

INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2-4	CONSTRUCTION DETAILS
5-8	TEMPORARY WATER POLLUTION CONTROL PLANS AND QUANTITIES
9	CONSTRUCTION AREA SIGNS
10-11	STAGE CONSTRUCTION PLANS AND QUANTITIES
12-16	TRAFFIC HANDLING PLANS, DETAILS AND QUANTITIES
17-20	PAVEMENT DELINEATION PLANS AND QUANTITIES
21-25	REVISED AND NEW STANDARD PLANS
STRUCTURE PLANS	
26-49	ROUTE 91 BRIDGE REHABILITATION

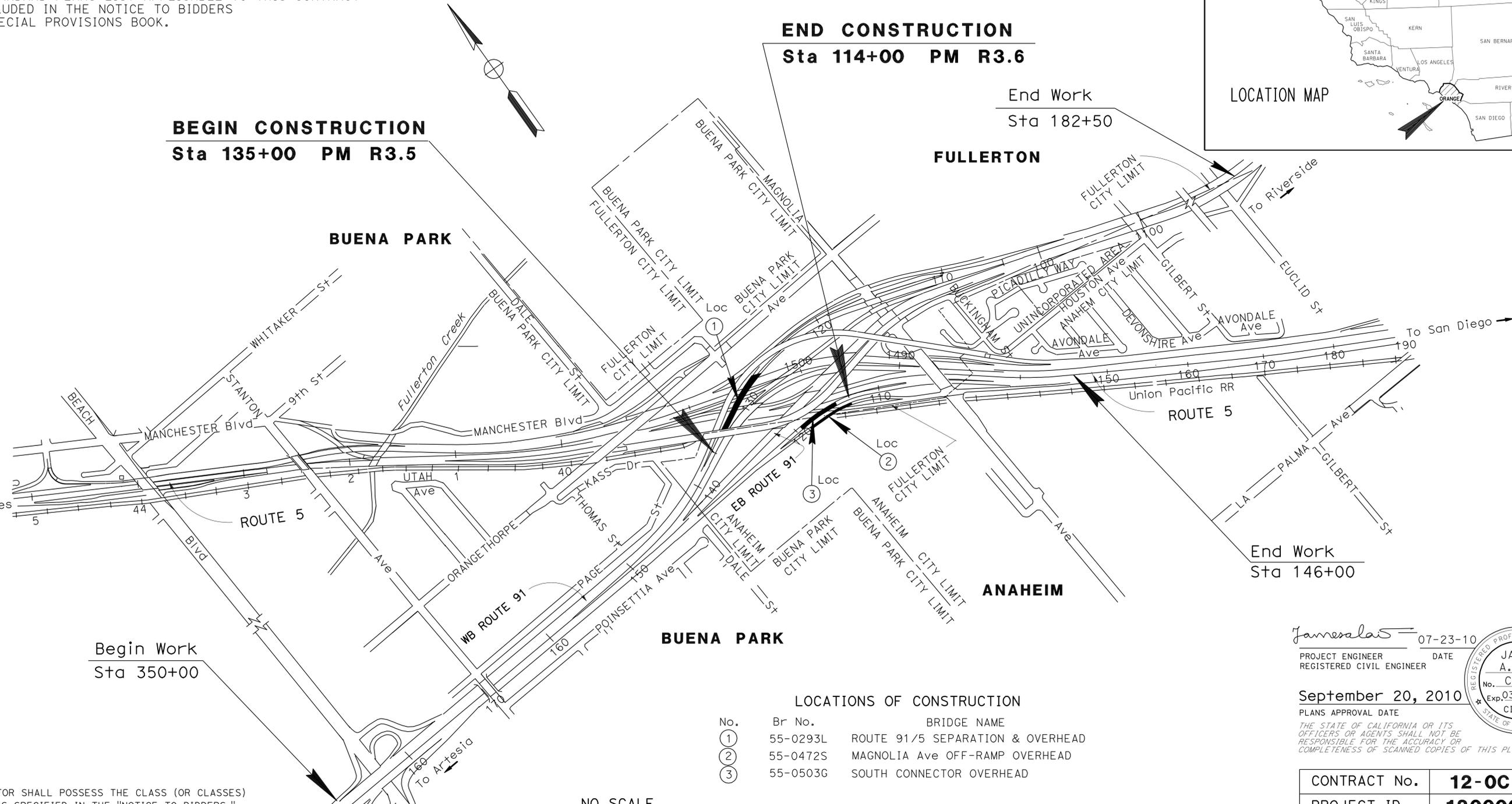
THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN ORANGE COUNTY
IN FULLERTON
AT VARIOUS LOCATIONS

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	1	49



PROJECT MANAGER
LEO CHEN

DESIGN ENGINEER
JAMES A. LAI

James Lai 07-23-10
PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

September 20, 2010
PLANS APPROVAL DATE

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.

LOCATIONS OF CONSTRUCTION

No.	Br No.	BRIDGE NAME
①	55-0293L	ROUTE 91/5 SEPARATION & OVERHEAD
②	55-0472S	MAGNOLIA Ave OFF-RAMP OVERHEAD
③	55-0503G	SOUTH CONNECTOR OVERHEAD

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

NO SCALE

DATE PLOTTED => 22-SEP-2010 TIME PLOTTED => 14:13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 SON NGUYEN

CALCULATED/DESIGNED BY
 CHECKED BY

JAMES A. LAI

REVISED BY
 DATE REVISED

JAMES LAI
 9-7-10

- NOTES:**
1. FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT DISTRICT OFFICE
 2. ALL DIMENSIONS ARE APPROXIMATE, TO BE VERIFIED IN THE FIELD
 3. EXCAVATE Min 4' UNDER THE APPROACH SLABS.
 4. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON PORTIONS OF THESE PLANS.

- LEGEND:**
- [Hatched Box] STRUCTURE APPROACH TYPE R(30D)
 - [Dotted Box] GROUT INJECTION

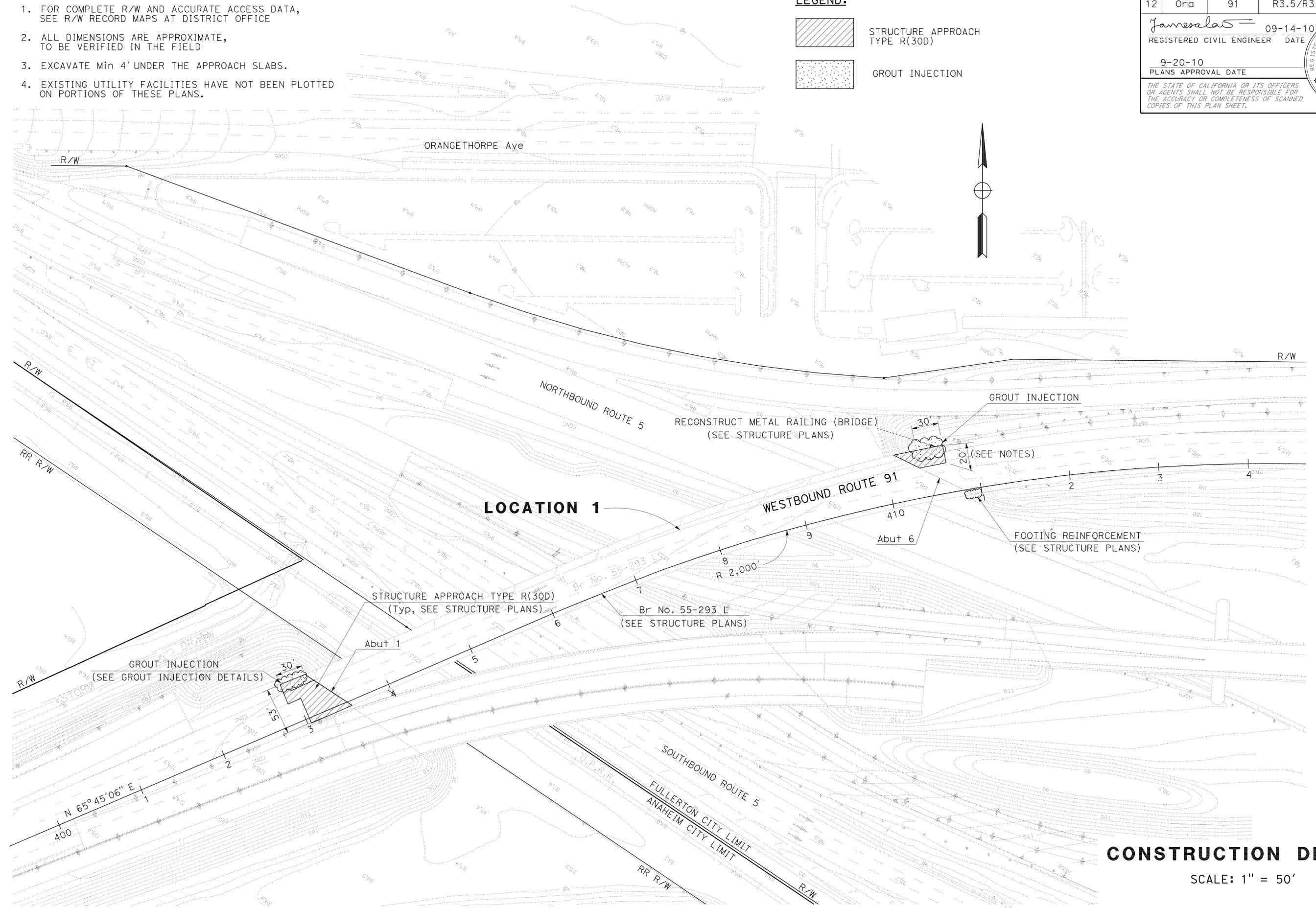
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	2	49

James Lai 09-14-10
 REGISTERED CIVIL ENGINEER DATE

9-20-10
 PLANS APPROVAL DATE

JAMES A. LAI
 No. C29368
 Exp. 03-31-11
 CIVIL

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CONSTRUCTION DETAILS

SCALE: 1" = 50'

C-1

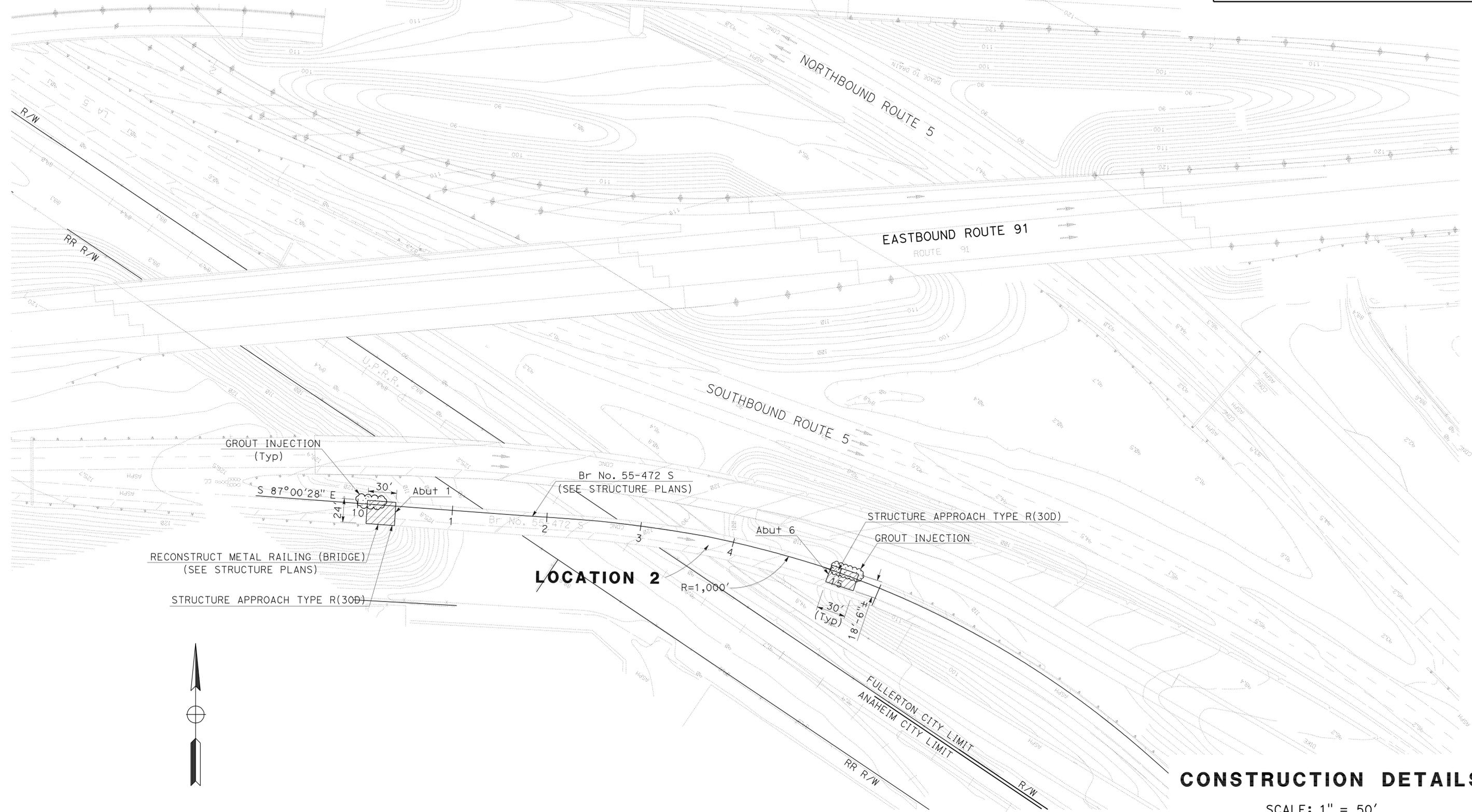
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	3	49

James Lai 09-14-10
REGISTERED CIVIL ENGINEER DATE
9-20-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JAMES A. LAI
No. C29368
Exp. 03-31-11
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STATE OF CALIFORNIA

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CONSTRUCTION DETAILS

SCALE: 1" = 50'

C-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN
FUNCTIONAL SUPERVISOR: SON NGUYEN
CALCULATED/DESIGNED BY: JAMES A. LAI
CHECKED BY:
REVISED BY: JAMES LAI
DATE REVISED: 9-7-10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	4	49

<i>James Lai</i>	09-14-10
REGISTERED CIVIL ENGINEER	DATE
9-20-10	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER

JAMES A. LAI

No. C29368

Exp. 03-31-11

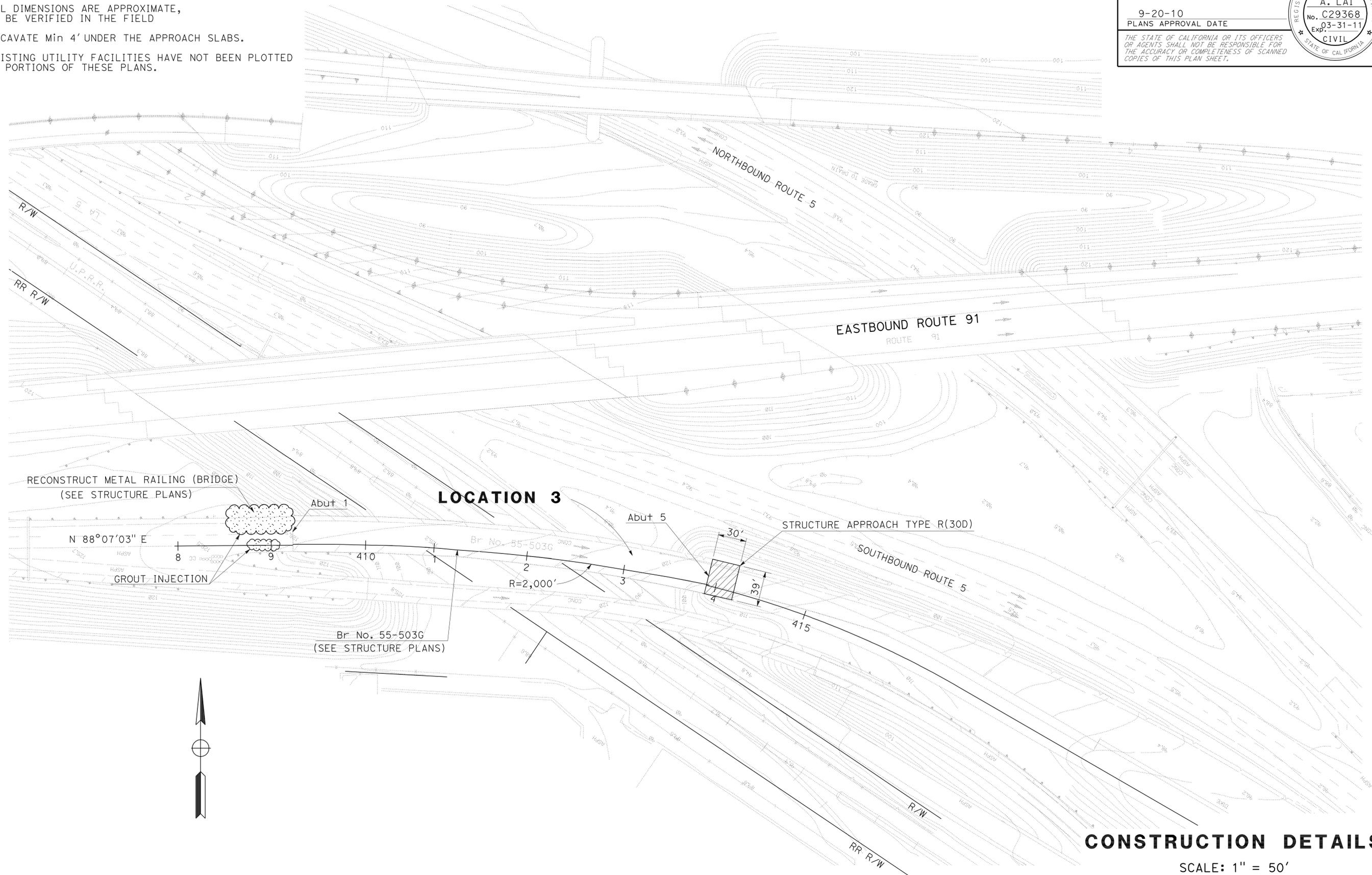
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CONSTRUCTION DETAILS

SCALE: 1" = 50'

C-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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 DESIGN
 FUNCTIONAL SUPERVISOR: SON NGUYEN
 CALCULATED/DESIGNED BY: JAMES A. LAI
 CHECKED BY:
 REVISED BY: JAMES LAI
 DATE REVISED: 9-7-10
 JAMES LAI
 9-7-10

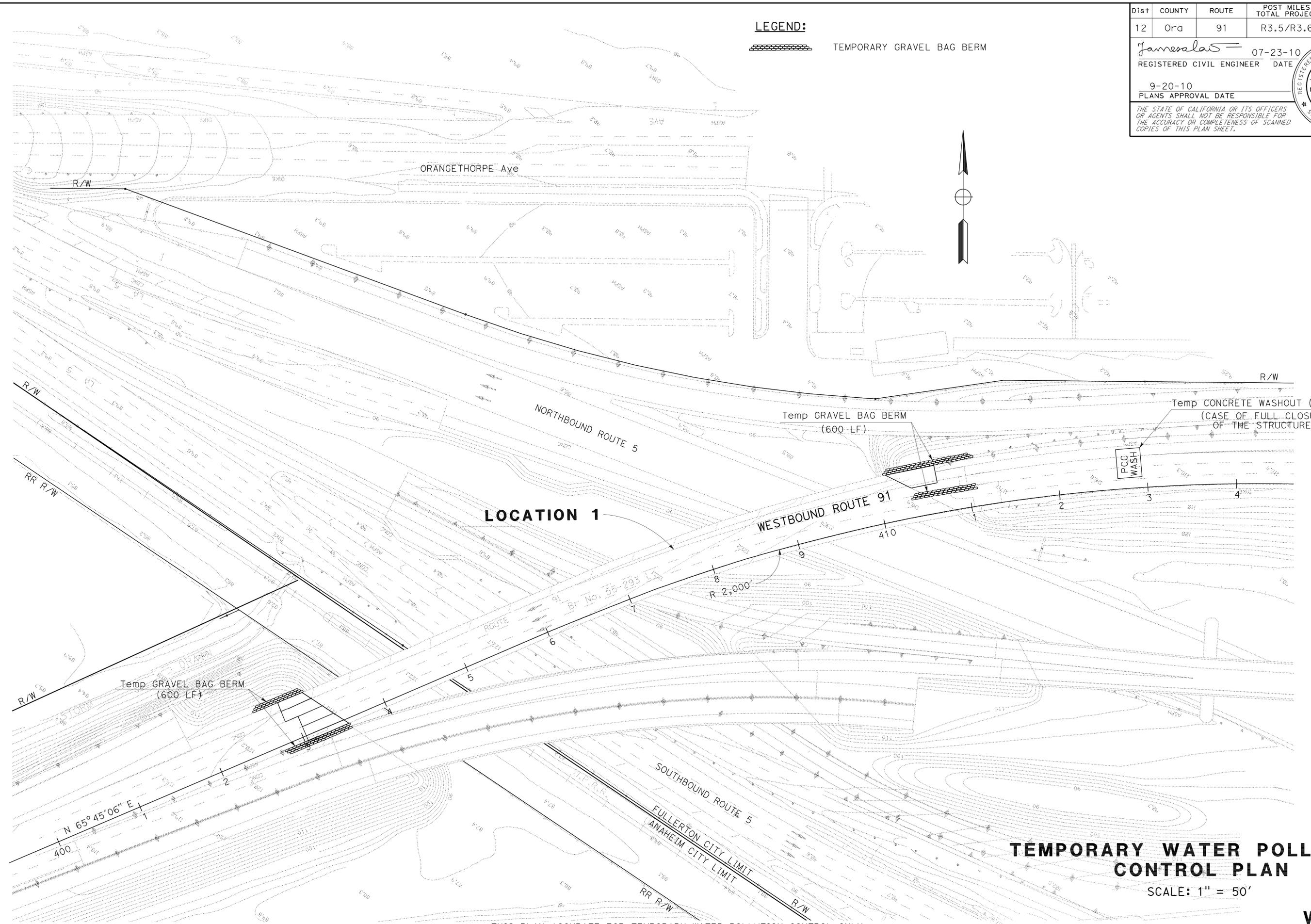
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	5	49

<i>James Lai</i>	07-23-10
REGISTERED CIVIL ENGINEER	DATE
9-20-10	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
JAMES A. LAI
No. C29368
Exp. 03-31-11
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STATE OF CALIFORNIA

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LEGEND:
 TEMPORARY GRAVEL BAG BERM



LOCATION 1

TEMPORARY WATER POLLUTION CONTROL PLAN

SCALE: 1" = 50'

WPC-1

THIS PLAN ACCURATE FOR TEMPORARY WATER POLLUTION CONTROL ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

REVISOR BY
 DATE

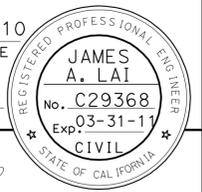
JAMES A. LAI

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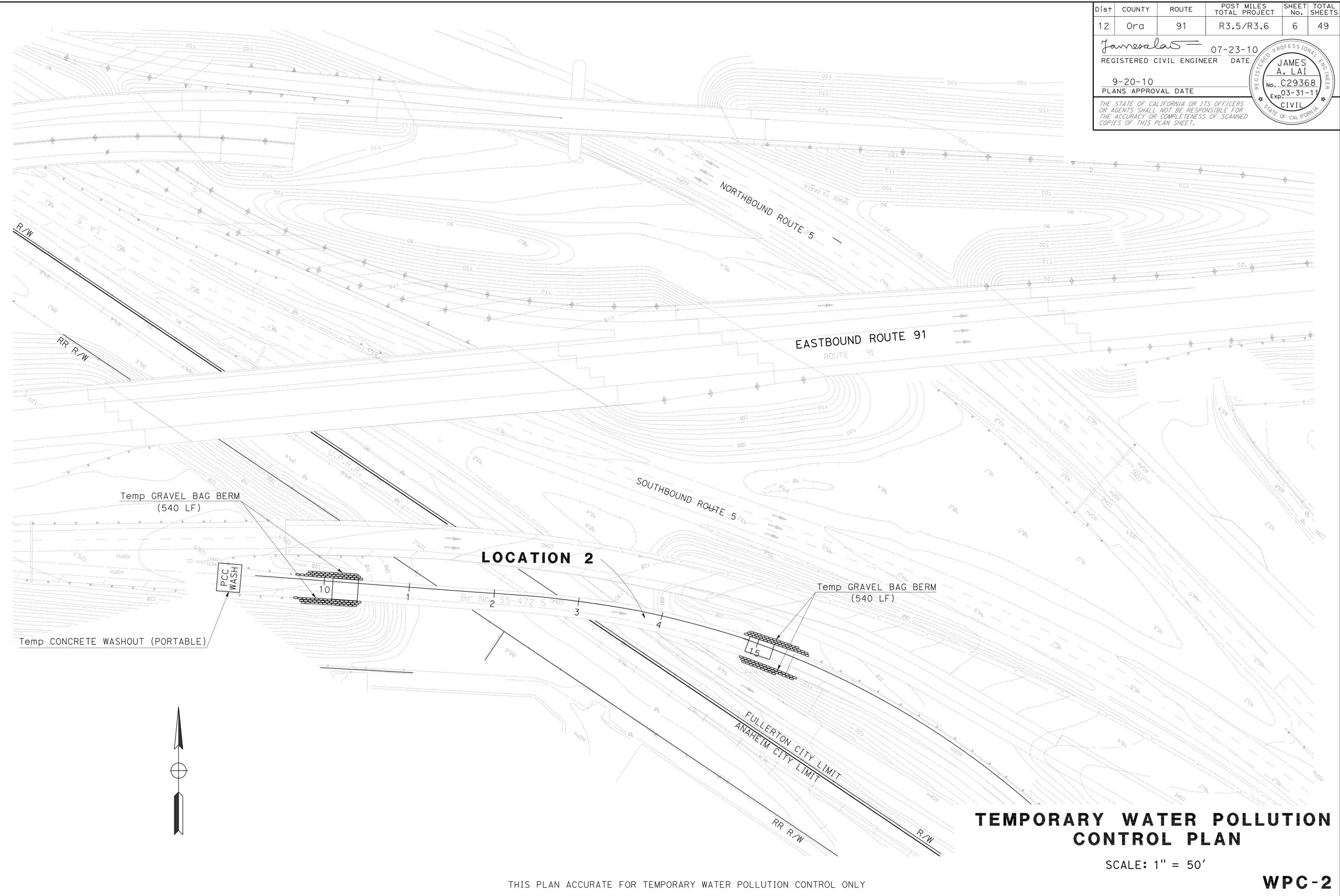
FUNCTIONAL SUPERVISOR
 SON NGUYEN

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	6	49

James Lai 07-23-10
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 CALCULATED/DESIGNED BY: [blank] CHECKED BY: [blank]
 JAMES A. LAI
 REVISED BY: [blank] DATE REVISED: [blank]



TEMPORARY WATER POLLUTION CONTROL PLAN

SCALE: 1" = 50'

WPC-2

THIS PLAN ACCURATE FOR TEMPORARY WATER POLLUTION CONTROL ONLY



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	7	49

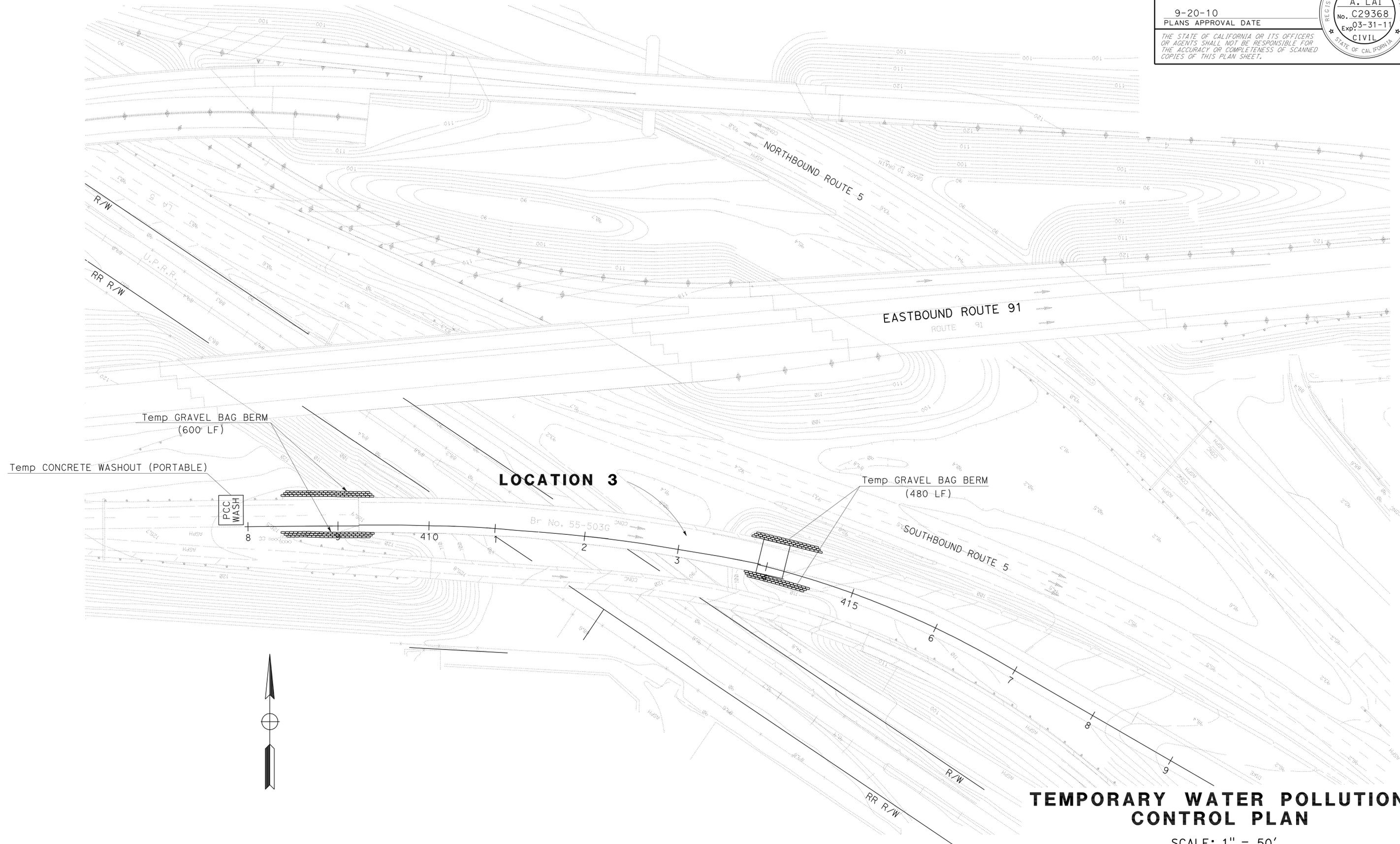
James Lai 07-23-10
REGISTERED CIVIL ENGINEER DATE

9-20-10
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
JAMES A. LAI
No. C29368
Exp. 03-31-11
CIVIL
STATE OF CALIFORNIA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	SON NGUYEN
CALCULATED/DESIGNED BY	CHECKED BY
JAMES A. LAI	
REVISED BY	DATE REVISED



TEMPORARY WATER POLLUTION CONTROL PLAN

SCALE: 1" = 50'

WPC-3

THIS PLAN ACCURATE FOR TEMPORARY WATER POLLUTION CONTROL ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	8	49

James Lai 07-23-10
 REGISTERED CIVIL ENGINEER DATE
 9-20-10
 PLANS APPROVAL DATE

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 SON NGUYEN
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 CHECKED BY
 JAMES A. LAI
 REVISED BY
 DATE REVISED

WATER POLLUTION CONTROL QUANTITIES

SHEET No.	TEMPORARY GRAVEL BAG BERM	TEMPORARY CONCRETE WASHOUT (PORTABLE)
	LF	EA
WPC-1	1200	1
WPC-2	1080	1
WPC-3	1080	1
TOTAL	3360	3

TEMPORARY WATER POLLUTION CONTROL QUANTITIES

WPCQ-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	9	49

James A. Lai 07-23-10
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9-20-10
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 No. C29368
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 CIVIL
 STATE OF CALIFORNIA

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NOTES:

- EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.
- FOR ADDITIONAL QUANTITIES OF CONSTRUCTION AREA SIGNS, SEE SHEET THQ-1.

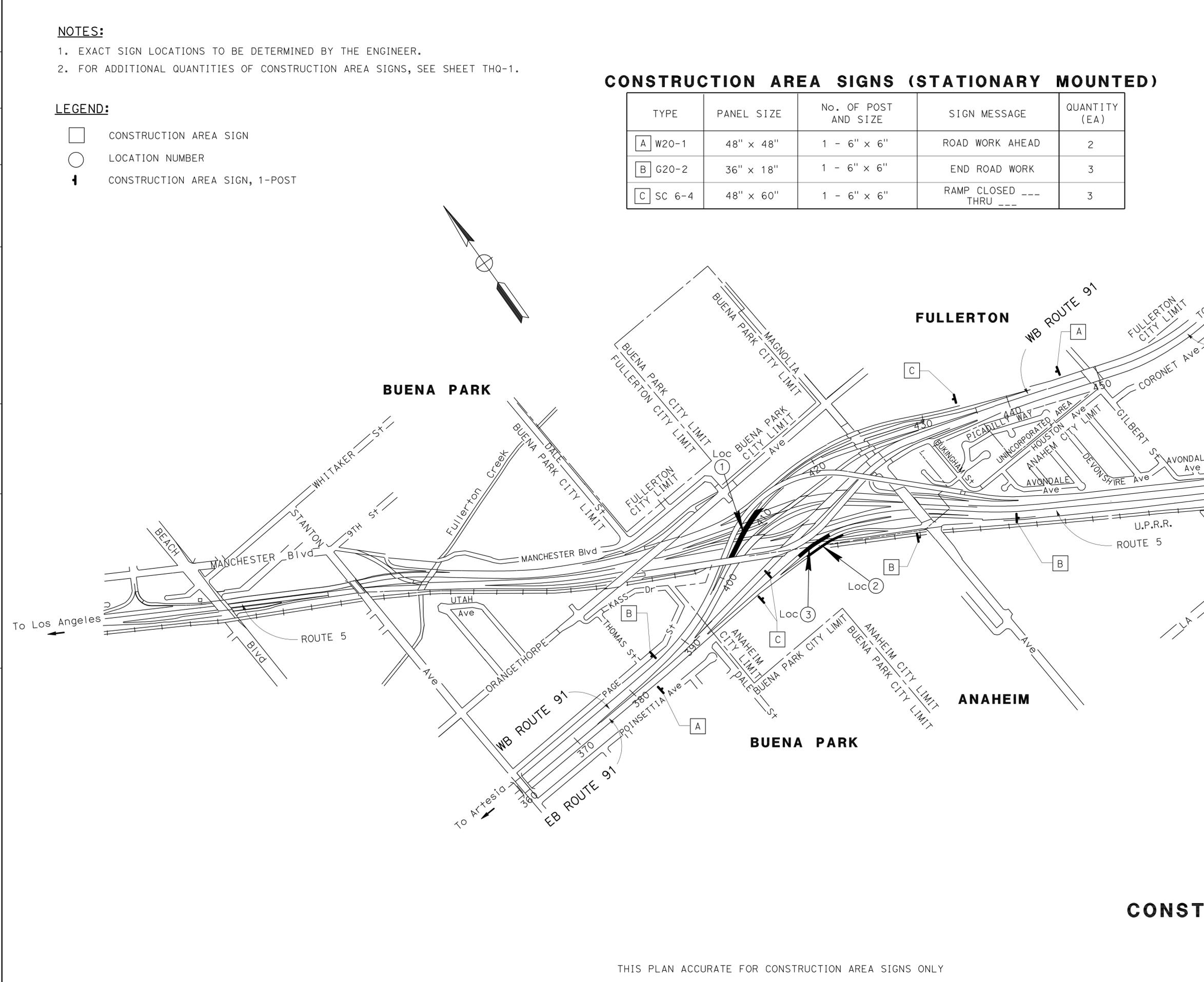
LEGEND:

- CONSTRUCTION AREA SIGN
- LOCATION NUMBER
- † CONSTRUCTION AREA SIGN, 1-POST

CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED)

TYPE	PANEL SIZE	No. OF POST AND SIZE	SIGN MESSAGE	QUANTITY (EA)
A W20-1	48" x 48"	1 - 6" x 6"	ROAD WORK AHEAD	2
B G20-2	36" x 18"	1 - 6" x 6"	END ROAD WORK	3
C SC 6-4	48" x 60"	1 - 6" x 6"	RAMP CLOSED --- THRU ---	3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 Caltrans



CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGNS ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 SON NGUYEN

CALCULATED/DESIGNED BY
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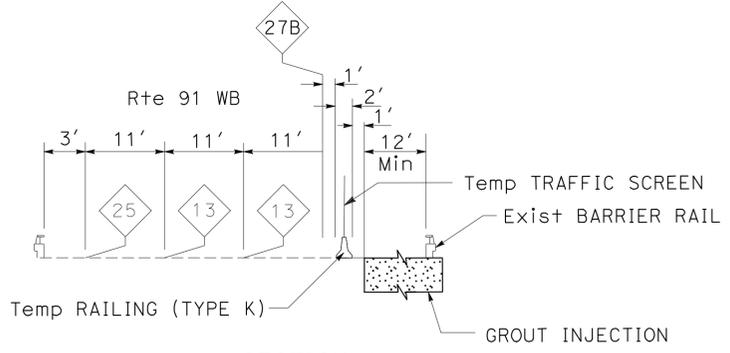
JAMES A. LAI

REVISED BY
 DATE REVISED

JAMES LAI
 9-7-10

- LEGEND:**
- DIRECTION OF TRAVEL
 - ◇ X PAVEMENT DELINEATION DETAIL No.
 - ↔ CHANGE OF PAVEMENT DELINEATION DETAIL
 - CHANNELIZER (SURFACE MOUNTED)
 - ▒ TEMPORARY CRASH CUSHION (ARRAY "TS11")

NOTE:
 A 10:1 MINIMUM TAPER SHALL BE USED AT THE APPROACH ENDS OF TEMPORARY RAILING (Type K) UNLESS OTHERWISE DIRECTED BY THE ENGINEER.



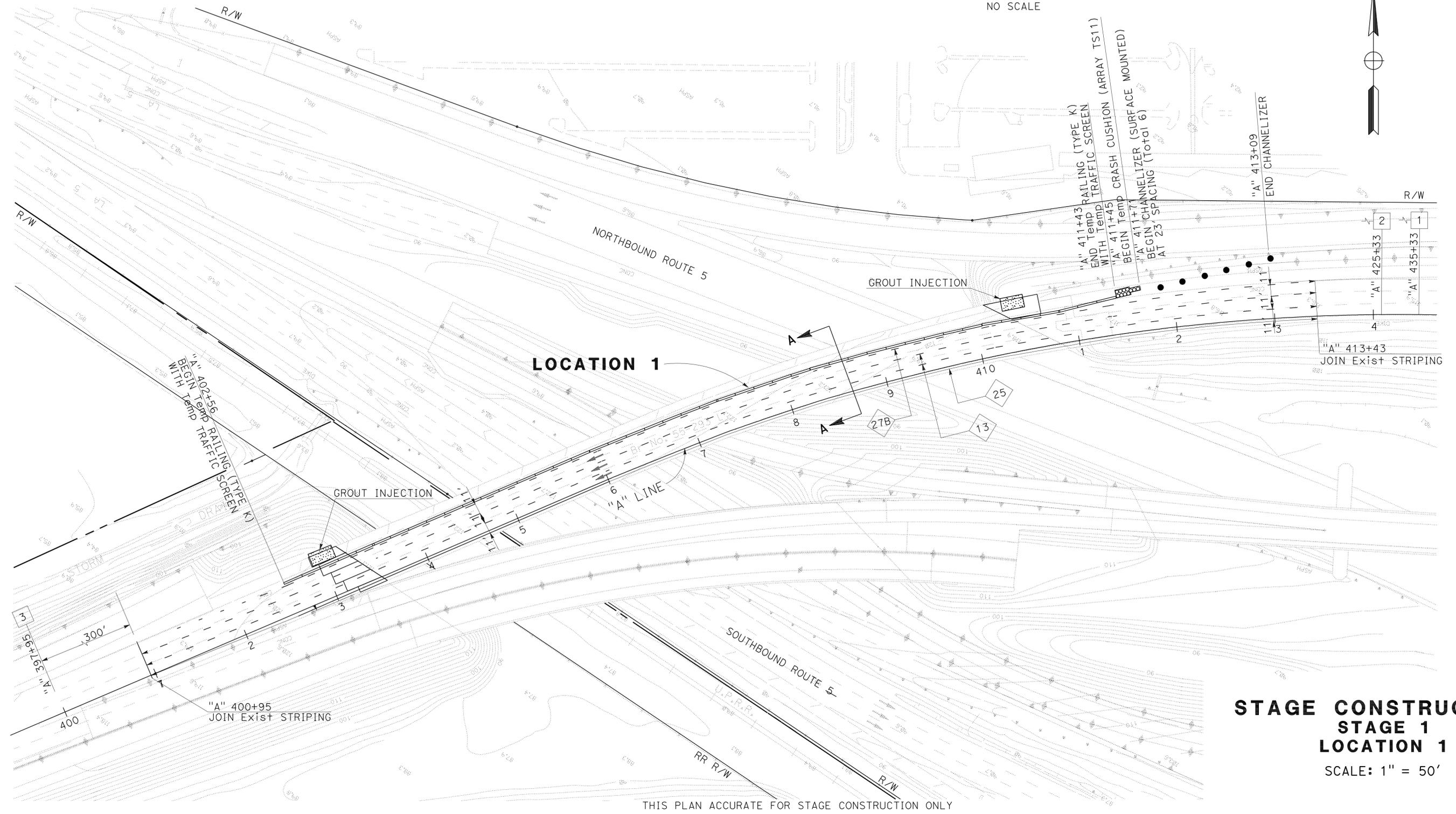
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	10	49

James Lai
 REGISTERED CIVIL ENGINEER DATE 09-14-10

9-20-10
 PLANS APPROVAL DATE

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JAMES A. LAI
 No. C29368
 Exp. 03-31-11
 CIVIL



STAGE CONSTRUCTION
STAGE 1
LOCATION 1
 SCALE: 1" = 50'

SC-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	11	49

James Lai
 REGISTERED CIVIL ENGINEER DATE 09-14-10
 9-20-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 JAMES A. LAI
 No. C29368
 Exp. 03-31-11
 CIVIL
 STATE OF CALIFORNIA

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STAGE CONSTRUCTION QUANTITIES

SHEET No.	STATION LIMITS	PAINT TRAFFIC STRIPE (2-COAT)		PAVEMENT MARKER DETAIL 13 & 25			TEMPORARY RAILING (TYPE K)	TEMPORARY TRAFFIC SCREEN	CHANNELIZER (SURFACE MOUNTED)	TEMPORARY CRASH CUSHION MODULE	REMOVE PAINTED TRAFFIC STRIPE	REMOVE PAVEMENT MARKER
		DETAIL 27B	DETAIL 25	RETROREFLECTIVE		NON-REFLECTIVE						
		4" SOLID WHITE	4" SOLID YELLOW	TYPE G	TYPE H	TYPE A						
		LF	LF	EA	EA	EA	LF	LF	EA	EA	LF	EA
SC-1	"A" Sta 400+95 TO "A" Sta 413+43	1,248	1,248	54	27	208					2,496	289
	"A" Sta 402+56 TO "A" Sta 411+43						887	887				
	"A" Sta 411+71 TO "A" Sta 413+09								6			
	"A" Sta 411+45 TO "A" Sta 411+71								1			
SUB-TOTAL		1,248	1,248	81		208	887	887			2,496	289
TOTAL		2,496		81 *		208 *	887	887	6	1	2,496	289 *

* SEE SHEET PDQ-1 FOR GRAND TOTAL OF PAVEMENT MARKER AND REMOVE PAVEMENT MARKER

CONSTRUCTION AREA SIGNS (STAGE CONSTRUCTION)

SIGN No.	SIGN CODE	PANEL SIZE	SIGN MESSAGE	No. OF POSTS AND SIZE	QUANTITY (EA)
1	W20-1 (Mod)	36" x 36"	SHOULDER WORK AHEAD	1 - 6" x 6"	1
2	C30A (CA)	36" x 36"	SHOULDER CLOSED	1 - 6" x 6"	1
3	G20-2 (Mod)	36" x 18"	END SHOULDER WORK	1 - 6" x 6"	1

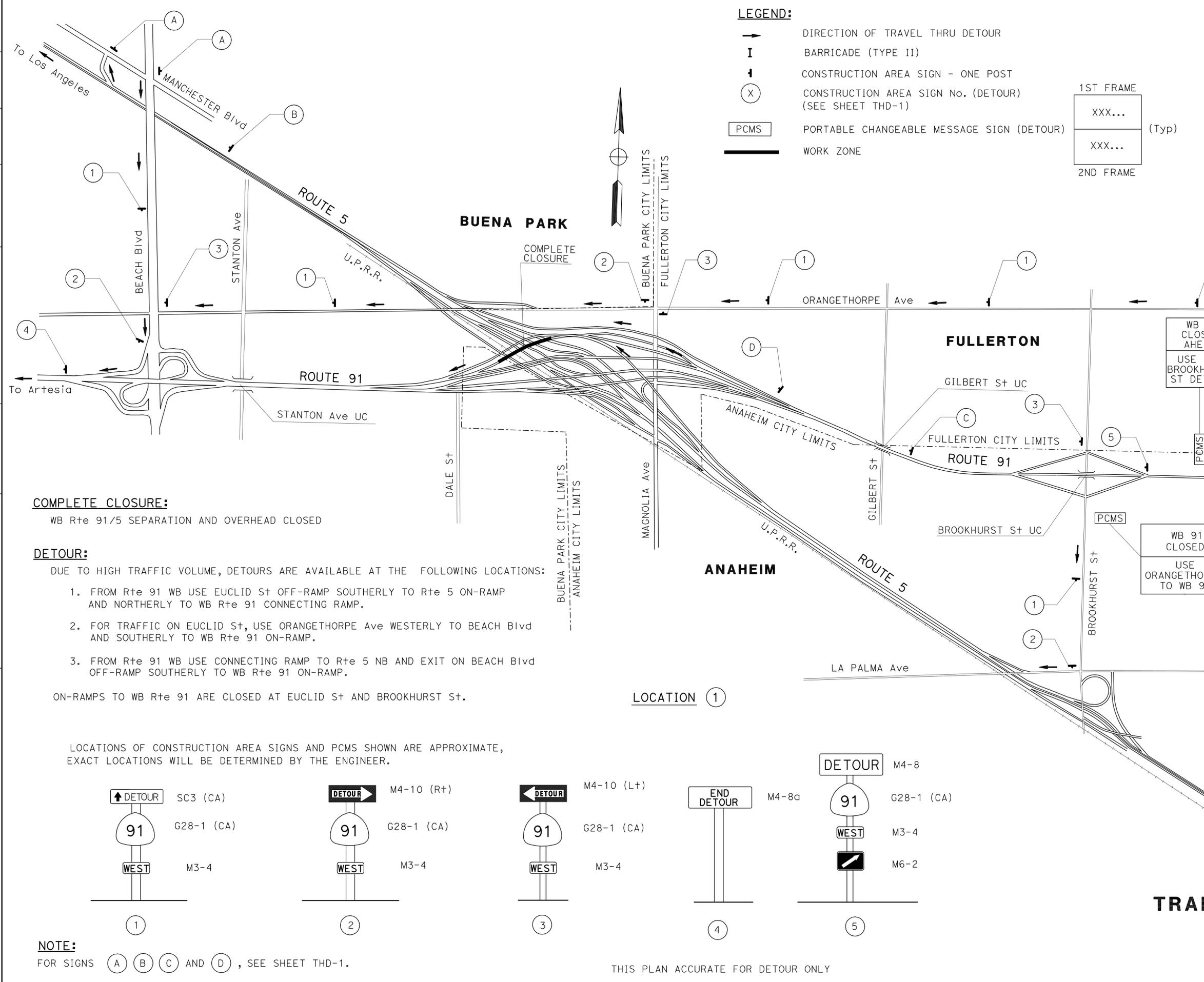
FOR ADDITIONAL QUANTITIES OF CONSTRUCTION AREA SIGNS, SEE SHEET CS-1

STAGE CONSTRUCTION SUMMARY OF QUANTITIES

SCQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 SON NGUYEN
 JAMES A. LAI
 REVISOR BY JAMES LAI
 DATE REVISOR 9-7-10
 CALCULATED BY DESIGNED BY
 CHECKED BY
 FUNCTIONAL SUPERVISOR
 SON NGUYEN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	12	49

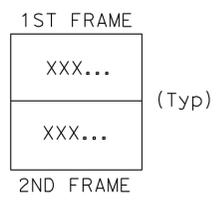
James Lai 09-14-10
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REGISTERED PROFESSIONAL ENGINEER
 JAMES A. LAI
 No. C29368
 Exp. 03-31-11
 CIVIL
 STATE OF CALIFORNIA

- LEGEND:**
- DIRECTION OF TRAVEL THRU DETOUR
 - I BARRICADE (TYPE II)
 - ↓ CONSTRUCTION AREA SIGN - ONE POST
 - (X) CONSTRUCTION AREA SIGN No. (DETOUR) (SEE SHEET THD-1)
 - PCMS PORTABLE CHANGEABLE MESSAGE SIGN (DETOUR)
 - WORK ZONE



COMPLETE CLOSURE:

WB Rte 91/5 SEPARATION AND OVERHEAD CLOSED

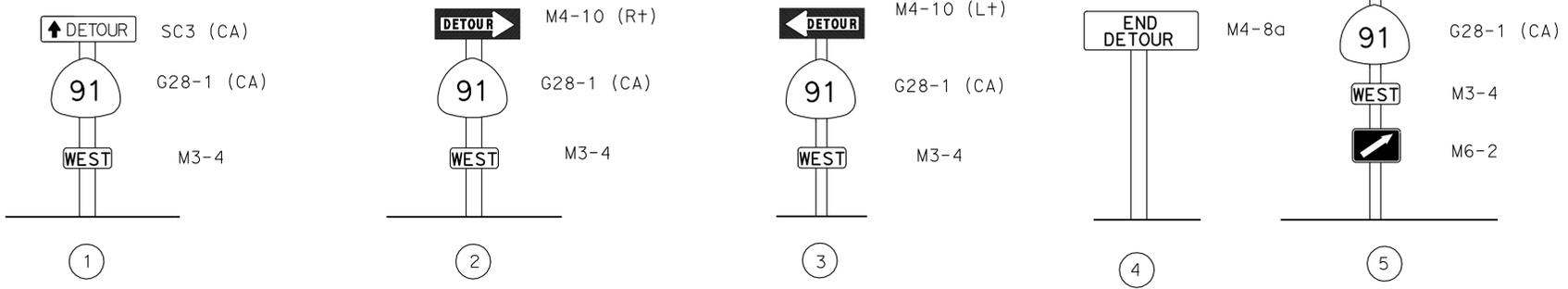
DETOUR:

DUE TO HIGH TRAFFIC VOLUME, DETOURS ARE AVAILABLE AT THE FOLLOWING LOCATIONS:

1. FROM Rte 91 WB USE EUCLID St OFF-RAMP SOUTHERLY TO Rte 5 ON-RAMP AND NORTHERLY TO WB Rte 91 CONNECTING RAMP.
2. FOR TRAFFIC ON EUCLID St, USE ORANGETHORPE Ave WESTERLY TO BEACH Blvd AND SOUTHERLY TO WB Rte 91 ON-RAMP.
3. FROM Rte 91 WB USE CONNECTING RAMP TO Rte 5 NB AND EXIT ON BEACH Blvd OFF-RAMP SOUTHERLY TO WB Rte 91 ON-RAMP.

ON-RAMPS TO WB Rte 91 ARE CLOSED AT EUCLID St AND BROOKHURST St.

LOCATIONS OF CONSTRUCTION AREA SIGNS AND PCMS SHOWN ARE APPROXIMATE, EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

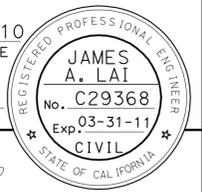


NOTE:
 FOR SIGNS (A) (B) (C) AND (D), SEE SHEET THD-1.

THIS PLAN ACCURATE FOR DETOUR ONLY

TRAFFIC HANDLING PLAN (DETOUR) LOCATION 1
 NO SCALE
TH-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	13	49
James Lai		09-14-10		REGISTERED CIVIL ENGINEER DATE	
9-20-10		PLANS APPROVAL DATE			
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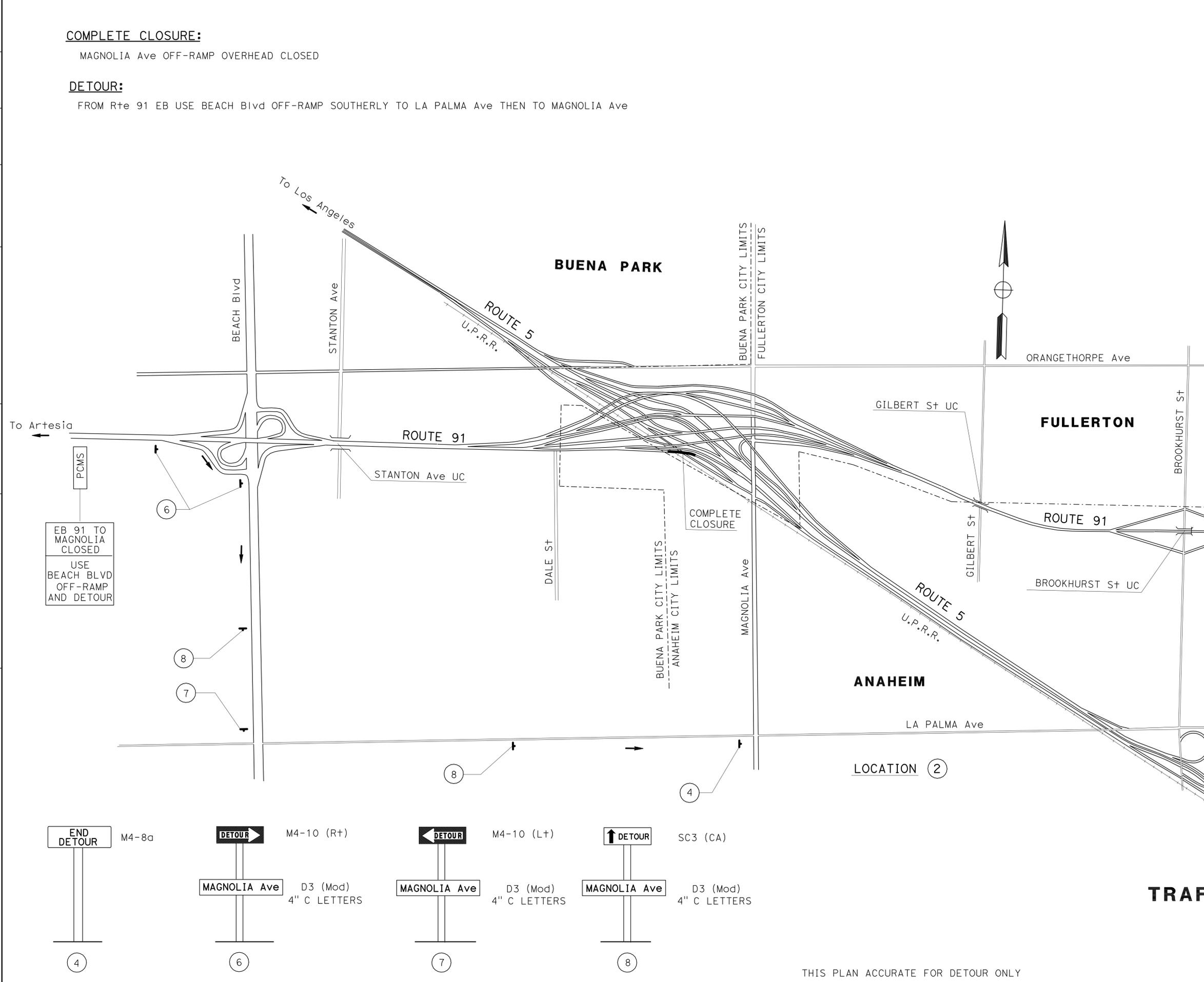
COMPLETE CLOSURE:

MAGNOLIA Ave OFF-RAMP OVERHEAD CLOSED

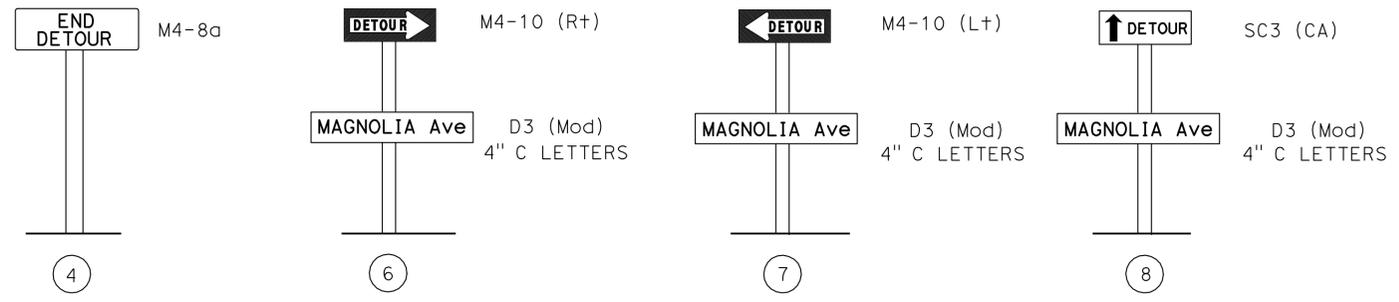
DETOUR:

FROM Rte 91 EB USE BEACH Blvd OFF-RAMP SOUTHERLY TO LA PALMA Ave THEN TO MAGNOLIA Ave

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
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PCMS
 EB 91 TO MAGNOLIA CLOSED
 USE BEACH BLVD OFF-RAMP AND DETOUR



**TRAFFIC HANDLING PLAN
 (DETOUR)
 LOCATION 2
 NO SCALE
 TH-2**

THIS PLAN ACCURATE FOR DETOUR ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	14	49

James Lai
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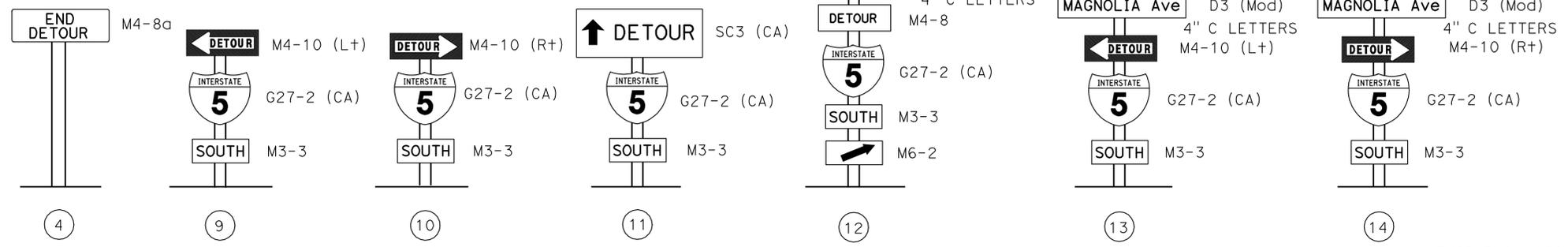
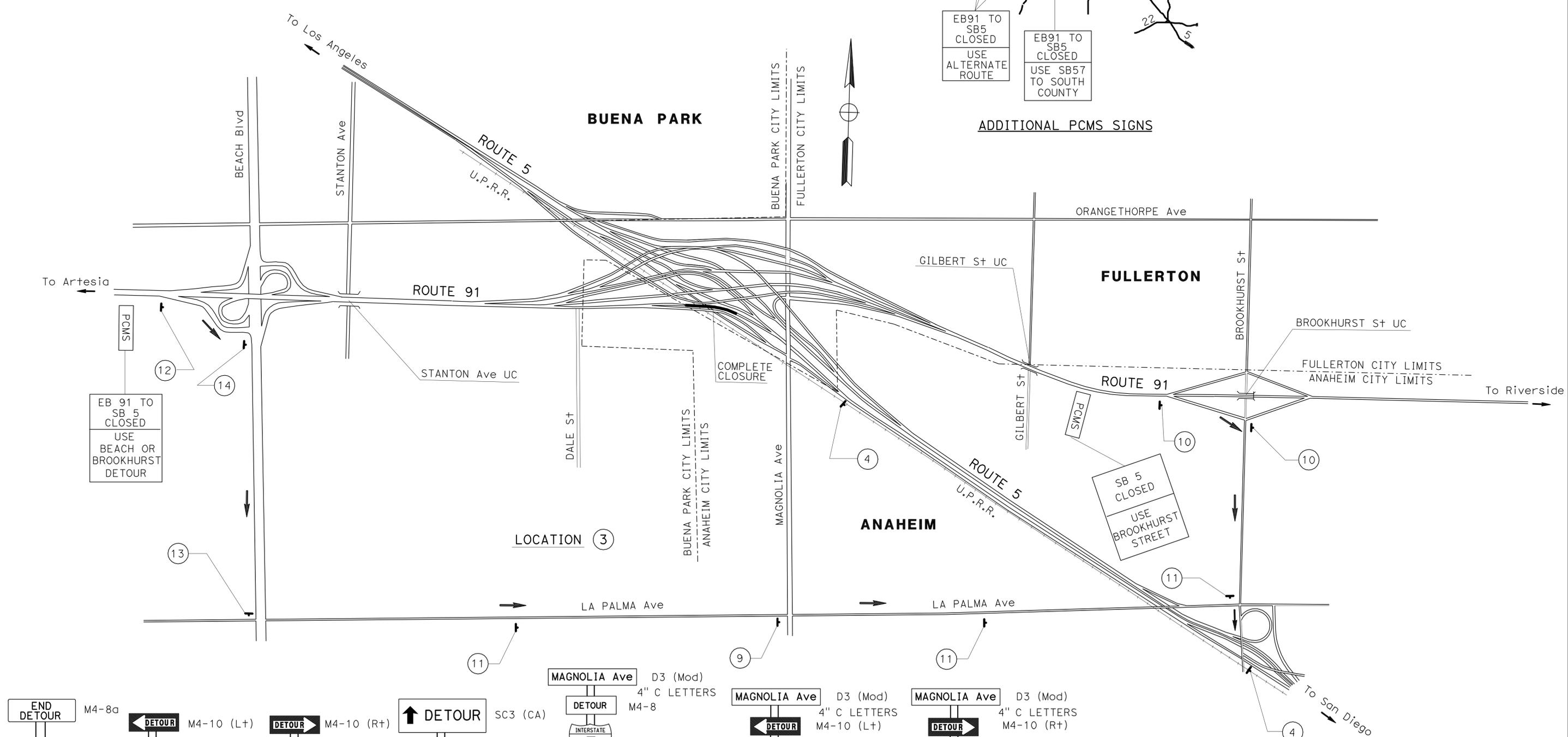
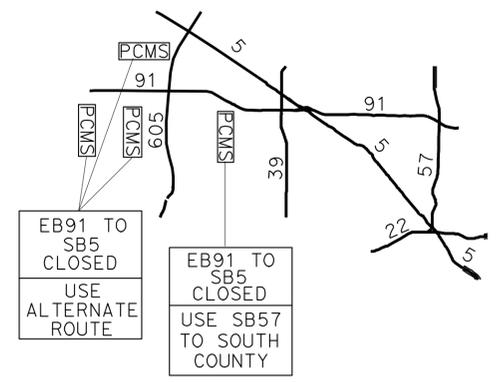
REGISTERED PROFESSIONAL ENGINEER
JAMES A. LAI
 No. C29368
 Exp. 03-31-11
 CIVIL
 STATE OF CALIFORNIA

COMPLETE CLOSURE:

EB Rte 91/SB 5 CONNECTOR OVERHEAD CLOSED

DETOUR:

FROM Rte 91 EB TAKE MAGNOLIA Ave OFF-RAMP OVERHEAD EASTERLY TO MAGNOLIA Ave THEN TO SB Rte 5.



TRAFFIC HANDLING PLAN (DETOUR) LOCATION 3

NO SCALE

TH-3

THIS PLAN ACCURATE FOR DETOUR ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 JAMES A. LAI
 REVISIONS BY: JAMES LAI 9-7-10
 CHECKED BY: SON NGUYEN
 CALCULATED/DESIGNED BY: JAMES A. LAI
 FUNCTIONAL SUPERVISOR: SON NGUYEN

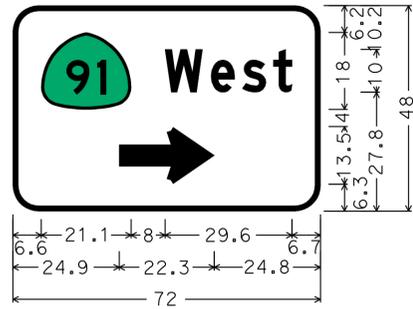
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<i>James Lai</i>	07-23-10
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9-20-10	
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REGISTERED PROFESSIONAL ENGINEER	JAMES A. LAI
No. C29368	
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CIVIL	

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NOTE:
SEE SHEET TH-1



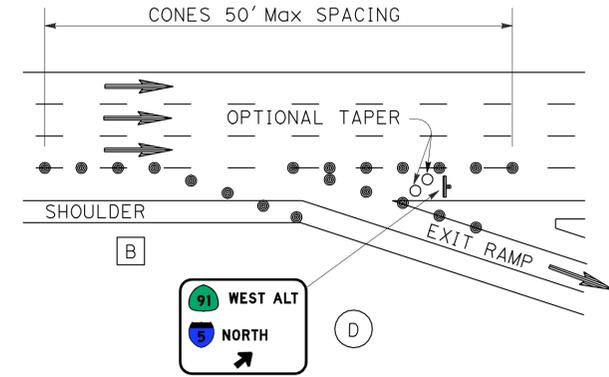
SC3 (Mod);
6.0" RADIUS, 1.3" BORDER, BLACK ON ORANGE;
[WEST] D;
STANDARD ARROW CUSTOM 22.3" X 13.5" 0°;

(A)
TOTAL 2



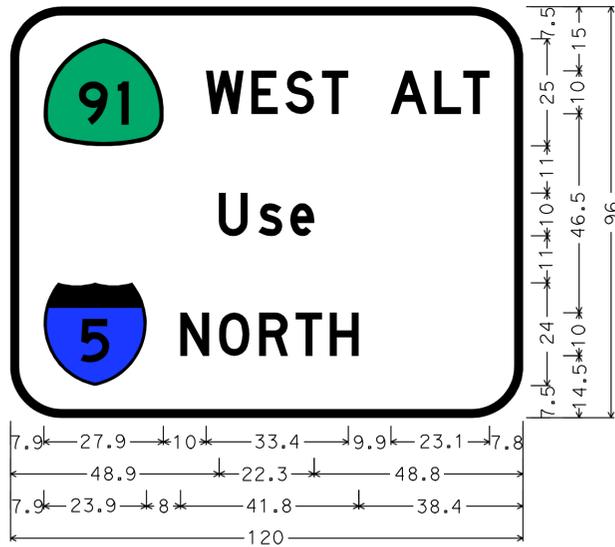
SC3 (Mod);
9.0" RADIUS, 1.5" BORDER, BLACK ON ORANGE;
[WEST] D; [USE BEACH] D; [EXIT] D;

(B)
TOTAL 1



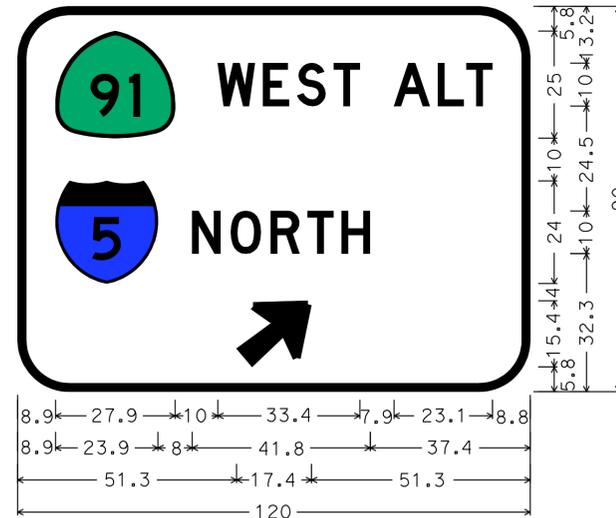
**LANE CLOSURE
AT CONNECTOR**

NOTE: SEE STANDARD PLAN T-10
FOR MORE CLOSURE DETAILS



SC3 (Mod); 12.0" RADIUS, 2.0" BORDER, BLACK ON ORANGE;
[WEST ALT] D; [USE] D; [NORTH] D;

(C)
TOTAL 1



SC3 (Mod); 12.0" RADIUS, 2.0" BORDER, BLACK ON ORANGE;
[WEST ALT] D; [NORTH] D;
ARROW 13.33UC-1L - 20.3" 40°;

(D)
TOTAL 1

**TRAFFIC HANDLING DETAILS
(DETOUR)**

NO SCALE

THD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	SON NGUYEN
CALCULATED/DESIGNED BY	CHECKED BY
JAMES A. LAI	
REVISOR	DATE

JAMES LAI
 9-7-10

REVISED BY
 DATE REVISED

JAMES A. LAI

CALCULATED/DESIGNED BY
 CHECKED BY

FUNCTIONAL SUPERVISOR
 SON NGUYEN

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	16	49

James Lai 09-14-10
 REGISTERED CIVIL ENGINEER DATE

9-20-10
 PLANS APPROVAL DATE

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.

CONSTRUCTION AREA SIGN (DETOUR)

SHEET	SIGN No.	SIGN CODE	PANEL SIZE	SIGN MESSAGE	NO. OF POST AND SIZE	EACH
TH-1	1	SC3 (CA)	48" x 18"	DETOUR (UP ARROW)	1 - 4" x 6"	9
		G28-1 (CA)	25" x 24"	ROUTE SHIELD (SR-91)		
		M3-4	24" x 12"	DIRECTION MARKER (WEST)		
	2	M4-10 (Rt)	48" x 18"	DETOUR (RIGHT ARROW)	1 - 4" x 6"	4
		G28-1 (CA)	25" x 24"	ROUTE SHIELD (SR-91)		
		M3-4	24" x 12"	DIRECTION MARKER (WEST)		
	3	M4-10 (Lt)	48" x 18"	DETOUR (LEFT ARROW)	1 - 4" x 6"	5
		G28-1 (CA)	25" x 24"	ROUTE SHIELD (SR-91)		
		M3-4	24" x 12"	DIRECTION MARKER (WEST)		
	4	M 4-8a	24" x 18"	END DETOUR	1 - 4" x 6"	1
		M 4-8	24" x 18"	DETOUR		
		G28-1 (CA)	25" x 24"	ROUTE SHIELD (SR-91)		
M 6-2		24" x 24"	DIRECTION ARROW (45 RIGHT)			
TH-2	4	M4-8a	24" x 18"	END DETOUR	1 - 4" x 6"	1
		M4-10 (Rt)	48" x 18"	DETOUR (RIGHT ARROW)		
	6	D3 (Mod)	48" x 8"	MAGNOLIA Ave	1 - 4" x 6"	2
		M4-10 (Lt)	48" x 18"	DETOUR (LEFT ARROW)		
7	D3 (Mod)	48" x 8"	MAGNOLIA Ave	1 - 4" x 6"	1	
	SC3 (CA)	48" x 18"	DETOUR (UP ARROW)			
8	D3 (Mod)	48" x 8"	MAGNOLIA Ave	1 - 4" x 6"	2	
	M4-8a	24" x 12"	END DETOUR			
TH-3	4	M4-10 (Lt)	48" x 18"	DETOUR (LEFT ARROW)	1 - 4" x 6"	1
		G27-2 (CA)	25" x 24"	ROUTE SHIELD (I-5)		
		M3-3	24" x 12"	DIRECTION MARKER (SOUTH)		
	10	M4-10 (Rt)	48" x 18"	DETOUR (RIGHT ARROW)	1 - 4" x 6"	2
		G27-2 (CA)	25" x 24"	ROUTE SHIELD (I-5)		
		M3-3	24" x 12"	DIRECTION MARKER (SOUTH)		
	11	SC3 (CA)	48" x 18"	DETOUR (UP ARROW)	1 - 4" x 6"	3
		G27-2 (CA)	25" x 24"	ROUTE SHIELD (I-5)		
		M3-3	24" x 12"	DIRECTION MARKER (SOUTH)		
	12	D3 (Mod)	48" x 8"	MAGNOLIA Ave	1 - 4" x 6"	1
		M4-8	24" x 12"	DETOUR		
		G27-2 (CA)	25" x 24"	ROUTE SHIELD (I-5)		
M3-3		24" x 12"	DIRECTION MARKER (SOUTH)			
13	M6-2	24" x 12"	ARROW	1 - 4" x 6"	1	
	D3 (Mod)	48" x 8"	MAGNOLIA Ave			
	M4-10 (Lt)	48" x 18"	DETOUR (LEFT ARROW)			
14	G27-2 (CA)	25" x 24"	ROUTE SHIELD (I-5)	1 - 4" x 6"	1	
	M3-3	24" x 12"	DIRECTION MARKER (SOUTH)			
	D3 (Mod)	48" x 8"	MAGNOLIA Ave			
	M4-10 (Rt)	48" x 18"	DETOUR (RIGHT ARROW)			
14	G27-2 (CA)	25" x 24"	ROUTE SHIELD (I-5)	1 - 4" x 6"	1	
	M3-3	24" x 12"	DIRECTION MARKER (SOUTH)			

FOR ADDITIONAL QUANTITIES OF CONSTRUCTION AREA SIGNS, SEE SHEET CS-1.

PORTABLE CHANGEABLE MESSAGE SIGN (DETOUR)

SHEET No.	No. OF PCMS
TH-1	6
TH-2	1
TH-3	6

TRAFFIC HANDLING QUANTITIES

NO SCALE

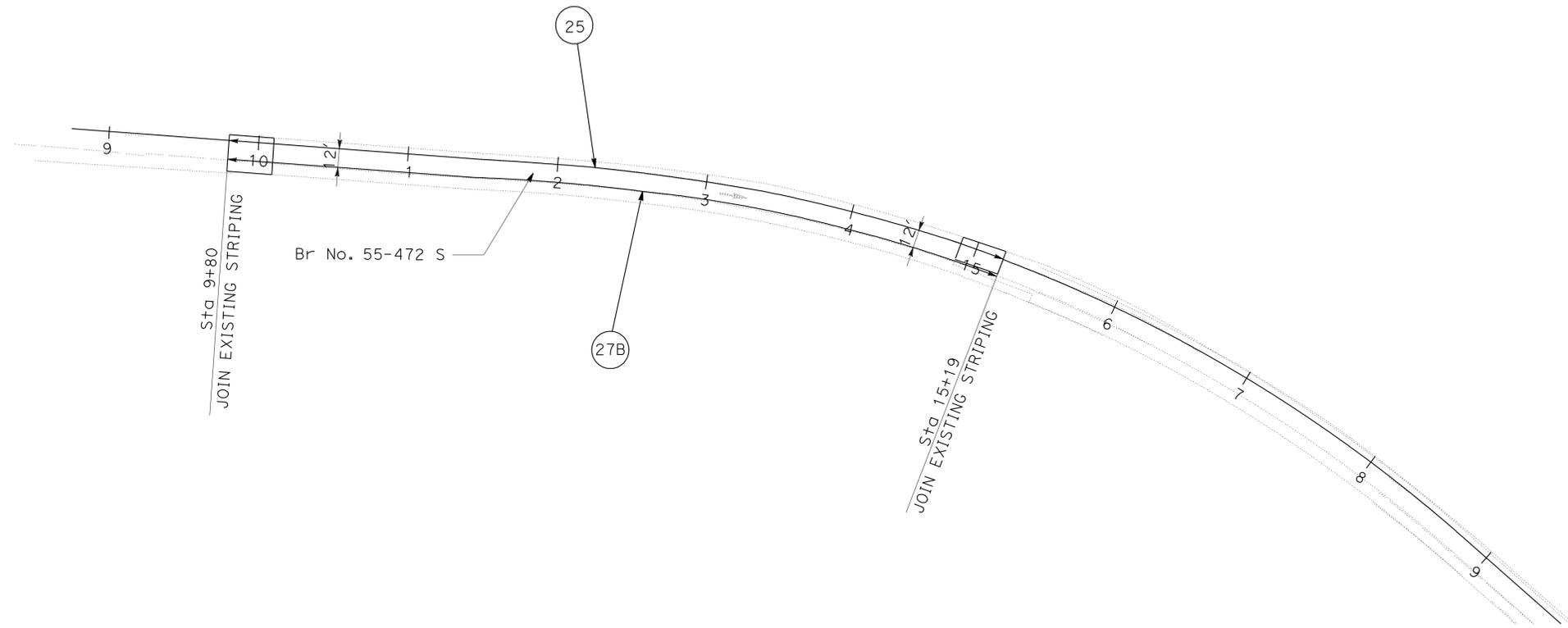
THQ-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	18	49

James A. Lai 07-23-10
 REGISTERED CIVIL ENGINEER DATE
 9-20-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JAMES A. LAI
 No. C29368
 Exp. 03-31-11
 CIVIL
 STATE OF CALIFORNIA

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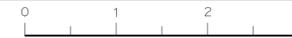


PAVEMENT DELINEATION PLAN
LOCATION 2
 SCALE: 1" = 50'

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION ONLY

PD-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
Caltrans	SON NGUYEN	JAMES A. LAI	DATE
DESIGN	CHECKED BY	DATE REVISOR	DATE REVISOR

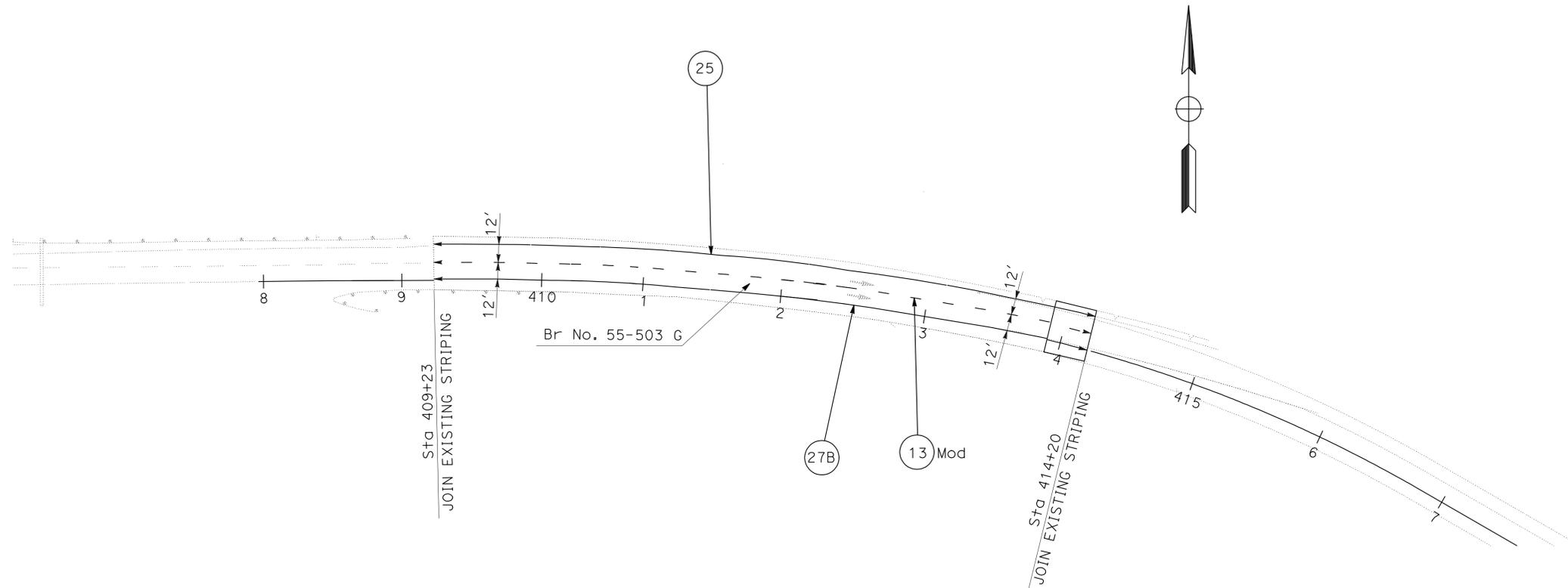


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	19	49

James Lai 07-23-10
 REGISTERED CIVIL ENGINEER DATE
 9-20-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JAMES A. LAI
 No. C29368
 Exp. 03-31-11
 CIVIL
 STATE OF CALIFORNIA

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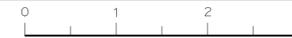


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
Caltrans	SON NGUYEN	CHECKED BY	JAMES A. LAI
DESIGN			

PAVEMENT DELINEATION PLAN
LOCATION 3
 SCALE: 1" = 50'

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION ONLY

PD-3



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	20	49

James Lai
 REGISTERED CIVIL ENGINEER DATE 09-14-10
 9-20-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 JAMES A. LAI
 No. C29368
 Exp. 03-31-11
 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.

PAVEMENT DELINEATION QUANTITIES

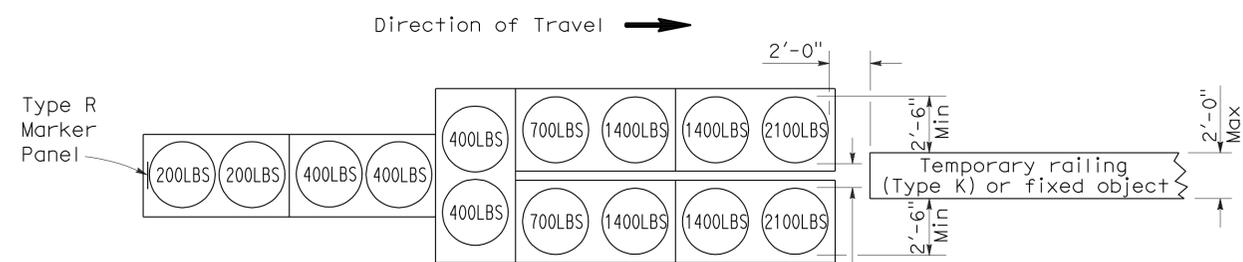
SHEET No.	STATION LIMITS		THERMOPLASTIC TRAFFIC STRIPE			PAVEMENT MARKER			REMOVE		
	FROM	TO	DETAIL 13 (Mod) 4" BROKEN WHITE (36 - 12)	DETAIL 27B 4" SOLID WHITE	DETAIL 25 4" SOLID YELLOW	NON-REFLECTIVE TYPE A DETAIL 13 (Mod)	CLEAR RETROREFLECTIVE TYPE G DETAIL 13 (Mod)	YELLOW RETROREFLECTIVE TYPE H DETAIL 25	WHITE THERMOPLASTIC TRAFFIC STRIPE	YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	PAVEMENT MARKER
			LF	LF	LF	EA	EA	EA	LF	LF	EA
PD-1	400+95	413+43	2,496	1,248	1,248	208	54	27	3,744	1,248	289
PD-2	9+80	15+19	—	539	539	—	—	12	539	539	12
PD-3	409+23	414+20	497	497	497	40	11	11	994	497	62
SUB TOTAL			2,993	2,284	2,284	248	65	50	5,277	2,284	363
SHEET TOTAL			2,993	2,284	2,284	248	115		5,277	2,284	363
TOTAL FROM SHEET SCQ-1						208	81				289
GRAND TOTAL			2,993	4,568		456	196		5,277	2,284	652

PAVEMENT DELINEATION QUANTITIES

PDQ-1

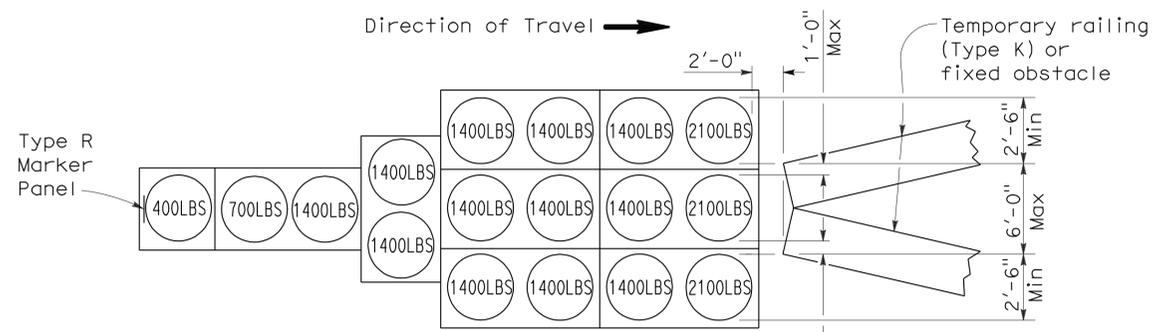
To accompany plans dated 9-20-10

2006 REVISED STANDARD PLAN RSP T1A



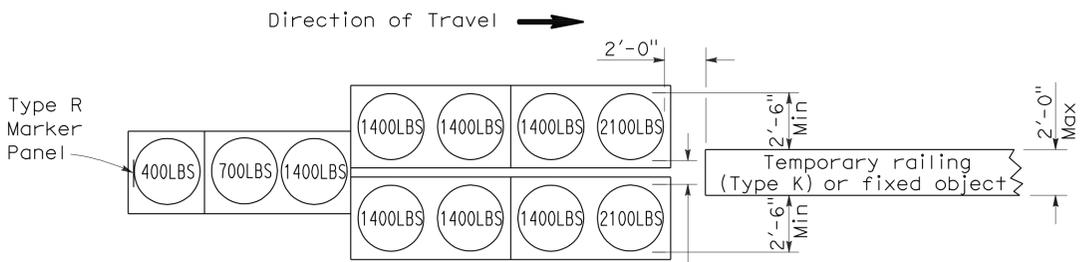
ARRAY 'TU14'

Approach speed 45 mph or more



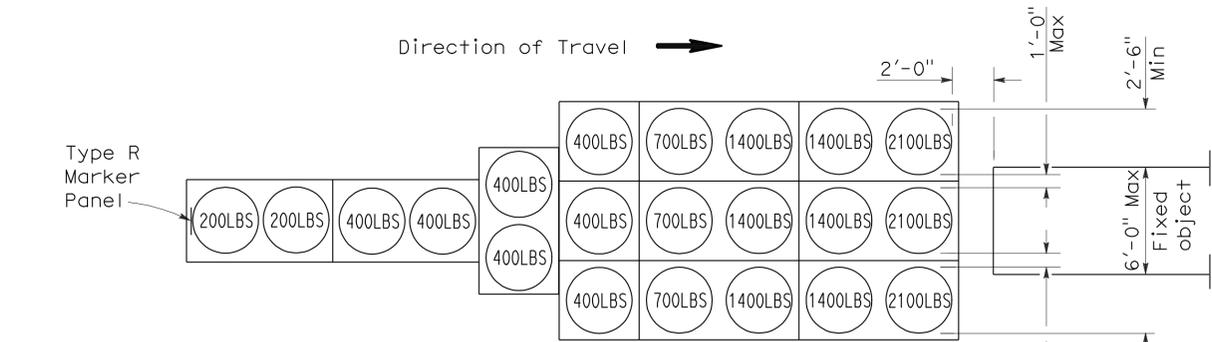
ARRAY 'TU17'

Approach speed less than 45 mph



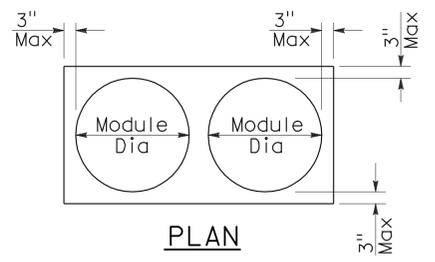
ARRAY 'TU11'

Approach speed less than 45 mph

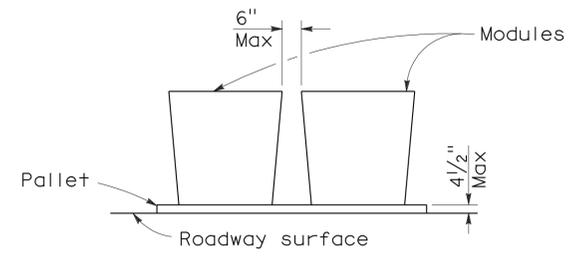


ARRAY 'TU21'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the top of Type R marker panel 1" below the module lid.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(UNIDIRECTIONAL)**

NO SCALE

RSP T1A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1A
DATED MAY 1, 2006 - PAGE 211 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	22	49

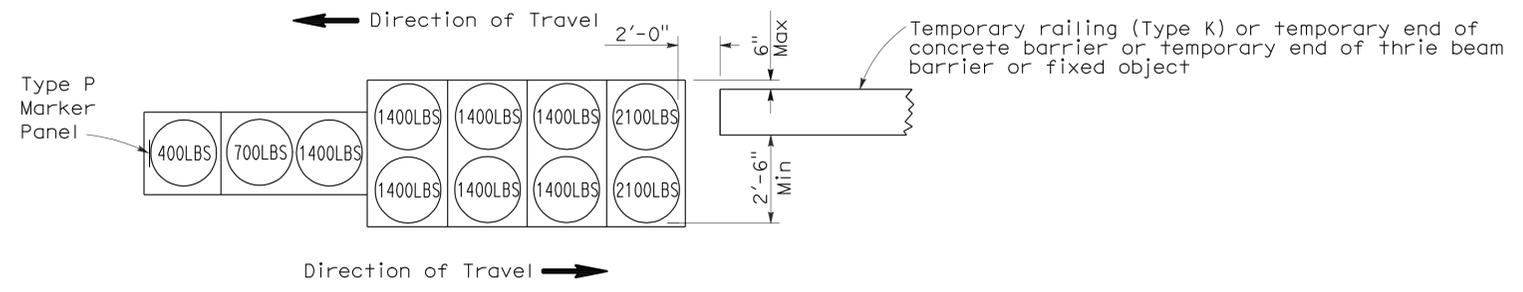
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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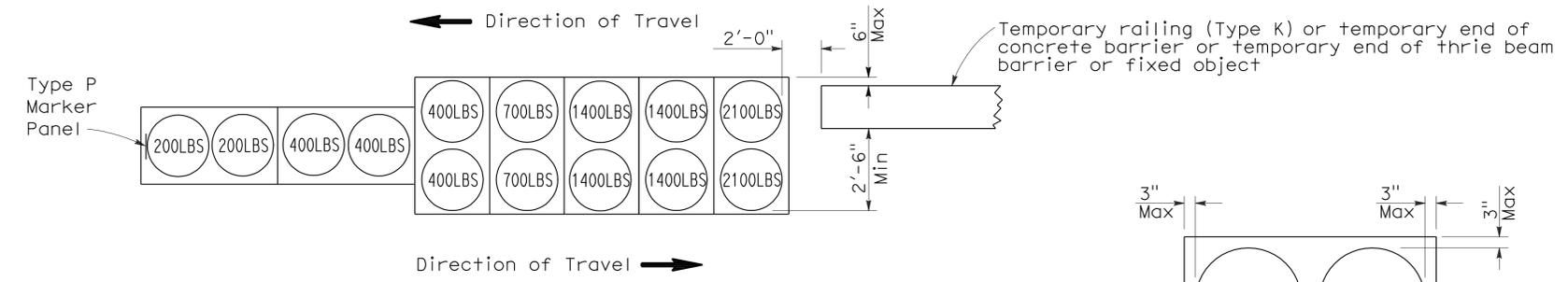
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 9-20-10



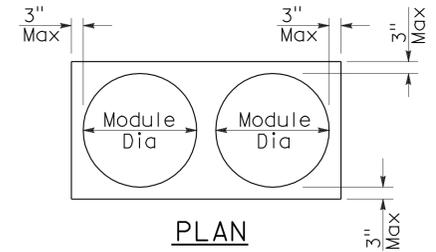
ARRAY 'TB11'

Approach speed less than 45 mph

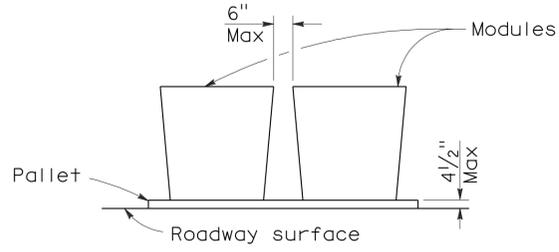


ARRAY 'TB14'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the Type P marker panel so that the bottom of the panel rests upon the pallet.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(BIDIRECTIONAL)**

NO SCALE

RSP T1B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1B
DATED MAY 1, 2006 - PAGE 212 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T1B

2006 REVISED STANDARD PLAN RSP T1B

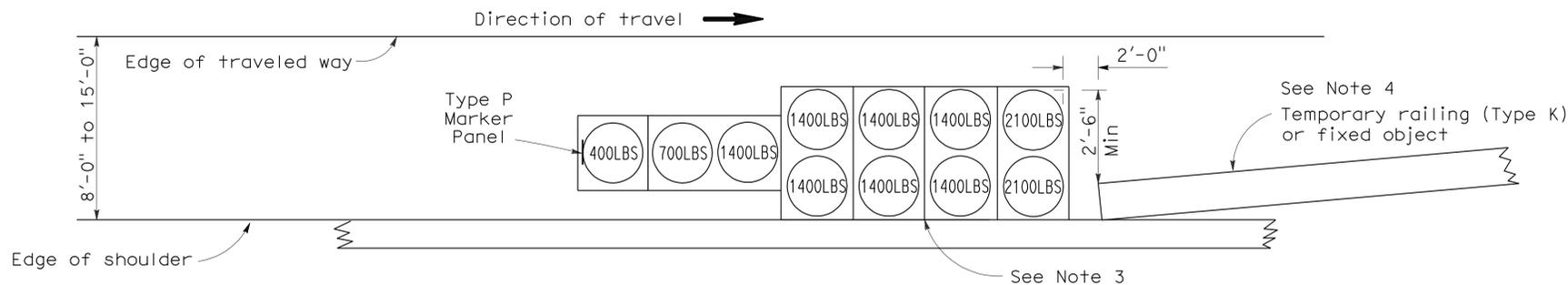
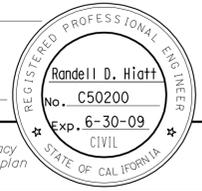
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	23	49

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

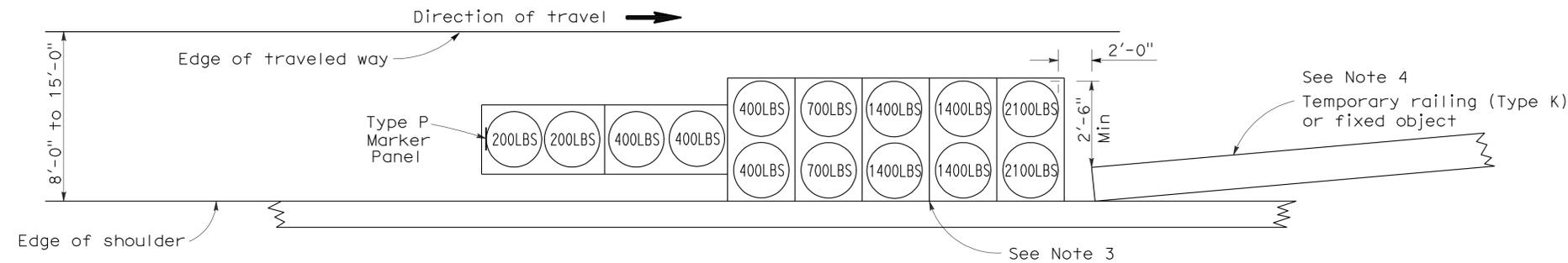
June 6, 2008
PLANS APPROVAL DATE

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To accompany plans dated 9-20-10



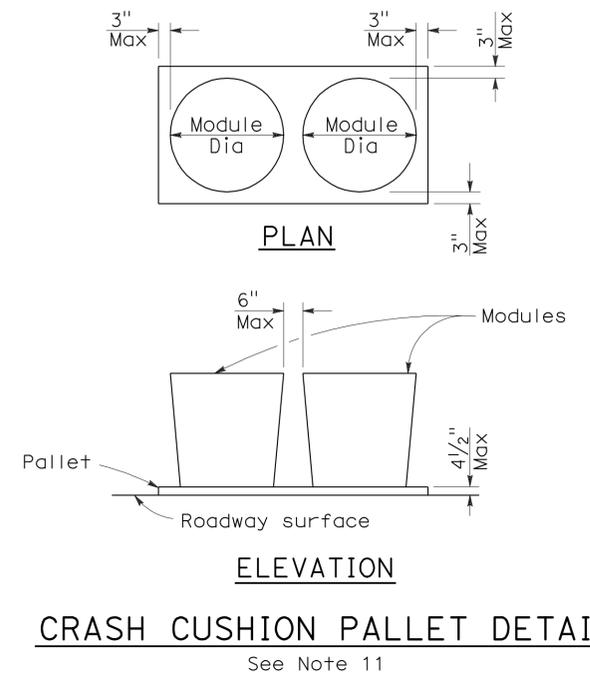
ARRAY 'TS11'
Approach speed less than 45 mph
See Note 9



ARRAY 'TS14'
Approach speed 45 mph or more
See Note 9

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. The temporary crash cushion arrays shown on this plan shall be used only in locations where there will be traffic on one side of the temporary crash cushion array.
4. If the fixed object or approach end of the temporary railing is less than 15'-0" from the edge of traveled way, a temporary crash cushion is required in a construction or work zone.
5. Temporary crash cushion arrays shall not encroach on the traveled way.
6. Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
7. Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
8. Refer to Standard Plan A73B for marker details.
9. For shoulder widths less than 8'-0", appropriate approved crash cushion protection, other than sand filled modules, shall be provided at fixed objects and at approach ends of temporary railing. The specific type of crash cushion shall be as shown on the project plans or as specified in the Special Provisions, or if not shown on the project plans or specified in the Special Provisions, shall be as approved by the Engineer.
10. Approach speeds indicated conform to NCHRP 350 Report criteria.
11. Use of pallets is optional.



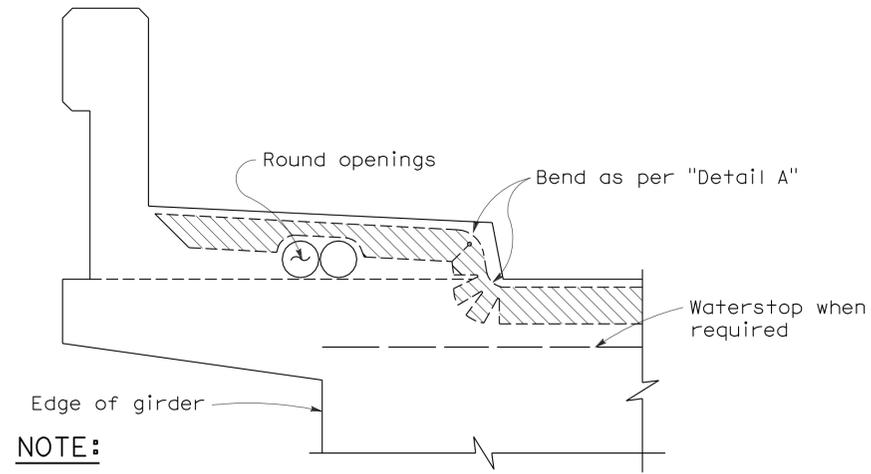
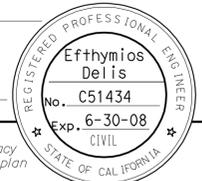
CRASH CUSHION PALLET DETAIL
See Note 11

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**TEMPORARY CRASH CUSHION,
SAND FILLED
(SHOULDER INSTALLATIONS)**
NO SCALE

RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

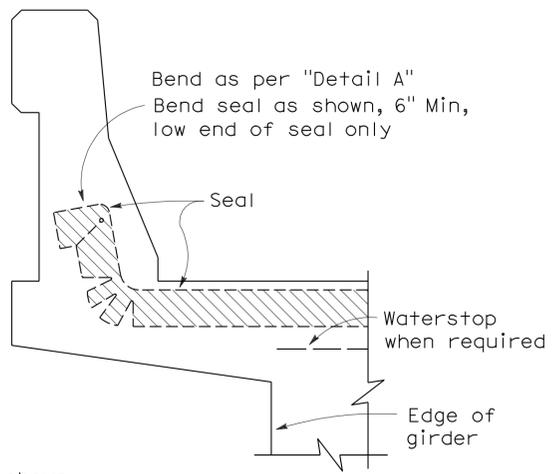
REVISED STANDARD PLAN RSP T2

2006 REVISED STANDARD PLAN RSP T2

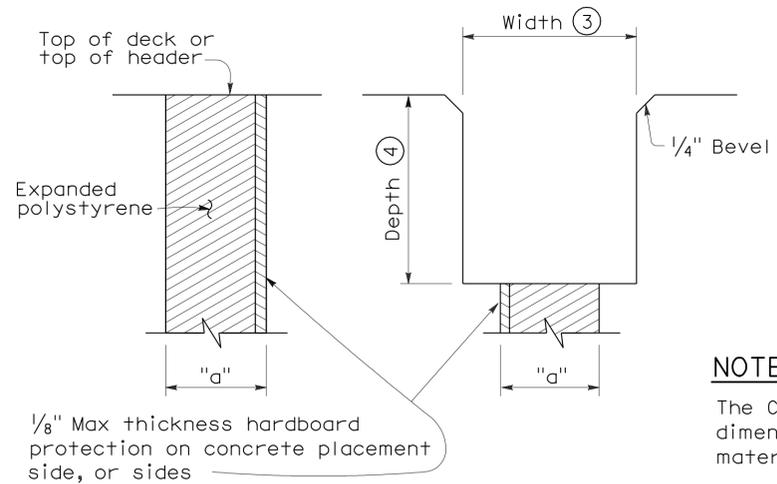


NOTE:
 Type "B" seal shown. Type "A" seals to conform to the general path of seal shown, cuts for bending not required. Bend Type "A" seals 3" up into curb or barrier rail on only the low end of the seal.

CONCRETE BARRIER AND SIDEWALK



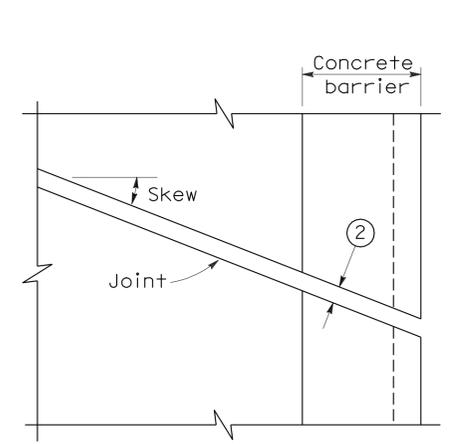
CONCRETE BARRIER



FORMING DETAIL SAWCUT DETAIL

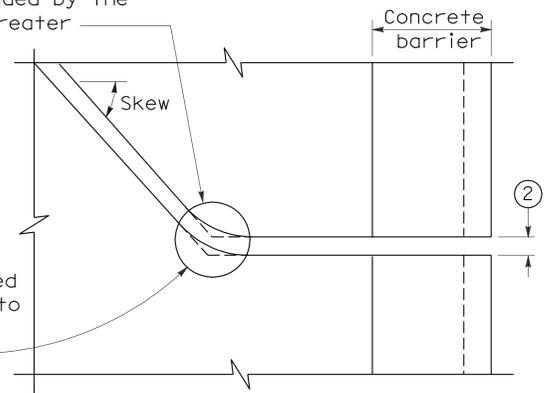
NOTE:
 The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

JOINT SEALS DETAILS



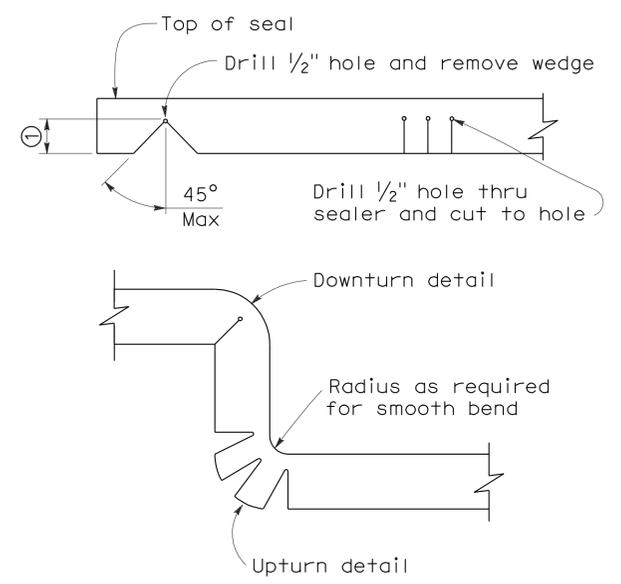
PLAN OF JOINT (SKEW ≤ 20°)

Min ϕ radius to be 4 times uncompressed width of seal or as recommended by the manufacturer, whichever is greater



PLAN OF JOINT (SKEW > 20°)

In lieu of saw cutting, this area may be blocked out and reconstructed to match saw cutting on both sides.



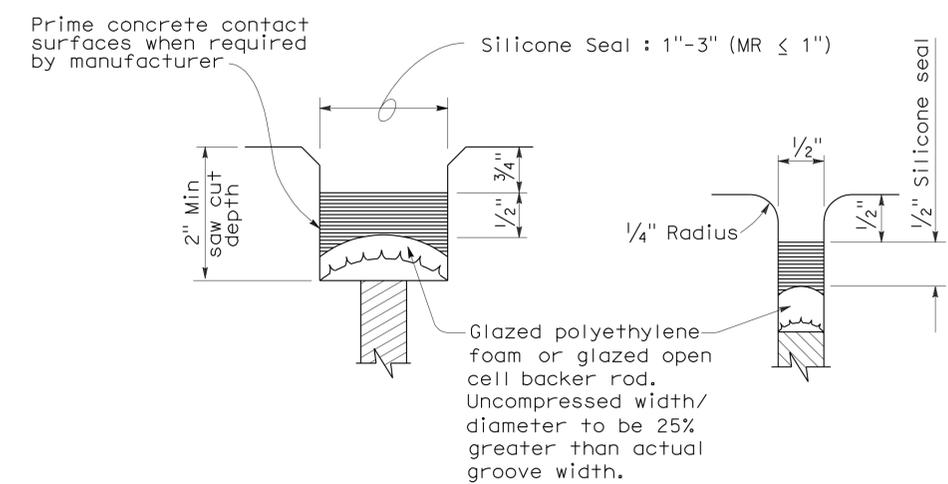
DETAIL A

- NOTES:**
- Make smooth cuts from the bottom of seal to 1 1/2" clear of top leaving at least one complete cell between the top of the cut and top of the seal. When necessary cut back of seal to clear conduit and round openings.
 - Opening in barrier to match width of sawn deck joint.
 - Sawcut groove widths shall be as ordered by the Engineer.
 - Depth of sawcut: Type A - Depth to be 2" minimum. Type B - Depth to be equal to or greater than the depth of seal measured along the contact surface, when compressed to minimum width position (W₂) plus dimensions shown.
 - MR (movement rating) as shown on other plan sheets.
 - Other depths must be approved by the Engineer.

DIMENSIONS "a" OF JOINT REQUIRED

Movement Rating (MR) ⑤	Bridge Type	"a" Dimension		
		Deck Concrete Placed		
		Winter	Fall-Spring	Summer
2"	All except CIP/PS	1 1/2"	1 1/4"	3/4"
	CIP/PS	1 1/4"	1"	1/2"
1 1/2"	All except CIP/PS	1 1/4"	1"	1/2"
	CIP/PS	1"	3/4"	1/2"
1"	All except CIP/PS	1"	3/4"	1/2"
	CIP/PS	3/4"	1/2"	1/2"
1/2"	All except CIP/PS	3/4"	3/4"	1/2"
	CIP/PS	1/2"	1/2"	1/2"

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
JOINT SEALS
(MAXIMUM MOVEMENT RATING = 2")
 NO SCALE

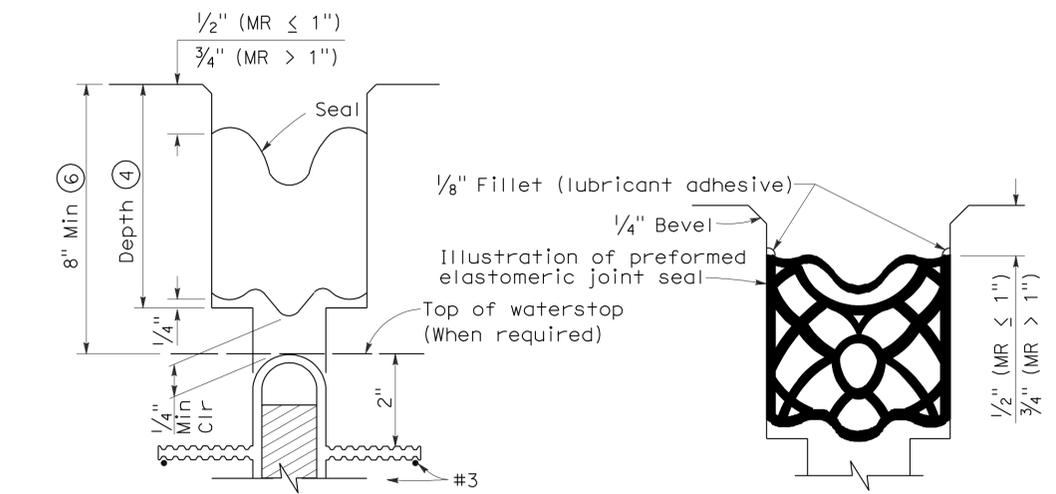


TYPE A SEAL

Movement rating : Silicone = 1" Max

TYPE AL SEAL

Longitudinal joints only



TYPE B JOINT SEAL IN MINIMUM WIDTH POSITION (W₂)

TYPE B SEAL

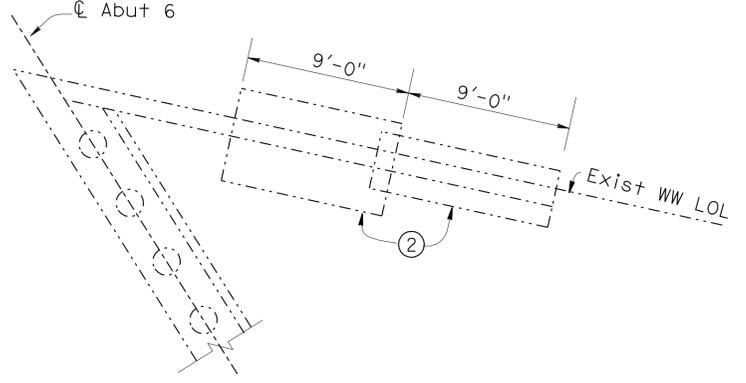
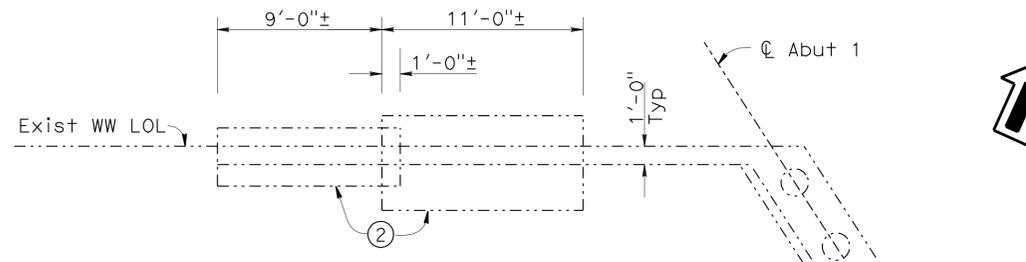
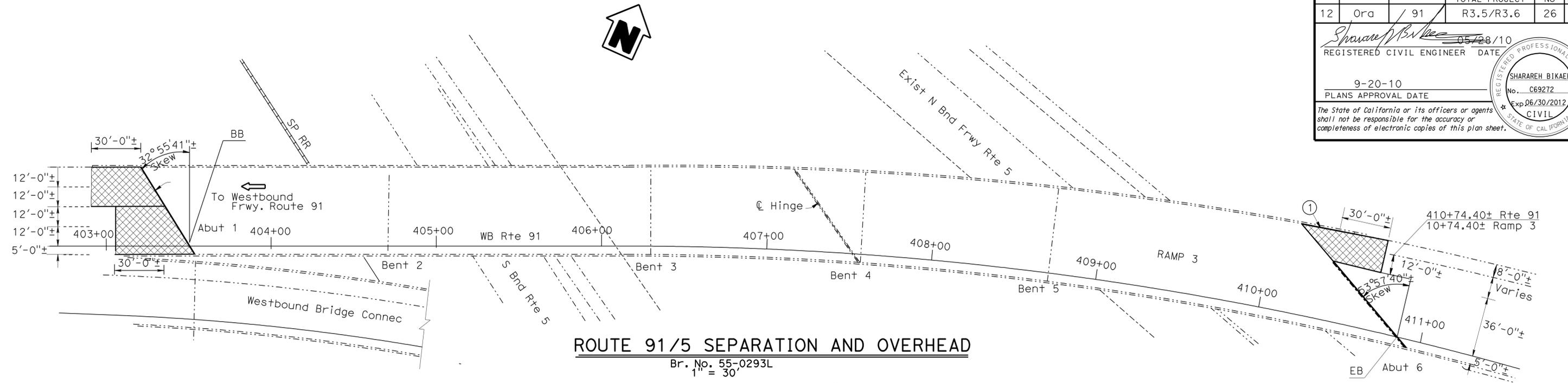
Movement Rating ≤ 2"

RSP B6-21 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B6-21 DATED MAY 1, 2006 - PAGE 258 OF THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	26	49

Sharareh Bikae 05/28/10
 REGISTERED CIVIL ENGINEER DATE
 9-20-10
 PLANS APPROVAL DATE
 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.

REGISTERED PROFESSIONAL ENGINEER
 SHARAREH BIKAE
 No. C69272
 Exp. 06/30/2012
 CIVIL
 STATE OF CALIFORNIA



INDEX TO PLANS

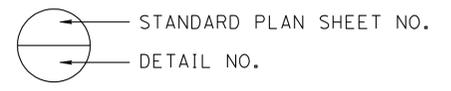
SHEET NO.	TITLE
1.	GENERAL PLAN NO.1
2.	GROUT INJECTION DETAILS NO.1
3.	SHEAR BLOCK ABUTMENT NO.6
4.	GENERAL PLAN NO.2
5.	GROUT INJECTION DETAILS NO.2
6.	GENERAL PLAN NO.3
7.	GROUT INJECTION DETAILS NO.3
8.	REPAIR DETAILS NO.1
9.	REPAIR DETAILS NO.2
10.	STRUCTURE EXCAVATION AND BACK FILL LIMITS
11.	STRUCTURE APPROACH TYPE R(30D)
12.	LOG OF TEST BORINGS 1 OF 5 (Br.#55-293L)
13.	LOG OF TEST BORINGS 2 OF 5 (Br.#55-293L)
14.	LOG OF TEST BORINGS 3 OF 5 (Br.#55-293L)
15.	LOG OF TEST BORINGS 4 OF 5 (Br.#55-293L)
16.	LOG OF TEST BORINGS 5 OF 5 (Br.#55-293L)
17.	LOG OF TEST BORINGS 1 OF 4 (Br.#55-472S)
18.	LOG OF TEST BORINGS 2 OF 4 (Br.#55-472S)
19.	LOG OF TEST BORINGS 3 OF 4 (Br.#55-472S)
20.	LOG OF TEST BORINGS 4 OF 4 (Br.#55-472S)
21.	LOG OF TEST BORINGS 1 OF 4 (Br.#55-503G)
22.	LOG OF TEST BORINGS 2 OF 4 (Br.#55-503G)
23.	LOG OF TEST BORINGS 3 OF 4 (Br.#55-503G)
24.	LOG OF TEST BORINGS 4 OF 4 (Br.#55-503G)

LEGEND

- Existing Structure
- Remove existing approach pavement and place paving notch extension and Structure Approach Type R(30D). Excavate 4 feet below bottom of existing slab. For details, see "STRUCTURE APPROACH TYPE R(30D)", and "STRUCTURE EXCAVATION AND BACK FILL" sheets
- Install new joint seal (MR=2"), see "STRUCTURE EXCAVATION AND BACKFILL LIMITS" sheet and RSP
B6-21
- - - - - Clean expansion joint

STANDARD PLANS DATED MAY 2006

- A10A ACRONYMS AND ABBREVIATIONS (A-L)
- A10B ACRONYMS AND ABBREVIATIONS (M-Z)
- RSP-B6-21 JOINT SEALS (MAXIMUM MOVEMENT RATING=2")



NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

NOTES

- ① Repair existing conc. Barrier see "REPAIR DETAILS NO.1" and "REPAIR DETAILS NO.2" sheets.
- ② Grout injections footing area, see "GROUT INJECTION DETAILS" sheet

ROUTE 91/5 SEPARATION AND OVERHEAD QUANTITIES		BR NO 55-293 L
RECONSTRUCT METAL RAILING (BRIDGE)	9	LF
STRUCTURE EXCAVATION (BRIDGE)	425	CY
STRUCTURE BACKFILL (BRIDGE)	364	CY
COMPACTION GROUTING	5,265	CF
STRUCTURAL CONCRETE, BRIDGE (TYPE R)	1	CY
STRUCTURAL CONCRETE, APPROACH SLAB	105	CY
PAVING NOTCH EXTENSION	70	CF
CLEAN EXPANSION JOINT	70	LF
JOINT SEAL (MR 2")	162	LF
BAR REINFORCING STEEL (BRIDGE)	135	LB
CONCRETE BARRIER (MODIFICATION)	9	LF

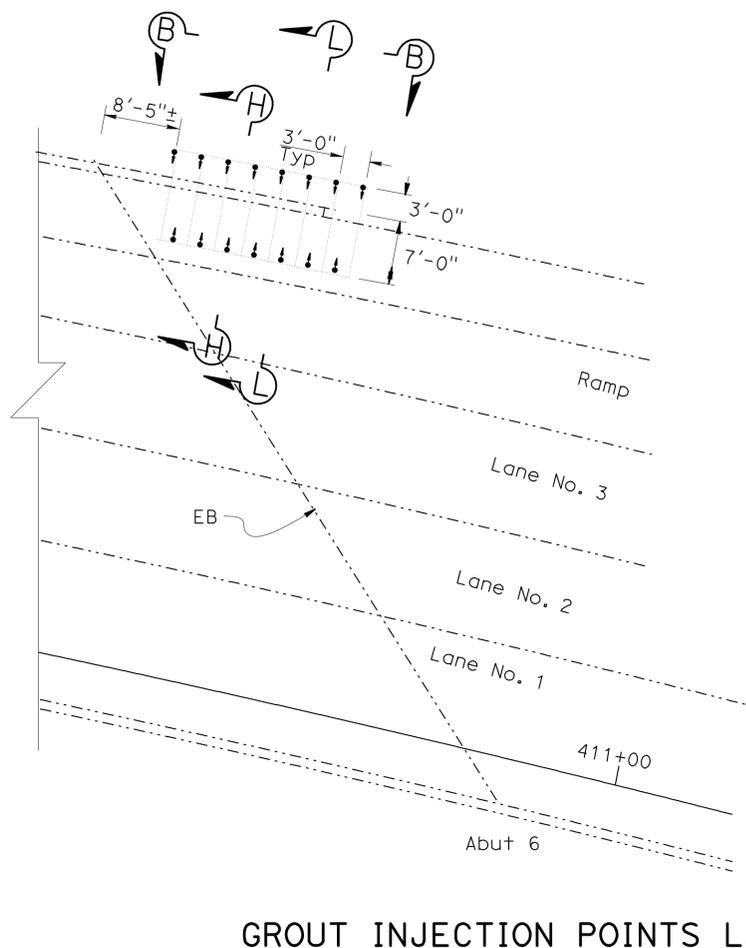
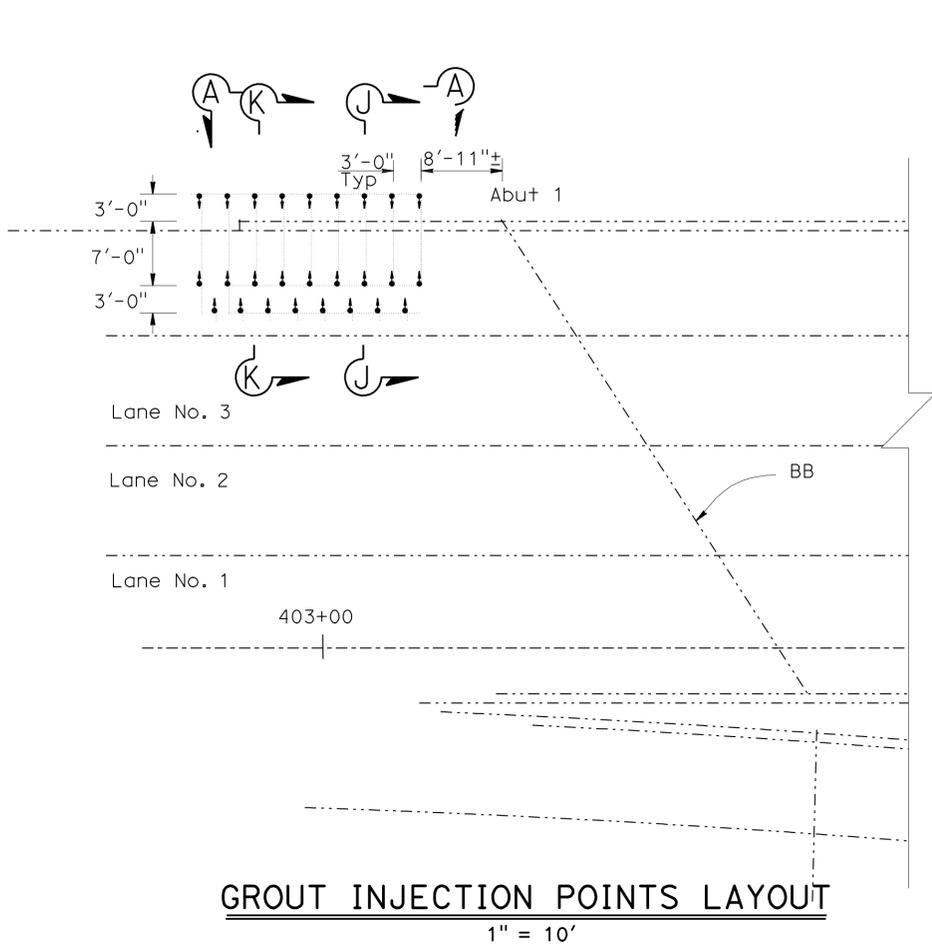
X DESIGN ENGINEER	DESIGN BY Sharareh Bikae	CHECKED Carl Duan	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 20	BRIDGE NO. 55-0293 L	ROUTE 91 BRIDGE REHABILITATION GENERAL PLAN NO. 1
	DETAILS BY Kay Farahzadi	CHECKED Sh.Bikae / C.Duan	LAYOUT BY X	CHECKED X			POST MILE 3.51-3.64	
	QUANTITIES BY Sharareh Bikae	CHECKED Charles Leong	SPECIFICATIONS BY X	PLANS AND SPECS COMPARED X				1 24

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 10/25/05) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 CU 12 EA OC9701 DISREGARD PRINTS BEARING EARLIER REVISION DATES 09/26/09 09/26/09 03/26/10 03/26/10 03/26/10 07/12/10 07/12/10 05/25/10 FILE => 55_0293L_gp_01.dgn STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.07-24-06)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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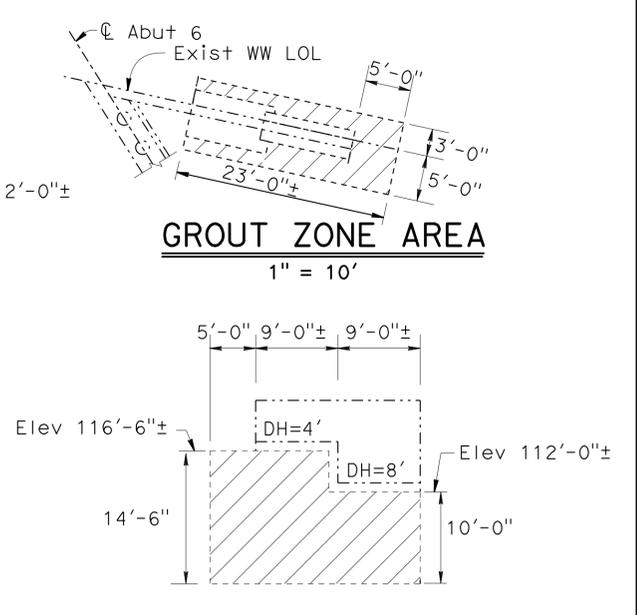
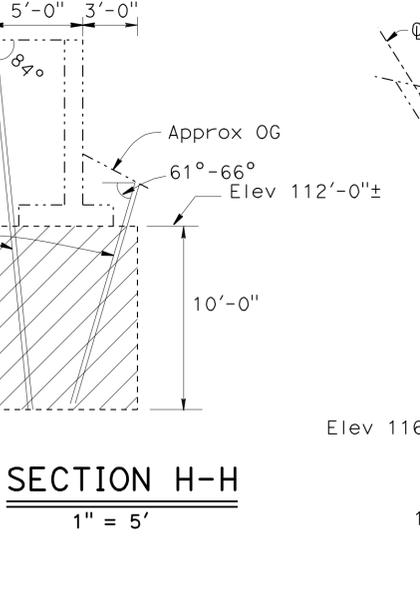
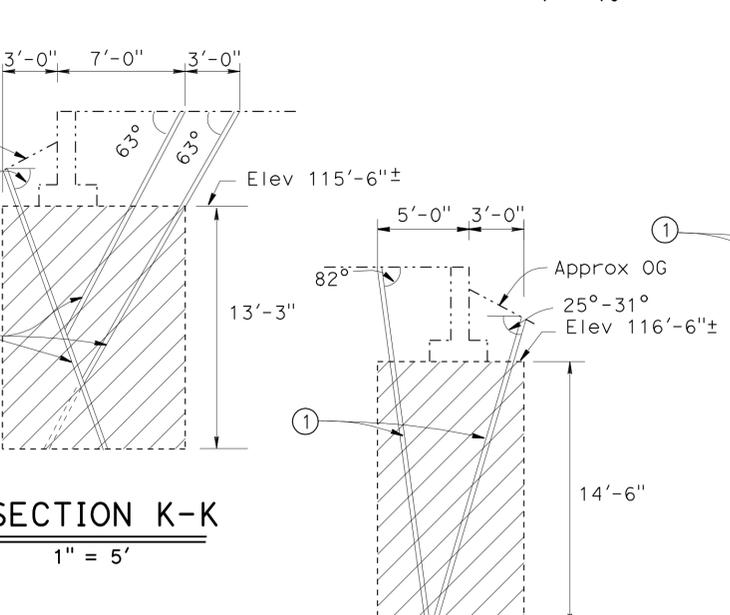
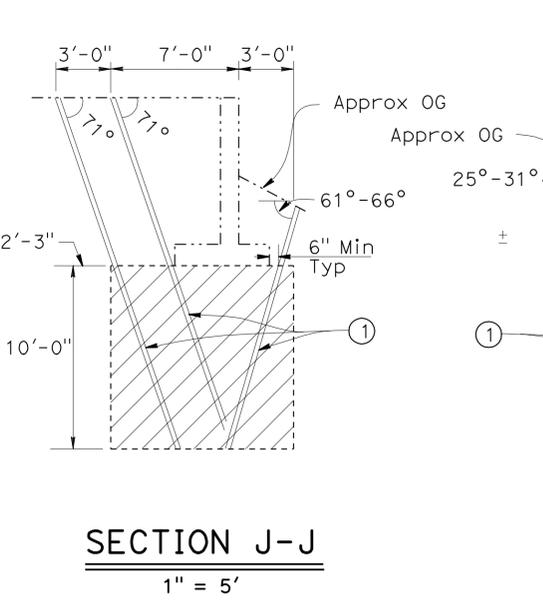
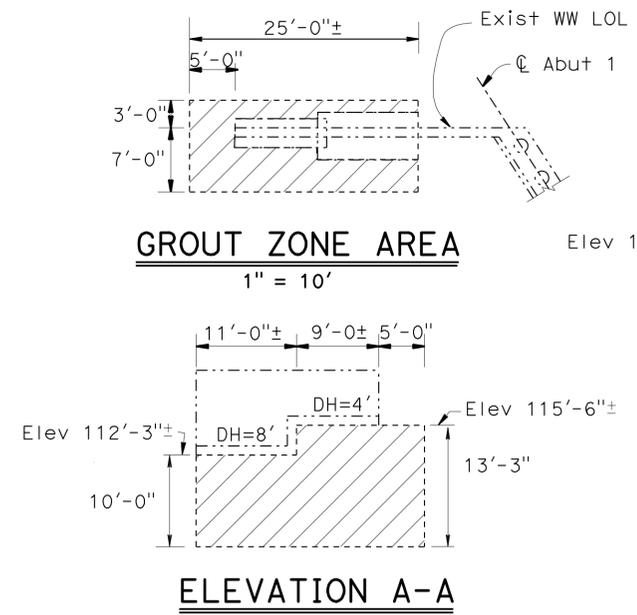
05/28/10
 REGISTERED CIVIL ENGINEER DATE
 9-20-10
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 SHARAREH BIKAAE
 No. C69272
 Exp 06/30/2012
 CIVIL
 STATE OF CALIFORNIA



- NOTES:**
1. Grout injection points shall be located as necessary to avoid underground structures and other existing utilities.
 2. Typical injection angles and spacing to be determined by contractor.
 3. The Engineer will approve the final location of all grout injection points.
 4. Bottom of the footing elevation is from As Built.

- LEGEND**
- ① Location of Grouting Ground Pipe
 - Exist Structure
 - ▨ Grout zone area
 - ↓ Grout injection points
 - DH Design Height of existing retaining wall



NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DESIGN	BY Sharareh Bikaae	CHECKED Carl Duan	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 20	BRIDGE NO.	55-0293 L	ROUTE 91 BRIDGE REHABILITATION GROUT INJECTION DETAILS NO.1
	DETAILS	BY Kay Farahzadi	CHECKED Sh. Bikaae / C.Duan		POST MILE	3.51-3.64	
	QUANTITIES	BY Sharareh Bikaae	CHECKED Charles Leong		POST MILE	3.51-3.64	

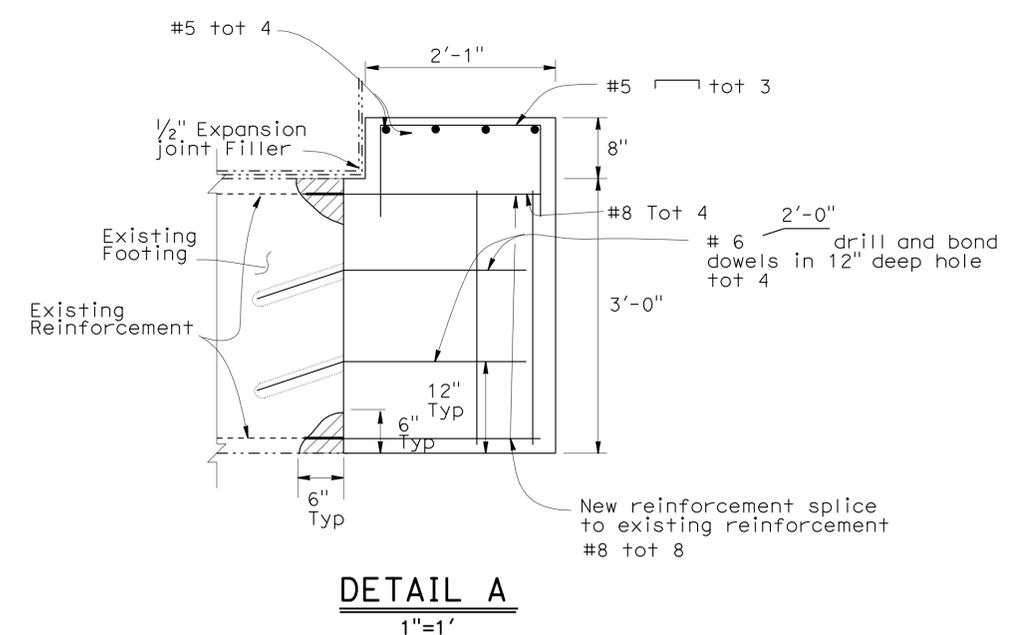
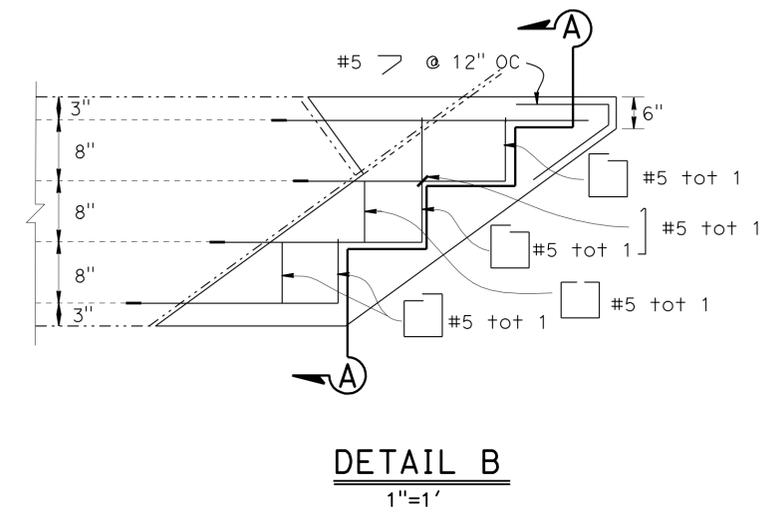
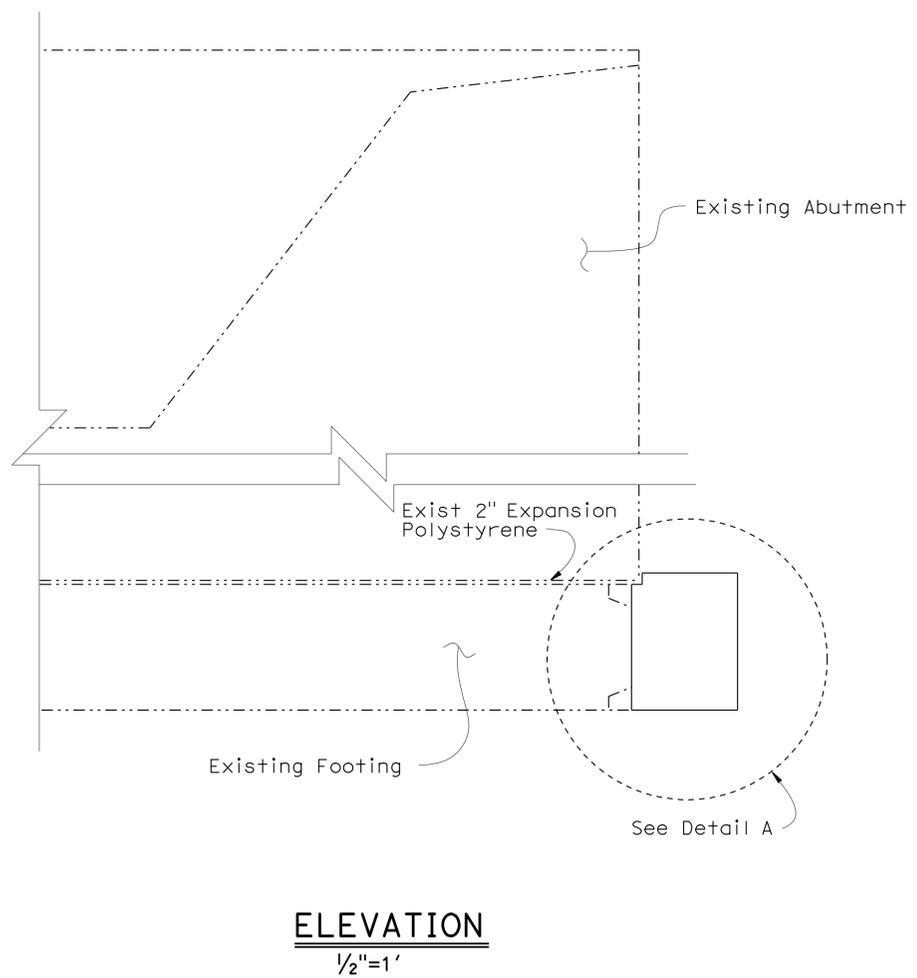
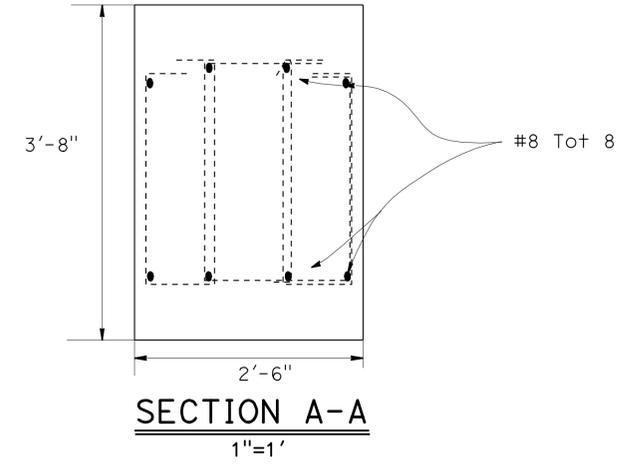
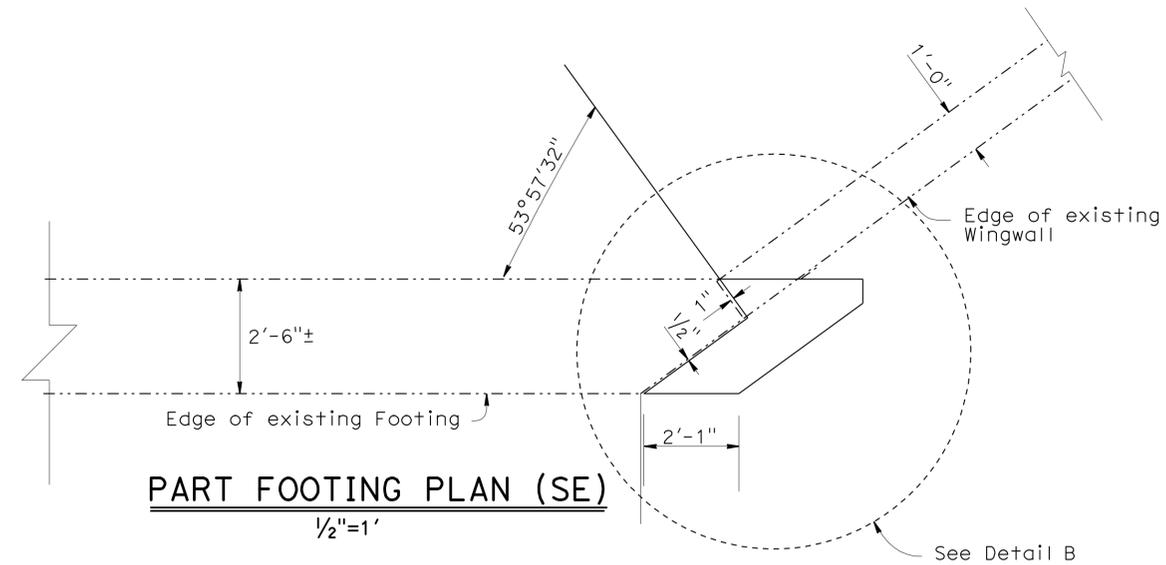
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS CU 12 EA OC9701 DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES									
08/24/08	08/26/08	09/02/08	09/05/08	03/03/09	03/16/10	03/23/10	04/12/10	05/18/10	SHEET 2 OF 24

FILE => 55_0293L Grout Injection 01.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	28	49

Sharareh Bikae 05/28/10
 REGISTERED CIVIL ENGINEER DATE
 9-20-10
 PLANS APPROVAL DATE
 No. C69272
 Exp. 06/30/2012
 CIVIL
 STATE OF CALIFORNIA
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LEGEND

----- Existing Structure

Remove concrete from existing footing to expose existing reinforcement to allow splicing

NOTE:

Splice shall adhere to "Service Splice" criteria

Reinforced $f_y=60$ KSI
Concrete: $f'_c=3.6$ KSI

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	BY Sharareh Bikae	CHECKED Carl Duan
DETAILS	BY Kay Farahzadi	CHECKED Sh. Bikae / C. Duan
QUANTITIES	BY Sharareh Bikae	CHECKED Charles Leong

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH **20**

BRIDGE NO. 55-293 L
POST MILE 3.51-3.64

ROUTE 91 BRIDGE REHABILITATION
SHEAR BLOCK ABUTMENT NO. 6

CU 12
EA OC9701

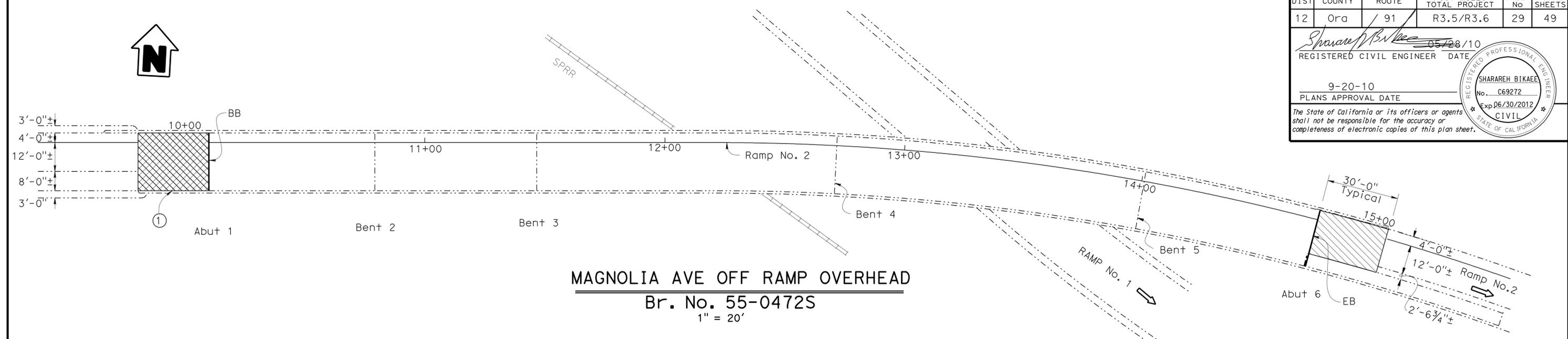
REVISION DATES

09/17/09	09/28/09	09/28/09	03/16/10	03/25/10	04/15/10	05/18/10
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SHEET 3 OF 24

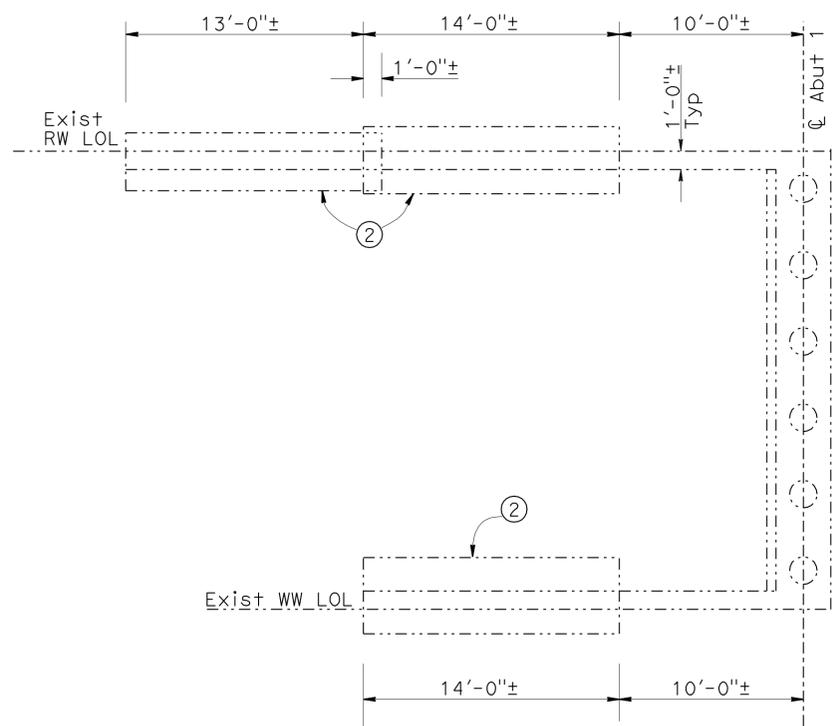
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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Sharareh Bikae REGISTERED CIVIL ENGINEER DATE 05/28/10			REGISTERED PROFESSIONAL ENGINEER No. C69272 Exp 06/30/2012 CIVIL STATE OF CALIFORNIA		
9-20-10 PLANS APPROVAL DATE					
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.					

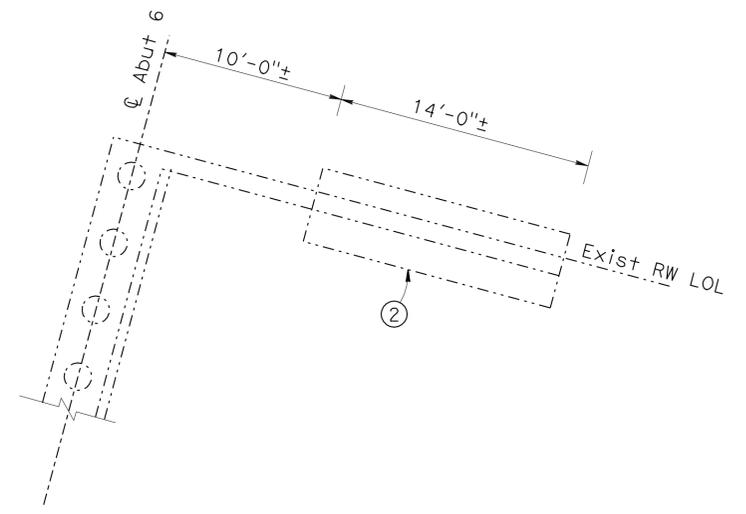


MAGNOLIA AVE OFF RAMP OVERHEAD
Br. No. 55-0472S
 1" = 20'

- LEGEND**
- Indicates Existing Structure
 - Remove existing Approach pavement and place paving notch extension and Structure Approach Type R(30D). Excavate 4 feet below bottom of existing slab. For details, see "STRUCTURE APPROACH TYPE R(30D)" and "STRUCTURE EXCAVATION AND BACK FILL" sheets
 - Remove existing Approach pavement and place paving notch extension and Structure Approach Type R(30D). For details, see "STRUCTURE APPROACH TYPE R(30D)" sheet
 - Instal new Joint seal (MR=2"), see "STRUCTURE EXCAVATION AND BACKFILL LIMITS" sheet and
 - - - Clean expansion joint



ABUTMENT 1 PLAN
1" = 5'



ABUTMENT 6 PARTIAL PLAN
1" = 5'

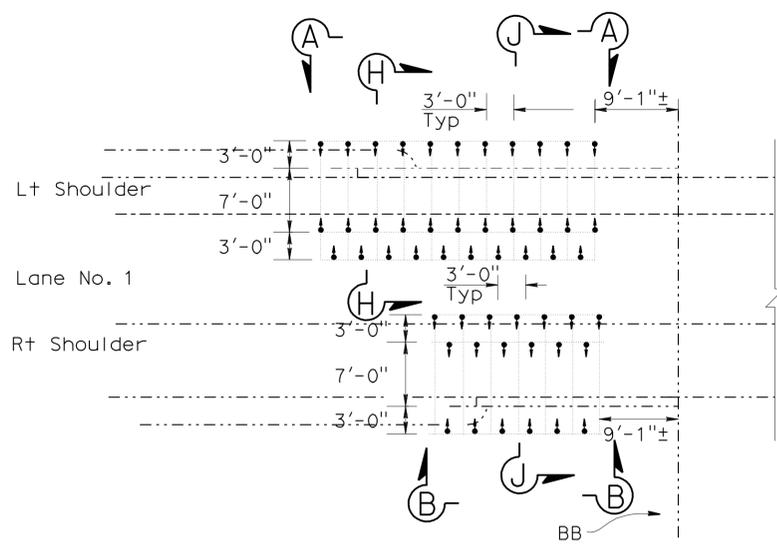
- NOTES**
- ① Repair existing Conc. Barrier see "REPAIR DETAILS NO.1" and "REPAIR DETAILS NO.2" sheets
 - ② Grout injections footing areas, see "GROUT INJECTION DETAILS" sheet

NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

MAGNOLIA AVE OFF RAMP OVERHEAD	BR NO 55-0472S
QUANTITIES	
RECONSTRUCT METAL RAILING (BRIDGE)	14 LF
STRUCTURE EXCAVATION (BRIDGE)	107 CY
STRUCTURE BACKFILL (BRIDGE)	92 CY
COMPACTION GROUTING	7,452 CF
AGGREGATE BASE (APPROACH SLAB)	2 CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	47 CY
PAVING NOTCH EXTENSION	32 CF
CLEAN EXPANSION JOINT	6 LF
JOINT SEAL (MR 2")	48 LF
CONCRETE BARRIER (MODIFICATION)	14 LF

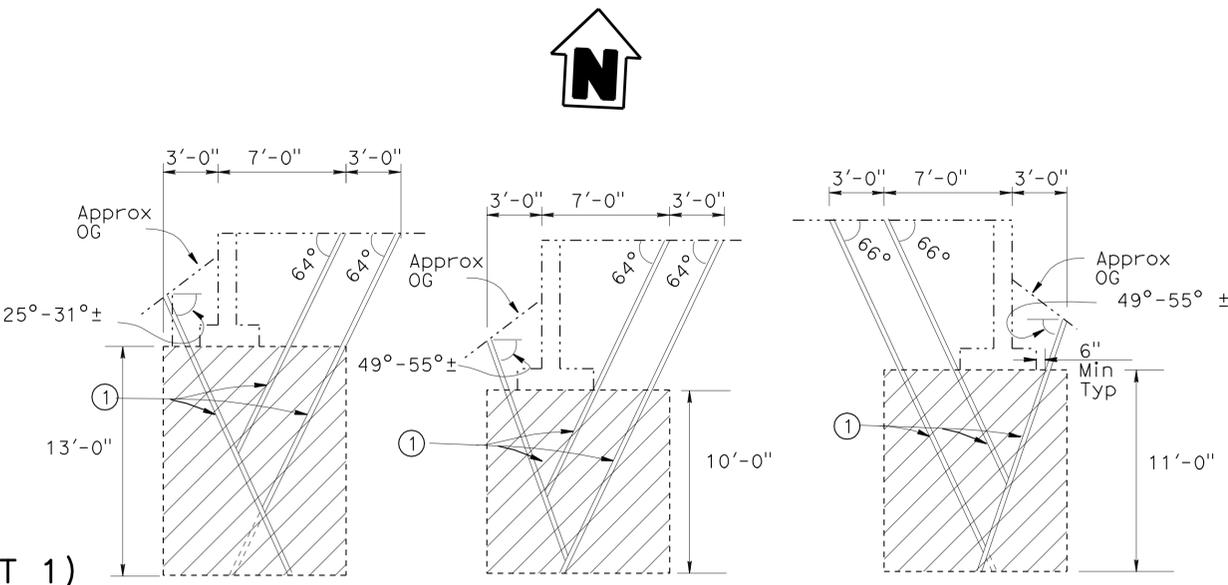
X DESIGN ENGINEER	DESIGN	BY Sharareh Bikae	CHECKED Carl Duan	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 20	BRIDGE NO.	55-0472S	ROUTE 91 BRIDGE REHABILITATION GENERAL PLAN NO. 2	
	DETAILS	BY Kay Farahzadi	CHECKED Sh. Bikae / C. Duan	LAYOUT	CHECKED X			POST MILE	3.51-3.64		
	QUANTITIES	BY Sharareh Bikae	CHECKED Charles Leong	SPECIFICATIONS	BY X			PLANS AND SPECS COMPARED X			
STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 10/25/05)						ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 12 EA 0C9701	DISREGARD PRINTS BEARING EARLIER REVISION DATES REVISION DATES: 04/16/09, 05/25/10, 04/30/09, 05/26/09, 05/11/09, 03/24/10, 03/22/10, 04/26/10, 05/18/10			SHEET 4 OF 24

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	30	49
Sharareh Bikae 05/28/10 REGISTERED CIVIL ENGINEER DATE					
9-20-10 PLANS APPROVAL DATE					
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.					



GROUT INJECTION POINTS LAYOUT PLAN (ABUT 1)

1" = 10'

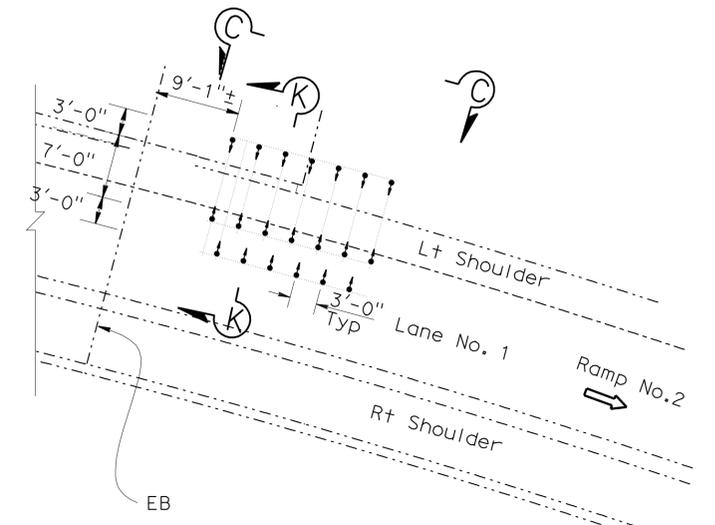


SECTION H-H

1" = 5'

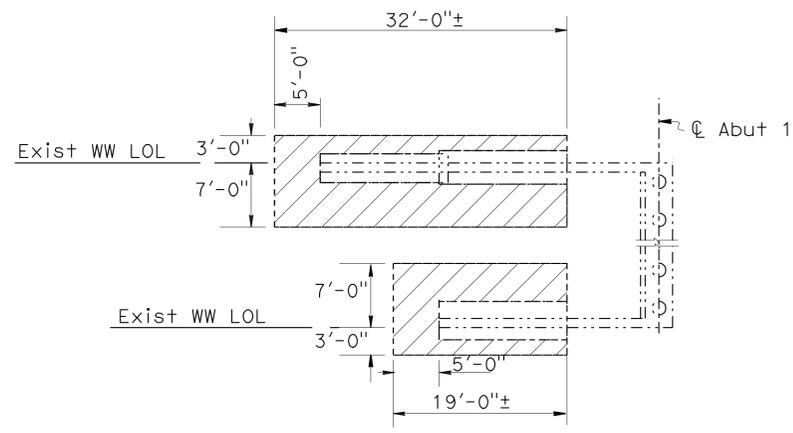
SECTION J-J

1" = 5'



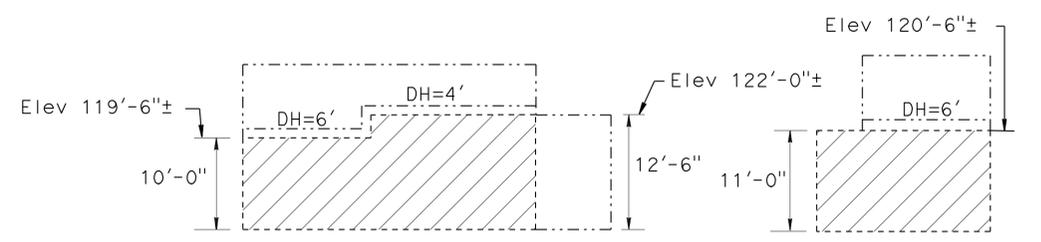
GROUT INJECTION POINTS LAYOUT PLAN (ABUT 5)

1" = 10'



GROUT ZONE AREA

1" = 10'



ELEVATION A-A

1" = 10'

ELEVATION B-B

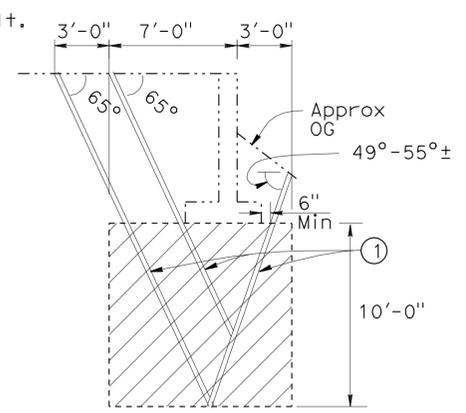
1" = 10'

NOTES:

1. Grout injection points shall be located as necessary to avoid underground structures and other existing facilities.
2. Typical Injection angles and spacing to be determined by contractor.
3. The Engineer will approve the final locations of all grout injection points.
4. Bottom of the footing elevation is from As Built.

LEGEND

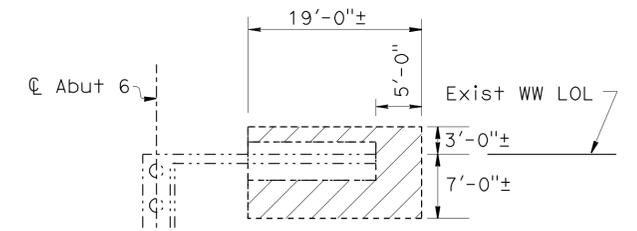
- ① Location of Grouting Ground Pipe
- Exist Structure
- ▨ Grout zone area
- Grout injection points
- DH Design Height of existing retaining Wall



SECTION K-K

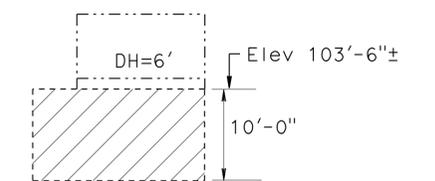
1" = 5'

ABUTMENT 6



GROUT ZONE AREA

1" = 10'



ELEVATION C-C

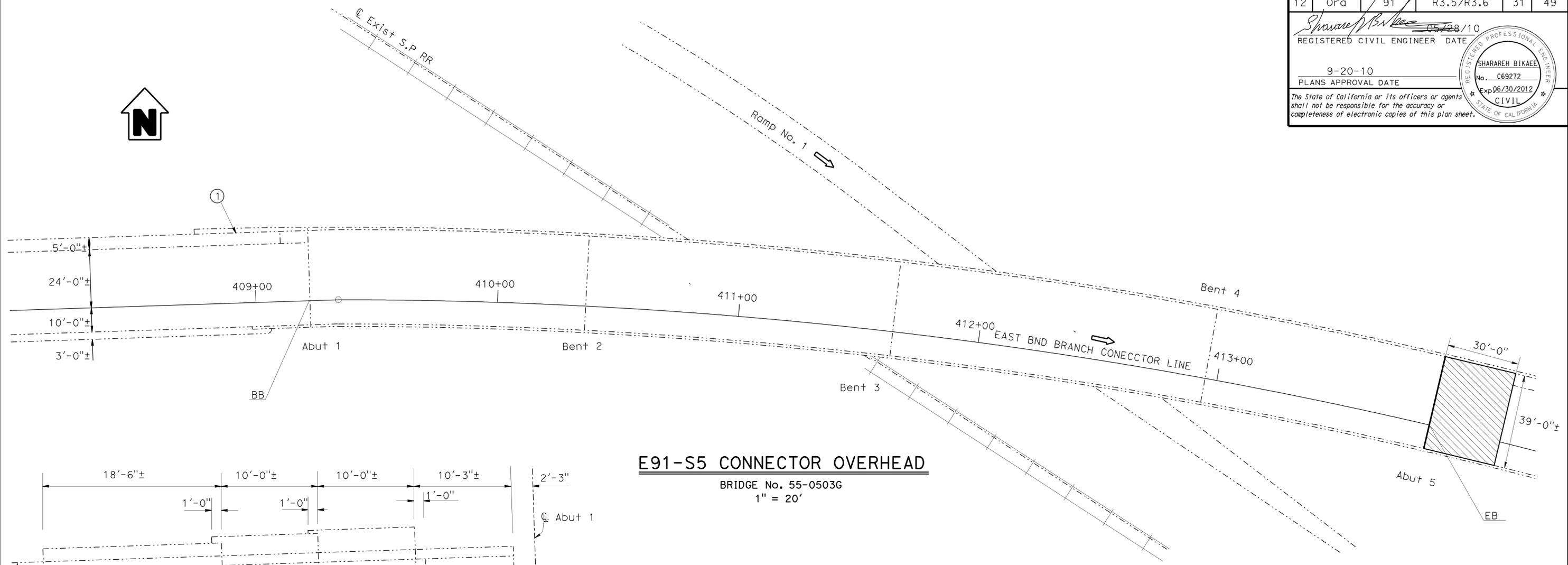
1" = 10'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

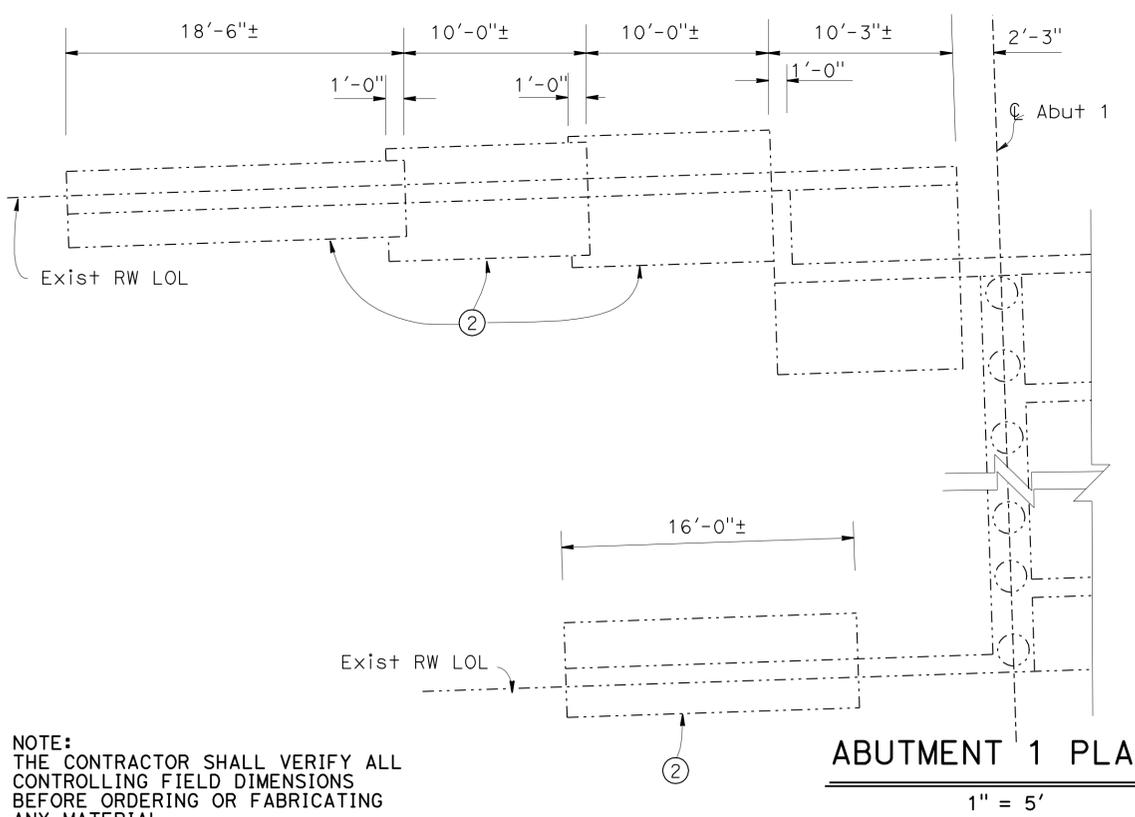
ABUTMENT 1

DESIGN	BY	Sharareh Bikae	CHECKED	Carl Duan	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 20	BRIDGE NO.	55-0472S	ROUTE 91 BRIDGE REHABILITATION GROUT INJECTION DETAILS NO.2	
	DETAILS	BY	Kay Farahzadi	CHECKED			Sh. Bikae / C. Duan	POST MILE		3.51-3.64
	QUANTITIES	BY	Sharareh Bikae	CHECKED			Charles Leong	REVISION DATES		08/18/09 08/25/09 08/26/09 09/04/09 09/25/09 03/08/10 03/16/10 04/12/10 05/18/10
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)					ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 12 EA 0C9701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET	OF	
					0	1	2	3	5	24

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	31	49
REGISTERED CIVIL ENGINEER DATE 05/28/10 Sharareh Bikae			REGISTERED PROFESSIONAL ENGINEER No. C69272 Exp 06/30/2012 CIVIL STATE OF CALIFORNIA		
PLANS APPROVAL DATE 9-20-10					
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E91-S5 CONNECTOR OVERHEAD
 BRIDGE No. 55-0503G
 1" = 20'



NOTES

- ① Repair existing Conc. Barrier see "REPAIR DETAILS NO.1" and "REPAIR DETAILS No.2" sheets.
- ② Grout injection footing areas, see "GROUT INJECTION DETAILS" sheet

LEGEND

- Indicates Existing Structure
- Remove existing Approach pavement and place paving notch extension and Structure Approach Type R(30D). For details, see "STRUCTURE APPROACH TYPE R(30D)" sheet
- Joint seal removal and replace with new joint seal (MR=2"), see "STRUCTURE EXCAVATION AND BACKFILL LIMITS" sheet and

E91-S5 CONNECTOR OVERHEAD	BR NO 55-503G
RECONSTRUCT METAL RAILING (BRIDGE)	39 LF
COMPACTION GROUTING	7,822 CF
AGGREGATE BASE (APPROACH SLAB)	4 CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	43 CY
PAVING NOTCH EXTENSION	29 CF
JOINT SEAL (MR 2")	39 LF
CONCRETE BARRIER (MODIFICATION)	39 LF

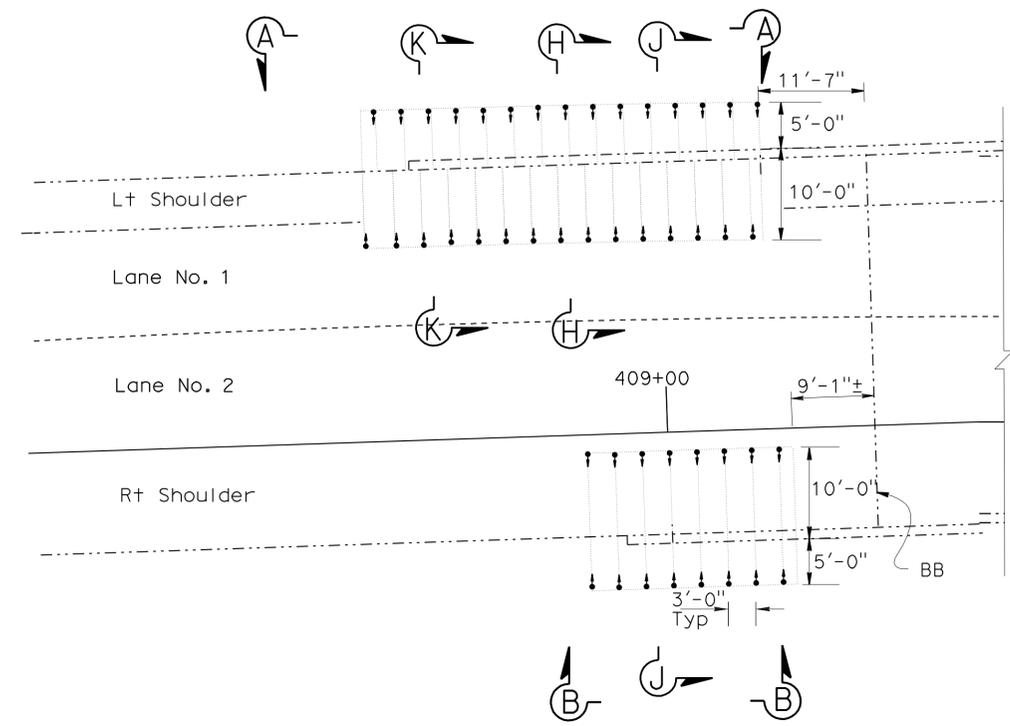
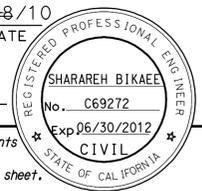
NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN BY Sharareh Bikae	CHECKED Carl Duan	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 55 0503G	ROUTE 91 BRIDGE REHABILITATION GENERAL PLAN NO.3	
DETAILS BY Kay Farahzadi	CHECKED Sh.Bikae / C.Duan		DESIGN BRANCH 20		POST MILE 3.51-3.64
QUANTITIES BY Sharareh Bikae	CHECKED Charles Leong		CU 12 EA OC9701		DISREGARD PRINTS BEARING EARLIER REVISION DATES
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	REVISION DATES	SHEET 6 OF 24

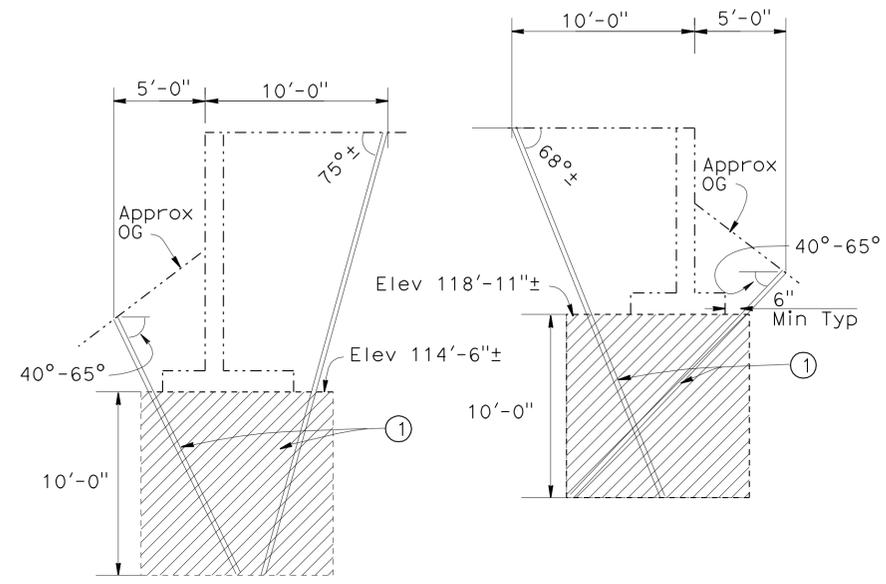
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	32	49

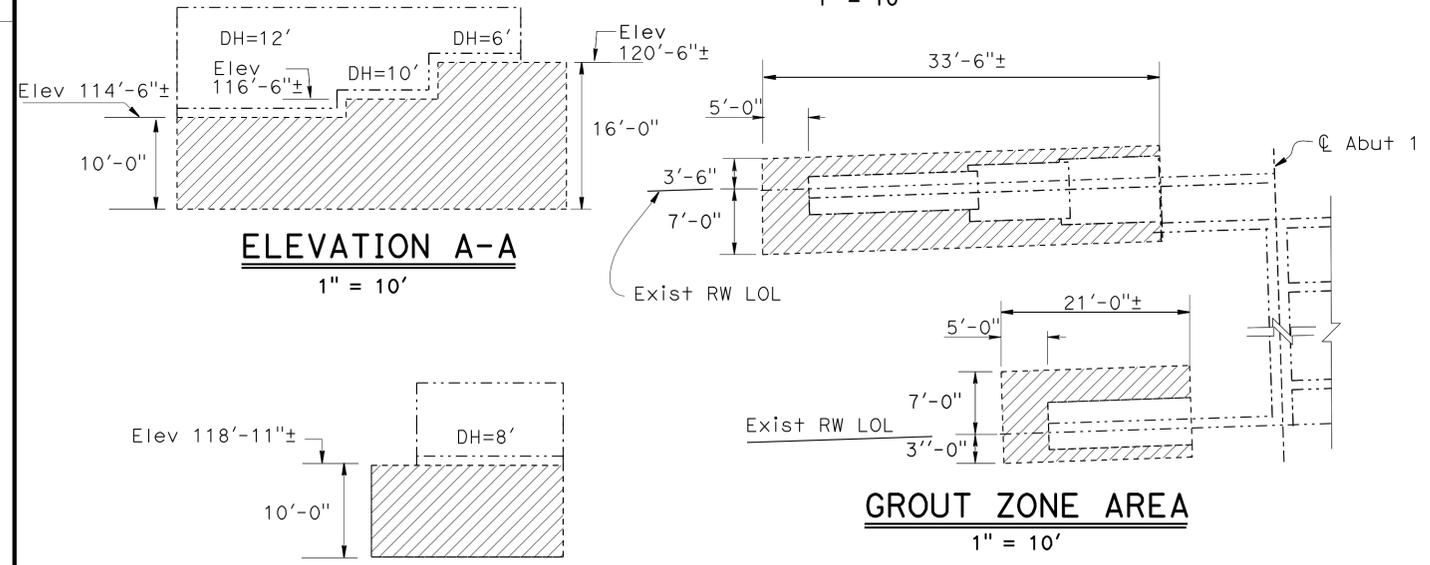
REGISTERED CIVIL ENGINEER DATE 05/28/10
 9-20-10
 PLANS APPROVAL DATE
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GROUT INJECTION POINTS LAYOUT PLAN (ABUT 1)
1" = 10'



SECTION J-J
1" = 5'

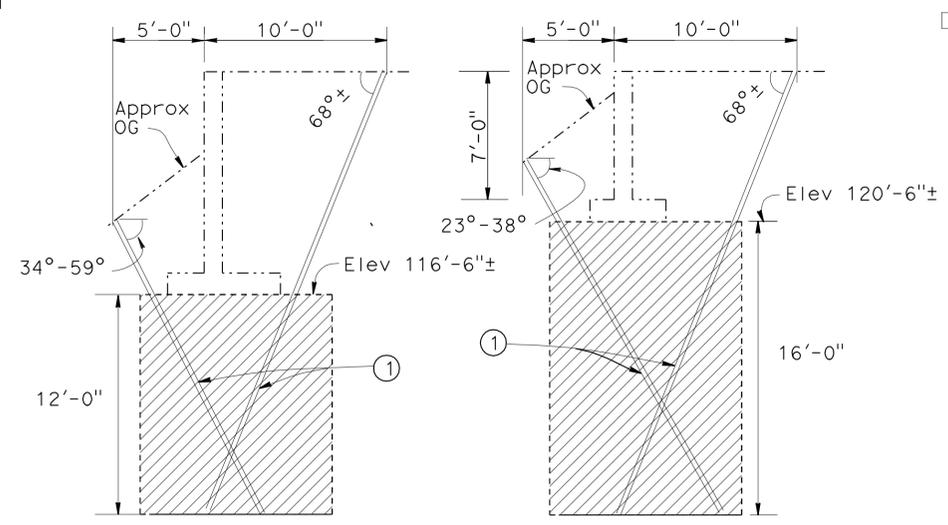


ELEVATION A-A
1" = 10'

ELEVATION B-B
1" = 10'

GROUT ZONE AREA
1" = 10'

ABUTMENT 1
1" =



SECTION H-H
1" = 5'

SECTION K-K
1" = 5'

NOTES:

1. Grout Injection Points shall be located as necessary to avoid underground structures and other existing utilities.
2. Typical injection angles and spacing to be determined by contractor.
3. The Engineer will approve the final location of all grout injection points.
4. Bottom of the footing elevations from As Built.

LEGEND

- ① Location of Grouting Ground Pipe
- Exist Structure
- ▨ Grout zone area
- Grout Injection Point
- DH Design Height of existing retaining wal

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	BY Sharareh Bikae	CHECKED Carl Duan	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 20	BRIDGE NO.	55 0503G	ROUTE 91 BRIDGE REHABILITATION GROUT INJECTION DETAILS NO.3
DETAILS	BY Kay Farahzadi	CHECKED Sh. Bikae / C. Duan			POST MILE	3.51-3.64	
QUANTITIES	BY Sharareh Bikae	CHECKED Charles Leong			REVISION DATES	08/24/09 08/25/09 08/27/09 09/01/09 03/24/10 04/12/10 05/18/10	

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS CU 12 EA OC9701 DISREGARD PRINTS BEARING EARLIER REVISION DATES

USERNAME => HPH115 DATE PLOTTED => 22-SEP-2010 TIME PLOTTED => 14:39

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	33	49

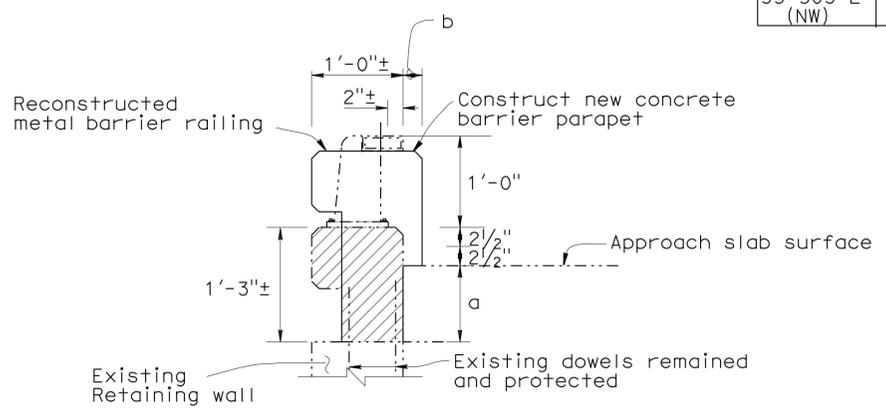
05/28/10
 REGISTERED CIVIL ENGINEER DATE
 9-20-10
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER
 SHARAREH BIKAAE
 No. C69272
 Exp. 06/30/2012
 CIVIL
 STATE OF CALIFORNIA

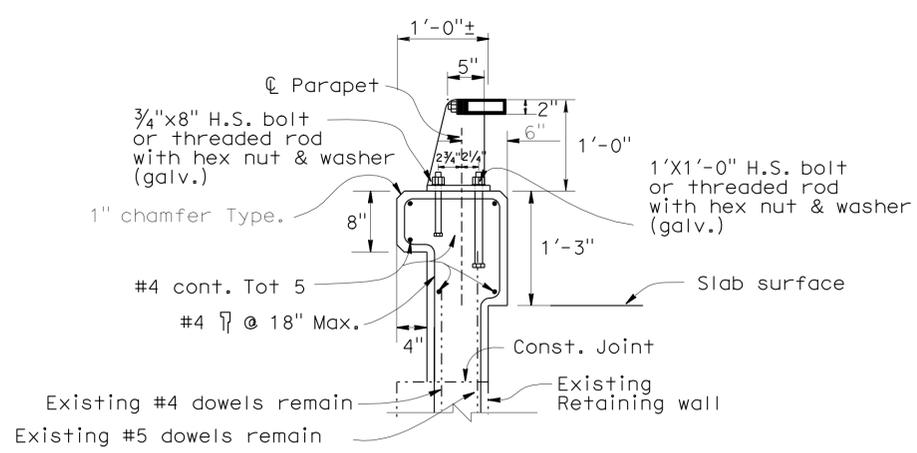
Br#	a (in)	b (in)
55-293 L (NE)	6" Max	4.7"± to 0"
55-472 S (SW)	10" Max	2.5"± to 0"
55-503 E (NW)	5 1/2" Max	4.0"± to 0"

ABBREVIATIONS

NE NORTH EAST
 SW SOUTH WEST
 NW NORTH WEST



SECTION A-A
1"=1'



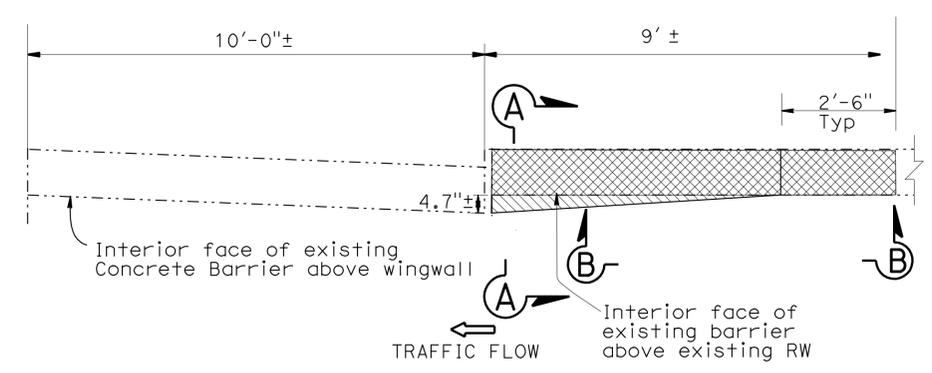
CONCRETE BARRIER MODIFICATION AND RECONSTRUCT METAL BARRIER RAILING TYPE 9A MODIFIED
1"=1'

LEGEND

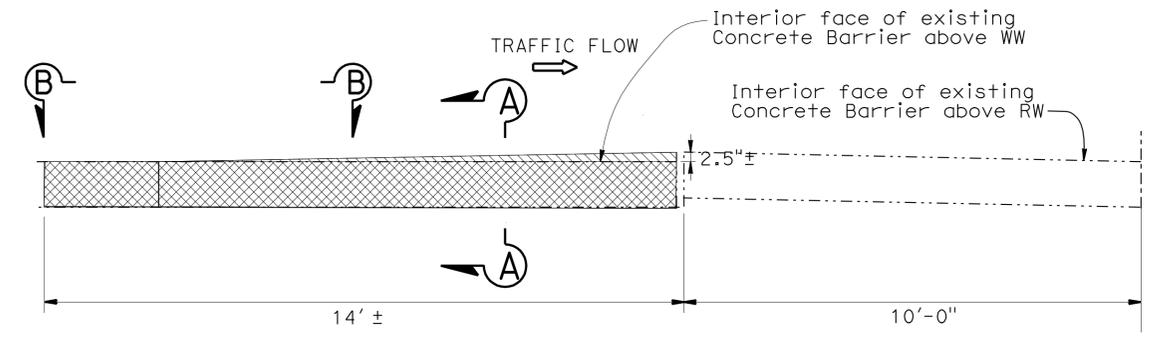
- Indicates existing structure
- Indicates new construction
- ▨ Remove existing concrete barrier parapet
- ▨ Reconstruct concrete barrier railing Type 9A (Mod)

NOTE

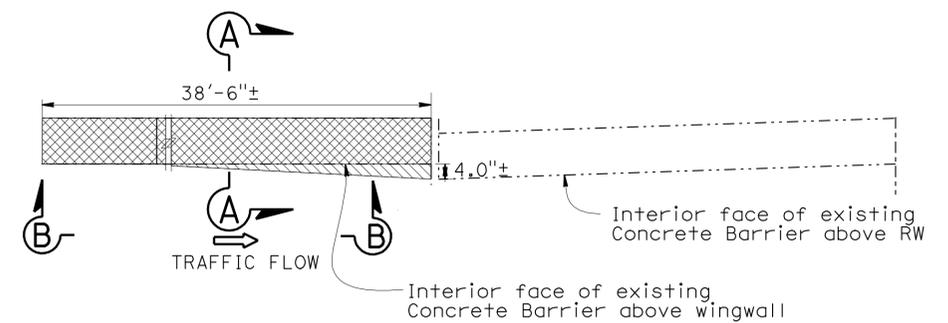
Elevation B-B, see REPAIR DETAILS No. 2 sheet.



PART PLAN ABUTMENT 6 (NE)
Br # 55-0293L
1/2"=1'



PART PLAN ABUTMENT 1 (SW)
Br # 55-0472S
1/2"=1'



PART PLAN ABUTMENT 1 (NW)
Br # 55-0503G
1/2"=1'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN BY Sharareh Bikaae	CHECKED Carl Duan	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. VARIES	ROUTE 91 BRIDGE REHABILITATION REPAIR DETAILS NO.1	
DETAILS BY Kay Farahzadi	CHECKED Sh. Bikaae / C. Duan		DESIGN BRANCH 20		POST MILE 3.51-3.64
QUANTITIES BY Sharareh Bikaae	CHECKED Charles Leong		CU 12 EA OC9701		REVISION DATES

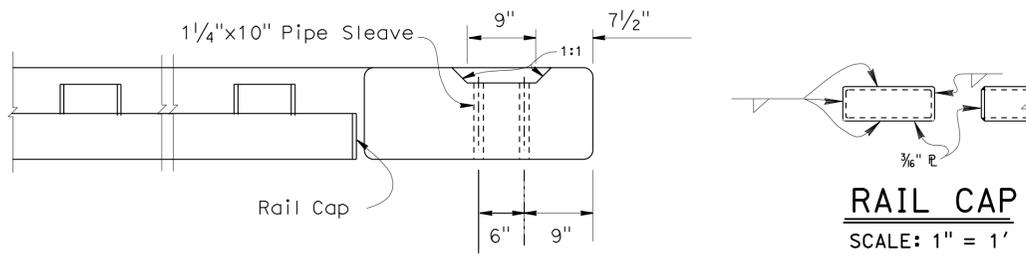
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES

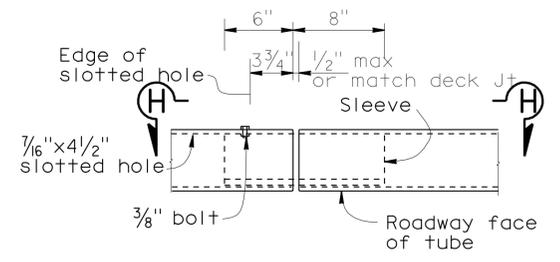
USERNAME => HPH115 DATE PLOTTED => 22-SEP-2010 TIME PLOTTED => 14:39

FILE => 55 Vari-Repair.dwg No.1.dgn

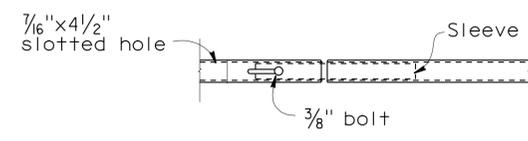
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Orca	91	R3.5/R3.6	34	49
Sharareh Bikae 05/28/10 REGISTERED CIVIL ENGINEER DATE					
9-20-10 PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



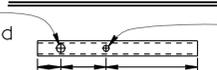
RAIL CAP
SCALE: 1" = 1'



PLAN



VIEW H-H



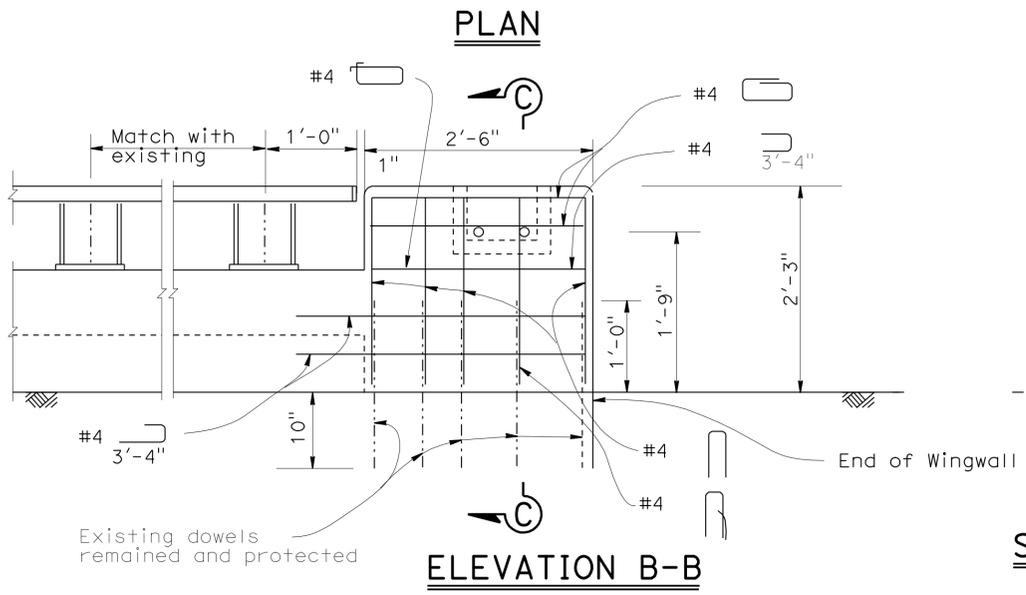
SLEEVE

TUBE SPLICE

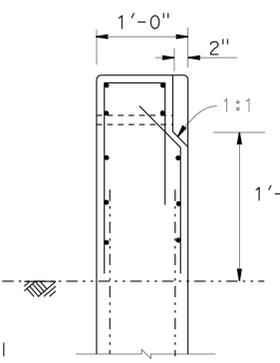
SCALE: 1/2" = 1'

Tack weld 3/8" nut inside of sleeve for 3/8" hex head bolt with washer (Tot 1)

1/2" ø holes near & far side. Sleeve formed of 3/16" PL, bent thus: □ for sliding fit inside of rail tube.



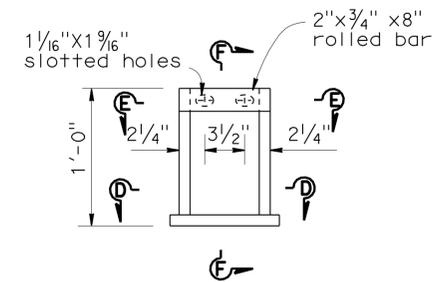
ELEVATION B-B



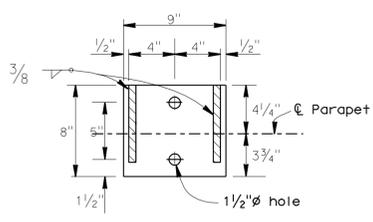
SECTION C-C

METAL BEAM GUARD RAIL ANCHORAGE

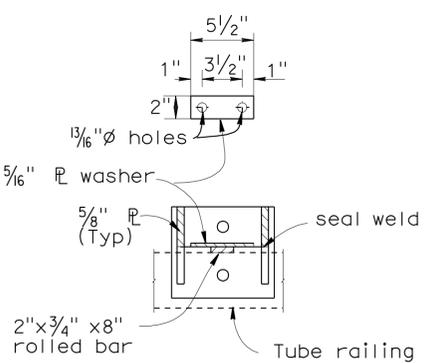
SCALE: 1" = 1'



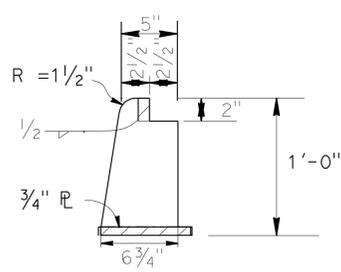
ELEVATION



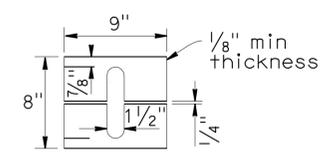
SECTION D-D



SECTION E-E



SECTION F-F



SHIM DETAIL

For bent plate rail post cut shim to fit

RAIL POST DETAILS

SCALE: 1/2" = 1'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

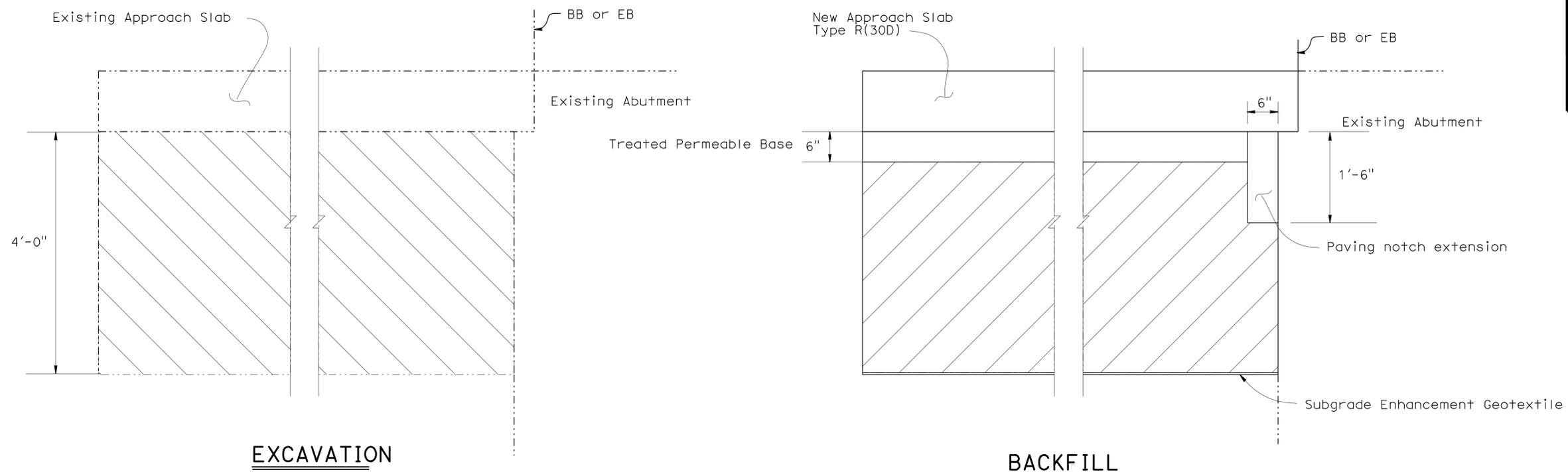
DESIGN	BY Sharareh Bikae	CHECKED Carl Duan
DETAILS	BY Kay Farahzadi	CHECKED Sh. Bikae / C. Duan
QUANTITIES	BY Sharareh Bikae	CHECKED Charles Leong

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

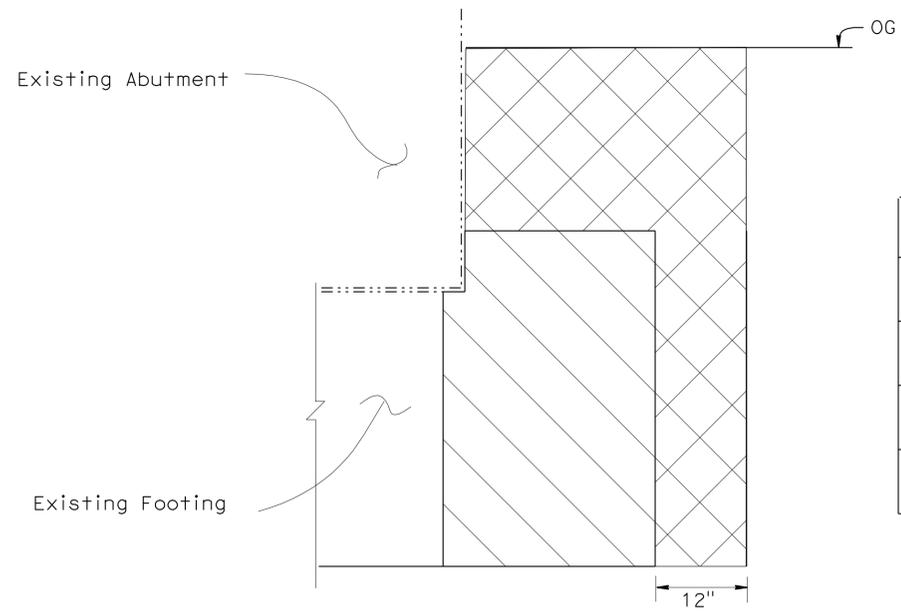
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 20

BRIDGE NO.	VARIES
POST MILE	3.51-3.64

ROUTE 91 BRIDGE REHABILITATION
REPAIR DETAILS No.2



EXCAVATION AND BACKFILL LIMITS
APPROACH SLAB SECTION
 SCALE: 1" = 1'

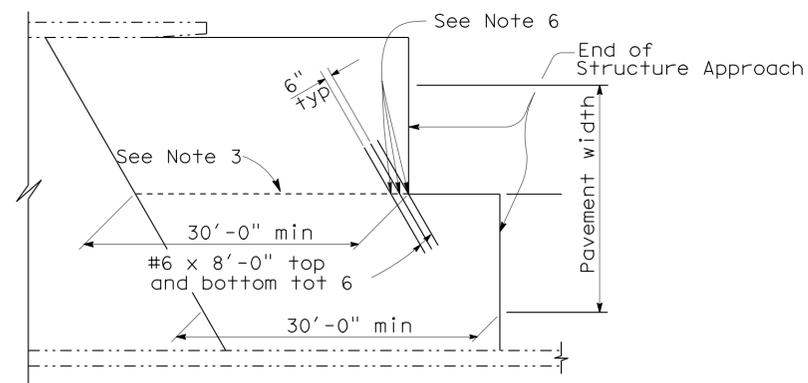
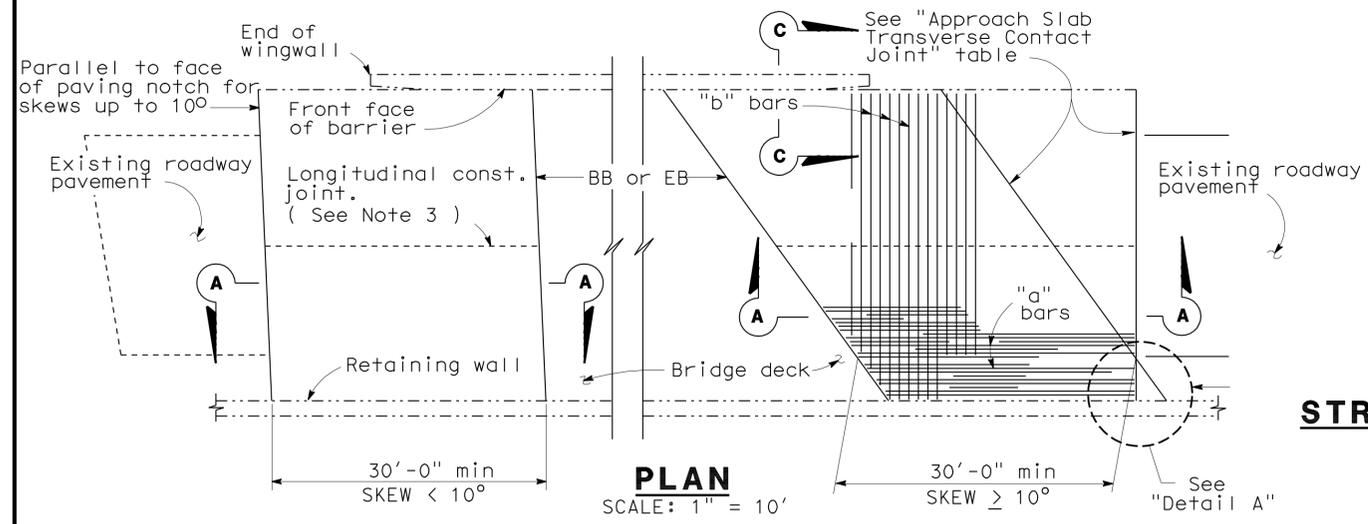


EXCAVATION AND BACKFILL LIMITS
SHEAR BLOCK (Br# 55-0293L)
 SCALE: 1" = 1'

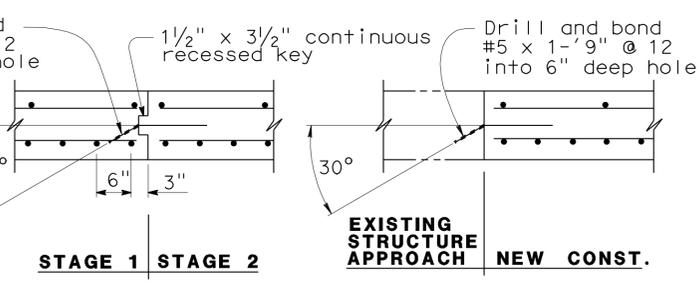
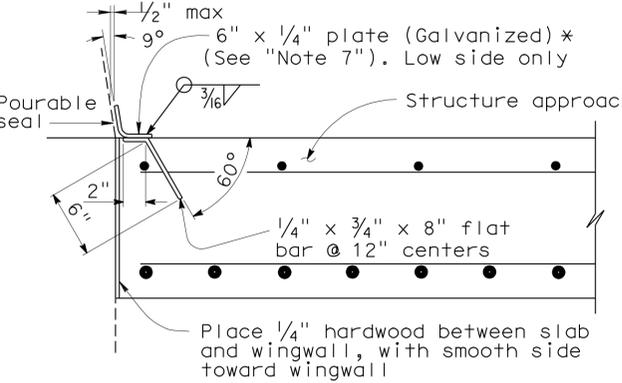
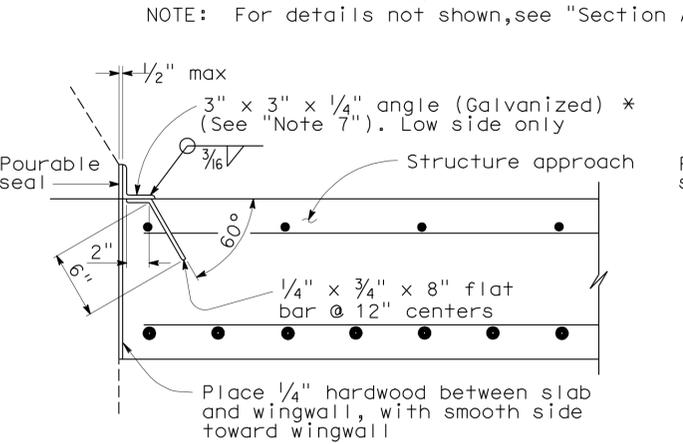
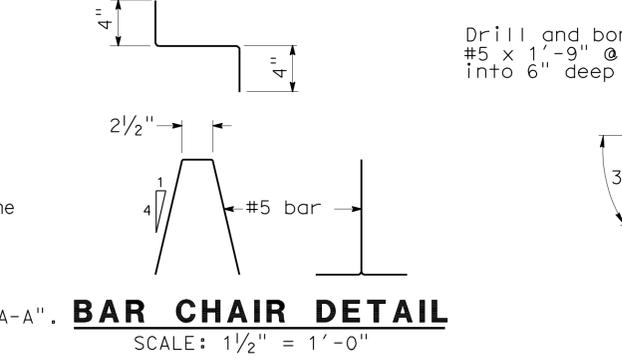
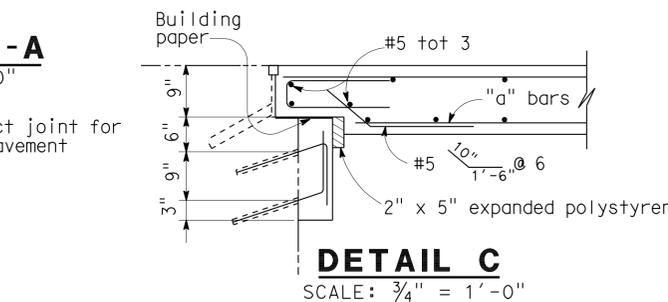
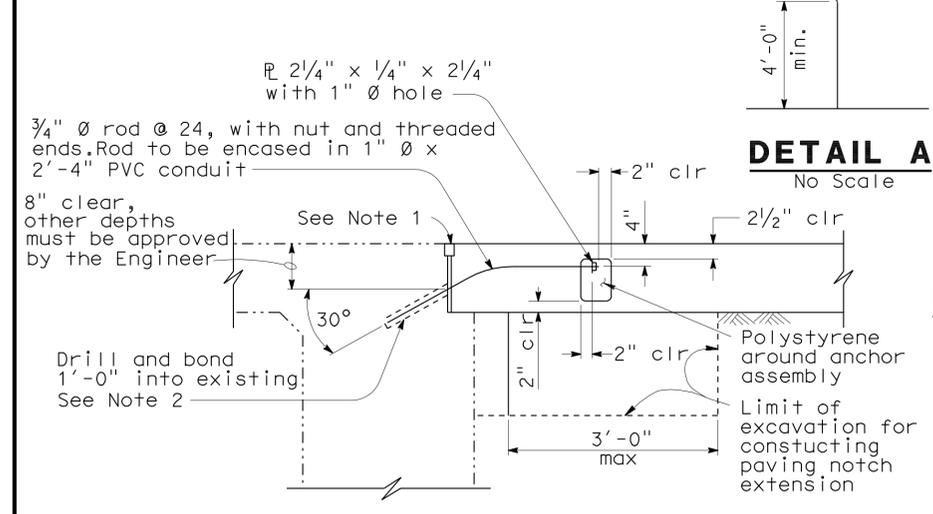
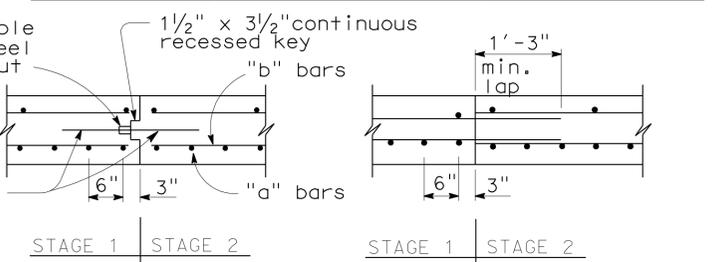
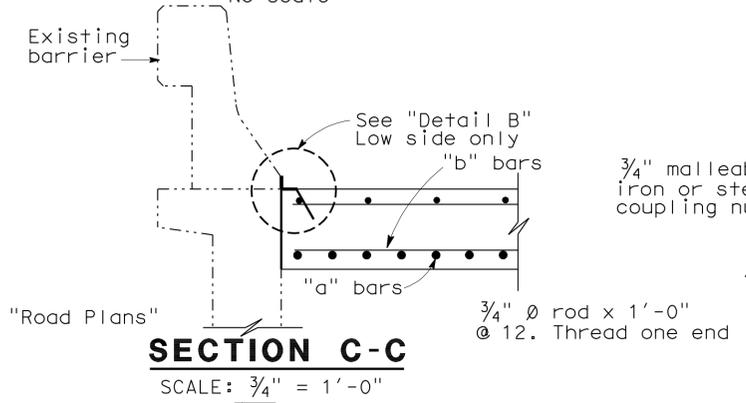
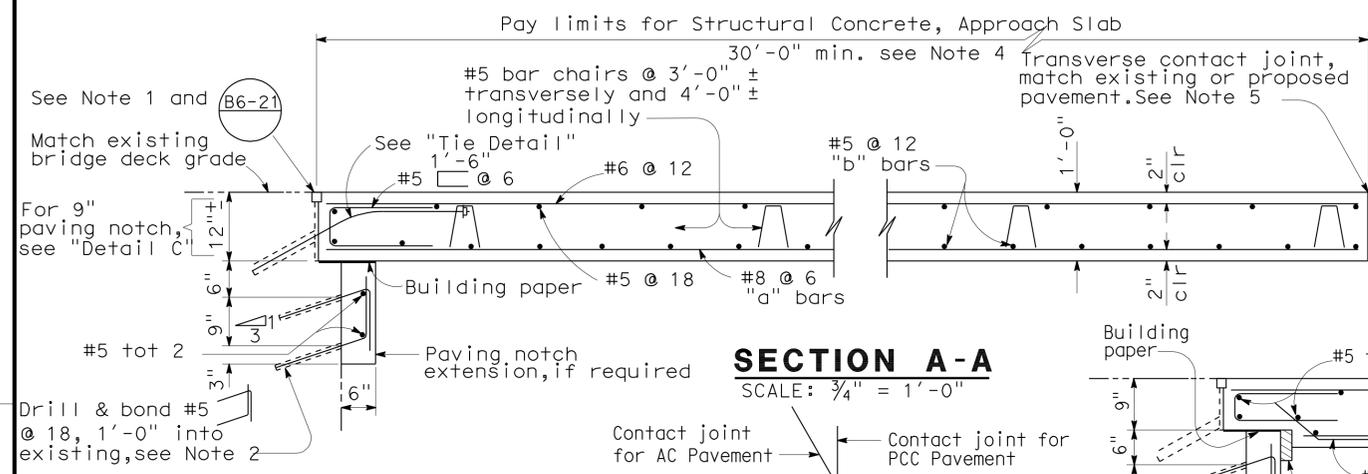
NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

LOCATION			MINIMUM "MR" (IN)	APPROXIMATE LENGTH (FT)	EXISTING WATER STOP	APPROXIMATE DEPTH TO CLEAN EXPANSION JOINT (IN)	APPROXIMATE LENGTH OF CLEAN EXPANSION JOINT
Bridge No. 55-0293L	Abut1	BB	2	63	NO	N/A	N/A
	Abut6	EB	2	99	NO	12	70
Bridge No. 55-0472S	Abut1	BB	2	24	NO	N/A	N/A
	Abut6	EB	2	24	NO	12	6
Bridge No. 55-0503G	Abut6	EB	2	39	NO	N/A	N/A

- LEGEND**
- Existing Structure
 - New Structure
 - ▨ Structure Excavation
 - ▩ Structure Backfill



APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	Parallel to face of paving notch	Parallel to face of paving notch
10° - 45°	Parallel to face of P N use (Detail A)	Stagger lines 24' to 36' apart
> 45°	Parallel to face of P N use (Detail A)	Stagger at each lane line



- NOTES:**
- For details not shown or noted, see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required.
 - Space to avoid existing prestress anchorages and main reinforcement.
 - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
 - Transverse contact joint shall be a minimum of 5'-0" from an existing or constructed weakened plane joint.
 - For transverse contact joint with new PCC paving, refer to Standard Plan P10.
 - Couplers are required for stage construction.
 - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable.

NOTE:
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*(TO BE USED WITH TYPE 25 OR TYPE 27 CONCRETE BARRIER)

*(TO BE USED WITH TYPE 732 OR TYPE 736 CONCRETE BARRIER)

STANDARD DRAWING			
RELEASE DATE 3/14/05	DESIGN BY M. TRAFFALIS	CHECKED E. THORKILDSEN	RELEASED BY
FILE NO. xs3-140e	DETAILS BY R. YEE	CHECKED E. THORKILDSEN	
	SUBMITTED BY M. HA	DRAWING DATE 8/92	OFFICE CHIEF

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

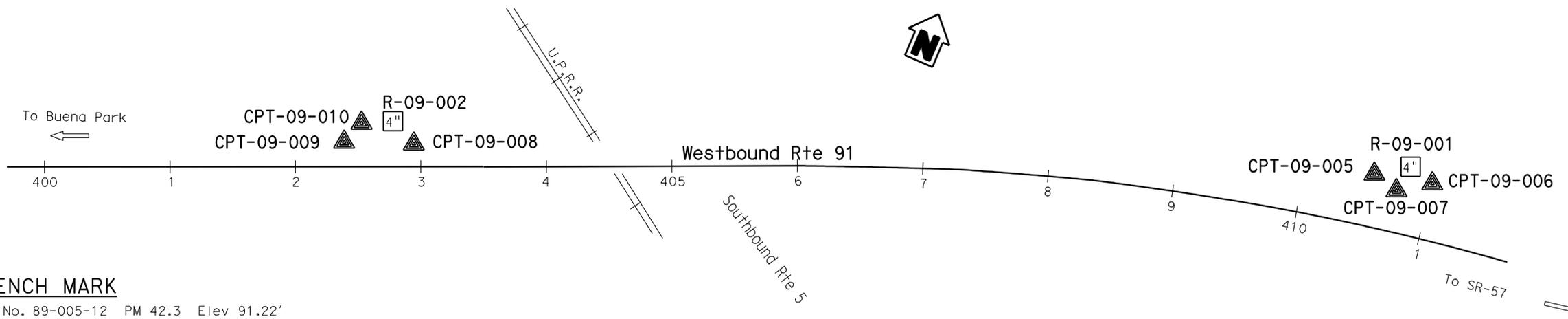
BRIDGE NO. Varies	ROUTE 91 BRIDGE REHABILITATION
MILE POST 3.51-3.64	ROUTE 91/5 SEPARATION & OVERHEAD
	STRUCTURE APPROACH TYPE R(30D)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Oran	91	R3.5/R3.6	37	49

Quanyan Liao 3-15-10
 PROFESSIONAL ENGINEER
 REGISTERED PROFESSIONAL ENGINEER
 No. C68870
 Exp. 9-30-11
 CIVIL
 STATE OF CALIFORNIA

9-20-10
 PLANS APPROVAL DATE
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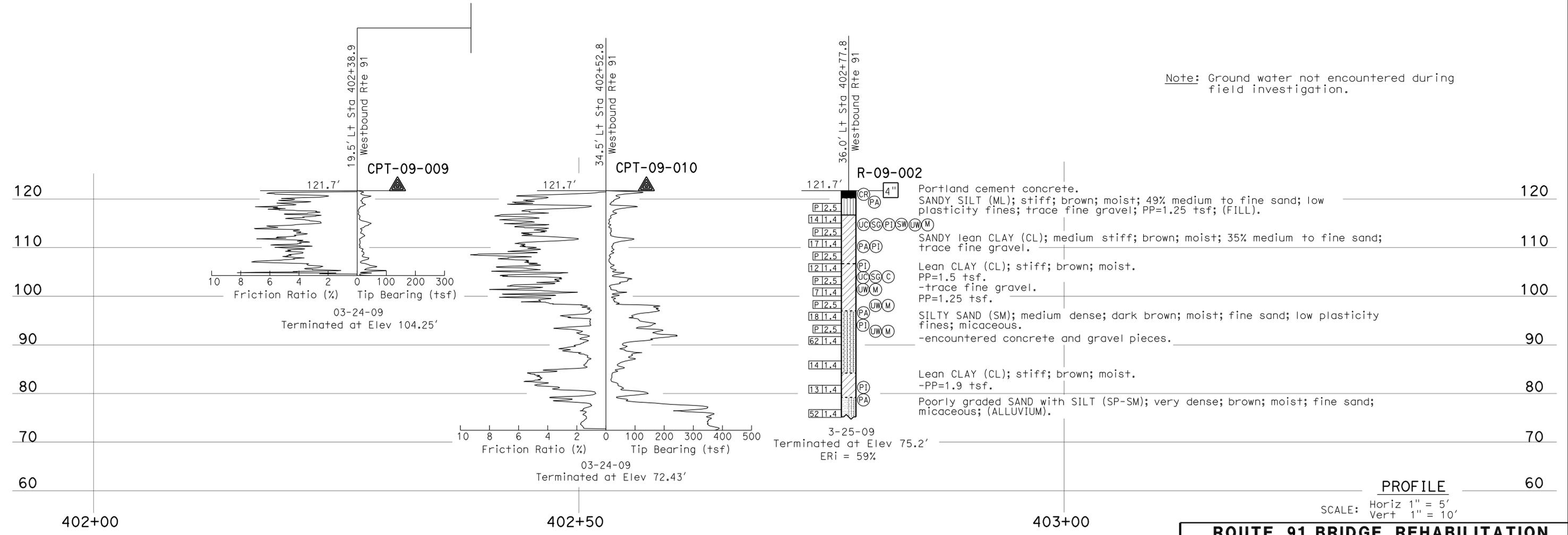
This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2007).



BENCH MARK

BM No. 89-005-12 PM 42.3 Elev 91.22'
 Set a chis. "X" on the SW'ly anchor bolt of a traffic signal base in the SE'ly quad of the inters. of Orangethorpe Ave. and Manchester Ave., 55 ft S'ly of the centerline of Orangethorpe, 50 ft E'ly of the centerline prod. of Manchester from the No. and 35 ft W'ly of a fire hydrant.

PLAN
 SCALE: 1" = 50'



ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. 55-0293L	ROUTE 91/5 SEPARATION & OVERHEAD
FUNCTIONAL SUPERVISOR NAME: S. Sukiasian	DRAWN BY: C. Christian, F. Nguyen 7/09 CHECKED BY: N. Spour	FIELD INVESTIGATION BY: Q. Liao				POST MILES	
065 CIVIL LOG OF TEST BORINGS SHEET				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 12 EA 0C9701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES
				0 1 2 3	FILE => 55-0293L-z-1+tb01-5.dgn	09-30-09 11-24-09 03-15-10	SHEET 12 OF 24

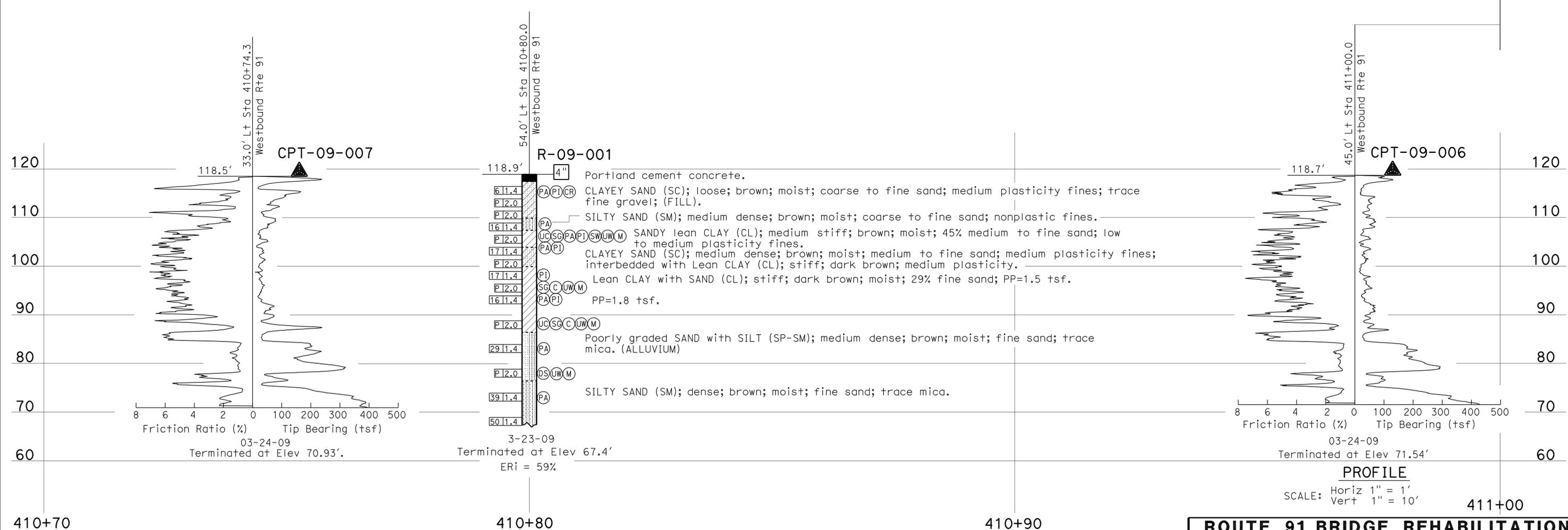
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Oran	91	R3.5/R3.6	39	49

Quanyan Liao 3-15-10
 PROFESSIONAL ENGINEER
 9-20-10
 PLANS APPROVAL DATE
 REGISTERED PROFESSIONAL ENGINEER
 Quanyan Liao
 No. C68870
 Exp. 9-30-11
 CIVIL
 STATE OF CALIFORNIA
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This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2007).

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

Note: Ground water not encountered during field investigation.



ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. 55-0293L	ROUTE 91 BRIDGE REHABILITATION ROUTE 91/5 SEPARATION & OVERHEAD LOG OF TEST BORINGS 3 OF 5
FUNCTIONAL SUPERVISOR NAME: S. Sukiasian	DRAWN BY: C. Christian, F. Nguyen 7/09 CHECKED BY: N. Srouf	FIELD INVESTIGATION BY: Q. Liao				POST MILES	
065 CIVIL LOG OF TEST BORINGS SHEET				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 12 EA 0C9701	REVISION DATES	SHEET 14 OF 24

USERNAME => HPIRice DATE PLOTTED => 22-SEP-2010 TIME PLOTTED => 14:50

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Oran	91	R3.5/R3.6	40	49

Quanyan Liao 3-15-10
 PROFESSIONAL ENGINEER
 9-20-10
 PLANS APPROVAL DATE
 No. C68870
 Exp. 9-30-11
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL
 STATE OF CALIFORNIA
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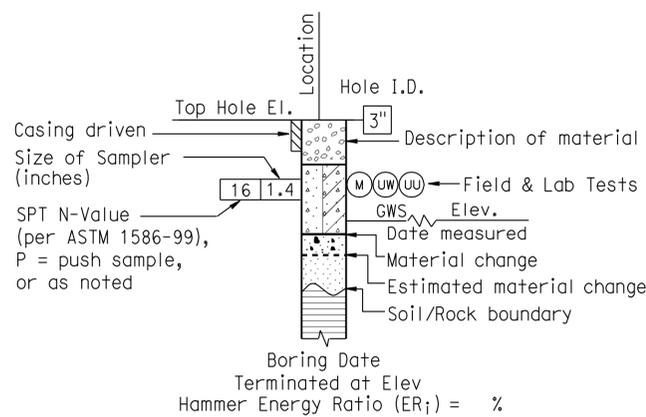
CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS				
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

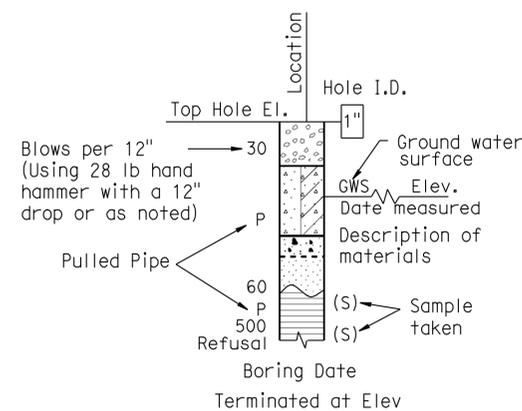
BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring
	R	Rotary drilled boring
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778-95)
	O	Other

Note: Size in inches.

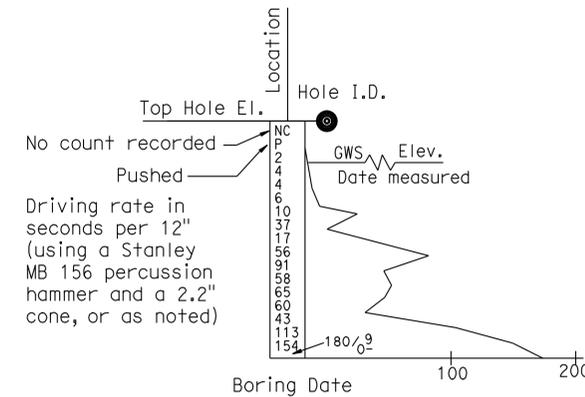
PLASTICITY OF FINE-GRAINED SOILS	
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



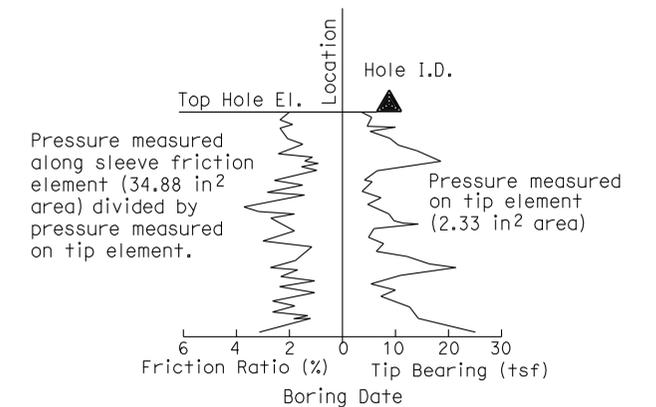
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		ROUTE 91 BRIDGE REHABILITATION	
		PREPARED BY: F. Nguyen 7/09		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		55-0293L		ROUTE 91/5 SEPARATION & OVERHEAD	
						DESIGN BRANCH		POST MILE		LOG OF TEST BORINGS 4 OF 5	
GS LOTB SOIL LEGEND		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 12 EA 0C9701		DISREGARD PRINTS BEARING EARLIER REVISION DATES		11-24-09		SHEET 15 OF 24	

FILE => 55-0293L-z-1+tb04-5.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Oran	91	R3.5/R3.6	41	49

Quanyan Liao 3-15-10
 PROFESSIONAL ENGINEER
 9-20-10
 PLANS APPROVAL DATE
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GROUP SYMBOLS AND NAMES					
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	Well-graded GRAVEL		CL		Lean CLAY
	Well-graded GRAVEL with SAND				Lean CLAY with SAND
	Poorly graded GRAVEL		CL		Lean CLAY with GRAVEL
	Poorly graded GRAVEL with SAND				SANDY lean CLAY
	Well-graded GRAVEL with SILT		CL-ML		SILTY CLAY
	Well-graded GRAVEL with SILT and SAND				SILTY CLAY with SAND
	Well-graded GRAVEL with CLAY (or SILTY CLAY)		CL-ML		SILTY CLAY with GRAVEL
	Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)				SANDY SILTY CLAY
	Poorly graded GRAVEL with SILT		ML		SANDY SILTY CLAY with GRAVEL
	Poorly graded GRAVEL with SILT and SAND				GRAVELLY SILTY CLAY
	Poorly graded GRAVEL with CLAY (or SILTY CLAY)		ML		GRAVELLY SILTY CLAY with SAND
	Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)				SILT
	SILTY GRAVEL		ML		SILT with SAND
	SILTY GRAVEL with SAND				SILT with GRAVEL
	CLAYEY GRAVEL		ML		SANDY SILT
	CLAYEY GRAVEL with SAND				SANDY SILT with GRAVEL
	SILTY, CLAYEY GRAVEL		OL		GRAVELLY SILT
	SILTY, CLAYEY GRAVEL with SAND				GRAVELLY SILT with SAND
	Well-graded SAND		OL		ORGANIC lean CLAY
	Well-graded SAND with GRAVEL				ORGANIC lean CLAY with SAND
	Poorly graded SAND		OL		ORGANIC lean CLAY with GRAVEL
	Poorly graded SAND with GRAVEL				SANDY ORGANIC lean CLAY
	Well-graded SAND with SILT		OL		GRAVELLY ORGANIC lean CLAY
	Well-graded SAND with SILT and GRAVEL				GRAVELLY ORGANIC lean CLAY with SAND
	Well-graded SAND with CLAY (or SILTY CLAY)		CH		Fat CLAY
	Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)				Fat CLAY with SAND
	Poorly graded SAND with SILT		CH		Fat CLAY with GRAVEL
	Poorly graded SAND with SILT and GRAVEL				SANDY fat CLAY
	Poorly graded SAND with CLAY (or SILTY CLAY)		CH		SANDY fat CLAY with GRAVEL
	Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)				GRAVELLY fat CLAY
	Well-graded SAND with SILT and GRAVEL		CH		GRAVELLY fat CLAY with SAND
	Well-graded SAND with SILT and GRAVEL				Elastic SILT
	Well-graded SAND with CLAY (or SILTY CLAY)		MH		Elastic SILT with SAND
	Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)				Elastic SILT with GRAVEL
	Poorly graded SAND with SILT		MH		SANDY elastic SILT
	Poorly graded SAND with SILT and GRAVEL				SANDY elastic SILT with GRAVEL
	Poorly graded SAND with CLAY (or SILTY CLAY)		MH		GRAVELLY elastic SILT
	Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)				GRAVELLY elastic SILT with SAND
	Poorly graded SAND with CLAY (or SILTY CLAY)		OH		ORGANIC fat CLAY
	Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)				ORGANIC fat CLAY with SAND
	SILTY SAND		OH		ORGANIC fat CLAY with GRAVEL
	SILTY SAND with GRAVEL				SANDY ORGANIC fat CLAY
	CLAYEY SAND		OH		GRAVELLY ORGANIC fat CLAY
	CLAYEY SAND with GRAVEL				GRAVELLY ORGANIC fat CLAY with SAND
	SILTY, CLAYEY SAND		OH		ORGANIC elastic SILT
	SILTY, CLAYEY SAND with GRAVEL				ORGANIC elastic SILT with SAND
	PEAT		OH		ORGANIC elastic SILT with GRAVEL
	COBBLES				SANDY ORGANIC elastic SILT
	COBBLES and BOULDERS		OH		GRAVELLY ORGANIC elastic SILT
	BOULDERS				GRAVELLY ORGANIC elastic SILT with SAND
	ORGANIC SOIL		OL/OH		ORGANIC SOIL with SAND
	ORGANIC SOIL with SAND				ORGANIC SOIL with GRAVEL
	ORGANIC SOIL with GRAVEL		OL/OH		SANDY ORGANIC SOIL
	SANDY ORGANIC SOIL				SANDY ORGANIC SOIL with GRAVEL
	SANDY ORGANIC SOIL with GRAVEL		OL/OH		GRAVELLY ORGANIC SOIL
	GRAVELLY ORGANIC SOIL				GRAVELLY ORGANIC SOIL with SAND
	GRAVELLY ORGANIC SOIL with SAND				

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
(PP)	Pocket Penetrometer
(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)
(TV)	Pocket Torvane
(UC)	Unconfined Compression-Soil (ASTM D 2166)
(UU)	Unconfined Compression-Rock (ASTM D 2938)
(UU)	Unconsolidated Undrained Triaxial (ASTM D 2850)
(UW)	Unit Weight (ASTM D 4767)
(VS)	Vane Shear (AASHTO T 223)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N ₆₀ (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE	
Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

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

PARTICLE SIZE		
Description	Size	
Boulder	> 12"	
Cobble	3" to 12"	
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

ENGINEERING SERVICES	GEOTECHNICAL SERVICES PREPARED BY: F. Nguyen 7/09	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. 55-0293L	ROUTE 91 BRIDGE REHABILITATION ROUTE 91/5 SEPARATION & OVERHEAD LOG OF TEST BORINGS 5 OF 5
				POST MILE	
GS LOTB SOIL LEGEND	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 12 EA OC9701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 16 OF 24	FILE => 55-0293L-z-1fb05-5.dgn

BENCH MARK

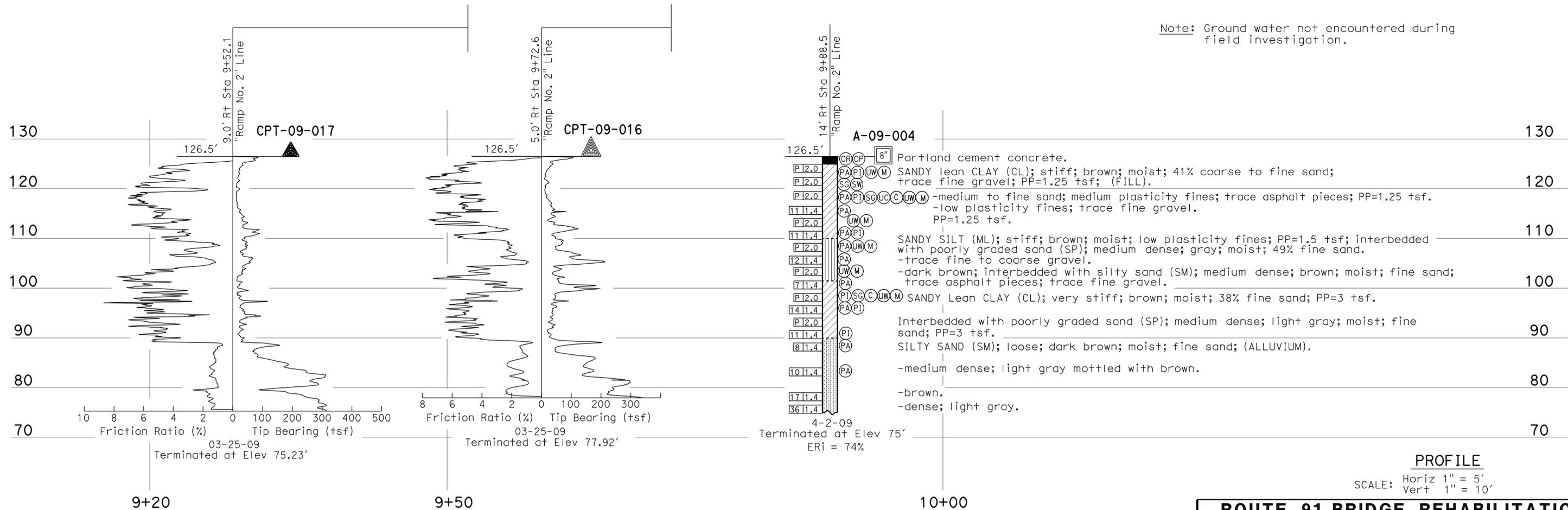
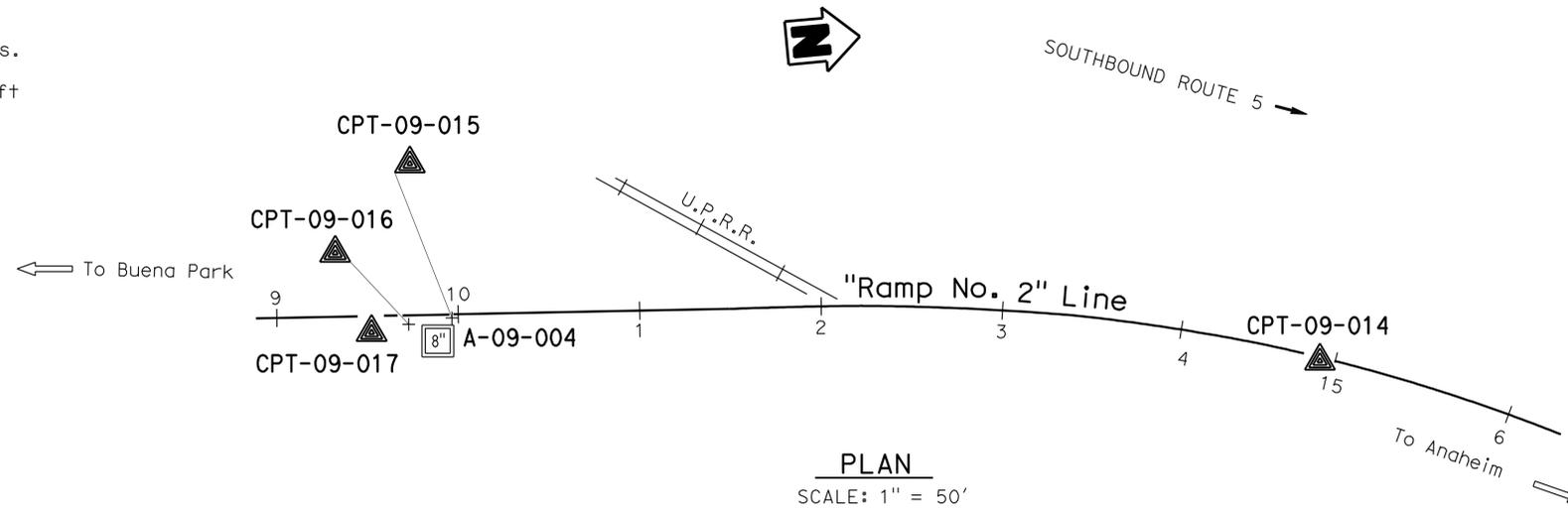
BM No. 67-A-66A PM 41.95 Elev 94.2'
 Fd a L&T on T.C. in the SE'ly quad of the inters.
 of Magnolia Ave. Buckingham St., a S'ly Fr. Rd.
 of Rte-91, 90 ft E'ly of the C of Magnolia, 26 ft
 S'ly of the C of Buckingham, 75 ft W'ly of the
 C of the Magnolia off-ramp from No. Bd. Rte-5,
 1.8 ft E'ly of the edge of a driveway.
 (12-ORA-091, Index No. 14-A-B, PG-4)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Oran	91	R3.5/R3.6	42	49



Quanyan Liao 3-15-10
 PROFESSIONAL ENGINEER
 9-20-10
 PLANS APPROVAL DATE
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This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2007).



ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA	DIVISION OF ENGINEERING SERVICES	BRIDGE NO.	ROUTE 91 BRIDGE REHABILITATION	
FUNCTIONAL SUPERVISOR	DRAWN BY: C. Christian, F. Nguyen 7/09	FIELD INVESTIGATION BY:	Q. Liao	DEPARTMENT OF TRANSPORTATION	STRUCTURE DESIGN	55-0472S	MAGNOLIA AVE OFFRAMP OVERHEAD	
NAME: S. Sukiasian	CHECKED BY: N. Srour			DESIGN BRANCH		POST MILES	LOG OF TEST BORINGS 1 OF 4	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						CU 12 EA 0C9701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES
0 1 2 3						FILE => 55-0472s-z-1fb01-4.dgn	09-25-09 11-24-09 03-15-10	SHEET 17 OF 24

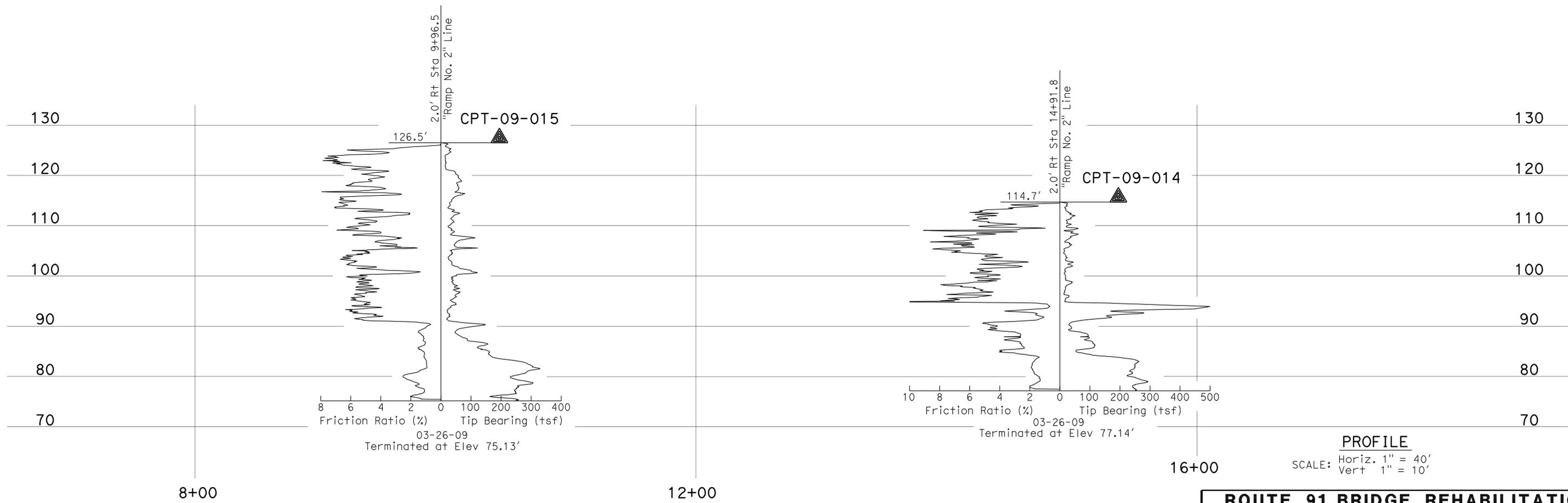
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Oran	91	R3.5/R3.6	43	49

Quanyan Liao 3-15-10
 PROFESSIONAL ENGINEER
 9-20-10
 PLANS APPROVAL DATE
 No. C68870
 Exp. 9-30-11
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL
 STATE OF CALIFORNIA
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FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 4"



PROFILE
SCALE: Horiz. 1" = 40'
Vert. 1" = 10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		ROUTE 91 BRIDGE REHABILITATION	
FUNCTIONAL SUPERVISOR		DRAWN BY: F. Nguyen 8/09		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		55-0472S		MAGNOLIA AVE OFFRAMP OVERHEAD	
NAME: S. Sukiasian		CHECKED BY: N. Srouf		Q. Liao		DESIGN BRANCH		POST MILES		LOG OF TEST BORINGS 2 OF 4	
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 12 EA 0C9701		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET 18 OF 24	

USERNAME => hpjpc DATE PLOTTED => 22-SEP-2010 TIME PLOTTED => 14:51

3-15-10

PROFESSIONAL ENGINEER

9-20-10

PLANS APPROVAL DATE

No. C68870
Exp. 9-30-11

CIVIL

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GROUP SYMBOLS AND NAMES			
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	Well-graded GRAVEL		Lean CLAY
	Well-graded GRAVEL with SAND		Lean CLAY with SAND
	Poorly graded GRAVEL		Lean CLAY with GRAVEL
	Poorly graded GRAVEL with SAND		SANDY lean CLAY
	Well-graded GRAVEL with SILT		SILTY CLAY
	Well-graded GRAVEL with SILT and SAND		SILTY CLAY with SAND
	Well-graded GRAVEL with CLAY (or SILTY CLAY)		SILTY CLAY with GRAVEL
	Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		SANDY SILTY CLAY
	Poorly graded GRAVEL with SILT		SANDY SILTY CLAY with GRAVEL
	Poorly graded GRAVEL with SILT and SAND		GRAVELLY SILTY CLAY
	Poorly graded GRAVEL with CLAY (or SILTY CLAY)		GRAVELLY SILTY CLAY with SAND
	Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		SILT
	SILTY GRAVEL		SILT with SAND
	SILTY GRAVEL with SAND		SILT with GRAVEL
	CLAYEY GRAVEL		SANDY SILT
	CLAYEY GRAVEL with SAND		SANDY SILT with GRAVEL
	SILTY, CLAYEY GRAVEL		GRAVELLY SILT
	SILTY, CLAYEY GRAVEL with SAND		GRAVELLY SILT with SAND
	Well-graded SAND		ORGANIC lean CLAY
	Well-graded SAND with GRAVEL		ORGANIC lean CLAY with SAND
	Poorly graded SAND		ORGANIC lean CLAY with GRAVEL
	Poorly graded SAND with GRAVEL		SANDY ORGANIC lean CLAY
	Well-graded SAND with SILT		GRAVELLY ORGANIC lean CLAY
	Well-graded SAND with SILT and GRAVEL		GRAVELLY ORGANIC lean CLAY with SAND
	Well-graded SAND with CLAY (or SILTY CLAY)		ORGANIC SILT
	Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		ORGANIC SILT with SAND
	Poorly graded SAND with SILT		ORGANIC SILT with GRAVEL
	Poorly graded SAND with SILT and GRAVEL		SANDY ORGANIC SILT
	Poorly graded SAND with CLAY (or SILTY CLAY)		SANDY ORGANIC SILT with GRAVEL
	Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		GRAVELLY ORGANIC SILT
	SILTY SAND		GRAVELLY ORGANIC SILT with SAND
	SILTY SAND with GRAVEL		ORGANIC fat CLAY
	CLAYEY SAND		ORGANIC fat CLAY with SAND
	CLAYEY SAND with GRAVEL		ORGANIC fat CLAY with GRAVEL
	SILTY, CLAYEY SAND		SANDY ORGANIC fat CLAY
	SILTY, CLAYEY SAND with GRAVEL		SANDY ORGANIC fat CLAY with GRAVEL
	PEAT		GRAVELLY ORGANIC fat CLAY
	COBBLES		GRAVELLY ORGANIC fat CLAY with SAND
	COBBLES and BOULDERS		ORGANIC elastic SILT
	BOULDERS		ORGANIC elastic SILT with SAND

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
(PP)	Pocket Penetrometer
(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)
(TV)	Pocket Torvane
(UC)	Unconfined Compression-Soil (ASTM D 2166)
(UU)	Unconfined Compression-Rock (ASTM D 2938)
(UW)	Unconsolidated Undrained Triaxial (ASTM D 2850)
(UW)	Unit Weight (ASTM D 4767)
(VS)	Vane Shear (AASHTO T 223)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N ₆₀ (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

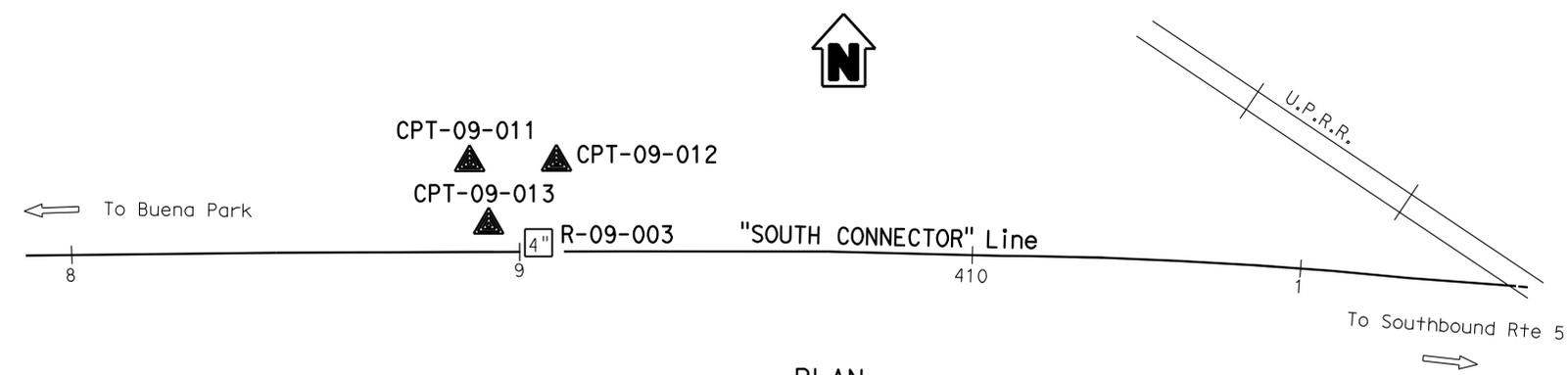
MOISTURE	
Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

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

PARTICLE SIZE		
Description	Size	
Boulder	> 12"	
Cobble	3" to 12"	
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO. 55-0472S POST MILE
	PREPARED BY: F. Nguyen 7/09	DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH	ROUTE 91 BRIDGE REHABILITATION MAGNOLIA AVE OFFRAMP OVERHEAD LOG OF TEST BORINGS 4 OF 4
GS LOTB SOIL LEGEND	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	CU 12 EA OC9701	DISREGARD PRINTS BEARING EARLIER REVISION DATES
			FILE => 55-0472s-z-1fb04-4.dgn	REVISION DATES
				SHEET 20 OF 24

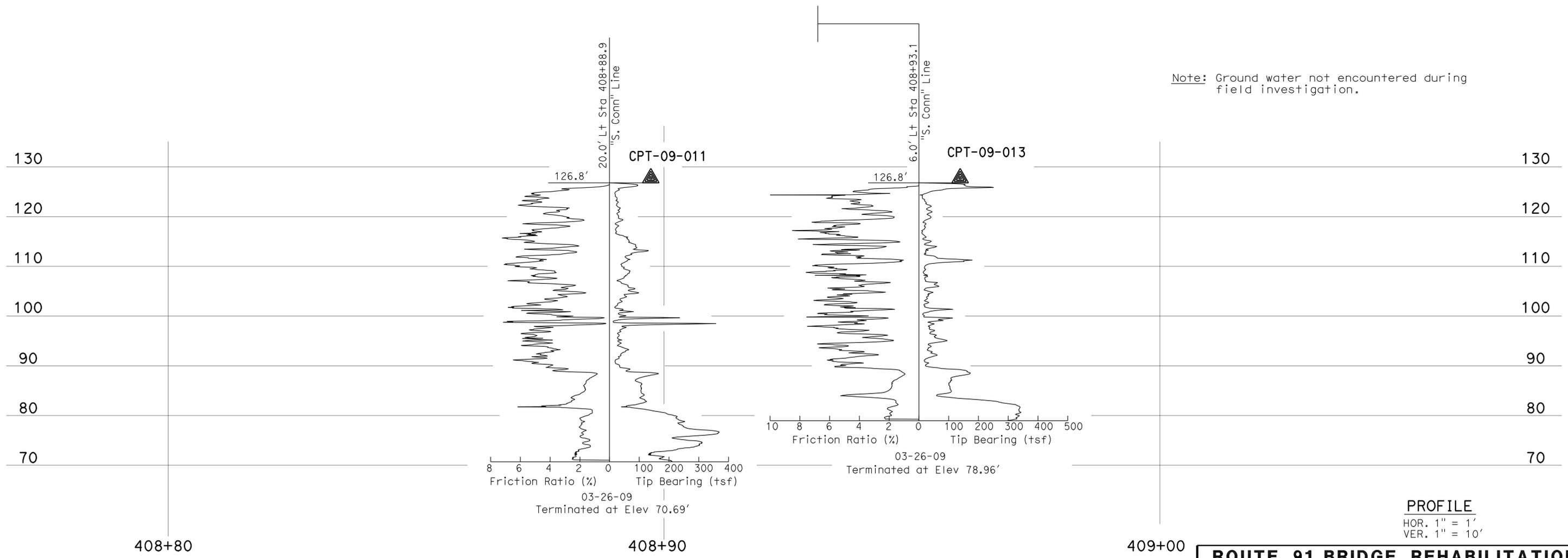
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	46	49
Quanyan Liao PROFESSIONAL ENGINEER 3-15-10 PLANS APPROVAL DATE					
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BENCH MARK

BM No. 15-00056 PM 42.2 Elev 90.1'
 Fd a lead & nail on top of a PCC box culvert on the SW'ly side of the off-ramp to Magnolia Ave. from So. Bd. Rte-5, 0.3 mile NW'ly of Magnolia, near the NE'ly corner of the third bridge column SE'ly of the beginning of bridge #55-472, 1.5 ft N'ly of the N'ly face of the column, at the prod. of the E'ly face, 0.3 ft NE'ly of the edge of the box culvert, 18 ft SW'ly of the E.S. of the off-ramp, about 2 ft lower than the ramp shoulder. (12-ORA-005, Index 28 A-K, PG-4)

PLAN
 1" = 20'

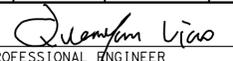


PROFILE
 HOR. 1" = 1'
 VER. 1" = 10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		ROUTE 91 BRIDGE REHABILITATION	
FUNCTIONAL SUPERVISOR		DRAWN BY: C. Christian, F. Nguyen 7/09		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		55-0503G		SOUTH CONNECTOR OVERHEAD	
NAME: S. Sukiasian		CHECKED BY: N. Srour		FIELD INVESTIGATION BY:		DESIGN BRANCH		POST MILES		LOG OF TEST BORINGS 1 OF 4	
06S CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU EA		12 0C9701		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES	
				0 1 2 3				10-09-09 11-24-09 03-15-10		SHEET 21 OF 24	

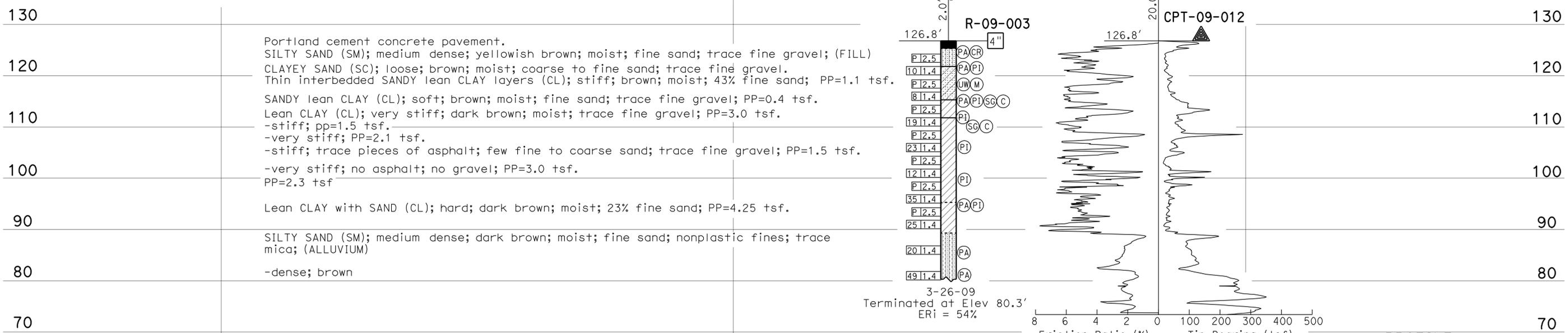
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	47	49

 3-15-10
 PROFESSIONAL ENGINEER
 PLANS APPROVAL DATE: 9-20-10
 No. C68870
 Exp. 9-30-11
 REGISTERED PROFESSIONAL ENGINEER
 Quanyan Liao
 CIVIL
 STATE OF CALIFORNIA
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This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2007).

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



Note: Ground water not encountered during field investigation.

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH		BRIDGE NO. 55-05036 POST MILES		ROUTE 91 BRIDGE REHABILITATION SOUTH CONNECTOR OVERHEAD LOG OF TEST BORINGS 2 OF 4			
FUNCTIONAL SUPERVISOR NAME: S. Sukiasian		DRAWN BY: F. Nguyen 7/09 CHECKED BY: N. Spour		FIELD INVESTIGATION BY: Q. Liao		CU 12 EA 0C9701		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES			
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS										SHEET 22 OF 24			

USERNAME => s135318 DATE PLOTTED => 22-SEP-2010 TIME PLOTTED => 14:23

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	R3.5/R3.6	48	49

Quanyan Liao 3-15-10
 PROFESSIONAL ENGINEER
 9-20-10
 PLANS APPROVAL DATE
 No. C68870
 Exp. 9-30-11
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL
 STATE OF CALIFORNIA
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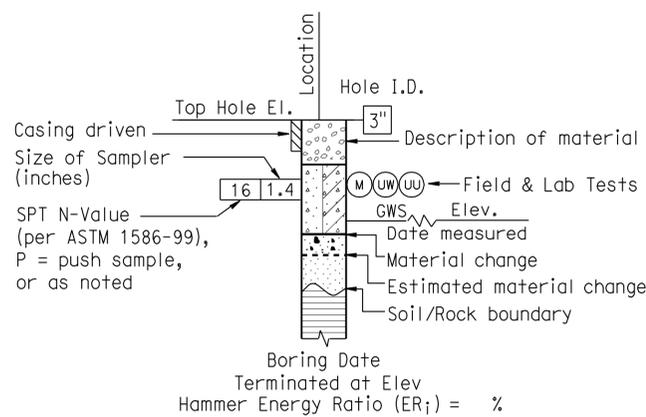
CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS				
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

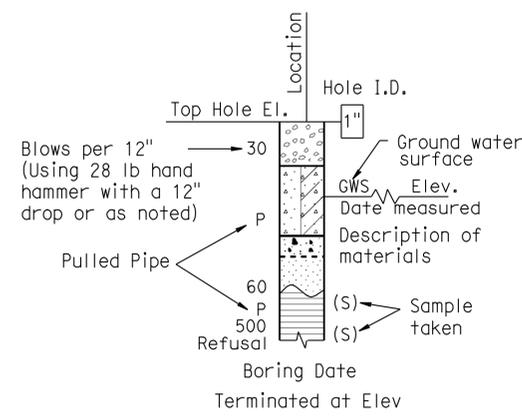
BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring
	R	Rotary drilled boring
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778-95)
	O	Other

Note: Size in inches.

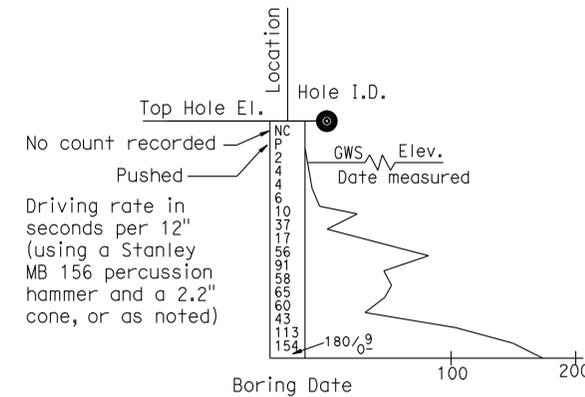
PLASTICITY OF FINE-GRAINED SOILS	
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



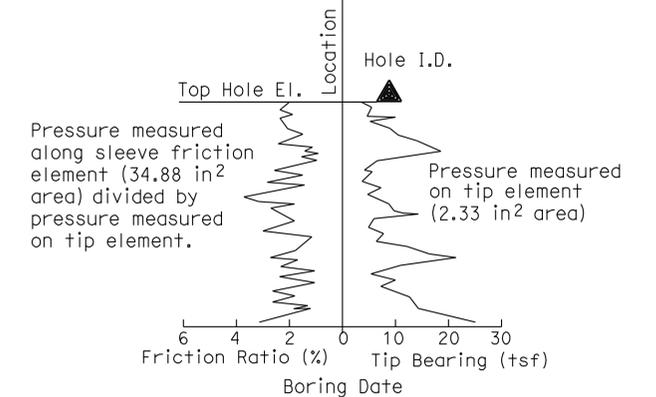
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		ROUTE 91 BRIDGE REHABILITATION	
		PREPARED BY: F. Nguyen 7/09		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		55-0503G		SOUTH CONNECTOR OVERHEAD	
						DESIGN BRANCH		POST MILE		LOG OF TEST BORINGS 3 OF 4	
GS LOTB SOIL LEGEND		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 12 EA 0C9701		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET 23 OF 24	

USERNAME => s135318 DATE PLOTTED => 22-SEP-2010 TIME PLOTTED => 14:23

3-15-10

Quanyan Liao
PROFESSIONAL ENGINEER

9-20-10
PLANS APPROVAL DATE

No. C68870
Exp. 9-30-11
CIVIL
STATE OF CALIFORNIA

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GROUP SYMBOLS AND NAMES			
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	Well-graded GRAVEL		Lean CLAY
	Well-graded GRAVEL with SAND		Lean CLAY with SAND
	Poorly graded GRAVEL		Lean CLAY with GRAVEL
	Poorly graded GRAVEL with SAND		SANDY lean CLAY
	Well-graded GRAVEL with SILT		SANDY lean CLAY with GRAVEL
	Well-graded GRAVEL with SILT and SAND		GRAVELLY lean CLAY
	Well-graded GRAVEL with CLAY (or SILTY CLAY)		GRAVELLY lean CLAY with SAND
	Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		SILTY CLAY
	Poorly graded GRAVEL with SILT		SILTY CLAY with SAND
	Poorly graded GRAVEL with SILT and SAND		SILTY CLAY with GRAVEL
	Poorly graded GRAVEL with CLAY (or SILTY CLAY)		SANDY SILTY CLAY
	Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		SANDY SILTY CLAY with GRAVEL
	SILTY GRAVEL		GRAVELLY SILTY CLAY
	SILTY GRAVEL with SAND		GRAVELLY SILTY CLAY with SAND
	CLAYEY GRAVEL		SILT
	CLAYEY GRAVEL with SAND		SILT with SAND
	SILTY, CLAYEY GRAVEL		SILT with GRAVEL
	SILTY, CLAYEY GRAVEL with SAND		SANDY SILT
	Well-graded SAND		SANDY SILT with GRAVEL
	Well-graded SAND with GRAVEL		GRAVELLY SILT
	Poorly graded SAND		GRAVELLY SILT with SAND
	Poorly graded SAND with GRAVEL		ORGANIC lean CLAY
	Well-graded SAND with SILT		ORGANIC lean CLAY with SAND
	Well-graded SAND with SILT and GRAVEL		ORGANIC lean CLAY with GRAVEL
	Well-graded SAND with CLAY (or SILTY CLAY)		SANDY ORGANIC lean CLAY
	Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		SANDY ORGANIC lean CLAY with GRAVEL
	Poorly graded SAND with SILT		GRAVELLY ORGANIC lean CLAY
	Poorly graded SAND with SILT and GRAVEL		GRAVELLY ORGANIC lean CLAY with SAND
	Poorly graded SAND with CLAY (or SILTY CLAY)		ORGANIC SILT
	Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		ORGANIC SILT with SAND
	SILTY SAND		ORGANIC SILT with GRAVEL
	SILTY SAND with GRAVEL		SANDY ORGANIC SILT
	CLAYEY SAND		SANDY ORGANIC SILT with GRAVEL
	CLAYEY SAND with GRAVEL		GRAVELLY ORGANIC SILT
	SILTY, CLAYEY SAND		GRAVELLY ORGANIC SILT with SAND
	SILTY, CLAYEY SAND with GRAVEL		ORGANIC fat CLAY
	PEAT		ORGANIC fat CLAY with SAND
	COBBLES		ORGANIC fat CLAY with GRAVEL
	COBBLES and BOULDERS		SANDY ORGANIC fat CLAY
	BOULDERS		SANDY ORGANIC fat CLAY with GRAVEL
			GRAVELLY ORGANIC fat CLAY
			GRAVELLY ORGANIC fat CLAY with SAND

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
(PP)	Pocket Penetrometer
(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)
(TV)	Pocket Torvane
(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)
(VS)	Vane Shear (AASHTO T 223)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N ₆₀ (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE	
Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

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

PARTICLE SIZE		
Description	Size	
Boulder	> 12"	
Cobble	3" to 12"	
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. 55-0503G	ROUTE 91 BRIDGE REHABILITATION SOUTH CONNECTOR OVERHEAD LOG OF TEST BORINGS 4 OF 4	
				POST MILE		
PREPARED BY: F. Nguyen 7/09	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 12 EA OC9701	REVISION DATES	SHEET 24 OF 24		

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