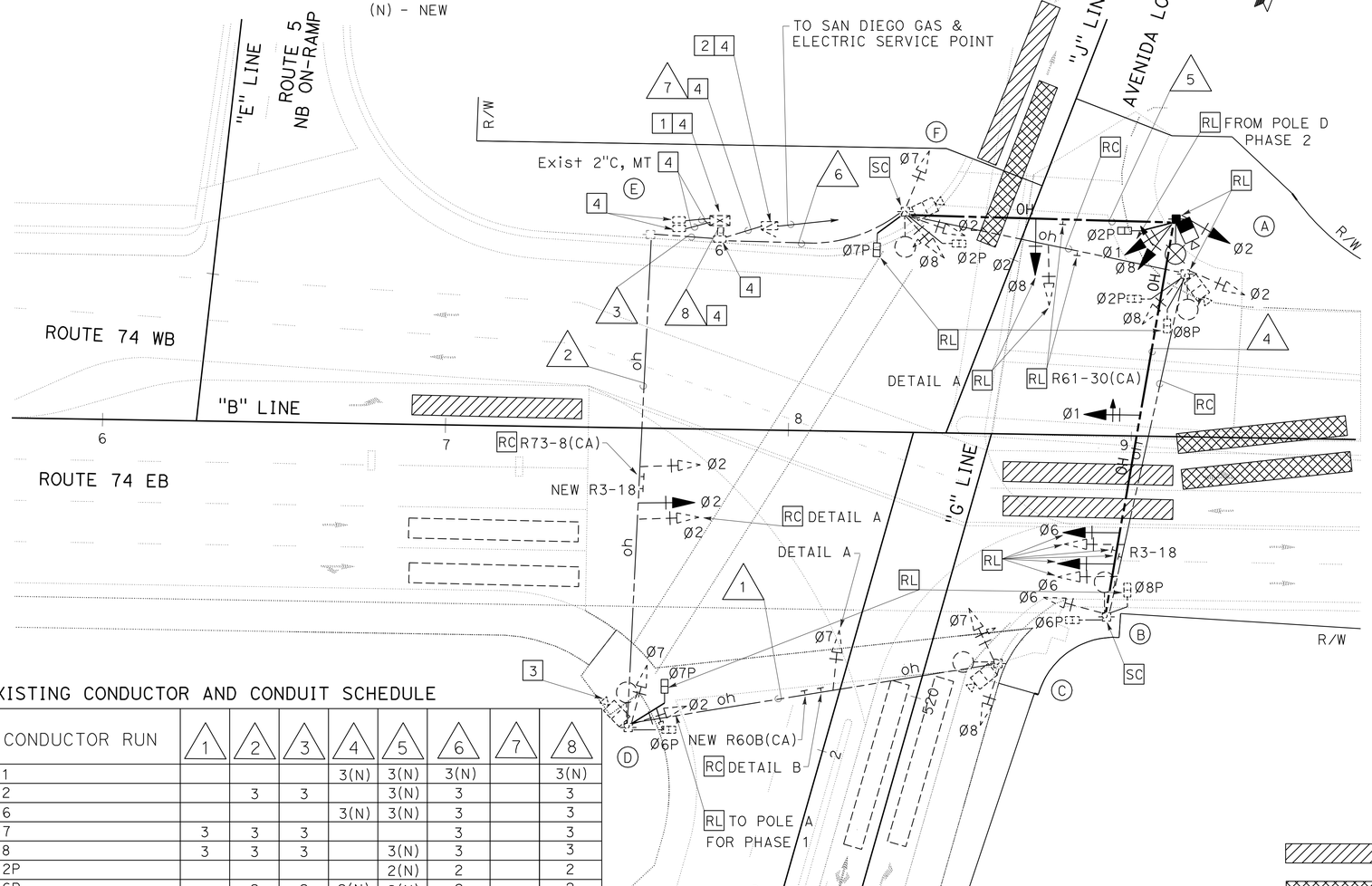
NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

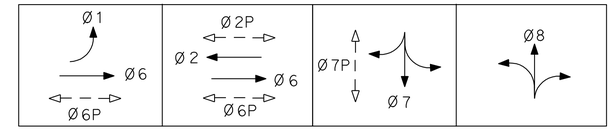
EXISTING POLE AND EQUIPMENT SCHEDULE

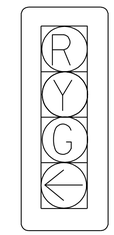
No.	STANDARD Type	STANDARD SMA	STANDARD LMA	VEH SIG MTG Pole	PED SIGNAL MTG	PPB Ø	PPB ARROW	HPS LUMINAIRE
A	WOOD(*)	OVERHEAD WIRE	12'	SV-2-TA(R) SV-3-TA(N)	SP-2-T(R) SP-1-T(N)	2(N) 8(R)	→ →	310 W
B	WOOD	OVERHEAD WIRE	12'	SV-1-T	SP-2-T(R) SP-1-T(N)	8(R)	→	310 W
C	WOOD	OVERHEAD WIRE	12'	SV-2-TA		6	→	310 W
D	WOOD	OVERHEAD WIRE	12'	SV-2-TA(R) SV-1-T(N)	SP-1-T(R) SP-2-T(N)	6 7(N)	← ←	310 W
E	WOOD	OVERHEAD WIRE						
F	WOOD	OVERHEAD WIRE	12'	SV-3-TA	SP-1-T(R) SP-2-T(N)	2(N) 7(N)	← ←	310 W

(*) - RL ALL EXISTING EQUIPMENT, UNLESS OTHERWISE NOTED
(R) - RC
(N) - NEW



PHASE DIAGRAM





DETAIL A
NTS

DETAIL B
NTS

EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6	7	8
#14	Ø1				3(N)	3(N)	3(N)		3(N)
	Ø2		3	3		3(N)	3		3
	Ø6				3(N)	3(N)	3		3
	Ø7	3	3	3			3		3
	Ø8	3	3	3		3(N)	3		3
	Ø2P					2(N)	2		2
	Ø6P		2	2	2(N)	2(N)	2		2
	Ø7P		2(N)	2(N)			2		2
	Ø2P PPB					1(N)	1		1
	Ø6P PPB	1	1	1					1
	Ø7P PPB		1(N)	1(N)			1		1
	PPB COMMON	1	1	1		1(N)	1		1
#10	SIGNAL COMMON	1	1	1	1(N)	1(N)	1		1
	LUMINAIRE	2	2	2	2(N)	2(N)	2	2	
#6	SERVICE							2	2
VIDEO DETECTION CAMERA CABLE		1	2	2		1(N)	1/1(**)		3/1(**)
CONDUIT SIZE		*	*	3"	*(N)	*(N)	3"	2"	2-4"

* - OVERHEAD WIRE
** - REMOVE EXISTING AND INSTALL NEW CABLE
(N) - NEW

NOTES: (THIS SHEET ONLY)

1. EXISTING STATE-FURNISHED MODEL 2070L CONTROLLER WITH MODEL 332 CABINET, BBS AND VIDEO IMAGE VEHICLE DETECTION SYSTEM. SEE SHEET E-20.
2. EXISTING 120/240 V, METERED SERVICE, TYPE III-BF SERVICE EQUIPMENT ENCLOSURE. SEE SHEET E-20.
   ID No. 12-55-005-0-009.600
   100 A, 240 V, 2P, CB (MAIN)
   40 A, 120 V, 1P, CB (SIGNAL)
   30 A, 120 V, 1P, CB (LIGHTING)
   15 A, 120 V, 1P, CB (IISNS)
   15 A, 120 V, 1P, CB (PEC)
3. ADJUST EXISTING VIDEO DETECTION CAMERA FOR NEW DETECTION CAMERA ZONE.
4. EQUIPMENT TO REMAIN FOR PERMANENT INSTALLATION. SEE SHEET E-20.
5. RC ALL EQUIPMENT, AB CONDUITS AFTER TEMPORARY STAGING IS FINISHED, UNLESS OTHERWISE NOTED.

6' X 22' VIDEO DETECTION CAMERA ZONE

AB EXISTING 6' X 50' VIDEO DETECTION CAMERA ZONE

EXISTING 6' X 50' VIDEO DETECTION CAMERA ZONE

APPROVED FOR ELECTRICAL WORK ONLY

TEMPORARY SIGNAL AND LIGHTING (LOCATION 3) (STAGE 2C)

SCALE: 1" = 20'

E-18

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN
FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY / DATE REVISED

LAST REVISION 12-01-11
DATE PLOTTED => 16-APR-2012
TIME PLOTTED => 06:16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	295	515

Vanessa Van Truong 03-19-12
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp. 6/30/12 ELECTRICAL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE: FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

POLE AND EQUIPMENT SCHEDULE

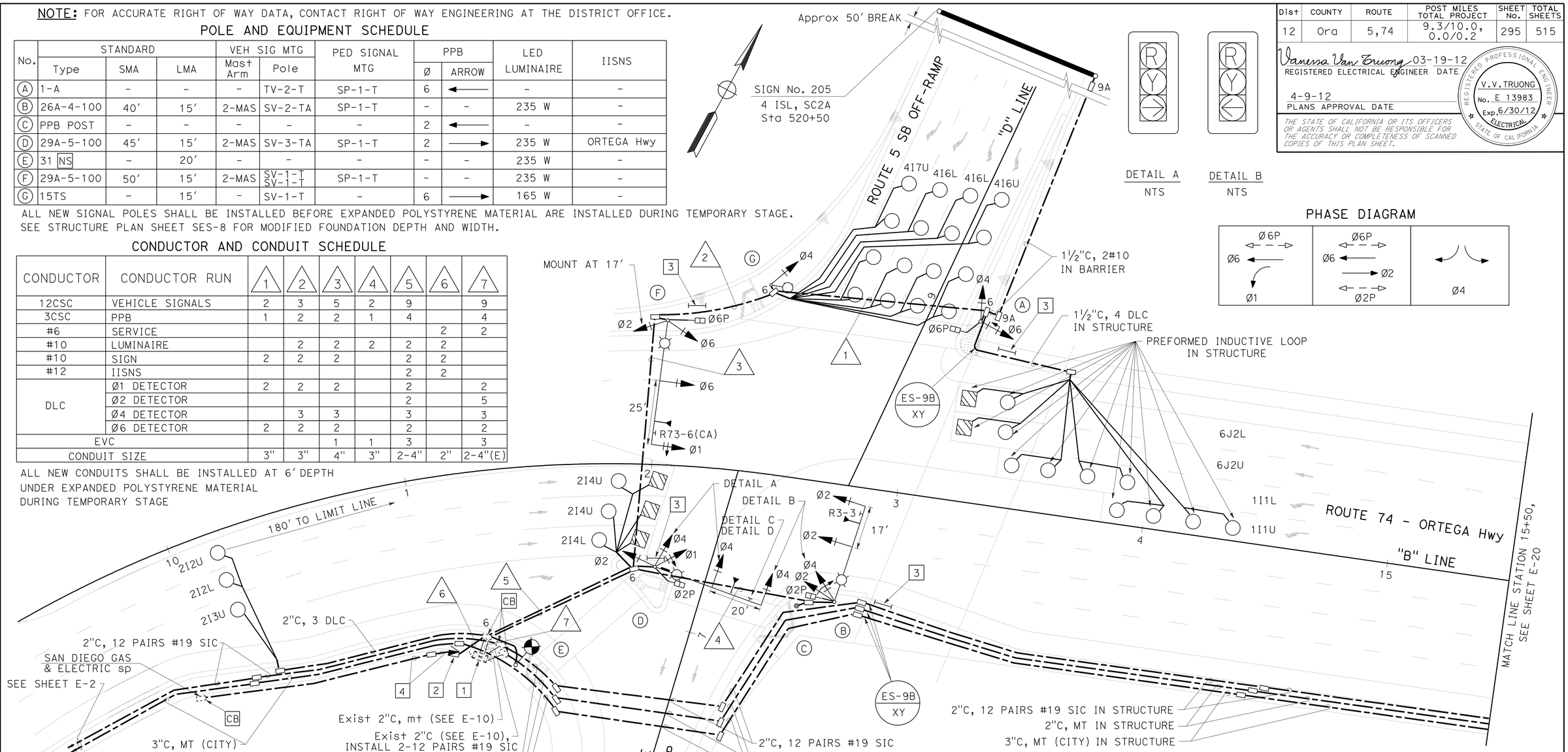
No.	STANDARD Type	STANDARD SMA	STANDARD LMA	VEH SIG MTG Mast Arm	VEH SIG MTG Pole	PED SIGNAL MTG	PPB Ø	PPB ARROW	LED LUMINAIRE	IISNS
(A)	1-A	-	-	-	TV-2-T	SP-1-T	6	←	-	-
(B)	26A-4-100	40′	15′	2-MAS	SV-2-TA	SP-1-T	-	-	235 W	-
(C)	PPB POST	-	-	-	-	-	2	←	-	-
(D)	29A-5-100	45′	15′	2-MAS	SV-3-TA	SP-1-T	2	→	235 W	ORTEGA Hwy
(E)	31 NS	-	20′	-	-	-	-	-	235 W	-
(F)	29A-5-100	50′	15′	2-MAS	SV-1-T SV-1-T	SP-1-T	-	-	235 W	-
(G)	15TS	-	15′	-	SV-1-T	-	6	→	165 W	-

ALL NEW SIGNAL POLES SHALL BE INSTALLED BEFORE EXPANDED POLYSTYRENE MATERIAL ARE INSTALLED DURING TEMPORARY STAGE.
SEE STRUCTURE PLAN SHEET SES-8 FOR MODIFIED FOUNDATION DEPTH AND WIDTH.

CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6	7
12CSC	VEHICLE SIGNALS	2	3	5	2	9		9
3CSC	PPB	1	2	2	1	4		4
#6	SERVICE						2	2
#10	LUMINAIRE		2	2	2	2	2	
#10	SIGN	2	2	2		2	2	
#12	IISNS					2	2	
DLC	Ø1 DETECTOR	2	2	2		2		2
	Ø2 DETECTOR					2		5
	Ø4 DETECTOR		3	3		3		3
	Ø6 DETECTOR	2	2	2		2		2
EVC				1	1	3		3
CONDUIT SIZE		3"	3"	4"	3"	2-4"	2"	2-4"(E)

ALL NEW CONDUITS SHALL BE INSTALLED AT 6′ DEPTH
UNDER EXPANDED POLYSTYRENE MATERIAL
DURING TEMPORARY STAGE



DETAIL A
NTS

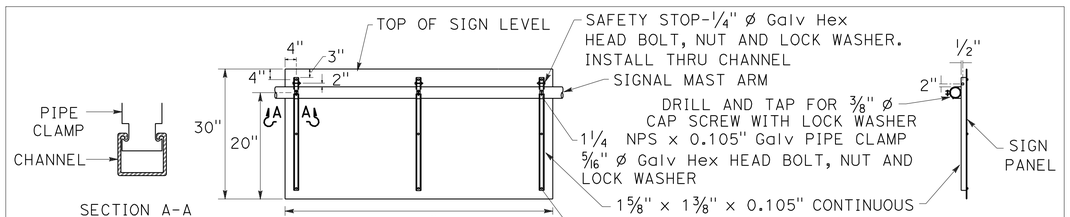
DETAIL B
NTS

PHASE DIAGRAM

NOTES: (THIS SHEET ONLY)

1. EXISTING STATE-FURNISHED MODEL 2070L CONTROLLER WITH MODEL 332 CABINET AND BBS. SEE SHEET E-10. REMOVE VIDEO IMAGE VEHICLE DETECTION SYSTEM.
2. INSTALL 120/240 V, METERED SERVICE, TYPE III-BF SERVICE EQUIPMENT ENCLOSURE. ID No. 12-55-005-0-009.500
   100 A, 240 V, 2P, CB (MAIN)
   40 A, 120 V, 1P, CB (SIGNAL)
   30 A, 120 V, 1P, CB (LIGHTING)
   15 A, 120 V, 1P, CB (IISNS)
   15 A, 120 V, 1P, CB (SIGN)
   15 A, 120 V, 1P, CB (PEC)
3. INSTALL TYPE I PEDESTRIAN BARRICADE WITH 2-SIGN R9-3A BACK TO BACK.
4. INSTALL 3"C, CONDUCTORS BY SAN DIEGO GAS & ELECTRIC.
5. ALL NEW PED SIGNAL FACE SHALL BE LED COUNTDOWN PEDESTRIAN SIGNAL MODULE.

DETAIL C
NTS



SIGN MOUNTING DETAILS
DETAIL D
NTS

SIGNAL AND LIGHTING (LOCATION 1)

SCALE: 1" = 20′

E-19

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 03-16-12
DATE PLOTTED => 16-APR-2012
TIME PLOTTED => 06:16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	296	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

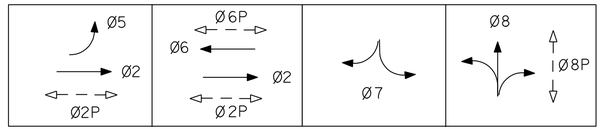
REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp. 6/30/12 ELECTRICAL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

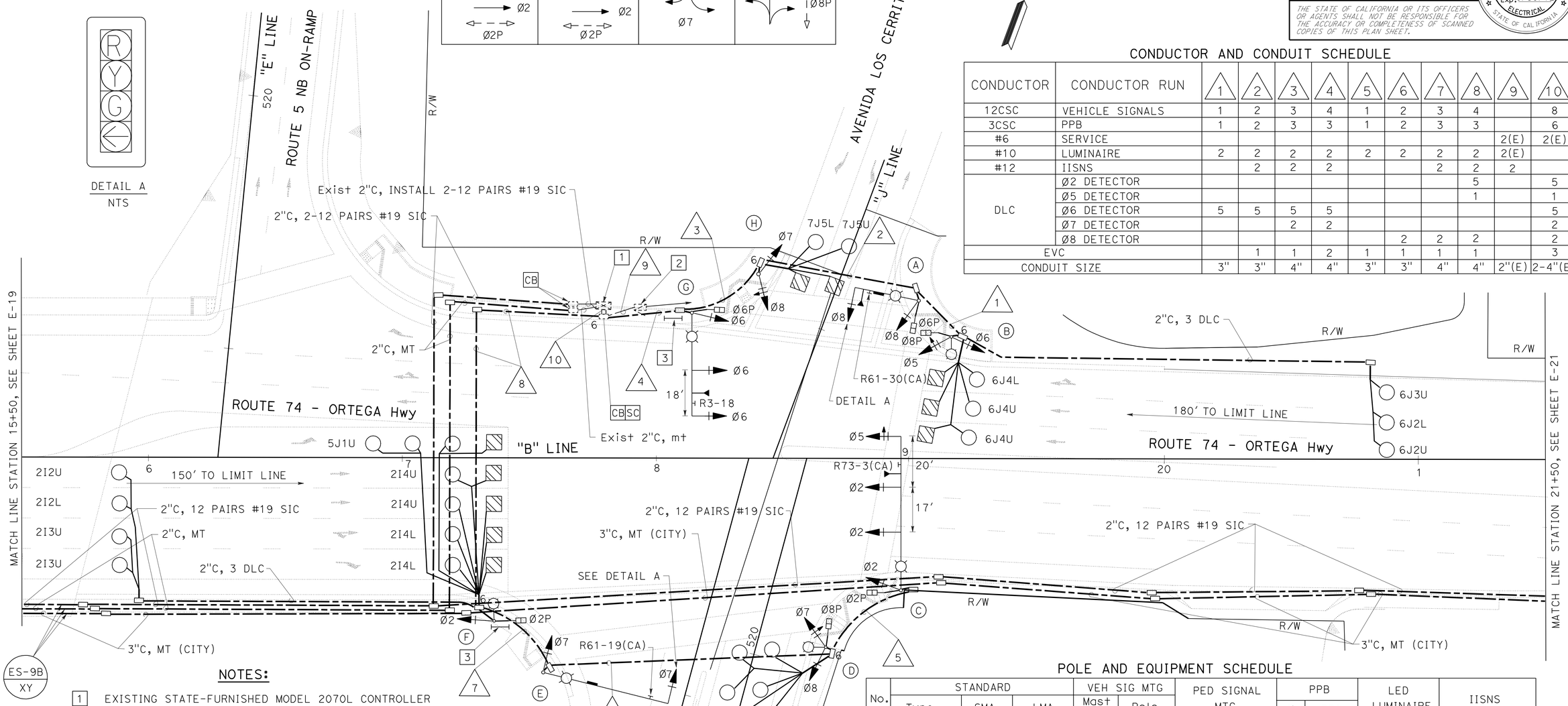
NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

PHASE DIAGRAM



DETAIL A
NTS



CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6	7	8	9	10
12CSC	VEHICLE SIGNALS	1	2	3	4	1	2	3	4		8
3CSC	PPB	1	2	3	3	1	2	3	3		6
#6	SERVICE									2(E)	2(E)
#10	LUMINAIRE	2	2	2	2	2	2	2	2	2(E)	
#12	IISNS		2	2	2			2	2	2	
DLC	Ø2 DETECTOR								5		5
	Ø5 DETECTOR								1		1
	Ø6 DETECTOR	5	5	5	5						5
	Ø7 DETECTOR			2	2						2
	Ø8 DETECTOR						2	2	2		2
EVC			1	1	2	1	1	1	1		3
CONDUIT SIZE		3"	3"	4"	4"	3"	3"	4"	4"	2"(E)	2-4"(E)

POLE AND EQUIPMENT SCHEDULE

No.	STANDARD Type	STANDARD SMA	STANDARD LMA	VEH SIG MTG Mast Arm	VEH SIG MTG Pole	PED SIGNAL MTG	PPB Ø	PPB ARROW	LED LUMINAIRE	IISNS
A	19-4-100	25'	15'	MAS	SV-1-T	SP-1-T	6	←	165 W	ORTEGA Hwy
B	15TS	-	15'	-	SV-2-TA	SP-1-T	8	→	165 W	-
C	61-5-100	60'	15'	MAT 2-MAS	SV-1-T	SP-1-T	8	←	165 W	-
D	15TS	-	15'	-	SV-2-TA	SP-1-T	2	→	165 W	-
E	29-5-100	50'	15'	MAT	SV-1-T	-	2	←	165 W	ORTEGA Hwy
F	15TS	-	15'	-	SV-1-T	SP-1-T	-	-	165 W	-
G	26-4-100	40'	15'	MAT MAS	SV-1-T	SP-1-T	-	-	165 W	-
H	1-A	-	-	-	TV-2-T	-	6	→	-	-

NOTES:

1. EXISTING STATE-FURNISHED MODEL 2070L CONTROLLER WITH MODEL 332 CABINET AND BBS. SEE SHEET E-18. REMOVE EXISTING VIDEO IMAGE VEHICLE DETECTION SYSTEM.
2. EXISTING 120/240 V, METERED SERVICE, TYPE III-BF SERVICE EQUIPMENT ENCLOSURE. SEE SHEET E-18.
   ID No. 12-55-005-0-009.600
   100 A, 240 V, 2P, CB (MAIN)
   40 A, 120 V, 1P, CB (SIGNAL)
   30 A, 120 V, 1P, CB (LIGHTING)
   15 A, 120 V, 1P, CB (IISNS)
   15 A, 120 V, 1P, CB (PEC)
3. INSTALL TYPE I PEDESTRIAN BARRICADE WITH 2-SIGN R9-3A AND 2-SIGN R9-3B BACK TO BACK.
4. ALL NEW PED SIGNAL FACE SHALL BE LED COUNTDOWN PEDESTRIAN SIGNAL MODULE.

APPROVED FOR ELECTRICAL WORK ONLY

SIGNAL AND LIGHTING (LOCATION 2)

SCALE: 1" = 20'

E-20

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 12-01-11
DATE PLOTTED => 16-APR-2012
TIME PLOTTED => 06:16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	297	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

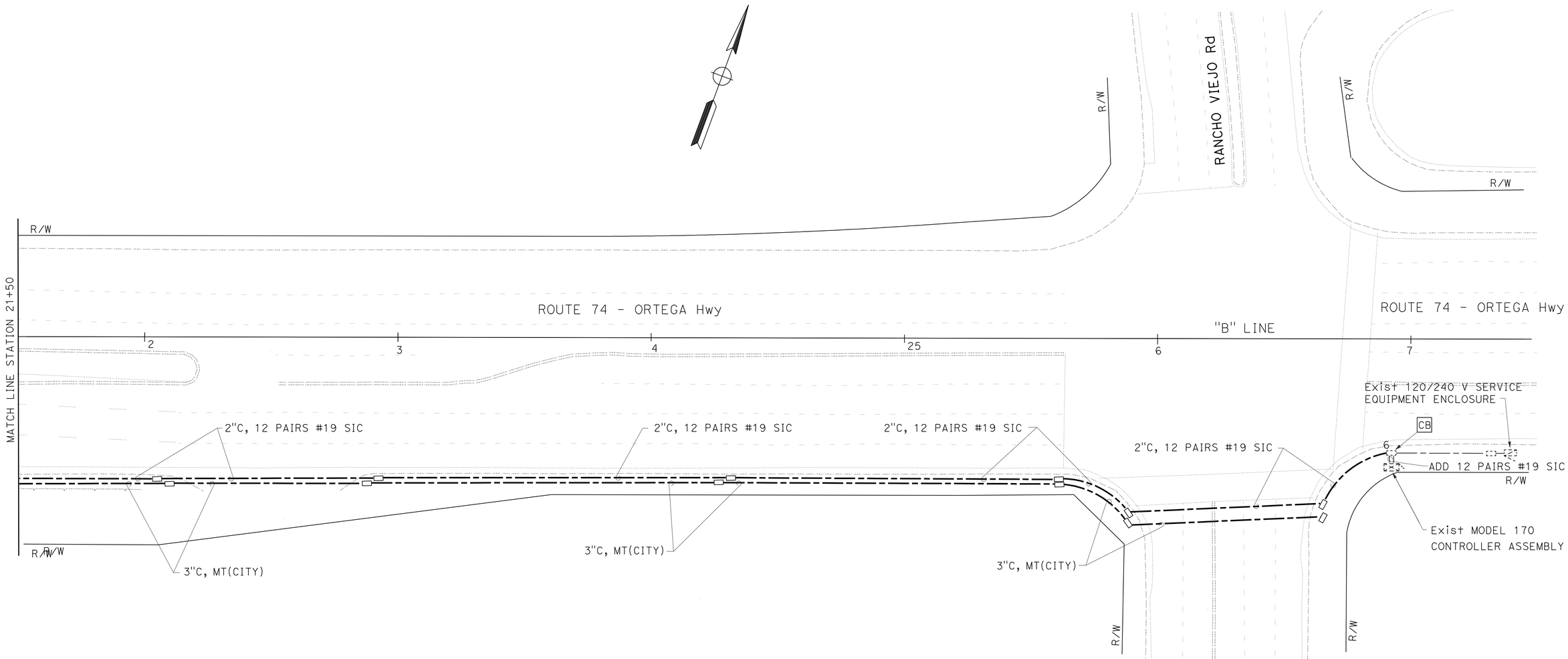
4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
V.V. TRUONG
No. E 13983
Exp. 6/30/12
ELECTRICAL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SIGNAL AND LIGHTING (LOCATION 2)

SCALE: 1" = 20'

E-21

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 12-01-11
DATE PLOTTED => 16-APR-2012
TIME PLOTTED => 11:29

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	298	515

Vanessa Van Truong 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER V.V. TRUONG No. E 13983 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA

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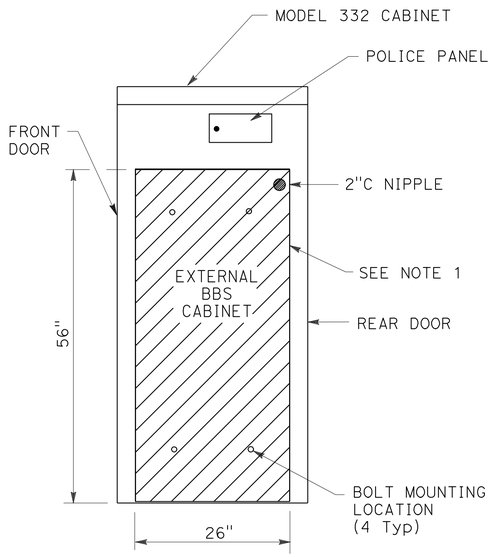
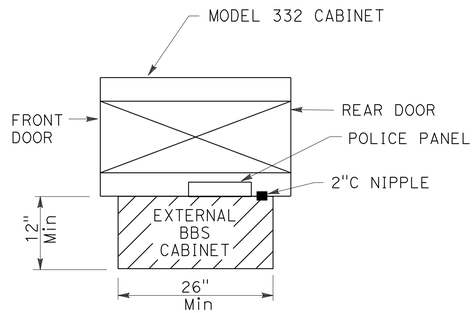
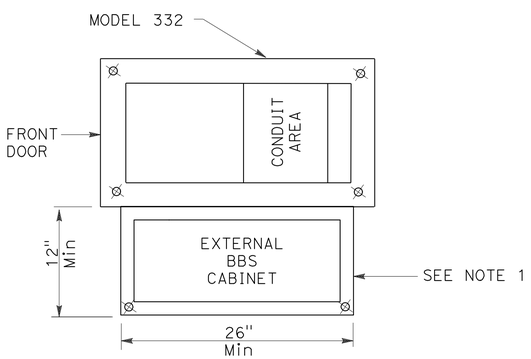


SIDE VIEW



TOP VIEW

EXTERNAL BBS CABINET MOUNTED TO THE MODEL 332 CABINET

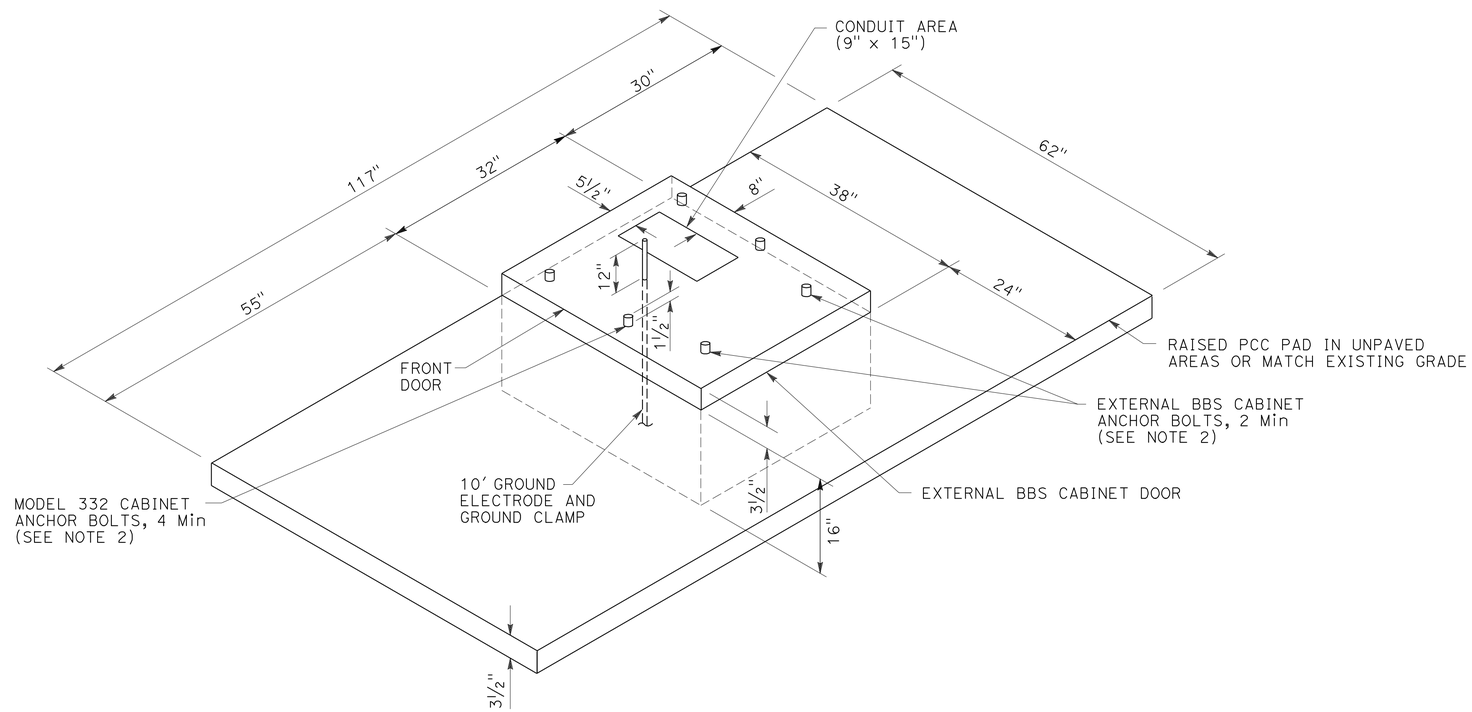


BASE PLAN FOR BBS MOUNTED TO THE MODEL 332 CABINET

(FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE SHEET A6-1 TO A6-4, CABINET HOUSING DETAILS OF THE TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATION (TEES))

NOTES: (THIS SHEET ONLY)

1. THE EXTERNAL BBS CABINET SHALL BE MOUNTED TO THE MODEL 332 CABINET WITH FOUR 18-8 STAINLESS STEEL HEX HEAD, FULLY-THREADED, 3/8"-16 X 1" BOLTS; TWO WASHERS PER BOLT, DESIGNED FOR 3/8" BOLTS AND ARE 18-8 STAINLESS STEEL, 1" OUTSIDE DIAMETER, ROUND, AND FLAT; AND ONE K-LOCK NUT PER BOLT THAT IS 18-8 STAINLESS STEEL AND A HEX-NUT. THE ENGINEER WILL HAVE TO APPROVE THE BOLT MOUNTING LOCATION PRIOR TO INSTALLATION.
2. THE ANCHOR BOLTS SHALL BE 3/4" Dia X 15" WITH A 2"-90° BEND. THE CABINET MANUFACTURER'S SPECIFICATION SHALL DETERMINE THE LOCATION OF THE ANCHOR BOLTS IN THE FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE THE ANCHOR BOLTS AND ITS LOCATION IN THE FOUNDATION PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF THE BBS CABINET PRIOR TO CONSTRUCTING THE FOUNDATION OF THE MODIFIED PORTION OF MODEL 332 CABINET FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE ANY NECESSARY DEVIATIONS PRIOR TO CONSTRUCTION.
4. ALL DIMENSIONS ARE NOMINAL.
5. FOR ADDITIONAL BBS DETAILS, SEE INFORMATION HANDOUT AS DESCRIBED IN "SUPPLEMENTAL PROJECT INFORMATION".



MODIFIED MODEL 332 CABINET FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM (BBS)

(FOR DIMENSIONS AND DETAILS NOT SHOWN AND ADDITIONAL NOTES, SEE SHEET ES-3C OF THE STANDARD PLANS)

SIGNAL AND LIGHTING
(CONTROLLER FOUNDATION DETAILS)
NO SCALE

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E-22

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
CALCULATED-DESIGNED BY: VANESSA TRUONG
CHECKED BY: SHAHRAM SHAHRIARI
REVISED BY
DATE REVISED

LAST REVISION 12-16-11
DATE PLOTTED => 16-APR-2012
TIME PLOTTED => 11:29

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	299	515

Barjesh K. Sharma 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER B.K.SHARMA No. E 19299 Exp. 12/31/12 ELECTRICAL STATE OF CALIFORNIA

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NOTE:

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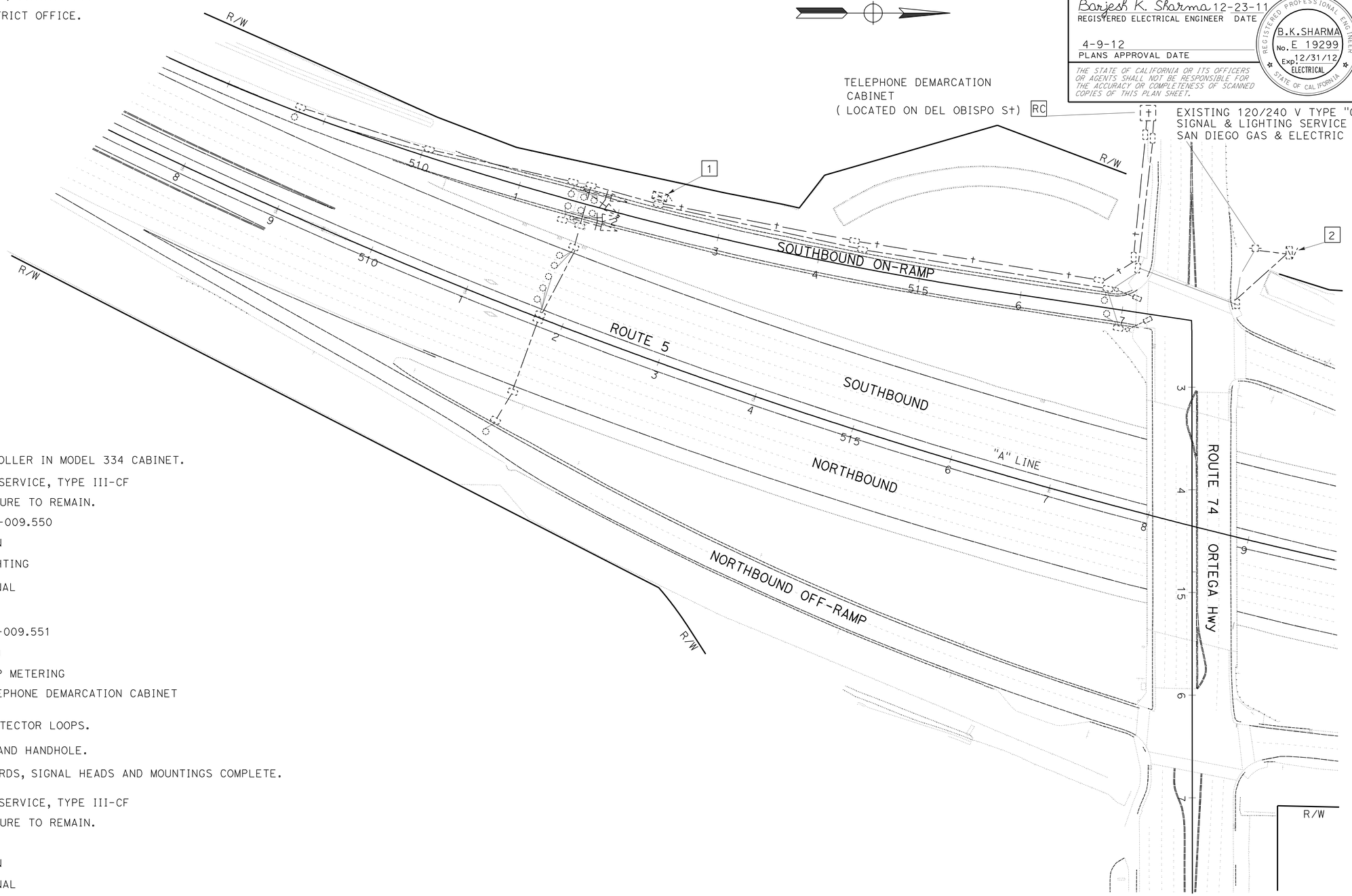

NOTES: (SHEET E-23 TO E-24)

1 RC EXISTING MODEL 170 CONTROLLER IN MODEL 334 CABINET.

2 EXISTING 120/240 V, METER SERVICE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE TO REMAIN.

METER No. 1 ID No. 12-55-005-0-009.550
- 100 A, 240 V, 2P, CB MAIN
- 40 A, 240 V, 2P, CB LIGHTING
- 50 A, 120 V, 1P, CB SIGNAL
- 15 A, 120 V, 1P, CB PEC

METER No. 2 ID No. 12-55-005-0-009.551
- 100 A, 120 V, 1P, CB MAIN
- 30 A, 120 V, 1P, CB RAMP METERING
- 20 A, 120 V, 1P, CB TELEPHONE DEMARCATION CABINET

3. AB ALL EXISTING CONDUITS, DETECTOR LOOPS.

RC ALL EXISTING PULL BOXES AND HANDHOLE.

RC EXISTING TYPE 1-A STANDARDS, SIGNAL HEADS AND MOUNTINGS COMPLETE.

4 EXISTING 120/240 V, METER SERVICE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE TO REMAIN.

METER No. 1
- 100 A, 240 V, 2P, CB MAIN
- 40 A, 120 V, 1P, CB SIGNAL

METER No. 2
- 100 A, 240 V, 2P, CB MAIN
- 30 A, 120 V, 1P, CB RAMP METERING
- 15 A, 120 V, 1P, CB TELEPHONE DEMARCATION CABINET
- 30 A, 120 V, 1P, CCTV CAMERA

APPROVED FOR ELECTRICAL WORK ONLY

RAMP METERING SYSTEM (LOCATION 1) (REMOVE)

SCALE: 1" = 50'

E-23

REVISED BY	DATE REVISED
BARJESH SHARMA	05/2011
VANESSA TRUONG	05/2011

CALCULATED-DESIGNED BY / CHECKED BY

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,74	9.3/10.0, 0.0/0.2	300	515

Barjesh K. Sharma 12-23-11
REGISTERED ELECTRICAL ENGINEER DATE

4-9-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
B.K.SHARMA
No. E 19299
Exp. 12/31/12
ELECTRICAL
STATE OF CALIFORNIA

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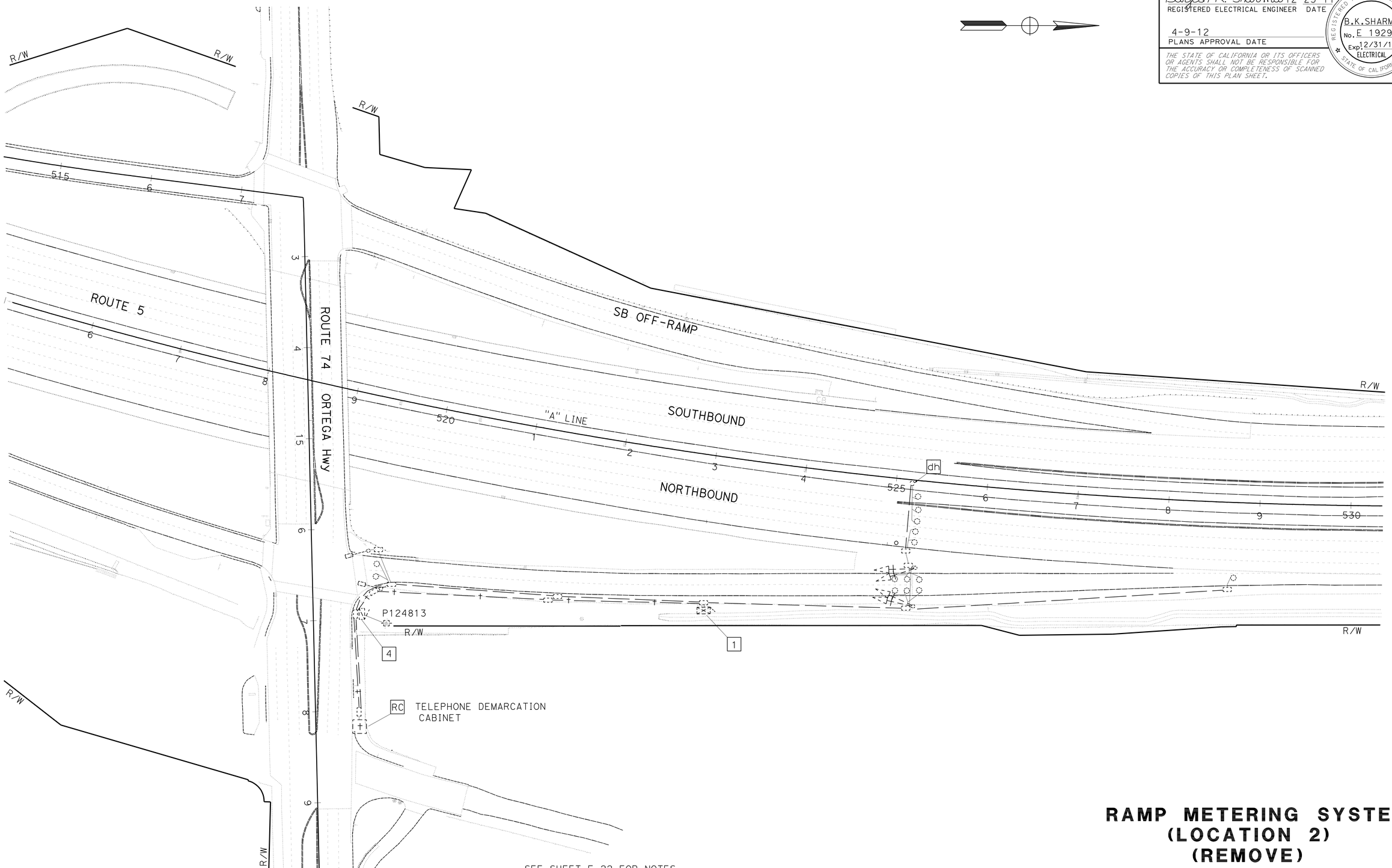

SEE SHEET E-22 FOR NOTES.

APPROVED FOR ELECTRICAL WORK ONLY

RAMP METERING SYSTEM (LOCATION 2) (REMOVE)

SCALE: 1" = 50'

E-24

REVISED BY	BARJESH SHARMA
DATE REVISED	05/2011
CALCULATED-DESIGNED BY	VANESSA TRUONG
CHECKED BY	
FUNCTIONAL SUPERVISOR	SHAHRAM SHAHRIARI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
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LAST REVISION 08-04-11 | DATE PLOTTED => 16-APR-2012 | TIME PLOTTED => 11:30