

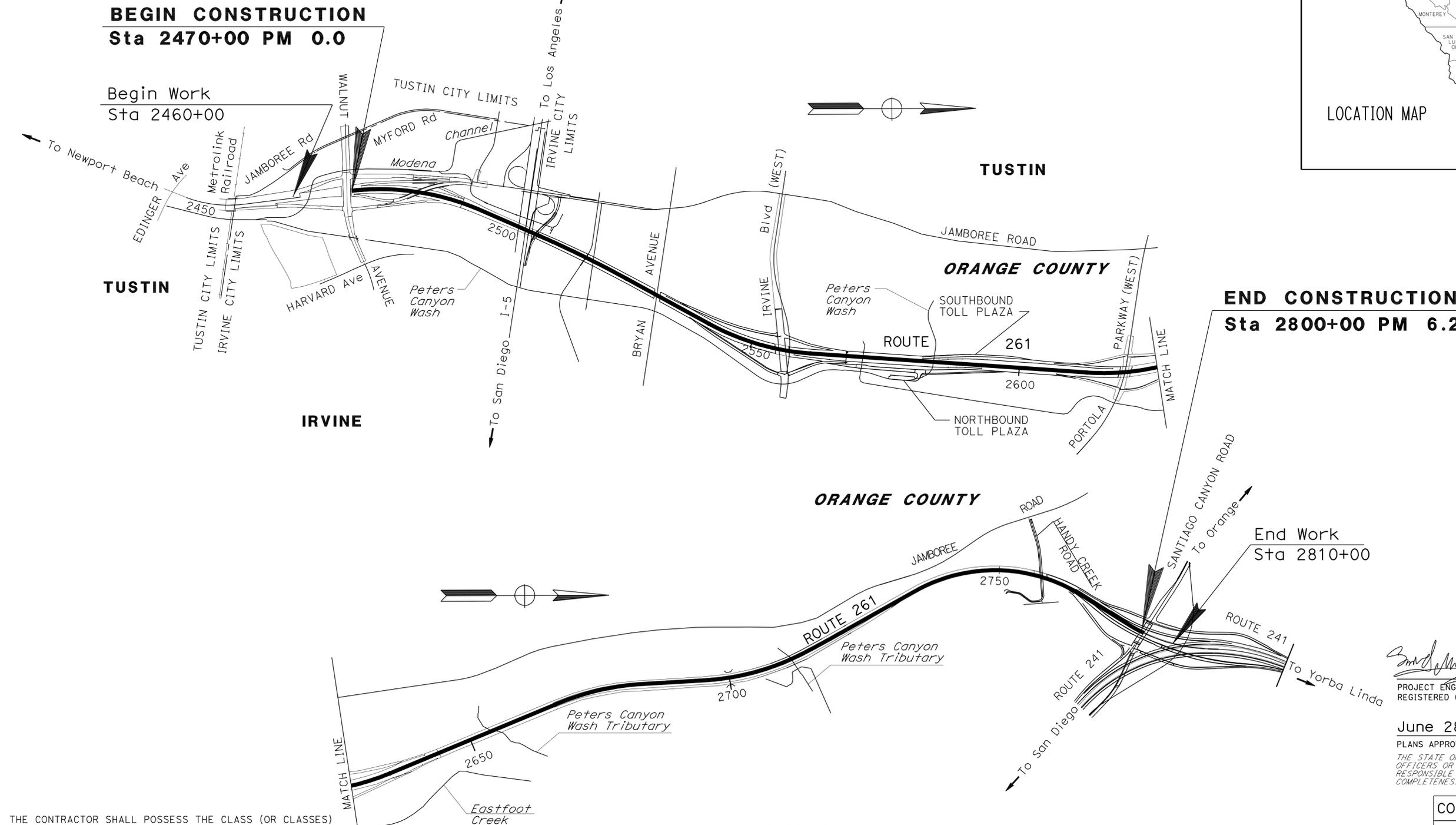
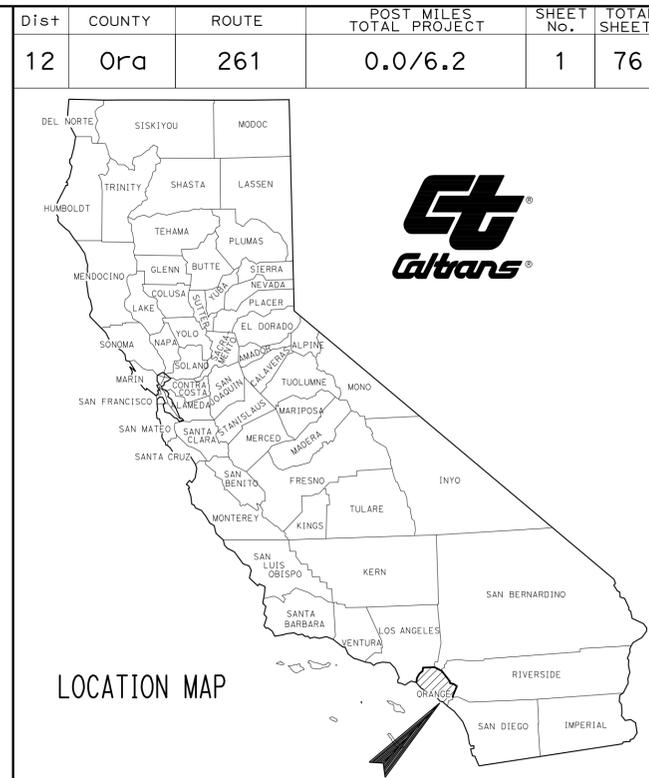
INDEX OF PLANS

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47-76	REVISED AND NEW STANDARD PLANS

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

STATE OF CALIFORNIA **HSSTPHG-P261(001)E**
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN ORANGE COUNTY
IN TUSTIN AND IRVINE
AT VARIOUS LOCATIONS

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



PROJECT MANAGER NOOSHIN YOOSEFI	DESIGN ENGINEER SAIED MEHRANFARD
------------------------------------	-------------------------------------

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

06-01-10
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER
June 28, 2010
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SAIED MEHRANFARD
 No. C 65290
 Exp. 9/30/11
 CIVIL
 STATE OF CALIFORNIA

CONTRACT No. 12-0L5004	
PROJECT ID 1200020004	

DATE PLOTTED => 15-SEP-2010
 TIME PLOTTED => 05:59
 LAST REVISION
 05-26-10

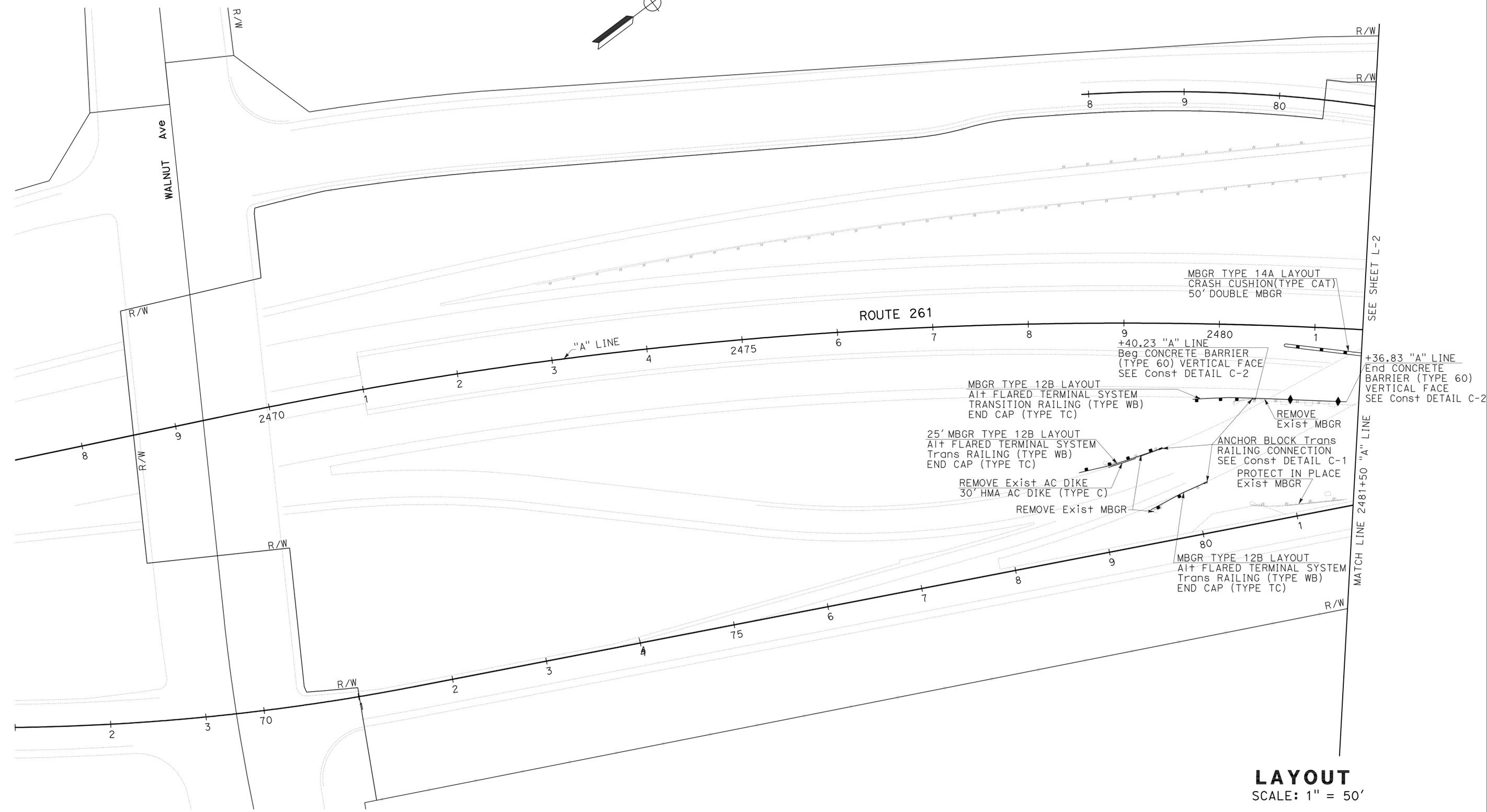
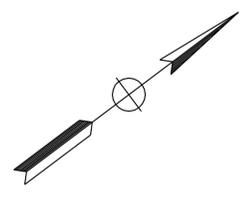
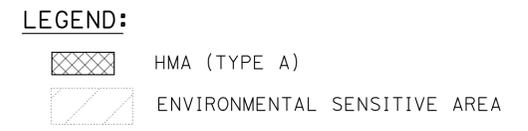
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	2	76

<i>Kimberly Nguyen</i>	06-01-10
REGISTERED CIVIL ENGINEER	DATE
6-28-10	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
KIMBERLY NGUYEN
No. C 64577
Exp. 6/30/11
CIVIL

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

- NOTES:**
- FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT DISTRICT OFFICE.
 - EXACT LOCATIONS OF MBGR BEGINS AND ENDS, AND DRAINAGE INLET PROTECTION LOCATIONS, TO BE DETERMINED BY THE ENGINEER.
 - ALL EXISTING DRAINAGE INLETS TO BE PROTECTED IN PLACE.
 - INSTALL GUARD RAILING DELINEATOR ON ALL NEW RAILING @ 25' SPACING.



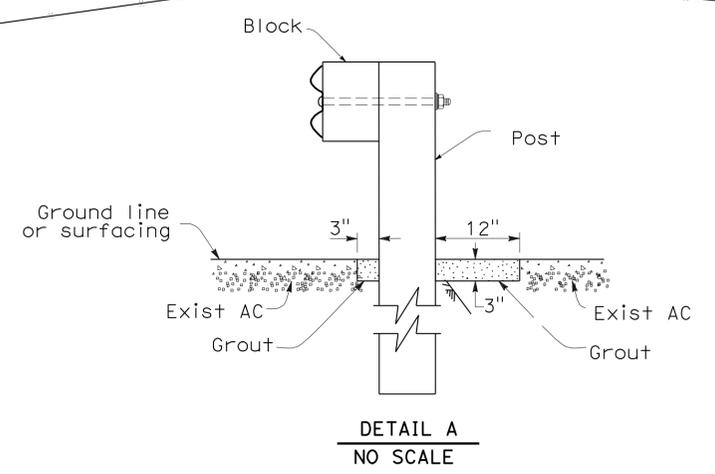
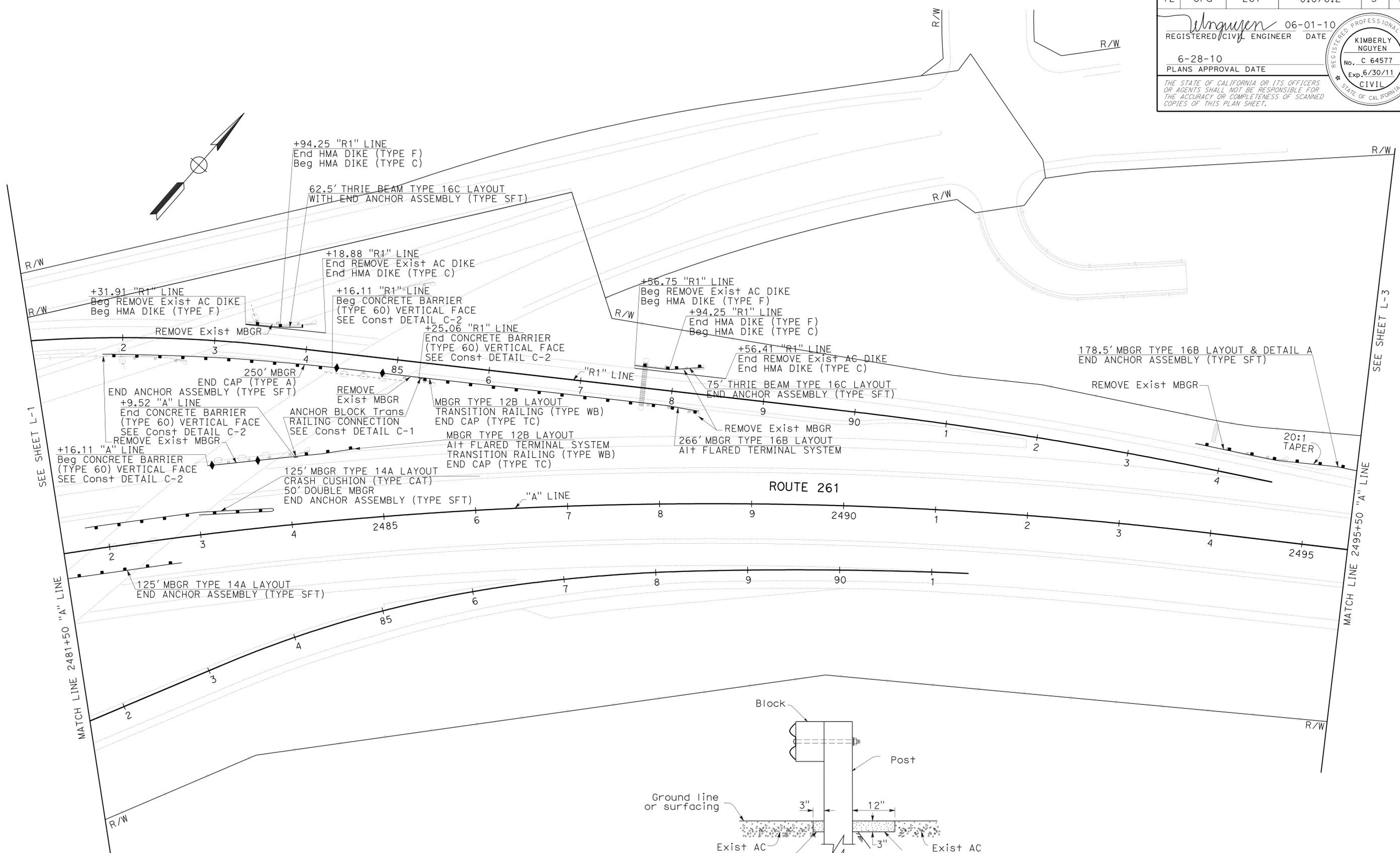
LAYOUT
SCALE: 1" = 50'

L-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH G
FUNCTIONAL RESPONSIBILITY	SUSAN YEE
CALCULATED/DESIGNED BY	CHECKED BY
KIMBERLY NGUYEN	SUSAN YEE
REVISOR	DATE
SUSAN YEE	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	3	76
			06-01-10 REGISTERED CIVIL ENGINEER DATE 6-28-10 PLANS APPROVAL DATE		
<small>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.</small>					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH G
FUNCTIONAL SUPERVISOR	SUSAN YEE
CALCULATED/DESIGNED BY	CHECKED BY
KIMBERLY NGUYEN	SUSAN YEE
REVISOR	DATE



LAYOUT
SCALE: 1" = 50'

L-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G

FUNCTIONAL SUPERVISOR
 SUSAN YEE

CALCULATED/DESIGNED BY
 CHECKED BY

KIMBERLY NGUYEN
 SUSAN YEE

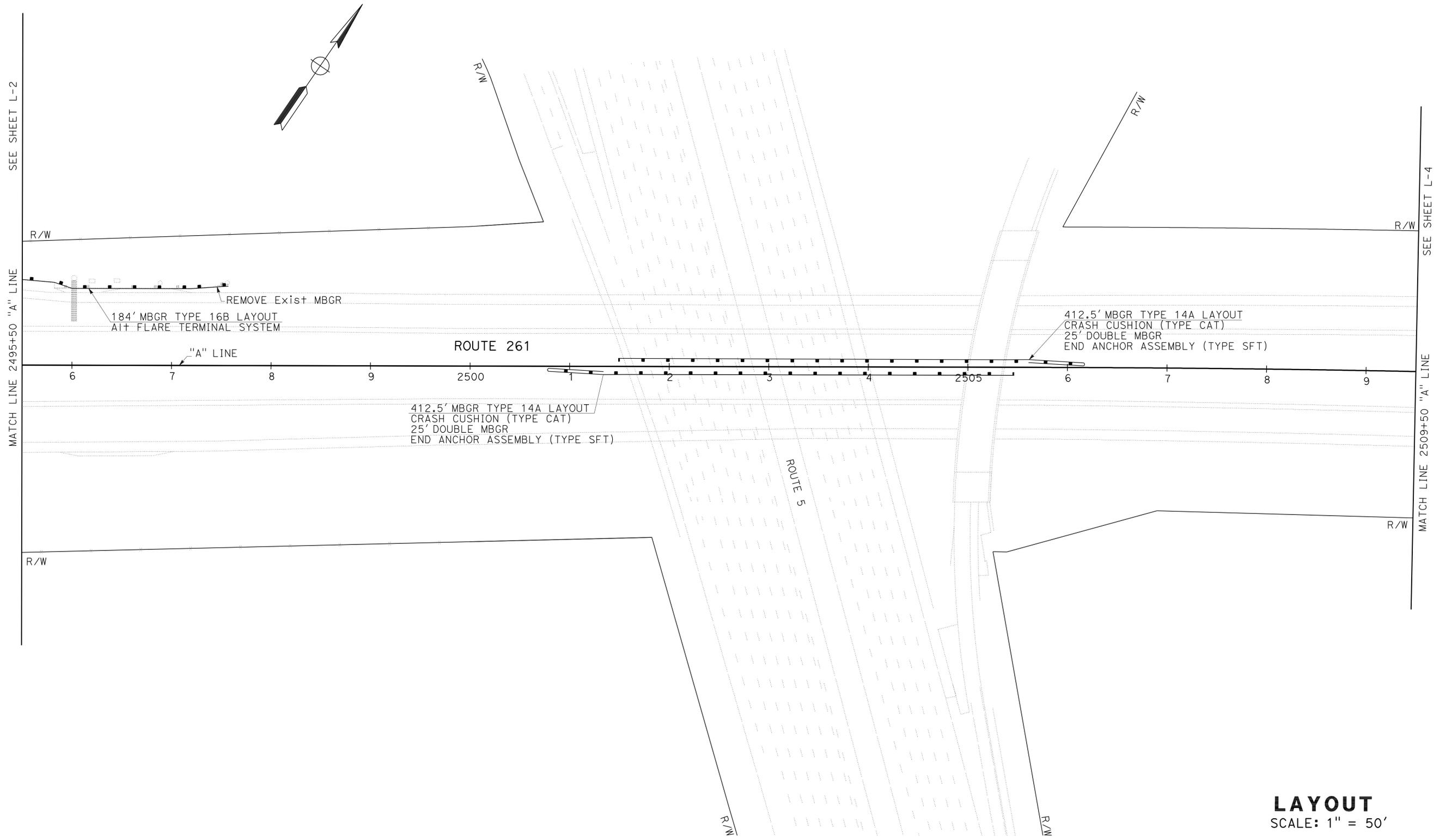
REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	4	76

06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 KIMBERLY NGUYEN
 No. C 64577
 Exp. 6/30/11
 CIVIL
 STATE OF CALIFORNIA

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LAYOUT
 SCALE: 1" = 50'

L-3

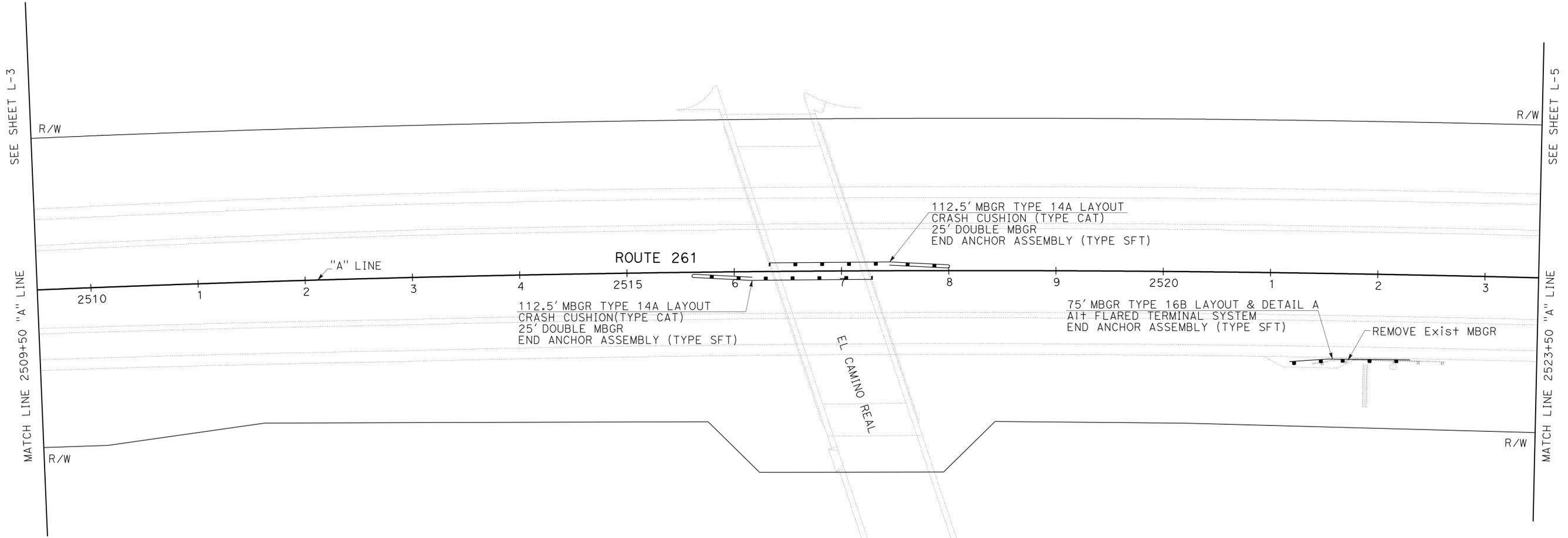
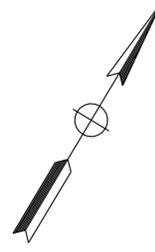
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G

FUNCTIONAL SUPERVISOR: SUSAN YEE
 CALCULATED/DESIGNED BY: SUSAN YEE
 CHECKED BY: SUSAN YEE
 KIMBERLY NGUYEN
 SUSAN YEE
 REVISOR: KIMBERLY NGUYEN
 DATE: 06-01-10
 REVISION: 6-28-10
 PLANS APPROVAL DATE: 6-28-10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	5	76

REGISTERED CIVIL ENGINEER DATE: 06-01-10
 REGISTERED CIVIL ENGINEER: KIMBERLY NGUYEN
 No. C 64577
 Exp. 6/30/11
 CIVIL
 STATE OF CALIFORNIA

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LAYOUT
 SCALE: 1" = 50'

L-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G

FUNCTIONAL SUPERVISOR
 SUSAN YEE

CALCULATED/DESIGNED BY
 CHECKED BY

KIMBERLY NGUYEN
 SUSAN YEE

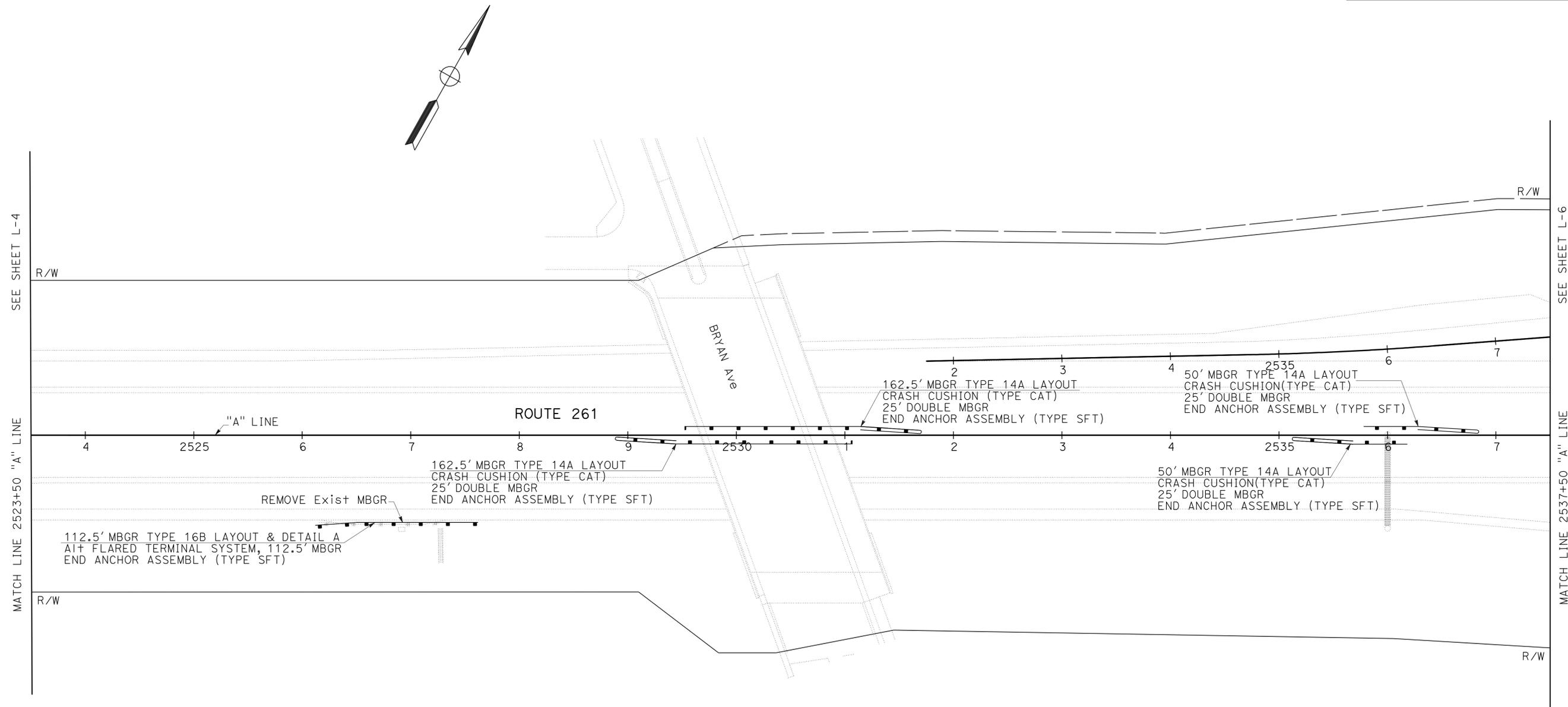
REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	6	76

06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 KIMBERLY NGUYEN
 No. C 64577
 Exp. 6/30/11
 CIVIL
 STATE OF CALIFORNIA

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LAYOUT
 SCALE: 1" = 50'

L-5

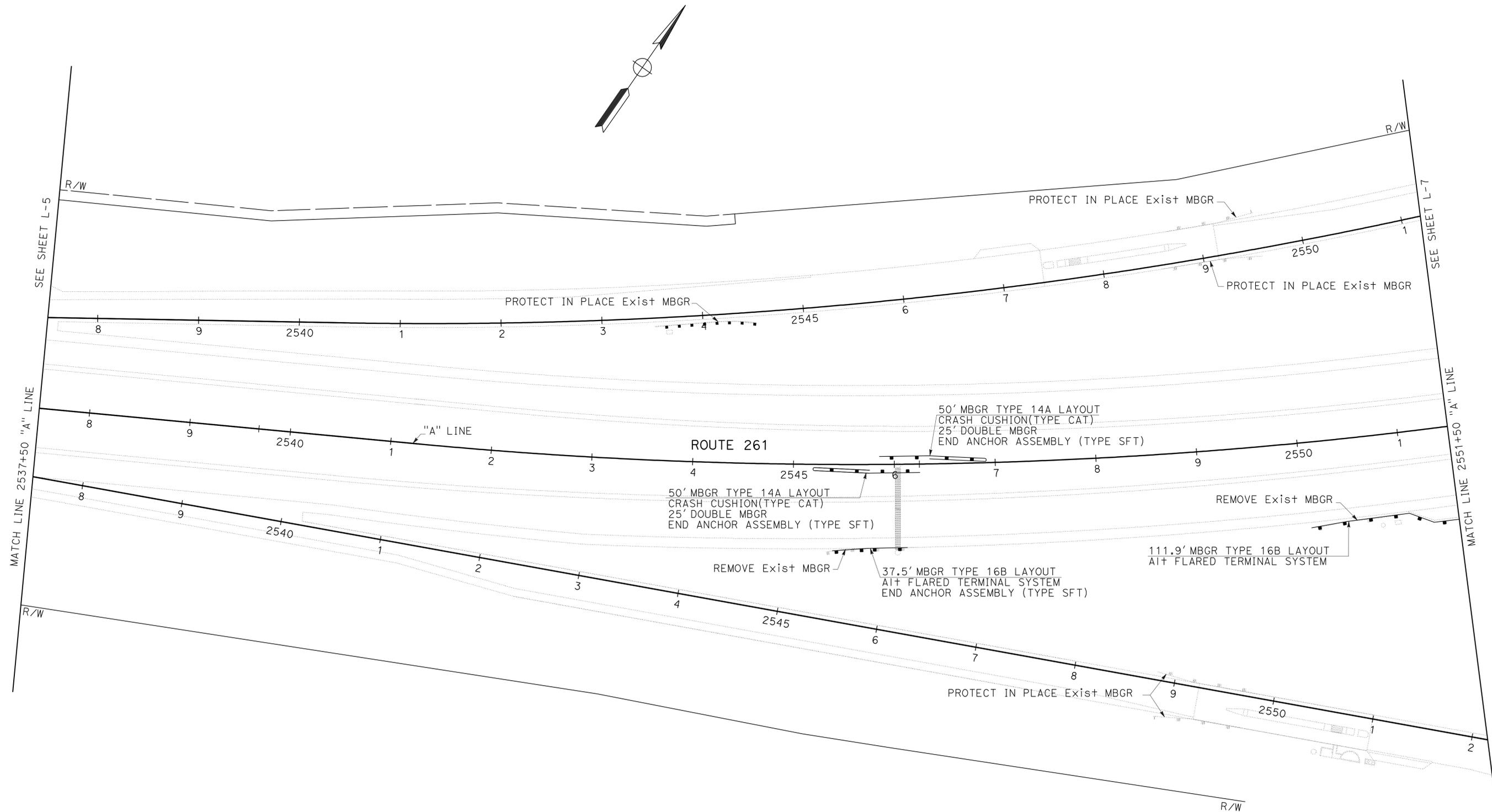
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	7	76

Kimberly Nguyen 06-01-10
REGISTERED CIVIL ENGINEER DATE
6-28-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
KIMBERLY NGUYEN
No. C 64577
Exp. 6/30/11
CIVIL
STATE OF CALIFORNIA

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH G
FUNCTIONAL SUPERVISOR	SUSAN YEE
CALCULATED/DESIGNED BY	CHECKED BY
KIMBERLY NGUYEN	SUSAN YEE
REVISED BY	DATE REVISED



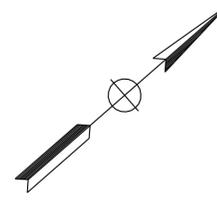
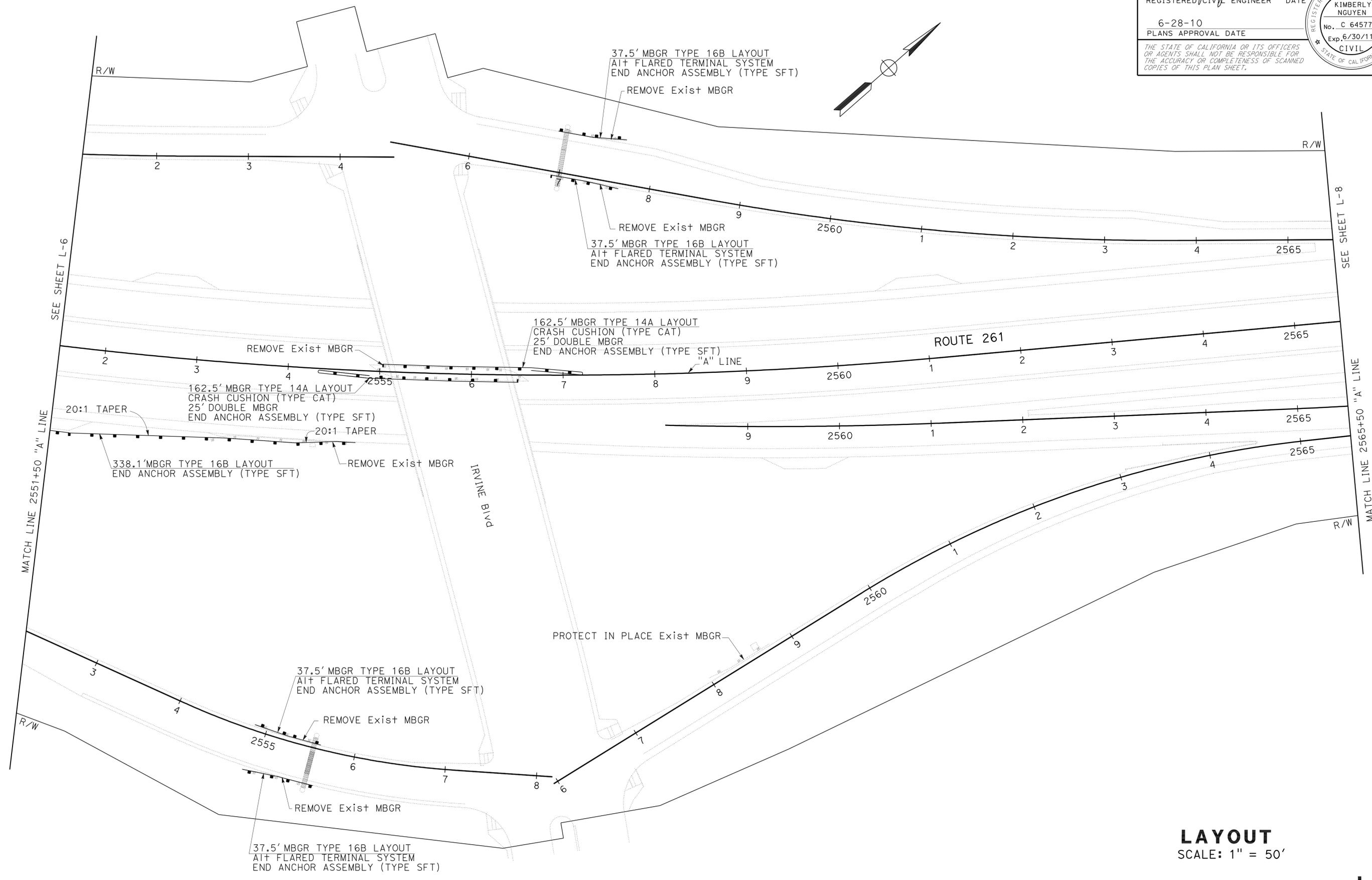
LAYOUT
SCALE: 1" = 50'

L-6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	8	76
			06-01-10	DATE	
REGISTERED CIVIL ENGINEER					
6-28-10			PLANS APPROVAL DATE		
<small>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.</small>					



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH G
FUNCTIONAL SUPERVISOR	SUSAN YEE
CALCULATED/DESIGNED BY	CHECKED BY
REVISOR	DATE
KIMBERLY NGUYEN	SUSAN YEE
REVISOR	DATE



LAYOUT
SCALE: 1" = 50'

L-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G

FUNCTIONAL SUPERVISOR
 SUSAN YEE

CALCULATED/DESIGNED BY
 CHECKED BY

KIMBERLY NGUYEN
 SUSAN YEE

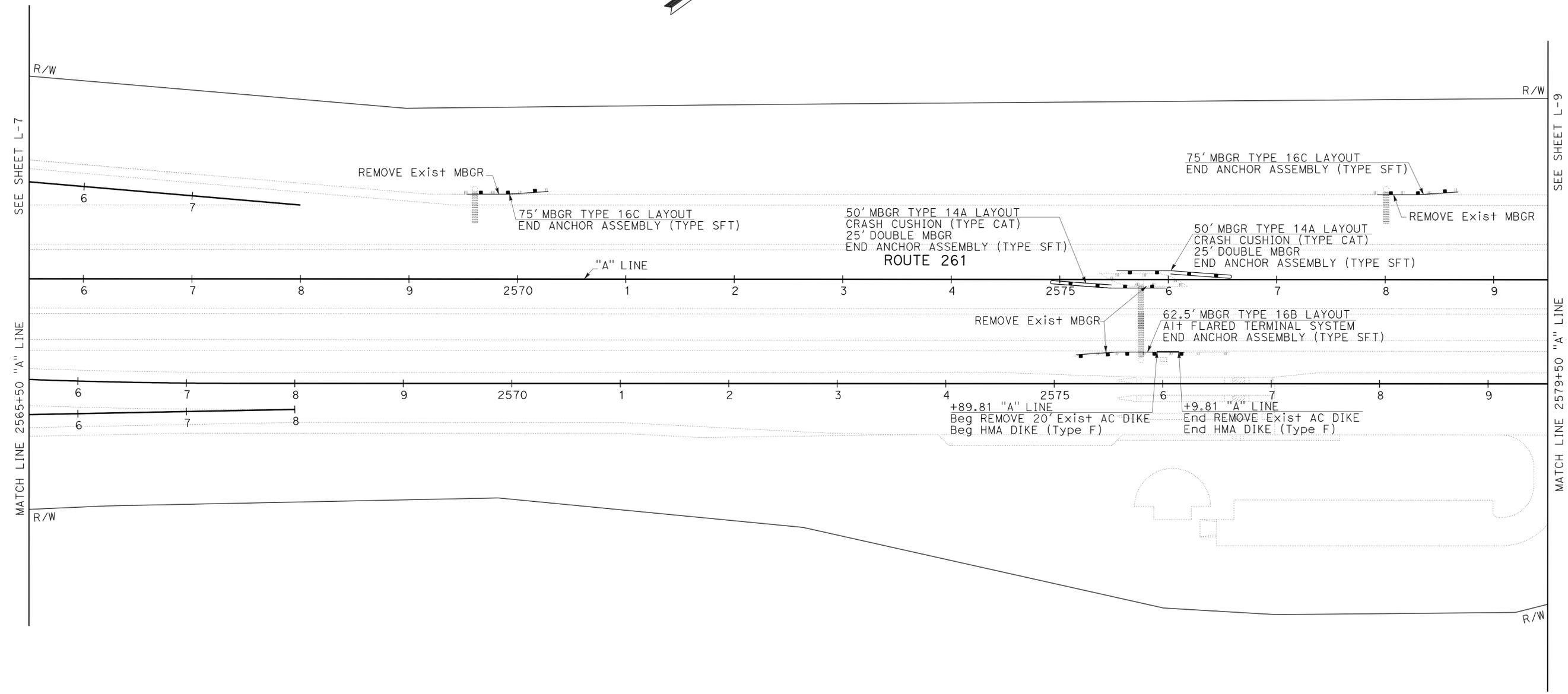
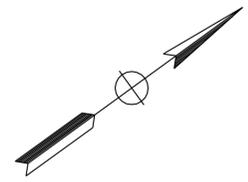
REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	9	76

06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 KIMBERLY NGUYEN
 No. C 64577
 Exp. 6/30/11
 CIVIL
 STATE OF CALIFORNIA

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LAYOUT
 SCALE: 1" = 50'

L-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G

FUNCTIONAL SUPERVISOR
 SUSAN YEE

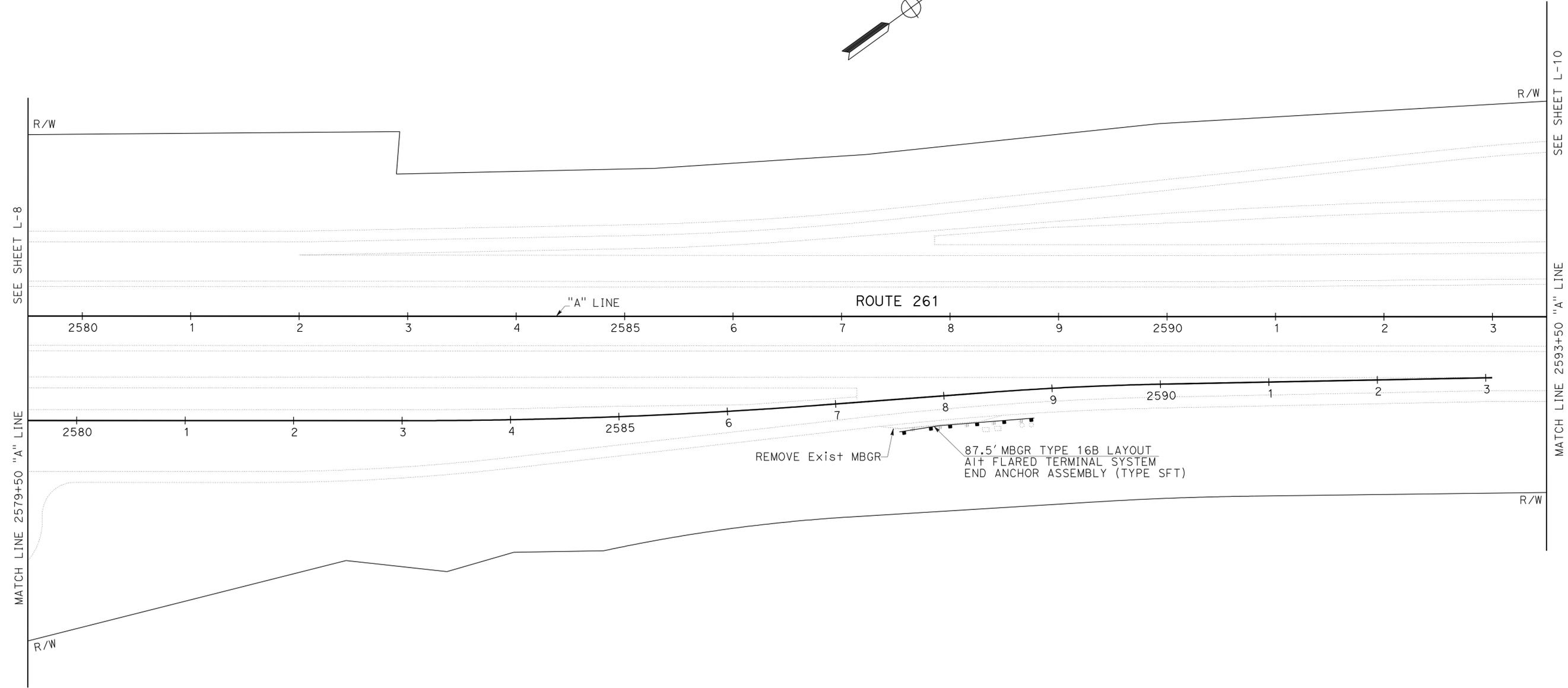
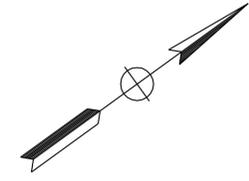
CALCULATED/DESIGNED BY
 CHECKED BY

KIMBERLY NGUYEN
 SUSAN YEE

REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	10	76

REGISTERED CIVIL ENGINEER DATE 06-01-10
 KIMBERLY NGUYEN
 No. C 64577
 Exp. 6/30/11
 CIVIL
 PLANS APPROVAL DATE 6-28-10
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LAYOUT
 SCALE: 1" = 50'

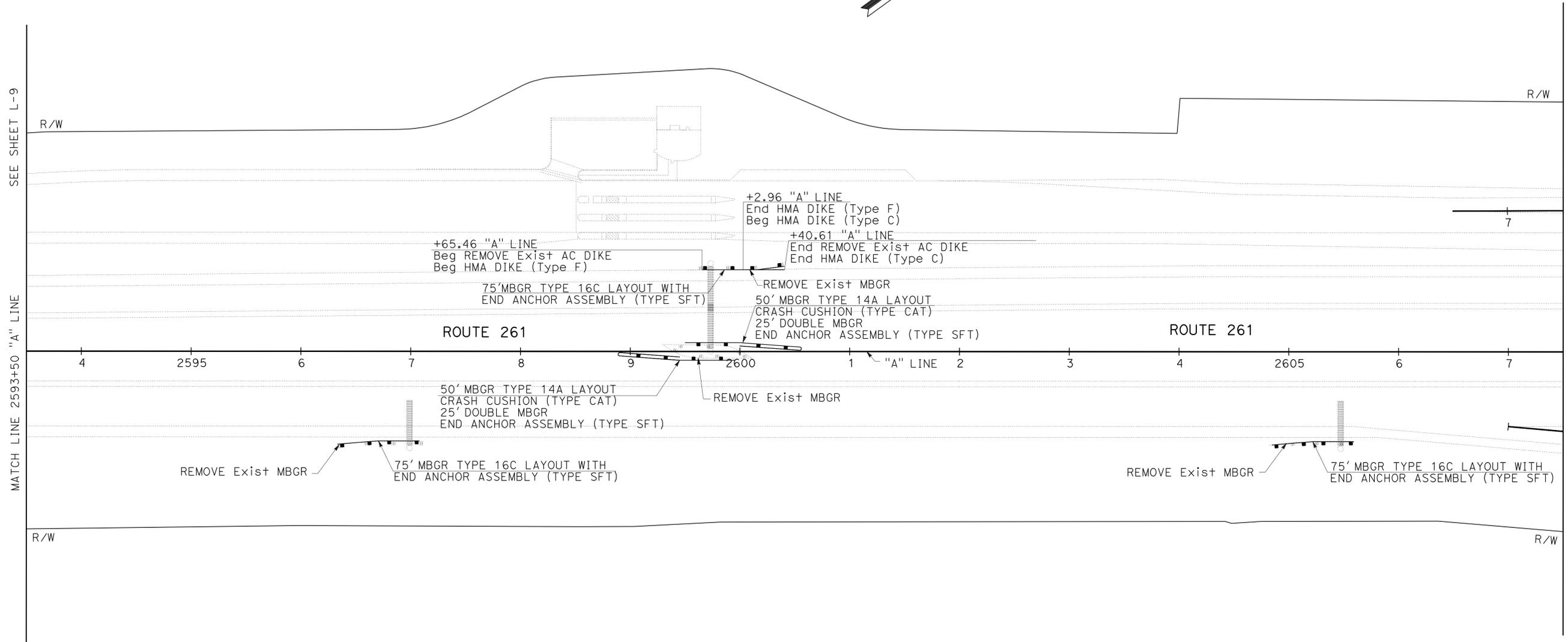
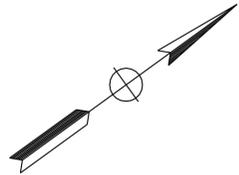
L-9

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	11	76

<i>Kim Nguyen</i>	06-01-10
REGISTERED CIVIL ENGINEER	DATE
6-28-10	
PLANS APPROVAL DATE	

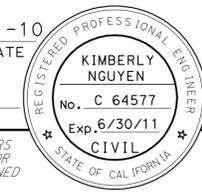
REGISTERED PROFESSIONAL ENGINEER
KIMBERLY NGUYEN
No. C 64577
Exp. 6/30/11
CIVIL

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.

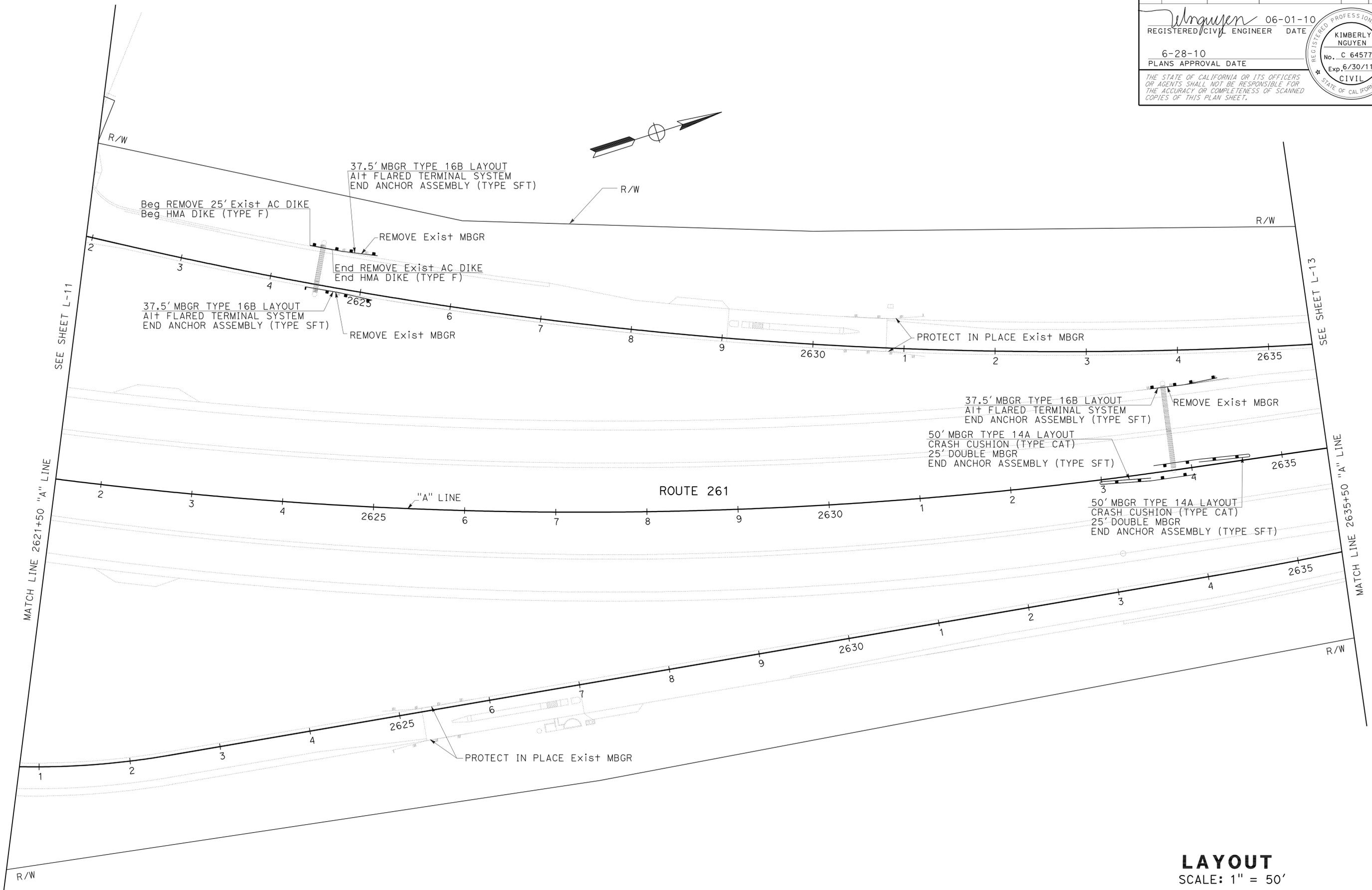


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G
 FUNCTIONAL SUPERVISOR: SUSAN YEE
 CALCULATED/DESIGNED BY: SUSAN YEE
 CHECKED BY: SUSAN YEE
 REVISIONS BY: KIMBERLY NGUYEN, SUSAN YEE
 REVISIONS DATE: [blank]

LAYOUT
SCALE: 1" = 50'

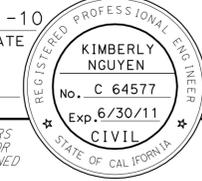
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	13	76
			06-01-10	DATE	
REGISTERED CIVIL ENGINEER			KIMBERLY NGUYEN		
6-28-10			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

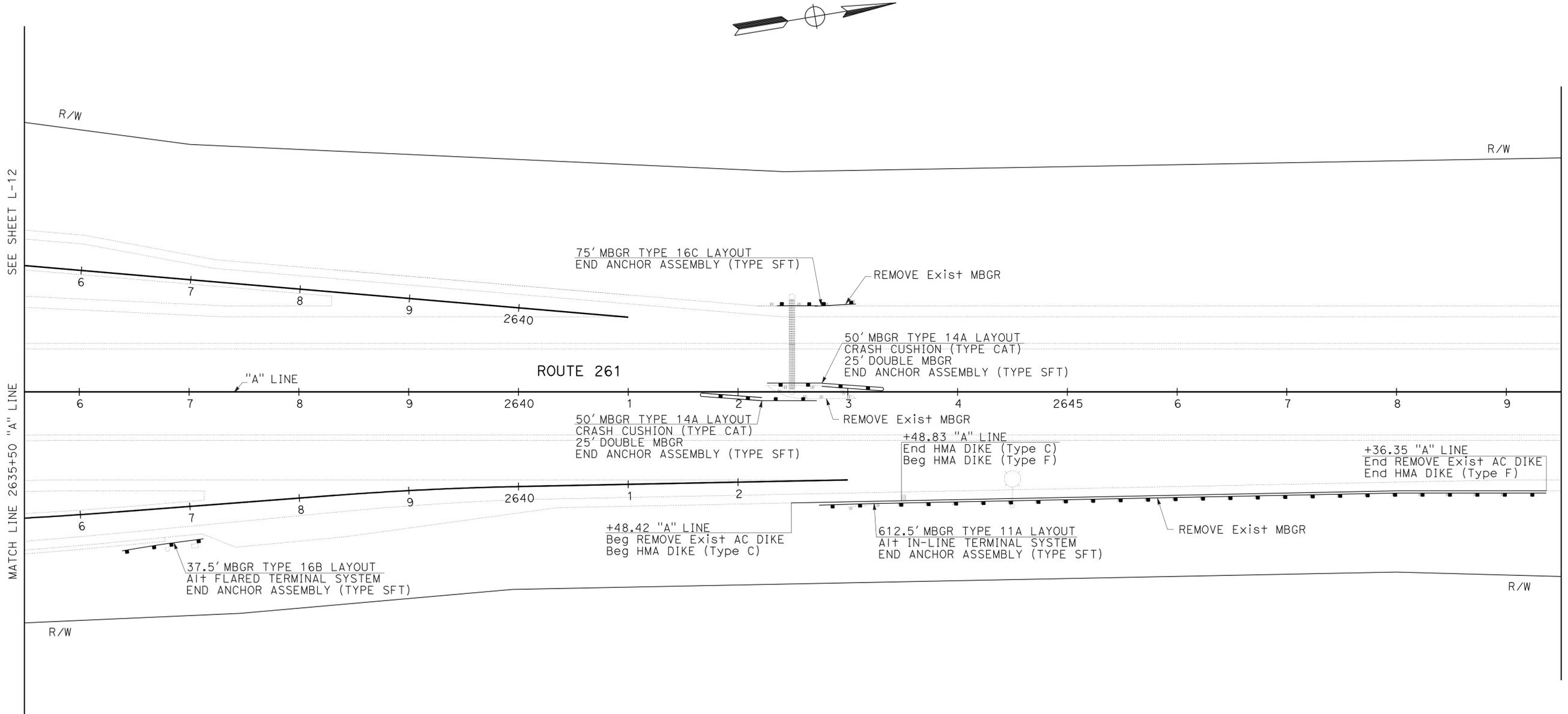
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH G
FUNCTIONAL SUPERVISOR	SUSAN YEE
CALCULATED/DESIGNED BY	CHECKED BY
KIMBERLY NGUYEN	SUSAN YEE
REVISED BY	DATE REVISED



LAYOUT
SCALE: 1" = 50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	14	76


 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G
 FUNCTIONAL SUPERVISOR: SUSAN YEE
 CALCULATED/DESIGNED BY: CHECKED BY:
 KIMBERLY NGUYEN SUSAN YEE
 REVISED BY: DATE REVISED:
 SUSAN YEE

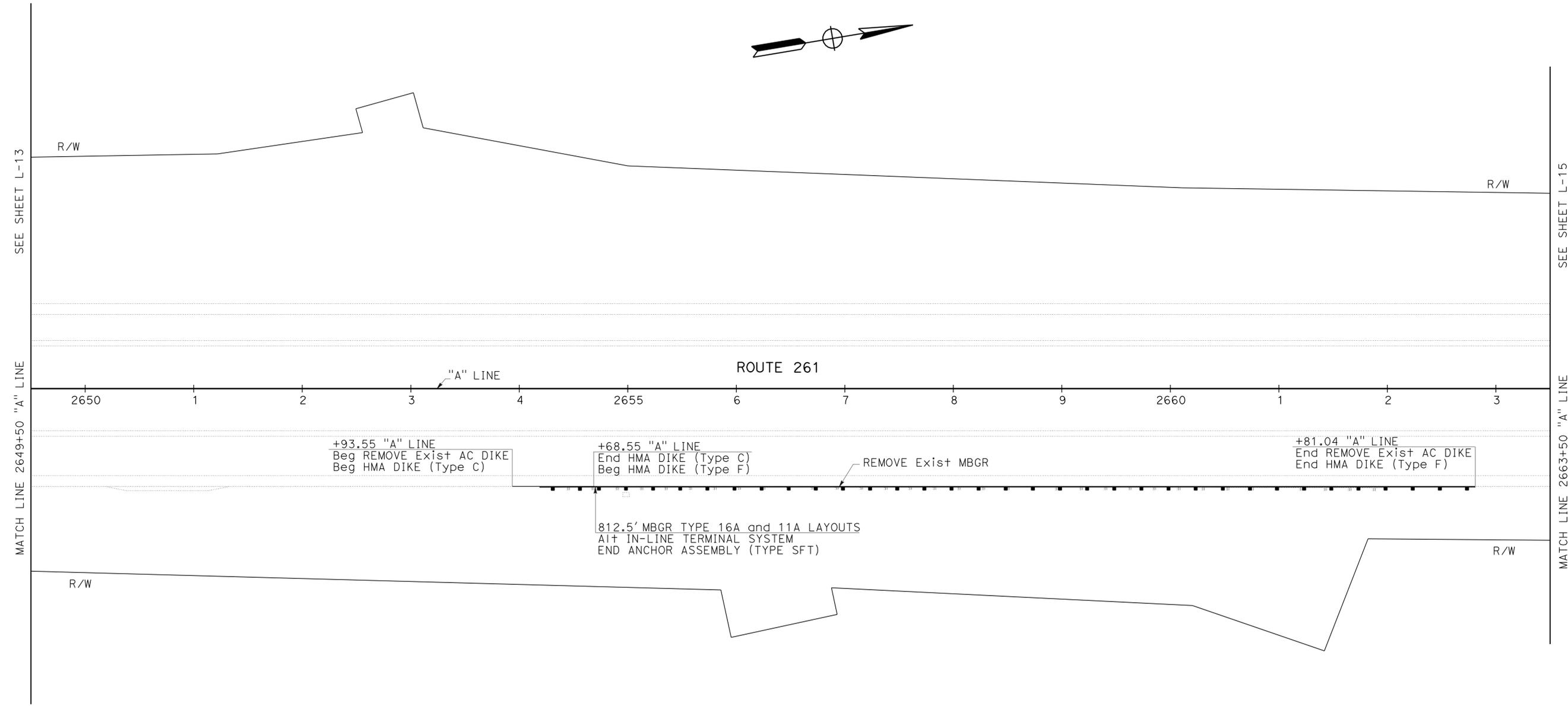
LAYOUT
SCALE: 1" = 50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	15	76

Kim Nguyen 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 KIMBERLY NGUYEN
 No. C 64577
 Exp. 6/30/11
 CIVIL
 STATE OF CALIFORNIA

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LAYOUT
 SCALE: 1" = 50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	16	76

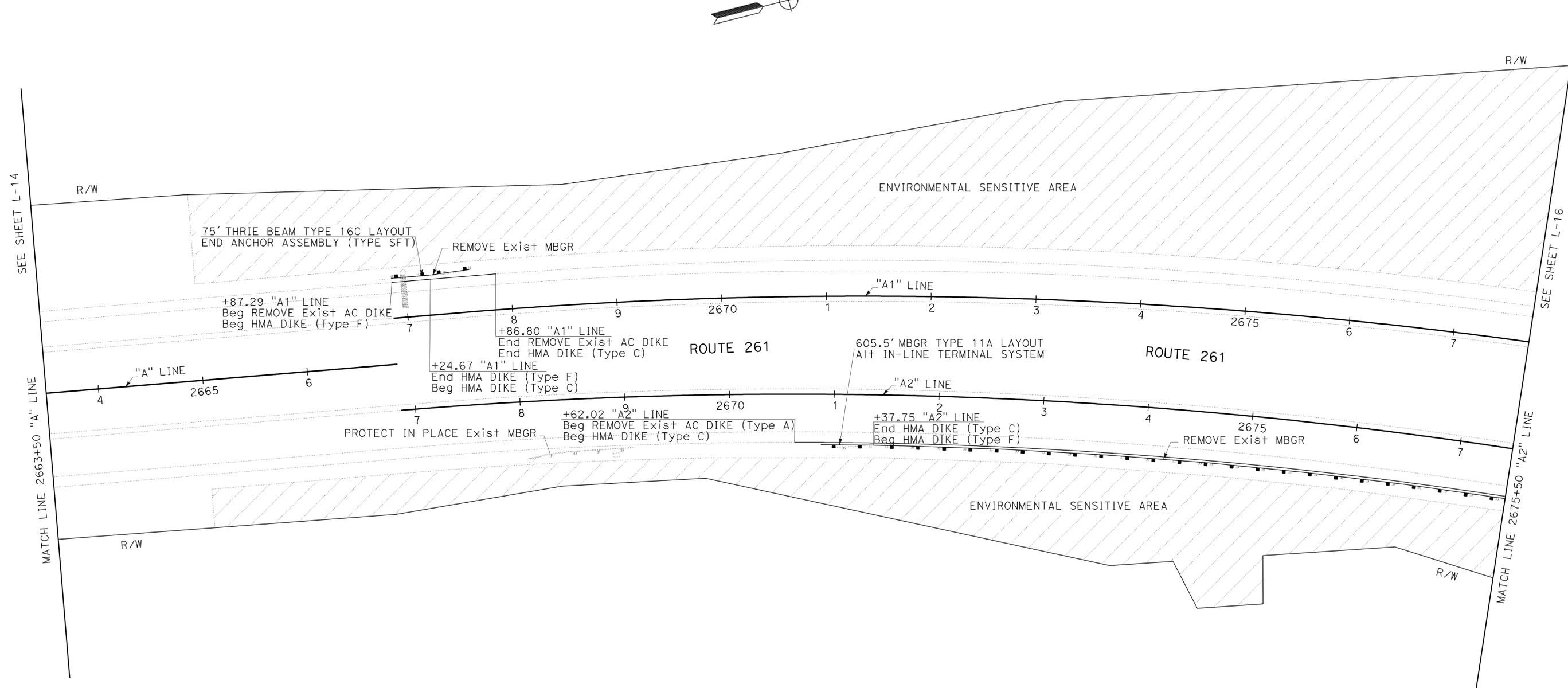
<i>Kim Nguyen</i>	06-01-10
REGISTERED CIVIL ENGINEER	DATE
6-28-10	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
KIMBERLY NGUYEN
No. C 64577
Exp. 6/30/11
CIVIL

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NOTE:

ENVIRONMENTAL SENSITIVE AREA (ESA) STARTS 14' FROM THE EDGE OF PAVEMENT.



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Caltrans DESIGN BRANCH G
 FUNCTIONAL SUPERVISOR: SUSAN YEE
 CALCULATED/DESIGNED BY: KIMBERLY NGUYEN
 CHECKED BY: SUSAN YEE
 REVISED BY: KIMBERLY NGUYEN
 DATE REVISED: SUSAN YEE

LAYOUT
 SCALE: 1" = 50'

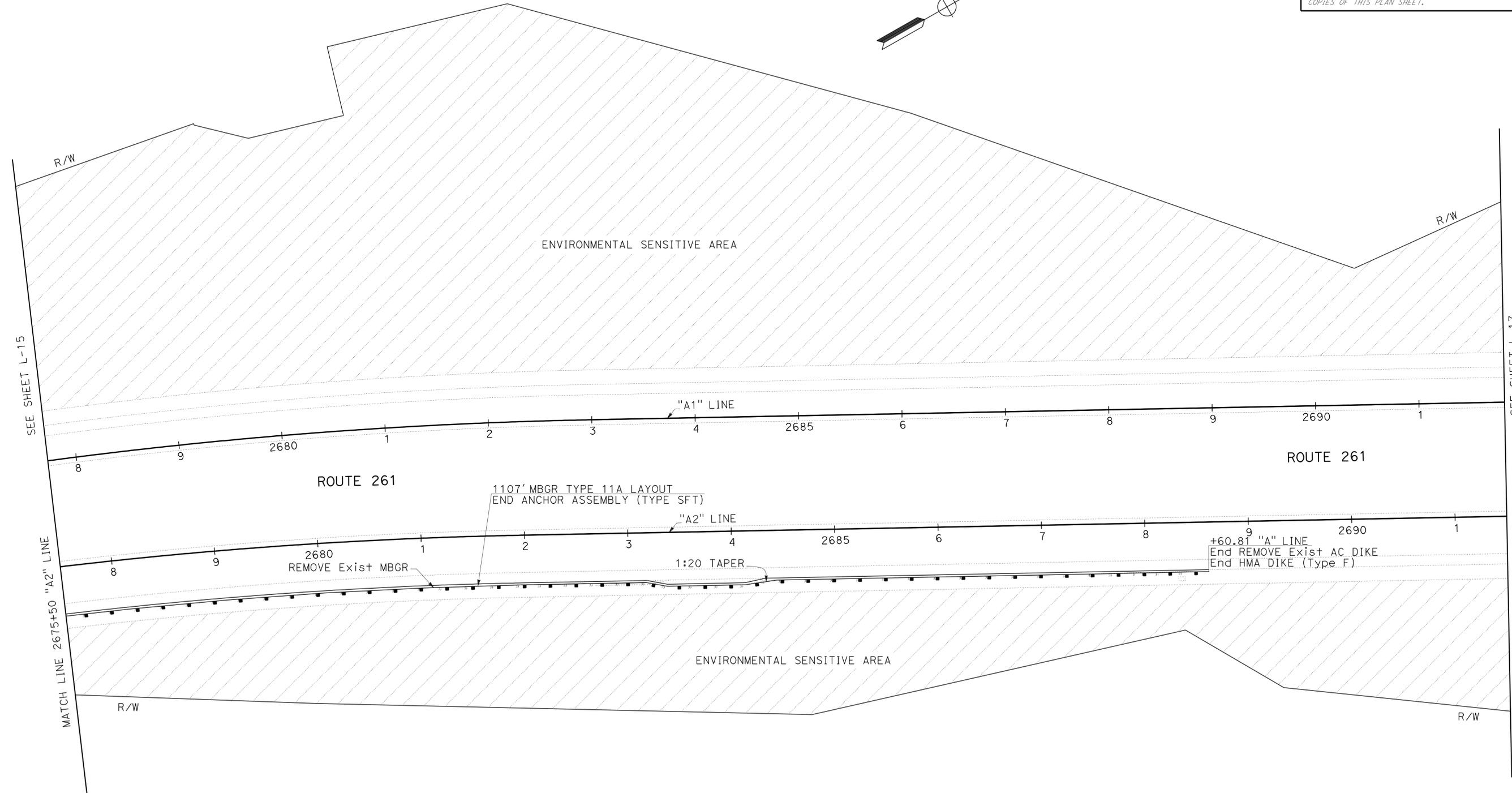
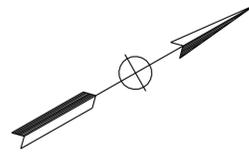


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	17	76

<i>Kim Nguyen</i>	06-01-10
REGISTERED CIVIL ENGINEER	DATE
6-28-10	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
KIMBERLY NGUYEN
No. C 64577
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G

REVISOR
 REVISION
 REVISION

DESIGNED BY
 CHECKED BY

FUNCTIONAL SUPERVISOR
 SUSAN YEE

DESIGNED BY
 CHECKED BY

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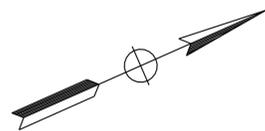
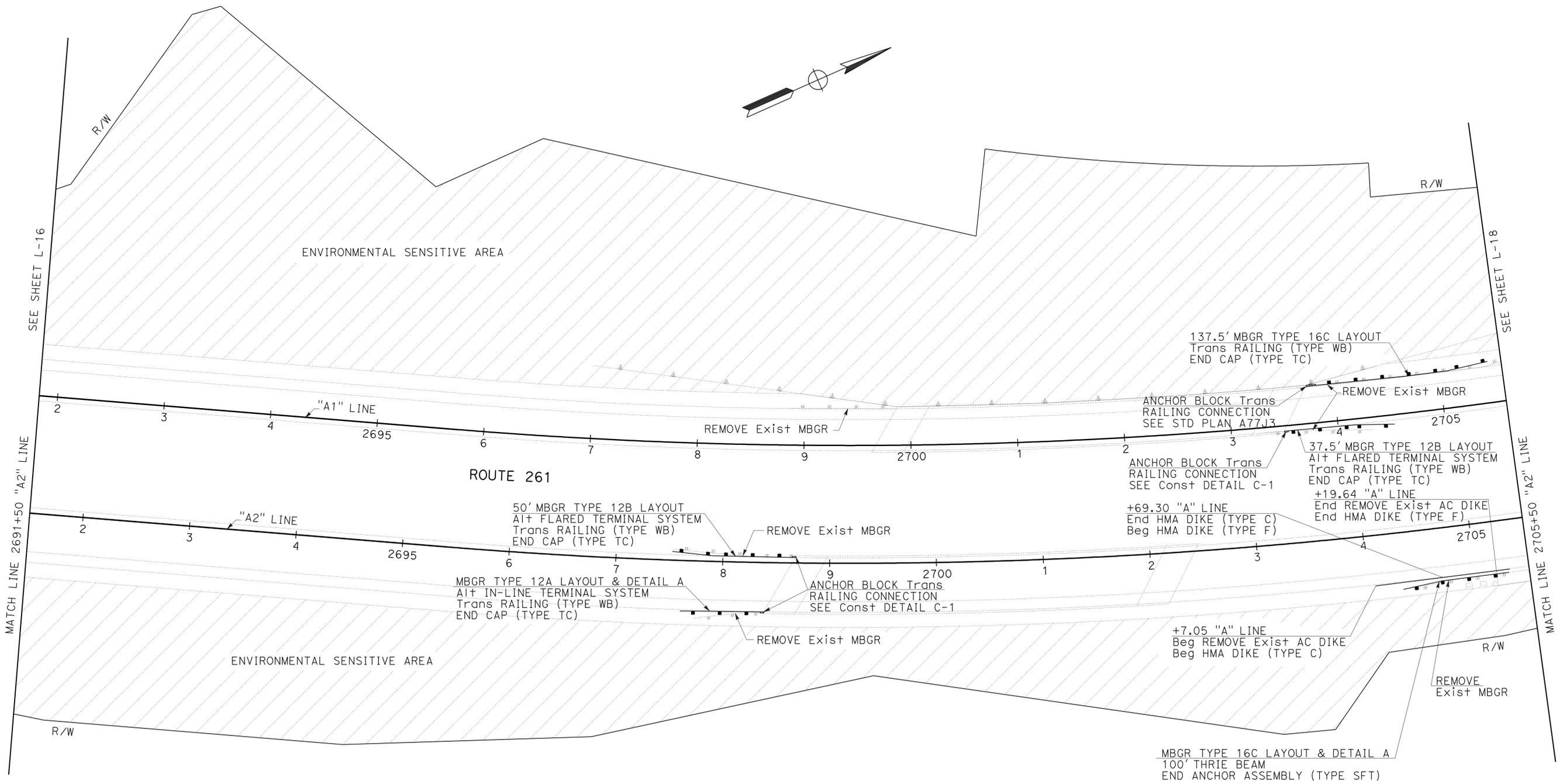
LAYOUT
 SCALE: 1" = 50'

L-16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	18	76
			06-01-10	DATE	
REGISTERED CIVIL ENGINEER					
6-28-10			PLANS APPROVAL DATE		
<small>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.</small>					



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH G
FUNCTIONAL SUPERVISOR	SUSAN YEE
CALCULATED/DESIGNED BY	CHECKED BY
KIMBERLY NGUYEN	SUSAN YEE
REVISOR	DATE

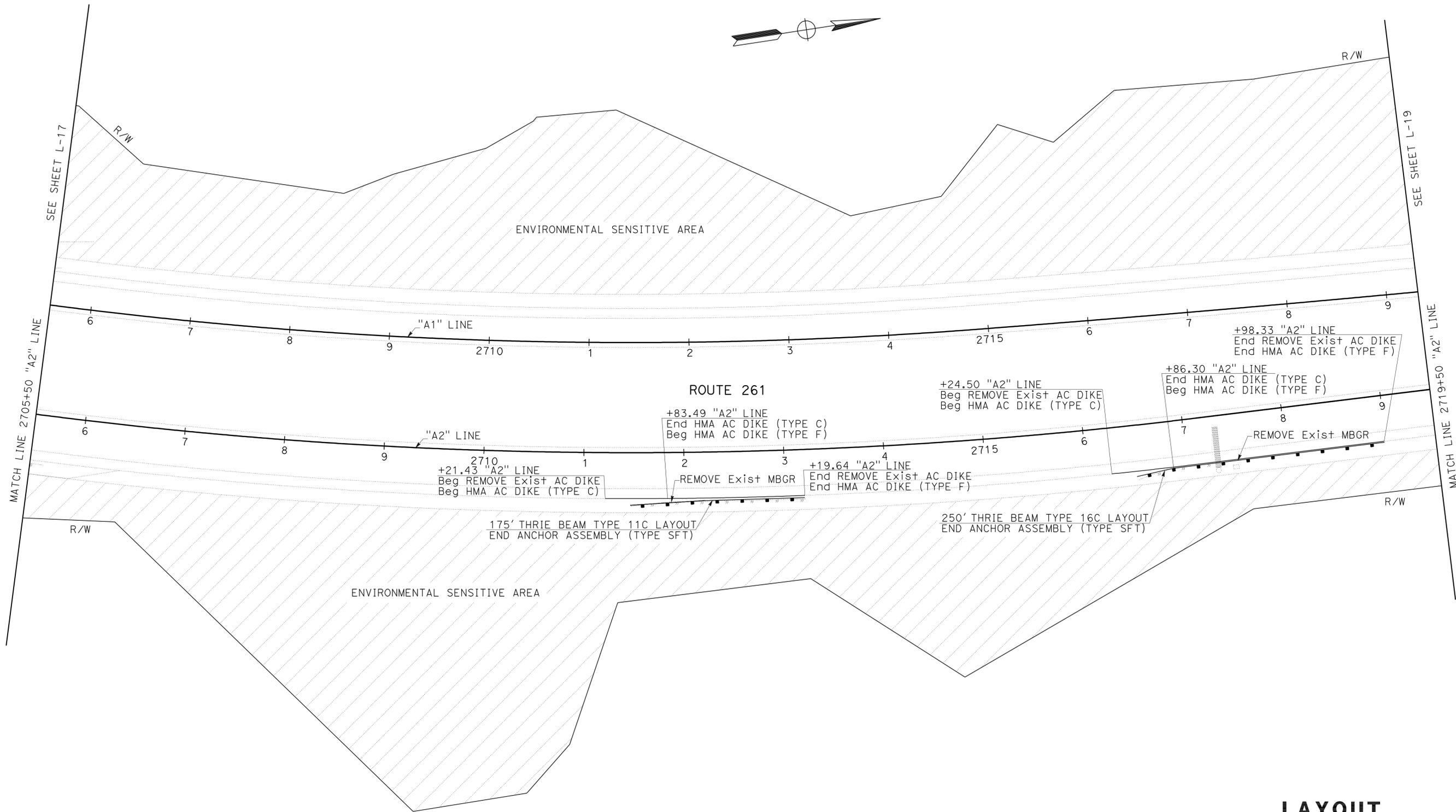


LAYOUT
SCALE: 1" = 50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	19	76
			06-01-10	DATE	
REGISTERED CIVIL ENGINEER					
KIMBERLY NGUYEN			No. C 64577		
6-28-10			Exp. 6/30/11		
PLANS APPROVAL DATE			CIVIL		
<small>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.</small>					



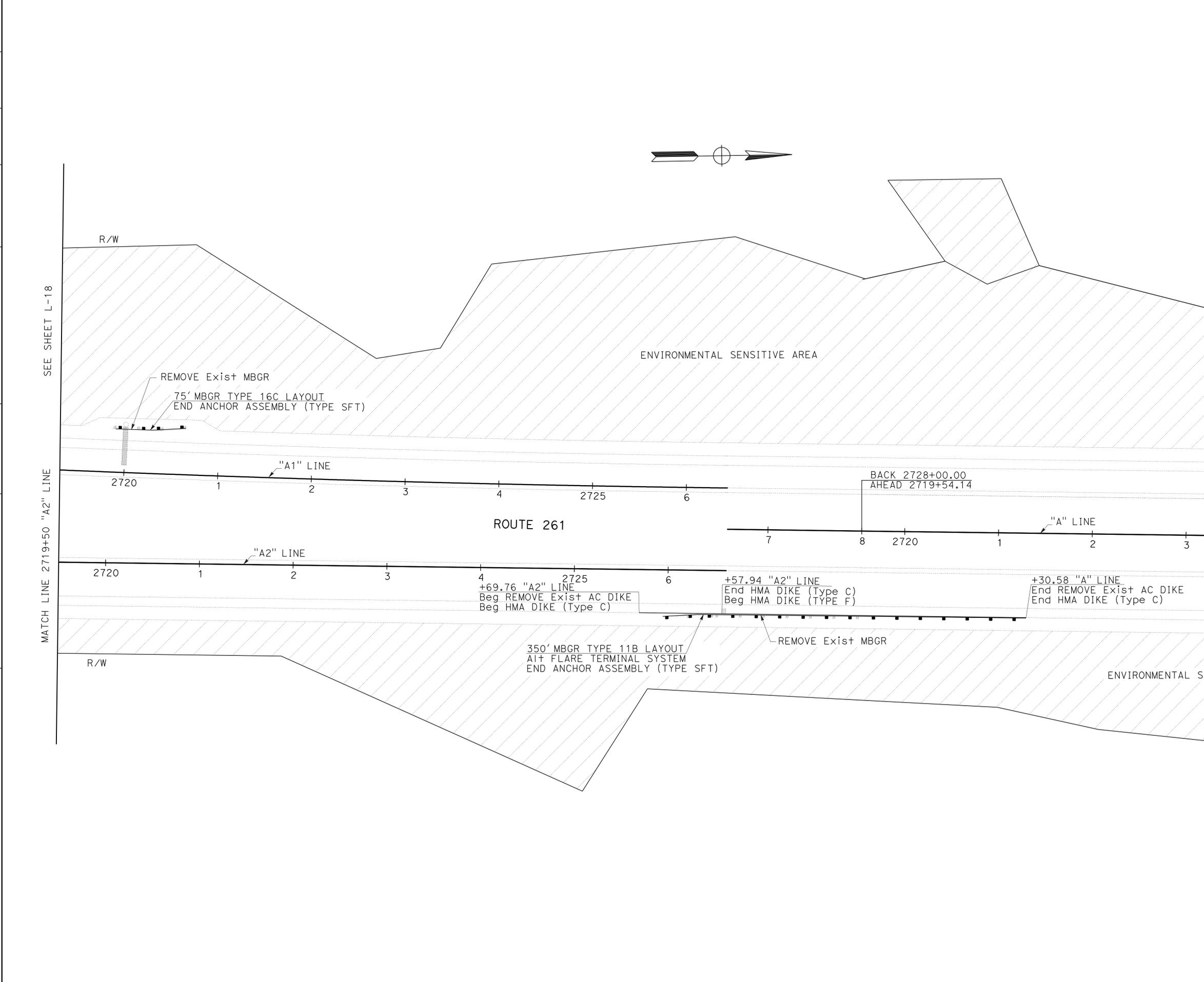
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH G
FUNCTIONAL SUPERVISOR	SUSAN YEE
CALCULATED/DESIGNED BY	CHECKED BY
KIMBERLY NGUYEN	SUSAN YEE
REVISED BY	DATE REVISED



LAYOUT
SCALE: 1" = 50'

L-18

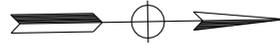
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	20	76

REGISTERED CIVIL ENGINEER DATE 06-01-10
 KIMBERLY NGUYEN
 No. C 64577
 Exp. 6/30/11
 CIVIL
 PLANS APPROVAL DATE 6-28-10

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LAYOUT
 SCALE: 1" = 50'

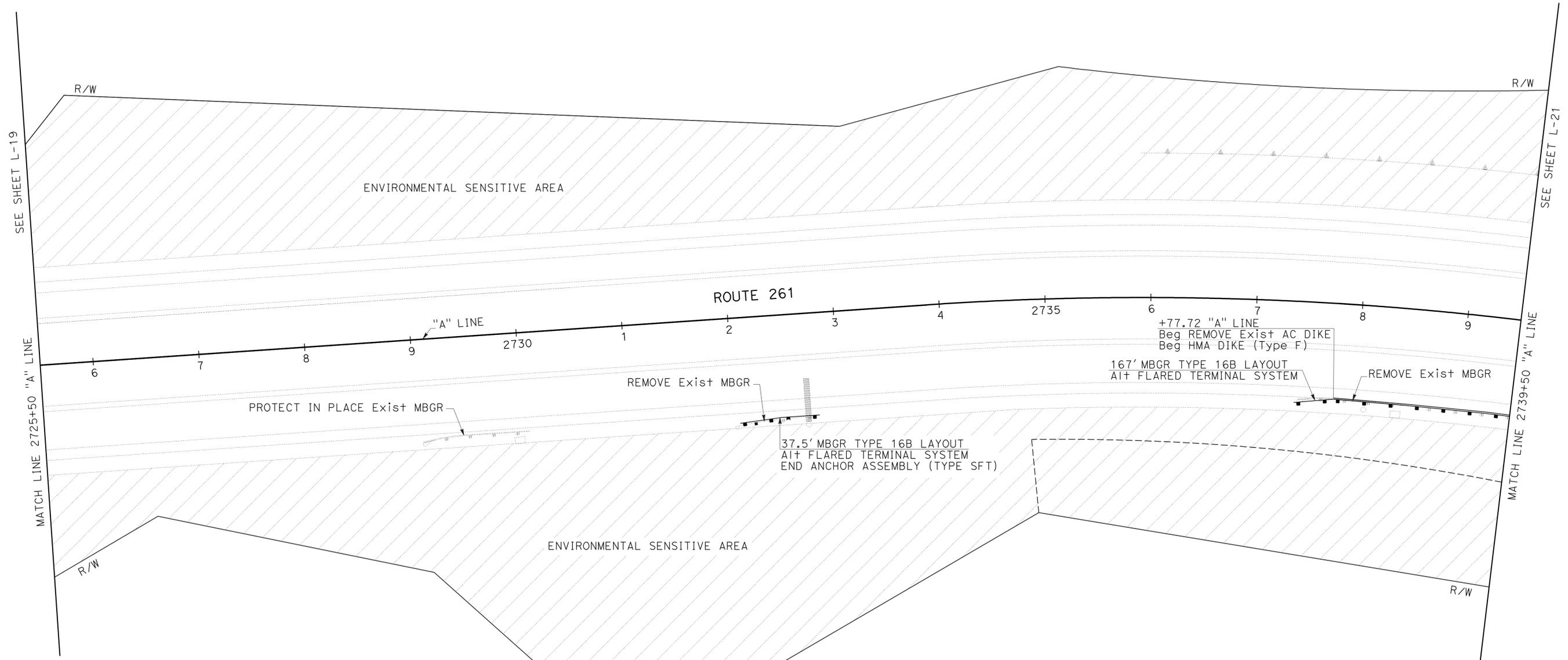
L-19

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	21	76

<i>Kim Nguyen</i>	06-01-10
REGISTERED CIVIL ENGINEER	DATE
6-28-10	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
KIMBERLY NGUYEN
No. C 64577
Exp. 6/30/11
CIVIL

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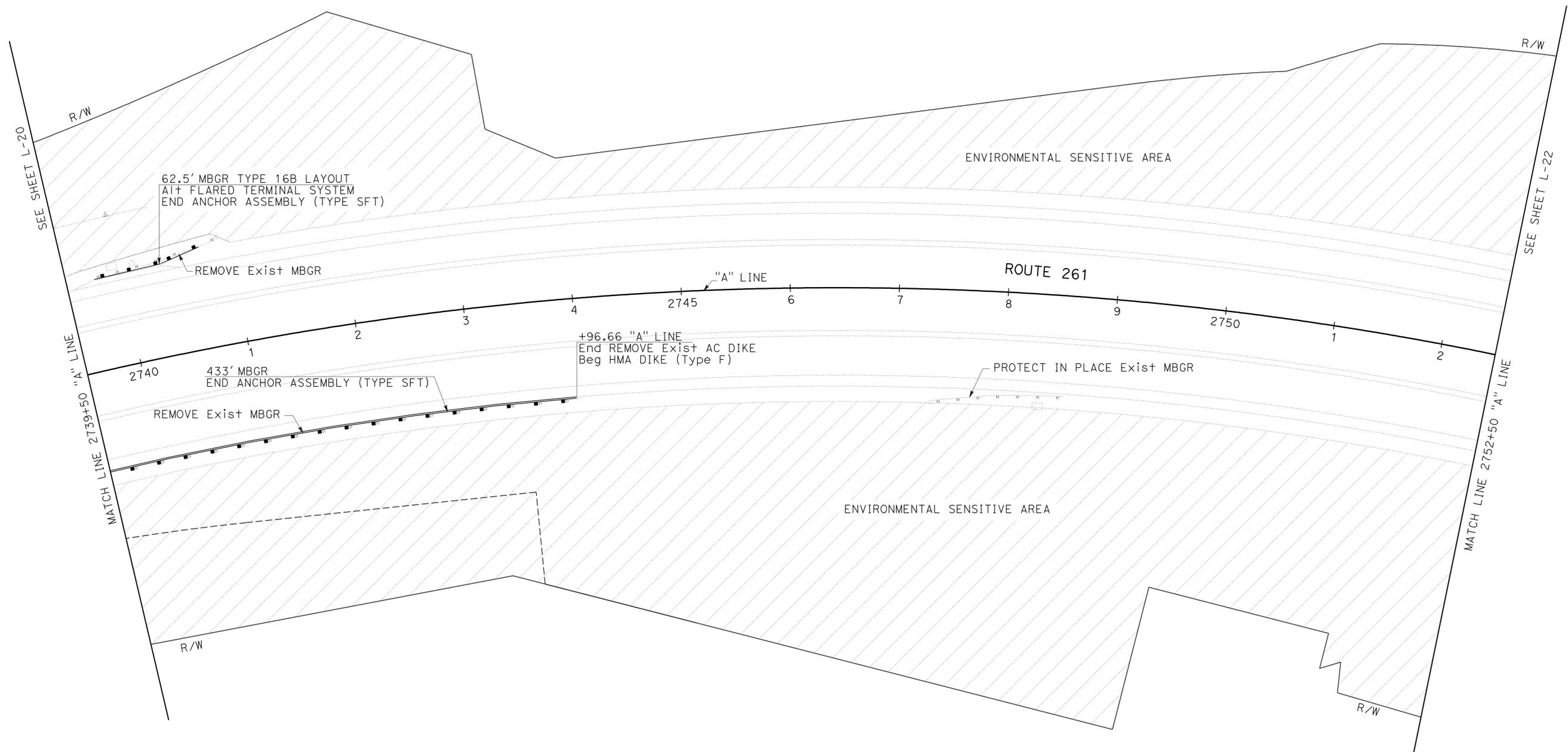
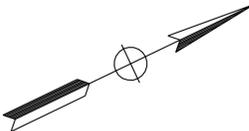


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH G
FUNCTIONAL SUPERVISOR	SUSAN YEE
CALCULATED/DESIGNED BY	CHECKED BY
KIMBERLY NGUYEN	SUSAN YEE
REVISOR BY	DATE REVISED

LAYOUT
SCALE: 1" = 50'

L-20

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	22	76
			06-01-10	DATE	
REGISTERED CIVIL ENGINEER					
KIMBERLY NGUYEN			No. C 64577		
6-28-10			Exp. 6/30/11		
PLANS APPROVAL DATE			CIVIL		
<small>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.</small>					

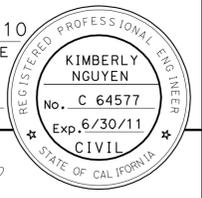


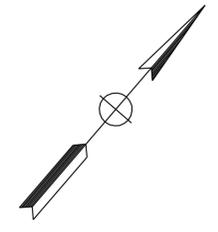
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH G	FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY	REVISOR	DATE
		SUSAN YEE	SUSAN YEE	KIMBERLY NGUYEN	SUSAN YEE	

LAYOUT
SCALE: 1" = 50'

L-21

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	23	76


 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 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.

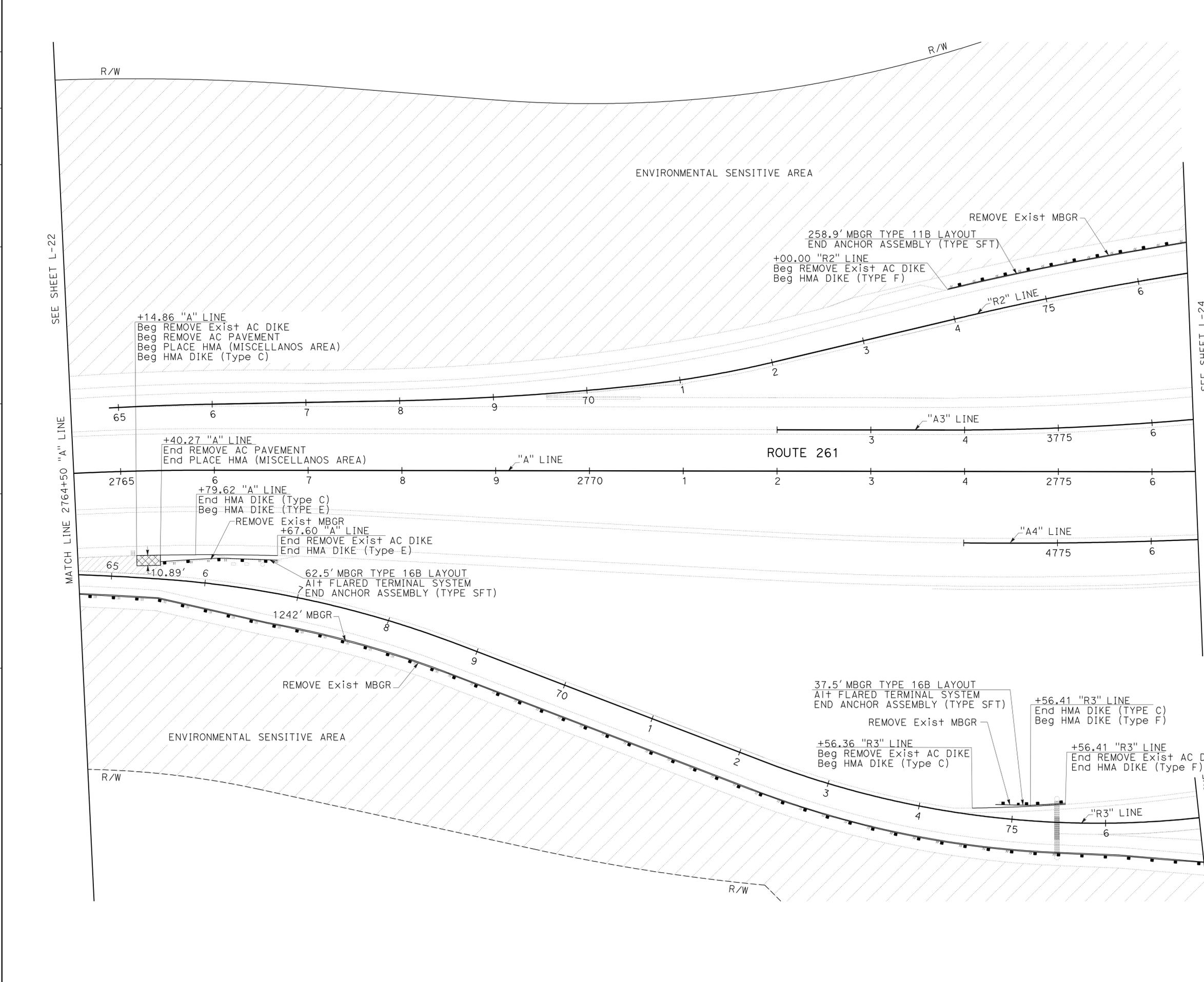


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G
 FUNCTIONAL SUPERVISOR SUSAN YEE
 CALCULATED/DESIGNED BY CHECKED BY
 KIMBERLY NGUYEN SUSAN YEE
 REVISED BY DATE REVISED
 KIMBERLY NGUYEN SUSAN YEE

LAYOUT
SCALE: 1" = 50'

L-22

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G

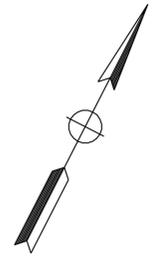


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	24	76

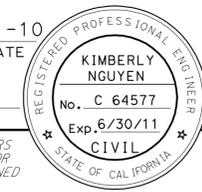
REGISTERED CIVIL ENGINEER: *Kimberly Nguyen* 06-01-10
 DATE: 6-28-10
 PLANS APPROVAL DATE: 6-28-10

REGISTERED PROFESSIONAL ENGINEER: KIMBERLY NGUYEN
 No. C 64577
 Exp. 6/30/11
 CIVIL

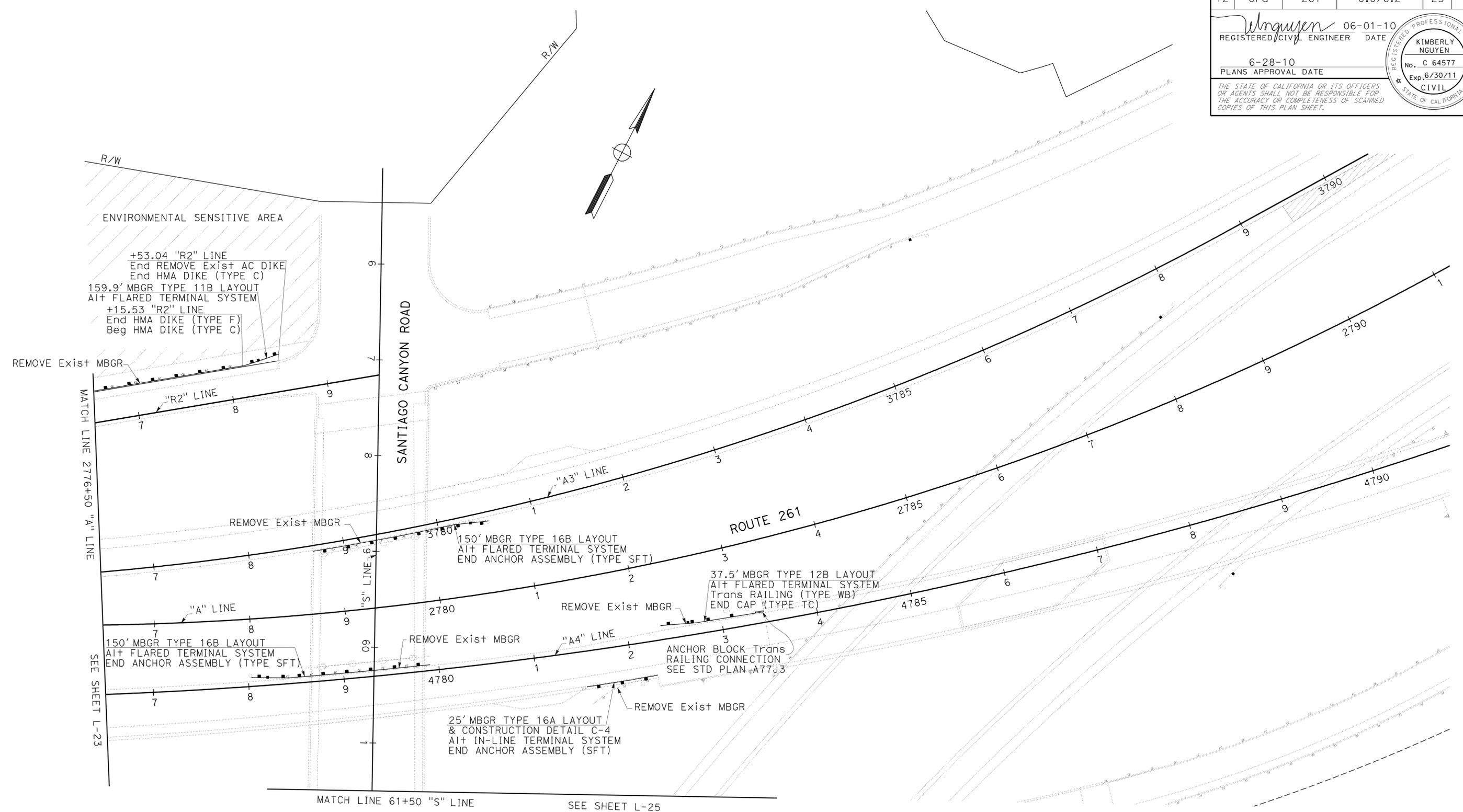
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



LAYOUT
 SCALE: 1" = 50'
L-23

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	25	76
			06-01-10	DATE	
REGISTERED CIVIL ENGINEER			DATE		
6-28-10			PLANS APPROVAL DATE		
<small>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.</small>					
					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH G
FUNCTIONAL SUPERVISOR	SUSAN YEE
CALCULATED/DESIGNED BY	CHECKED BY
KIMBERLY NGUYEN	SUSAN YEE
REVISED BY	DATE REVISED



LAYOUT
SCALE: 1" = 50'

L-24

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G

FUNCTIONAL SUPERVISOR
 SUSAN YEE

CALCULATED/DESIGNED BY
 CHECKED BY

KIMBERLY NGUYEN
 SUSAN YEE

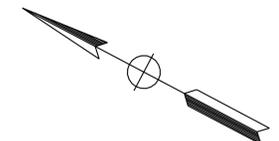
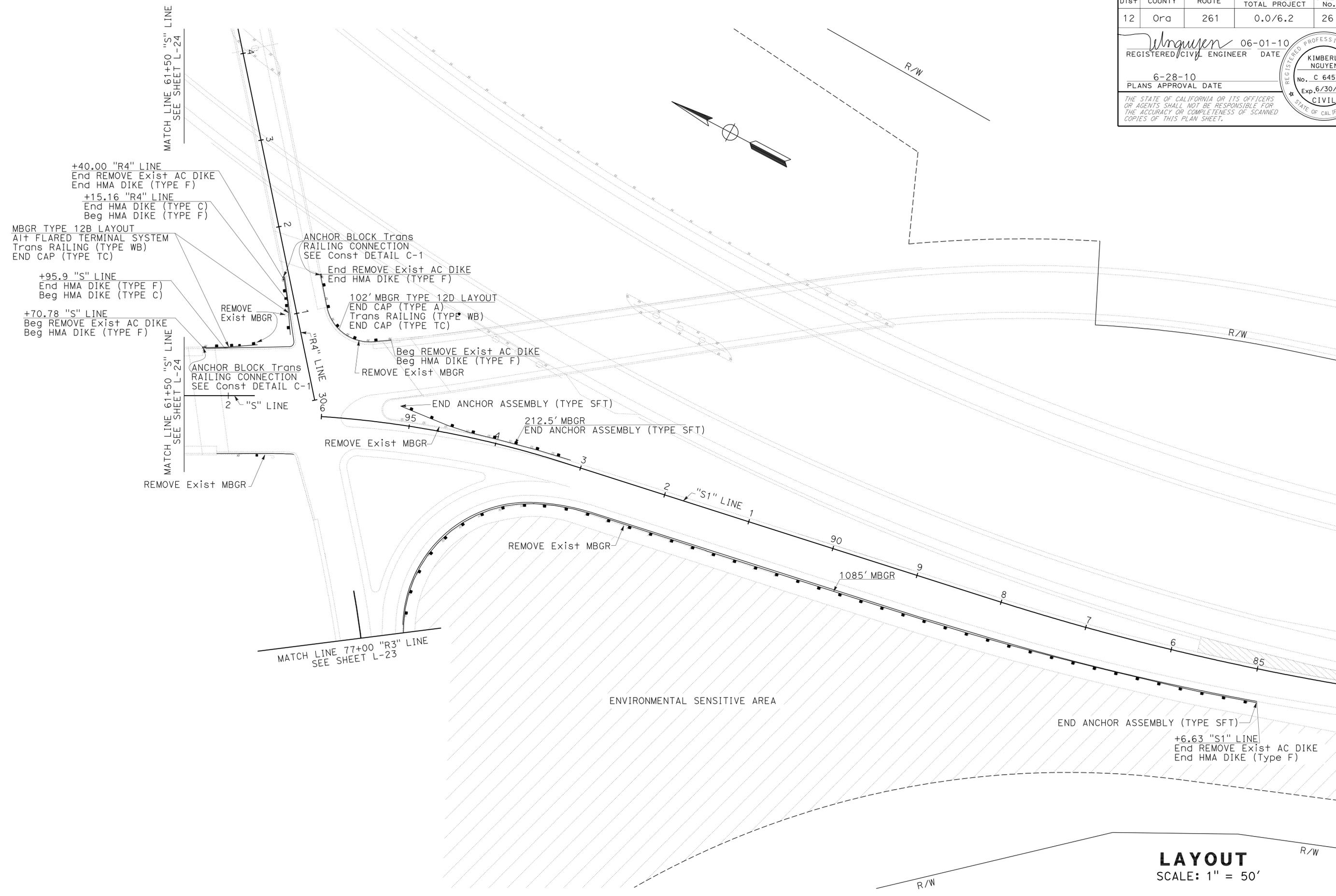
REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	261	0.0/6.2	26	76

06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE

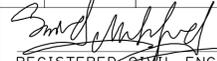
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

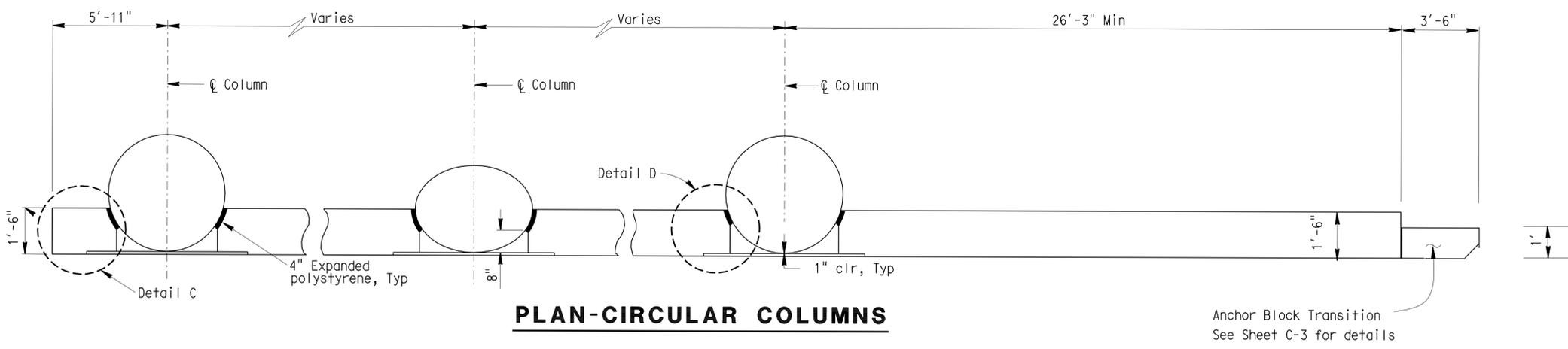
REGISTERED PROFESSIONAL ENGINEER
 KIMBERLY NGUYEN
 No. C 64577
 Exp. 6/30/11
 CIVIL
 STATE OF CALIFORNIA



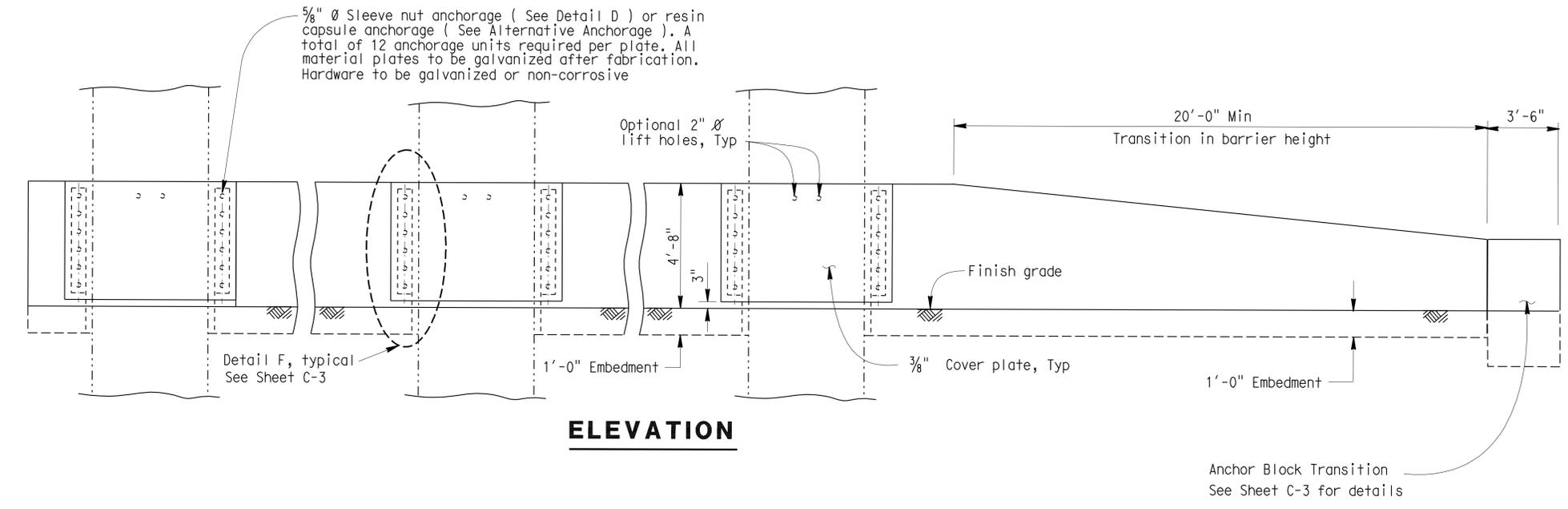
LAYOUT
 SCALE: 1" = 50'

L-25

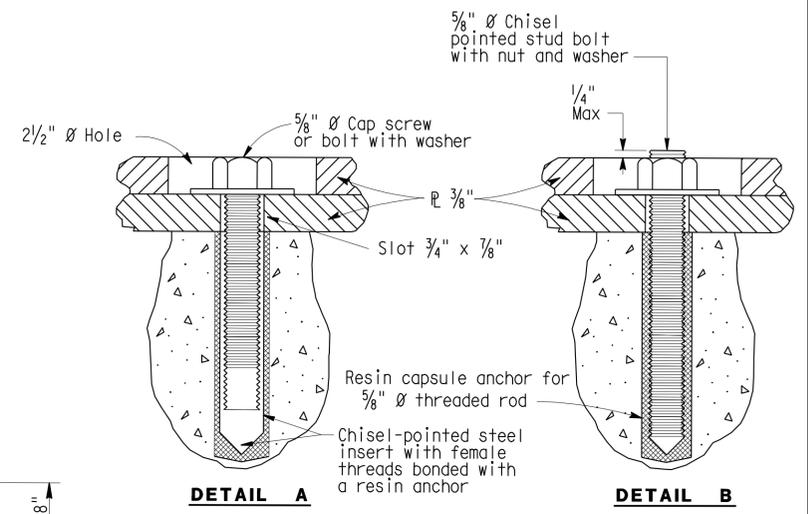
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	28	76
 REGISTERED CIVIL ENGINEER			06-01-10	DATE	
6-28-10 PLANS APPROVAL DATE					
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PLAN-CIRCULAR COLUMNS

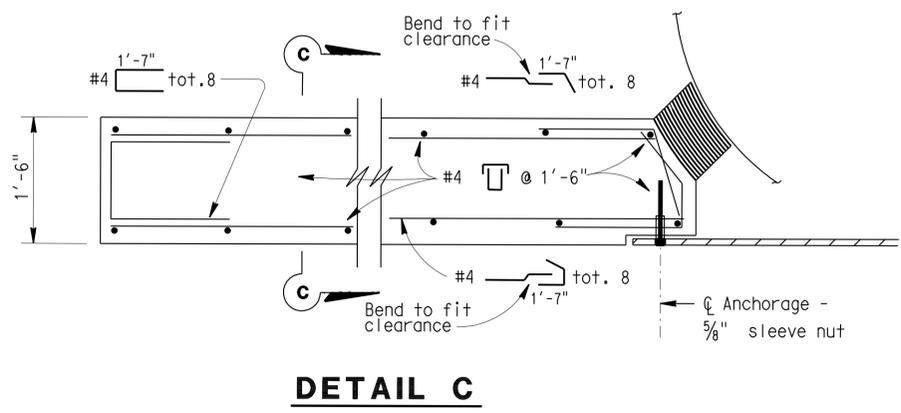


ELEVATION

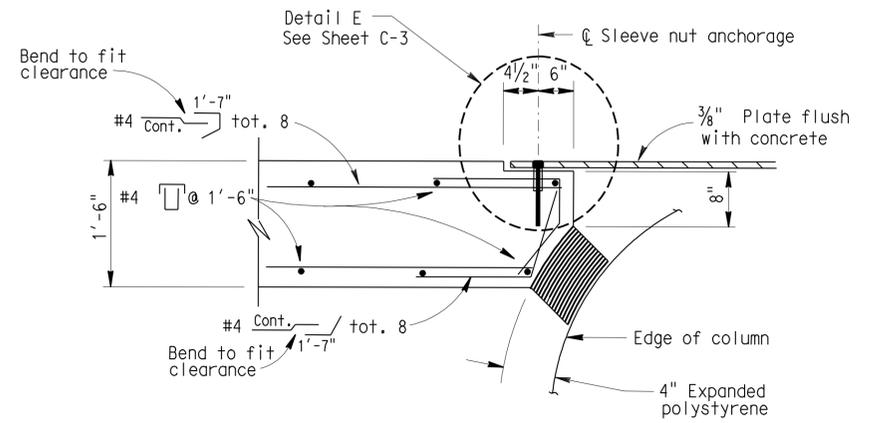


ALTERNATIVE ANCHORAGE

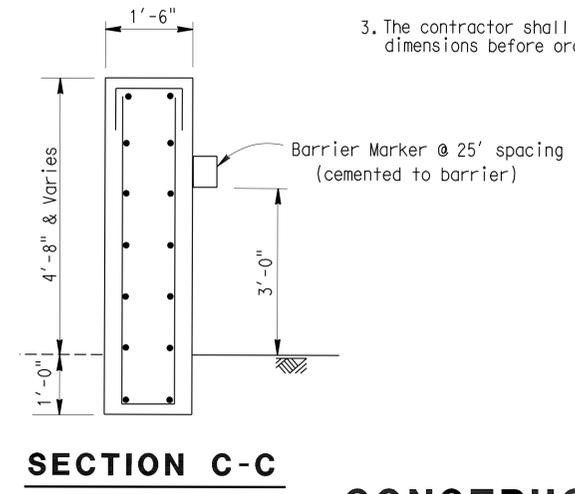
- NOTES:**
1. Resin capsule anchorage is subject to approval of the engineer. Installation procedures shall comply with manufacturer's instructions.
 2. Detail B similar to Detail A except for anchorage devices.
 3. The contractor shall verify all controlled field dimensions before ordering or fabricating any materials.



DETAIL C



DETAIL D



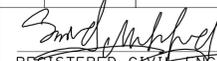
SECTION C-C

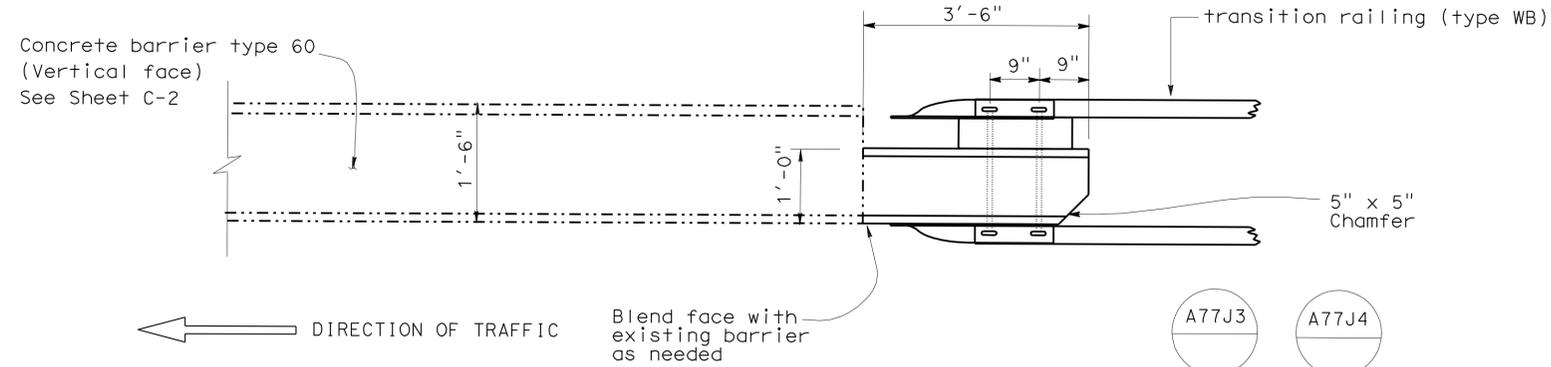
**CONSTRUCTION DETAILS
CONCRETE BARRIER TYPE 60
(VERTICAL FACE)**

NO SCALE

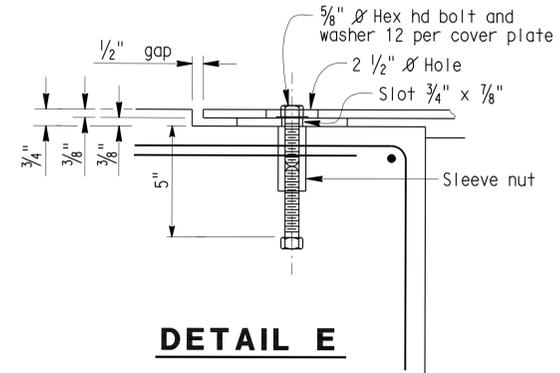
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN BRANCH G

FUNCTIONAL SUPERVISOR: SUSAN YEE
CALCULATED/DESIGNED BY: SUSAN YEE
CHECKED BY: SUSAN YEE
SAIED MEHRANFARD
REVISOR: SUSAN YEE
REVISIONS: REVISED BY: DATE

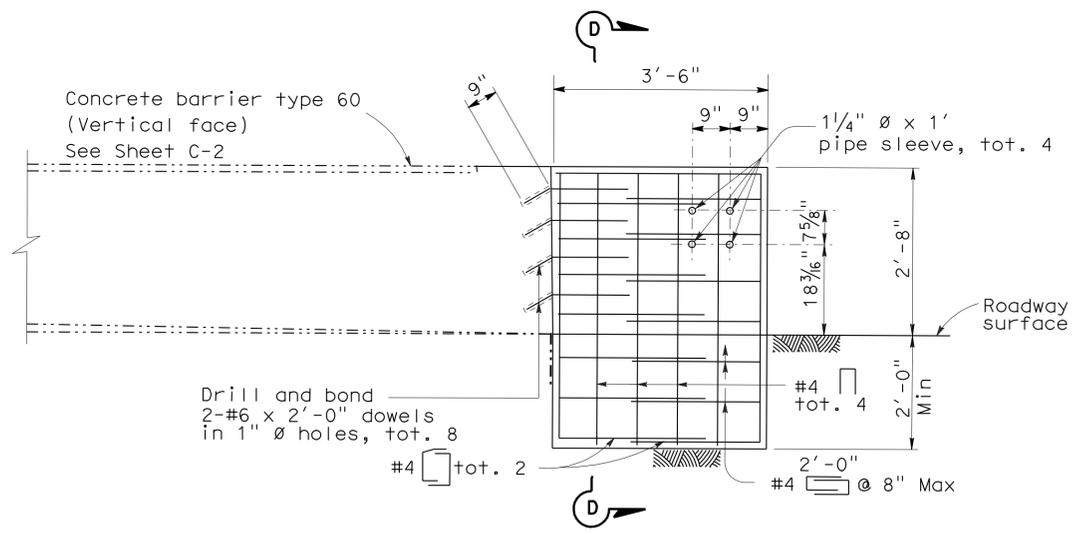
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	29	76
 REGISTERED CIVIL ENGINEER			DATE	06-01-10 6-28-10 PLANS APPROVAL DATE	
REGISTERED PROFESSIONAL ENGINEER SAIED MEHRANFARD No. C 65290 Exp. 9/30/11 CIVIL STATE OF CALIFORNIA			THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		



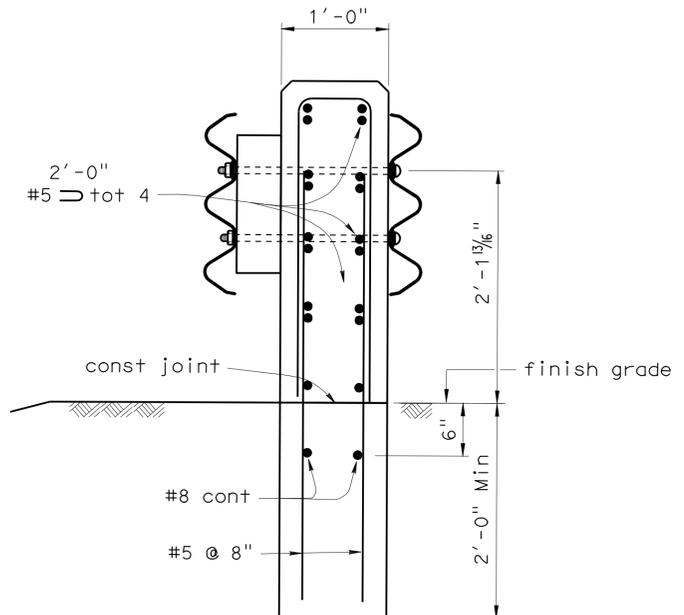
PLAN



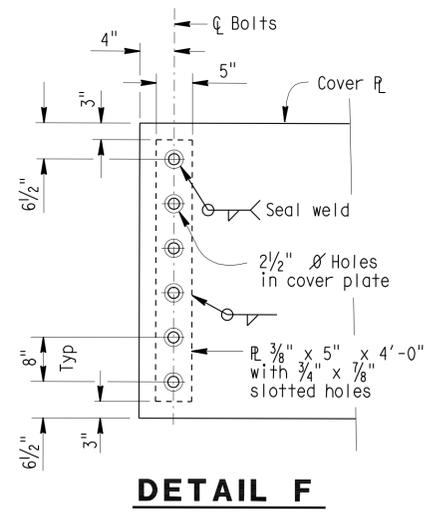
DETAIL E



ELEVATION



SECTION D-D



DETAIL F

TRANSITION RAILING TYPE WB CONNECTION TO CONCRETE BARRIER TYPE 60 (VERTICAL FACE)

CONSTRUCTION DETAILS ANCHOR BLOCK AND CONCRETE BARRIER TYPE 60 (VERTICAL FACE)

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G
 FUNCTIONAL SUPERVISOR: SUSAN YEE
 CALCULATED/DESIGNED BY: CHECKED BY:
 SAIED MEHRANFARD SUSAN YEE
 REVISED BY: DATE REVISED:
 REVISIONS:

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	261	0.0/6.2	30	76

Brandon Tran 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE

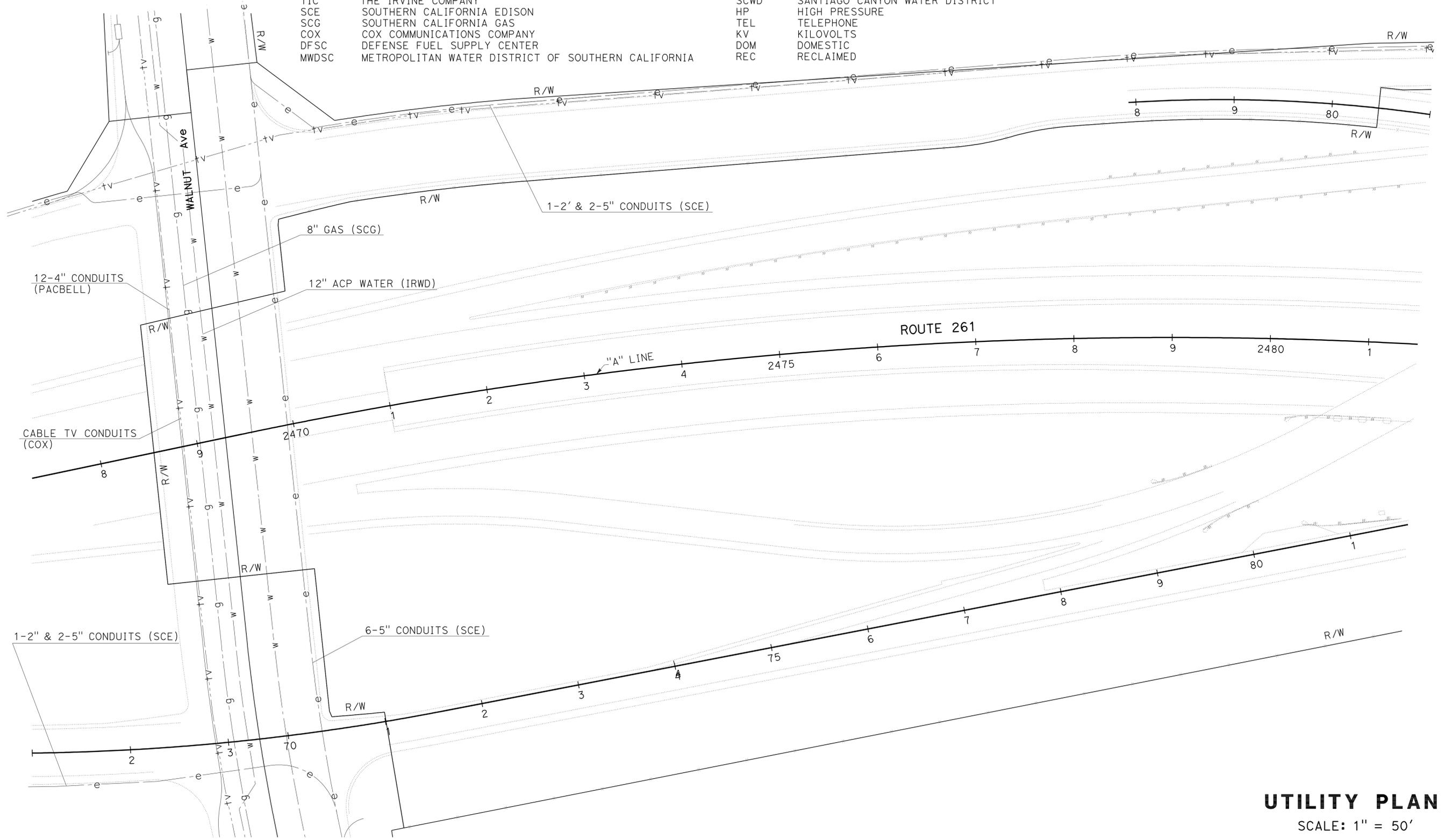
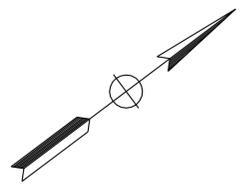
REGISTERED PROFESSIONAL ENGINEER
 BRANDON TRAN
 No. C 58283
 Exp. 6/30/10
 CIVIL
 STATE OF CALIFORNIA

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NOTE:
 1. LOCATIONS OF UTILITY FACILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

ABBREVIATIONS

- | | | | |
|---------|--|-------|-----------------------------------|
| IRWD | IRVINE RANCH WATER DISTRICT | SAC | SANTIAGO AQUEDUCT COMMISSION |
| COI | CITY OF IRVINE | EOCWD | EAST ORANGE COUNTY WATER DISTRICT |
| PACBELL | PACIFIC BELL TELEPHONE | ATC | AIR TOUCH CELLULAR TELEPHONE |
| TIC | THE IRVINE COMPANY | SCWD | SANTIAGO CANYON WATER DISTRICT |
| SCE | SOUTHERN CALIFORNIA EDISON | HP | HIGH PRESSURE |
| SCG | SOUTHERN CALIFORNIA GAS | TEL | TELEPHONE |
| COX | COX COMMUNICATIONS COMPANY | KV | KILOVOLTS |
| DFSC | DEFENSE FUEL SUPPLY CENTER | DOM | DOMESTIC |
| MWDSC | METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA | REC | RECLAIMED |



UTILITY PLAN
 SCALE: 1" = 50'

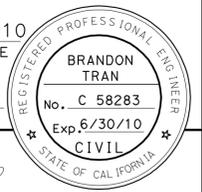
THIS PLAN ACCURATE FOR EXISTING UTILITY ONLY

U-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN DIVISION
 FUNCTIONAL SUPERVISOR: CHRISTOPHER LE
 CALCULATED/DESIGNED BY: [blank]
 CHECKED BY: [blank]
 BRANDON TRAN
 CHRISTOPHER LE
 REVISED BY: [blank]
 DATE REVISED: [blank]

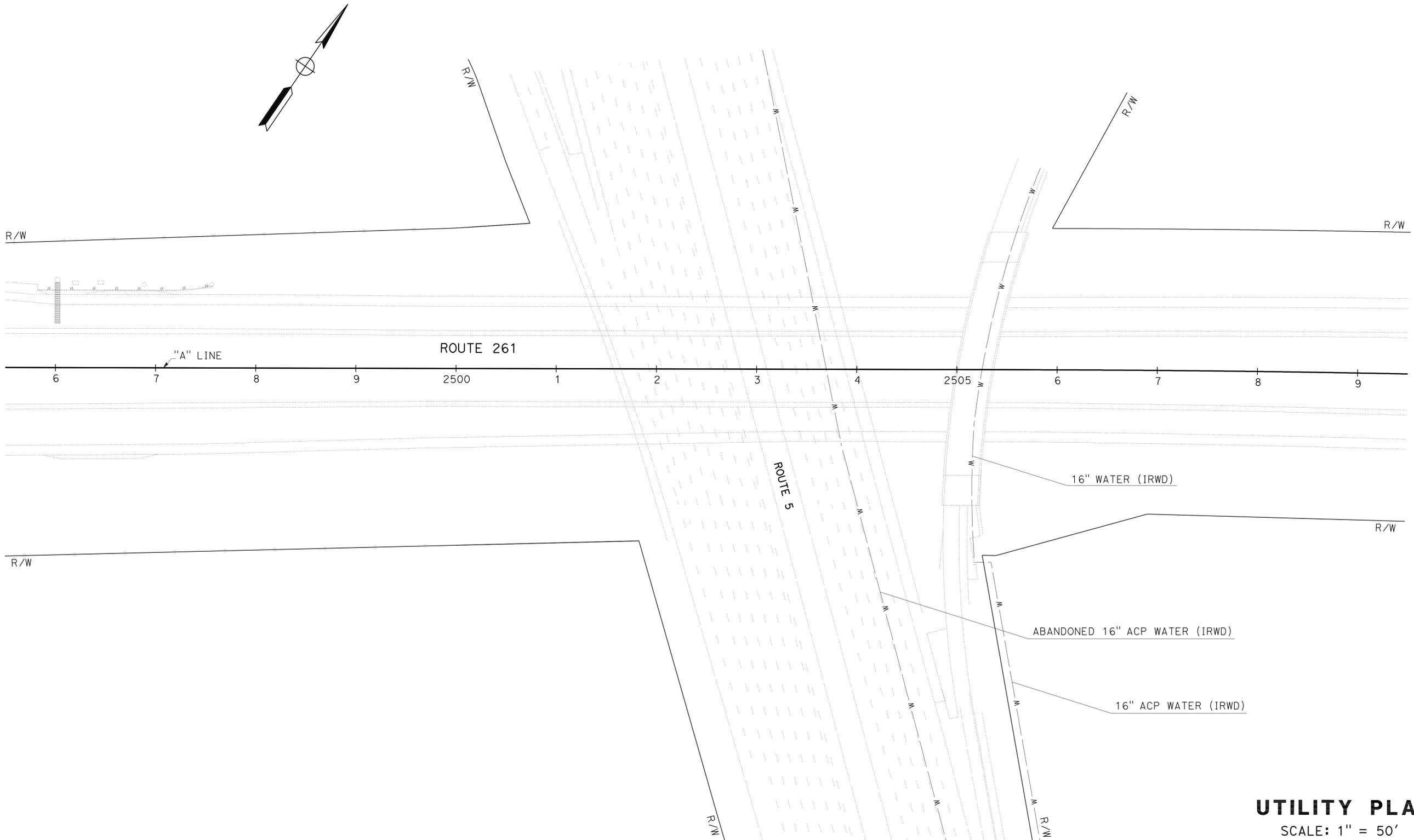
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	31	76

Brandon Tran 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE



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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN DIVISION	FUNCTIONAL SUPERVISOR	CHRISTOPHER LE	CALCULATED/DESIGNED BY	CHECKED BY	BRANDON TRAN	CHRISTOPHER LE	REVISOR	DATE
Caltrans									



UTILITY PLAN
 SCALE: 1" = 50'

THIS PLAN ACCURATE FOR EXISTING UTILITY ONLY

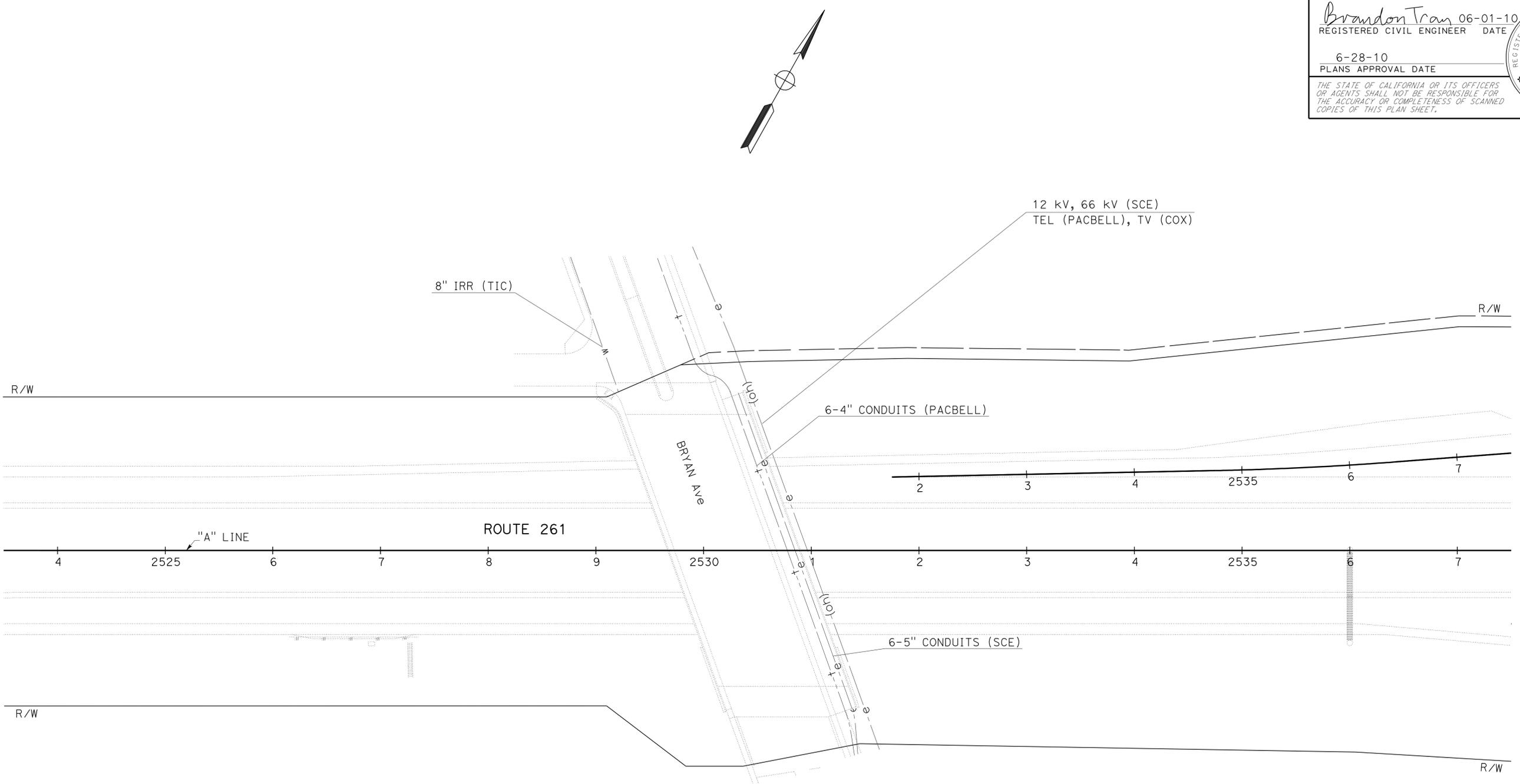
U-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	32	76

Brandon Tran 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 BRANDON TRAN
 No. C 58283
 Exp. 6/30/10
 CIVIL
 STATE OF CALIFORNIA

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN DIVISION
 FUNCTIONAL SUPERVISOR: CHRISTOPHER LE
 CALCULATED/DESIGNED BY: CHECKED BY:
 BRANDON TRAN
 CHRISTOPHER LE
 REVISED BY: DATE: REVISED:

UTILITY PLAN
SCALE: 1" = 50'

THIS PLAN ACCURATE FOR EXISTING UTILITY ONLY

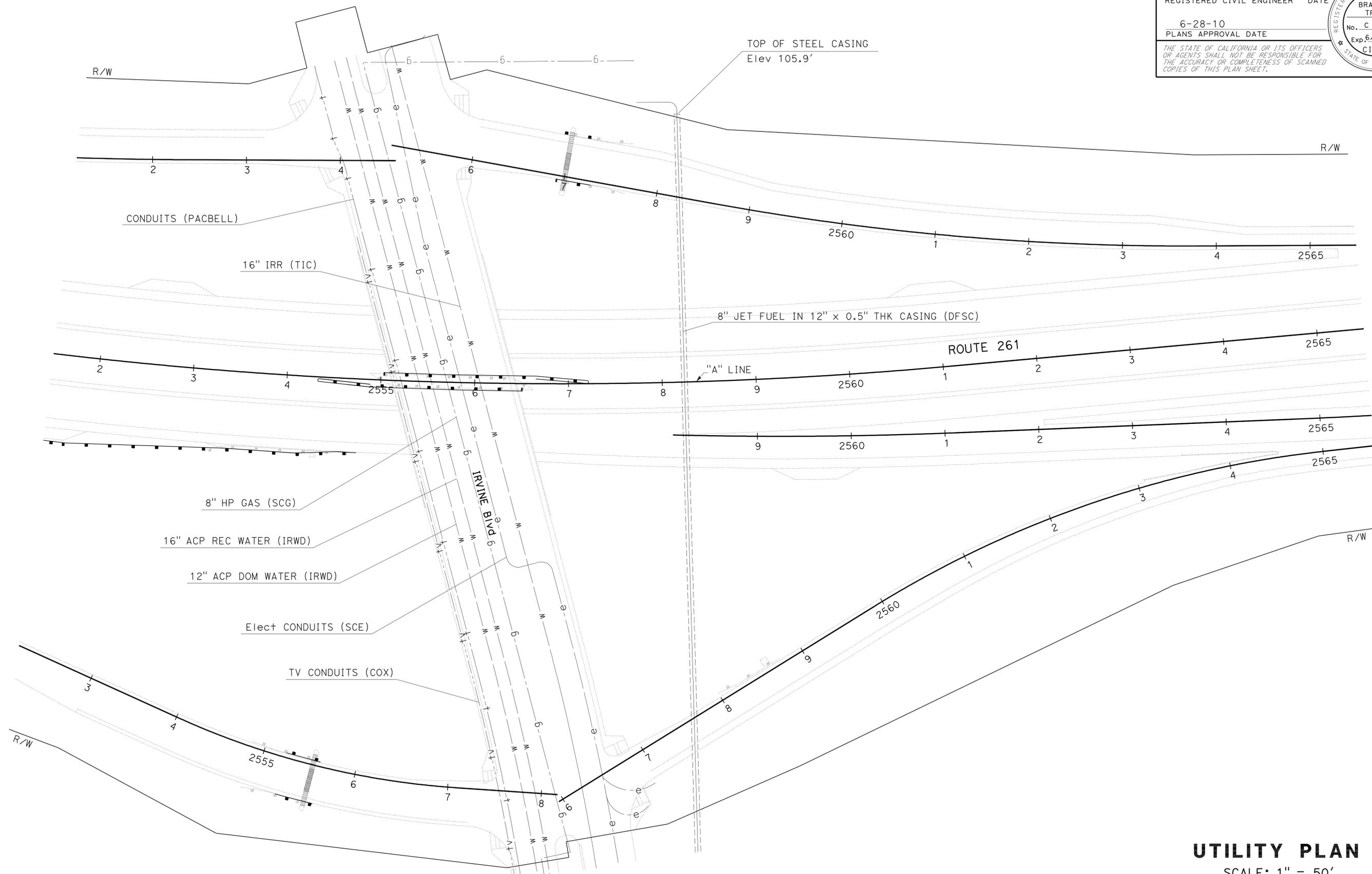
U-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	33	76

Brandon Tran 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 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.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN DIVISION
 FUNCTIONAL SUPERVISOR: CHRISTOPHER LE
 CALCULATED/DESIGNED BY: CHECKED BY:
 BRANDON TRAN: CHRISTOPHER LE
 REVISED BY: DATE REVISED:
 BORDER LAST REVISED 4/11/2008



UTILITY PLAN
SCALE: 1" = 50'

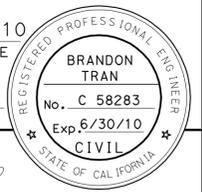
THIS PLAN ACCURATE FOR EXISTING UTILITY ONLY

U-4

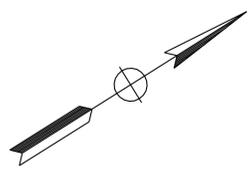
LAST REVISION: DATE PLOTTED => 28-JUN-2010
 03-17-10 TIME PLOTTED => 15:16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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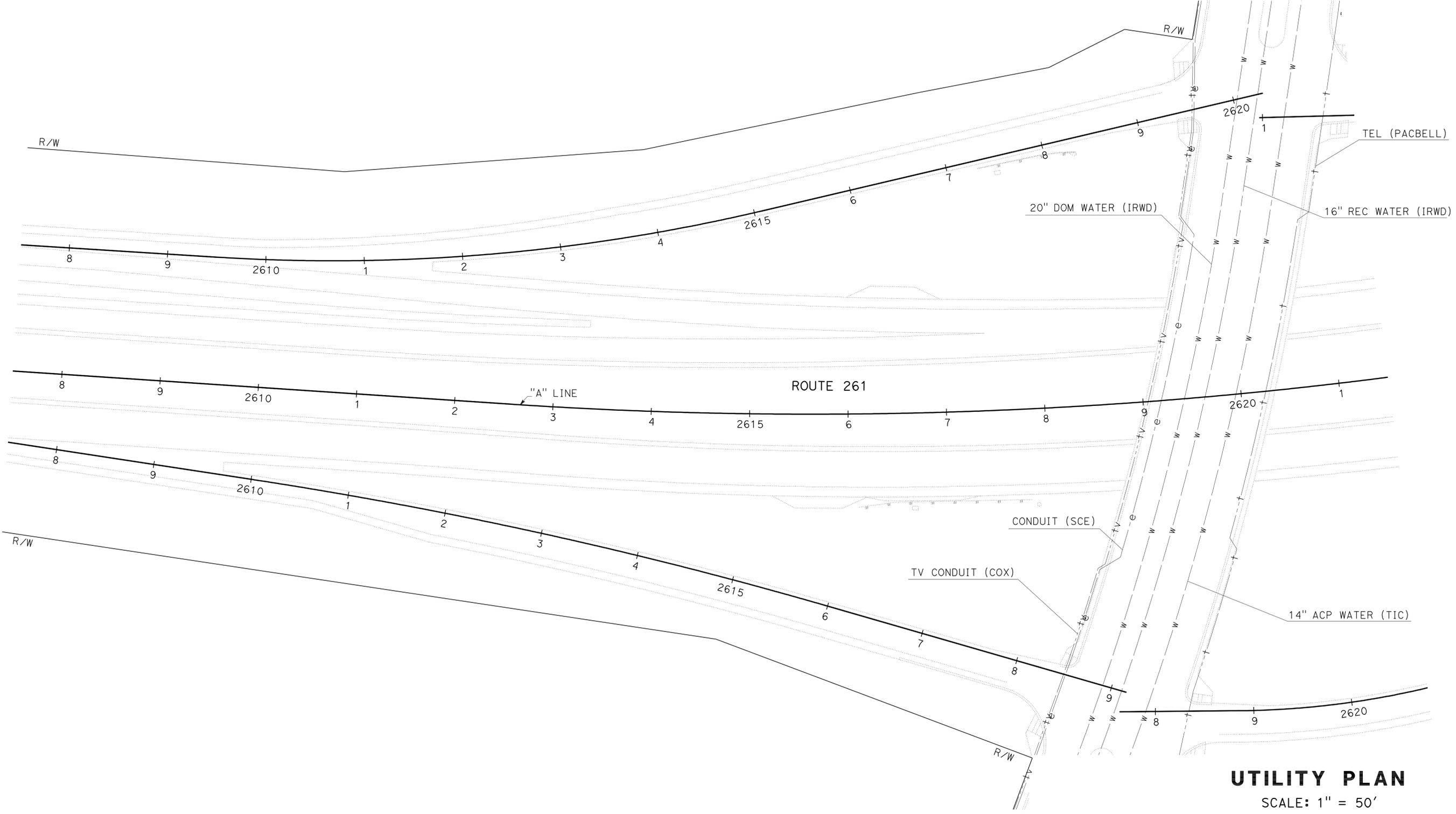
Brandon Tran 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE



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.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN DIVISION
FUNCTIONAL SUPERVISOR	CHRISTOPHER LE
CALCULATED/DESIGNED BY	CHECKED BY
BRANDON TRAN	CHRISTOPHER LE
REVISOR	DATE



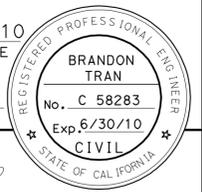
UTILITY PLAN
 SCALE: 1" = 50'

THIS PLAN ACCURATE FOR EXISTING UTILITY ONLY

U-5

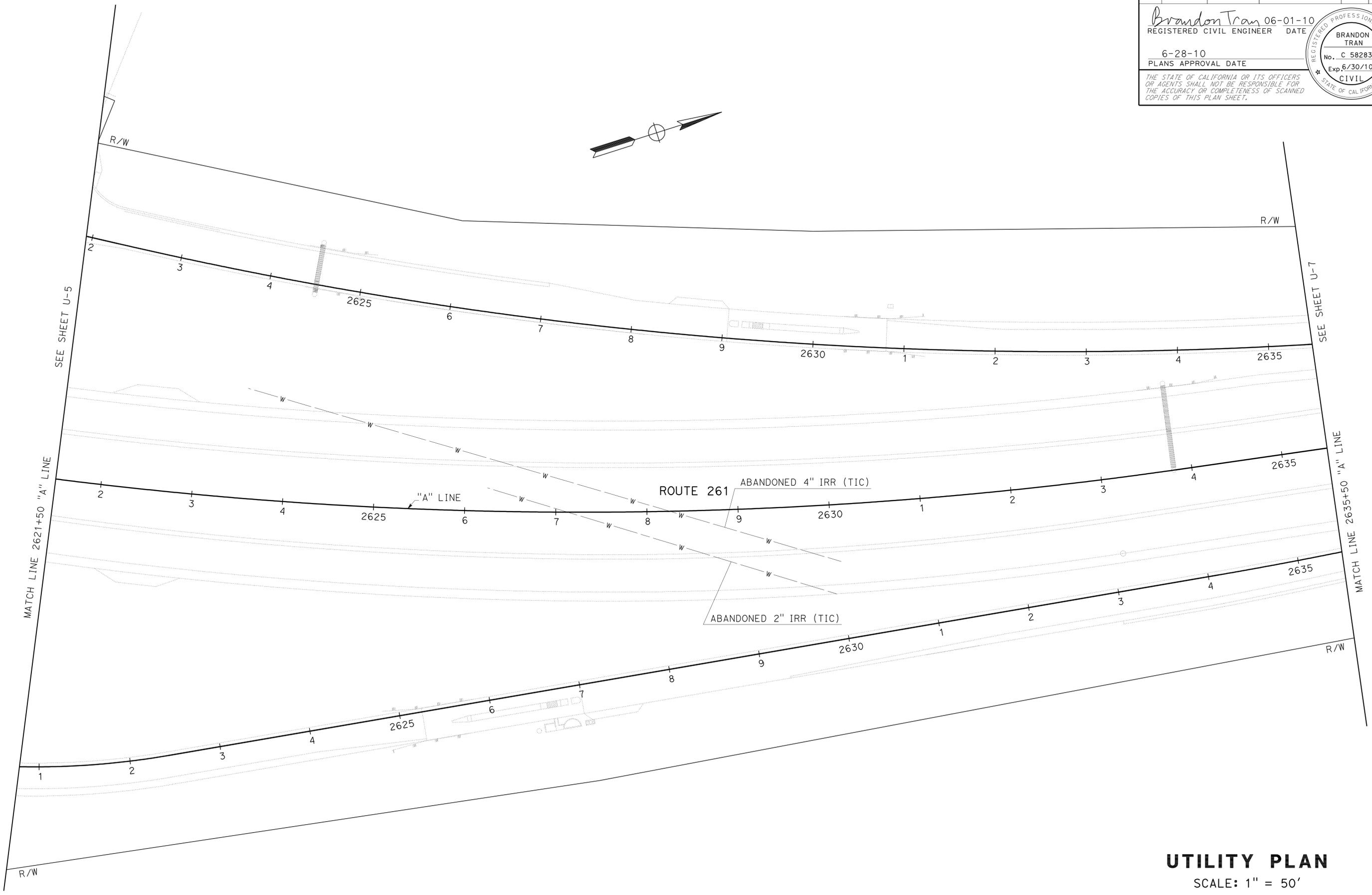
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	35	76

Brandon Tran 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE



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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN DIVISION
FUNCTIONAL SUPERVISOR	CHRISTOPHER LE
CALCULATED/DESIGNED BY	CHECKED BY
BRANDON TRAN	CHRISTOPHER LE
REVISOR	DATE



UTILITY PLAN
 SCALE: 1" = 50'

THIS PLAN ACCURATE FOR EXISTING UTILITY ONLY

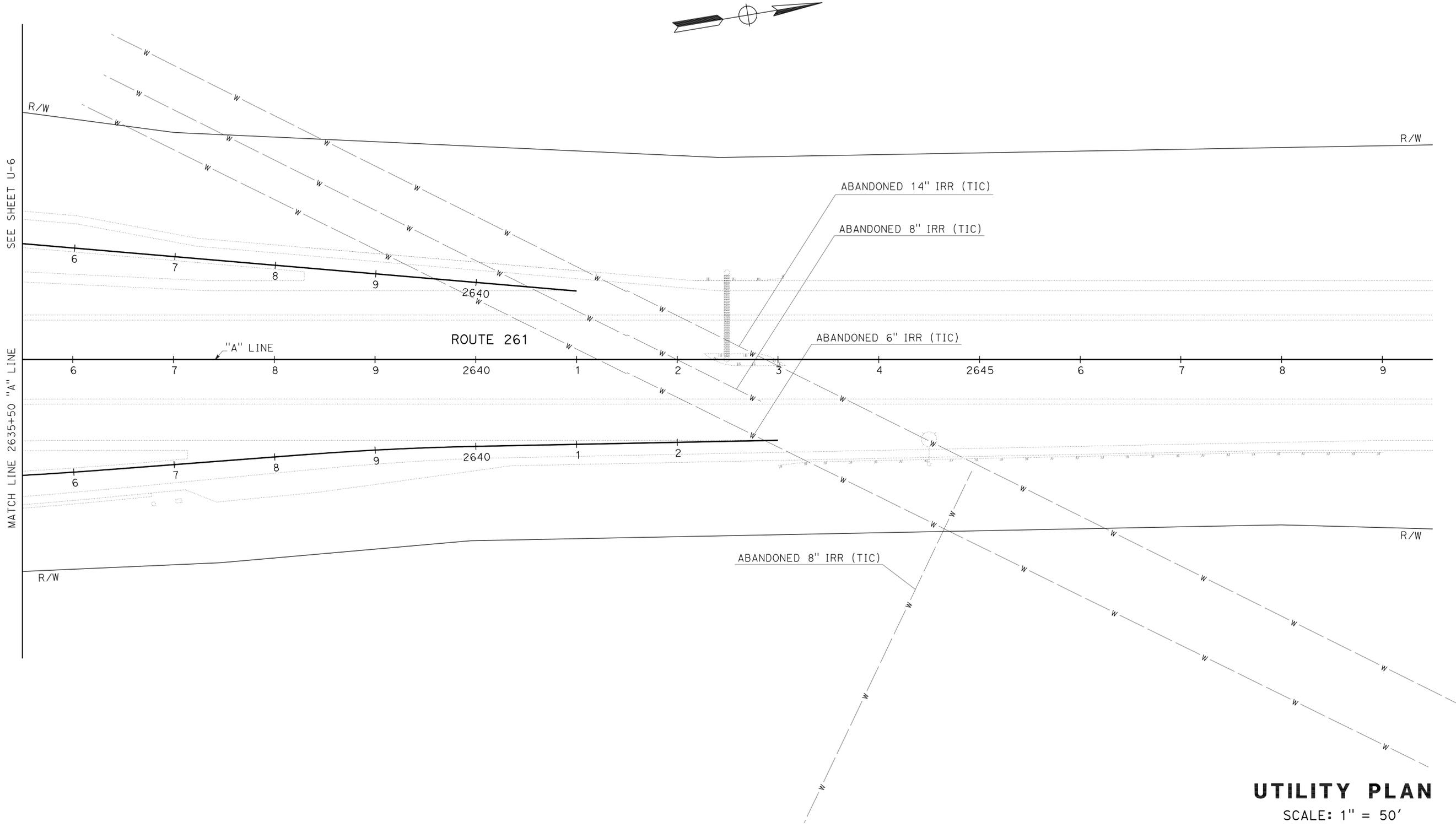
U-6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	36	76

Brandon Tran 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
BRANDON TRAN
 No. C 58283
 Exp. 6/30/10
 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.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN DIVISION
 FUNCTIONAL SUPERVISOR
 CHRISTOPHER LE
 CALCULATED/DESIGNED BY
 CHECKED BY
 BRANDON TRAN
 CHRISTOPHER LE
 REVISED BY
 DATE REVISED

THIS PLAN ACCURATE FOR EXISTING UTILITY ONLY

UTILITY PLAN
SCALE: 1" = 50'

U-7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	37	76

Brandon Tran 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 BRANDON TRAN
 No. C 58283
 Exp. 6/30/10
 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.

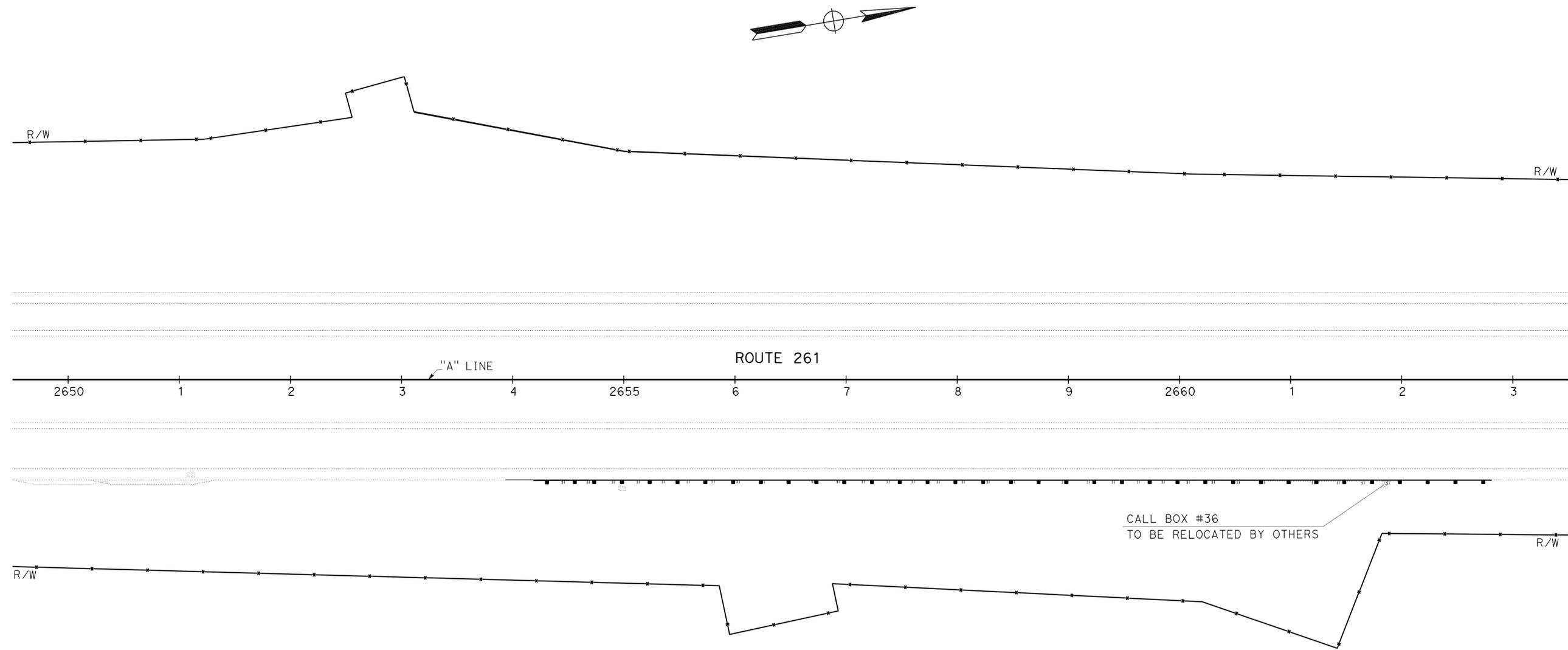
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN DIVISION

FUNCTIONAL SUPERVISOR
 CHRISTOPHER LE

CALCULATED/DESIGNED BY
 CHECKED BY

BRANDON TRAN
 CHRISTOPHER LE

REVISED BY
 DATE REVISED



UTILITY PLAN
 SCALE: 1" = 50'

THIS PLAN ACCURATE FOR EXISTING UTILITY ONLY

U-8

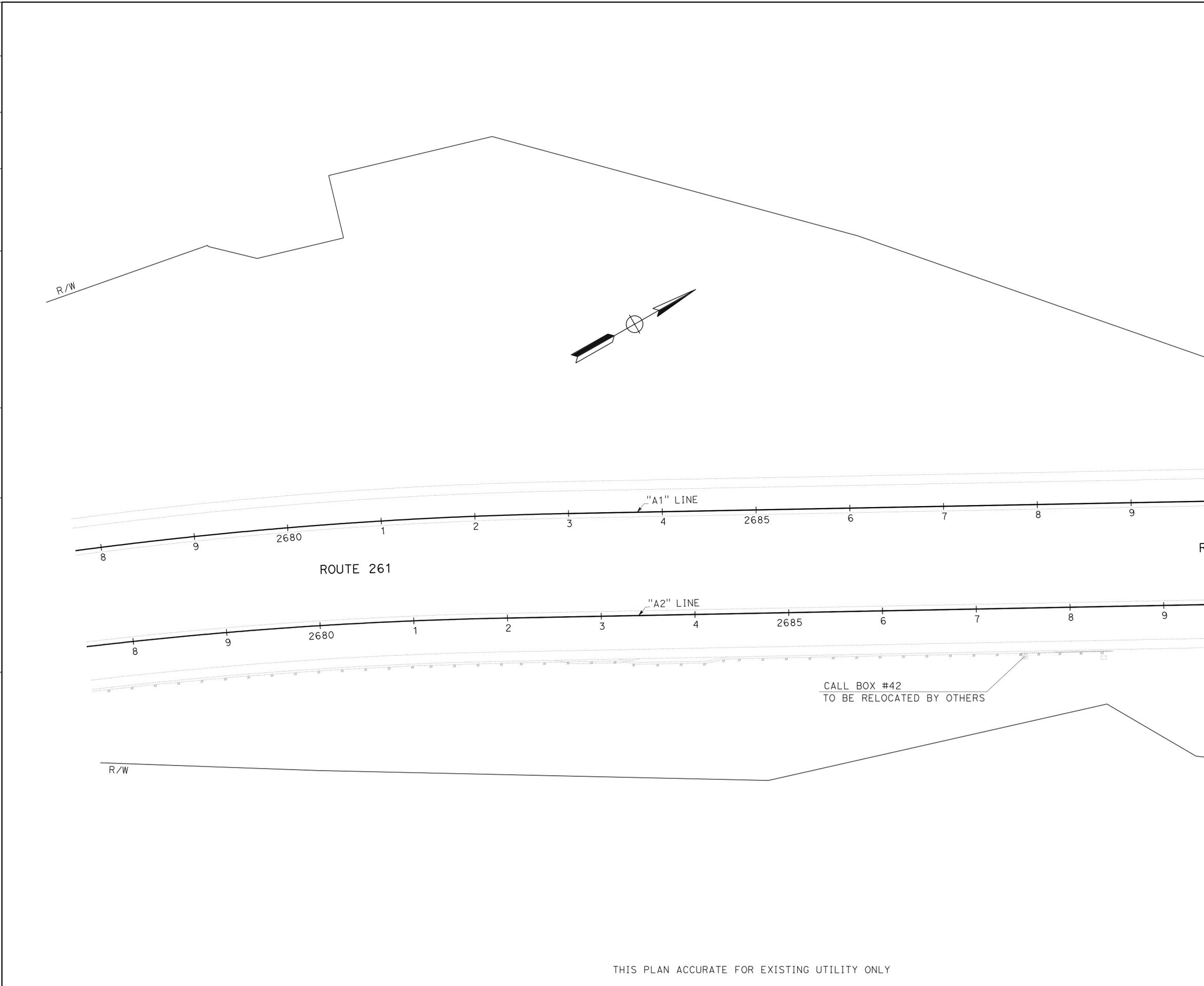
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	38	76

Brandon Tran 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 BRANDON TRAN
 No. C 58283
 Exp. 6/30/10
 CIVIL
 STATE OF CALIFORNIA

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN DIVISION



REVISED BY: _____ DATE: _____
 BRANDON TRAN
 CHRISTOPHER LE
 CALCULATED/DESIGNED BY: _____ CHECKED BY: _____
 FUNCTIONAL SUPERVISOR: CHRISTOPHER LE
 DEPARTMENT OF TRANSPORTATION DESIGN DIVISION

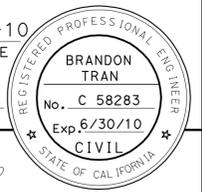
UTILITY PLAN
 SCALE: 1" = 50'

THIS PLAN ACCURATE FOR EXISTING UTILITY ONLY

U-9

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	40	76

Brandon Tran 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN DIVISION	FUNCTIONAL SUPERVISOR	CHRISTOPHER LE	CALCULATED/DESIGNED BY	CHECKED BY	BRANDON TRAN	CHRISTOPHER LE	REVISOR	DATE
Caltrans									



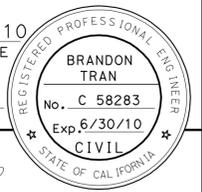
UTILITY PLAN
SCALE: 1" = 50'

U-11

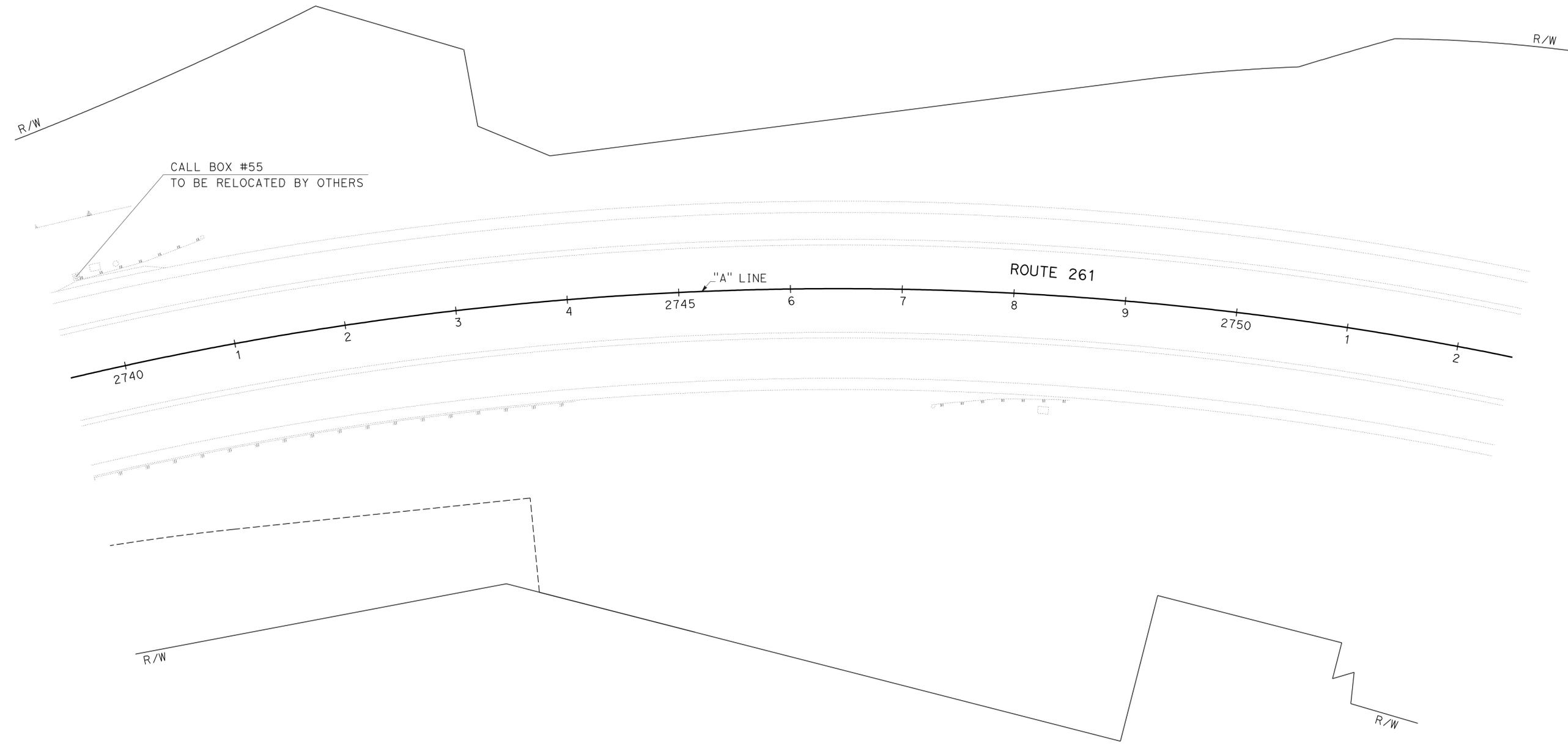
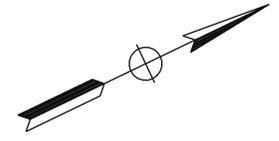
THIS PLAN ACCURATE FOR EXISTING UTILITY ONLY

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12	Ora	261	0.0/6.2	41	76

Brandon Tran 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE



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Caltrans DESIGN DIVISION
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 CALCULATED/DESIGNED BY: CHECKED BY:
 BRANDON TRAN
 CHRISTOPHER LE
 REVISED BY: DATE: REVISOR: DATE:

UTILITY PLAN
SCALE: 1" = 50'

THIS PLAN ACCURATE FOR EXISTING UTILITY ONLY

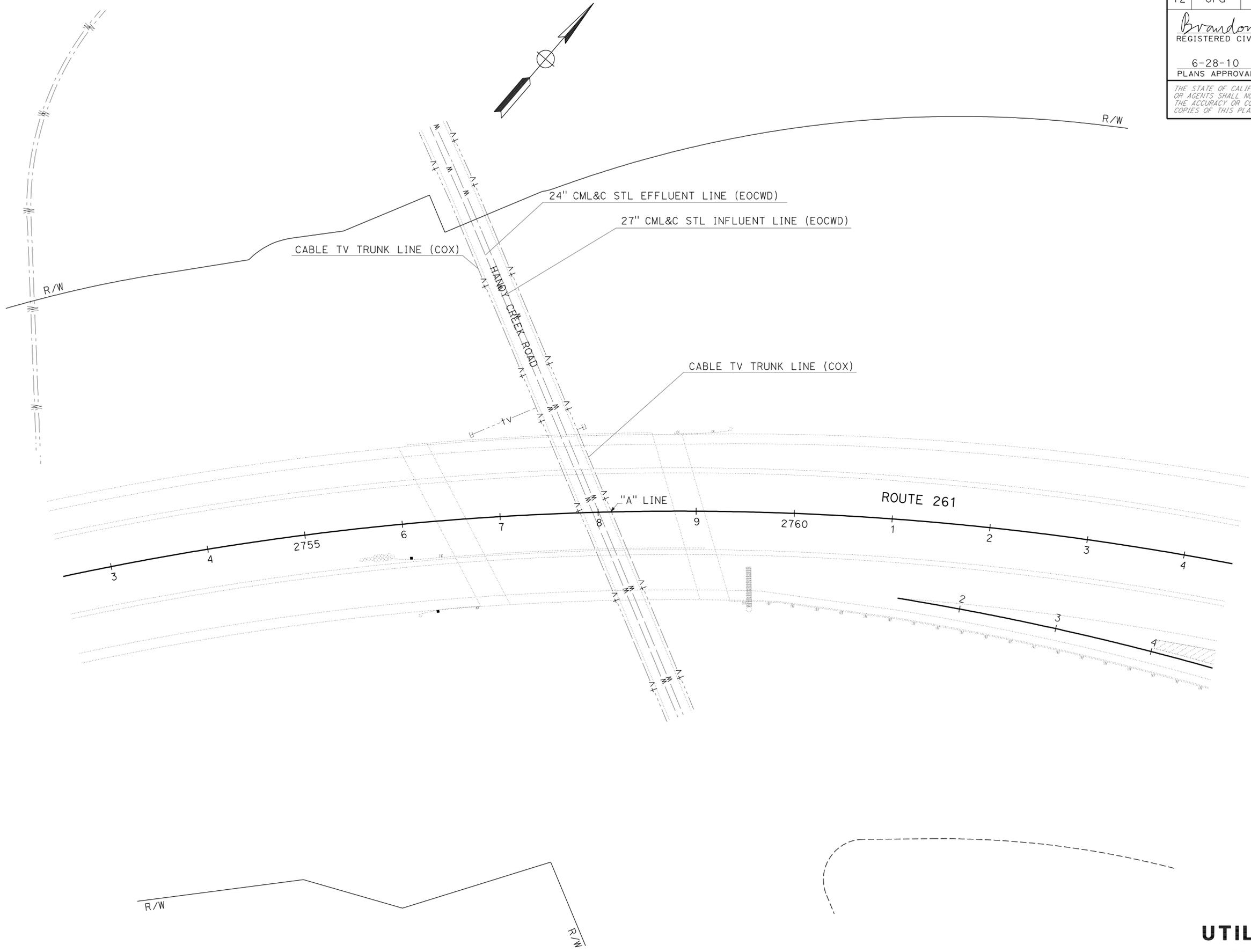
U-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	42	76

Brandon Tran 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 BRANDON TRAN
 No. C 58283
 Exp. 6/30/10
 CIVIL
 STATE OF CALIFORNIA

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN DIVISION
FUNCTIONAL SUPERVISOR	CHRISTOPHER LE
CALCULATED/DESIGNED BY	CHECKED BY
BRANDON TRAN	CHRISTOPHER LE
REVISED BY	DATE REVISED

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES

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DGN FILE => c01500ka013.dgn

CU 12236

EA 0L5001

UTILITY PLAN

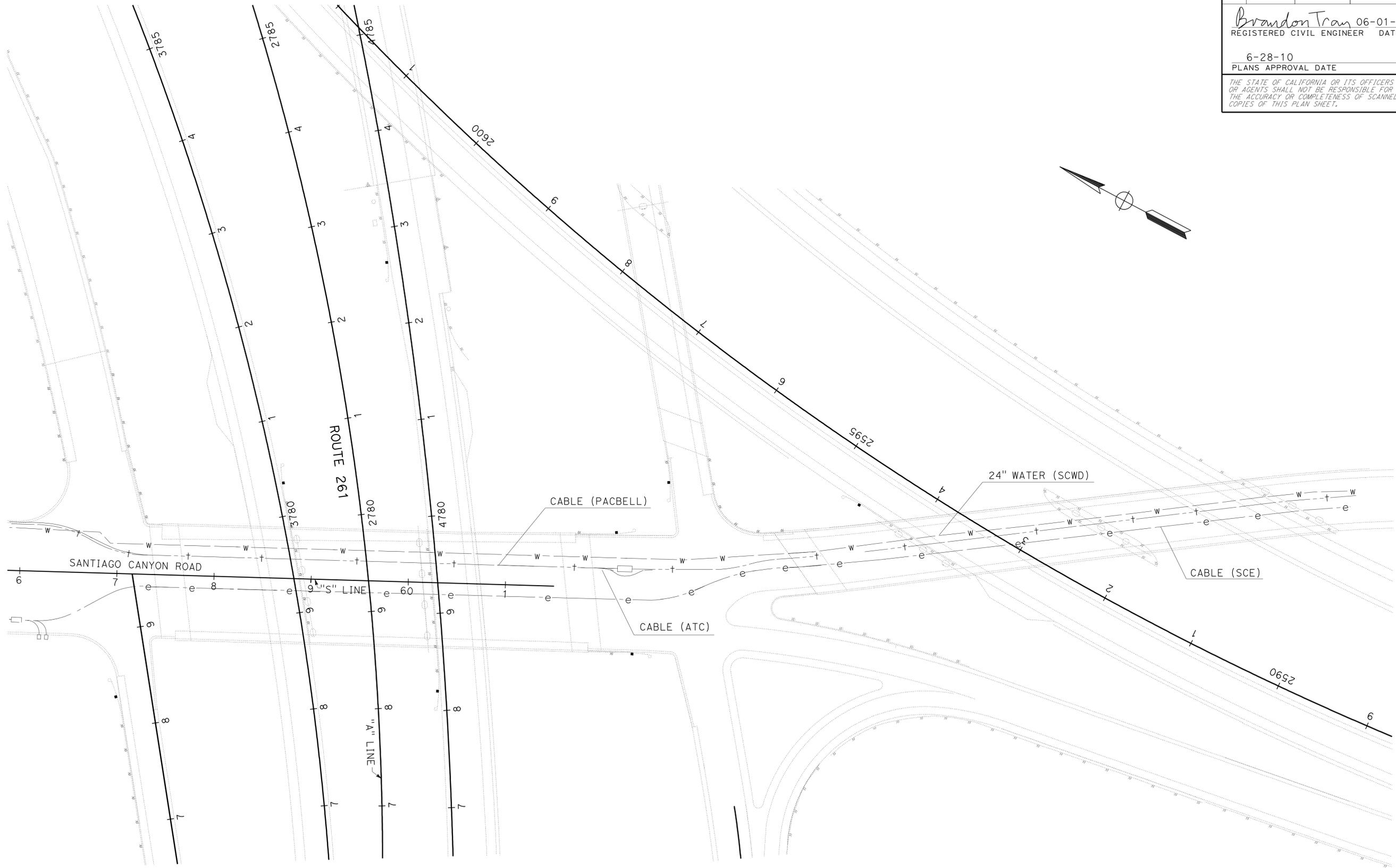
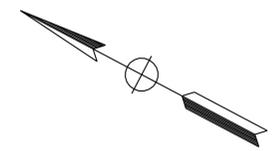
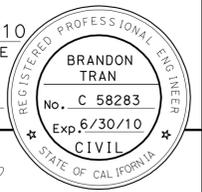
SCALE: 1" = 50'

U-13

LAST REVISION | DATE PLOTTED => 28-JUN-2010
 03-18-10 | TIME PLOTTED => 15:17

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	261	0.0/6.2	43	76

Brandon Tran 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	BRANDON TRAN	REVISOR BY	
Caltrans DESIGN DIVISION	CHRISTOPHER LE	CHECKED BY	CHRISTOPHER LE	DATE REVISED	

UTILITY PLAN
SCALE: 1" = 50'

THIS PLAN ACCURATE FOR EXISTING UTILITY ONLY

U-14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G

FUNCTIONAL SUPERVISOR	SUSAN YEE
CALCULATED/DESIGNED BY	CHECKED BY
SALIM KHAFFAJI	KIMBERLY NGUYEN
REVISED BY	DATE

NOTE:
 SIGN LOCATION SHOWN ARE APPROXIMATE,
 EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED SIGNS)

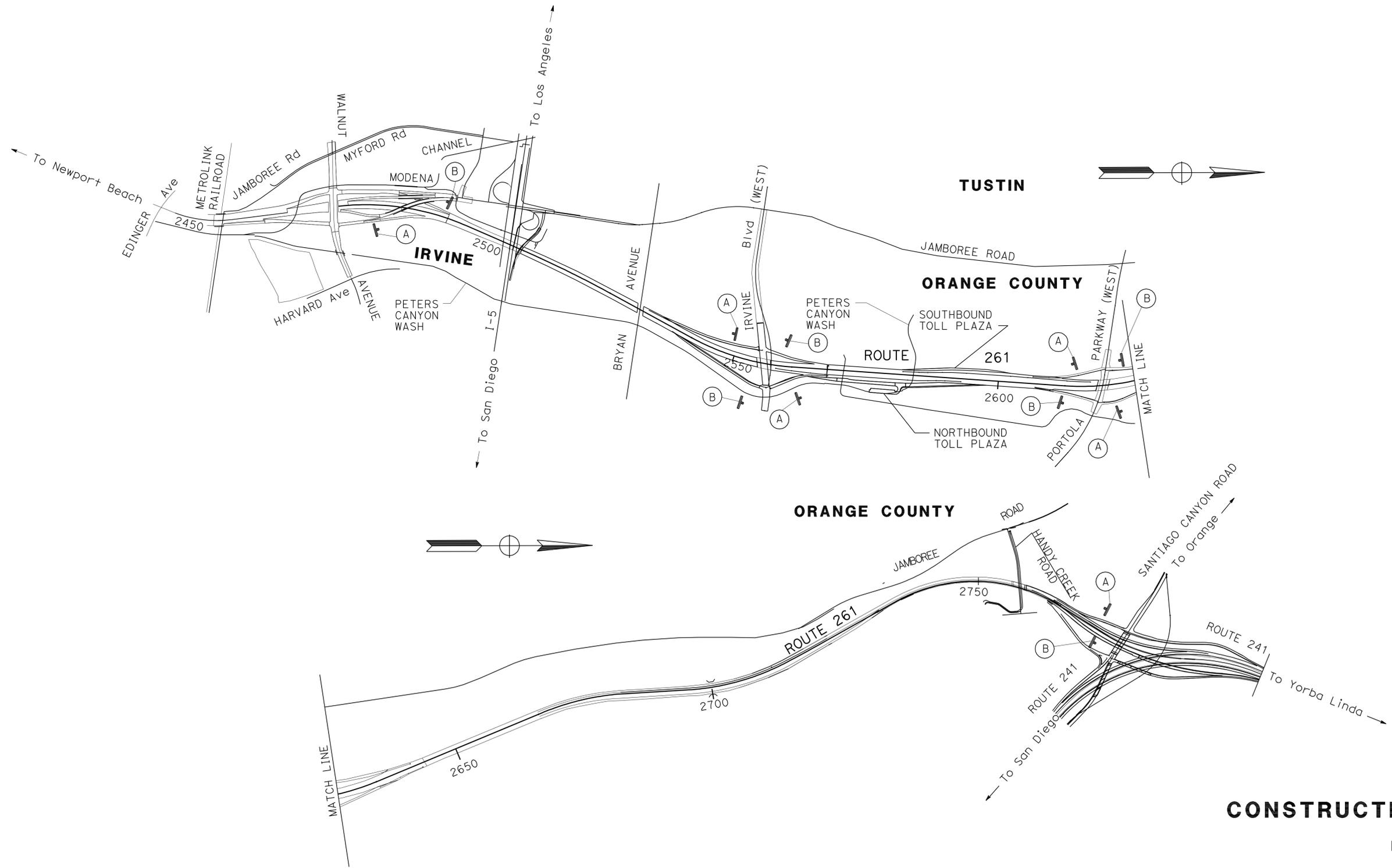
	TYPE	PANEL SIZE	SIGN MESSAGE	No. OF POST AND SIZES	QUANTITY (EA)
(A)	W20-1	36" x 36"	ROAD WORK AHEAD	(1) 4" x 6"	6
(B)	G20-2	18" x 36"	END ROAD WORK	(1) 4" x 4"	6
PCMS			DETERMINED BY ENGINEER		10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	261	0.0/6.2	44	76

REGISTERED CIVIL ENGINEER DATE 06-01-10
 6-28-10
 PLANS APPROVAL DATE

KIMBERLY NGUYEN
 No. C. 64577
 Exp. 6/30/11
 CIVIL

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CONSTRUCTION AREA SIGNS
 NO SCALE
CS-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Orca	261	0.0/6.2	45	76

06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE

KIMBERLY NGUYEN
 No. C 64577
 Exp. 6/30/11
 CIVIL

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METAL BEAM GUARD RAILING (WOOD POST)

SHEET No.	STATION LIMITS	ALTERNATIVE TERMINAL SYSTEM		CRASH CUSHION (TYPE CAT)	METAL BEAM GUARD RAILING (WOOD POST)			TRANSITION RAILING (TYPE WB)	GUARD RAILING DELINEATOR	END CAP (TYPE A)	END ANCHOR ASSEMBLY (TYPE SFT)	END CAP (TYPE TC)	REMOVE	
		FLARED	IN-LINE		DOUBLE MBGR	MBGR	THRIE BEAM						MBGR	CRASH CUSHION (SAND FILLED)
		EA	EA		LF	LF	LF						EA	EA
L-1	2468+00 "A" TO 2481+50 "A"	3		1	50	25		3	18			3	225	
L-2	2481+50 "A" TO 2495+50 "A"	2		1	50	944.5	137.5	2	46	1	6	2	475	
L-3	2495+50 "A" TO 2509+50 "A"	1		2	50	996.5			46		2		175	
L-4	2509+50 "A" TO 2523+50 "A"	1		2	50	300			18		3		122	
L-5	2523+50 "A" TO 2537+50 "A"	1		4	100	537.5			32		5		143	
L-6	2537+50 "A" TO 2551+50 "A"	2		2	50	149.4			14		3		150	
L-7	2551+50 "A" TO 2565+50 "A"	4		2	50	813.1			43		7		802.5	
L-8	2565+50 "A" TO 2579+50 "A"	1		2	50	312.5			19		5		306.5	
L-9	2579+50 "A" TO 2593+50 "A"	1				87.5			5		1		125	
L-10	2593+50 "A" TO 2607+50 "A"			2	50	325			18		5		387.5	
L-11	2607+50 "A" TO 2621+50 "A"	1		2	50	512.5			27		3		175	
L-12	2621+50 "A" TO 2635+50 "A"	3		2	50	212.5			18		4		225	
L-13	2635+50 "A" TO 2649+50 "A"	1	1	2	50	825			41		5		825	
L-14	2649+50 "A" TO 2663+50 "A"		1			812.5			35		1		800	
L-15	2663+50 "A" TO 2675+50 "A2"		1			605.5	75		30		1		730.5	
L-16	2675+50 "A2" TO 2691+50 "A2"					1107			45		1		1107	
L-17	2691+50 "A2" TO 2705+50 "A2"	2	1			225	100	4	22		1	4	675	
L-18	2705+50 "A2" TO 2719+50 "A2"						425		17		2		415	
L-19	2719+50 "A2" TO 2725+50 "A"	1				425			19				425	
L-20	2725+50 "A" TO 2739+50 "A"	2				204.5			12		1		229.5	
L-21	2739+50 "A" TO 2752+50 "A"	1				495.5			22		2		508	
L-22	2752+50 "A" TO 2764+50 "A"	1	1	1	75	523		3	32	1		2	698	1
L-23	2764+50 "A" TO 2776+50 "A"	2				1600.9			67		3		1675.9	
L-24	2776+50 "A" TO 2789+50 "A"	3	1			350		1	22		3	1	550	
L-25	61+50 "S" TO 86+00 "R"	2				314.5		3	19	1	2	3	517.5	
SUB-TOTAL		35	6	25	725	12704.4	737.5	16	687	3	66	15	12467.9	
TOTAL		35	6	25	14166.9			16	687	3	66	15	12467.9	1

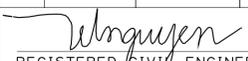
SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G
 FUNCTIONAL SUPERVISOR SUSAN YEE
 CALCULATED/DESIGNED BY CHECKED BY
 KIMBERLY NGUYEN SUSAN YEE
 REVISED BY DATE REVISED
 KIMBERLY NGUYEN



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Orca	261	0.0/6.2	46	76

 06-01-10
 REGISTERED CIVIL ENGINEER DATE
 6-28-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 KIMBERLY NGUYEN
 No. C 64577
 Exp. 6/30/11
 CIVIL
 STATE OF CALIFORNIA

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CONCRETE BARRIER AND ANCHOR BLOCK

SHEET No.	STATION LIMITS	CONCRETE BARRIER (TYPE 60)	MINOR CONCRETE (MINOR STRUCTURE) (ANCHOR BLOCK)
		LF	CY
L-1	2468+00 "A" TO 2481+50 "A"	95	1.83
L-2	2481+50 "A" TO 2495+50 "A"	190	1.22
L-17	2691+50 "A2" TO 2705+50 "A2"		3.85
L-22	2752+50 "A" TO 2764+50 "A"		1.83
L-24	2776+50 "A" TO 2789+50 "A"		2.02
L-25	61+50 "S" TO 86+00 "R"		1.83
TOTAL		285	12.58

REMOVE AC DIKE

SHEET No.	STATION LIMITS	REMOVE AC DIKE
		LF
L-1	2468+00 "A" TO 2481+50 "A"	30
L-2	2481+50 "A" TO 2495+50 "A"	150
L-8	2565+50 "A" TO 2579+50 "A"	20
L-10	2593+50 "A" TO 2607+50 "A"	75
L-12	2621+50 "A" TO 2635+50 "A"	25
L-13	2635+50 "A" TO 2649+50 "A"	725
L-14	2649+50 "A" TO 2663+50 "A"	837.5
L-15	2663+50 "A" TO 2675+50 "A2"	780.5
L-16	2675+50 "A2" TO 2691+50 "A2"	1107
L-17	2691+50 "A2" TO 2705+50 "A2"	119
L-18	2705+50 "A2" TO 2719+50 "A2"	475
L-19	2719+50 "A2" TO 2725+50 "A"	412.5
L-20	2725+50 "A" TO 2739+50 "A"	167
L-21	2739+50 "A" TO 2752+50 "A"	433
L-22	2752+50 "A" TO 2764+50 "A"	585.5
L-23	2764+50 "A" TO 2776+50 "A"	1725.9
L-25	61+50 "S" TO 86+00 "R"	306
TOTAL		7973.9

HOT MIX ASPHALT

SHEET No.	STATION LIMITS	PLACE HOT MIX ASPHALT DIKE		PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)	HMA (TYPE A)	REMOVE AC
		(TYPE C)	(TYPE F)			
		LF	LF	SQYD	TON	SQYD
L-1	2468+00 "A" TO 2481+50 "A"	30			0.23	
L-2	2481+50 "A" TO 2495+50 "A"	75	75		1.57	
L-8	2565+50 "A" TO 2579+50 "A"		20		0.27	
L-10	2593+50 "A" TO 2607+50 "A"	37.5	37.5		0.79	
L-12	2621+50 "A" TO 2635+50 "A"	25			0.19	
L-13	2635+50 "A" TO 2649+50 "A"	175	550		8.70	
L-14	2649+50 "A" TO 2663+50 "A"	75	762.5		10.77	
L-15	2663+50 "A" TO 2675+50 "A2"	137.5	643		9.65	
L-16	2675+50 "A2" TO 2691+50 "A2"		1107		14.80	
L-17	2691+50 "A2" TO 2705+50 "A2"	62.5	56.5		1.24	
L-18	2705+50 "A2" TO 2719+50 "A2"	125	350		5.64	
L-19	2719+50 "A2" TO 2725+50 "A"	62.5	350		5.16	
L-20	2725+50 "A" TO 2739+50 "A"		167		2.23	
L-21	2739+50 "A" TO 2752+50 "A"		433		5.79	
L-22	2752+50 "A" TO 2764+50 "A"	62.5	523		7.47	
L-23	2764+50 "A" TO 2776+50 "A"	125	1600.9	30.49	29.22	30.49
L-25	61+50 "S" TO 86+00 "R"	132	174		3.34	
TOTAL		1124.5	6849.4	30.49	107.06	30.49

SUMMARY OF QUANTITIES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN BRANCH G
 FUNCTIONAL SUPERVISOR SUSAN YEE
 CALCULATED/DESIGNED BY CHECKED BY
 KIMBERLY NGUYEN SUSAN YEE
 REVISED BY DATE REVISION
 KIMBERLY NGUYEN



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	47	76

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

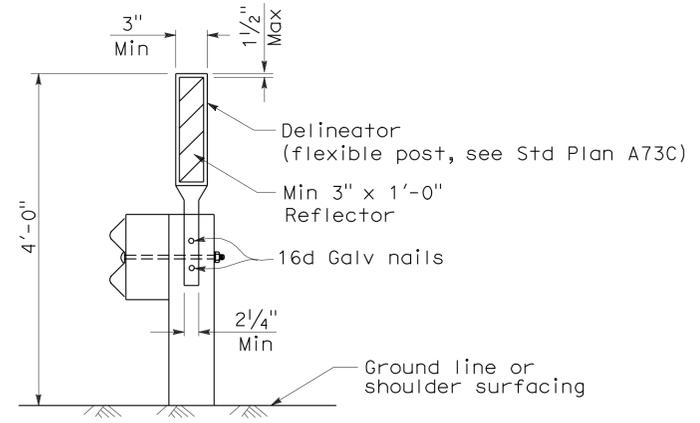
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REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

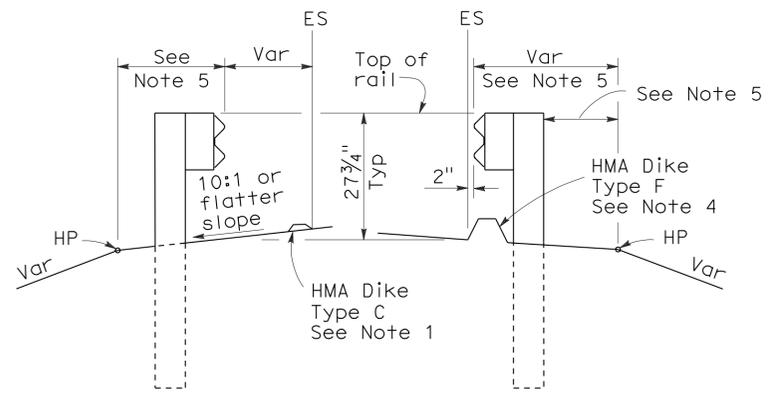
To accompany plans dated 6-28-10

NOTES:

1. When necessary to place dike in front of face of guard railing, only Type C dike may be used. For dike details, see Standard Plan A87B.
2. For standard railing post embedment, see Standard Plans A77C3.
3. Guard railing delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under guard railing, the maximum height of the dike or curb shall be 4". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and Standard Plan A87B.
5. For details of typical distance between the face of rail and hinge point, see Standard Plan A77C3.



GUARD RAILING DELINEATION
See Note 3



DIKE POSITIONING
See Note 1

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL RAILING DELINEATION
AND DIKE POSITIONING DETAILS**

NO SCALE

RSP A77C4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77C4
DATED MAY 1, 2006 - PAGE 47 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77C4

2006 REVISED STANDARD PLAN RSP A77C4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	48	76

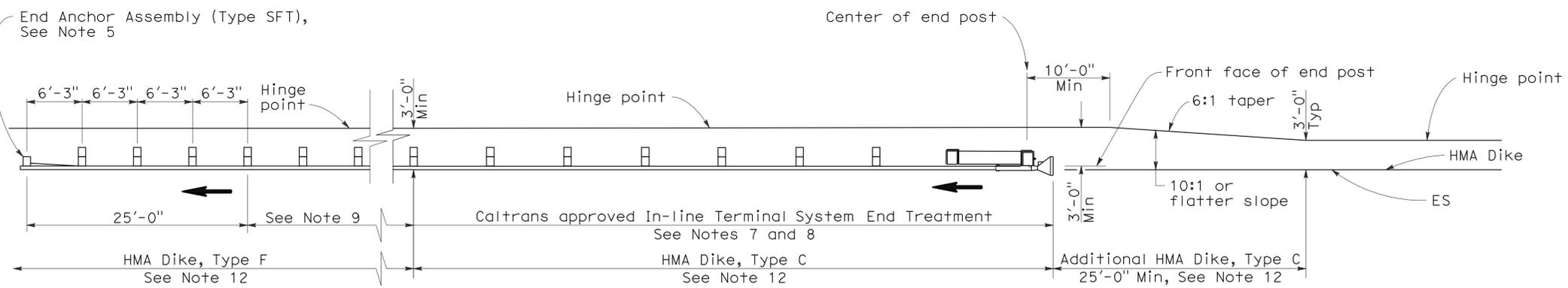
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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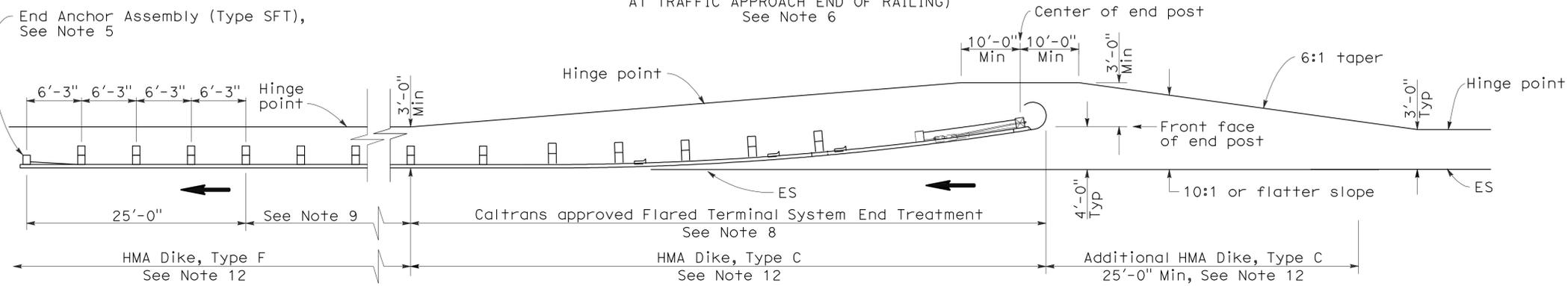
To accompany plans dated 6-28-10

2006 REVISED STANDARD PLAN RSP A77E1



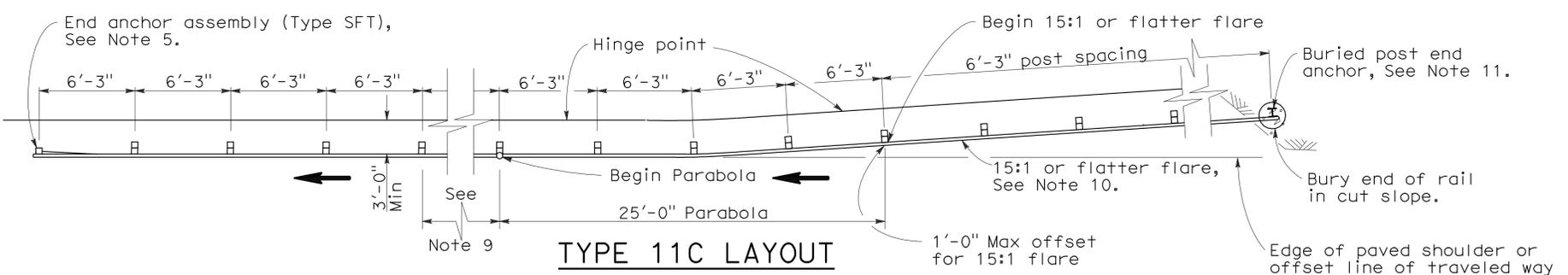
TYPE 11A LAYOUT

(EMBANKMENT GUARD INSTALLATION WITH IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Note 6



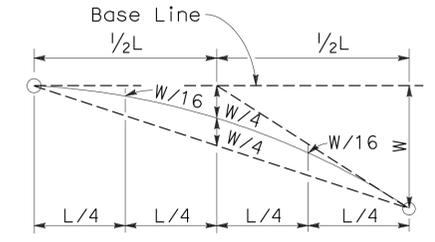
TYPE 11B LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Note 6

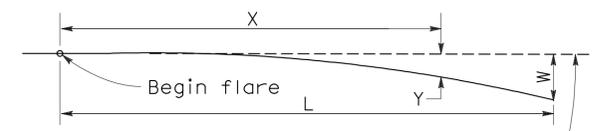


TYPE 11C LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 6 and 12



TYPICAL PARABOLIC LAYOUT

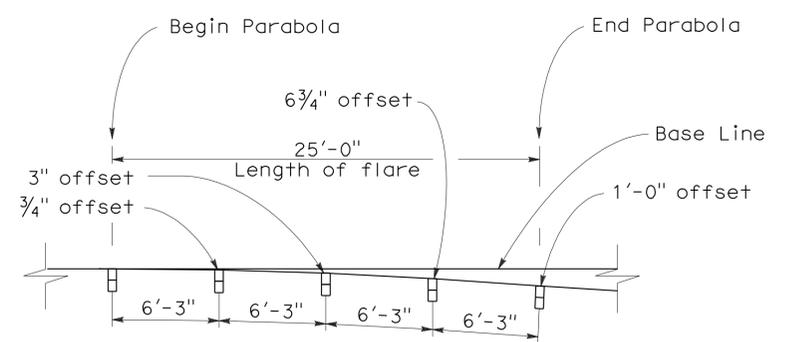


Base Line (Edge of paved shoulder or offset line of edge of traveled way)

$$Y = \frac{WX^2}{L^2}$$

Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

PARABOLIC FLARE OFFSETS



TYPICAL FLARE OFFSETS FOR 1 FOOT MAX END OFFSET

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1, and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- Layout Types 11A, 11B or 11C are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11C Layout, see Standard Plan A77I2.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
EMBANKMENTS**
NO SCALE

RSP A77E1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E1
DATED MAY 1, 2006 - PAGE 48 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77E1

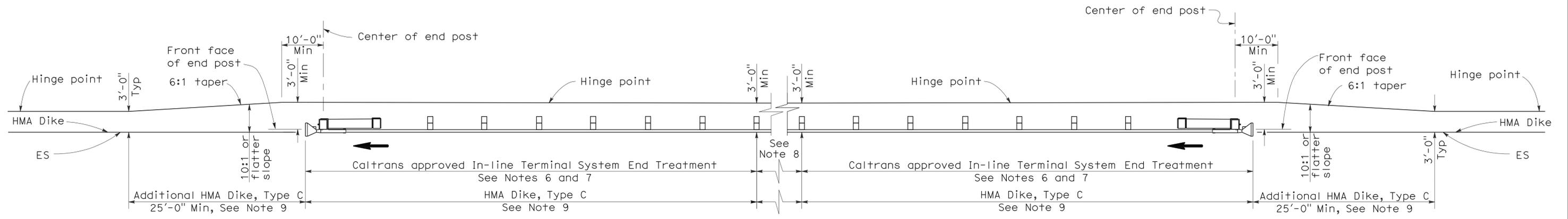
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	49	76

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

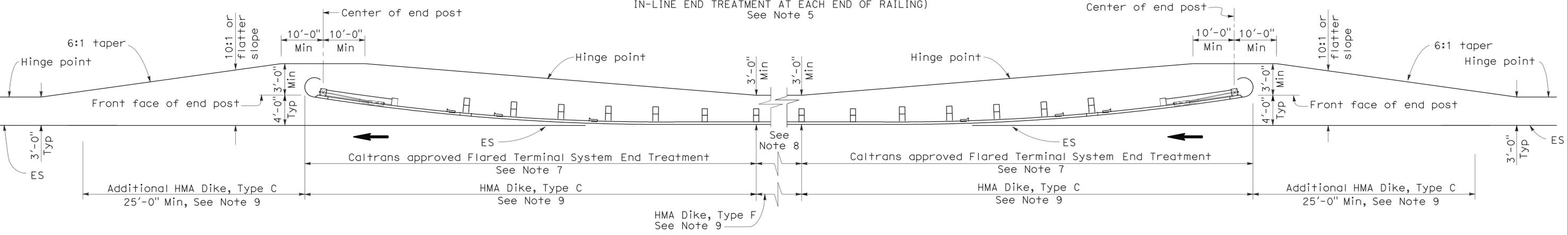
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To accompany plans dated 6-28-10



TYPE 11D LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH IN-LINE END TREATMENT AT EACH END OF RAILING)
See Note 5



TYPE 11E LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AT EACH END OF RAILING)
See Note 5

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE
RSP A77E2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E2
DATED MAY 1, 2006 - PAGE 49 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77E2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	50	76

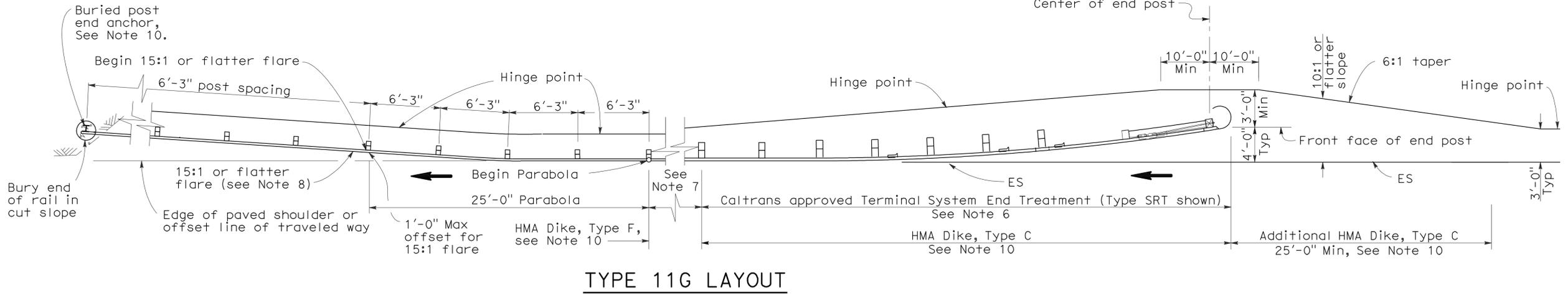
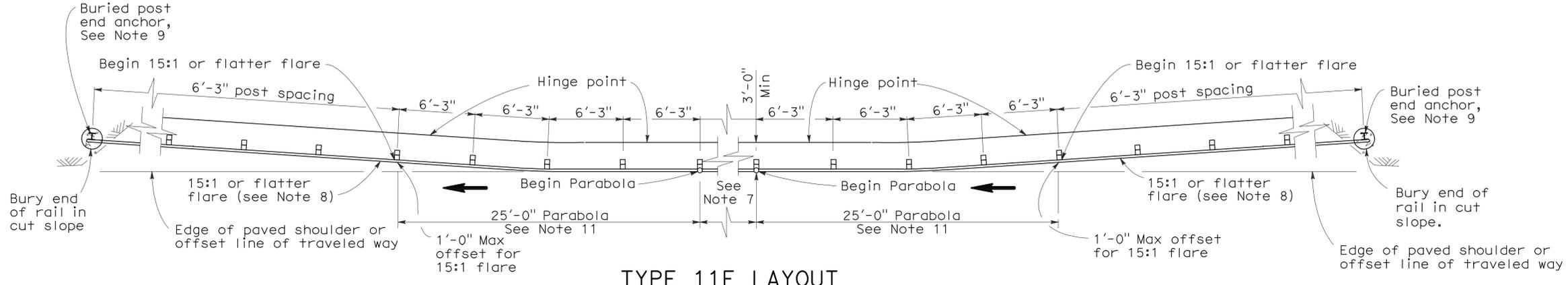
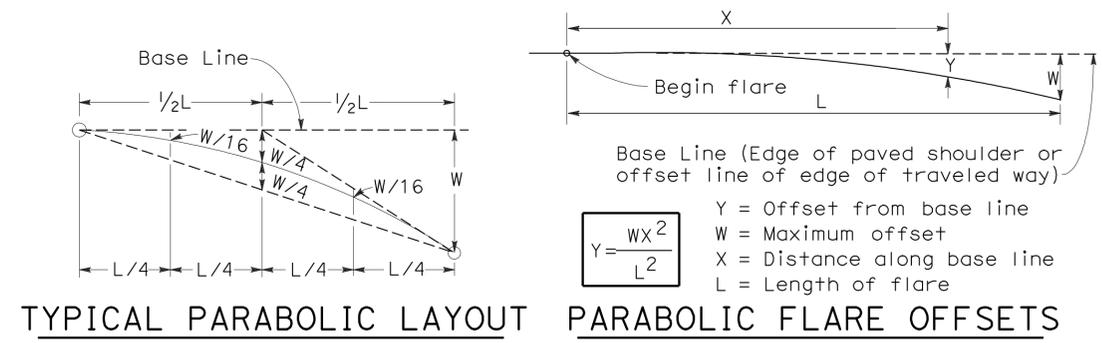
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

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 6-28-10



NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11F and 11G Layouts, see Standard Plan A77I2.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE

RSP A77E3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E3
DATED MAY 1, 2006 - PAGE 50 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77E3

2006 REVISED STANDARD PLAN RSP A77E3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	51	76

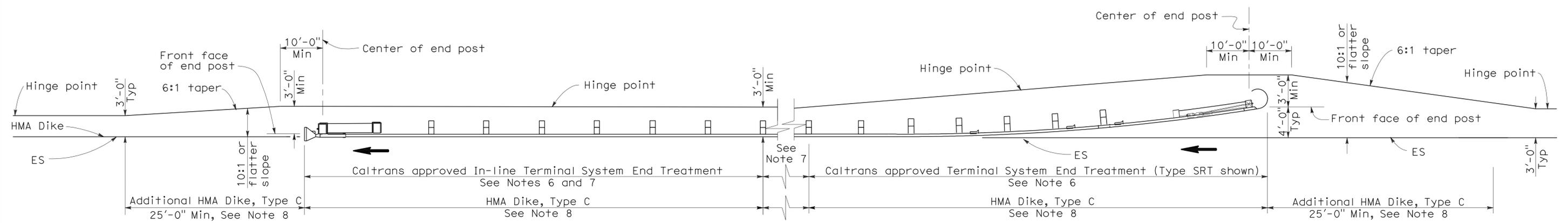
Randell D. Hiatt
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June 6, 2008
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No. C50200
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To accompany plans dated 6-28-10



TYPE 11H LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AND AN IN-LINE TREATMENT AT THE ENDS OF RAILING)
See Notes 5 and 8

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
EMBANKMENTS**
NO SCALE

RSP A77E4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E4
DATED MAY 1, 2006 - PAGE 51 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77E4

2006 REVISED STANDARD PLAN RSP A77E4

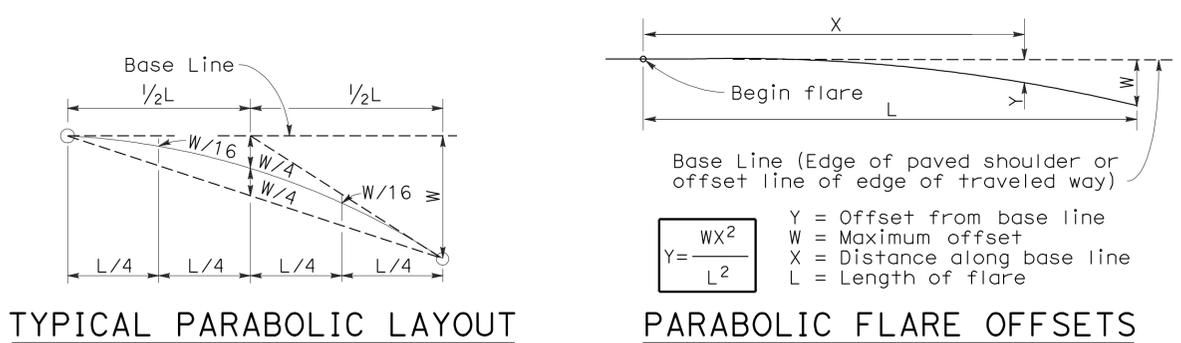
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	52	76

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

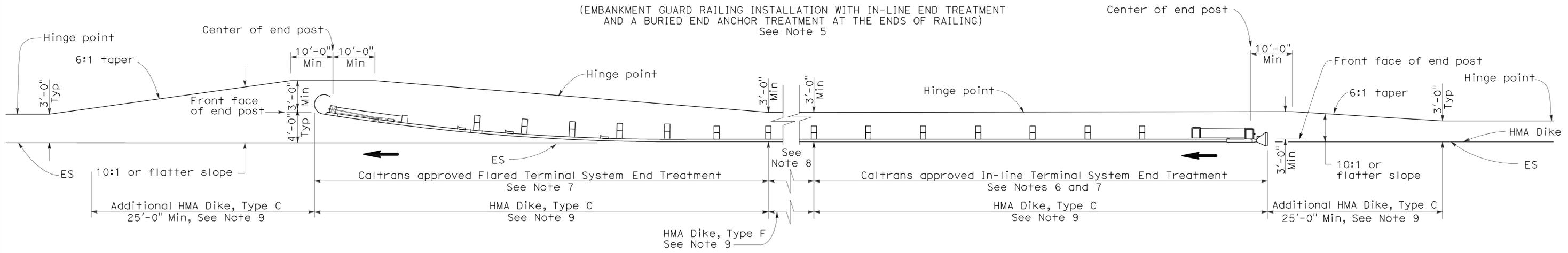
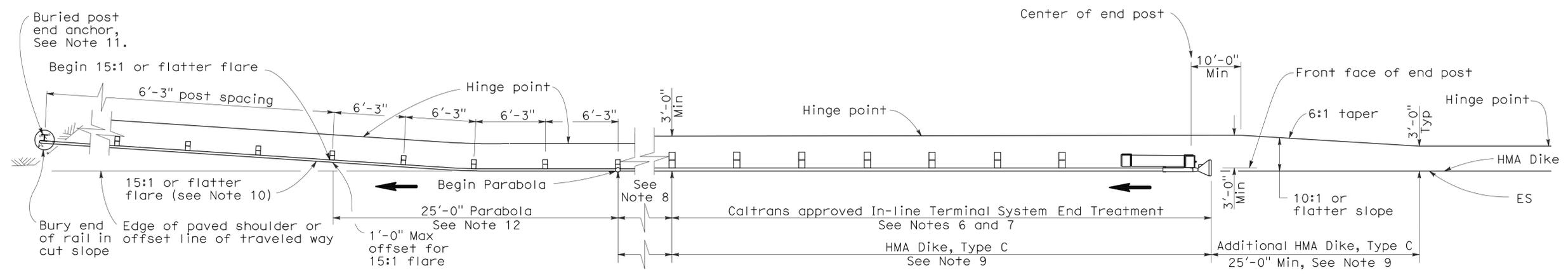
June 6, 2008
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STATE OF CALIFORNIA



To accompany plans dated 6-28-10



NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11I Layout, see Standard Plan A77I2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.

STATE OF CALIFORNIA
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**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE

RSP A77E5 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E5
DATED MAY 1, 2006 - PAGE 52 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77E5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	53	76

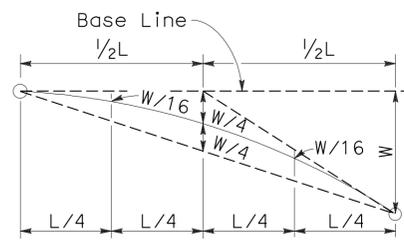
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

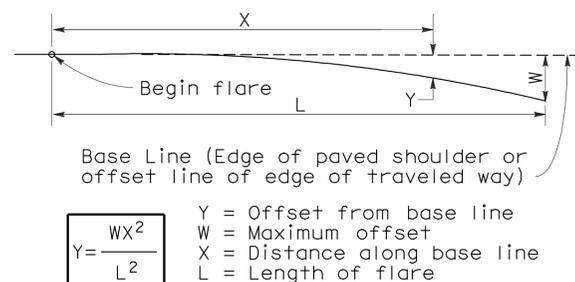
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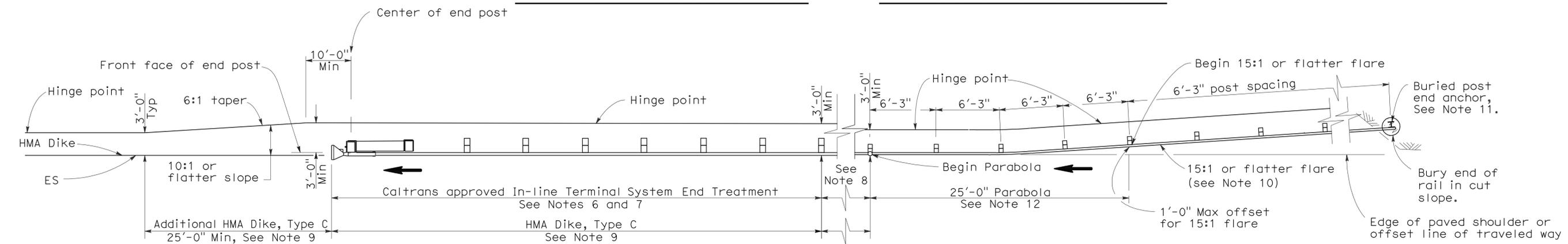
TYPICAL PARABOLIC LAYOUT



PARABOLIC FLARE OFFSETS

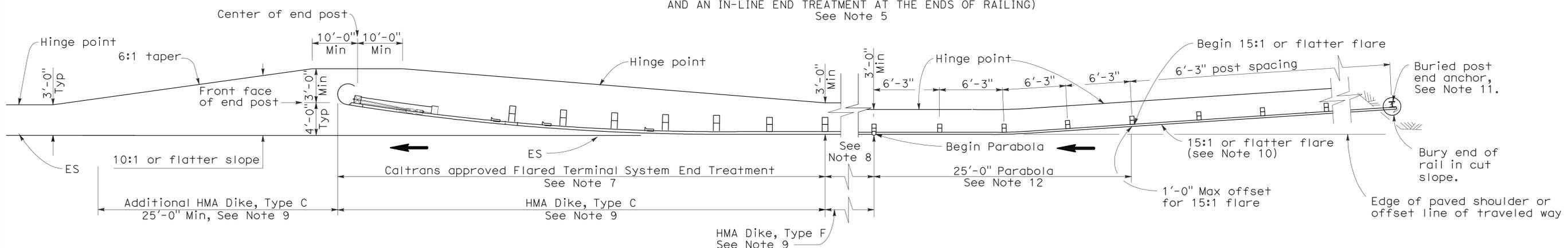
$$Y = \frac{WX^2}{L^2}$$

Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare



TYPE 11K LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH A BURIED END ANCHOR TREATMENT AND AN IN-LINE END TREATMENT AT THE ENDS OF RAILING)
See Note 5



TYPE 11L LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH A BURIED END ANCHOR TREATMENT AND A FLARED END TREATMENT AT THE ENDS OF RAILING)
See Note 5

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11K and 11L Layouts, see Standard Plan A77I2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.

STATE OF CALIFORNIA
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**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE

RSP A77E6 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E6
DATED MAY 1, 2006 - PAGE 53 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77E6

2006 REVISED STANDARD PLAN RSP A77E6

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	54	76

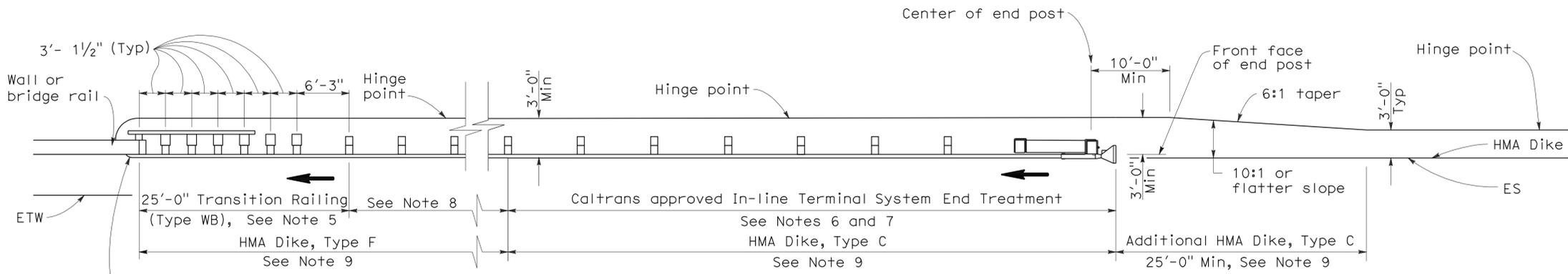
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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Exp. 6-30-09
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STATE OF CALIFORNIA

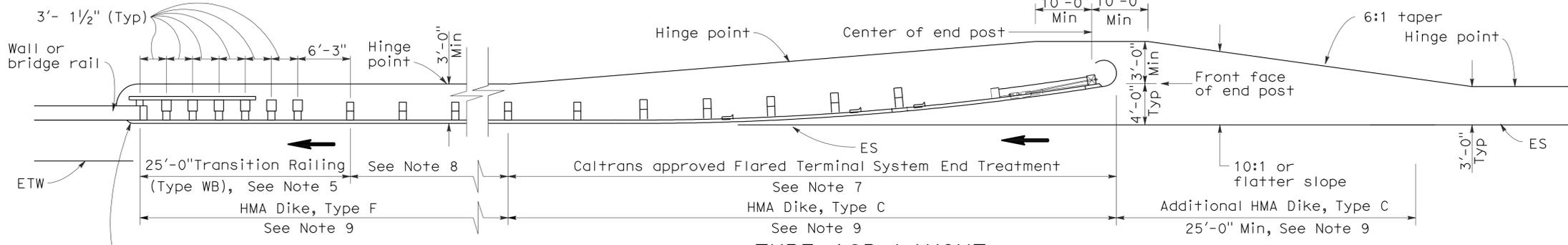
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To accompany plans dated 6-28-10



TYPE 12A LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 10



TYPE 12B LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 10

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- For Transition Railing (Type WB) details for Types 12A and 12B Layouts, see Standard Plan A77J4.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatment.

- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- Type 12A or Type 12B Layouts are typically used:
 - To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
 - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- See Revised Standard Plan RSP A77F3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.

- For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77J1 and RSP A77J2 and Connection Detail FF on Standard Plans A77K1 and A77K2.
- For additional details of a typical connection to walls or abutments, see Standard Plan A77J3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
STRUCTURE APPROACH**

NO SCALE

RSP A77F1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F1
DATED MAY 1, 2006 - PAGE 54 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77F1

2006 REVISED STANDARD PLAN RSP A77F1

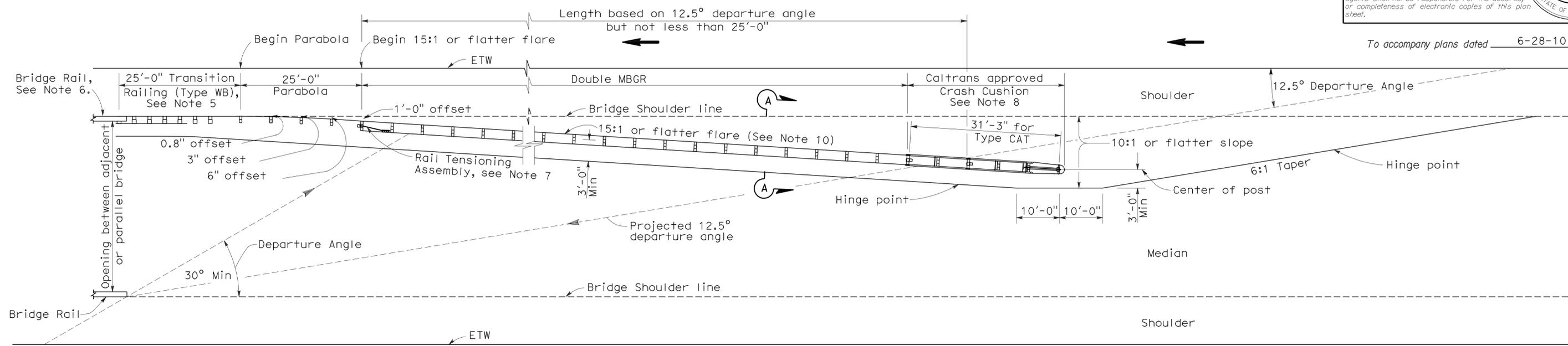
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	55	76

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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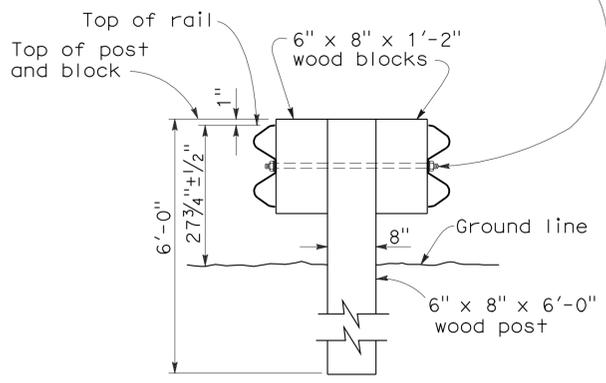
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA



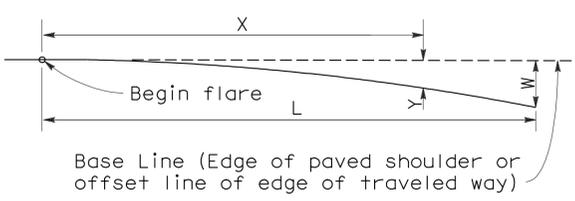
TYPE 12E LAYOUT

See Note 10

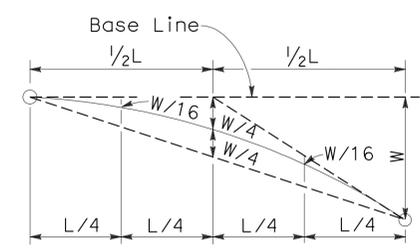
5/8" Ø Button head bolt with hex nut or 5/8" Ø Rod, threaded both ends, with hex nuts. 1/2" Max exposed threads after hex nut(s) tightened. No washer on rail faces for bolted connection to line post.



SECTION A-A
TYPICAL DOUBLE METAL BEAM GUARD RAILING



PARABOLIC FLARE OFFSETS



TYPICAL PARABOLIC LAYOUT

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- For Transition Railing (Type WB) details, see Standard Plan A77J4.
- For additional details of a typical connection to bridge rail, see Connection Detail AA on Revised Standard Plan RSP A77J1.
- For Rail Tensioning Assembly details, see Standard Plan A77H2.
- The type of Crash Cushion to be used will be shown on the Project Plans.
- Type 12E Layout is typically used left of approaching traffic at the end of each structure on multilane freeways or expressways where a median type barrier is not constructed between separated roadbeds.
- The 15:1 or flatter flare is measured off of the edge of traveled way.

STATE OF CALIFORNIA
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METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
STRUCTURE APPROACH

NO SCALE

RSP A77F3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F3
DATED MAY 1, 2006 - PAGE 56 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77F3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	56	76

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

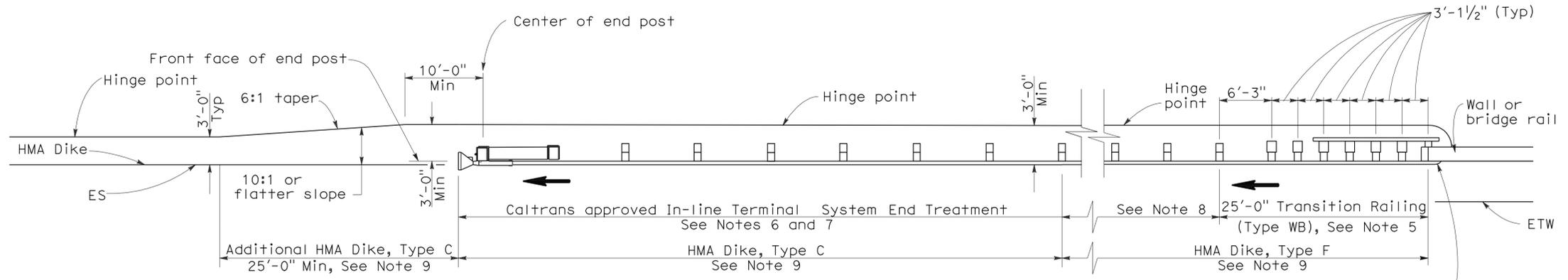
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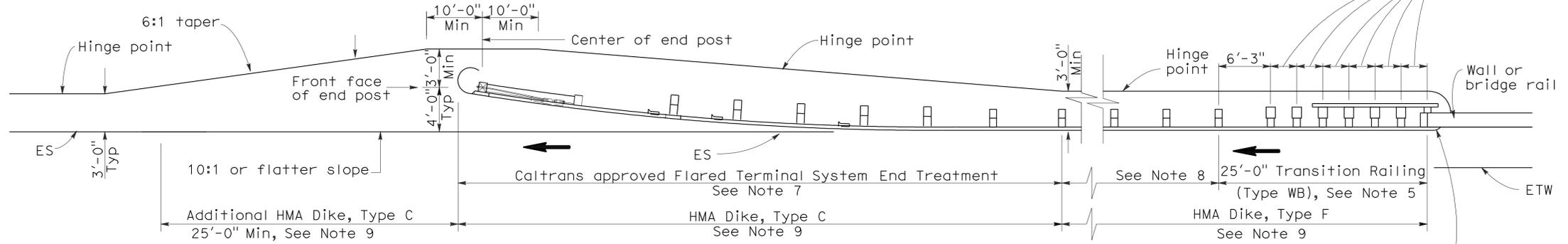
To accompany plans dated 6-28-10

2006 REVISED STANDARD PLAN RSP A77F4



TYPE 12AA LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE DEPARTURE WITH AN IN-LINE END TREATMENT AT TRAILING END OF RAILING)
See Notes 9 and 10



TYPE 12BB LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE DEPARTURE WITH A FLARED END TREATMENT AT TRAILING END OF RAILING)
See Notes 9 and 10

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- For Transition Railing (Type WB) details for Types 12AA and 12BB Layouts, see Standard Plan A77J4.
- In-line Terminal System Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatments.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- Type 12AA or Type 12BB Layouts are typically used to the right of traffic departing a structure on two-way conventional highways where the roadbed width across the structure is less than 40 feet.
- For additional details of typical connections to bridge rail, see Connection Detail CC on Revised Standard Plan RSP A77J2 and Connection Detail HH on Standard Plans A77K2.

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**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
STRUCTURE DEPARTURE**

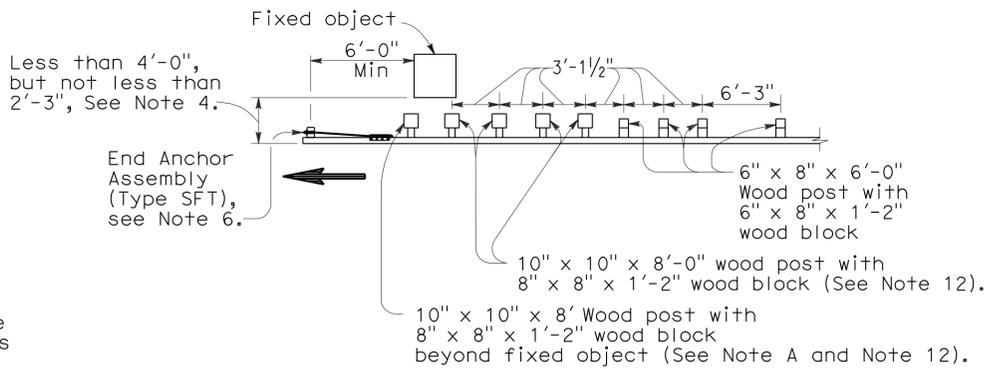
NO SCALE

RSP A77F4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F4
DATED MAY 1, 2006 - PAGE 57 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77F4

NOTES:

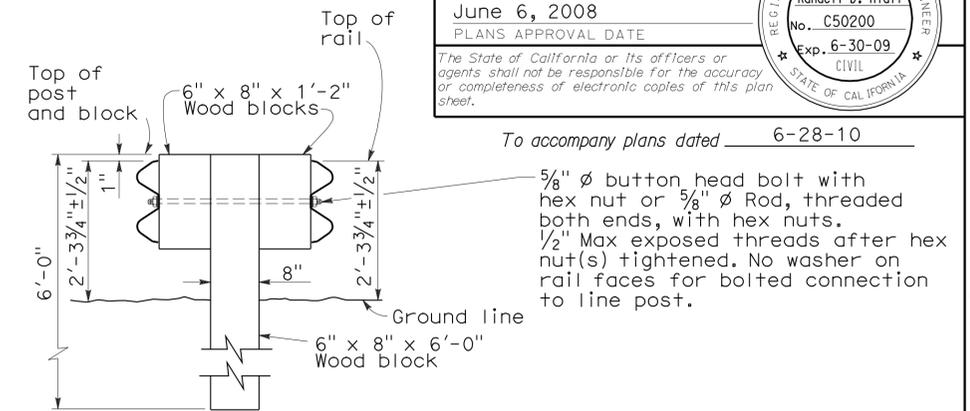
- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing of 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by \rightarrow .
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- For details of Rail Tensioning Assembly, see Standard Plan A77H2.
- The type of crash cushion to be used will be shown on the Project Plans.
- Type 14A layout is typically used on multilane freeways or expressways to shield fixed objects where a median type barrier is not constructed between the separated roadbeds.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
- The 15:1 or flatter flare is measured off of the edge of traveled way.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic block may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".



NOTE A: For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed objects.

STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

Use strengthened railing sections with Type 14A layout where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3", See Note 4.



SECTION A-A TYPICAL DOUBLE METAL BEAM GUARD RAILING

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	57	76

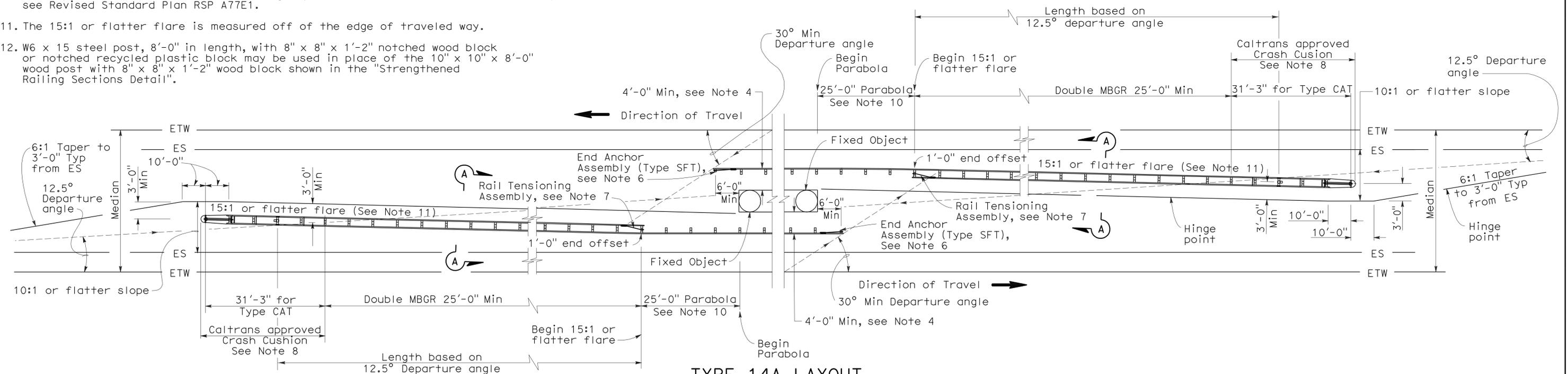
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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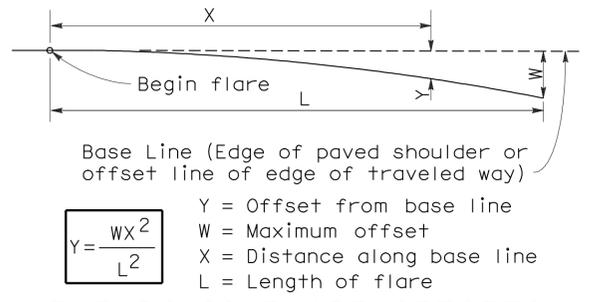
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 6-28-10

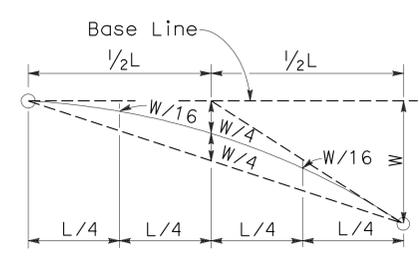


TYPE 14A LAYOUT

See Note 9



PARABOLIC FLARE OFFSETS



TYPICAL PARABOLIC LAYOUT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR FIXED OBJECTS BETWEEN SEPARATE ROADBEDS (TWO-WAY TRAFFIC)

NO SCALE

RSP A77G1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G1 DATED MAY 1, 2006 - PAGE 59 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G1

2006 REVISED STANDARD PLAN RSP A77G1

NOTES:

1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
2. Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
4. A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing section with post spacing of 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
5. Direction of adjacent traffic indicated by → .

6. For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
7. Type of crash cushion to be used will be shown on the Project Plans.
8. Type 15A layout is typically used on multilane freeways or expressways to shield fixed objects in the area between separated one-way roadbeds.
9. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
10. The 15:1 or flatter flare is measured off of the edge of the traveled way.
11. W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	58	76

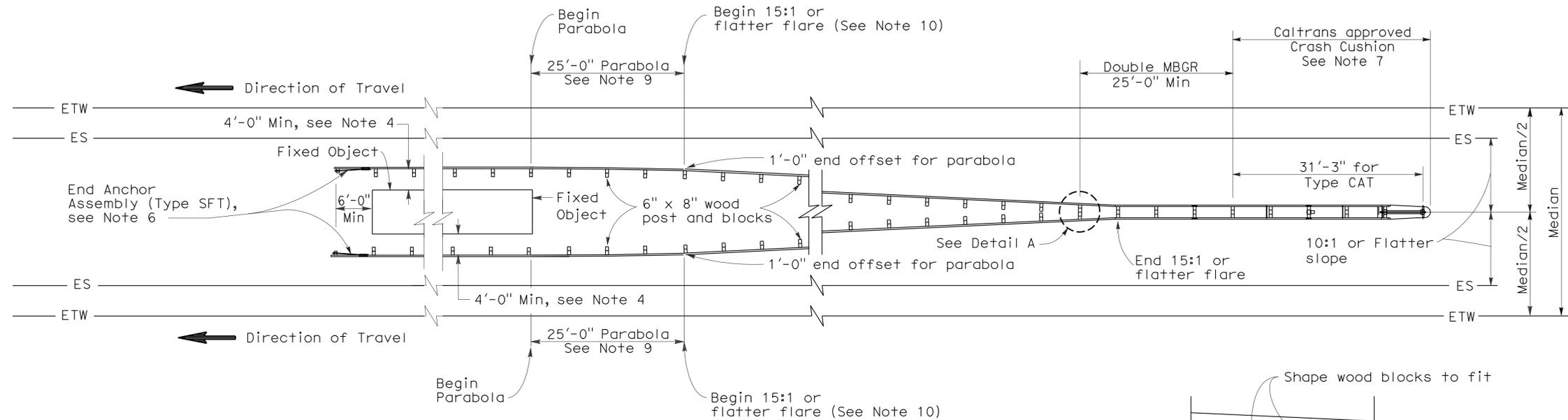
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

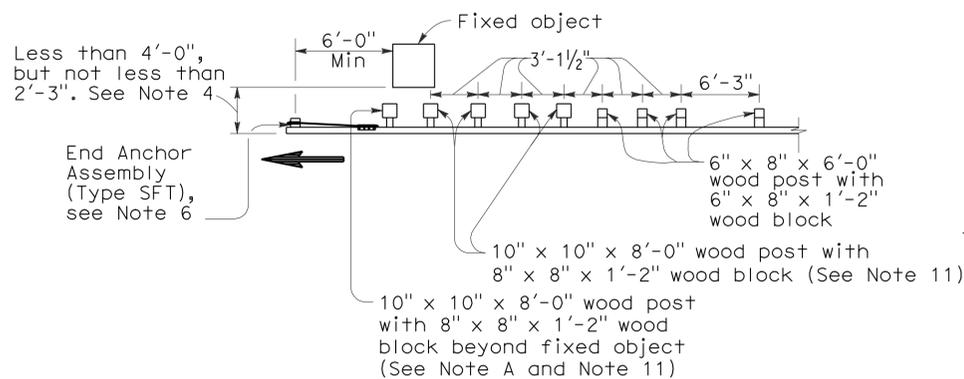
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To accompany plans dated 6-28-10

2006 REVISED STANDARD PLAN RSP A77G2

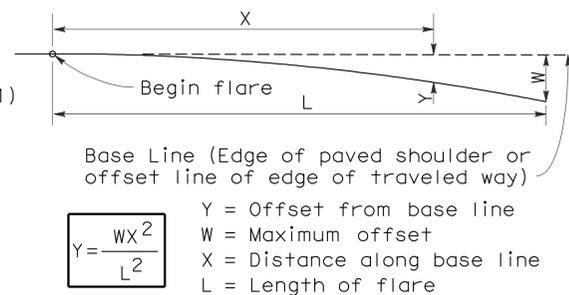


TYPE 15A LAYOUT
See Note 9



STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

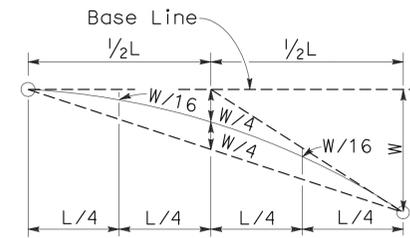
Use strengthened railing sections with Type 15A layout where minimum clearance between the face of the guard railing and the fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



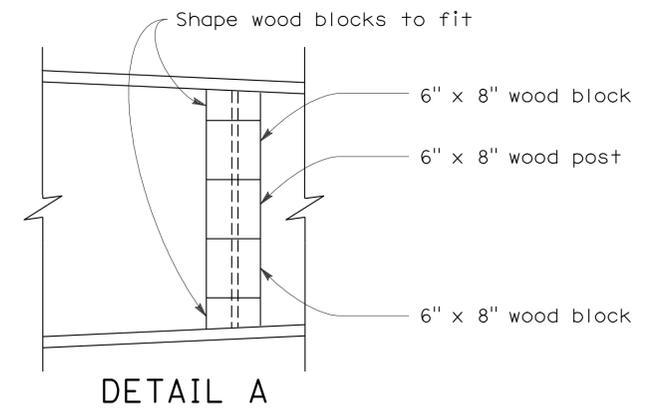
PARABOLIC FLARE OFFSETS

$$Y = \frac{WX^2}{L^2}$$

Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare



TYPICAL PARABOLIC LAYOUT



DETAIL A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
FIXED OBJECTS
BETWEEN SEPARATE ROADBEDS
(ONE-WAY TRAFFIC)**

NO SCALE

RSP A77G2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G2
DATED MAY 1, 2006 - PAGE 60 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G2

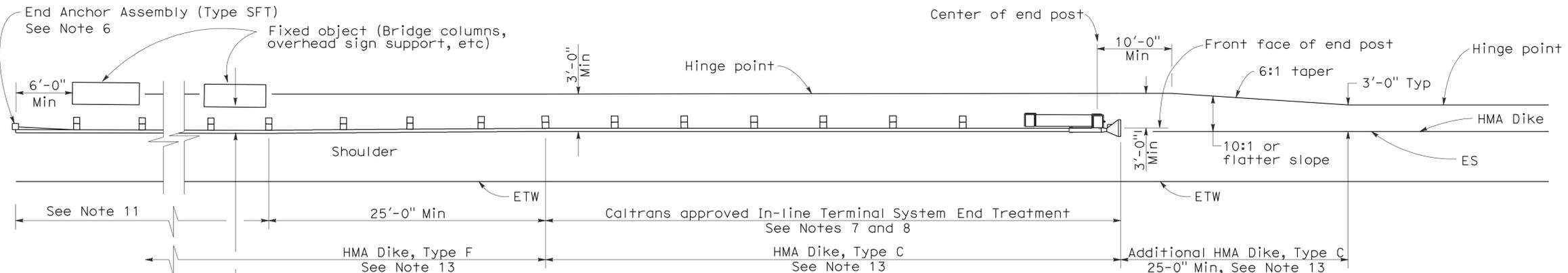
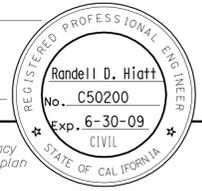
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	59	76

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

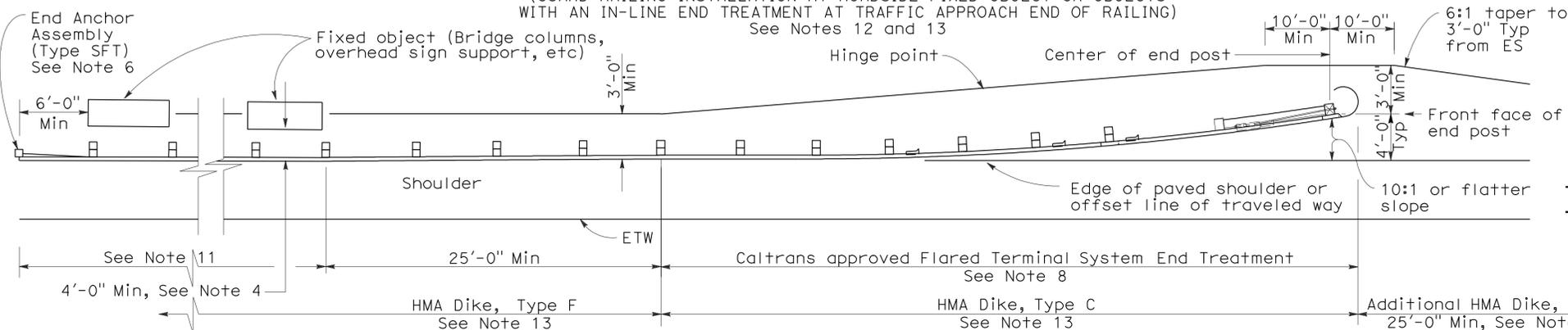
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To accompany plans dated 6-28-10



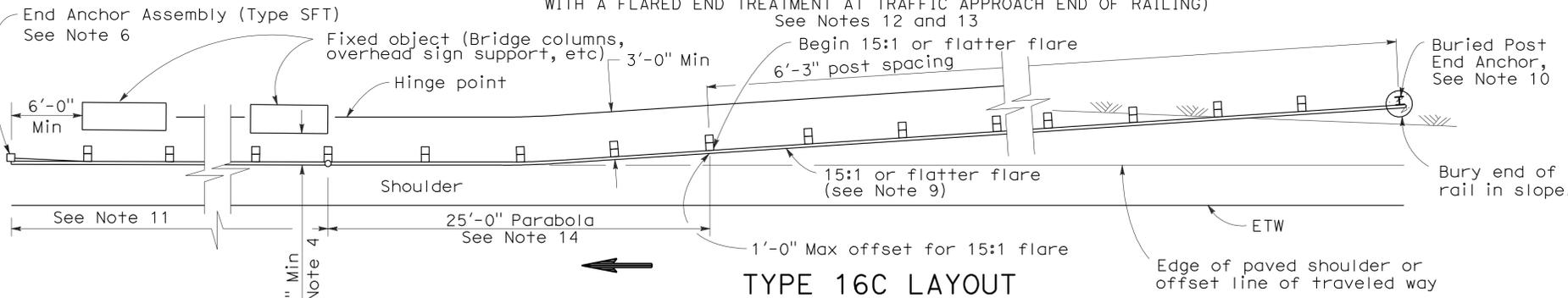
TYPE 16A LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13



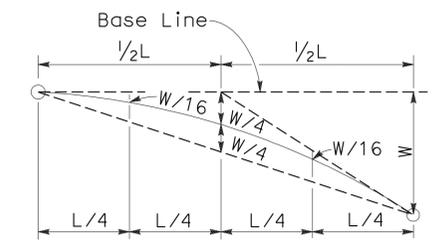
TYPE 16B LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13

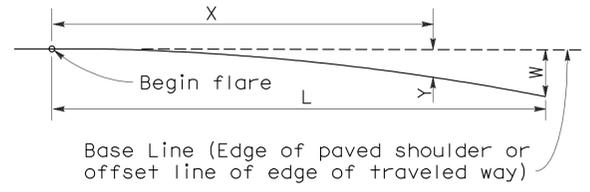


TYPE 16C LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13



TYPICAL PARABOLIC LAYOUT



Base Line (Edge of paved shoulder or offset line of edge of traveled way)

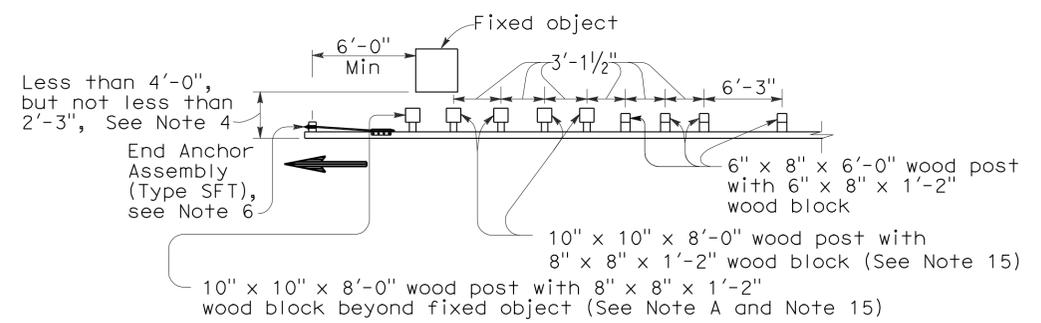
$Y = \frac{WX^2}{L^2}$

Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

PARABOLIC FLARE OFFSETS

NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing of 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by \rightarrow .
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- The 15:1 or flatter flare used with Type 16C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the Buried Post End Anchor used with Type 16C Layout, see Standard Plan A77I2.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3" except as specified in Note 4.
- Layout Types 16A, 16B or 16C are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for only one direction of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".



NOTE A:

For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed objects.

STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

Use strengthened railing sections with Types 16A, 16B or 16C Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77G3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G3 DATED MAY 1, 2006 - PAGE 61 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G3

2006 REVISED STANDARD PLAN RSP A77G3

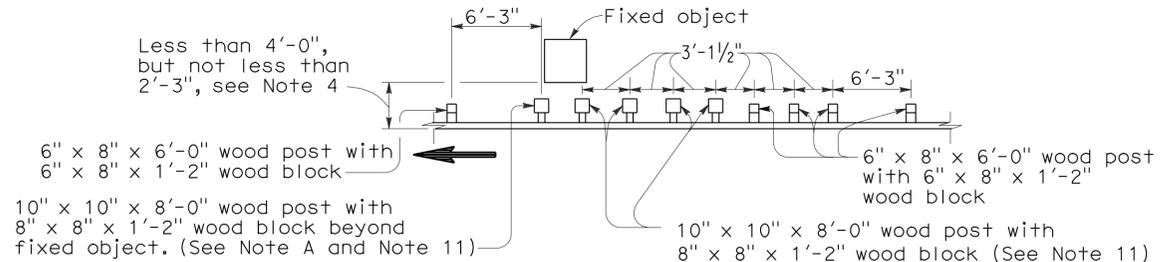
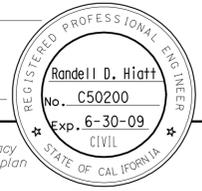
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	60	76

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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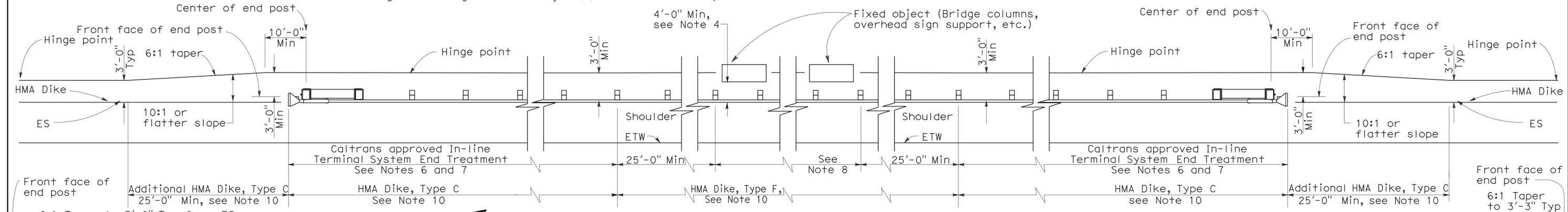
To accompany plans dated 6-28-10



NOTE A: For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

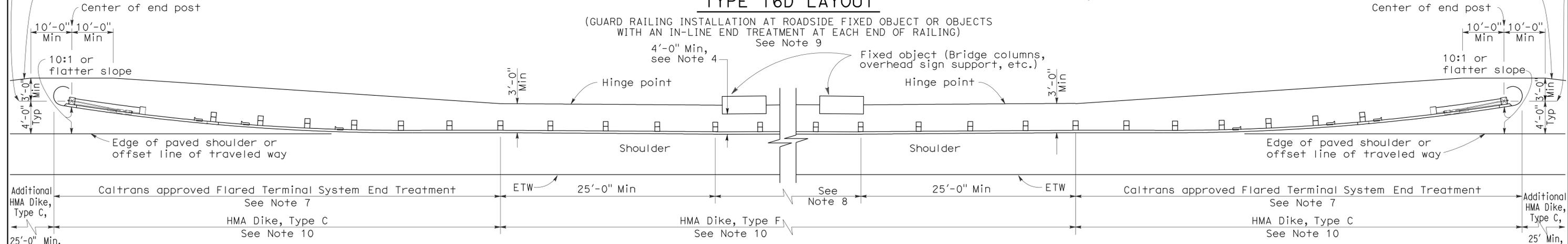
**STRENGTHENED RAILING SECTIONS
FOR FIXED OBJECT**

Use strengthened railing sections with Layout Types 16D or 16E where minimum clearance between the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



TYPE 16D LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AT EACH END OF RAILING)
See Note 9



TYPE 16E LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AT EACH END OF RAILING)
See Note 9

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).

- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans, are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.

11. W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic block may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail."

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
ROADSIDE FIXED OBJECTS**
NO SCALE

RSP A77G4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G4
DATED MAY 1, 2006 - PAGE 62 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G4

2006 REVISED STANDARD PLAN RSP A77G4

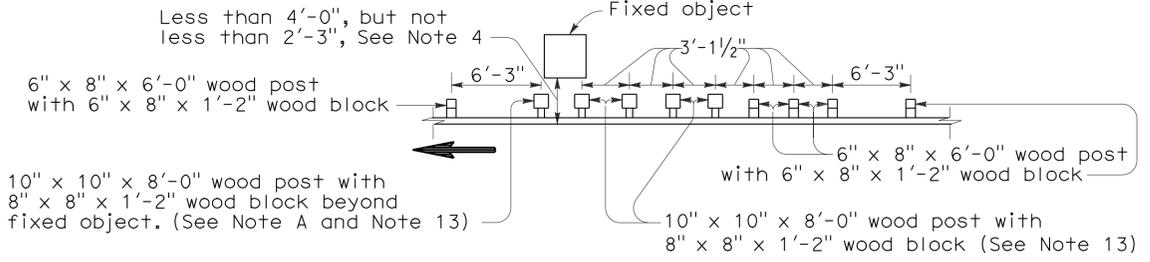
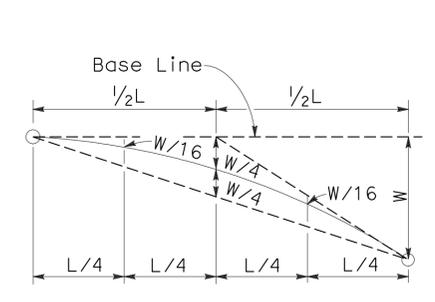
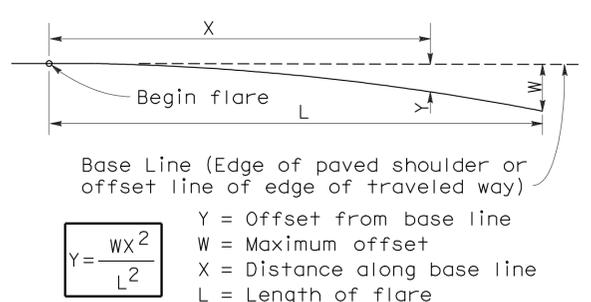
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	61	76

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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To accompany plans dated 6-28-10



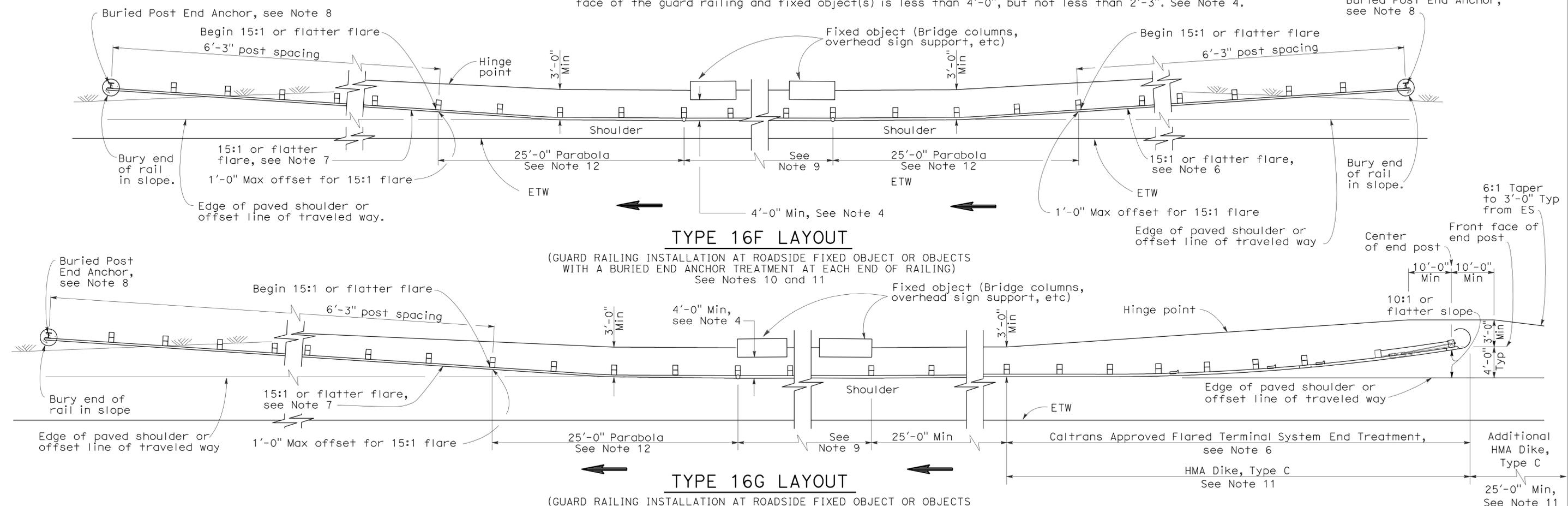
NOTE A: For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

PARABOLIC FLARE OFFSETS

TYPICAL PARABOLIC LAYOUT

STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

Use strengthened railing sections with Layout Types 16F or 16G where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 8" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by →.

- The type of terminal system to be used will be shown on the Project Plans.
- The 15:1 or flatter flare for the buried post anchor is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the Buried Post End Anchor details, see Standard Plan A77I2.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans, are typically used on highways where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.

- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
ROADSIDE FIXED OBJECTS**

NO SCALE

RSP A77G5 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G5
DATED MAY 1, 2006 - PAGE 63 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G5

2006 REVISED STANDARD PLAN RSP A77G5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	62	76

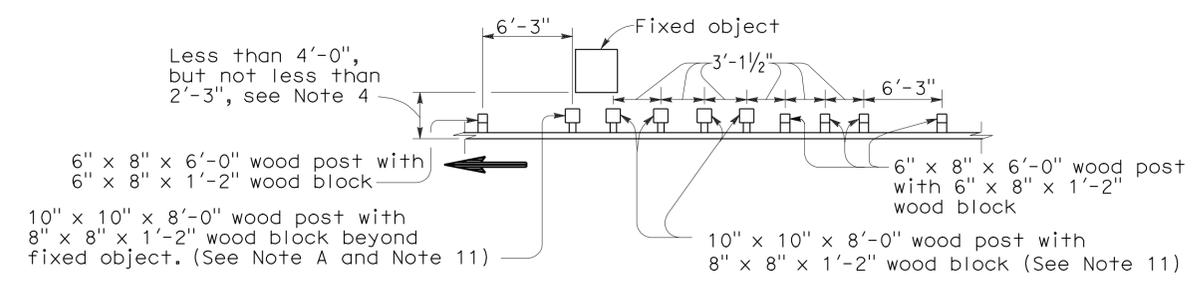
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

Randell D. Hiatt
No. C50200
Exp. 6-30-09
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STATE OF CALIFORNIA

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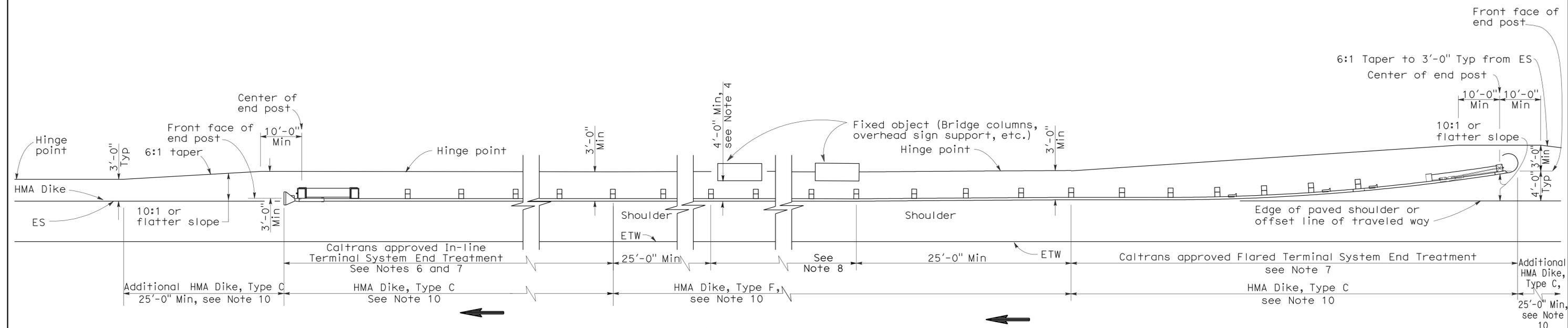
To accompany plans dated 6-28-10



Note A. For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

Use strengthened railing sections with Layout Type 16H where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



TYPE 16H LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AND AN IN-LINE TREATMENT AT THE ENDS OF RAILING) See Note 9

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object, located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by → .

- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans, typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE
RSP A77G6 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G6
DATED MAY 1, 2006 - PAGE 64 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77G6

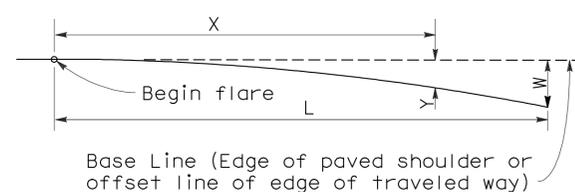
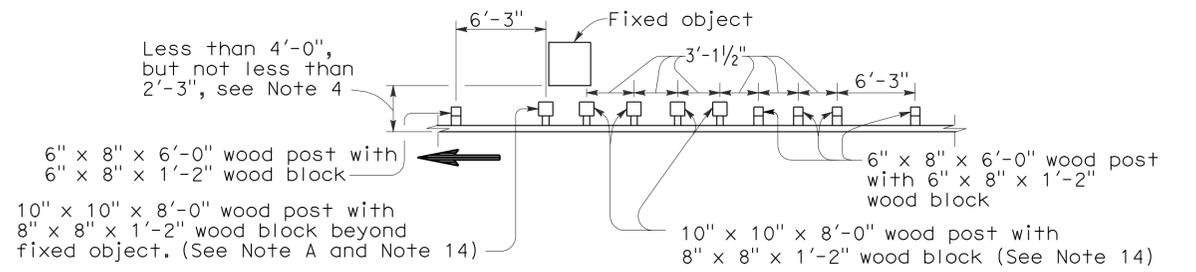
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	63	76

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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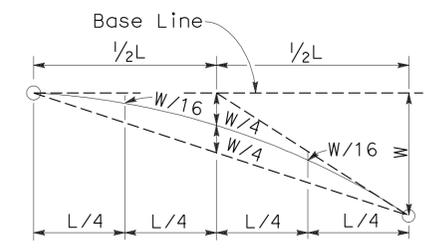
To accompany plans dated 6-28-10



Base Line (Edge of paved shoulder or offset line of edge of traveled way)

$Y = \frac{WX^2}{L^2}$

Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

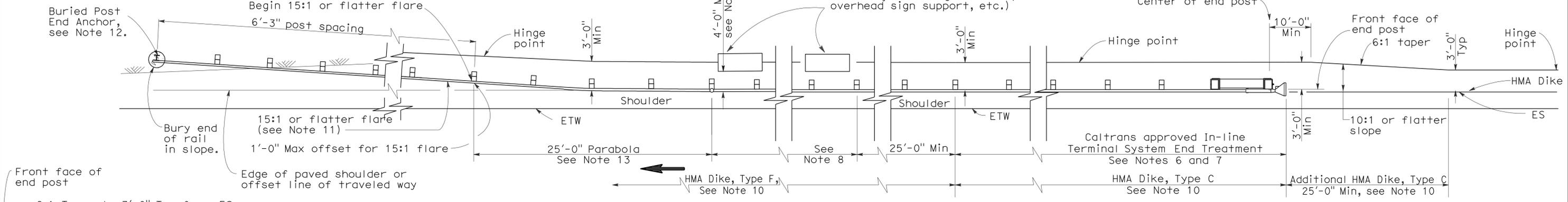


STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

PARABOLIC FLARE OFFSETS

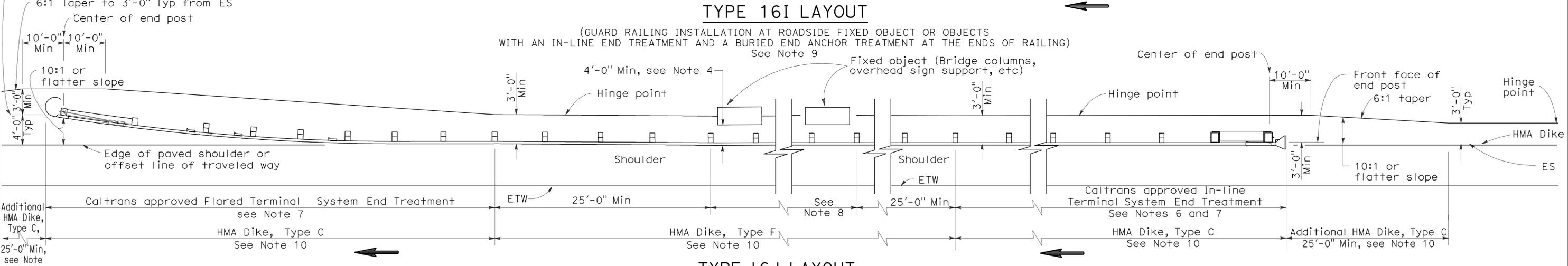
TYPICAL PARABOLIC LAYOUT

Use strengthened railing sections with Layout Types 16I or 16J Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



TYPE 16I LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AND A BURIED END ANCHOR TREATMENT AT THE ENDS OF RAILING) See Note 9



TYPE 16J LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AND A FLARED END TREATMENT AT THE ENDS OF RAILING) See Note 9

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by \rightarrow .

- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans, are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- The 15:1 or flatter flare for the buried post anchor is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".

- For details of Buried Post End Anchor details, see Standard Plan A77I2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard RSP Plan A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77G7 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G7
DATED MAY 1, 2006 - PAGE 65 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G7

2006 REVISED STANDARD PLAN RSP A77G7

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	64	76

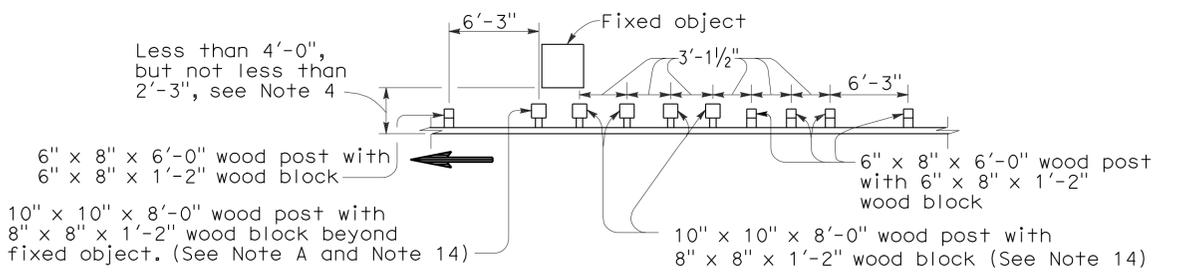
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

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

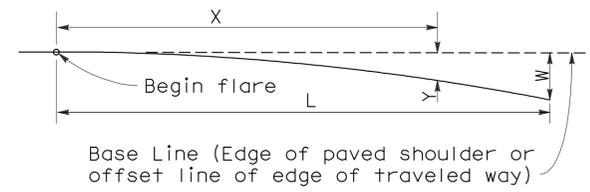
To accompany plans dated 6-28-10



Note A. For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

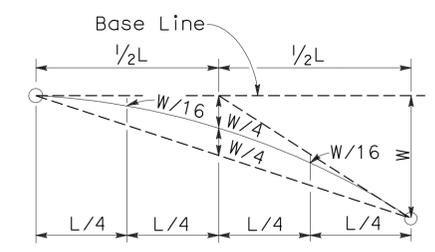
Use strengthened railing sections with Layout Types 16K or 16L Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



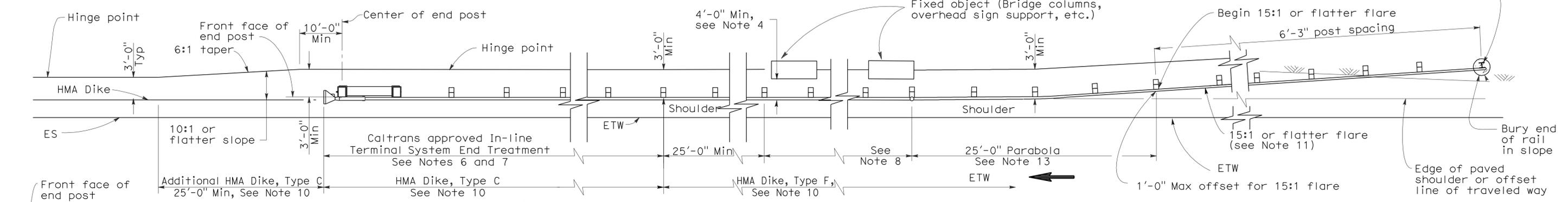
Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

$$Y = \frac{WX^2}{L^2}$$

PARABOLIC FLARE OFFSETS

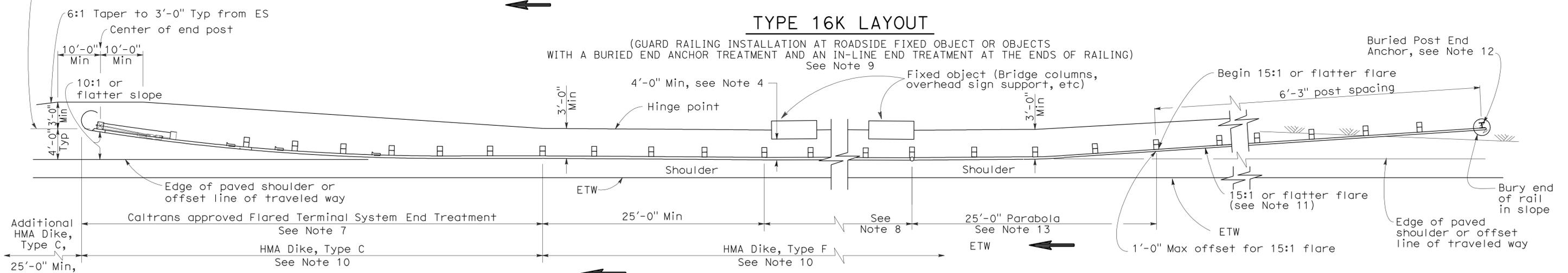


TYPICAL PARABOLIC LAYOUT



TYPE 16K LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AND AN IN-LINE END TREATMENT AT THE ENDS OF RAILING) See Note 9



TYPE 16L LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AND A FLARED END TREATMENT AT THE ENDS OF RAILING) See Note 9

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by →.

- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- The 15:1 or flatter flare for the buried post anchor is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".

- For details of Buried Post End Anchor details, see Standard Plan A77I2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard RSP Plan A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE
RSP A77G8 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G8
DATED MAY 1, 2006 - PAGE 66 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G8

2006 REVISED STANDARD PLAN RSP A77G8

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	65	76

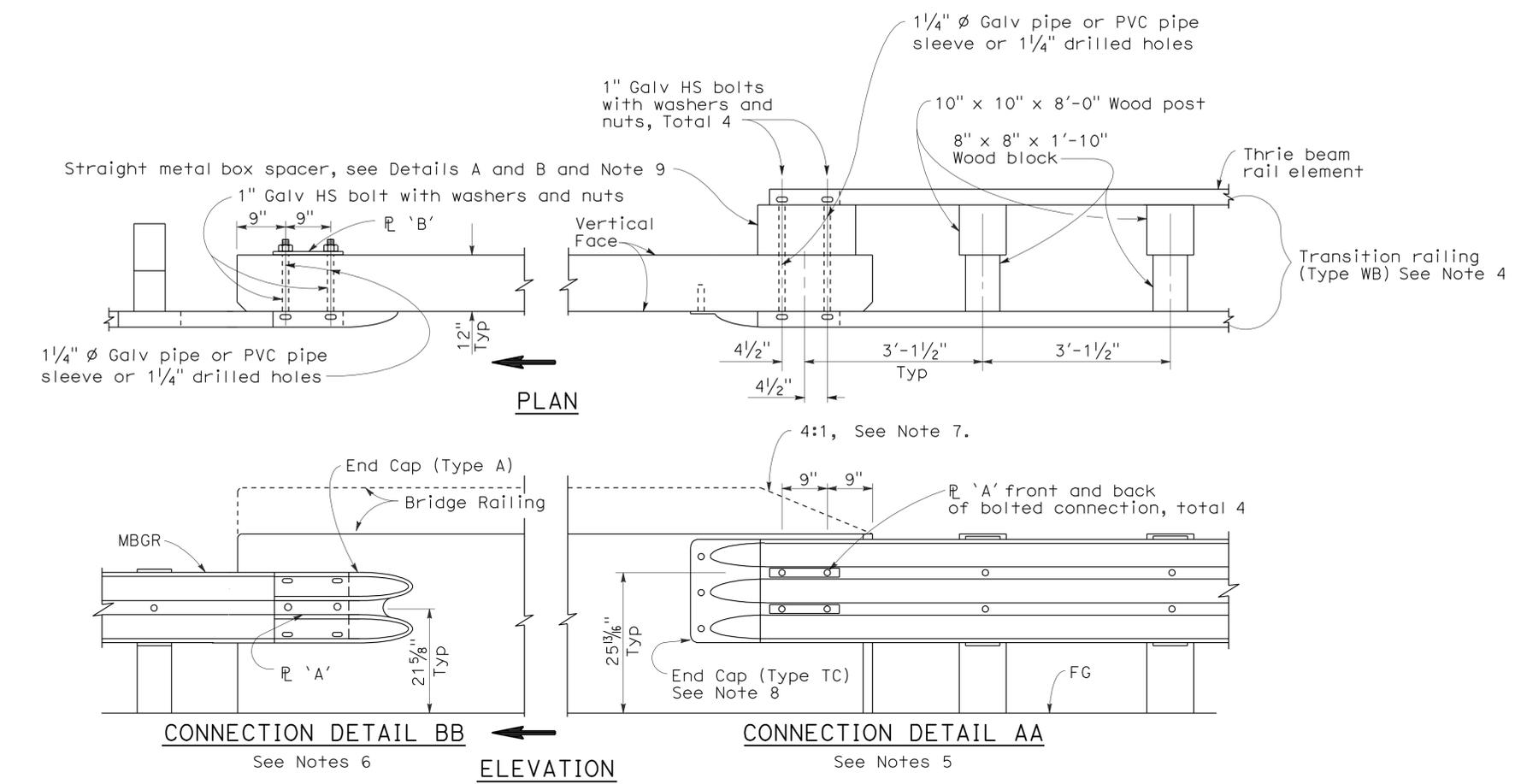
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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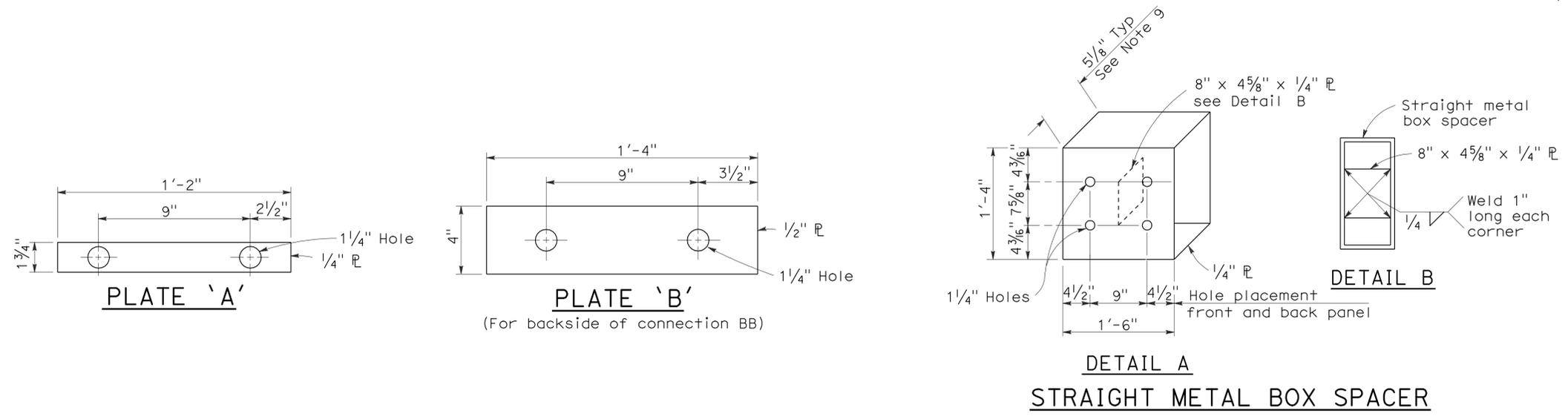
To accompany plans dated 6-28-10



NOTES:

1. See Revised Standard Plan RSP A77J2 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
3. Direction of adjacent traffic indicated by \rightarrow .
4. For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
5. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
6. For typical use of Connection Detail BB, see Layout Type 12D (structure departure railing connection) on Standard Plan A77F2 and Layout Type 12DD on Standard Plan A77F5.
7. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail.
8. For details of End Cap (Type TC), see Standard Plan A77J4.
9. See Standard Plan A77J4 for additional details regarding depth dimension for straight metal box spacer.

GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No.1

NO SCALE

RSP A77J1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J1 DATED MAY 1, 2006 - PAGE 72 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77J1

2006 REVISED STANDARD PLAN RSP A77J1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	66	76

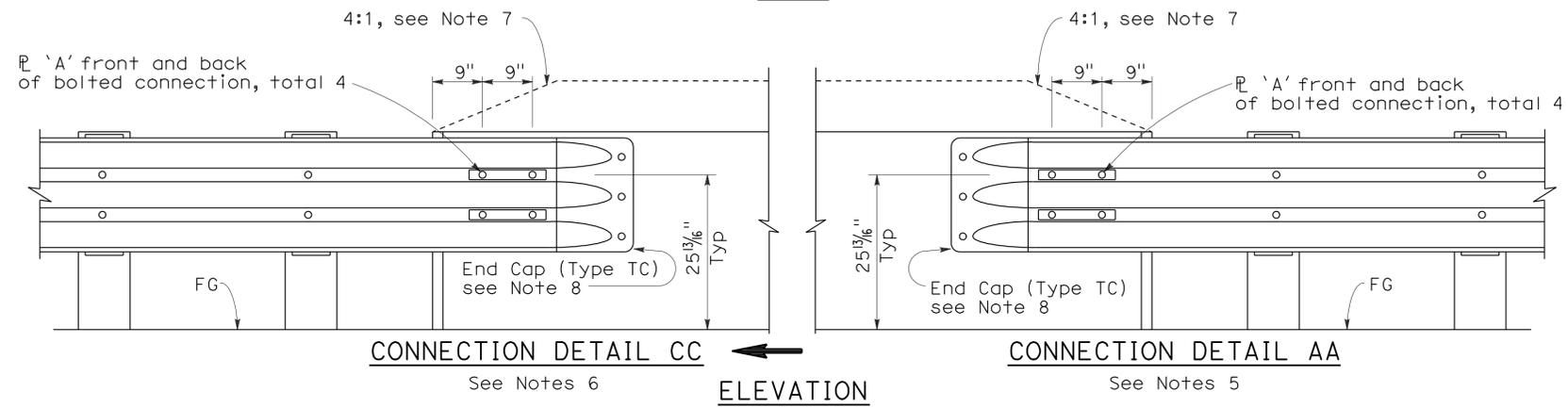
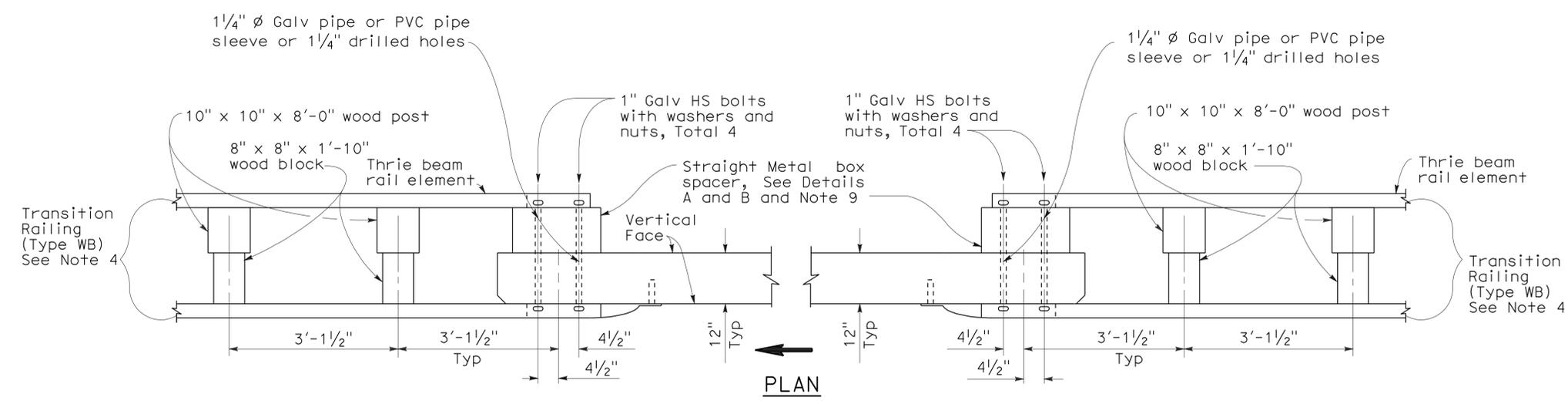
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

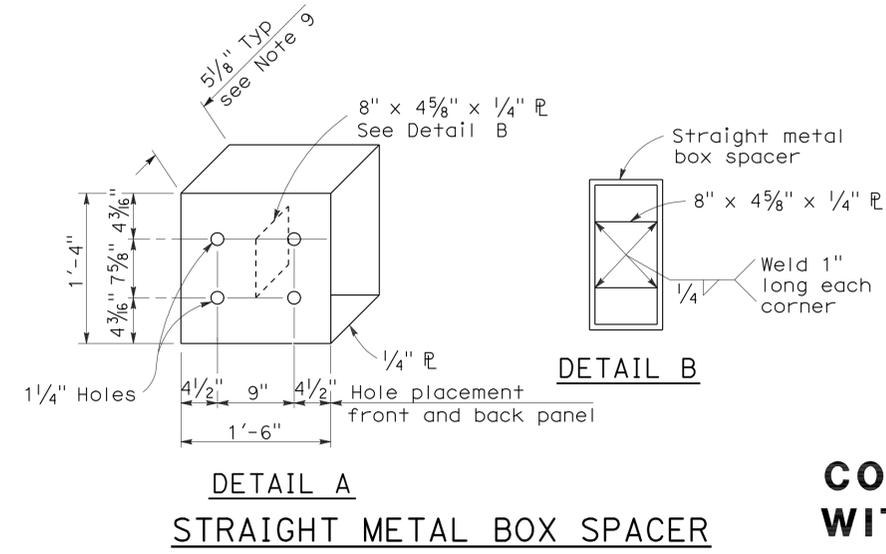
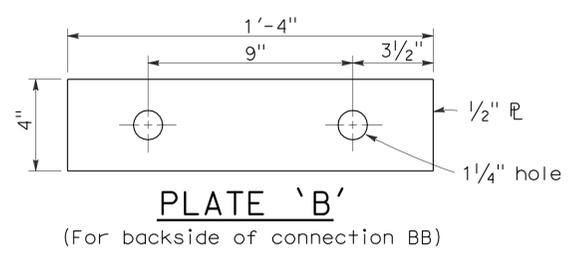
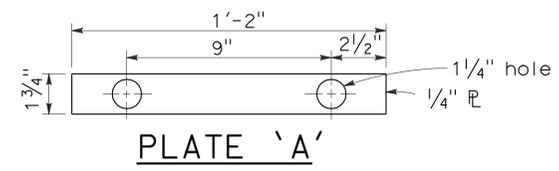
To accompany plans dated 6-28-10



GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

- See Revised Standard Plan RSP A77J1 for additional connection details to bridges without sidewalks.
- Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
- Direction of adjacent traffic indicated by →.
- For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
- For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
- For typical use of Connection Detail CC, see Layout Types 12AA and 12BB on Standard Plan A77F4 and Layout Type 12CC on Standard Plan A77F5.
- Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA and connection Detail CC, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
- For details of End Cap (Type TC), see Standard Plans A77J4.
- See Standard Plans A77J4 for additional details regarding depth dimension for straight metal box spacer.



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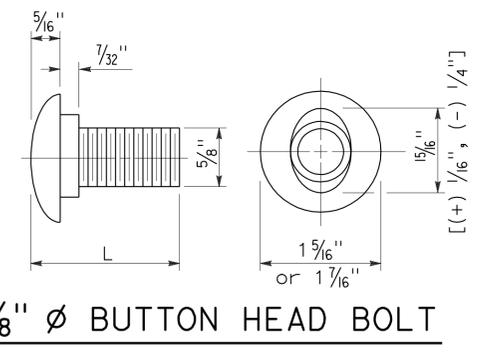
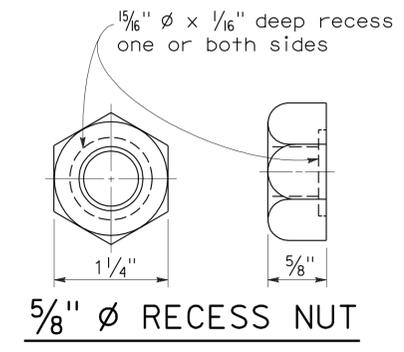
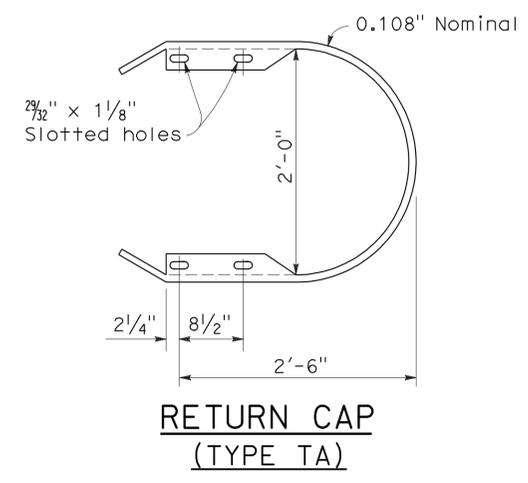
METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No.2

NO SCALE
RSP A77J2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J2
DATED MAY 1, 2006 - PAGE 73 OF THE STANDARD PLANS BOOK DATED MAY 2006.

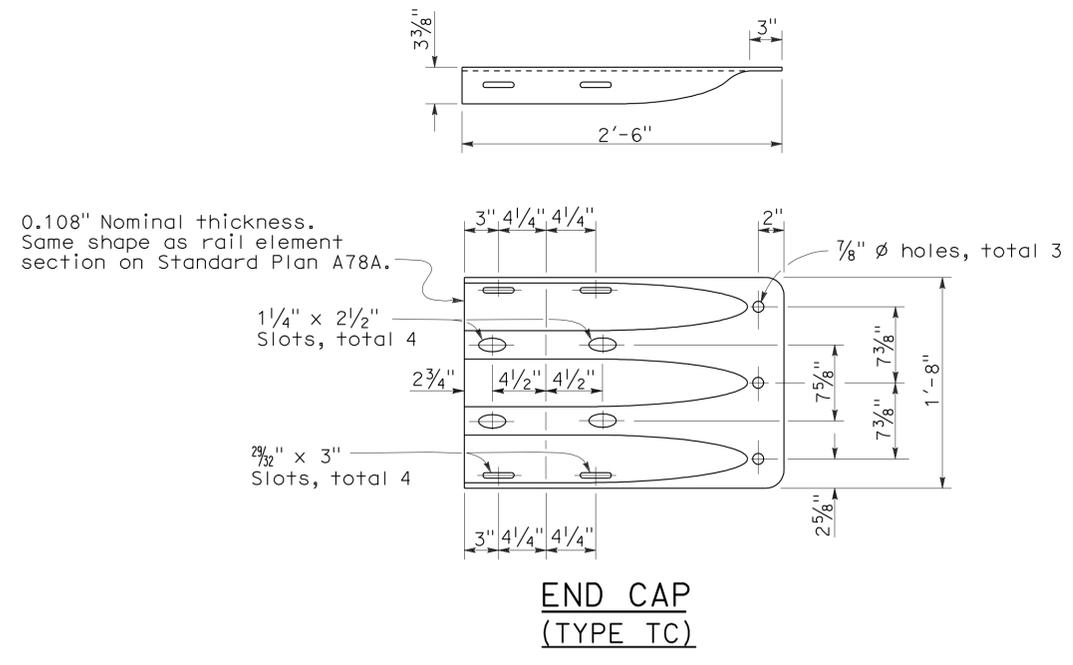
REVISED STANDARD PLAN RSP A77J2

2006 REVISED STANDARD PLAN RSP A77J2

To accompany plans dated 6-28-10



L	THREAD LENGTH
1 1/4"	full thread length
2"	full thread length
9/2"	4" Min thread length
18"	4" Min thread length



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**THRIE BEAM BARRIER
STANDARD HARDWARE DETAILS**

NO SCALE

RSP A78C1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A78C1
DATED MAY 1, 2006 - PAGE 85 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A78C1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	69	76

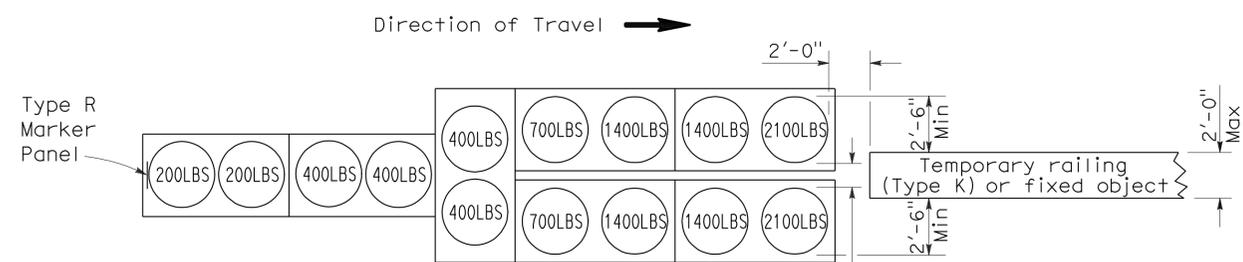
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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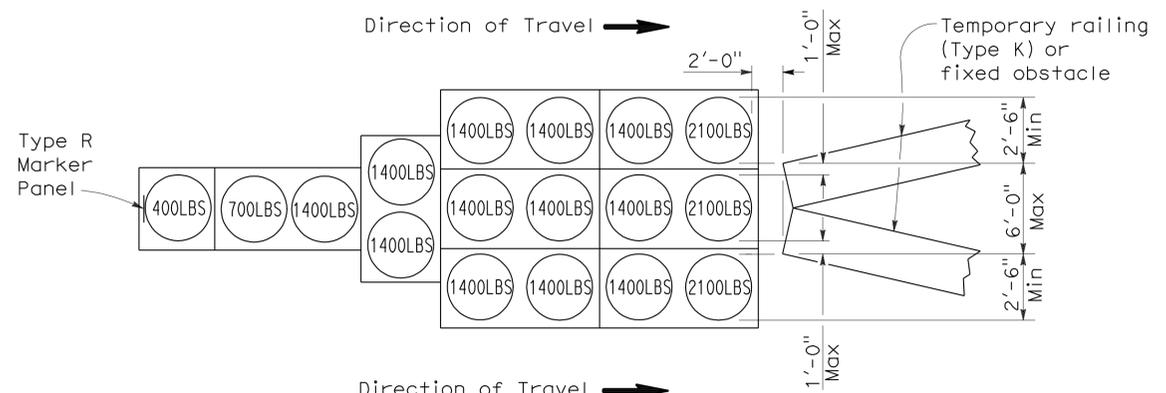
To accompany plans dated 6-28-10

2006 REVISED STANDARD PLAN RSP T1A



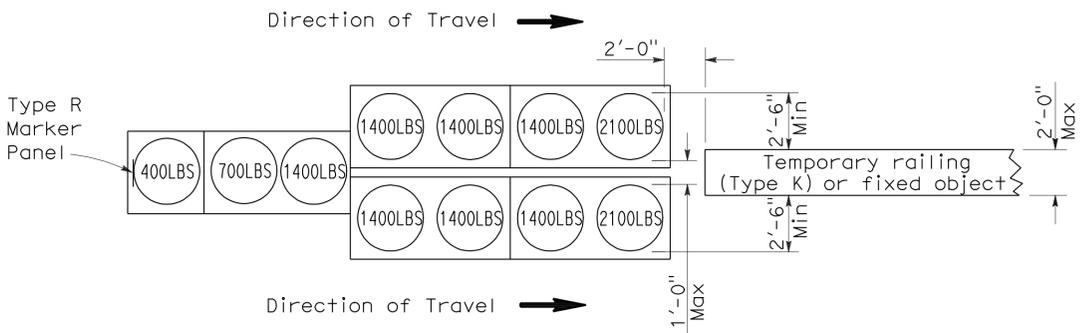
ARRAY 'TU14'

Approach speed 45 mph or more



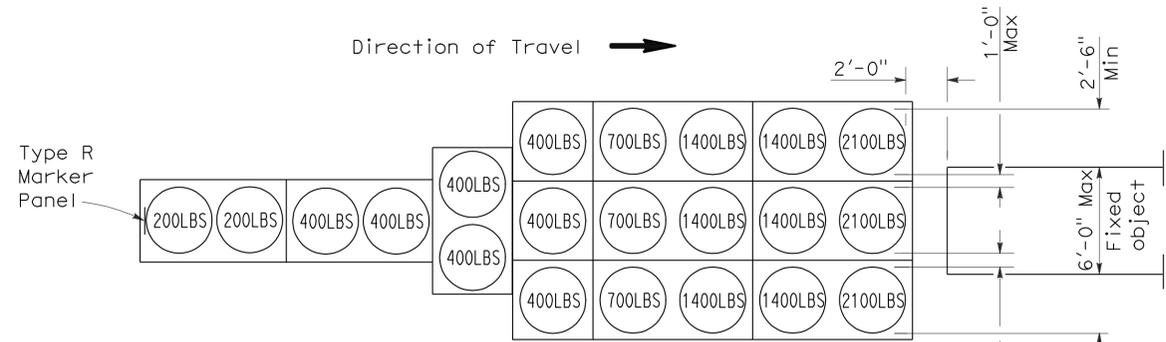
ARRAY 'TU17'

Approach speed less than 45 mph



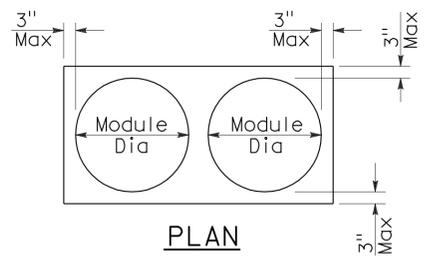
ARRAY 'TU11'

Approach speed less than 45 mph

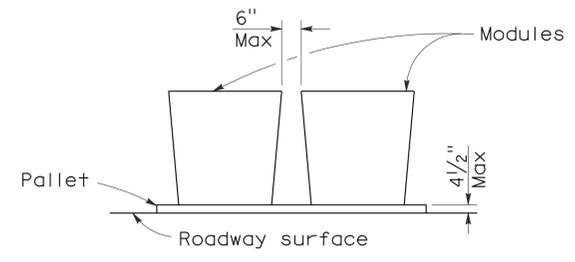


ARRAY 'TU21'

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

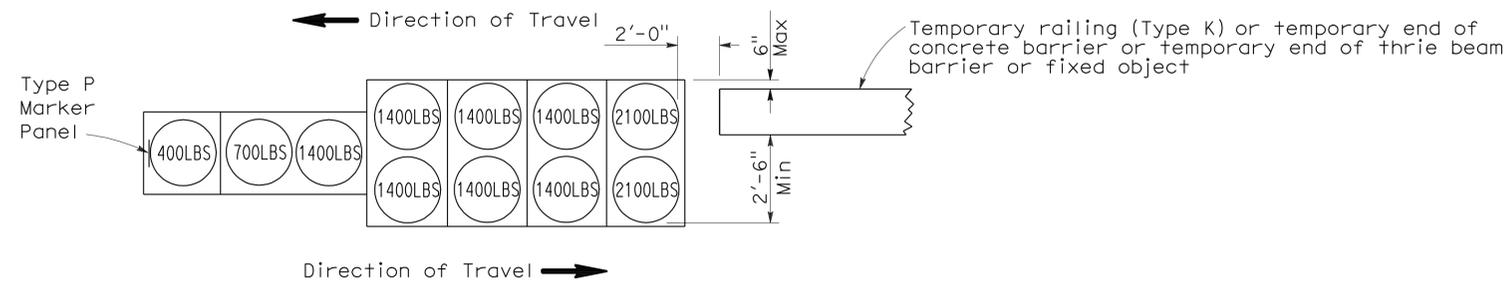
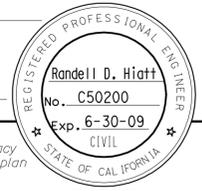
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	70	76

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

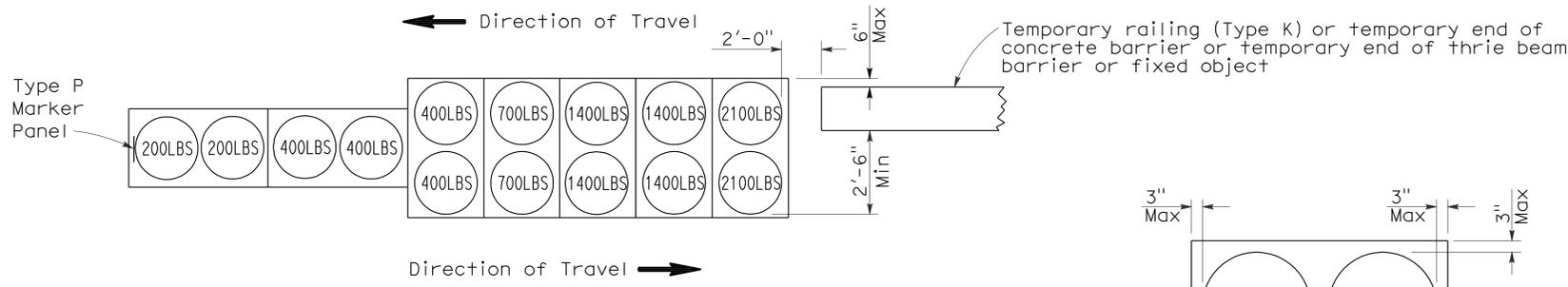
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 6-28-10



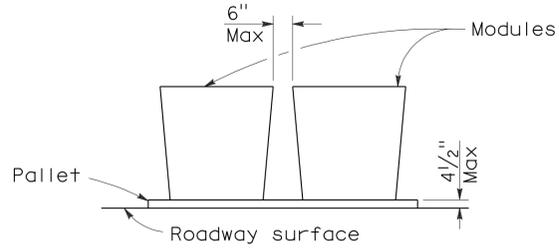
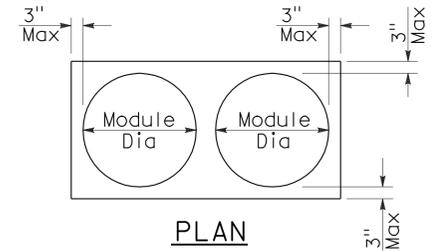
ARRAY 'TB11'

Approach speed less than 45 mph



ARRAY 'TB14'

Approach speed 45 mph or more



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

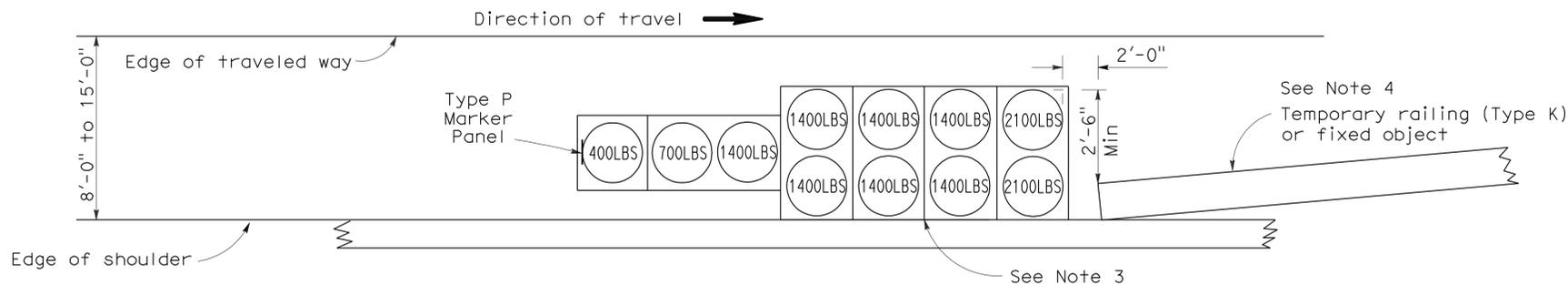
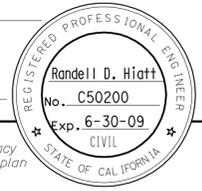
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	71	76

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

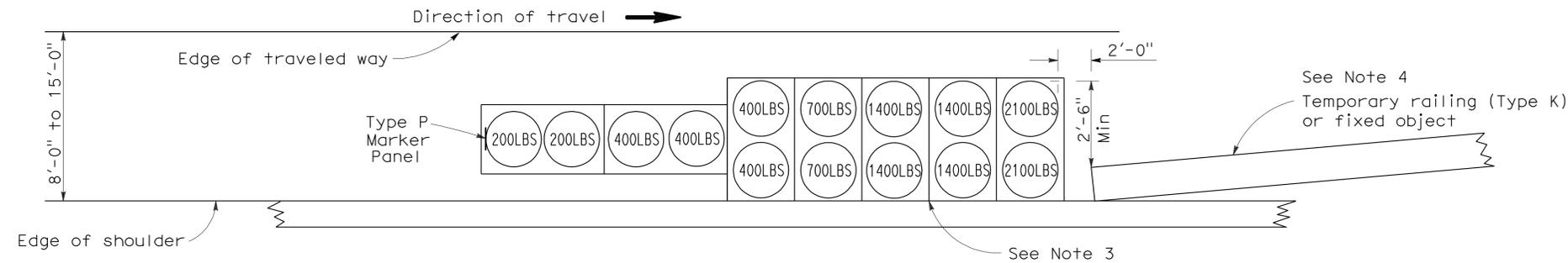
June 6, 2008
PLANS APPROVAL DATE

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To accompany plans dated 6-28-10



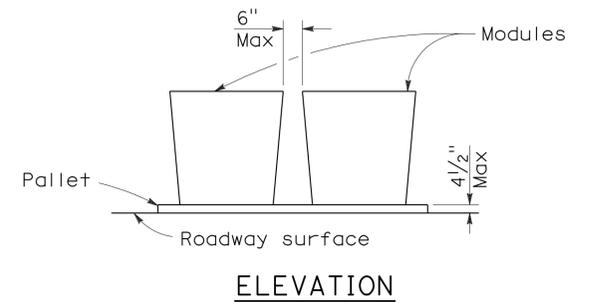
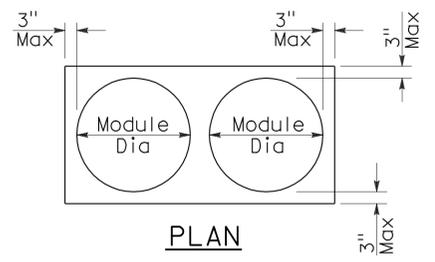
ARRAY 'TS11'
Approach speed less than 45 mph
See Note 9



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

NOTES:

- (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.
- All sand weights are nominal.
- 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.
- 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.
- Temporary crash cushion arrays shall not encroach on the traveled way.
- Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
- Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
- Refer to Standard Plan A73B for marker details.
- 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.
- Approach speeds indicated conform to NCHRP 350 Report criteria.
- 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

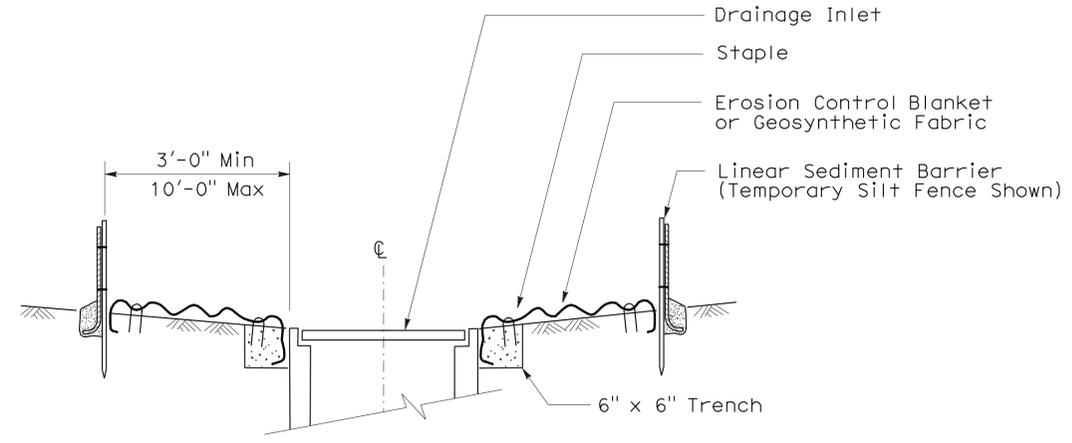
2006 REVISED STANDARD PLAN RSP T2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	73	76

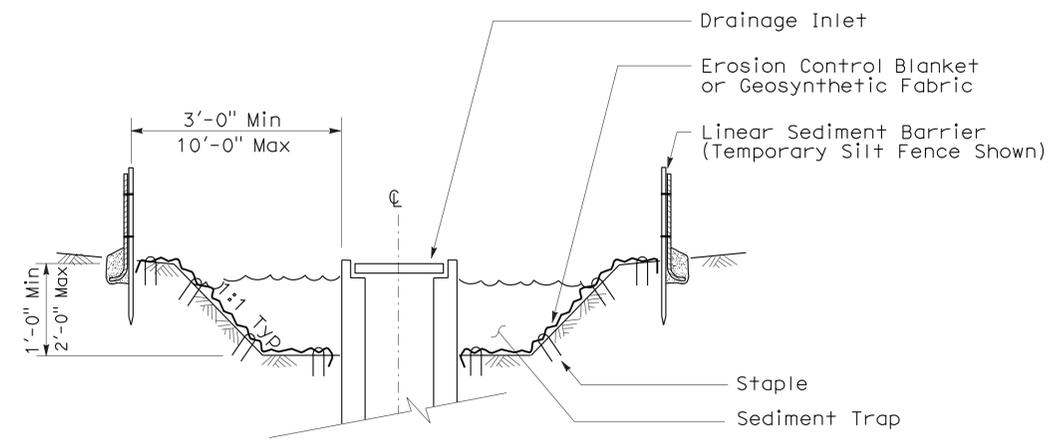
Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 PLANS Approval DATE
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To accompany plans dated 6-28-10

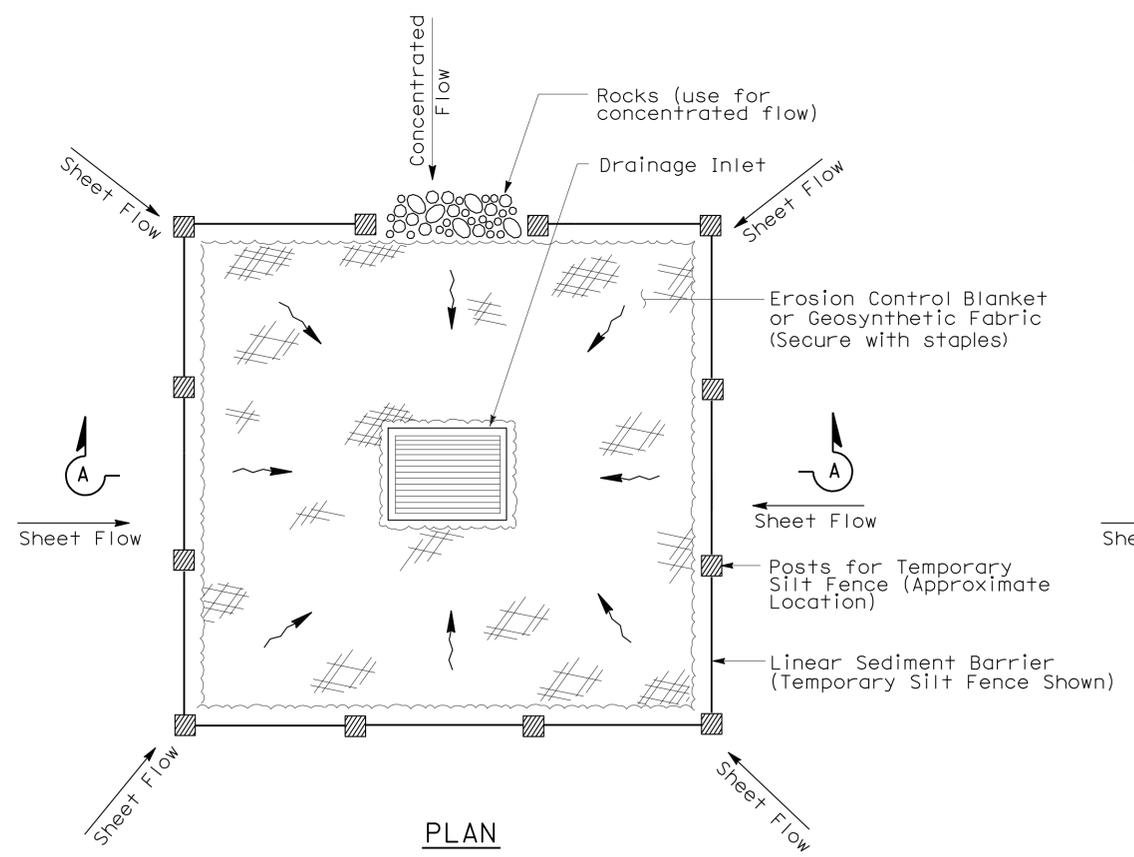
- NOTES:**
- See Standard Plan T51 for Temporary Silt Fence.
 - Dimensions may vary to fit field conditions.



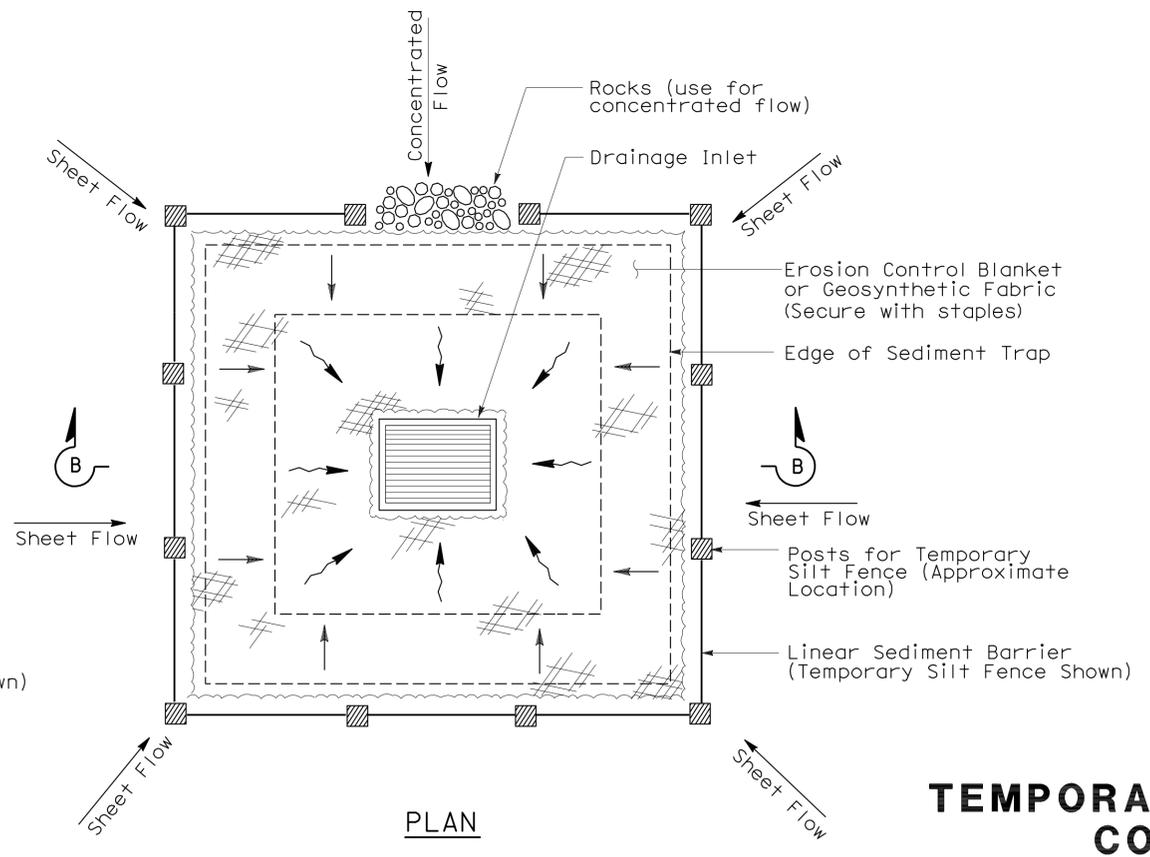
SECTION A-A



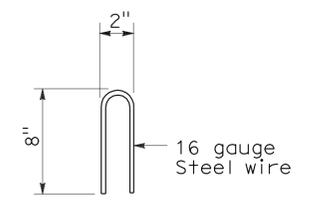
SECTION B-B



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 1)



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 2) (EXCAVATED SEDIMENT TRAP)



STAPLE DETAIL

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
TEMPORARY WATER POLLUTION CONTROL DETAILS
(TEMPORARY DRAINAGE INLET PROTECTION)
 NO SCALE

NSP T61 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T61

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	74	76

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 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.

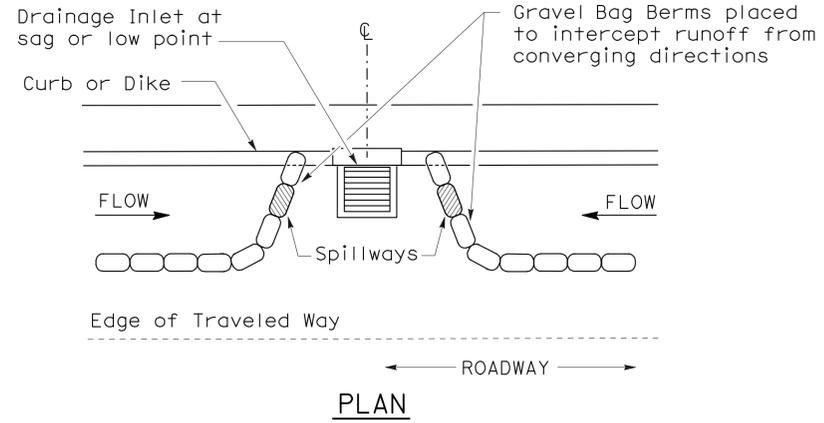


To accompany plans dated 6-28-10

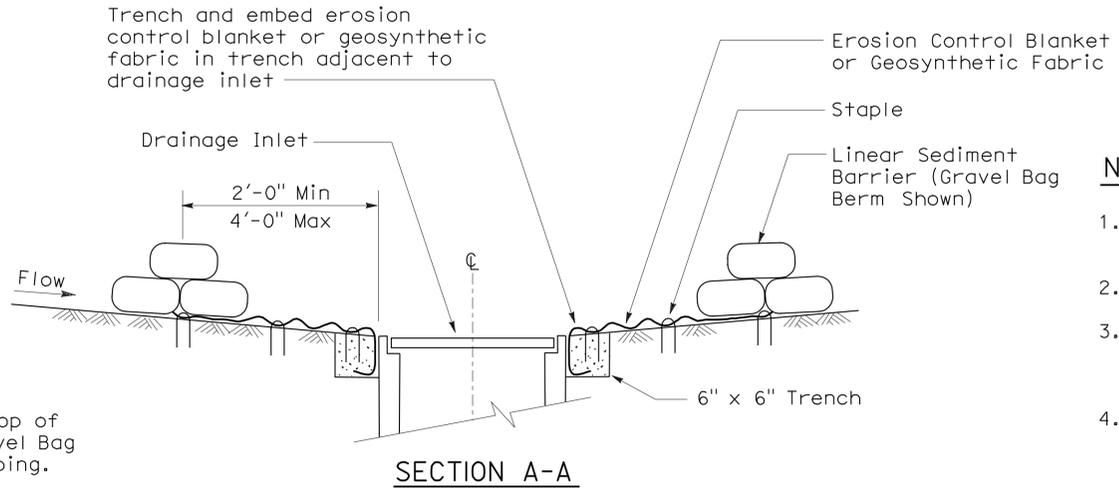
GRAVEL BAG BERM (TYPE 3A) SPACING TABLE

SLOPE OF ROADWAY (PERCENT)	1 to 3.9	4 to 5.9	6 to 7.9	8 to 10	10+
INTERVAL BETWEEN BERM	100'	75'	50'	25'	12'

For slope of less than 1%, install barriers only if erosion/sediment is prevalent



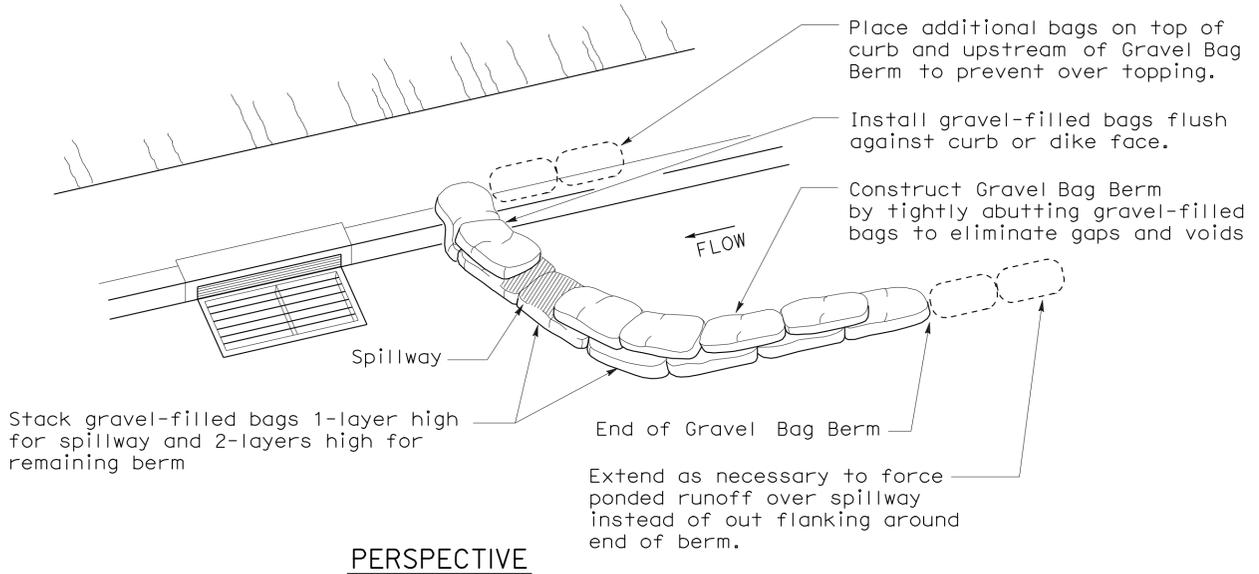
PLAN
CONFIGURATION FOR SAG POINT INLET (GRAVEL BAG BERM)



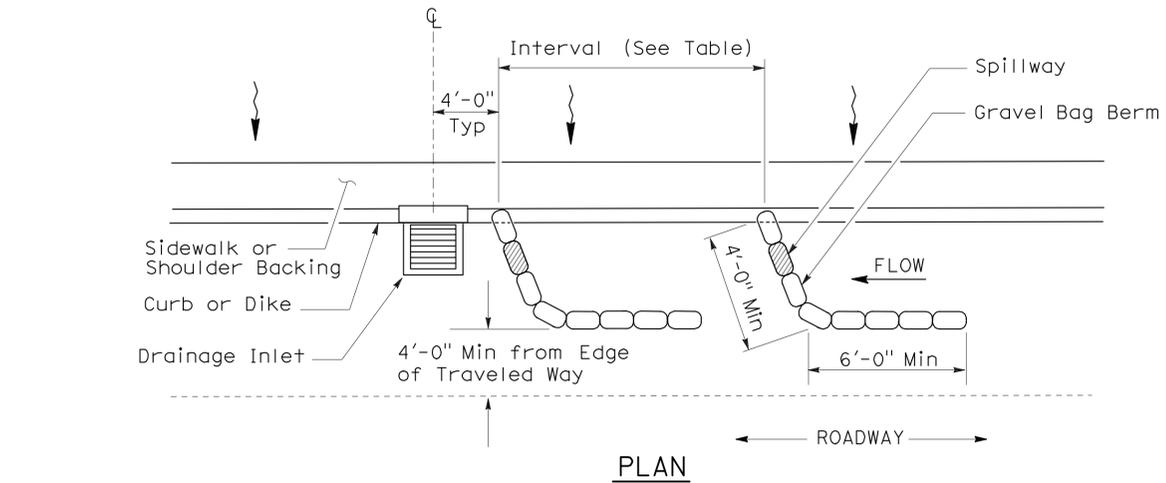
SECTION A-A

NOTES:

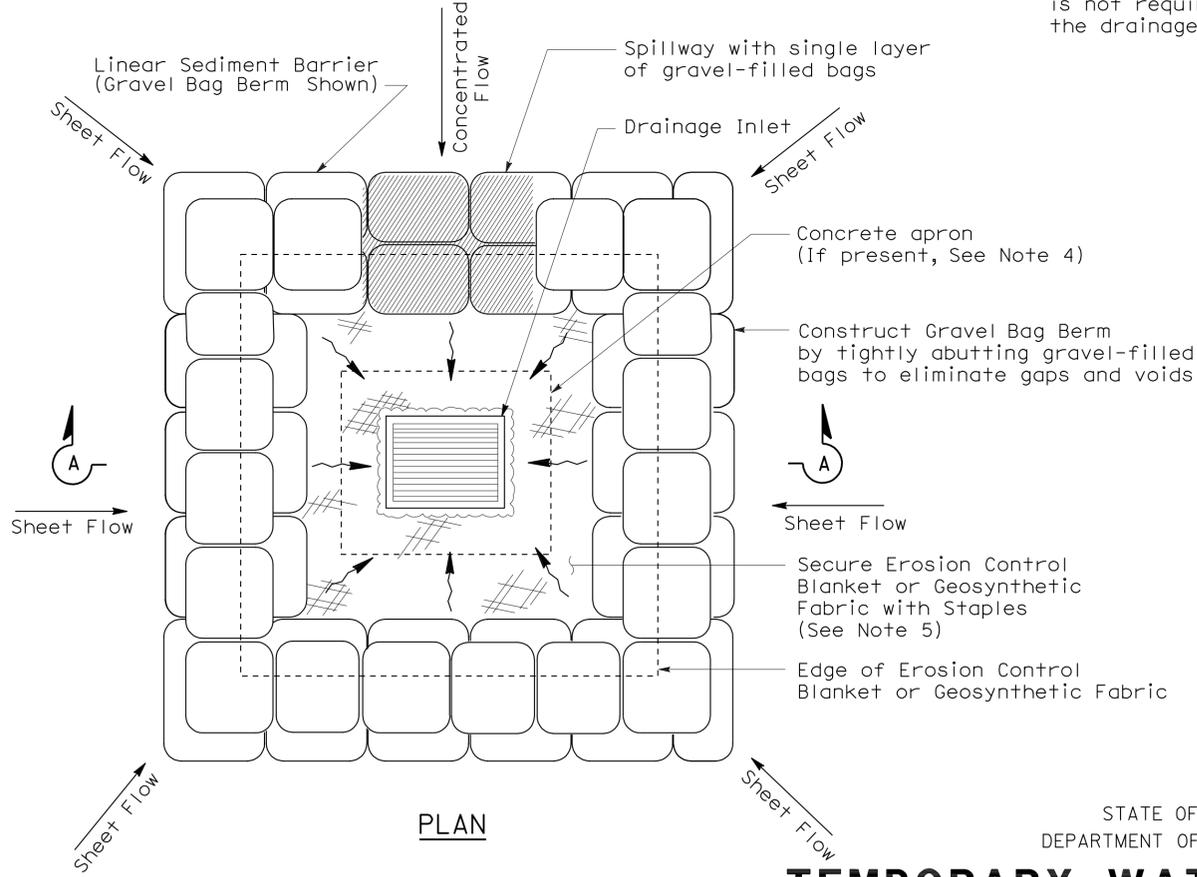
1. Place safety cones adjacent to drainage inlet protection.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 gravel bag berms upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
5. Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated or paved.



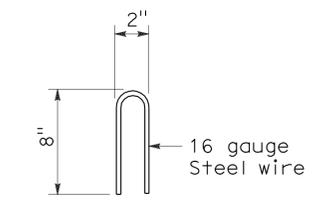
PERSPECTIVE



PLAN
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3A) (GRAVEL BAG BERM)



PLAN
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3B)



STAPLE DETAIL

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE
NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T62

FLEXIBLE SEDIMENT BARRIER SPACING TABLE

SLOPE OF ROADWAY (PERCENT)	0 to 0.9	1 to 1.9	2 to 2.9	3 to 4	5+
INTERVAL BETWEEN BARRIERS	50'	35'	30'	25'	20'
ANGLE FROM FACE OF CURB	70°	70°	70°	45°	45°
SUGGESTED BARRIER LENGTH	6'	6'	6'	6'	6'

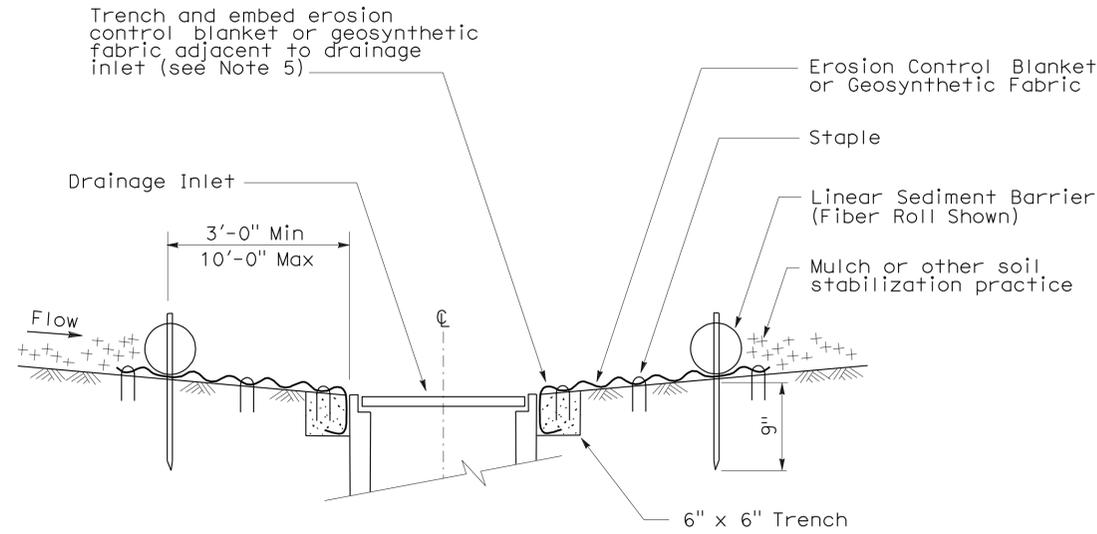
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	75	76

Robert B. Schott
LICENSED LANDSCAPE ARCHITECT

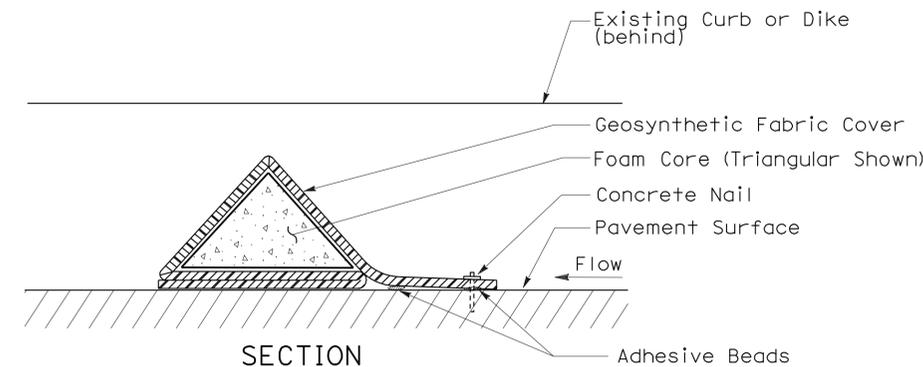
August 15, 2008
PLANS APPROVAL DATE

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To accompany plans dated 6-28-10



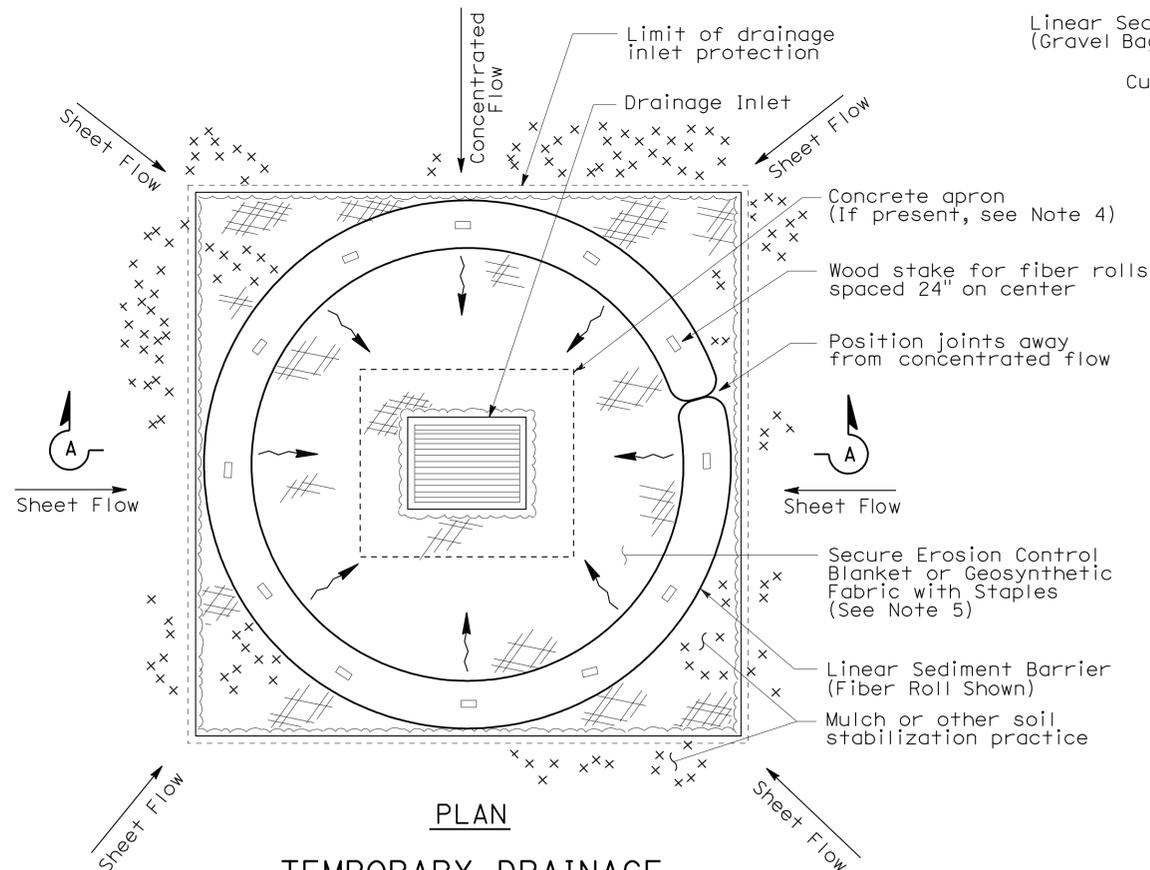
SECTION A-A



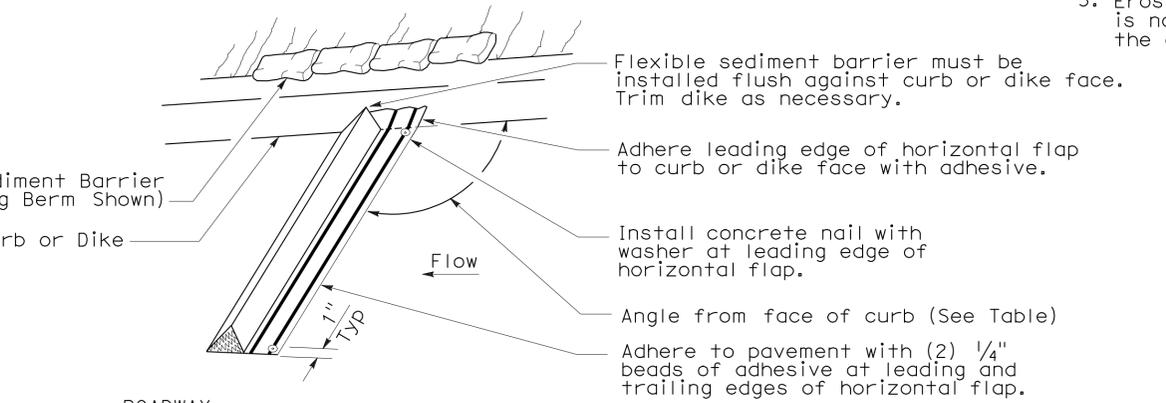
SECTION
FLEXIBLE SEDIMENT BARRIER DETAIL
(FOAM BARRIER SHOWN)

NOTES:

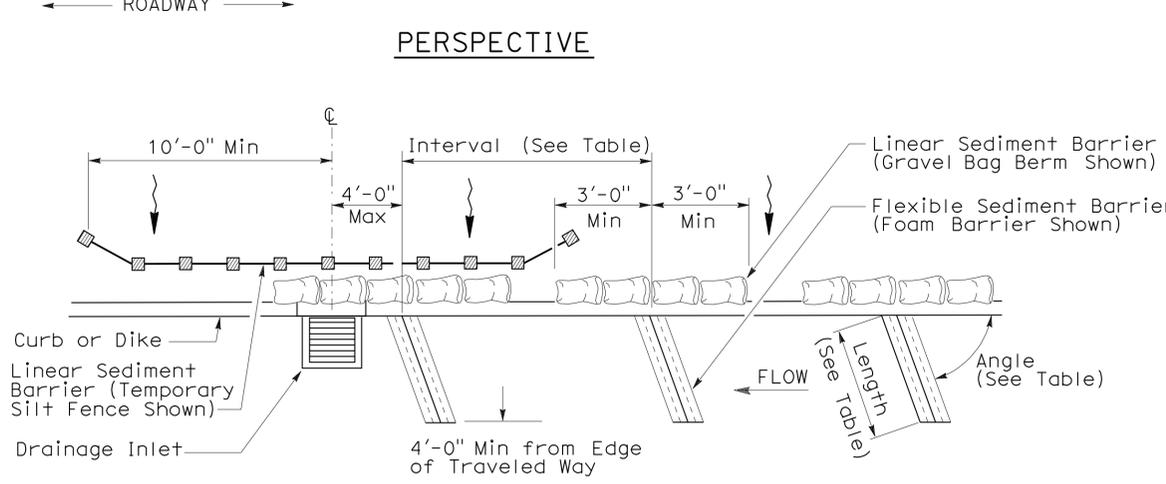
- See Standard Plan T51 for Temporary Silt Fence.
- Dimensions may vary to fit field conditions.
- Install a minimum of 3 flexible sediment barriers upstream of each drainage inlet to be protected.
- Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
- Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated.



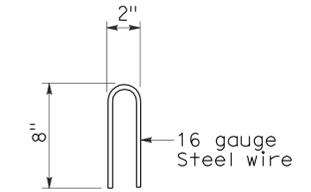
PLAN
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 4A)



PERSPECTIVE



PLAN
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 4B)
FLEXIBLE SEDIMENT BARRIER



STAPLE DETAIL

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY WATER POLLUTION
CONTROL DETAILS
(TEMPORARY DRAINAGE
INLET PROTECTION)**

NO SCALE
NSP T63 DATED AUGUST 15, 2008 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T63

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	261	0.0/6.2	76	76

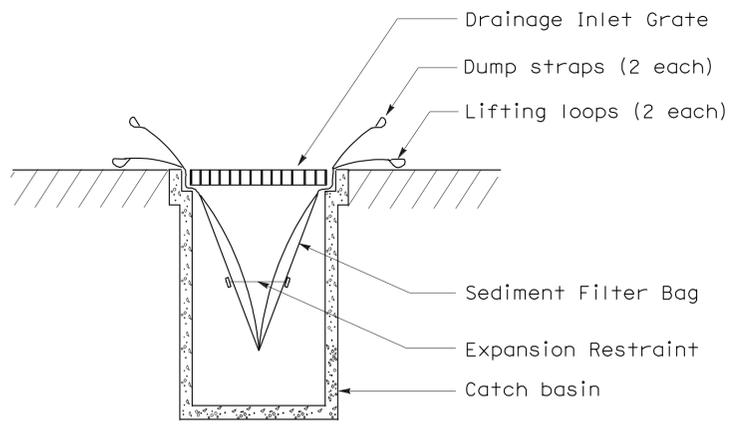
Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT

August 15, 2008
 PLANS APPROVAL DATE

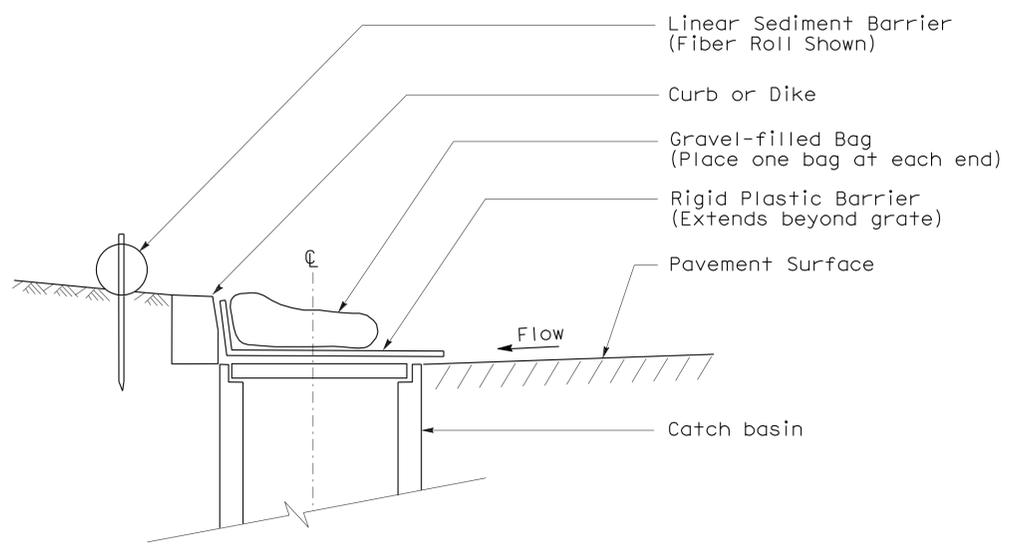
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LICENSED LANDSCAPE ARCHITECT
Robert B. Schott
 Signature
 11-04-08
 Renewal Date
 08-11-08
 Date
 STATE OF CALIFORNIA

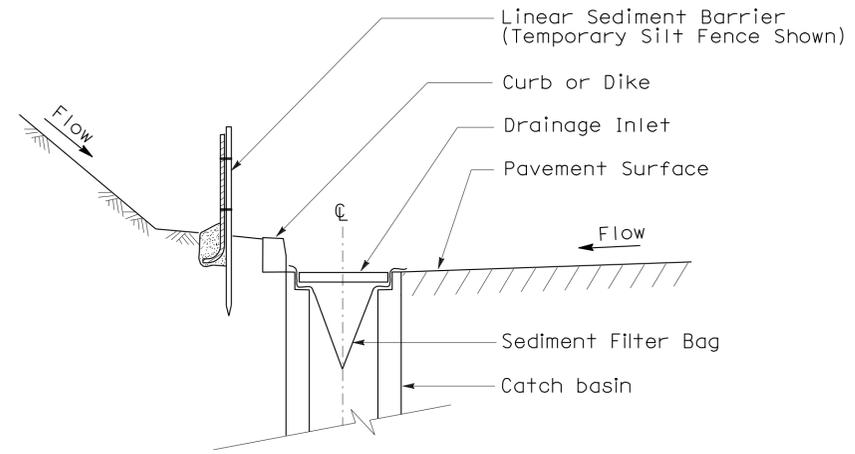
To accompany plans dated 6-28-10



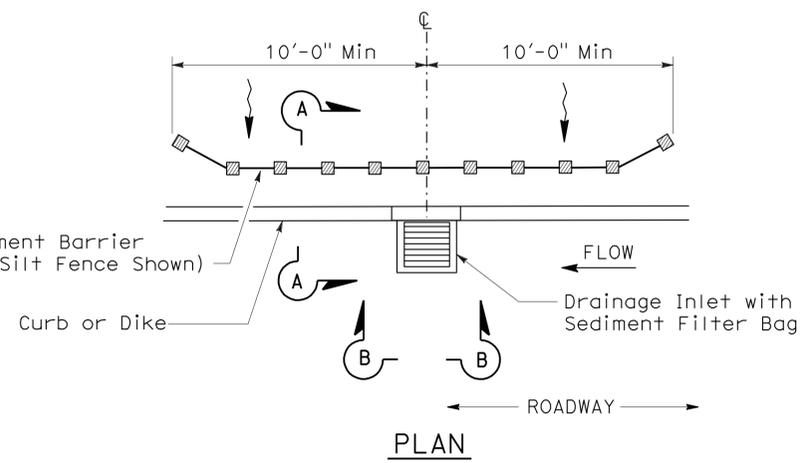
SECTION B-B
SEDIMENT FILTER BAG DETAIL



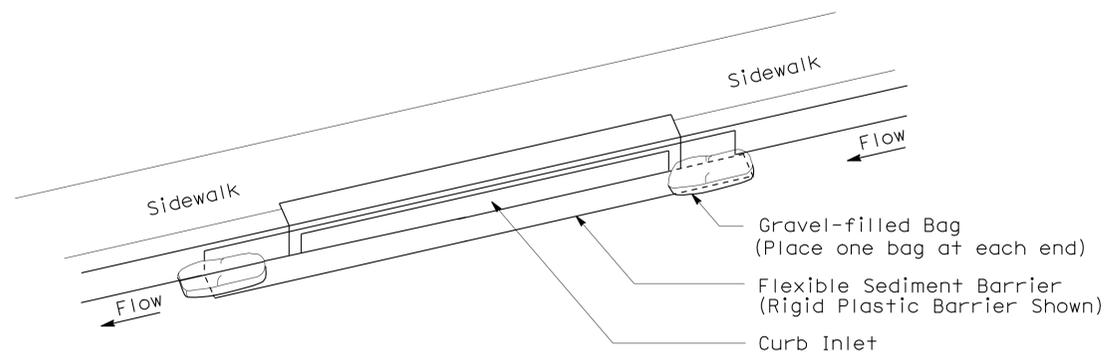
SECTION
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 6A)
(CATCH BASIN WITH GRATE)



SECTION A-A



PLAN
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 5)
(SEDIMENT FILTER BAG)



PERSPECTIVE
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 6B)
(CURB INLET WITHOUT GRATE)

NOTES:

1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE

NSP T64 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP T64

2006 NEW STANDARD PLAN NSP T64