

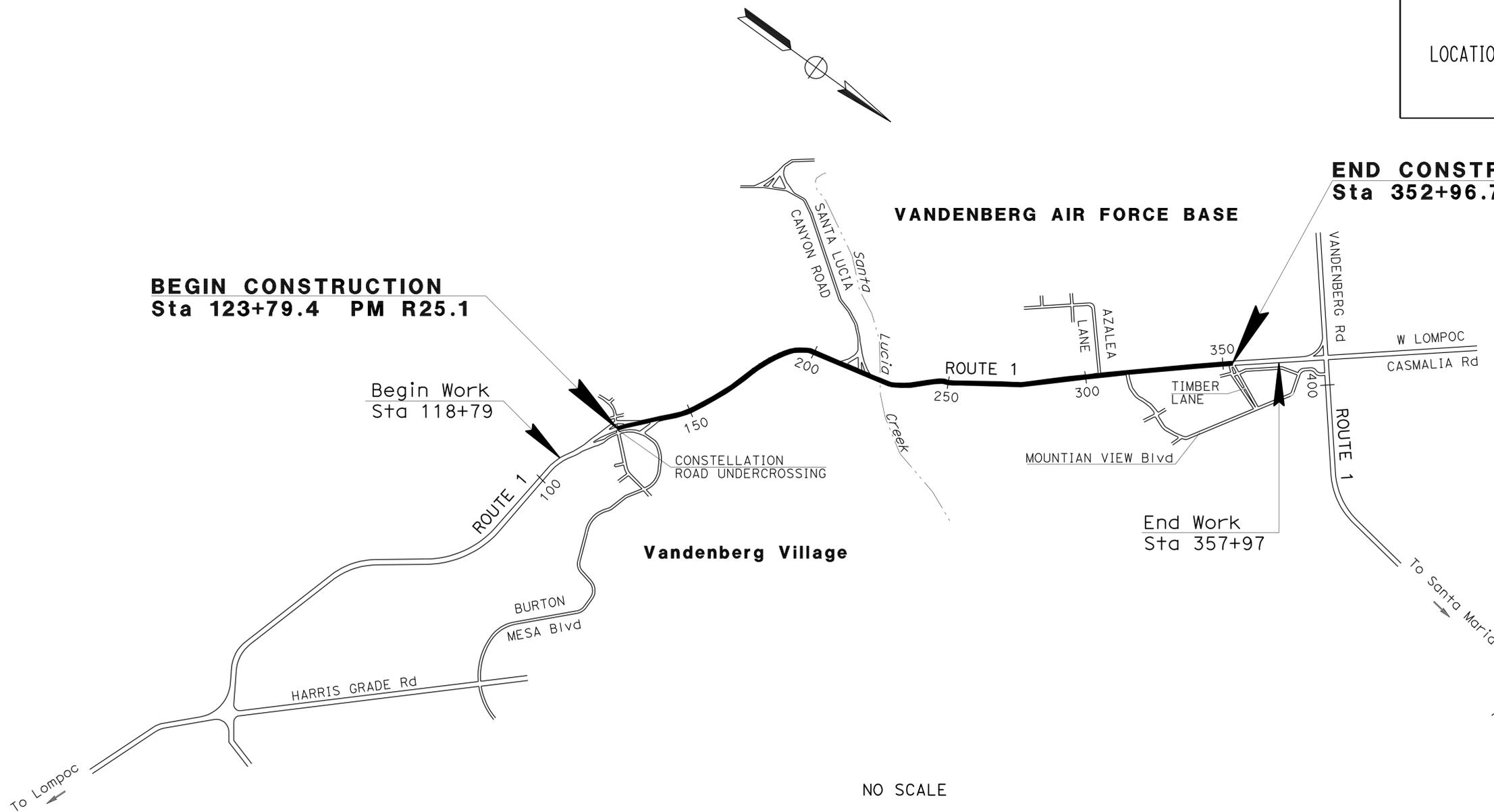
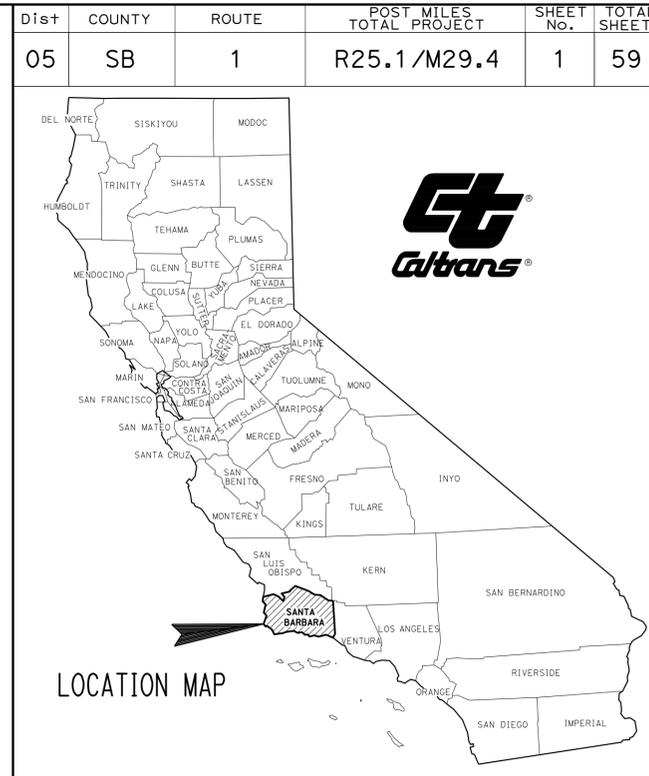
INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2-3	TYPICAL CROSS SECTIONS
4	KEY MAP AND LINE INDEX
5-16	LAYOUTS
17-19	CONSTRUCTION DETAILS
20-22	DRAINAGE PROFILES, DETAILS AND QUANTITIES
23	CONSTRUCTION AREA SIGNS
24-26	SUMMARY OF QUANTITIES
27-59	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 HSNGH-P001(543)E
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN SANTA BARBARA COUNTY
ABOUT 5 MILES NORTH OF LOMPOC
FROM CONSTELLATION ROAD UNDERCROSSING
TO TIMBER LANE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



NO SCALE

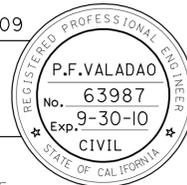
PROJECT MANAGER
DAVID C. BEARD
 DESIGN ENGINEER
STEVE M. WYATT

PROJECT ENGINEER
 REGISTERED CIVIL ENGINEER

DATE
July 20, 2009

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.



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

CONTRACT No. **05-0Q6904**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	2	59

REGISTERED CIVIL ENGINEER		DATE
7-20-09		PLANS APPROVAL DATE

ADT (2009)	15,529
ADT (2029)	22,383
DHV (2009)	1,320
DHV (2029)	1,956
D	55%
T	3.0%
% TRUCKS	4.8%
TI (20 YR)	10
V	70 MPH

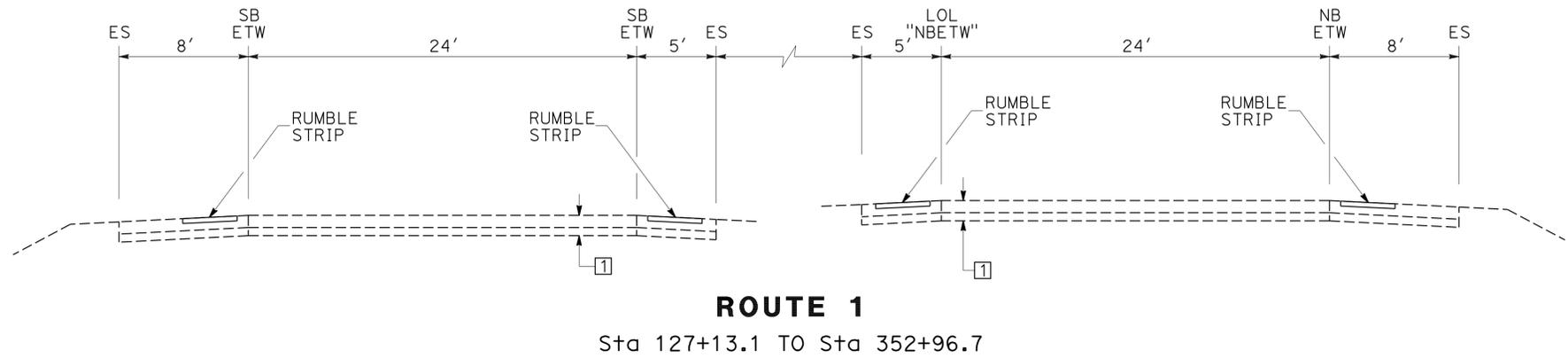
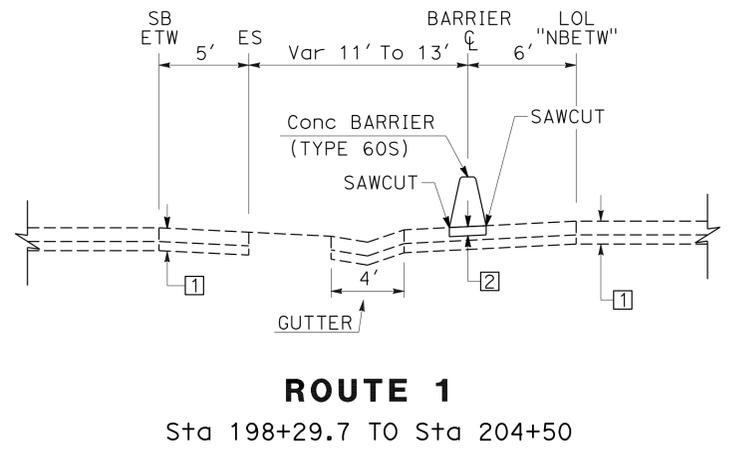
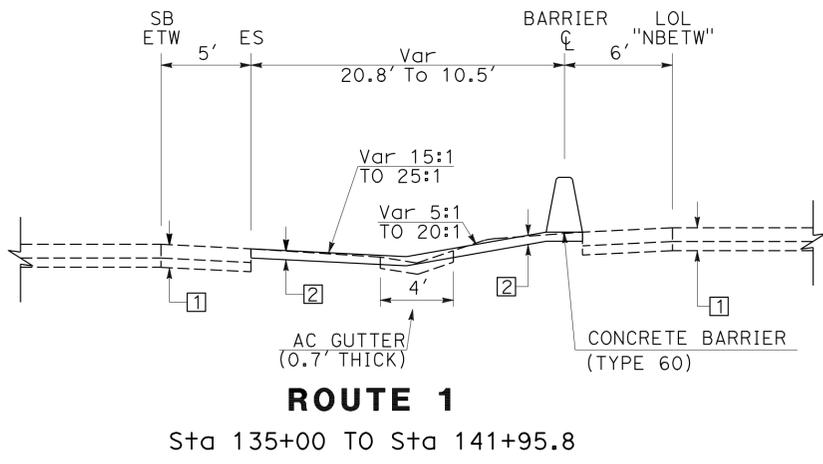
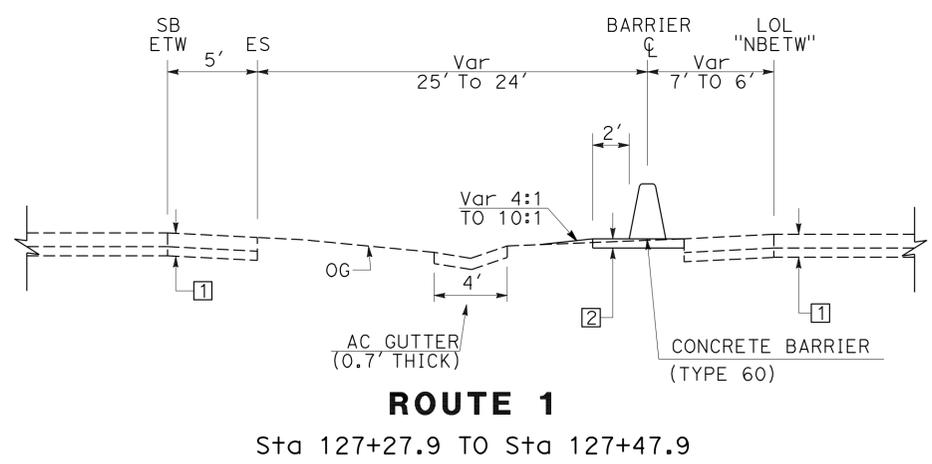
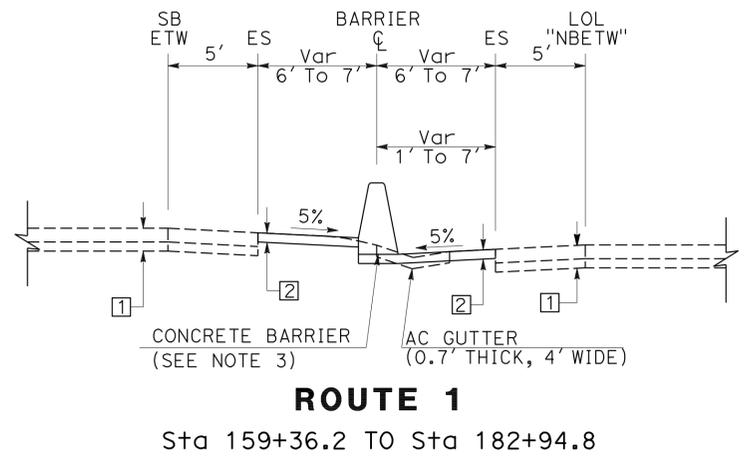
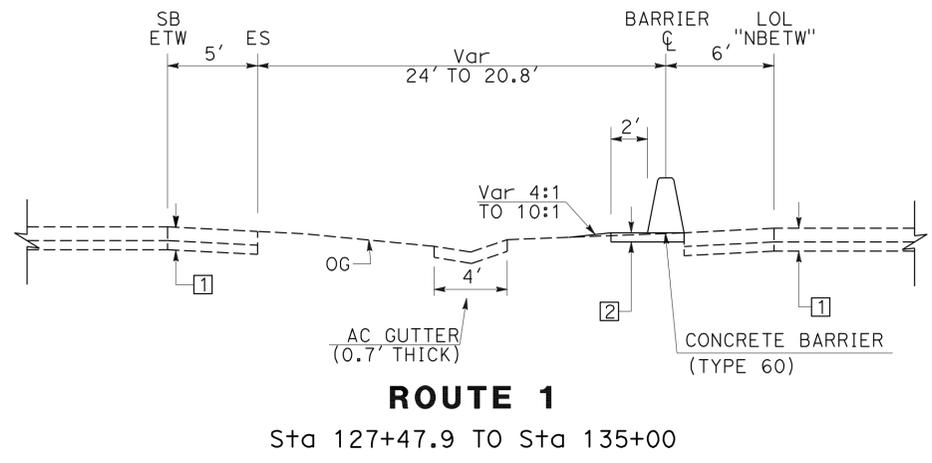
NOTES: 1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS
 2. SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
 3. FOR CONCRETE BARRIER TYPE, SEE LAYOUT AND QUANTITY SHEETS.

STRUCTURAL SECTIONS

- 1 Exist Pvmt
0.75' AC
0.5' AB
- 2 0.5' HMA (TYPE A)

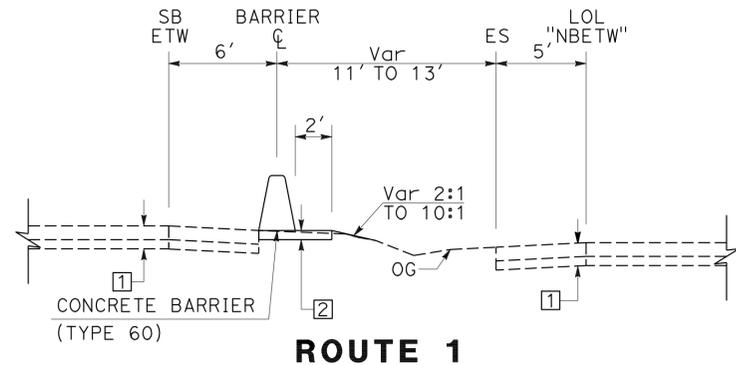
DESIGN DESIGNATION

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 Et Caltrans®
 FUNCTIONAL SUPERVISOR: S. M. WYATT
 CALCULATED/DESIGNED BY: PAUL F. VALADAO
 CHECKED BY: STEVE M. WYATT
 REVISED BY: PAUL F. VALADAO
 DATE REVISED:

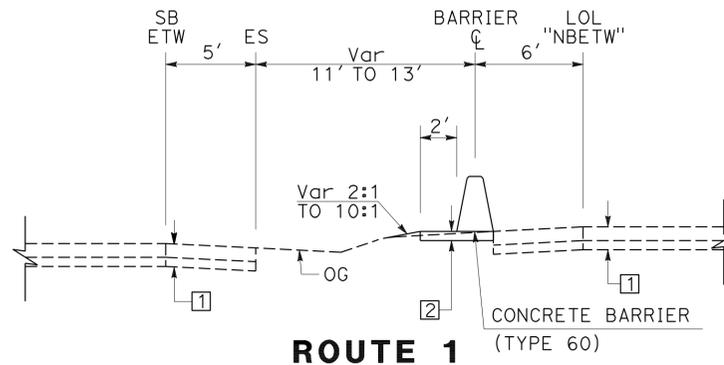


TYPICAL CROSS SECTIONS
NO SCALE
X-1

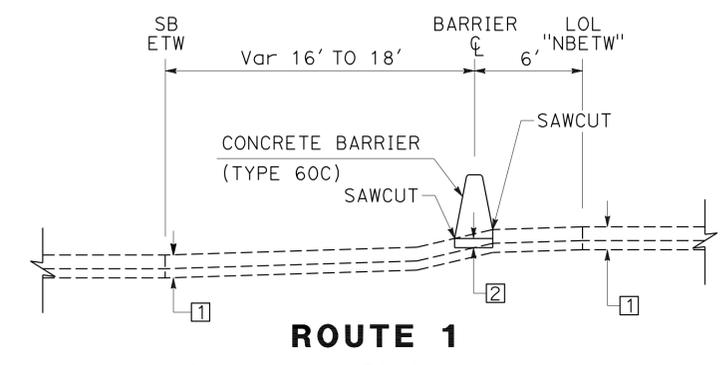
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	3	59
			5-21-09	DATE	
REGISTERED CIVIL ENGINEER			DATE		
7-20-09			PLANS APPROVAL DATE		
P.F. VALADAO			No. 63987		
			Exp. 9-30-10		
			CIVIL		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



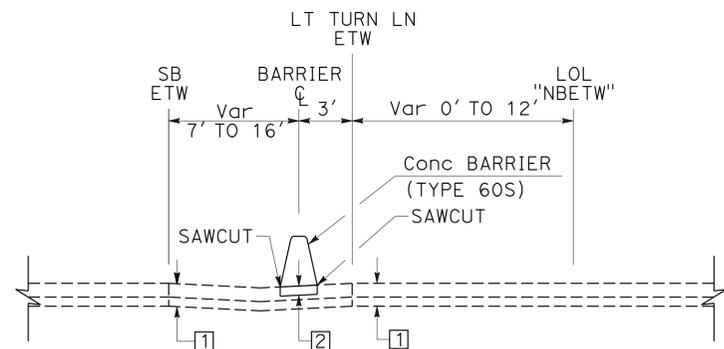
ROUTE 1
Sta 249+41.4 TO Sta 268+53.7



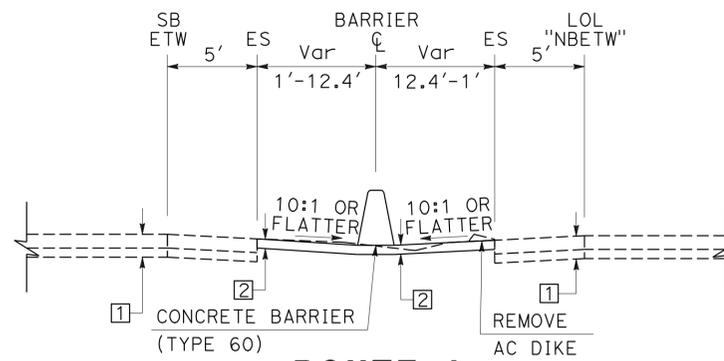
ROUTE 1
Sta 270+59.3 TO Sta 299+50
Sta 316+23.7 TO Sta 319+57.5
Sta 347+84.7 TO Sta 351+69



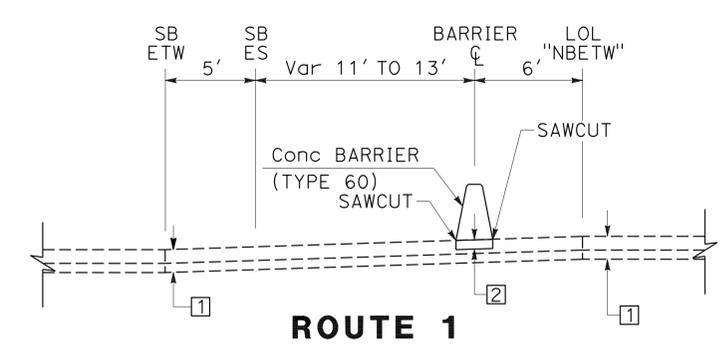
ROUTE 1
Sta 323+10 TO Sta 325+10



ROUTE 1
Sta 204+50 TO Sta 210+24.9



ROUTE 1
Sta 268+53.7 TO Sta 270+59.3



ROUTE 1
Sta 299+50 TO Sta 306+75.3
Sta 319+57.5 TO Sta 323+10
Sta 325+10 TO Sta 326+00.3

TYPICAL CROSS SECTIONS
NO SCALE
X-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
CALTRANS

REVISOR BY
DATE

PAUL F. VALADAO
STEVE M. WYATT

CALCULATED-DESIGNED BY
CHECKED BY

FUNCTIONAL SUPERVISOR
S. M. WYATT

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE
IS IN INCHES

USERNAME => frmkkesl
DGN FILE => 500690ca002.dgn

CU 06235

EA 006901

LAST REVISION | DATE PLOTTED => 26-AUG-2009
05-21-09 | TIME PLOTTED => 06:31

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

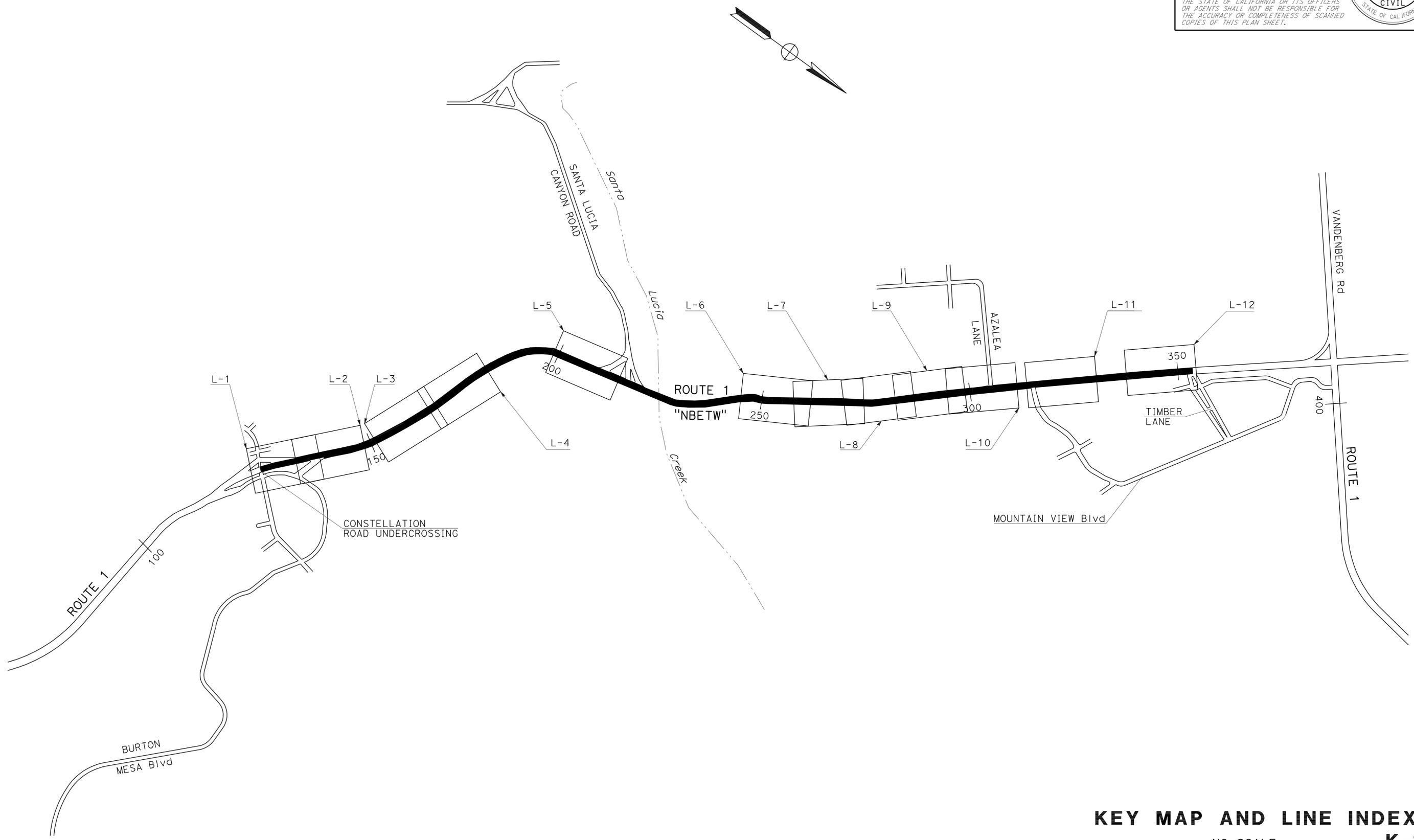
FUNCTIONAL SUPERVISOR S. M. WYATT	CALCULATED-DESIGNED BY PAUL F. VALADAO	REVISOR STEVE M. WYATT
CHECKED BY	DATE	REVISION

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	4	59

5-21-09
 REGISTERED CIVIL ENGINEER DATE
 7-20-09
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 P.F. VALADAO
 No. 63987
 Exp. 9-30-10
 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.



KEY MAP AND LINE INDEX
 NO SCALE
K-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	5	59

REGISTERED CIVIL ENGINEER	DATE
<i>P.F. Valadao</i>	5-21-09
PLANS APPROVAL DATE	
	7-20-09

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:

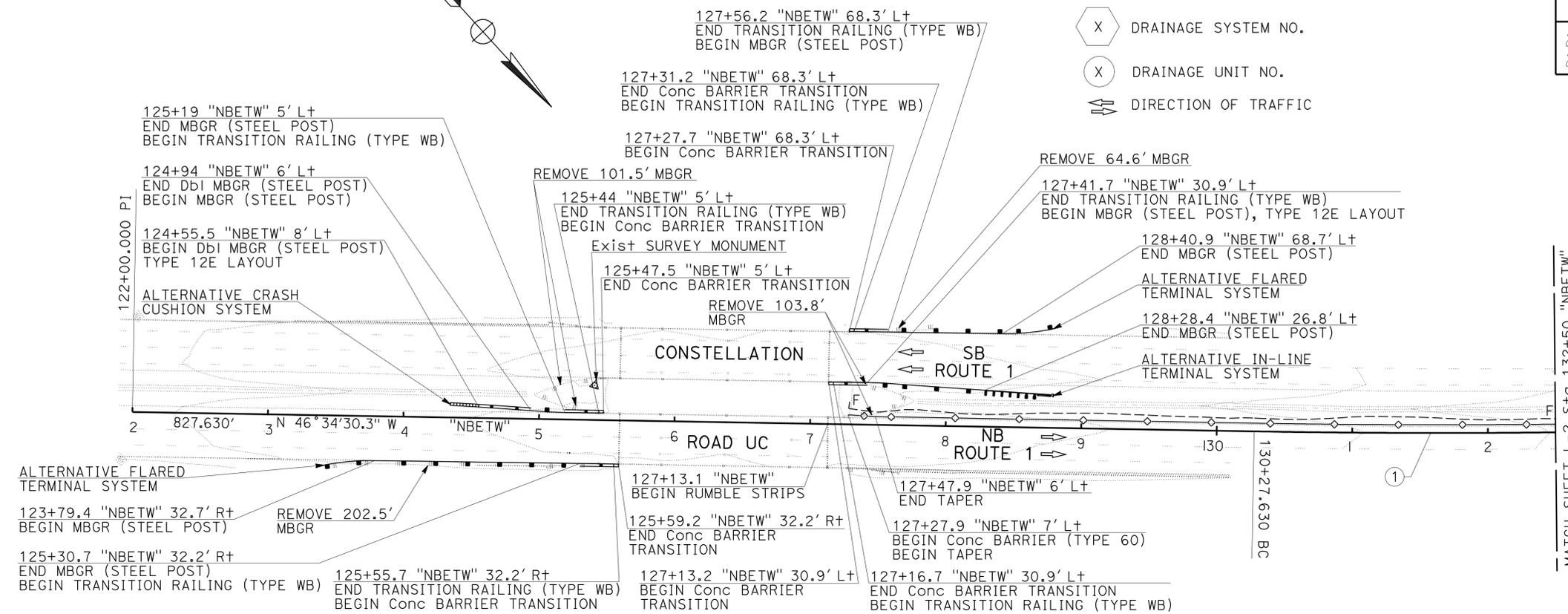
- FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE DISTRICT OFFICE.
- EXACT LOCATIONS OF EXISTING UTILITIES ARE UNKNOWN.

CURVE DATA

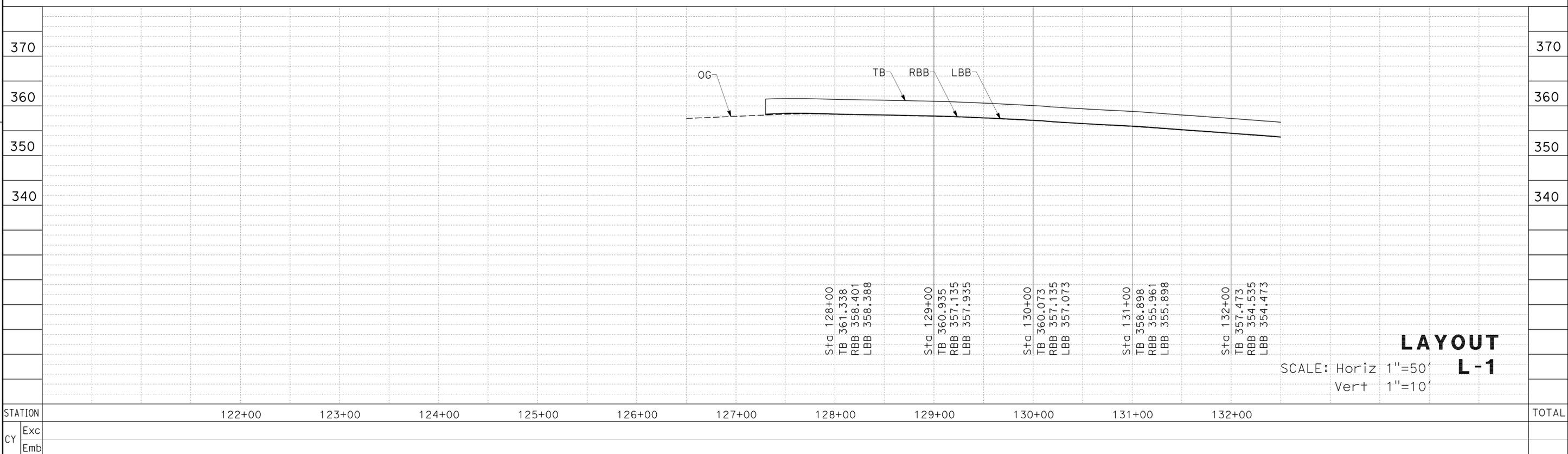
NO.	R	Δ	T	L
(1)	7960.75'	2°54'7"	201.64'	403.20'

LEGEND

- TB ELEVATION AT TOP OF BARRIER
- RBB ELEVATION AT RIGHT BOTTOM OF BARRIER
- LBB ELEVATION AT LEFT BOTTOM OF BARRIER
- (X) DRAINAGE SYSTEM NO.
- (X) DRAINAGE UNIT NO.
- ⇨ DIRECTION OF TRAFFIC



SCALE: 1"=50'



LAYOUT L-1

SCALE: Horiz 1"=50'
Vert 1"=10'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN
FUNCTIONAL SUPERVISOR
S. M. WYATT
CHECKED BY
PAUL F. VALADAO
STEVE M. WYATT
REVISOR
DATE
REVISION
DATE

STATION	Exc	Emb	TOTAL
122+00			
123+00			
124+00			
125+00			
126+00			
127+00			
128+00			
129+00			
130+00			
131+00			
132+00			
TOTAL			

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	6	59

5-21-09
 REGISTERED CIVIL ENGINEER DATE
 7-20-09
 PLANS APPROVAL DATE

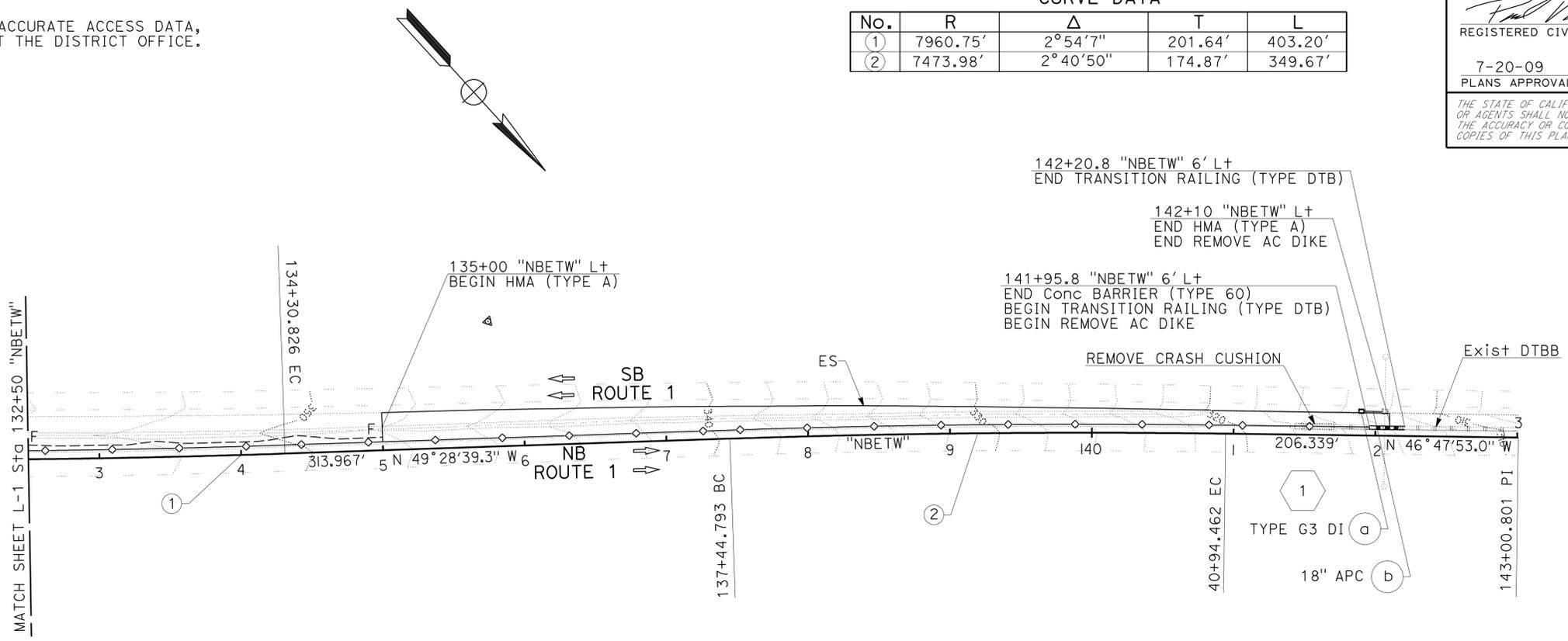
P.F. VALADAO
 No. 63987
 Exp. 9-30-10
 CIVIL

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.

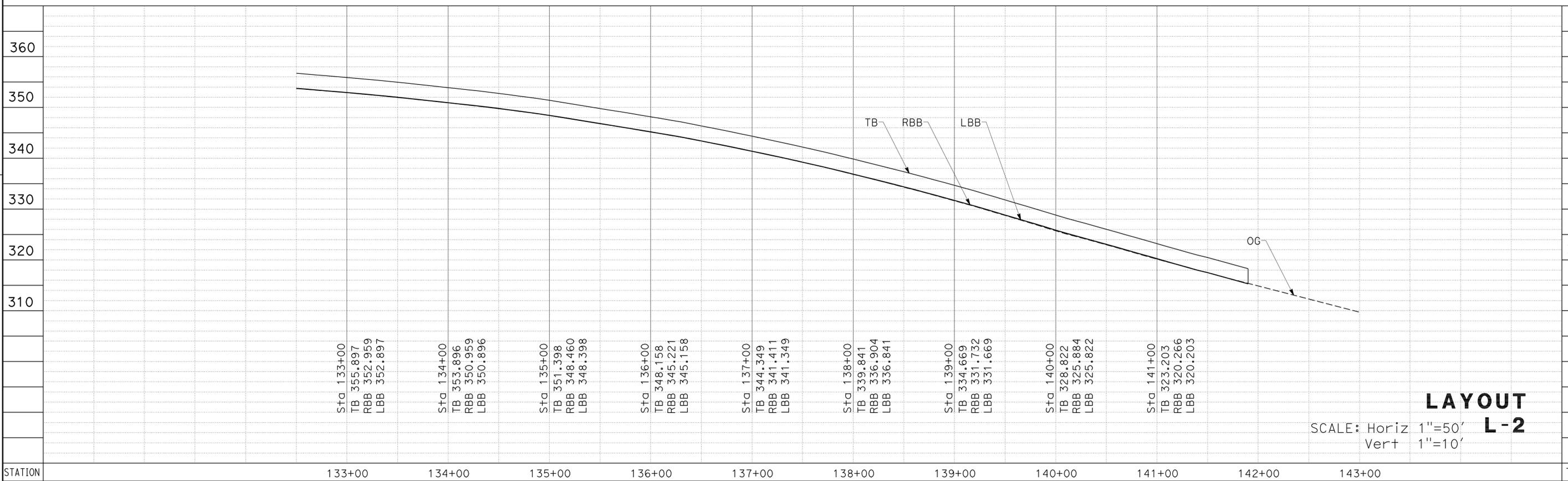
CURVE DATA

No.	R	Δ	T	L
(1)	7960.75'	2°54'7"	201.64'	403.20'
(2)	7473.98'	2°40'50"	174.87'	349.67'

NOTE:
 1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA,
 SEE RIGHT OF WAY RECORD MAPS AT THE DISTRICT OFFICE.



SCALE: 1"=50'



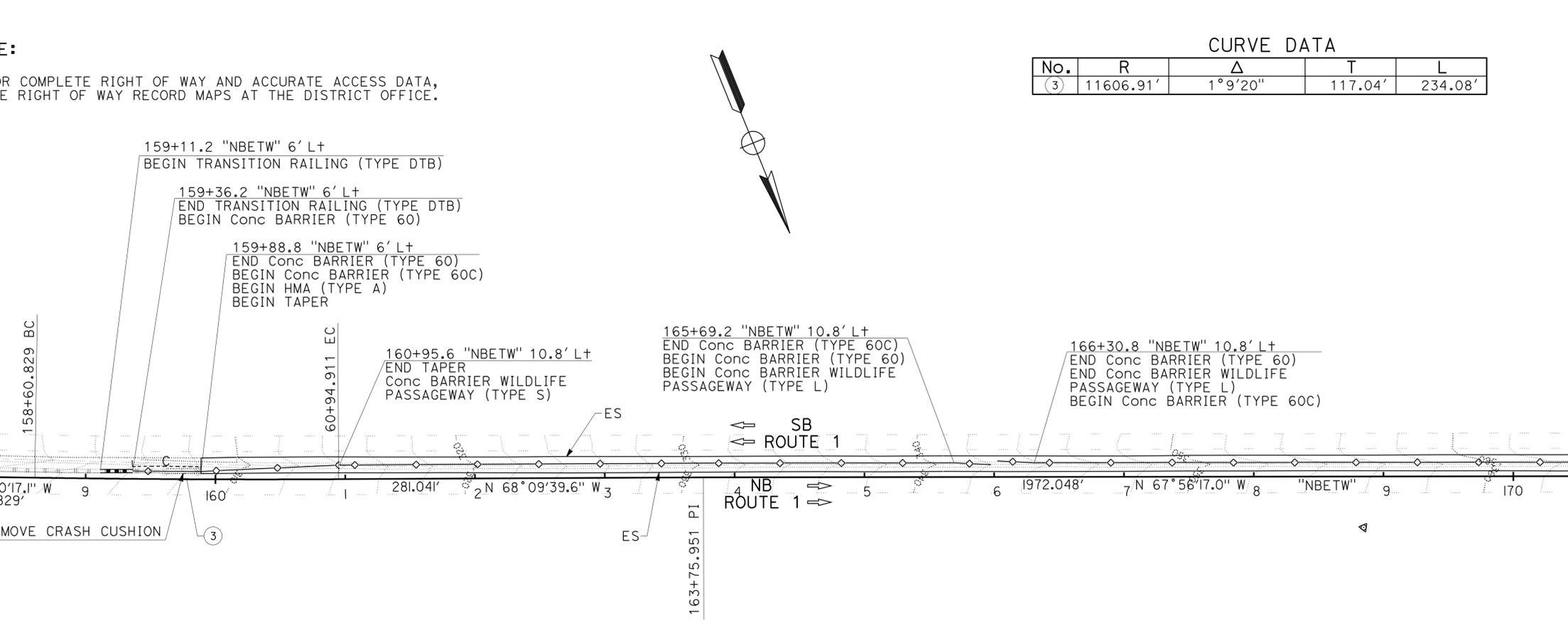
LAYOUT
 L-2
 SCALE: Horiz 1"=50'
 Vert 1"=10'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DESIGN
Caltrans	S. M. WYATT	PAUL F. VALADAO STEVE M. WYATT	
		CALCULATED-DESIGNED BY CHECKED BY	
STATION			
CY	Exc		
	Emb		

LAST REVISION
 DATE PLOTTED => 26-AUG-2009
 TIME PLOTTED => 06:51

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR: S. M. WYATT
 REVISIONS: PAUL F. VALADAO, STEVE M. WYATT, CALCULATED/DESIGNED BY, CHECKED BY



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	7	59

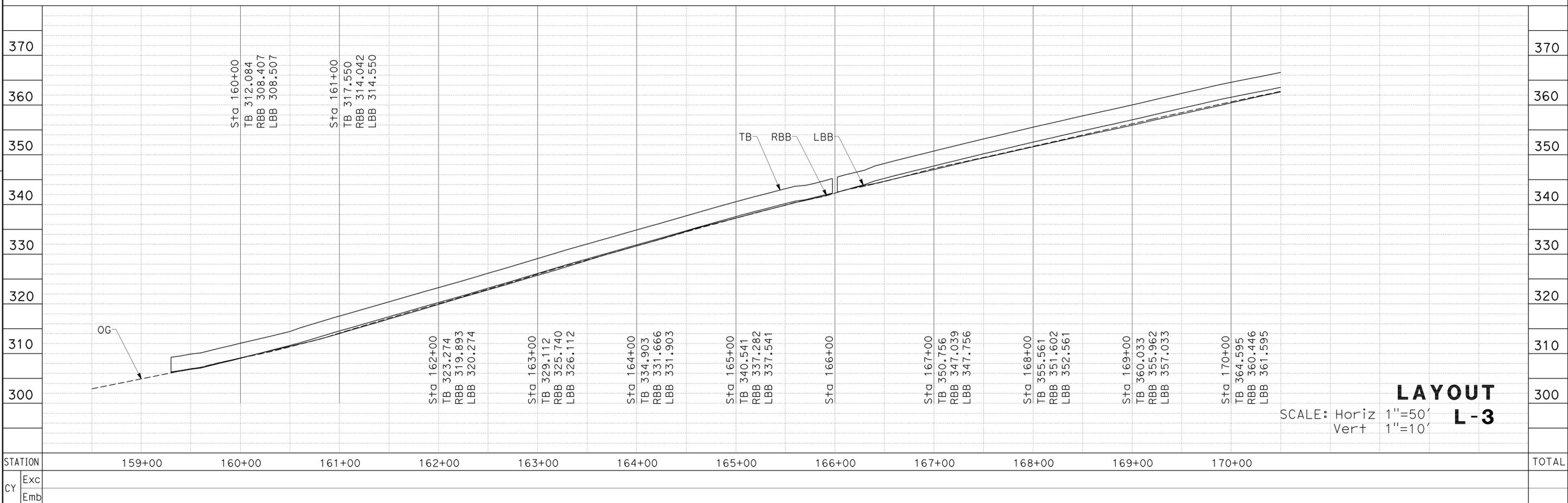
REGISTERED CIVIL ENGINEER: P.F. VALADAO
 No. 63987
 Exp. 9-30-10
 CIVIL

5-21-09 DATE
 7-20-09 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.

No.	R	Δ	T	L
(3)	11606.91'	1°9'20"	117.04'	234.08'

SCALE: 1"=50'



LAYOUT L-3
 SCALE: Horiz 1"=50'
 Vert 1"=10'

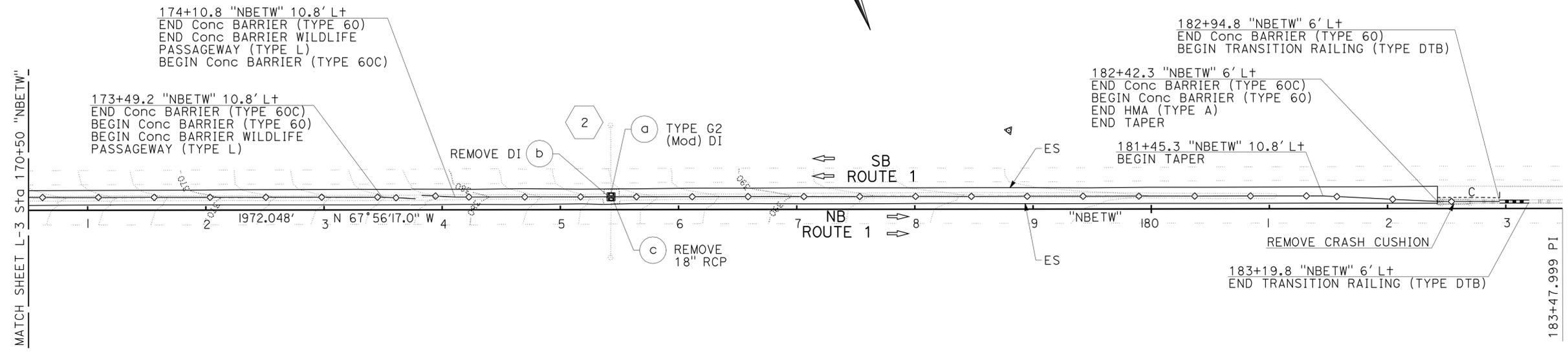
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	8	59

5-21-09
 REGISTERED CIVIL ENGINEER DATE
 7-20-09
 PLANS APPROVAL DATE

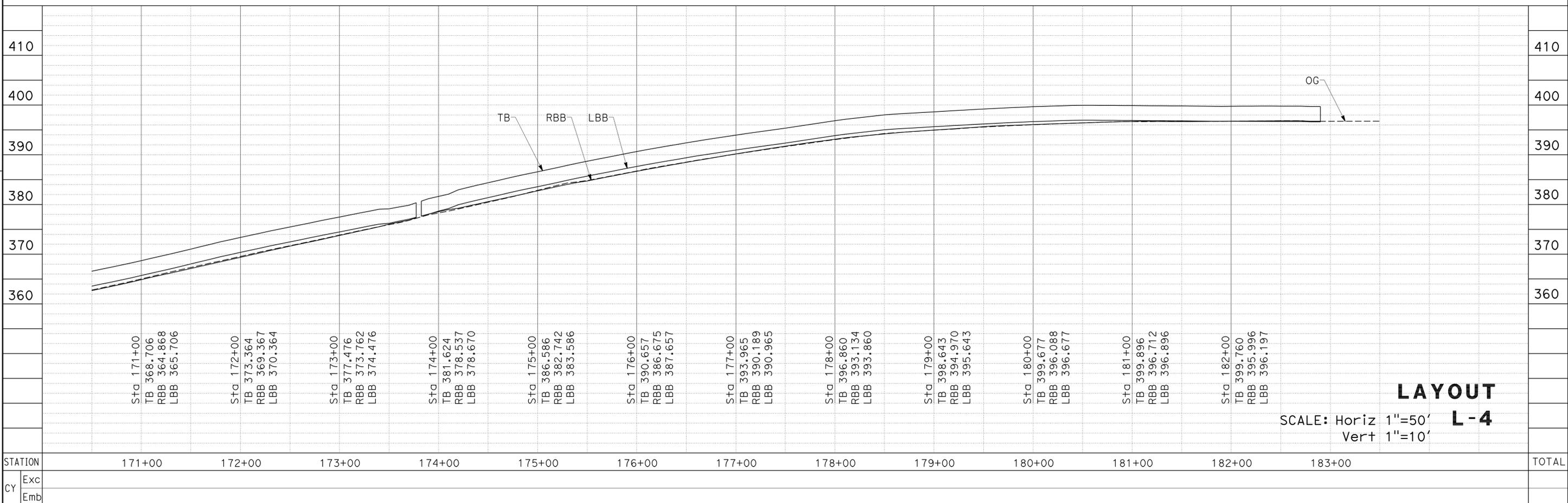
P.F. VALADAO
 No. 63987
 Exp. 9-30-10
 CIVIL

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.

NOTE:
 1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE DISTRICT OFFICE.



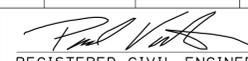
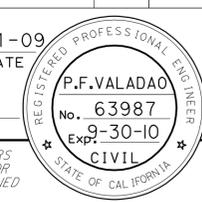
SCALE: 1"=50'



LAYOUT
L-4
 SCALE: Horiz 1"=50'
 Vert 1"=10'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans	S. M. WYATT	PAUL F. VALADAO	
DESIGN	CHECKED BY	STEVE M. WYATT	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	9	59

 REGISTERED CIVIL ENGINEER DATE 5-21-09		
PLANS APPROVAL DATE 7-20-09		
<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>		

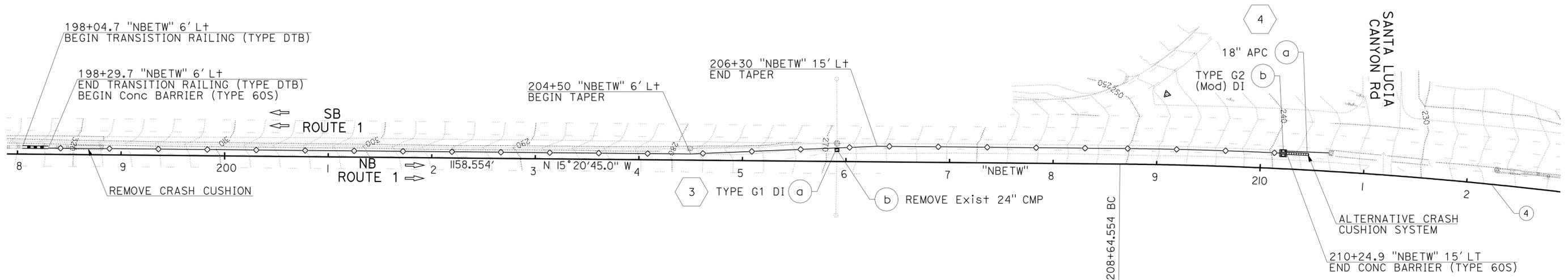
CURVE DATA

No.	R	Δ	T	L
(4)	3965.86'	13°30'09"	469.48'	934.60'

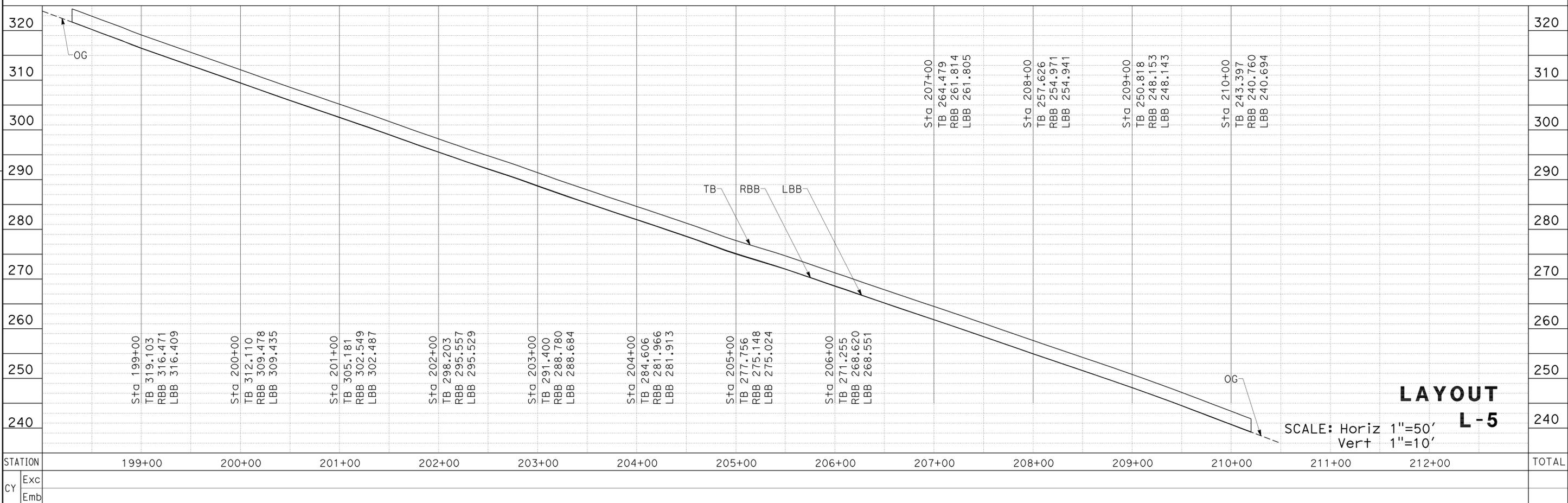
NOTE:
 1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: S. M. WYATT
 CALCULATED/DESIGNED BY: PAUL F. VALADAO
 CHECKED BY: STEVE M. WYATT
 REVISED BY: DATE REVISION



SCALE: 1"=50'



LAYOUT
 L-5
 SCALE: Horiz 1"=50'
 Vert 1"=10'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	10	59

5-21-09
 REGISTERED CIVIL ENGINEER DATE
 P.F. VALADAO
 No. 63987
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA

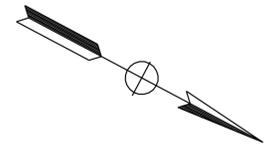
7-20-09
 PLANS APPROVAL DATE

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.

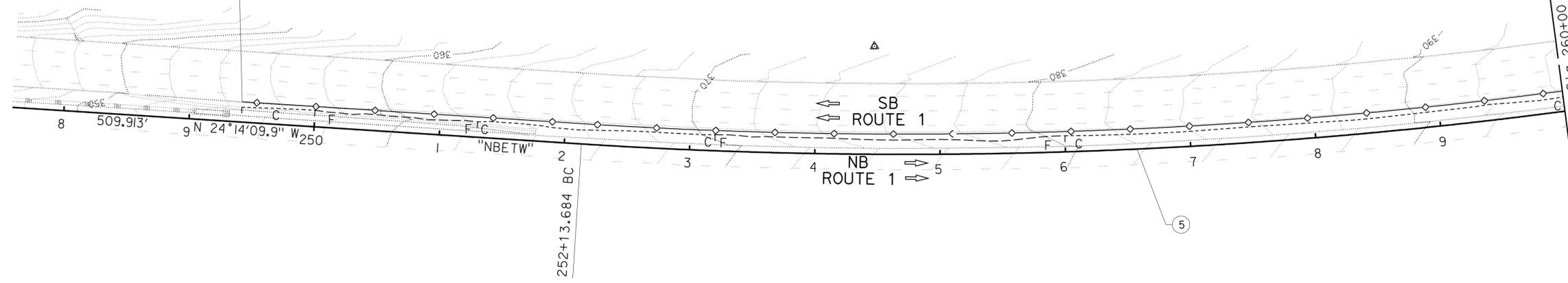
CURVE DATA

No.	R	Δ	T	L
(5)	4034.09'	16°3'21"	568.96'	1130.46'

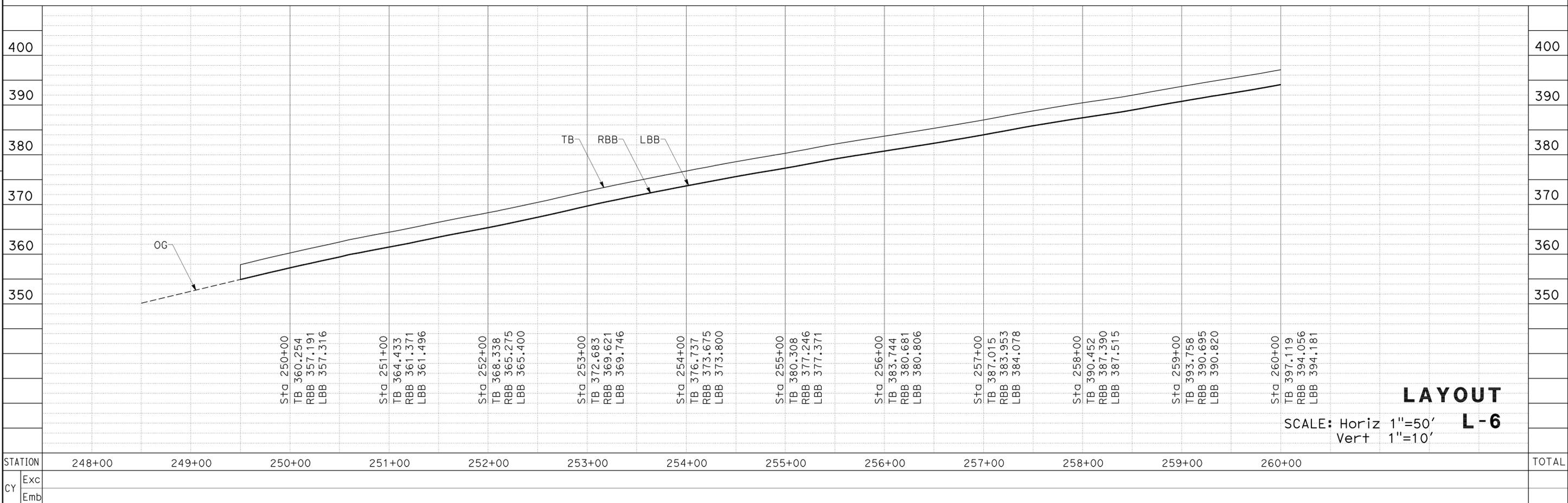
NOTE:
 1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE DISTRICT OFFICE.



249+41.4 "NBETW" 16.1' L+
 BEGIN Conc BARRIER (TYPE 60)



SCALE: 1"=50'



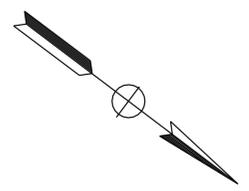
LAYOUT L-6
 SCALE: Horiz 1"=50'
 Vert 1"=10'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans	S. M. WYATT	PAUL F. VALADAO	
DESIGN	CHECKED BY	DESIGNED BY	DATE
	STEVE M. WYATT	STEVE M. WYATT	

LAST REVISION DATE PLOTTED => 26-AUG-2009
 05-21-09 TIME PLOTTED => 06:52

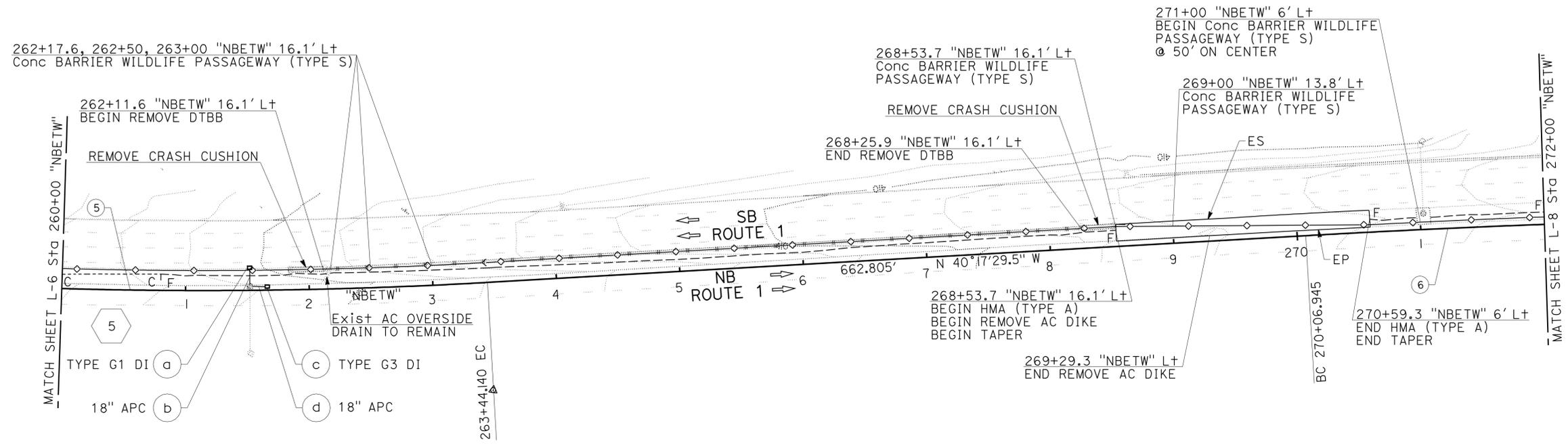
CURVE DATA

No.	R	Δ	T	L
5	4034.09'	16°3'21"	568.96'	1130.46'
6	9977.15'	2°51'29"	248.90'	497.69'

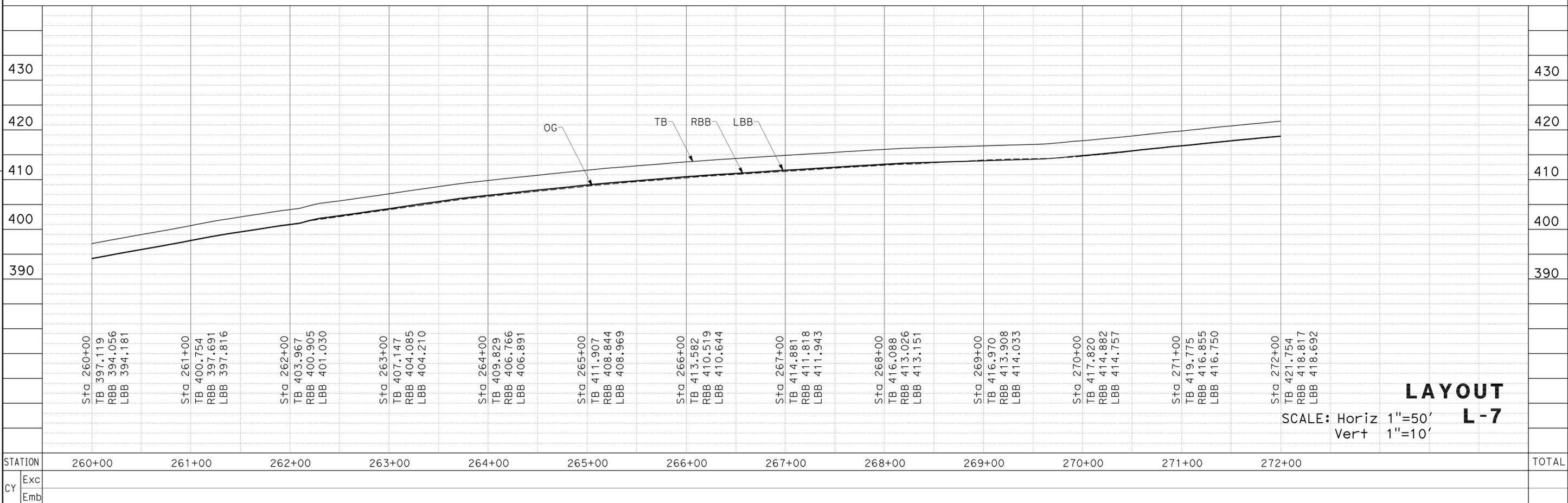


NOTE:
 1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 FUNCTIONAL SUPERVISOR S. M. WYATT
 CALCULATED/DESIGNED BY PAUL F. VALADAO
 CHECKED BY STEVE M. WYATT
 REVISED BY DATE REVISION
 REVISIONS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100



SCALE: 1"=50'



LAYOUT L-7
 SCALE: Horiz 1"=50'
 Vert 1"=10'

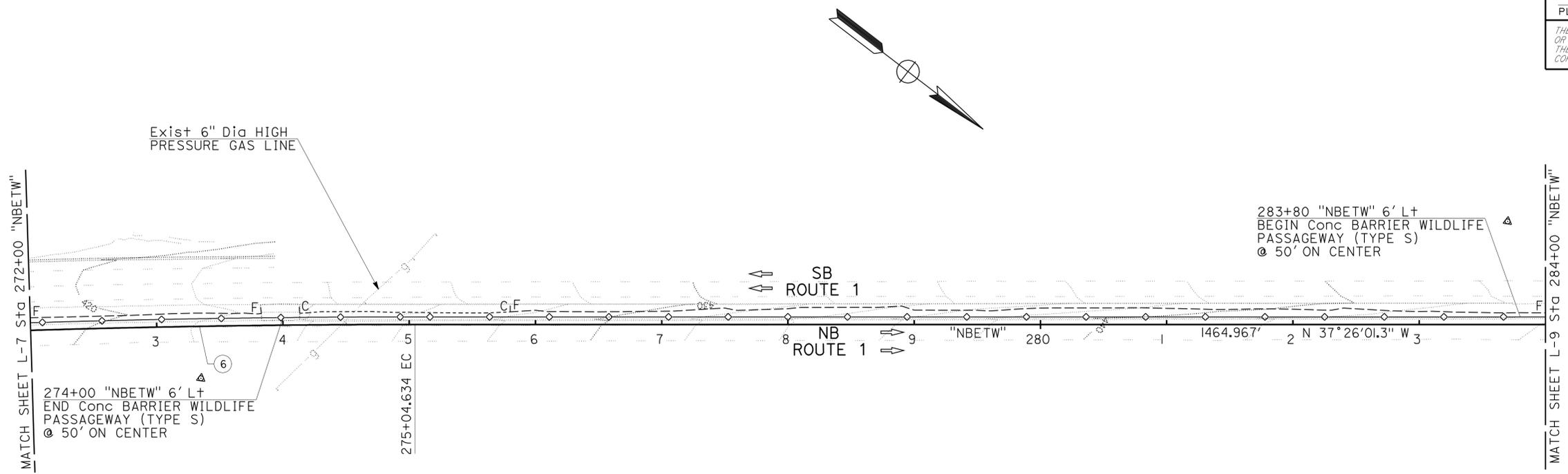
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	12	59

REGISTERED CIVIL ENGINEER DATE 5-21-09
 P.F. VALADAO
 No. 63987
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA
 REGISTERED PROFESSIONAL ENGINEER
 7-20-09
 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.

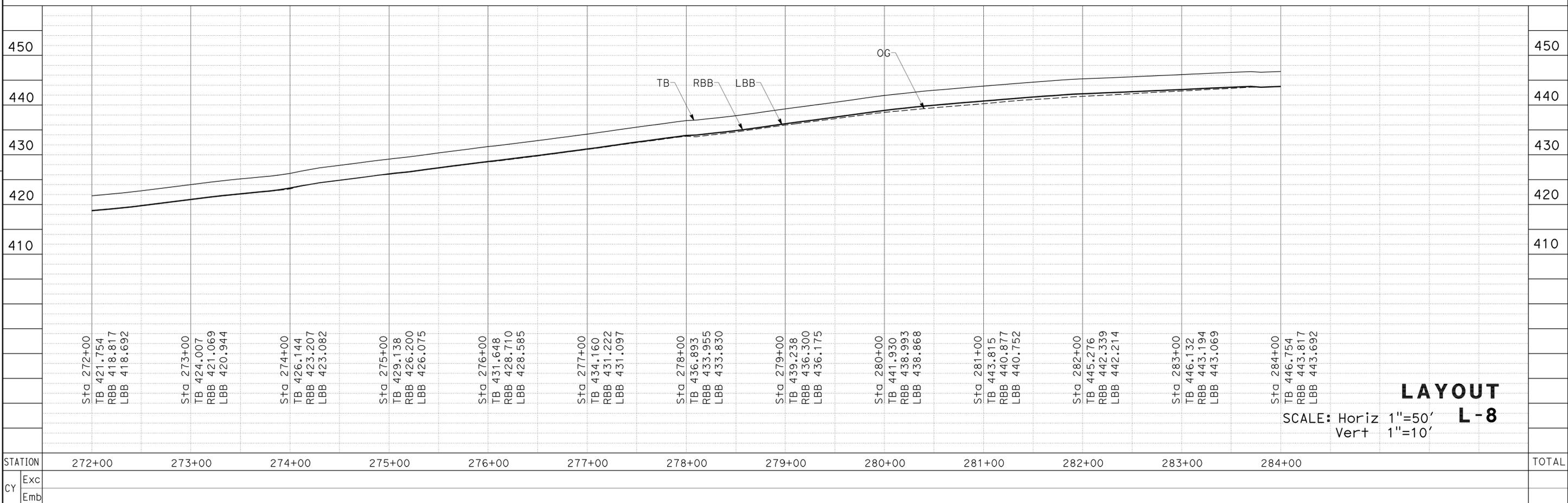
CURVE DATA

No.	R	Δ	T	L
(6)	9977.15'	2°51'29"	248.90'	497.69'

NOTE:
 1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE DISTRICT OFFICE.



SCALE: 1"=50'



LAYOUT
 SCALE: Horiz 1"=50'
 Vert 1"=10'

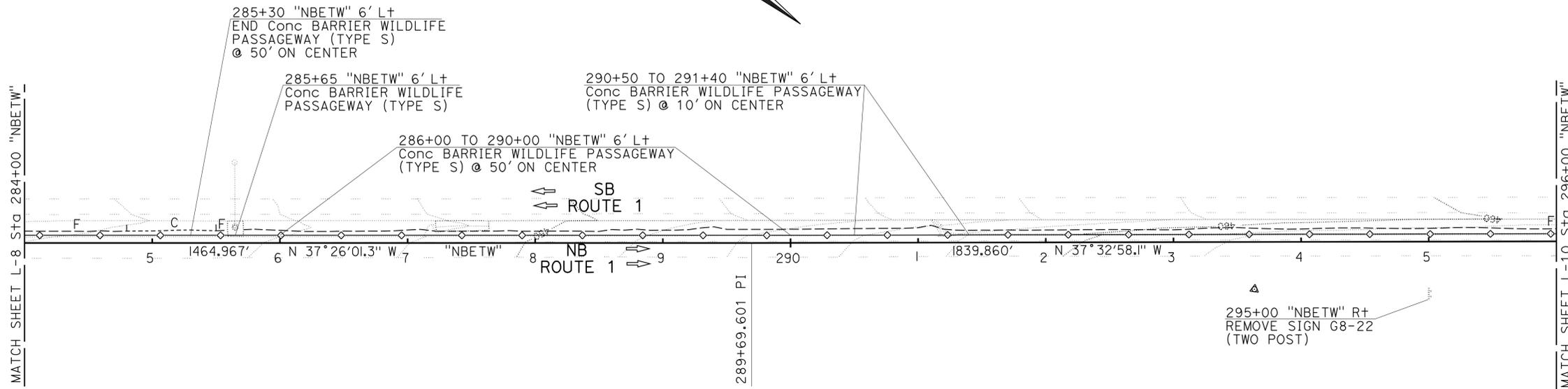
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGN
Caltrans	S. M. WYATT	
CALCULATED-DESIGNED BY	PAUL F. VALADAO	REVISOR
CHECKED BY	STEVE M. WYATT	DATE

LAST REVISION DATE PLOTTED => 26-AUG-2009
 05-21-09 TIME PLOTTED => 06:52

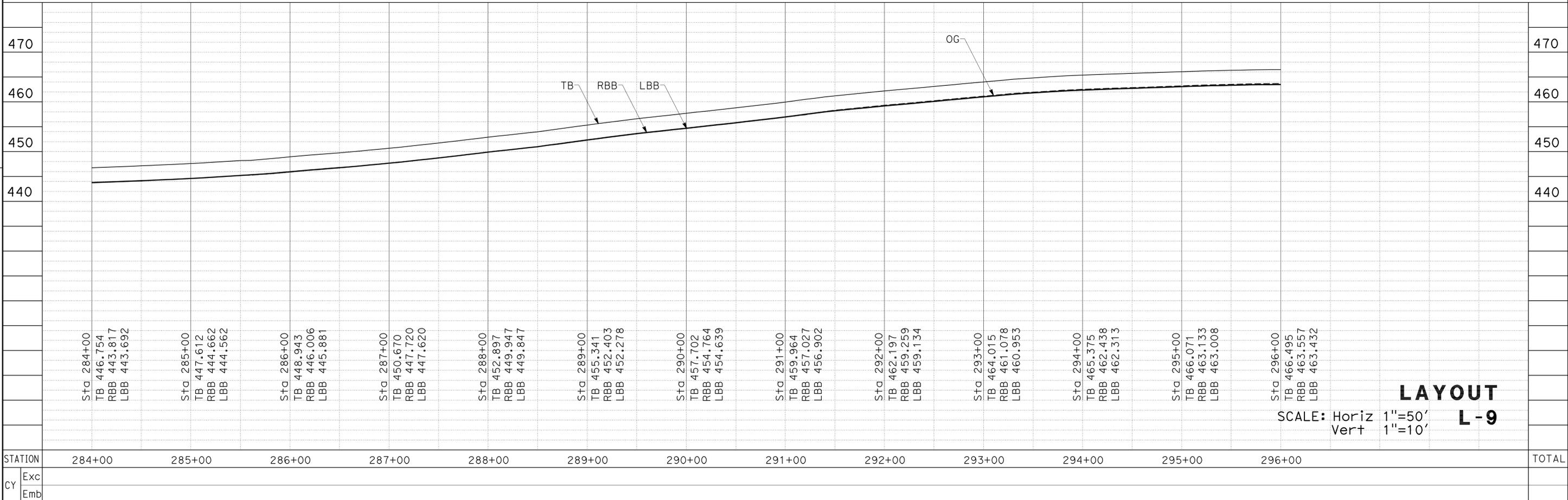
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	13	59
			5-21-09	REGISTERED CIVIL ENGINEER DATE	
			7-20-09	PLANS APPROVAL DATE	
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					
REGISTERED PROFESSIONAL ENGINEER P.F. VALADAO No. 63987 Exp. 9-30-10 CIVIL STATE OF CALIFORNIA					

NOTE:

- FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE DISTRICT OFFICE.



SCALE: 1"=50'



LAYOUT L-9
 SCALE: Horiz 1"=50'
 Vert 1"=10'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGN
Caltrans	S. M. WYATT	
CALCULATED-DESIGNED BY	REVISOR	DATE
CHECKED BY	PAUL F. VALADAO	STEVE M. WYATT
	REVISOR	DATE
	STEVE M. WYATT	



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	14	59

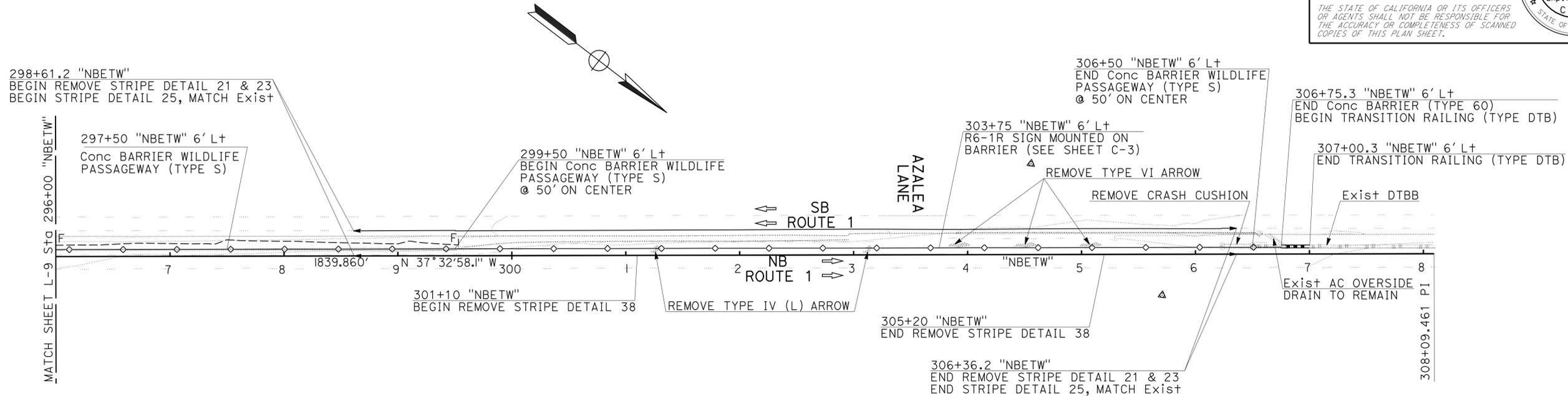
<i>P.F. Valadao</i>	5-21-09
REGISTERED CIVIL ENGINEER	DATE
7-20-09	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
 P.F. VALADAO
 No. 63987
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA

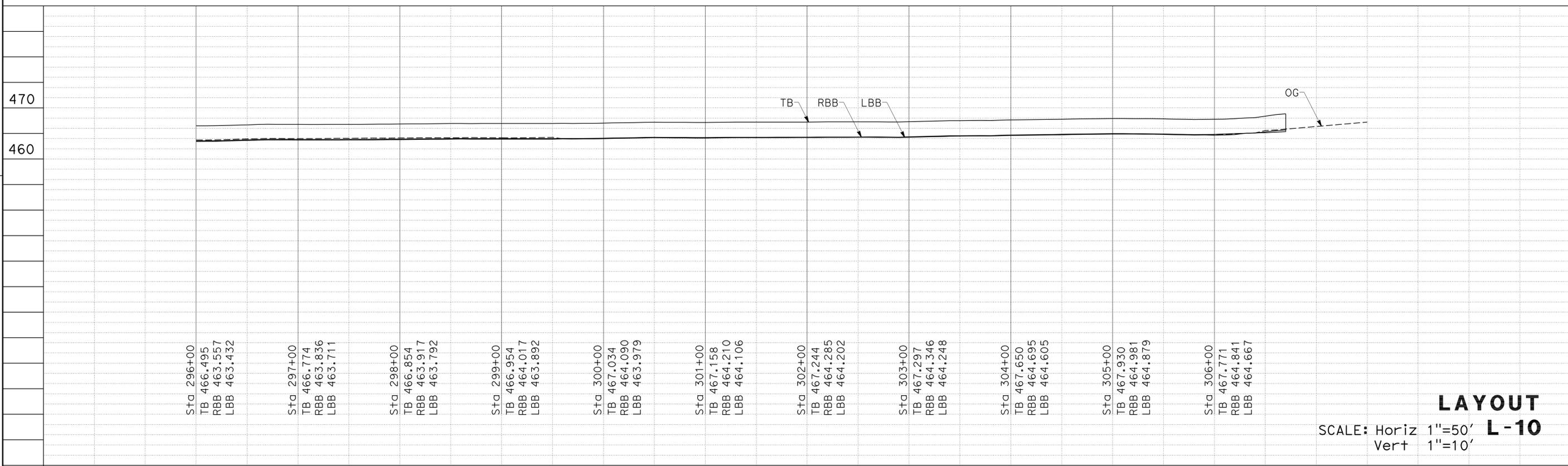
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE DISTRICT OFFICE.



SCALE: 1"=50'



LAYOUT
 SCALE: Horiz 1"=50'
 Vert 1"=10'

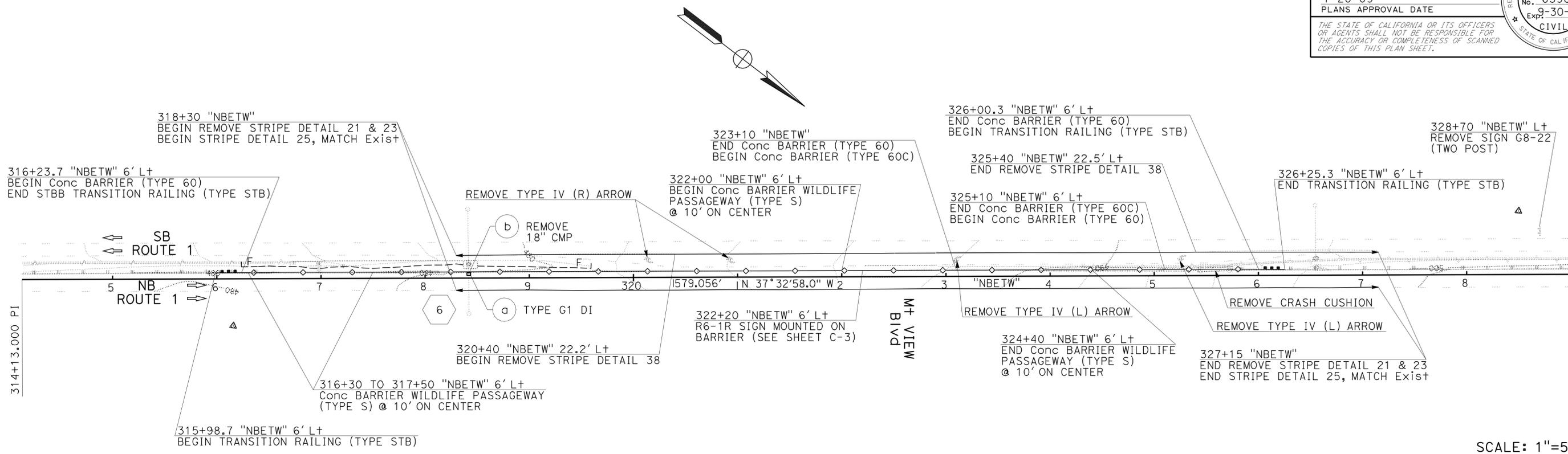
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN
FUNCTIONAL SUPERVISOR
S. M. WYATT
CALCULATED-DESIGNED BY
CHECKED BY
PAUL F. VALADAO
STEVE M. WYATT
REVISED BY
DATE REVISED

STATION	296+00	297+00	298+00	299+00	300+00	301+00	302+00	303+00	304+00	305+00	306+00	307+00	308+00	TOTAL
Exc														
Emb														

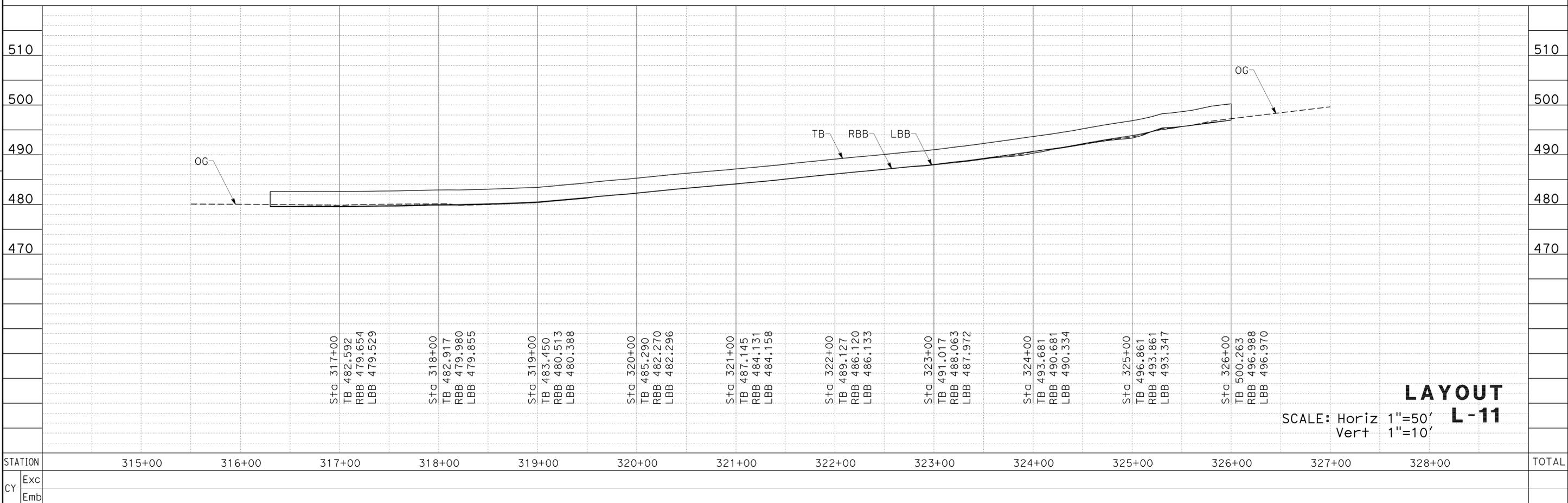
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	15	59

REGISTERED CIVIL ENGINEER DATE 5-21-09
 P.F. VALADAO
 No. 63987
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA
 REGISTERED PROFESSIONAL ENGINEER
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:
 1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE DISTRICT OFFICE.



SCALE: 1"=50'



LAYOUT L-11
 SCALE: Horiz 1"=50'
 Vert 1"=10'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans	S. M. WYATT	PAUL F. VALADAO	STEVE M. WYATT
DESIGN	CHECKED BY	CALCULATED/DESIGNED BY	DATE REVISOR

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	16	59

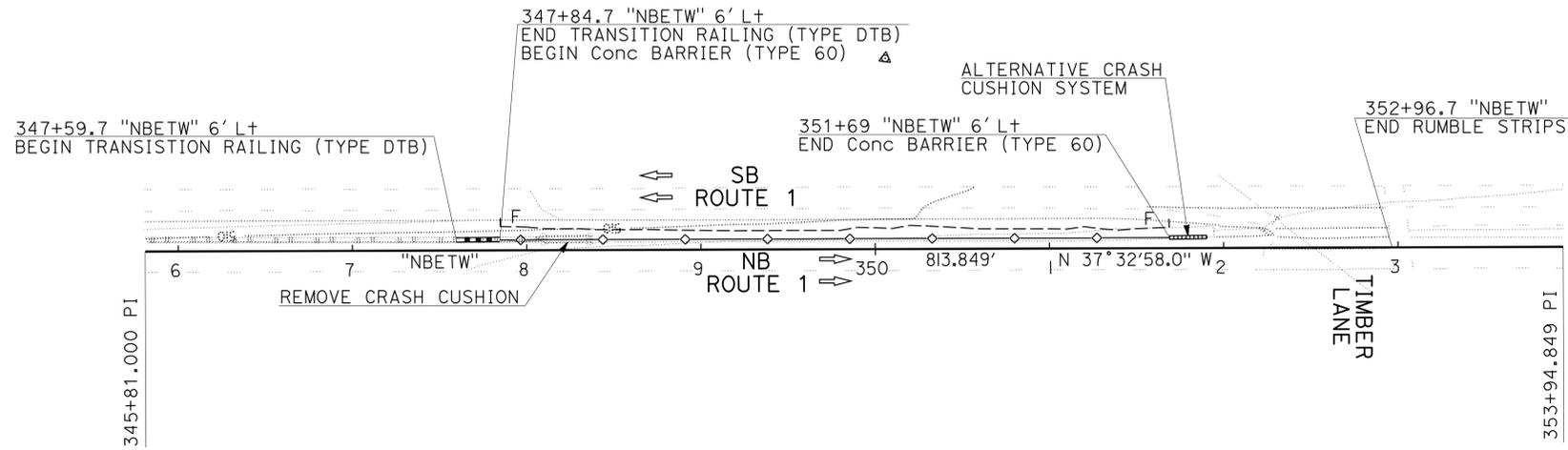
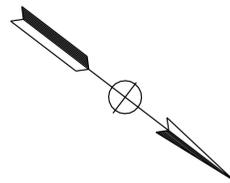
5-21-09
 REGISTERED CIVIL ENGINEER DATE
 7-20-09
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 P.F. VALADAO
 No. 63987
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA

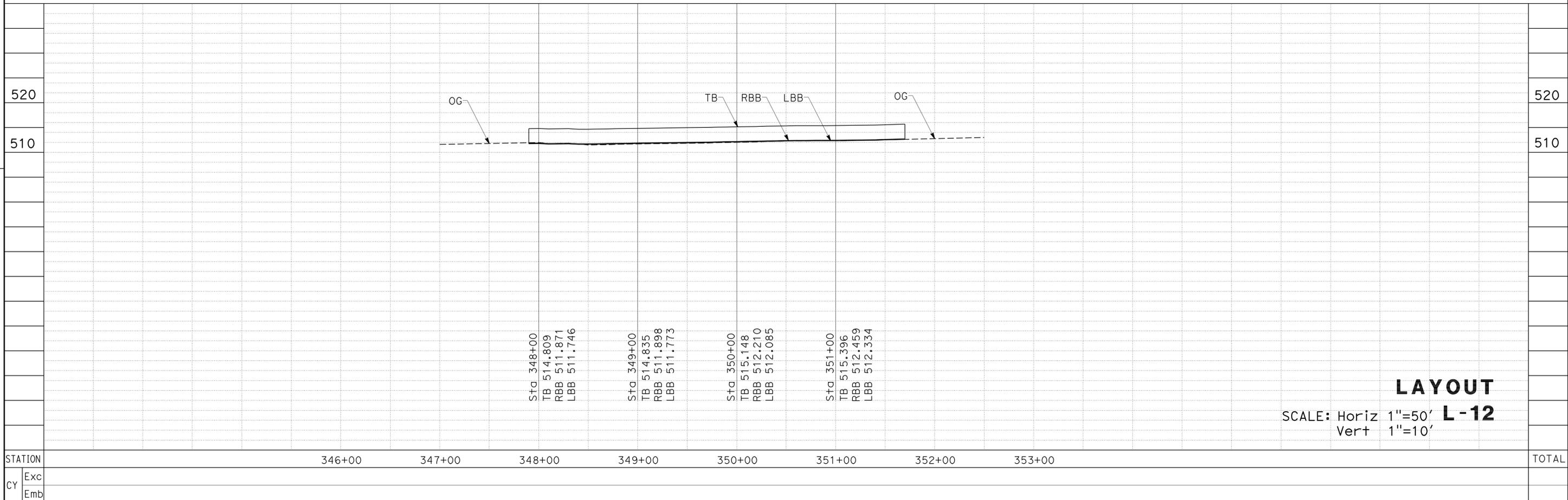
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE DISTRICT OFFICE.



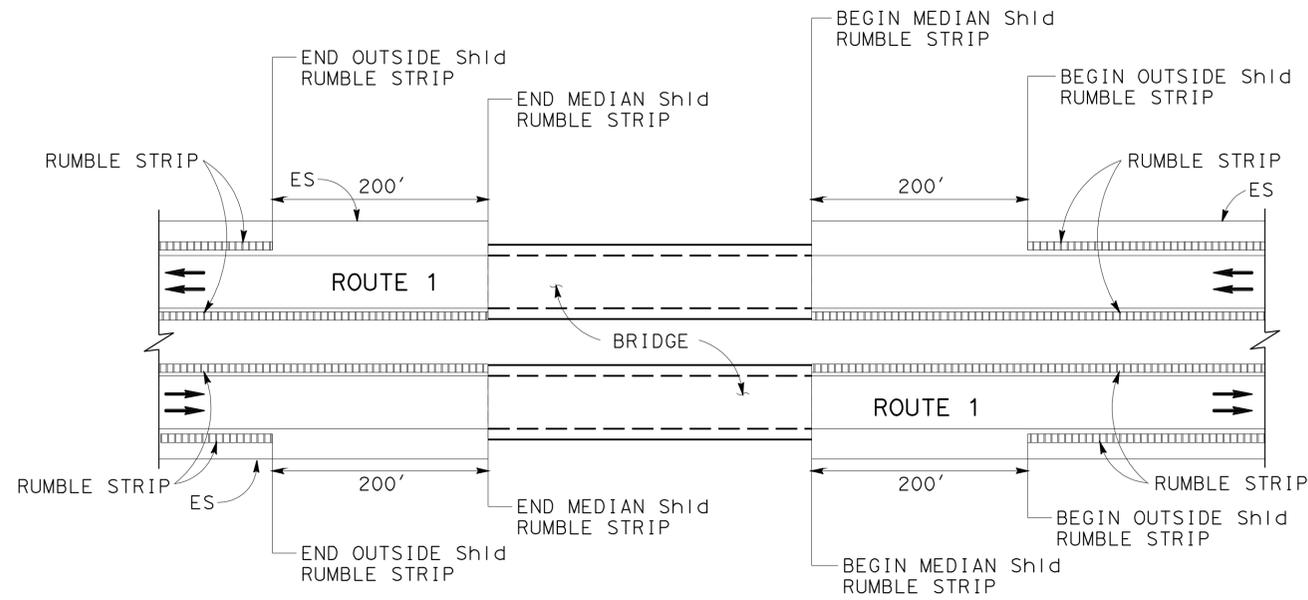
SCALE: 1"=50'



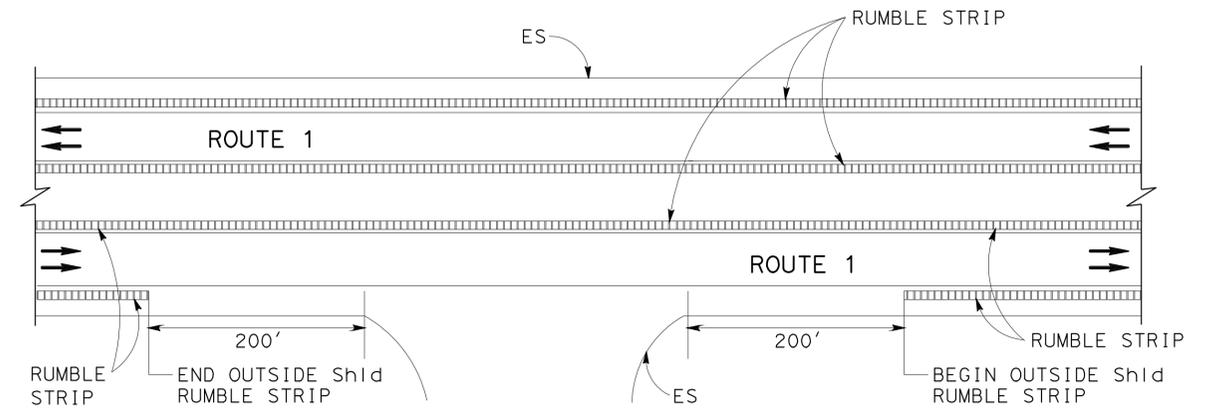
LAYOUT
 SCALE: Horiz 1"=50' L-12
 Vert 1"=10'



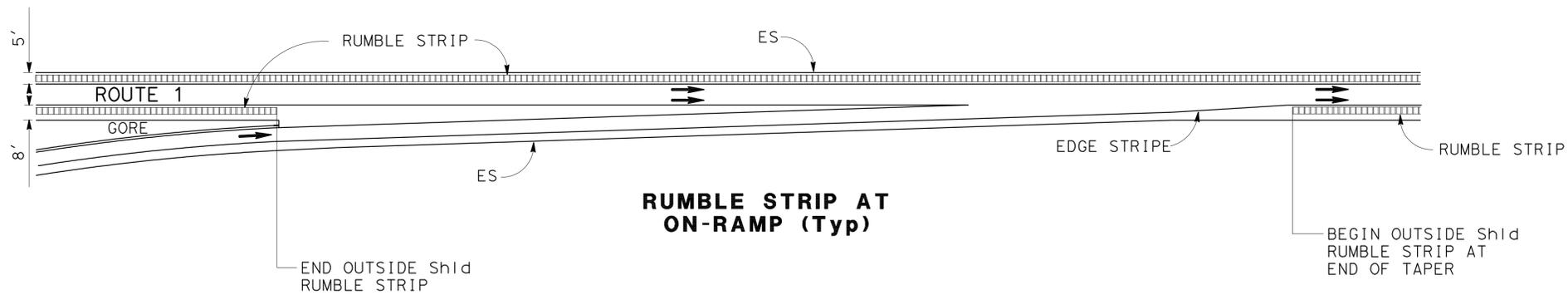
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	18	59
			5-21-09	DATE	
			7-20-09	PLANS APPROVAL DATE	
REGISTERED CIVIL ENGINEER P.F. VALADAO No. 63987 Exp. 9-30-10 CIVIL STATE OF CALIFORNIA					
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



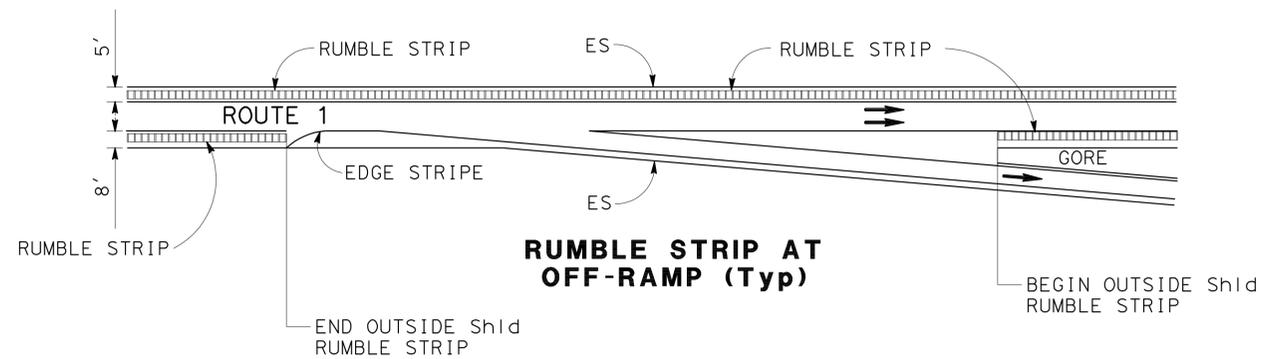
RUMBLE STRIP AT BRIDGE (Typ)



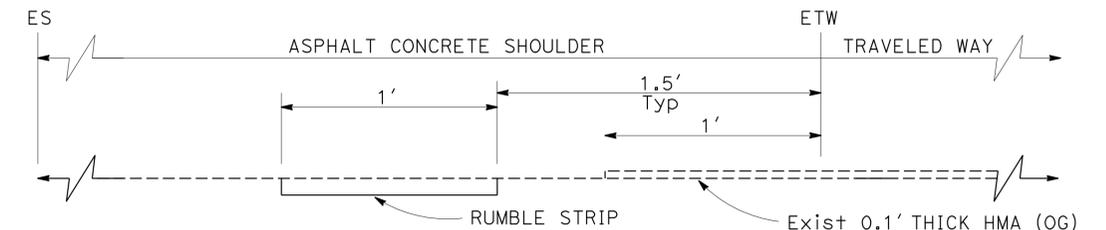
RUMBLE STRIP AT DRIVEWAY (Typ)



RUMBLE STRIP AT ON-RAMP (Typ)



RUMBLE STRIP AT OFF-RAMP (Typ)

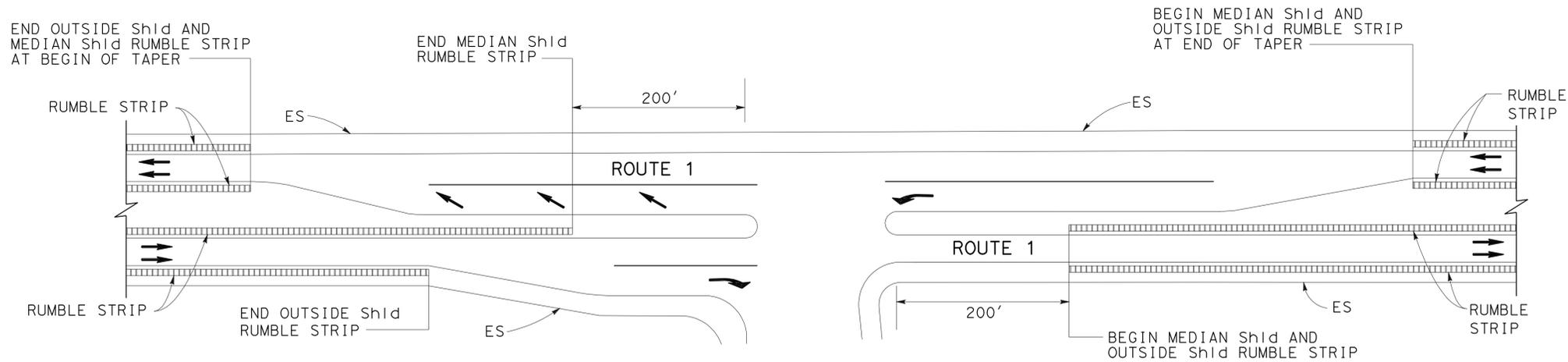


**RUMBLE STRIP PLACEMENT LEFT OF DIRECTION OF TRAVEL
SB ROUTE 1 STA 214+00 TO STA 265+70**

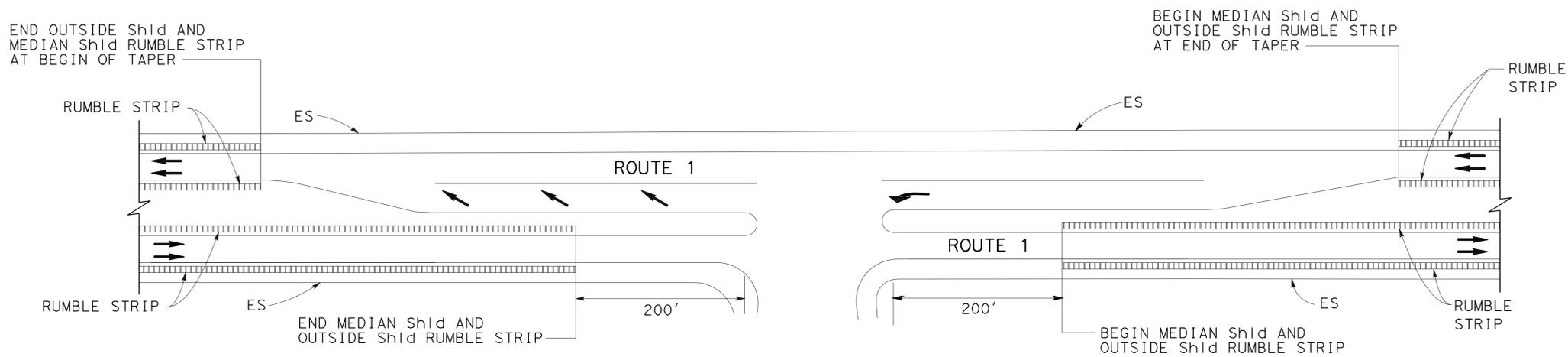
**CONSTRUCTION DETAILS
NO SCALE
C-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: S. M. WYATT
 CALCULATED-DESIGNED BY: PAUL F. VALADAO
 CHECKED BY: STEVE M. WYATT
 REVISED BY: PAUL F. VALADAO
 DATE REVISED: STEVE M. WYATT

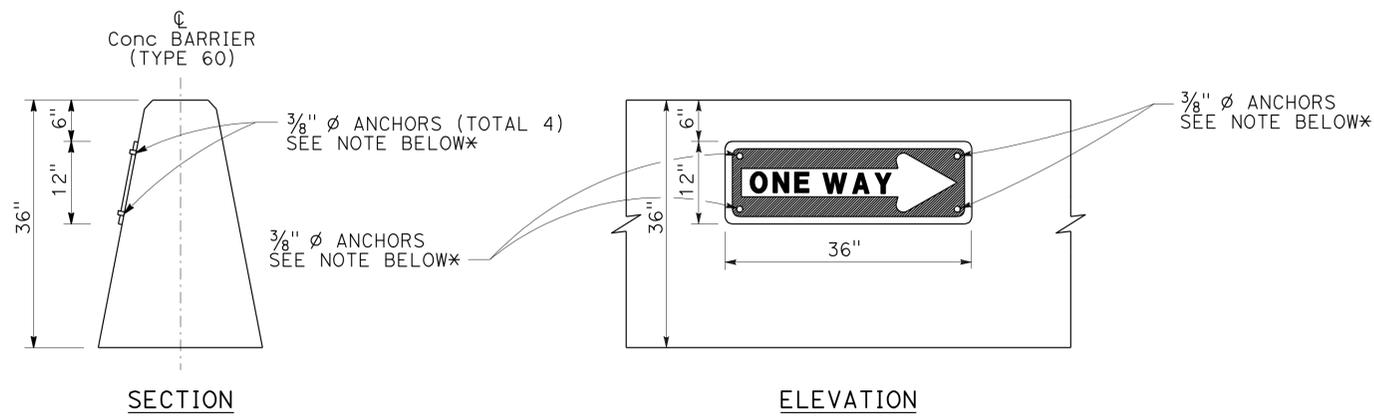
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	19	59
			5-21-09		
			REGISTERED CIVIL ENGINEER DATE		
			7-20-09		
			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



RUMBLE STRIP AT INTERSECTION WITH LEFT AND RIGHT-TURN CHANNELIZATION (Typ)



RUMBLE STRIP AT INTERSECTION WITH LEFT-TURN CHANNELIZATION (Typ)

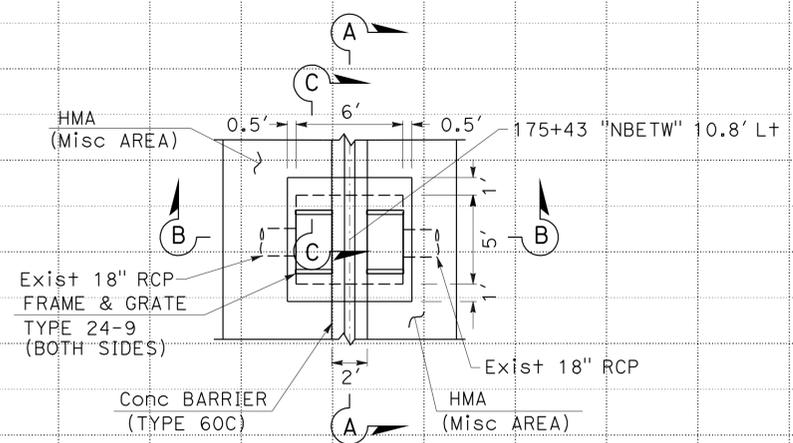


SIGN MOUNTED ON BARRIER DETAIL
* CAST-IN-PLACE INSERTS OR EXPANSION ANCHORS

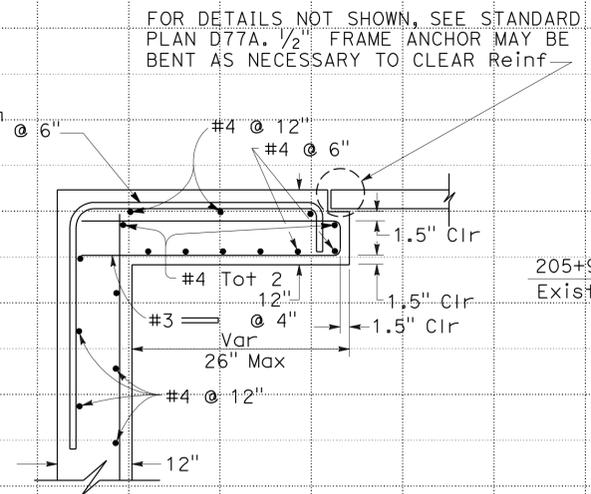
CONSTRUCTION DETAILS
NO SCALE
C-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: S. M. WYATT
 CALCULATED-DESIGNED BY: PAUL F. VALADAO
 CHECKED BY: STEVE M. WYATT
 REVISED BY: PAUL F. VALADAO
 DATE REVISED: STEVE M. WYATT

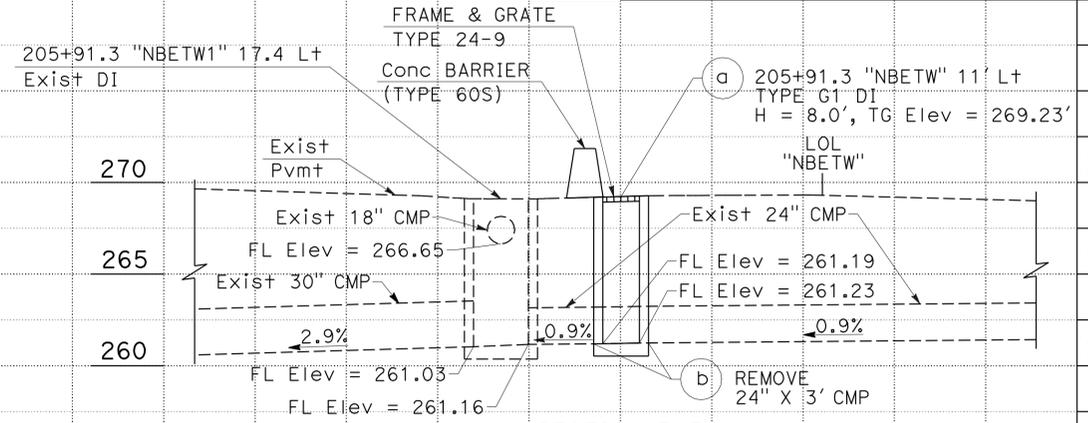
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	20	59
			5-21-09	REGISTERED CIVIL ENGINEER DATE	
			7-20-09	PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



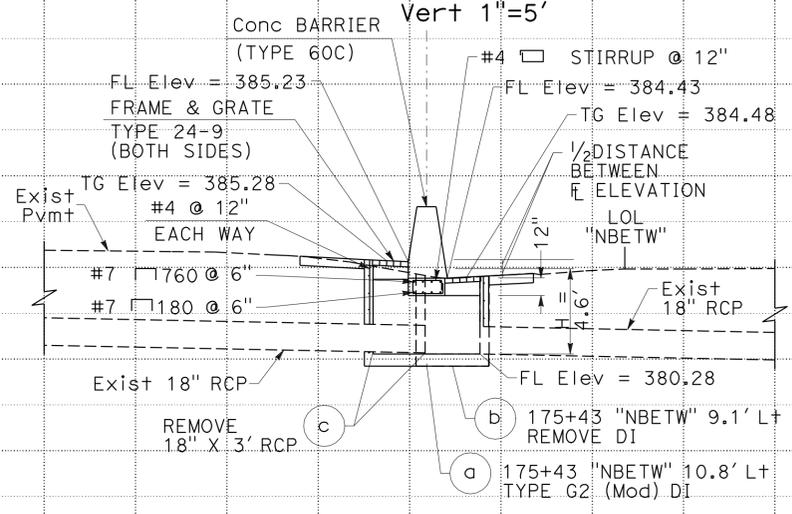
PLAN
SCALE: Horiz 1"=5'
Vert 1"=5'



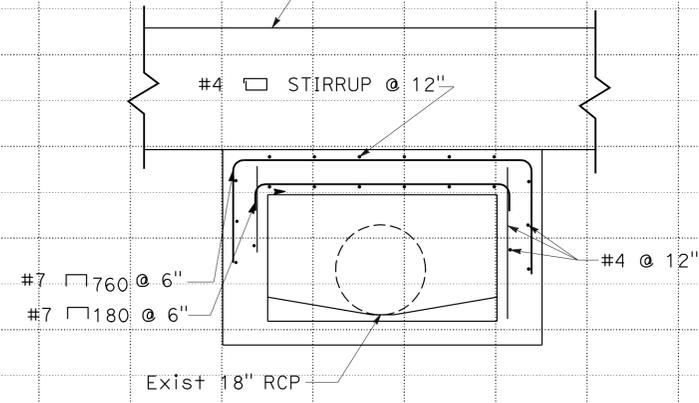
SECTION C-C
NO SCALE



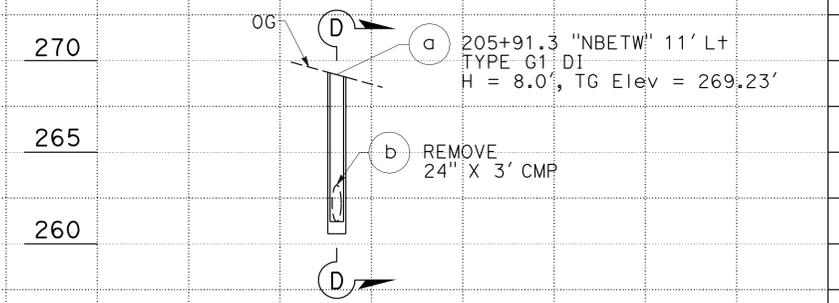
SECTION D-D
SCALE: Horiz 1"=5'
Vert 1"=5'



SECTION B-B
SCALE: Horiz 1"=5'
Vert 1"=5'



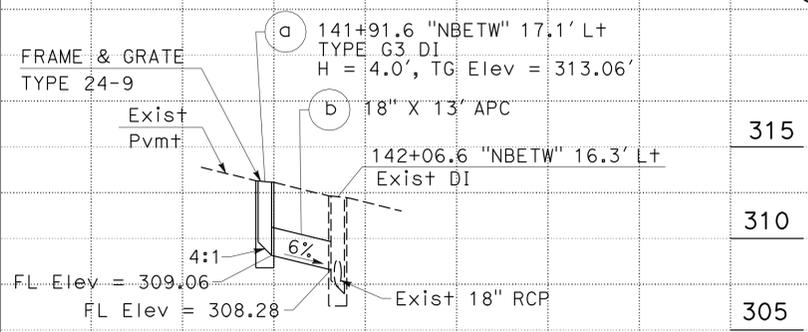
SECTION A-A
NO SCALE



PROFILE
SCALE: Horiz 1"=20'
Vert 1"=5'

DRAINAGE SYSTEM No. 2
Sta "NBETW" 175+43

DRAINAGE SYSTEM No. 3
Sta "NBETW" 205+91.3



PROFILE
SCALE: Horiz 1"=20'
Vert 1"=5'

DRAINAGE SYSTEM No. 1
Sta "NBETW" 141+91.6 TO 142+06.6

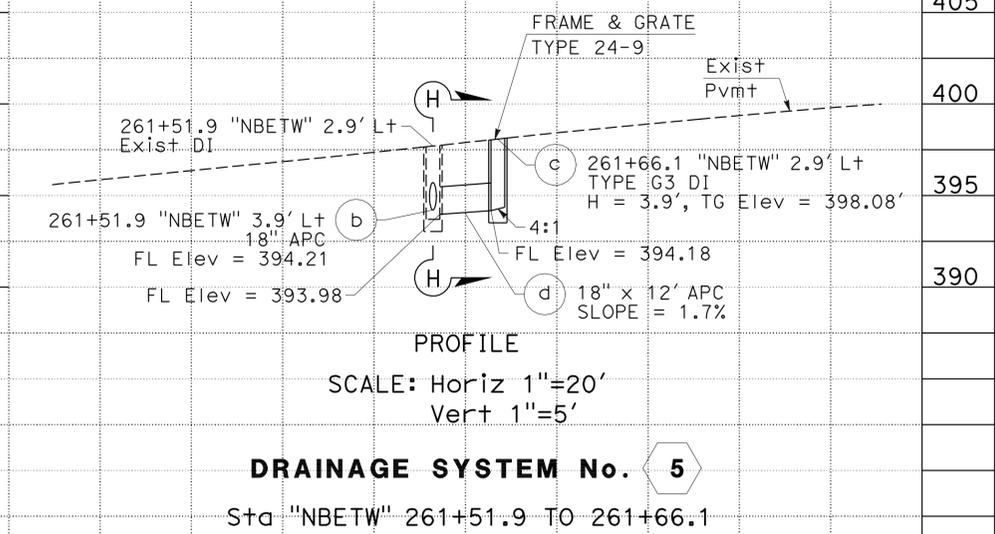
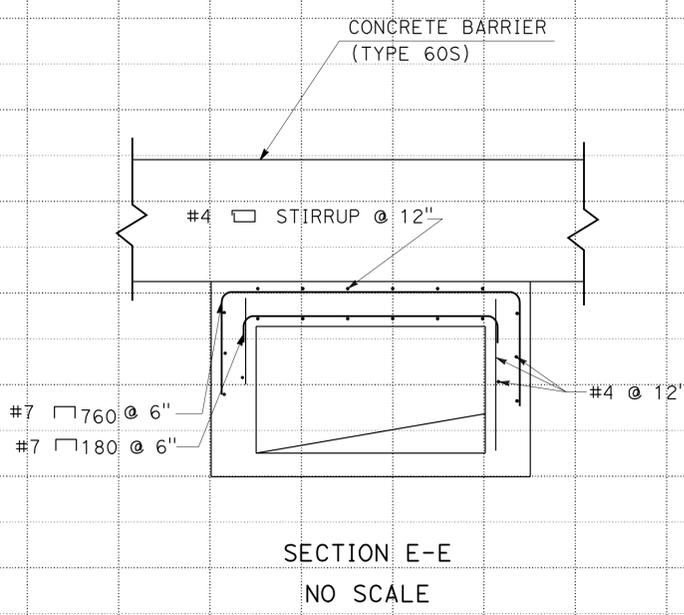
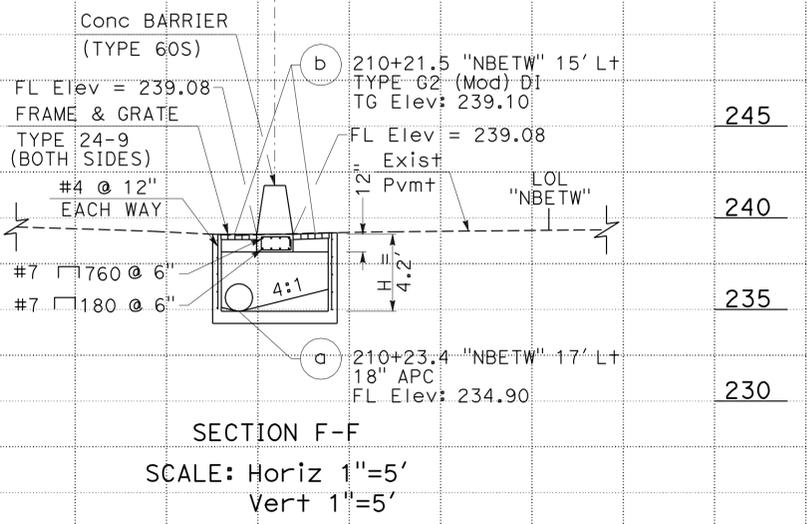
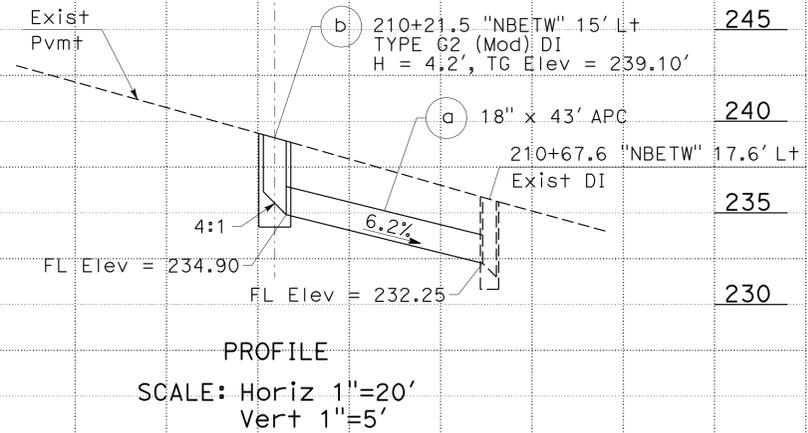
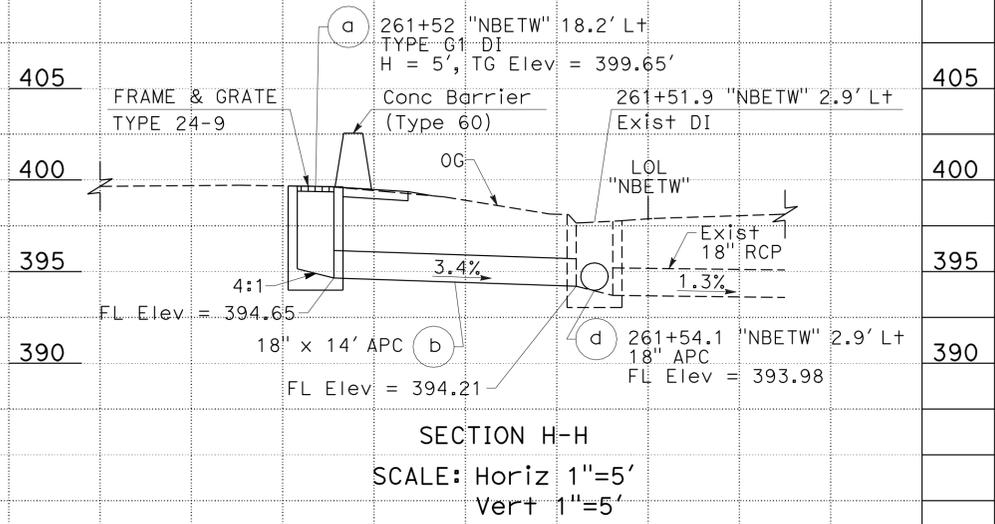
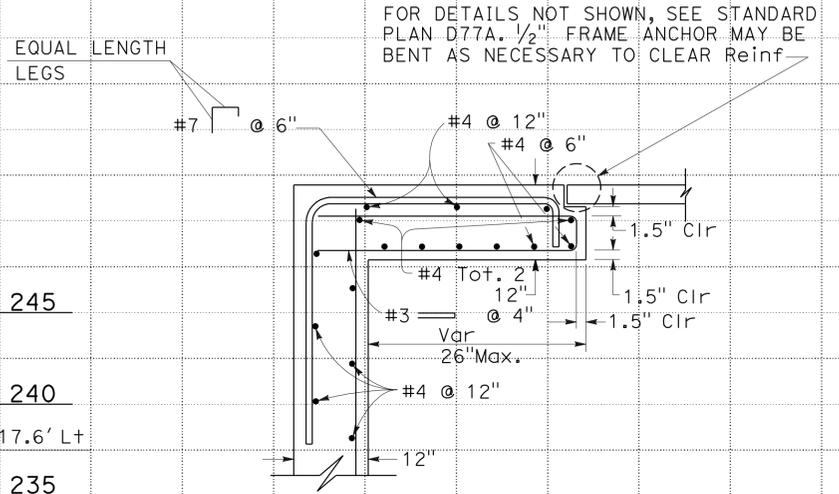
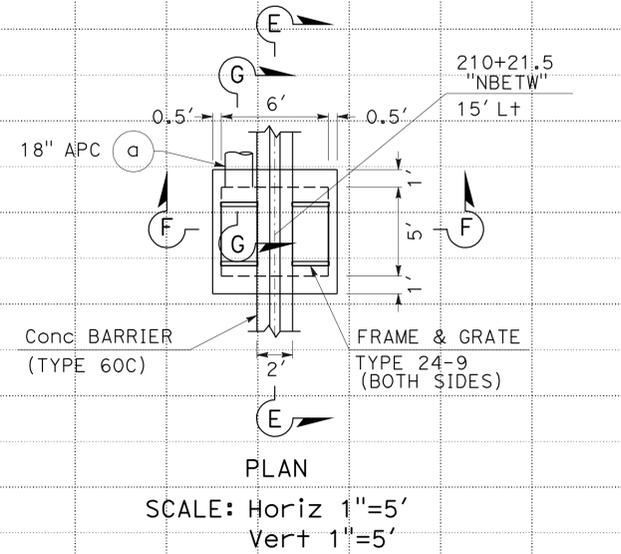
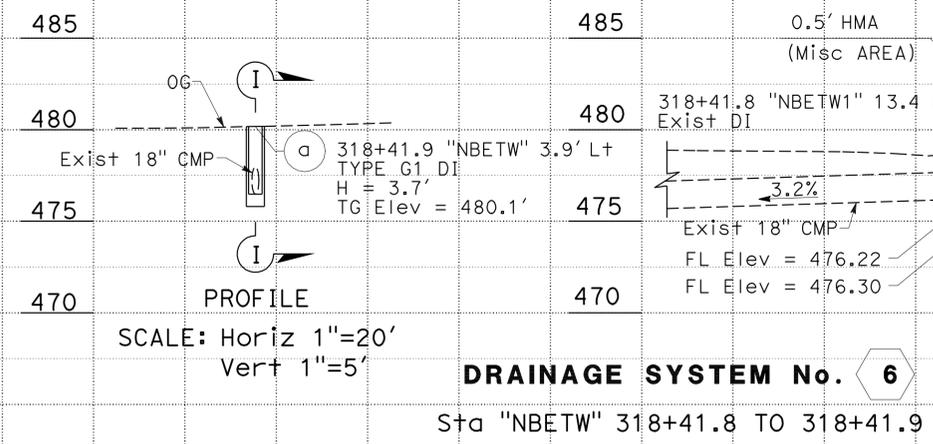
DRAINAGE PROFILES AND DETAILS
SCALE AS SHOWN **DP-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: S. M. WYATT
CALCULATED/DESIGNED BY: STEVE M. WYATT
CHECKED BY: PAUL F. VALADAO
REVISOR: PAUL F. VALADAO
DATE: 5-21-09

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: S. M. WYATT
 CALCULATED-DESIGNED BY: [Blank]
 CHECKED BY: [Blank]
 PAUL F. VALADAO
 STEVE M. WYATT
 REVISED BY: [Blank]
 DATE REVISED: [Blank]

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	21	59

5-21-09
 REGISTERED CIVIL ENGINEER DATE
 7-20-09
 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.



DRAINAGE SYSTEM No. 4
 Sta "NBETW" 210+21.5 TO 210+67.6

DRAINAGE SYSTEM No. 5
 Sta "NBETW" 261+51.9 TO 261+66.1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	22	59

5-21-09
 REGISTERED CIVIL ENGINEER DATE

7-20-09
 PLANS APPROVAL DATE

P.F. VALADAO
 No. 63987
 Exp. 9-30-10
 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.

APC ALLOWABLE PIPE MATERIAL

TYPE	Min THICKNESS/CLASS
CSP	0.064 INCHES
PLASTIC	SMOOTH INTERIOR
RCP	SEE STANDARD Specs

DRAINAGE QUANTITIES

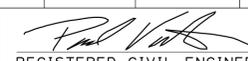
PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT No.	REMOVE INLET		MINOR CONCRETE (MINOR STRUCTURE)		MISCELLANEOUS IRON AND STEEL		FRAME AND GRATE TYPE 24-9 (N)		HEIGHT OF INLET "H" (N)		18" APC	REMOVE CULVERT	DRAINAGE INLET (N)	DESCRIPTION	STATION	DRAINAGE SYSTEM No.	DRAINAGE UNIT No.	PLAN SHEET No.	
			EA	CY	LB	EA	FT	LF	LF	EA											
L-2	1	a		1.25	263	1	4.0								1	TYPE G3, TG Elev = 313.06' 18" APC	141+91.6 "NBETW" 17.1 Lt 141+91.6 "NBETW" 17.1 Lt TO 142+04.6 "NBETW" 16.9' Lt	1	a	L-2	
		b									13								b		
L-4	2	a		5.46	526	2	4.6								1	TYPE G2 (Mod), TG Elev = 385.28', 384.48' REMOVE DI	175+43 "NBETW" 10.8' Lt 175+43 "NBETW" 9.1' Lt	2	a	L-4	
		b	1																b		
		c										3.0					REMOVE 18" RCP	175+43 "NBETW" 10.9' Lt TO 175+43 "NBETW" 13.9' Lt		c	
L-5	3	a		2.05	263	1	8.0								1	TYPE G1, TG Elev = 269.23' REMOVE 24" CMP	205+91.3 "NBETW" 11' Lt 205+91.3 "NBETW" 9.5' Lt TO 205+91.3 "NBETW" 12.5' Lt	3	a	L-5	
		b										3.0							b		
L-5	4	a										43				18" APC	210+23.4 "NBETW" 17' Lt TO 210+65.7 "NBETW" 17.7' Lt	4	a	L-5	
		b		5.18	526	2	4.2								1	TYPE G2 (Mod), TG Elev = 239.10' REMOVE 18" RCP	210+21.5 "NBETW" 15' Lt		b		
L-7	5	a		1.39	263	1	5.0								1	TYPE G1, TG Elev = 399.65' 18" APC	261+52 "NBETW" 18.2' Lt 261+52 "NBETW" 17.2' Lt TO 261+51.9 "NBETW" 3.9' Lt	5	a	L-7	
		b										14							b		
		c		1.23	263	1	3.9									1	TYPE G3, TG Elev = 398.08' 18" APC	261+66.1 "NBETW" 2.9' Lt 261+53.1 "NBETW" 3.1' Lt TO 261+64.5 "NBETW" 2.9' Lt		c	
		d										12							d		
L-11	6	a		1.10	263	1	3.7								1	TYPE G1, TG Elev = 480.10' REMOVE 18" CMP	318+41.9 "NBETW" 3.9' Lt 318+41.9 "NBETW" 2.4' Lt TO 318+41.9 "NBETW" 5.4' Lt	6	a	L-11	
		b											3.0						b		
SHEET TOTAL			1	17.66	2367	9					82	9	7								

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

**DRAINAGE QUANTITIES
 DQ-1**

LAST REVISION | DATE PLOTTED => 26-AUG-2009
 05-21-09 TIME PLOTTED => 06:34

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	23	59

 5-21-09
 REGISTERED CIVIL ENGINEER DATE

7-20-09
 PLANS APPROVAL DATE

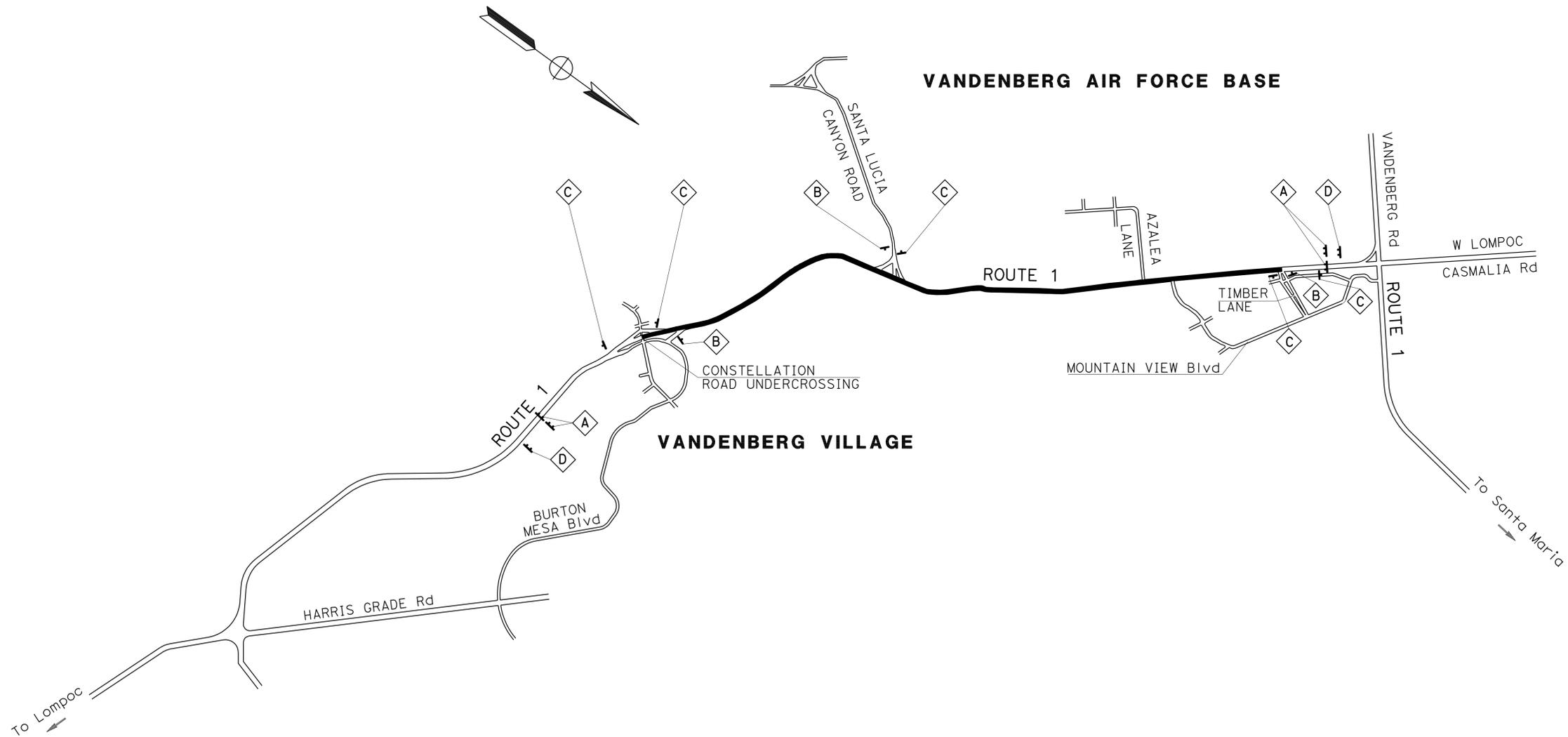
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 P.F. VALADAO
 No. 63987
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE	SIGN MESSAGE	PANEL SIZE	No. OF POST AND SIZE	No. OF SIGNS (EA)
 A	W20-1	ROAD WORK AHEAD	60" x 60"	2-4" x 6"	4
 B	W20-1	ROAD WORK AHEAD	36" x 36"	1-4" x 4"	3
 C	G20-2	END ROAD WORK	36" x 18"	1-4" x 4"	5
 D	C40	TRAFFIC FINES DOUBLED...ZONES	144" x 60"	2-4" x 6"	2

- NOTES:
- EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
 - CONSTRUCTION AREA SIGNS NOT NECESSARY AT AZALEA LANE AND MOUNTAIN VIEW Blvd BECAUSE ROADS ARE CLOSED BY VANDENBERG AIR FORCE BASE.



THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.

CONSTRUCTION AREA SIGNS
NO SCALE
CS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

REVISIONS
 REVISION NO. DATE
 1 7-20-09

TONY D. HENDERSON
 PAUL F. VALADAO

CALCULATED-DESIGNED BY
 CHECKED BY

FUNCTIONAL SUPERVISOR
 S. M. WYATT

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES



USERNAME => frmkiesl
 DGN FILE => 50q6901a001.dgn

CU 06235

EA 006901

LAST REVISION | DATE PLOTTED => 26-AUG-2009
 05-21-09 TIME PLOTTED => 06:34

FUNCTIONAL SUPERVISOR
 S. M. WYATT

PAUL F. VALADAO
 STEVE M. WYATT

REVISOR BY
 DATE REVISED

CALCULATED-DESIGNED BY
 CHECKED BY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	24	59

 5-21-09
 REGISTERED CIVIL ENGINEER DATE

7-20-09
 PLANS APPROVAL DATE

P.F. VALADAO
 No. 63987
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA

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CONCRETE BARRIER

STATION	CONCRETE BARRIER			(N) BARRIER MARKERS	WILDLIFE PASSAGE WAY (TYPE S)	(N) WILDLIFE PASSAGE WAY (TYPE L)
	TYPE					
	60	60C	60S			
	LF	LF	LF	LF	EA	EA
Sta 127+27.9 TO Sta 141+95.8	1467.8			32		
Sta 159+36.2 TO Sta 159+88.8	52.5			2		
Sta 159+88.8 TO Sta 165+69.2		580.4		12	1	
Sta 165+69.2 TO Sta 166+30.8	56.7			1		1
Sta 166+30.8 TO Sta 173+49.2		718.1		15		
Sta 173+49.2 TO Sta 174+10.8	56.7			1		1
Sta 174+10.8 TO Sta 182+42.3		831.6		17		
Sta 182+42.3 TO Sta 182+94.8	52.5			2		
Sta 198+29.7 TO Sta 210+24.9			1196	26		
Sta 249+41.4 TO Sta 306+75.3	5730.0			121	52	
Sta 316+23.7 TO Sta 323+10.0	686.3			16	13	
Sta 323+10.0 TO Sta 325+10.0		200.0		4	12	
Sta 325+10.0 TO Sta 326+00.3	90.3			2	13	
Sta 347+84.7 TO Sta 351+69.0	384.4			10		
TOTAL	8577.2	2330.1	1196	260	91	2

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

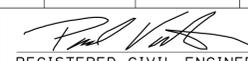
CRASH CUSHIONS

STATION	AI+ IN-LINE TERMINAL SYSTEM	AI+ FLARED TERMINAL SYSTEM	AI+ CRASH CUSHION SYSTEM	REMOVE CRASH CUSHION
	EA	EA	EA	EA
Sta 123+79.4 TO Sta 142+20.8	1	2	1	1
Sta 159+11.2 TO Sta 182+94.8				2
Sta 198+04.7 TO Sta 210+24.9			1	
Sta 249+41.1 TO Sta 307+00.3				3
Sta 315+98.7 TO Sta 328+70.0				1
Sta 347+59.7 TO Sta 352+96.7			1	1
TOTAL	1	2	3	9

SUMMARY OF QUANTITIES Q-1

LAST REVISION | DATE PLOTTED => 26-AUG-2009 | 05-21-09 | TIME PLOTTED => 06:34

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	25	59

 5-21-09
 REGISTERED CIVIL ENGINEER DATE

7-20-09
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 P.F. VALADAO
 No. 63987
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA

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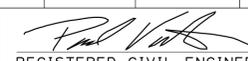
METAL BEAM GUARD RAILING

STATION	LOCATION	REMOVE METAL BEAM GUARD RAILING	REMOVE DOUBLE THRIE BEAM BARRIER	METAL BEAM GUARD RAILING (STEEL POST)	DOUBLE METAL BEAM GUARD RAILING (STEEL POST)	TRANSITION RAILING (TYPE WB)	TRANSITION RAILING (TYPE DTB)	TRANSITION RAILING (TYPE STB)	Conc BARRIER TRANSITION
		LF	LF	LF	LF	EA	EA	EA	LF
Sta 123+41.8 TO Sta 125+44.2	RIGHT OF LOL	202.5							
Sta 123+79.4 TO Sta 125+30.7	RIGHT OF LOL			151.3					
Sta 124+55.5 TO Sta 124+94.0	LEFT OF LOL				38.6				
Sta 124+94.0 TO Sta 125+19.0	LEFT OF LOL			25.0					
Sta 124+96.3 TO Sta 125+44.9	LEFT OF LOL	101.5							
Sta 125+19.0 TO Sta 125+44.0	LEFT OF LOL					1			
Sta 125+30.7 TO Sta 125+55.7	RIGHT OF LOL					1			
Sta 125+44.0 TO Sta 125+47.5	LEFT OF LOL								3.5
Sta 125+55.7 TO Sta 125+59.2	RIGHT OF LOL								3.5
Sta 127+13.2 TO Sta 127+16.7	LEFT OF LOL								3.5
Sta 127+16.7 TO Sta 127+41.7	LEFT OF LOL					1			
Sta 127+25.7 TO Sta 127+76.5	LEFT OF LOL	103.8							
Sta 127+27.7 TO Sta 127+31.2	LEFT OF LOL								3.5
Sta 127+28.9 TO Sta 127+93.4	LEFT OF LOL	64.6							
Sta 127+31.2 TO Sta 127+56.2	LEFT OF LOL					1			
Sta 127+41.7 TO Sta 128+28.4	LEFT OF LOL			86.8					
Sta 127+56.2 TO Sta 128+40.9	LEFT OF LOL			84.7					
Sta 141+95.8 TO Sta 142+20.8	LEFT OF LOL						1		
Sta 159+11.2 TO Sta 159+36.2	LEFT OF LOL						1		
Sta 182+94.8 TO Sta 183+19.8	LEFT OF LOL						1		
Sta 198+04.7 TO Sta 198+29.7	LEFT OF LOL						1		
Sta 262+11.6 TO Sta 268+25.9	LEFT OF LOL		614.3						
Sta 306+75.3 TO Sta 307+00.3	LEFT OF LOL						1		
Sta 315+98.7 TO Sta 316+23.7	LEFT OF LOL							1	
Sta 326+00.3 TO Sta 326+25.3	LEFT OF LOL							1	
Sta 347+59.7 TO Sta 347+84.7	LEFT OF LOL						1		
TOTAL		472.4	614.3	347.8	38.6	4	6	2	14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: S. M. WYATT
 CALCULATED-DESIGNED BY: PAUL F. VALADAO
 CHECKED BY: STEVE M. WYATT
 REVISED BY: [] DATE REVISED: []

SUMMARY OF QUANTITIES Q-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	26	59

 5-21-09
 REGISTERED CIVIL ENGINEER DATE

7-20-09
 PLANS APPROVAL DATE

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ROADWAY QUANTITIES

STATION	RUMBLE STRIPS	HOT MIX ASPHALT (TYPE A)	TACK COAT	EMBANKMENT (Z)	ROADWAY EXCAVATION	REMOVE AC DIKE
	Sta	TON	TON	CY	CY	LF
Sta 123+79.4 TO Sta 142+20.8		524.4	0.58	2	229	14.3
Sta 127+13.1 TO Sta 352+96.7	903					
Sta 159+11.2 TO Sta 182+94.8		1070.4	1.19	8	443	
Sta 198+04.7 TO Sta 210+24.9		89.6	0.10		44	
Sta 249+41.1 TO Sta 307+00.3		878.8	0.98	52	408	75.6
Sta 315+98.7 TO Sta 328+70.0		98.3	0.12	5	46	
Sta 347+59.7 TO Sta 352+96.7		57.6	0.07	9	20	
TOTAL	903	2719.1	3.0	76	1190	89.9

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

WATER POLLUTION CONTROL QUANTITIES

STATION	TEMPORARY DRAINAGE INLET PROTECTION	TEMPORARY CHECK DAM
	EA	LF
Sta 123+79.4 TO Sta 142+20.8	2	295
Sta 159+11.2 TO Sta 182+94.8	2	720
Sta 198+04.7 TO Sta 210+24.9	4	86
Sta 249+41.1 TO Sta 307+00.3	3	
Sta 315+98.7 TO Sta 328+70.0	1	
TOTAL	12	1101

PAVEMENT DELINEATION AND SIGN QUANTITIES

STATION	DETAIL No. OR PAVEMENT MARKING OR SIGN TYPE	ROADSIDE SIGN (BARRIER)	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)	PAVEMENT MARKER (RETROREFLECTIVE)	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE	REMOVE TRAFFIC STRIPE	REMOVE PAVEMENT MARKING	REMOVE PAVEMENT MARKER (N)	REMOVE ROADSIDE SIGN
		EA	LF	EA	LF	LF	SQFT	EA	EA
Sta 295+00.0	G8-22 (Two Post)								1
Sta 298+61.2 TO Sta 306+36.2	DETAIL 21				3100				
Sta 298+61.2 TO Sta 306+36.2	DETAIL 23							778	
Sta 298+61.2 TO Sta 306+36.2	DETAIL 25		1552	34					
Sta 301+10.0 TO Sta 305+20.0	DETAIL 38					410		18	
Sta 301+20.0 TO Sta 303+15.0	ARROW TYPE IV (L)						30		
Sta 303+75.0	R6-1R Sign	1							
Sta 303+90.0 TO Sta 305+10.0	ARROW TYPE VI						126		
Sta 318+30.0 TO Sta 327+15.0	DETAIL 21				3540				
Sta 318+30.0 TO Sta 327+15.0	DETAIL 23							886	
Sta 318+30.0 TO Sta 327+15.0	DETAIL 25		1768	38					
Sta 320+20.0 TO Sta 320+90.0	ARROW TYPE IV (R)						30		
Sta 320+40.0 TO Sta 325+40.0	DETAIL 38					500		22	
Sta 322+20.0	R6-1R Sign	1							
Sta 323+10.0 TO Sta 325+30.0	ARROW TYPE IV (L)						30		
Sta 328+70.0	G8-22 (Two Post)								1
TOTAL		2	3320	72	6640	910	216	1704	2

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

PERMANENT EROSION CONTROL QUANTITIES

STATION	EROSION CONTROL (COMPOST BLANKET)	EROSION CONTROL (TYPE D)	(N) SEED	(N) FIBER	(Z) STABILIZING EMULSION
	CY	ACRE	LB	LB	LB
Sta 123+79.4 TO Sta 351+69	320	2.4	115.2	2400	300
TOTAL	320	2.4	115.2	2400	300

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

SUMMARY OF QUANTITIES Q-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 FUNCTIONAL SUPERVISOR: S. M. WYATT
 CALCULATED-DESIGNED BY: PAUL F. VALADAO
 CHECKED BY: STEVE M. WYATT
 REVISED BY: PAUL F. VALADAO
 DATE REVISED: STEVE M. WYATT

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	27	59

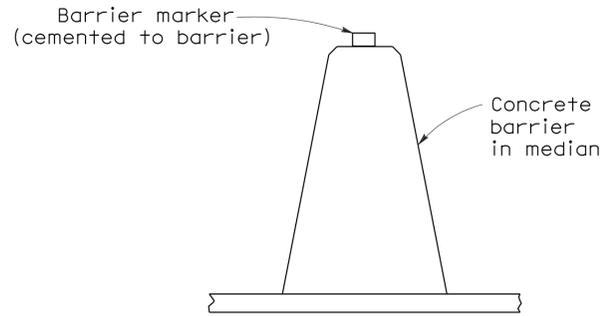
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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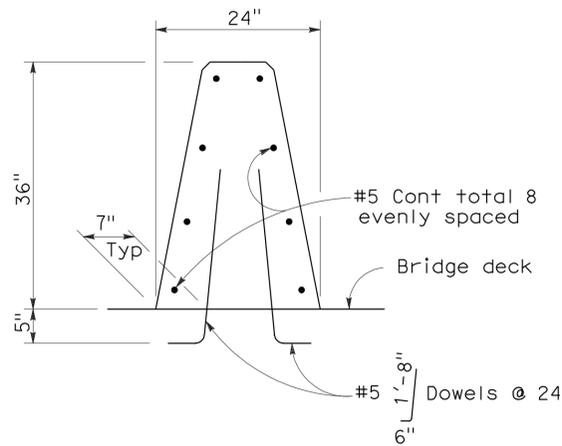
To accompany plans dated 7-20-09

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Exp. 6-30-09
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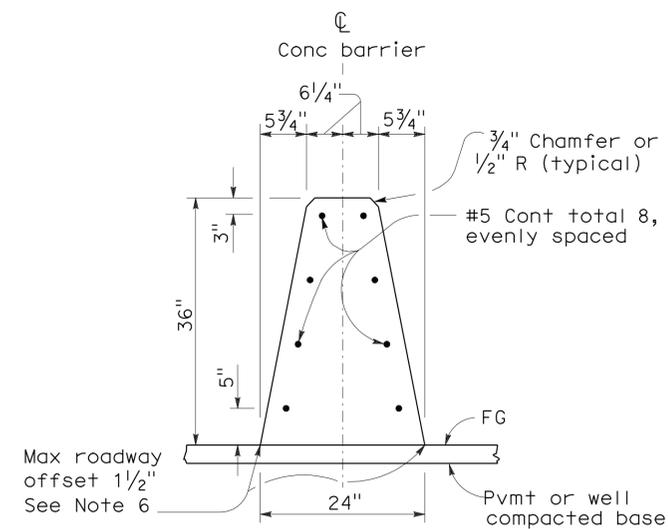
CONCRETE BARRIER TYPE 60 DELINEATION

See Notes 7 and 8



CONCRETE BARRIER TYPE 60A

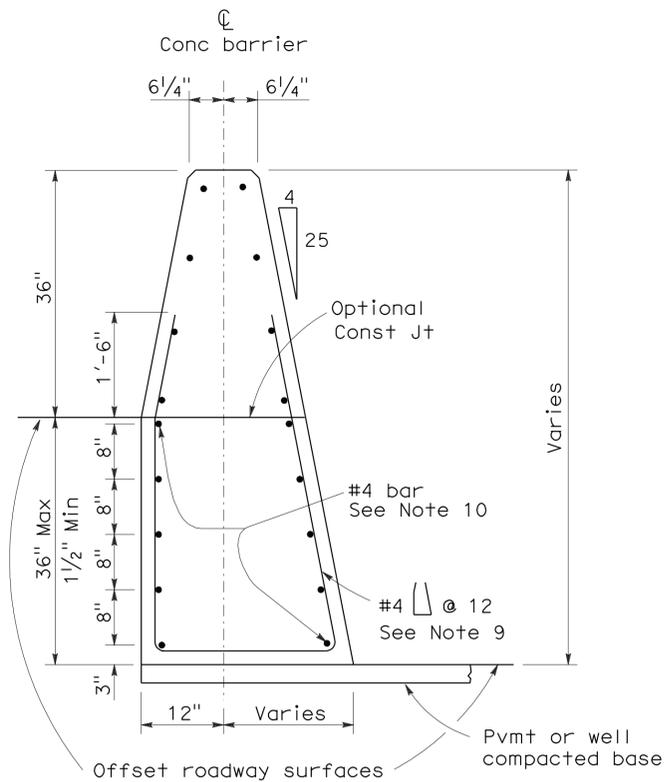
Details similar to Type 60 except as noted.



CONCRETE BARRIER TYPE 60

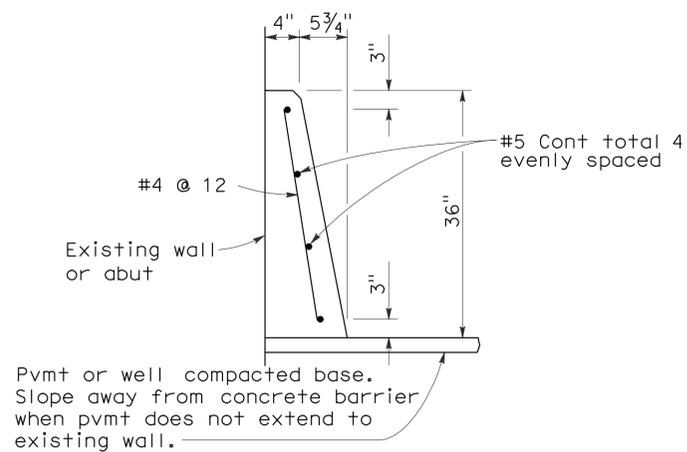
NOTES:

- See Standard Plan A76B for details of Concrete Barrier Type 60 end anchors, connection to structures and transitions to Concrete Barrier Type 50 and Concrete Barrier Type 60S.
- See Standard Plan A76C for Concrete Barrier Type 60 transitions at bridge column and sign pedestals.
- Where glare screen is required on Concrete Barrier Type 60, use Concrete Barrier Type 60G.
- Where the concrete barrier is added to the face of existing concrete structure, match existing weep holes.
- Expansion joints in concrete barrier shall be located at all deck, pavement and principal wall joints. Expansion joint filler material shall be the same size as joint or 1/2" minimum.
- Where roadway offset is greater than 1 1/2", see Concrete Barrier Type 60C.
- Barrier delineation to be used when required by the Special Provisions.
- Spacing of barrier markers to match spacing of raised pavement markers on the adjacent median edgeline pavement delineation.
- Reinforcing stirrup not required for roadway offsets less than 1'-0".
- For roadway surfaces offset greater than 1 1/2" to 3", no rebars required. For roadway surfaces offset greater than 3" to 8" use two #4 rebars at 3" above the lower roadway surface. For roadway surfaces offset greater than 8" to 12", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at 8" above the lower roadway surface. For roadway surfaces offset greater than 12" to 36", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at every 8" increment vertical spacing above the first two #4 rebars.



CONCRETE BARRIER TYPE 60C

Details similar to Type 60 except as noted. Concrete barrier end anchor when necessary. 36" roadway surfaces offset shown.



CONCRETE BARRIER TYPE 60D

CONCRETE BARRIER TYPE 60

NO SCALE

RSP A76A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A76A DATED MAY 1, 2006 - PAGE 29 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A76A

2006 REVISED STANDARD PLAN RSP A76A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	28	59

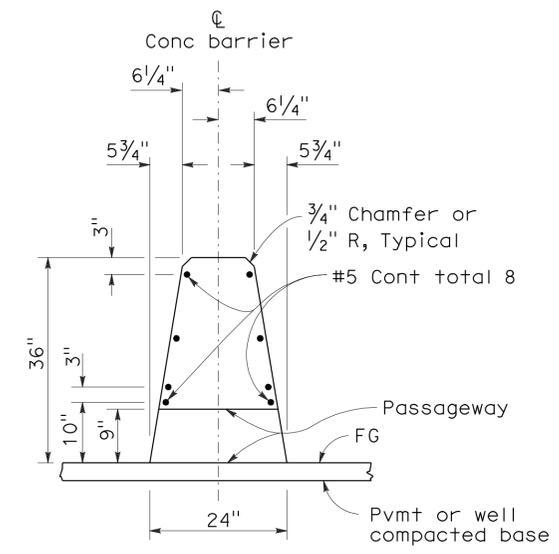
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June 6, 2008
PLANS APPROVAL DATE

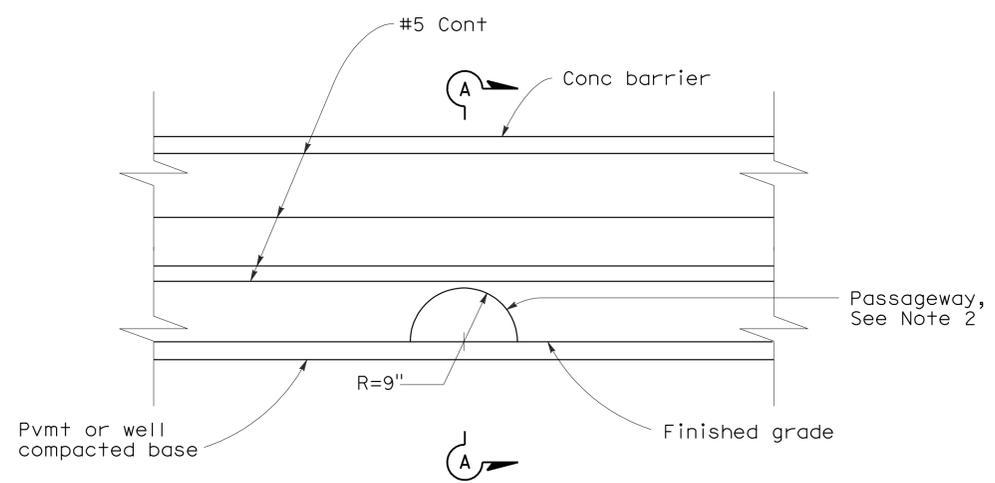
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To accompany plans dated 7-20-09



SECTION A-A
(Concrete Barrier Type 60 shown)



ELEVATION
(See Notes 1 and 3)

NOTES:

1. Type S Passageway typically used for crossing of small size animals.
2. At the option of the Contractor, the passageway opening shall be constructed by using either the cast-in-place method, with the allowance of the form to be left in place, or once the barrier is constructed, drilling through the barrier to create the opening.
3. See Revised Standard Plan RSP A76A for typical details of Concrete Barrier Type 60.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CONCRETE BARRIER
WILDLIFE PASSAGEWAY
(TYPE S)**

NO SCALE
RSP A76J DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A76J
DATED MAY 1, 2006 - PAGE 38 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A76J

2006 REVISED STANDARD PLAN RSP A76J

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	29	59

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June 6, 2008
PLANS APPROVAL DATE

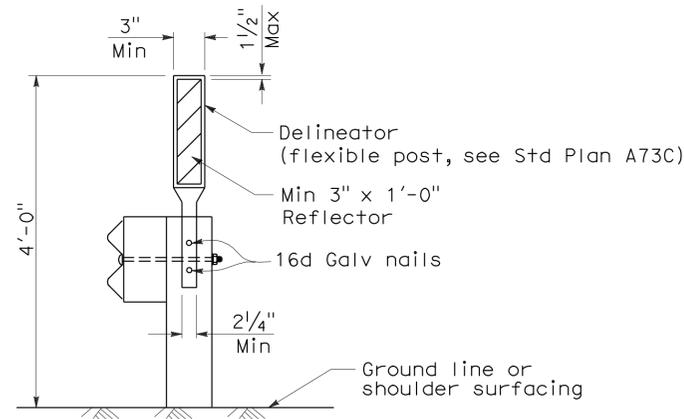
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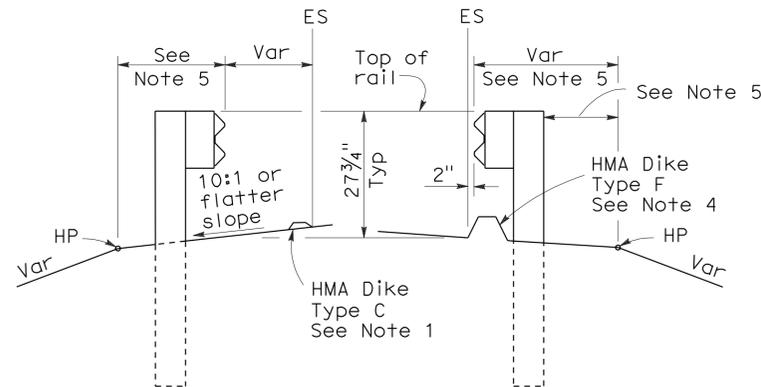
NOTES:

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
05	SB	1	R25.1/M29.4	30	59

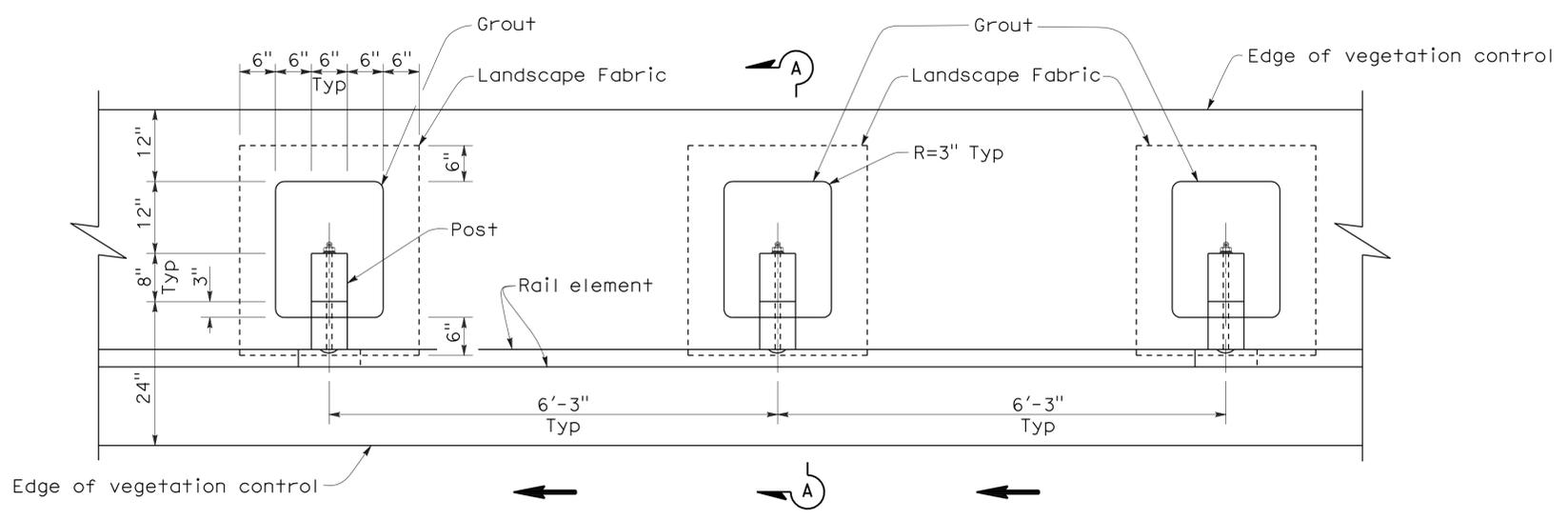
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October 20, 2006
PLANS APPROVAL DATE

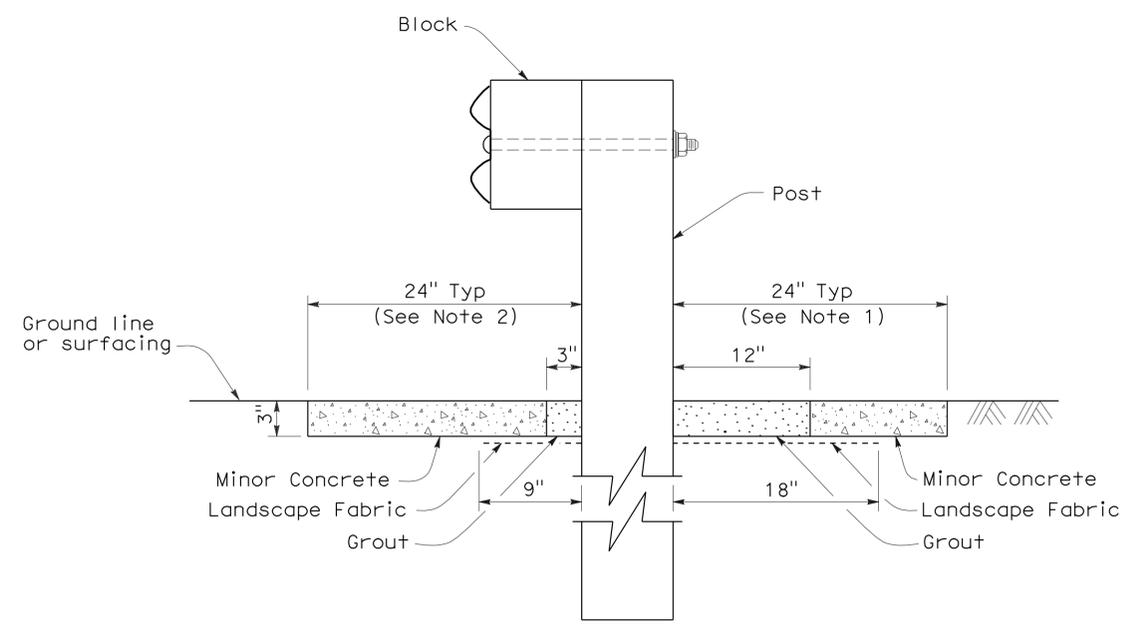
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Exp. 6-30-07
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STATE OF CALIFORNIA

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To accompany plans dated 7-20-09



PLAN



SECTION A-A

NOTES:

1. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
3. Direction of adjacent traffic indicated by ← .

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
STANDARD RAILING SECTION**

NO SCALE

NSP A77C5 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A77C5

2006 NEW STANDARD PLAN NSP A77C5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	31	59

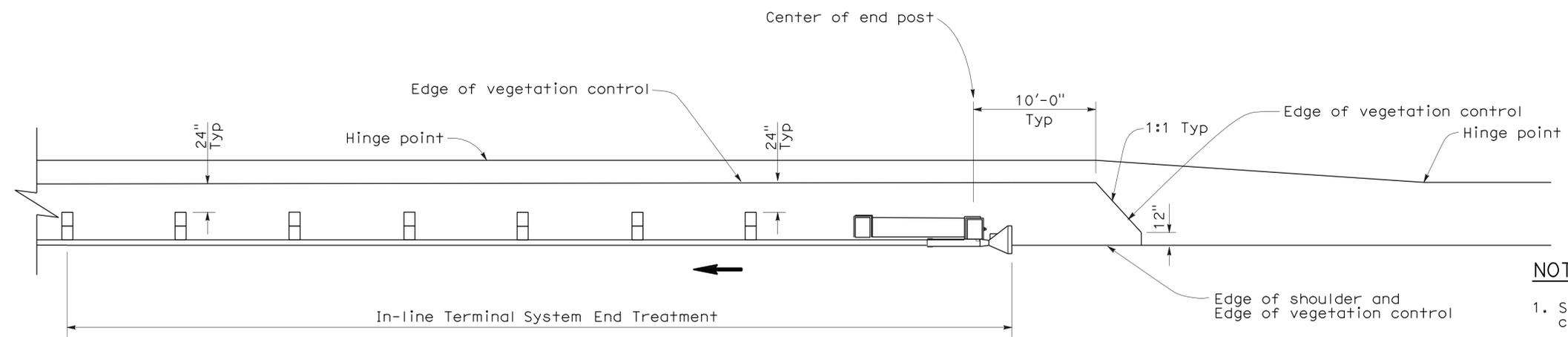
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October 20, 2006
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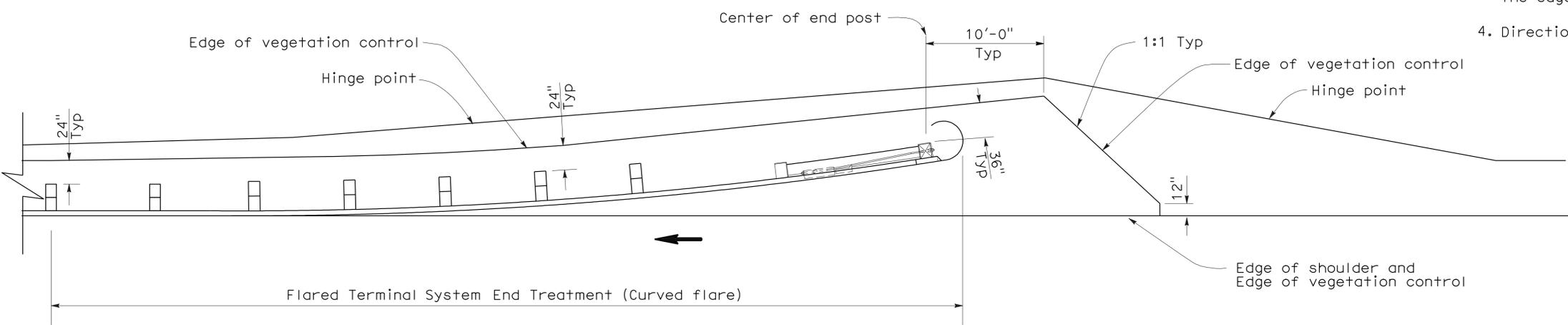
To accompany plans dated 7-20-09



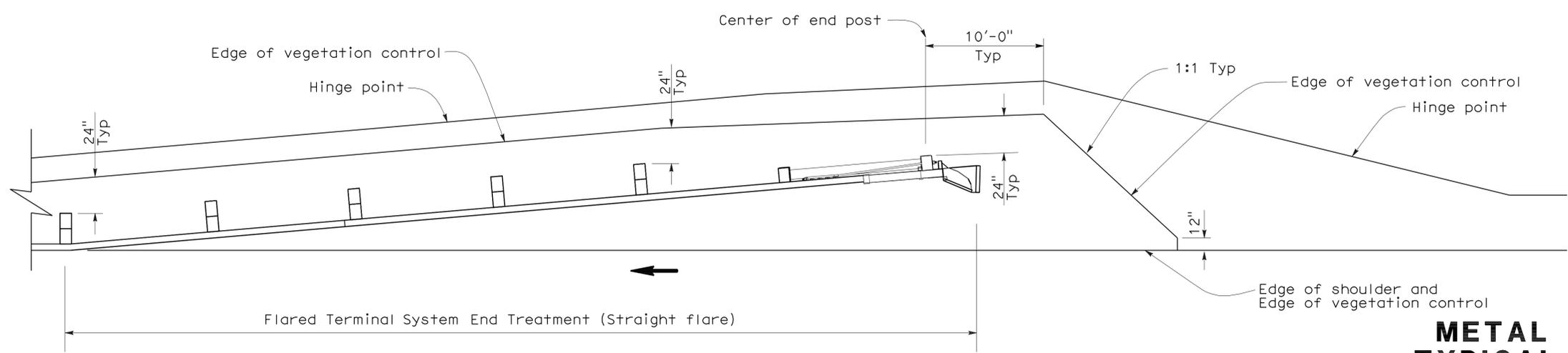
PLAN

NOTES:

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
4. Direction of adjacent traffic indicated by ←.



PLAN



PLAN

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
FOR TERMINAL SYSTEM END TREATMENTS**

NO SCALE
NSP A77C6 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP A77C6

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	32	59

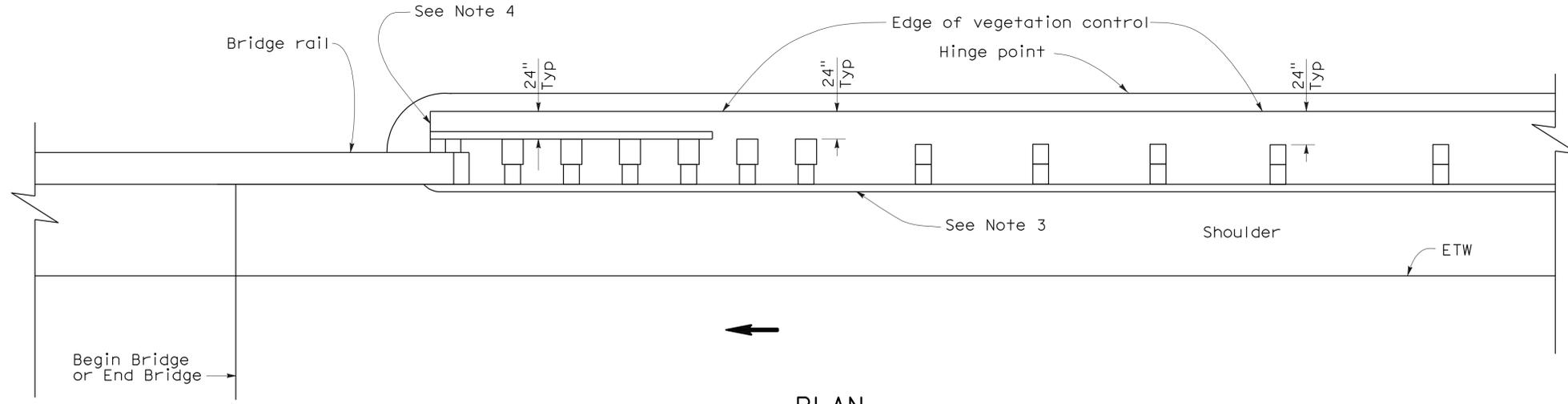
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

October 20, 2006
PLANS APPROVAL DATE

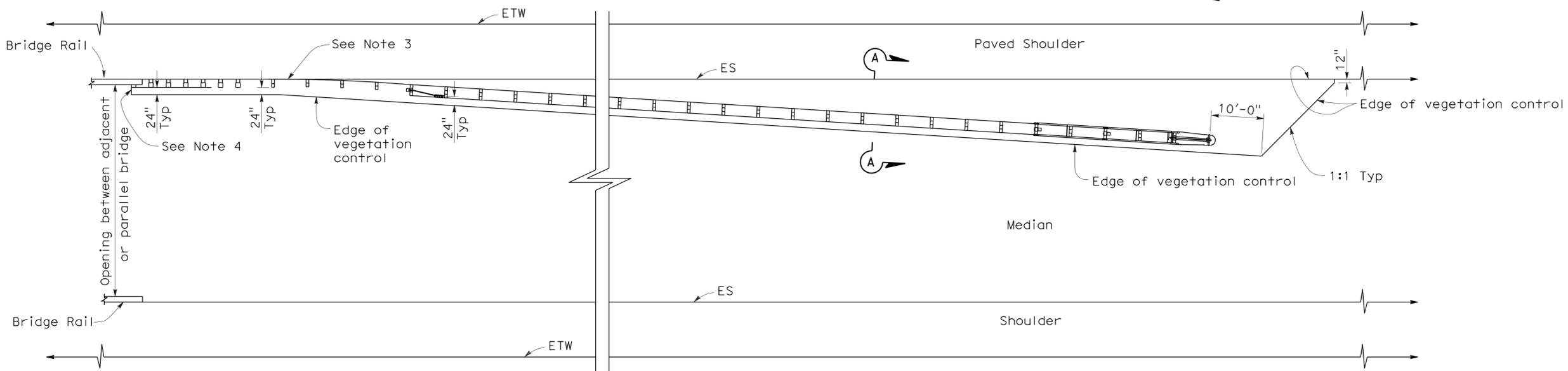
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To accompany plans dated 7-20-09

2006 NEW STANDARD PLAN NSP A77C7



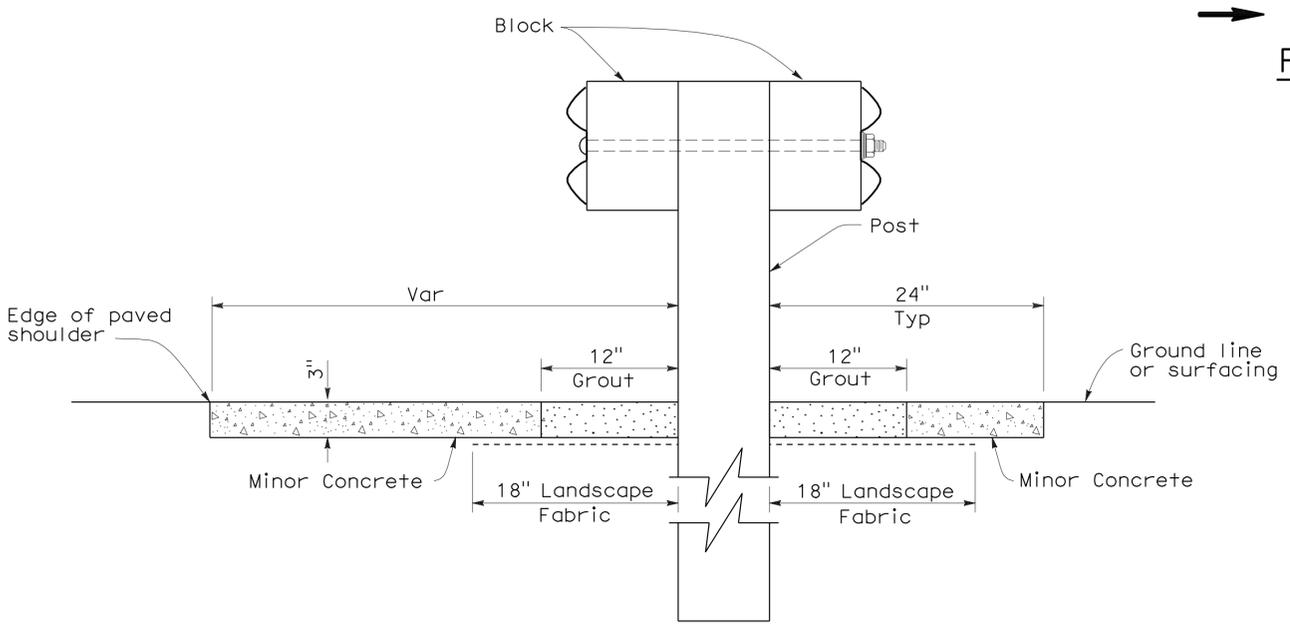
PLAN



PLAN

NOTES:

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
4. End vegetation control at end of backside rail element.
5. Direction of adjacent traffic indicated by ←.



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
AT STRUCTURE APPROACH
AND DEPARTURE**

NO SCALE
NSP A77C7 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	33	59

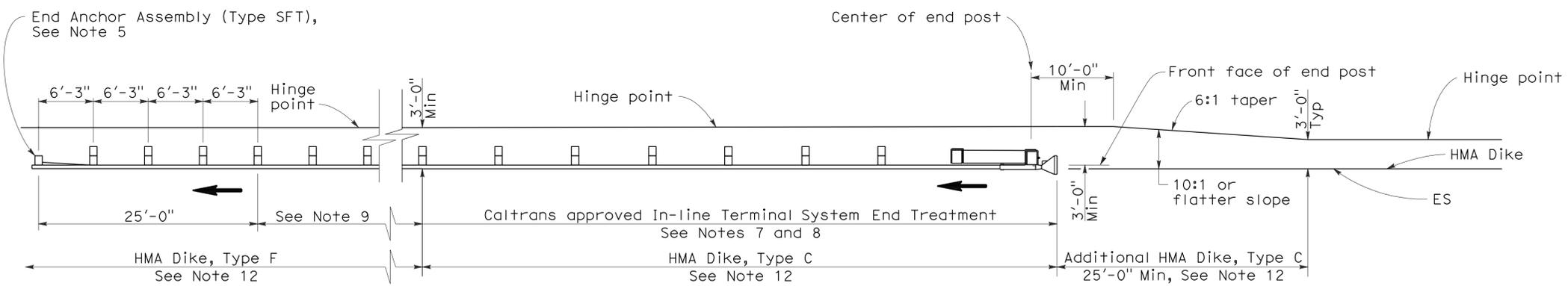
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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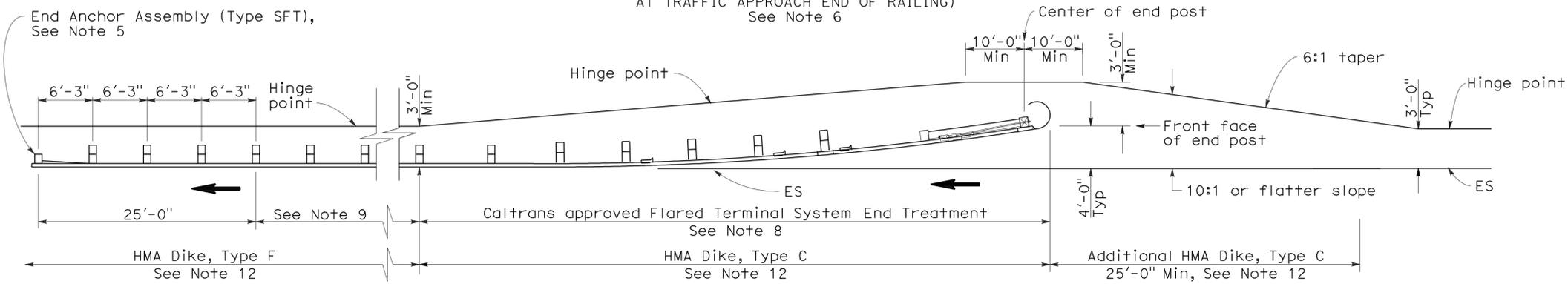
To accompany plans dated 7-20-09

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



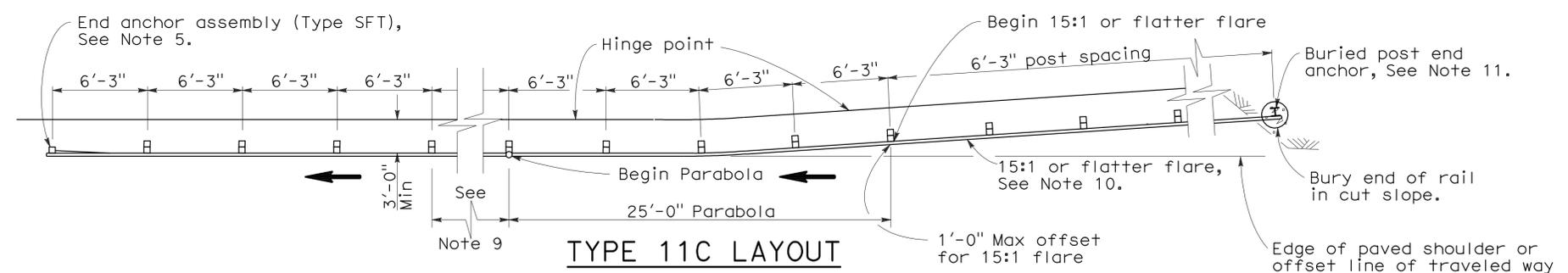
TYPE 11A LAYOUT

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



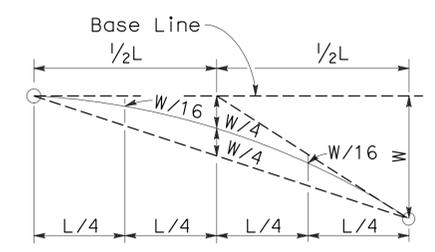
TYPE 11B LAYOUT

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

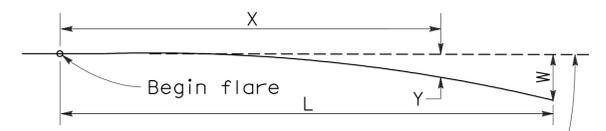


TYPE 11C LAYOUT

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



TYPICAL PARABOLIC LAYOUT

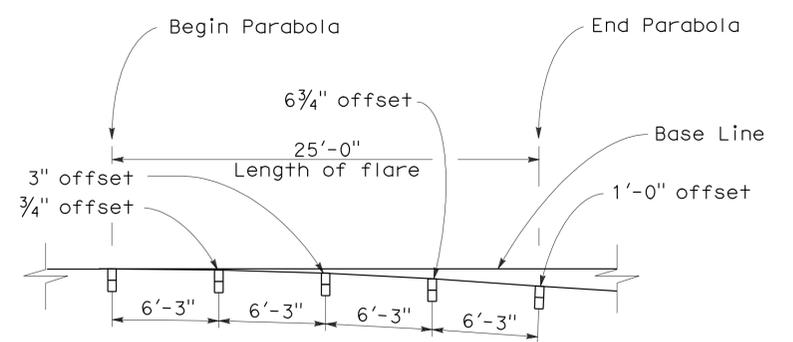


Base Line (Edge of paved shoulder or offset line of edge of traveled way)

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

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 →.
- 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
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**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

2006 REVISED STANDARD PLAN RSP A77E1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	34	59

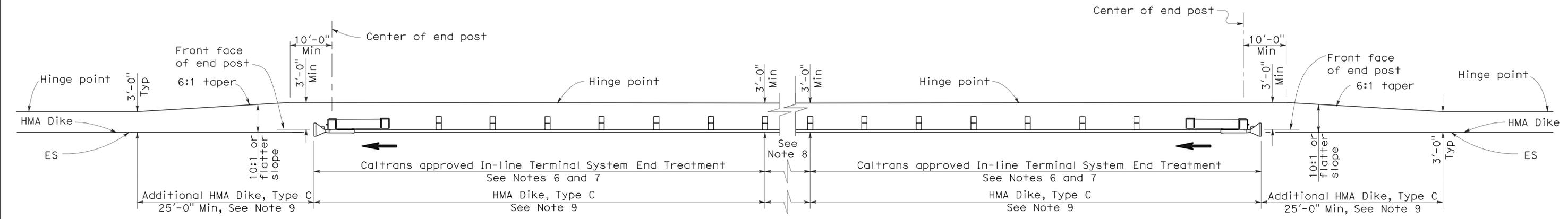
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

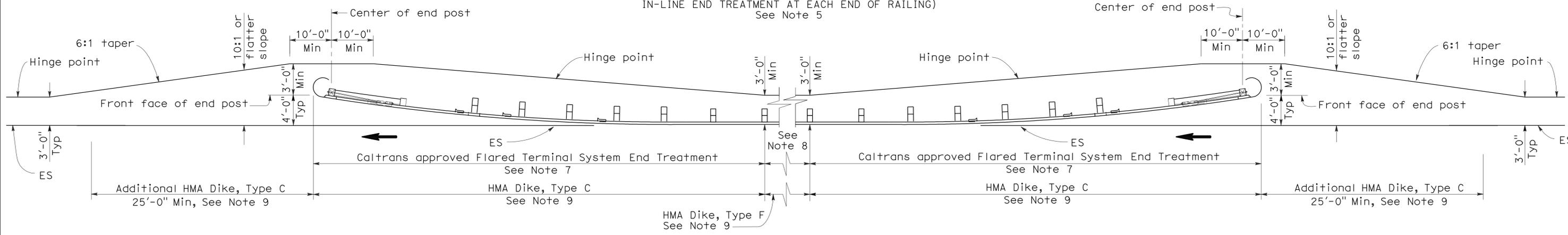
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To accompany plans dated 7-20-09



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 \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.

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
05	SB	1	R25.1/M29.4	35	59

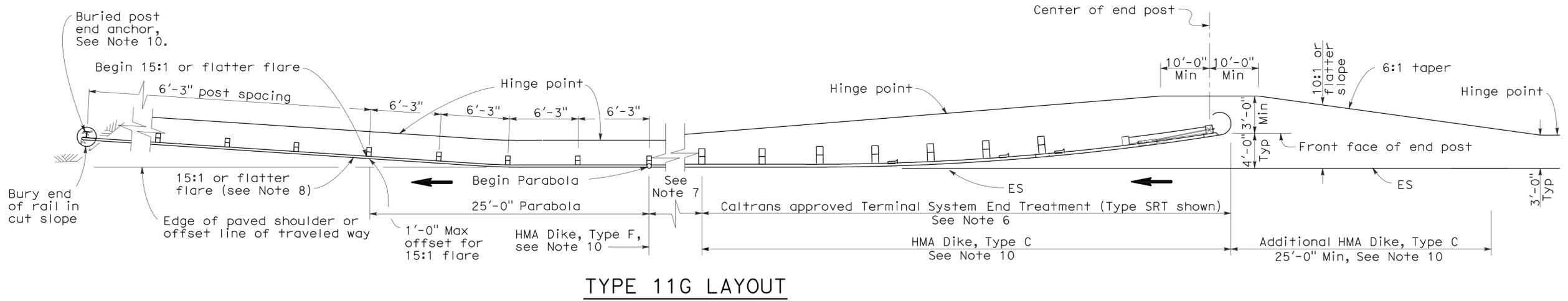
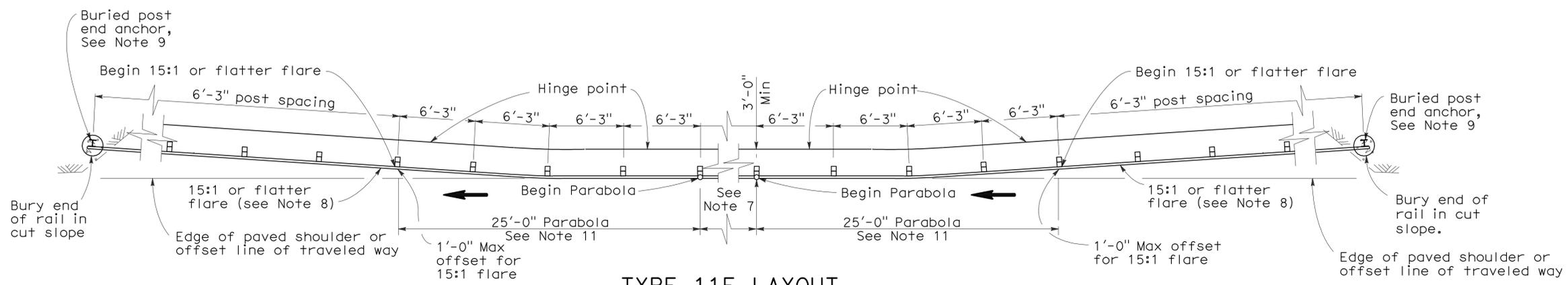
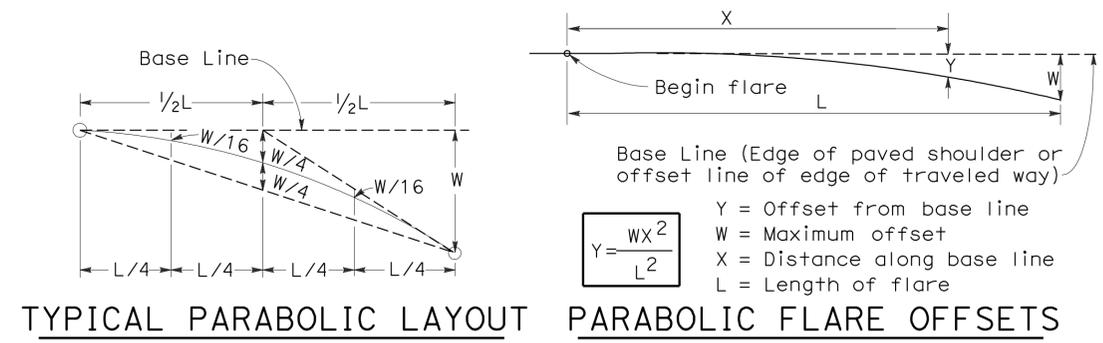
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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To accompany plans dated 7-20-09



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
05	SB	1	R25.1/M29.4	36	59

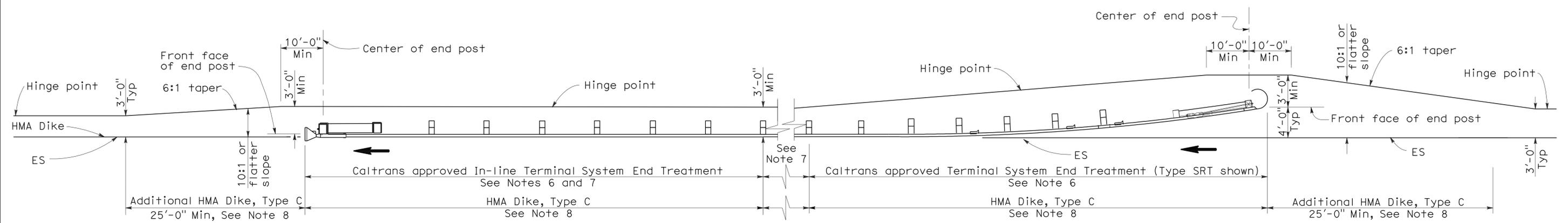
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To accompany plans dated 7-20-09



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

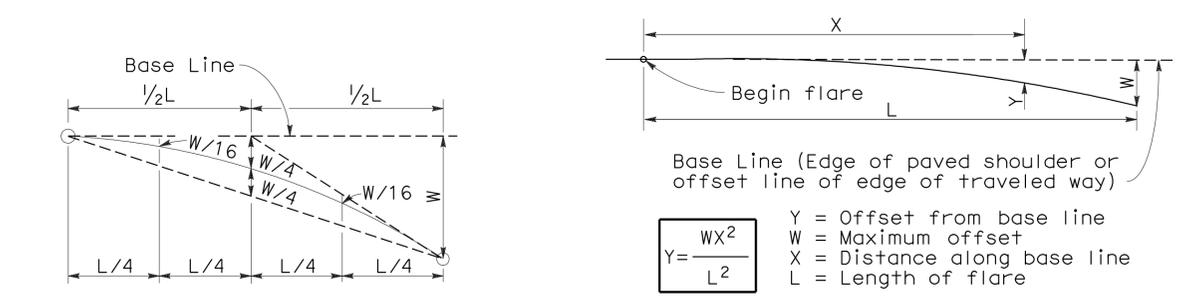
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	37	59

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REGISTERED CIVIL ENGINEER

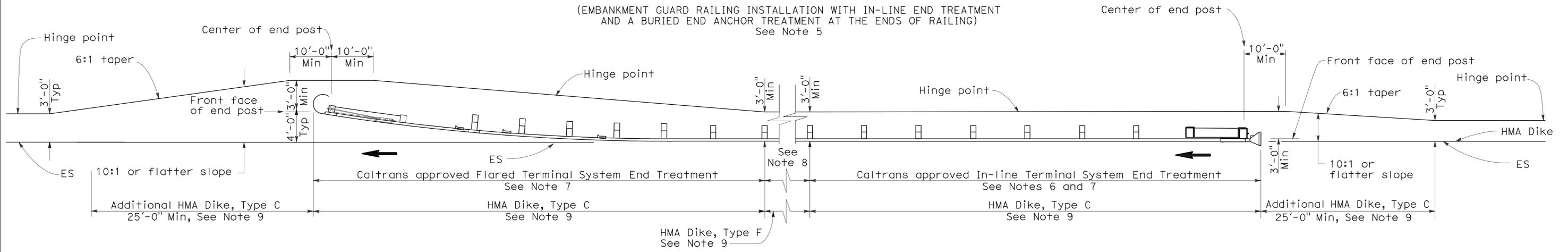
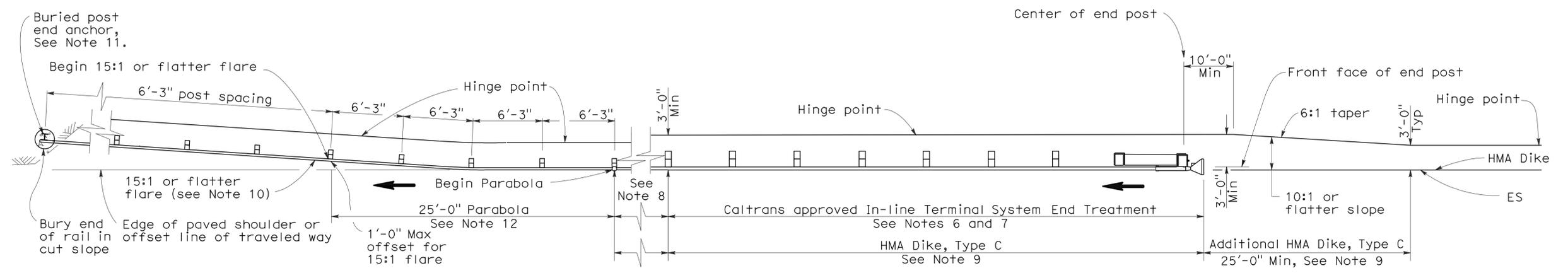
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Exp. 6-30-09
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STATE OF CALIFORNIA



To accompany plans dated 7-20-09



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
DEPARTMENT OF TRANSPORTATION

**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
05	SB	1	R25.1/M29.4	38	59

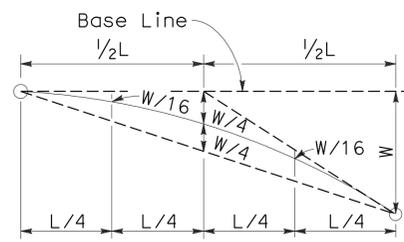
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REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

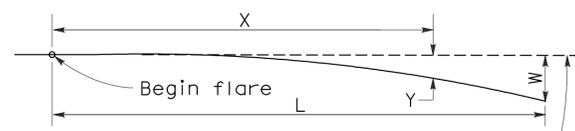
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To accompany plans dated 7-20-09



TYPICAL PARABOLIC LAYOUT

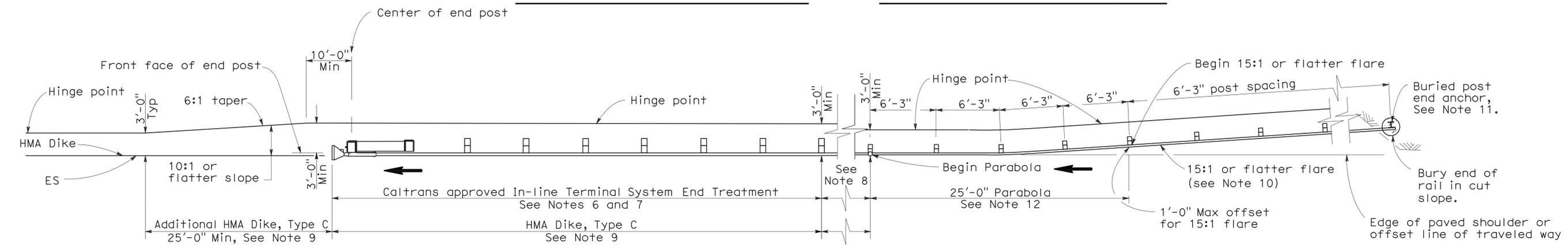


Base Line (Edge of paved shoulder or offset line of edge of traveled way)

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

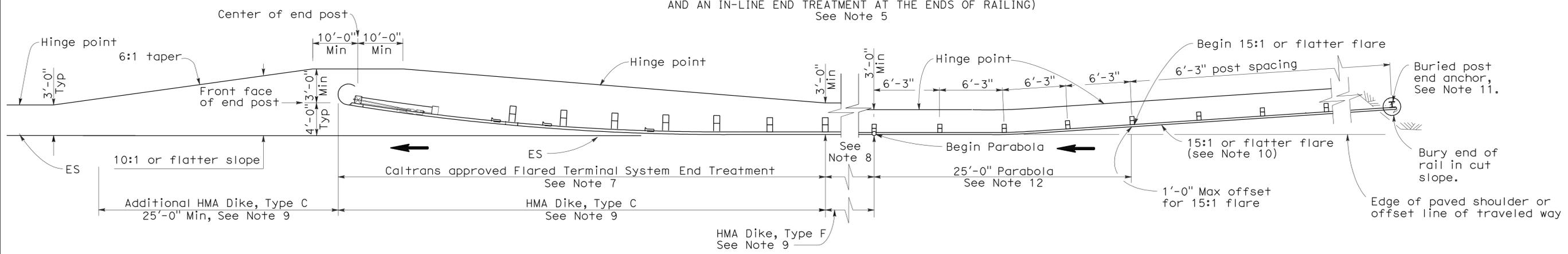
Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

PARABOLIC FLARE OFFSETS



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 \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 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
DEPARTMENT OF TRANSPORTATION
**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
05	SB	1	R25.1/M29.4	39	59

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REGISTERED CIVIL ENGINEER

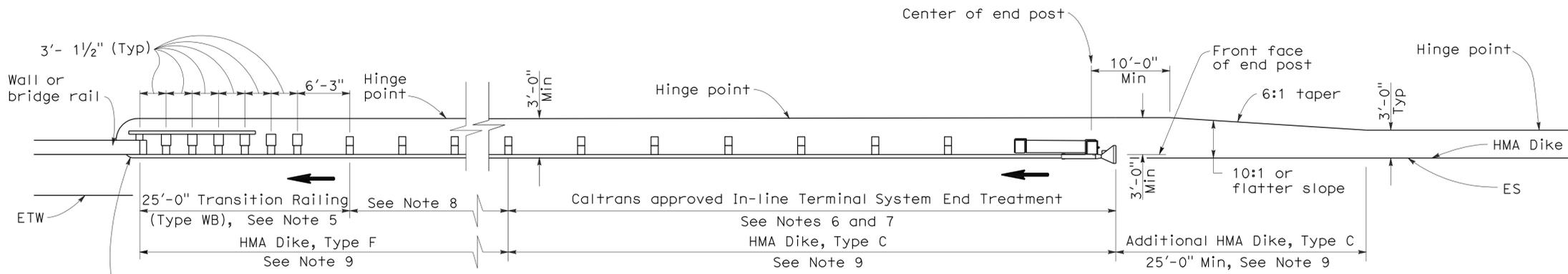
June 6, 2008
PLANS APPROVAL DATE

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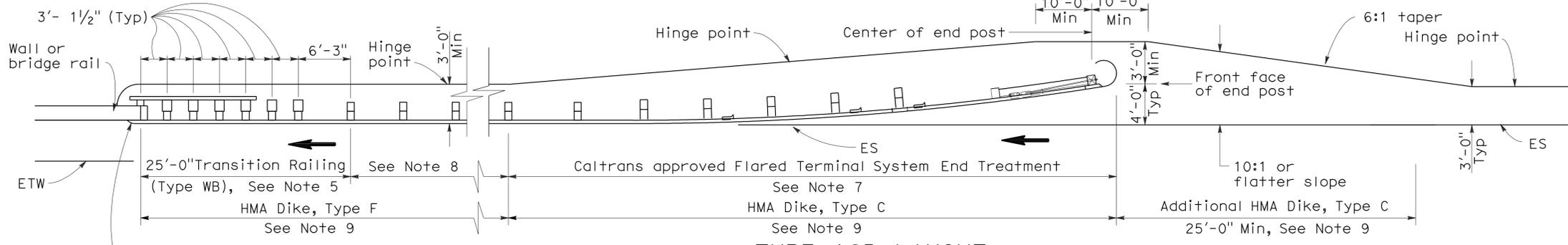
To accompany plans dated 7-20-09

2006 REVISED STANDARD PLAN RSP A77F1



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

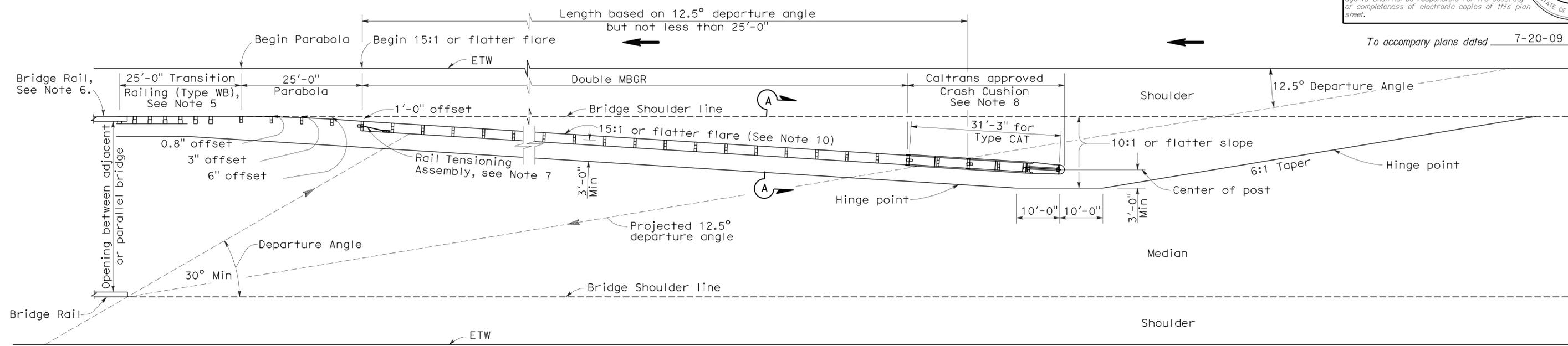
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	40	59

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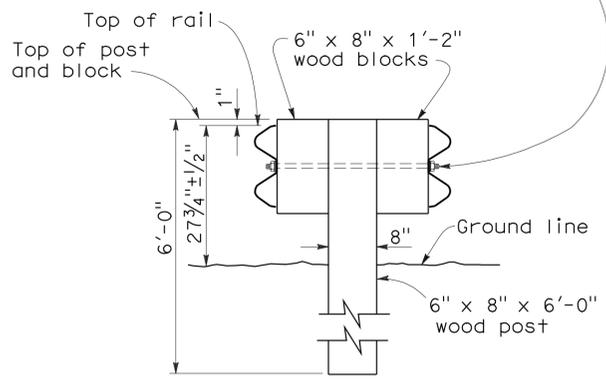


To accompany plans dated 7-20-09

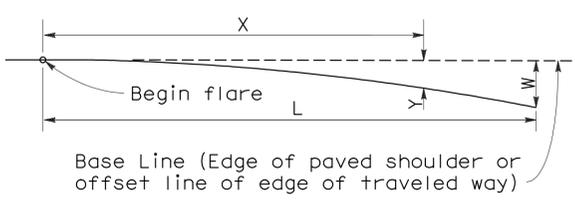
TYPE 12E LAYOUT

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.

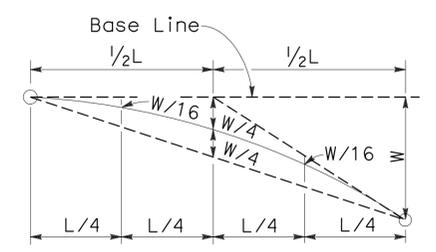


SECTION A-A
TYPICAL DOUBLE METAL BEAM GUARD RAILING



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

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
05	SB	1	R25.1/M29.4	41	59

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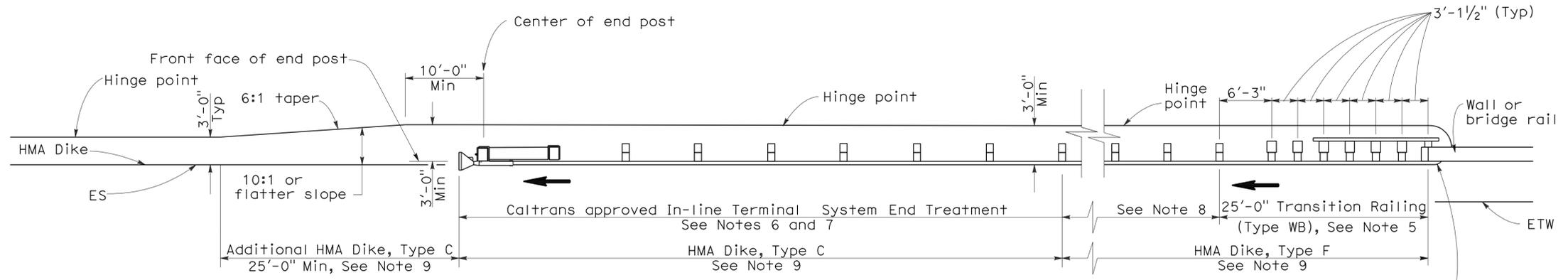
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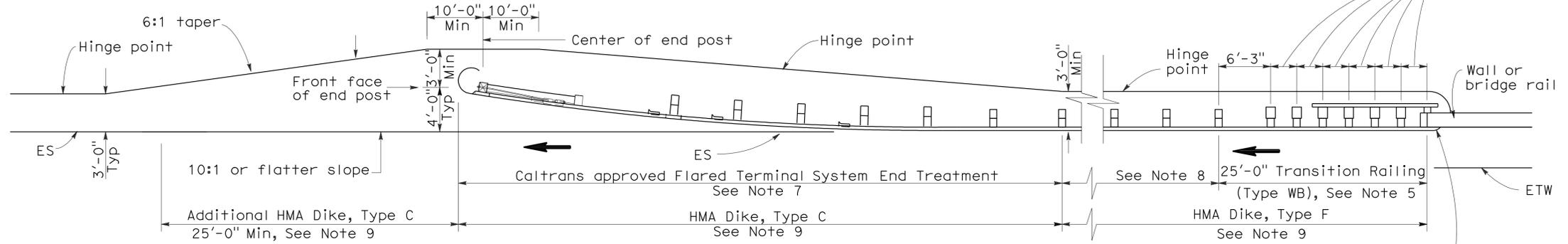
To accompany plans dated 7-20-09

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:

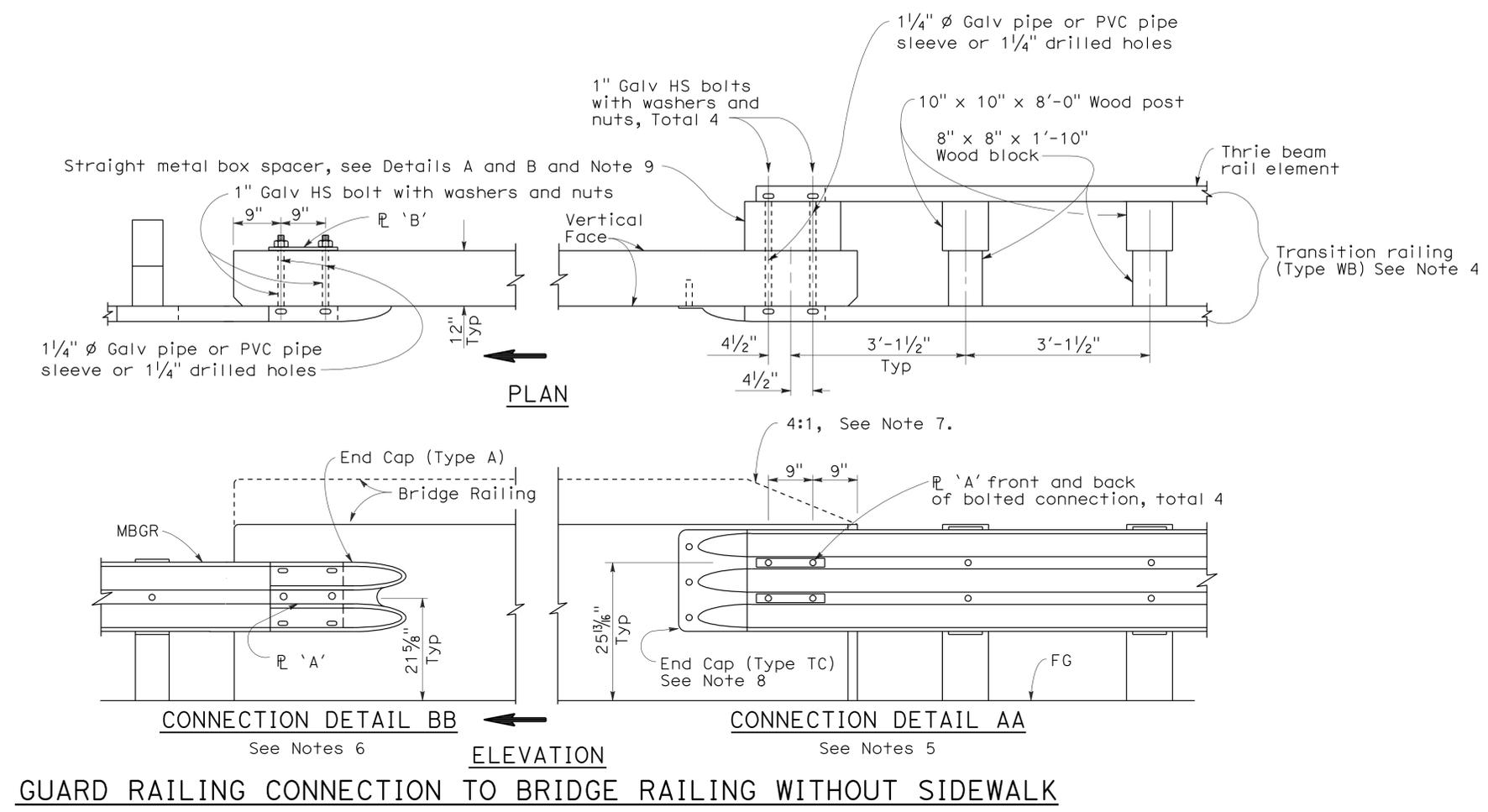
- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 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 \rightarrow .
- 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.

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

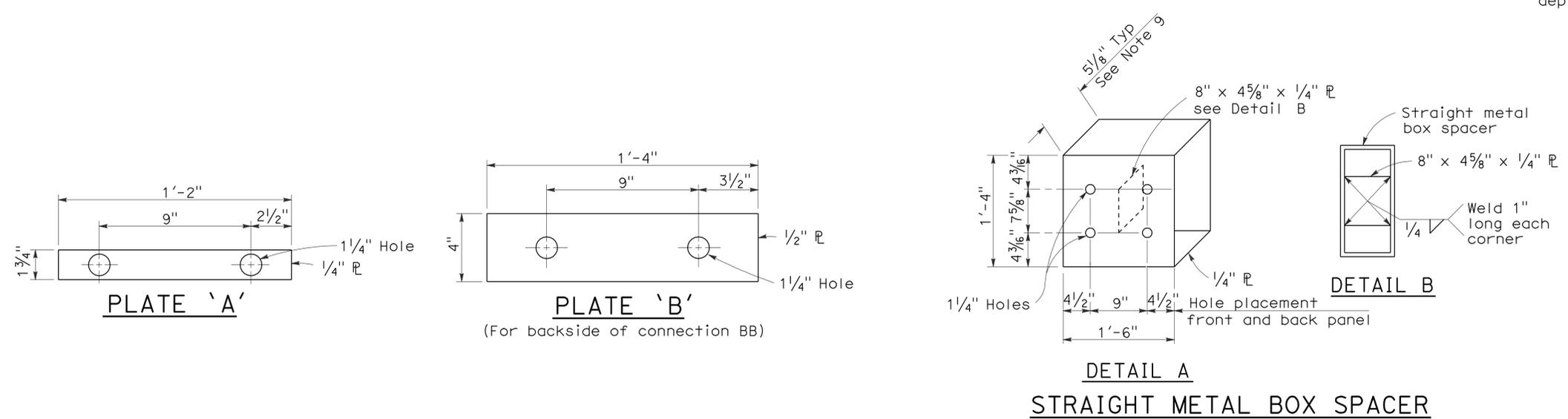
RSP A77F4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F4
DATED MAY 1, 2006 - PAGE 57 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77F4

To accompany plans dated 7-20-09



- 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 →.
 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.



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.

2006 REVISED STANDARD PLAN RSP A77J1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	43	59

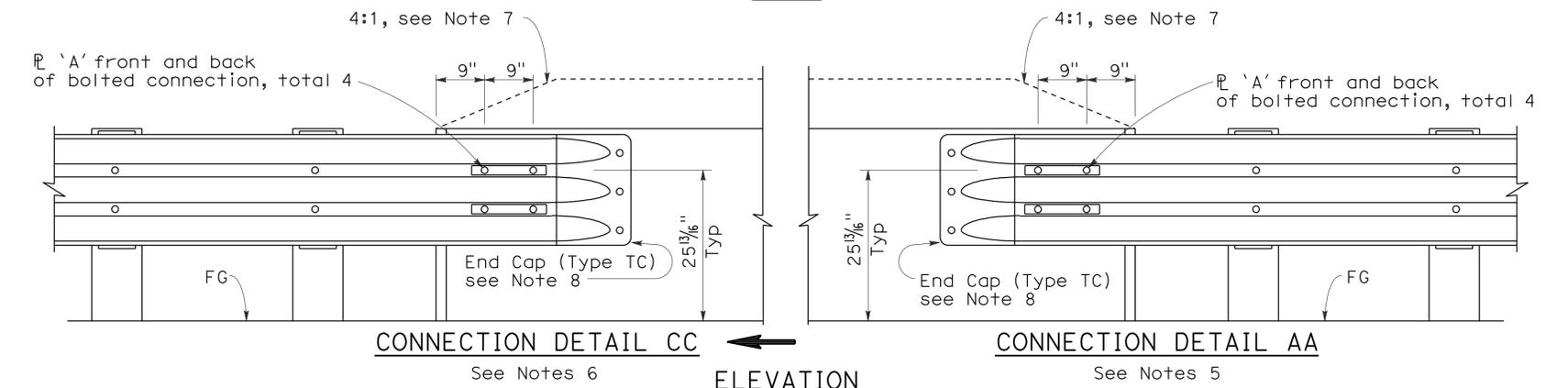
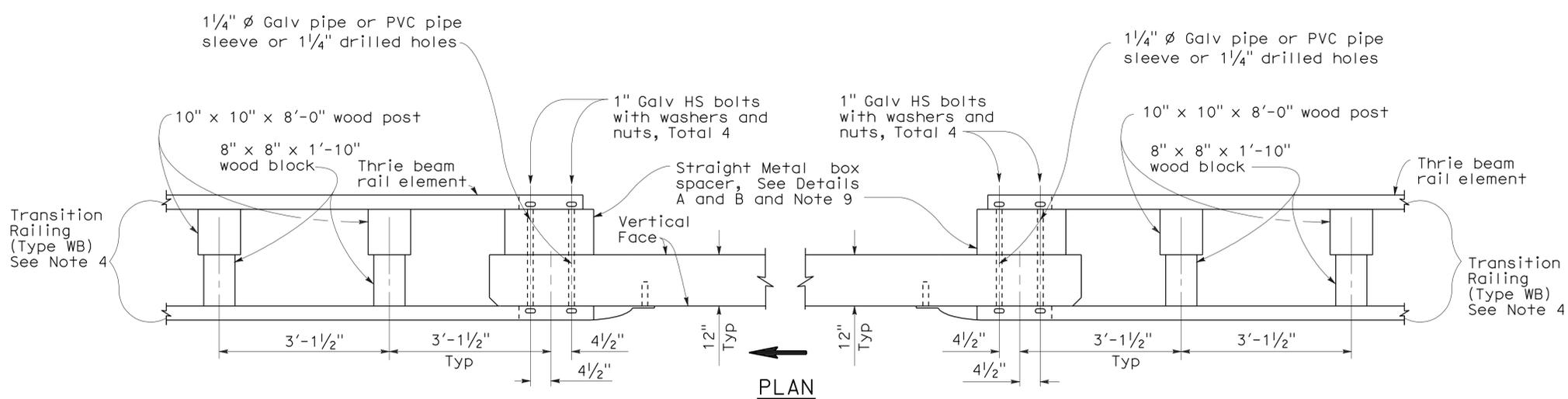
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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No. C50200
Exp. 6-30-09
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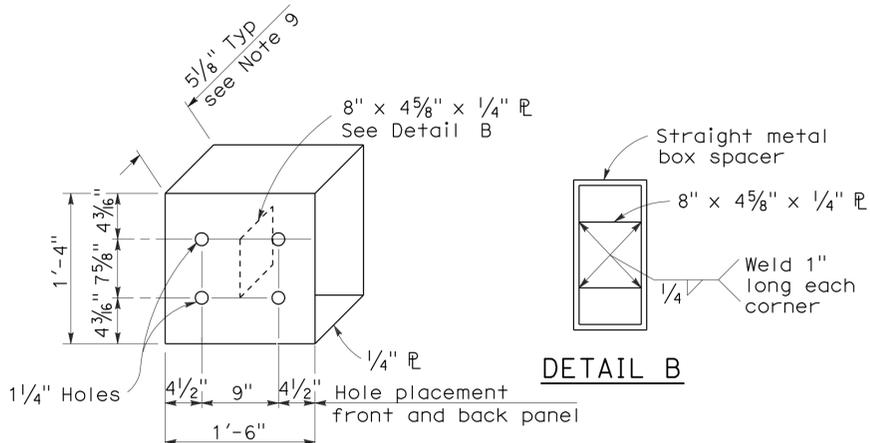
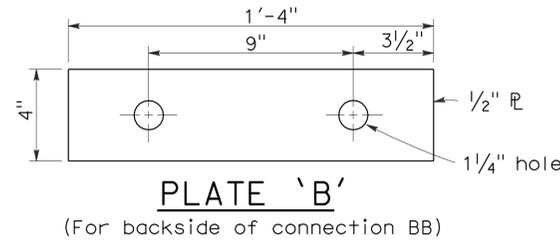
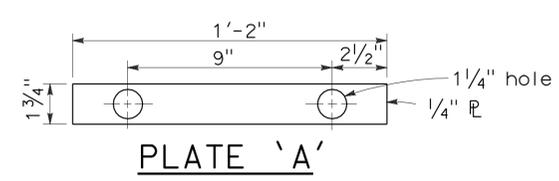
To accompany plans dated 7-20-09



GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

1. See Revised Standard Plan RSP A77J1 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 →.
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 CC, see Layout Types 12AA and 12BB on Standard Plan A77F4 and Layout Type 12CC 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 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.
8. For details of End Cap (Type TC), see Standard Plans A77J4.
9. See Standard Plans A77J4 for additional details regarding depth dimension for straight metal box spacer.



**DETAIL A
STRAIGHT METAL BOX SPACER**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	44	59

Randell D. Hiatt
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June 5, 2009
PLANS APPROVAL DATE

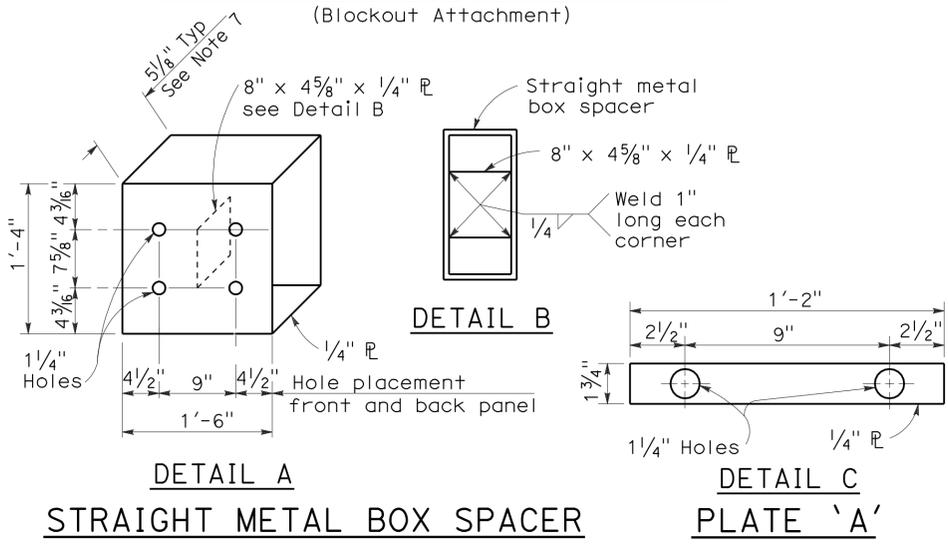
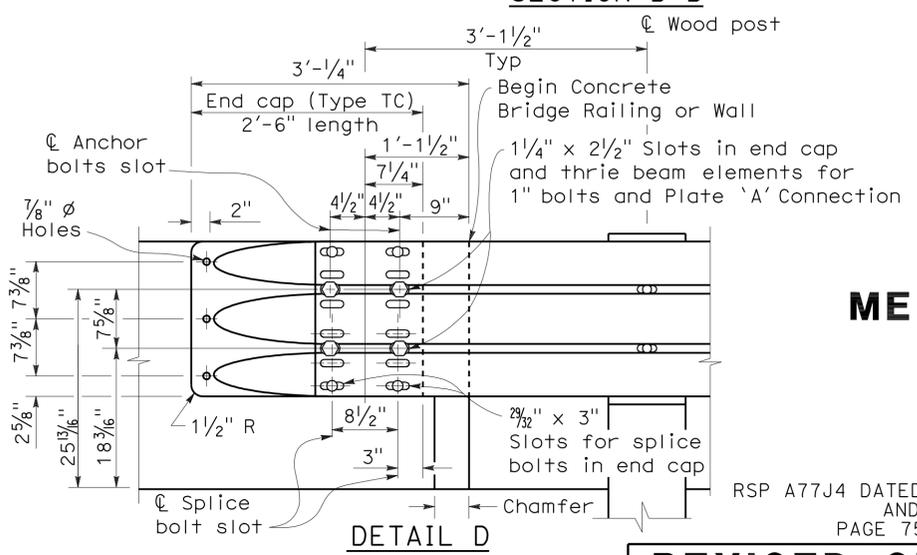
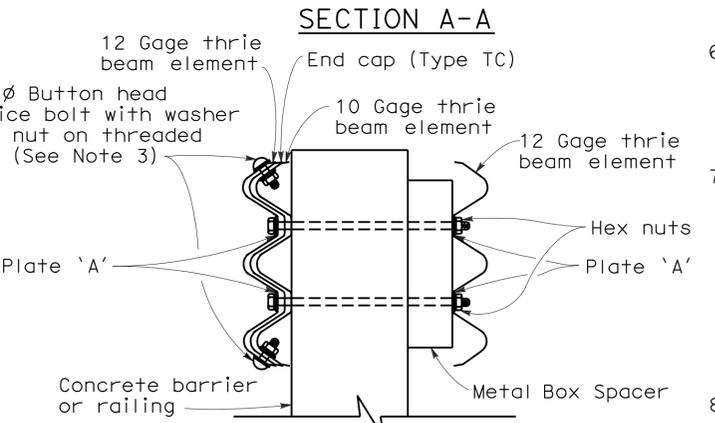
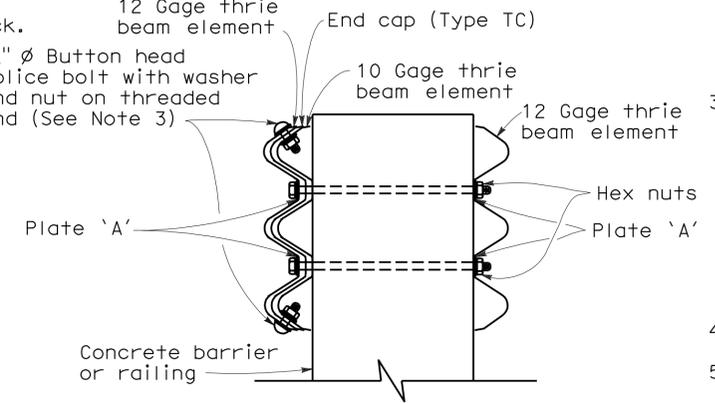
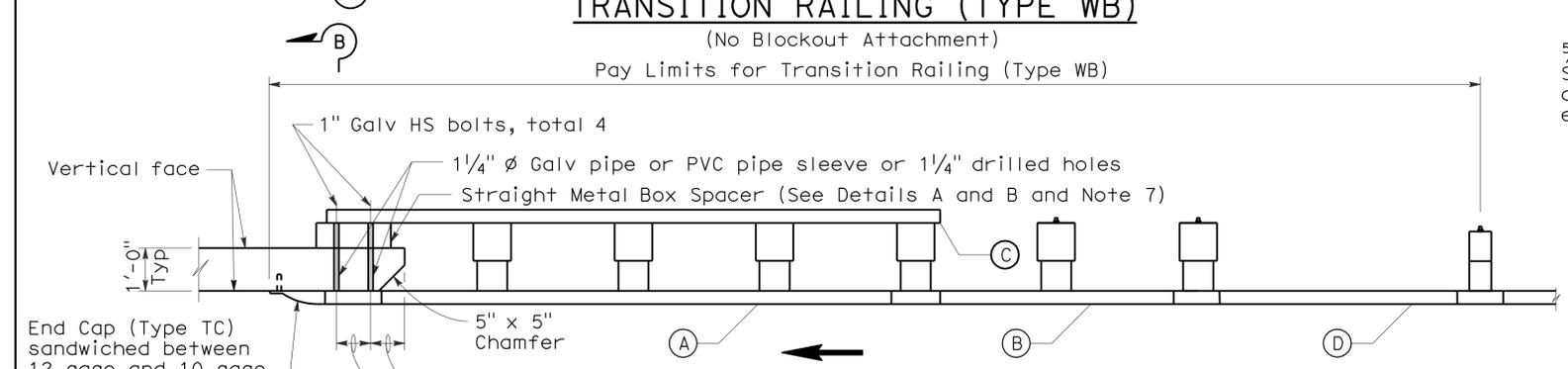
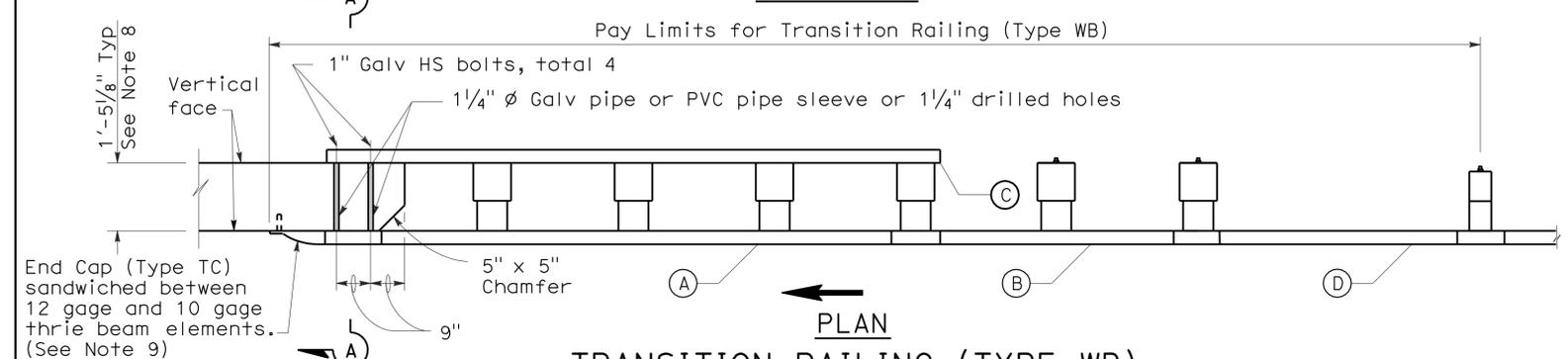
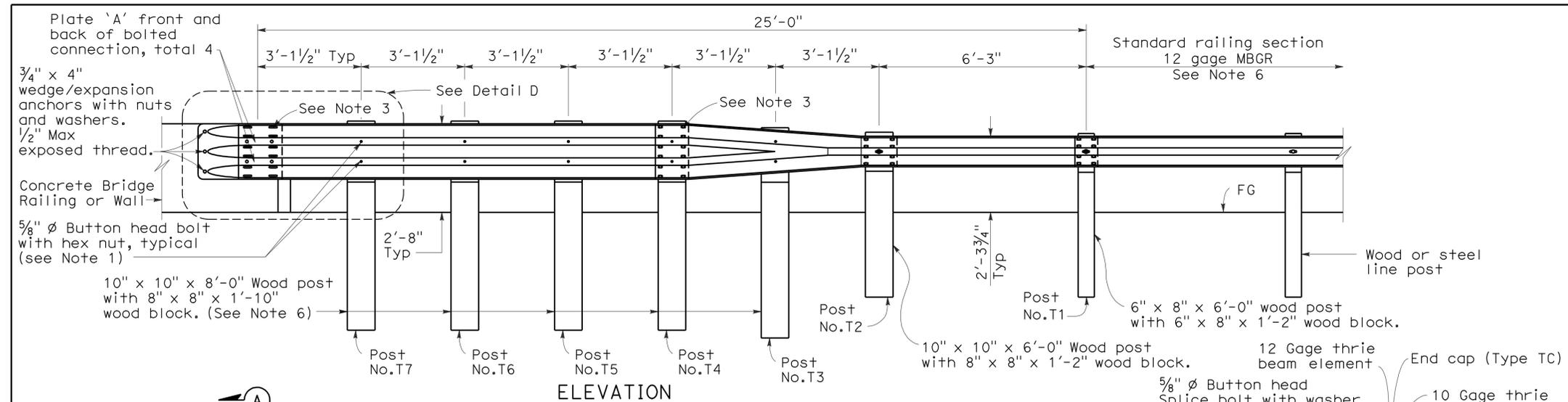
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No. C50200
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CIVIL
STATE OF CALIFORNIA

To accompany plans dated 7-20-09

NOTES:

- Use 5/8" ϕ Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
- The nested rail elements, end cap, and 'W' beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
- Exterior splice bolt holes for rail element splices at Post No.T4 and the connection to the concrete barrier or railing shall be the standard 29/32" x 1 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1 1/4" ϕ . Only the top 2 and the bottom 2 splice bolts with washers and nuts are required for rail splices at Post No.T4 and the connection to the concrete barrier or railing.
- Direction of adjacent traffic indicated by \rightarrow .
- The top elevation of Post Nos.T2 through T7 shall not project more than 1" above the top elevation of the rail element.
- Typically, the railing connected to Transition Railing (Type WB) will be either standard railing section of metal beam guard railing or an approved Caltrans end treatment attached to Post No.T1.
- The depth of the metal box spacer varies from the 5 1/8" to 1 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 17 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
- Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No.4 through No.7 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
- End cap may be installed over 12 gage and 10 gage thrie beam elements where transition railing is installed on the departure end of bridge railing.



- LEGEND**
- (A) Nested thrie beam elements (one 12 gage element nested over one 10 gage element).
 - (B) One 10 gage "W" beam to thrie beam element.
 - (C) One 12 gage thrie beam element.
 - (D) One 10 gage "W" beam rail element (7'-3 1/2" length)
- 10 gage = 0.135" thick
12 gage = 0.108" thick

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
TRANSITION RAILING
(TYPE WB)**

NO SCALE

RSP A77J4 DATED JUNE 5, 2009 SUPERSEDES RSP A77J4 DATED JUNE 6, 2008 AND STANDARD PLAN A77J4 DATED MAY 1, 2006 - PAGE 75 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77J4

2006 REVISED STANDARD PLAN RSP A77J4

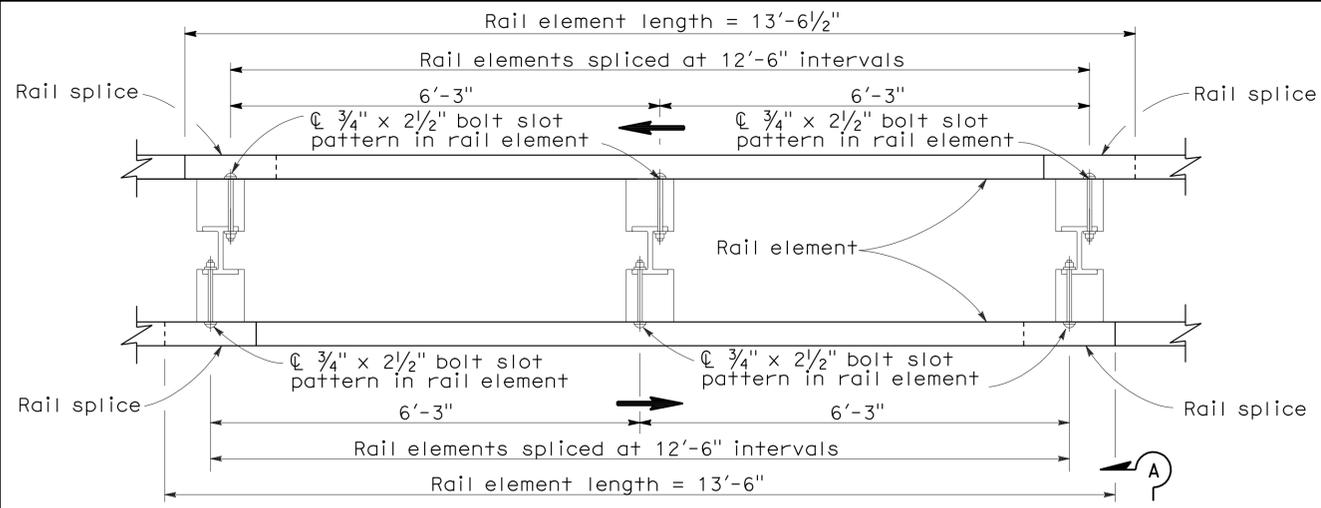
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	45	59

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

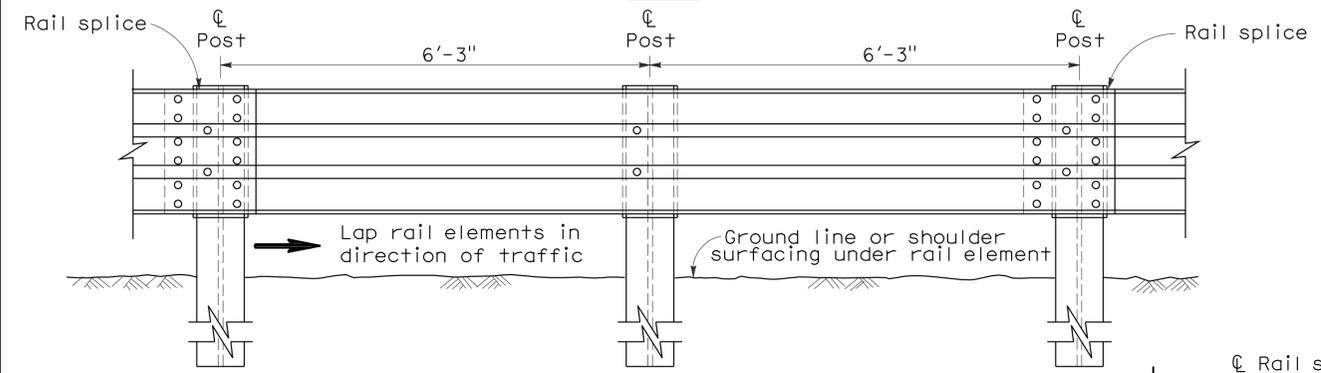
June 6, 2008
PLANS APPROVAL DATE

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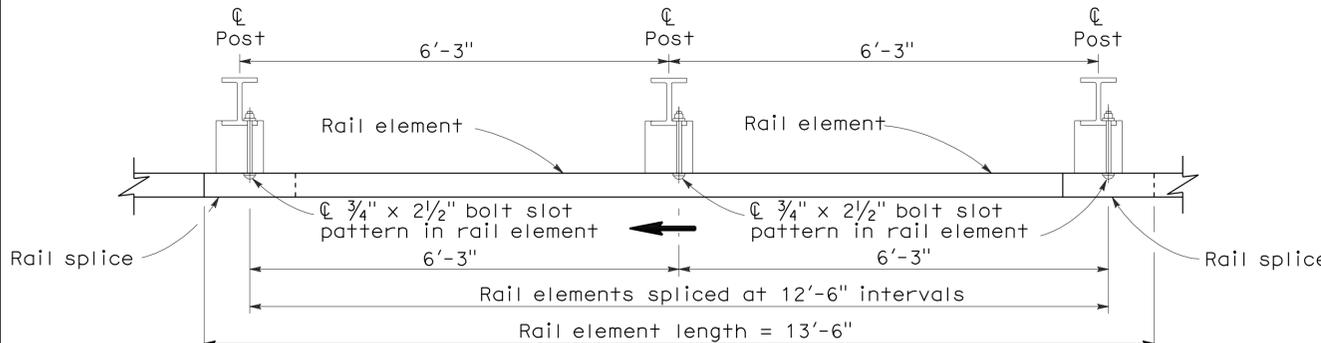
REGISTERED PROFESSIONAL ENGINEER
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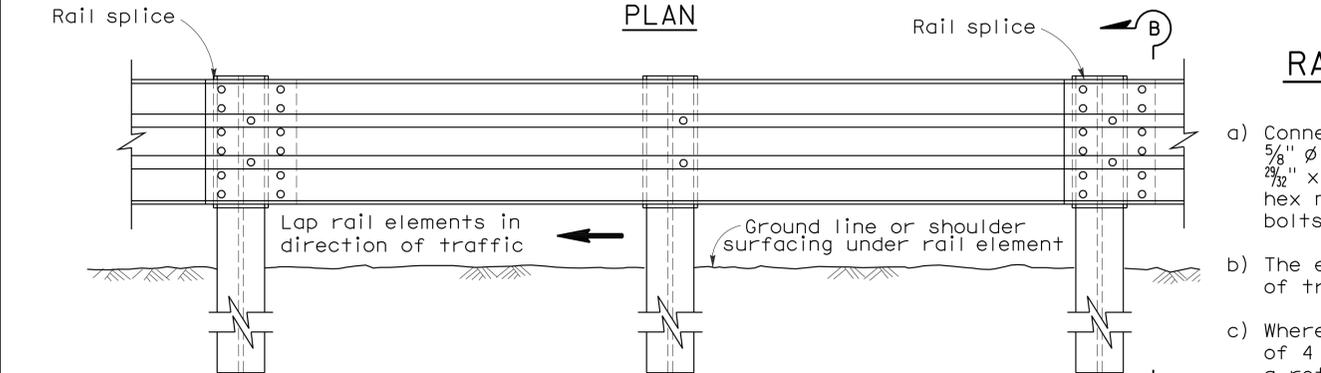
PLAN
DOUBLE THRIE BEAM BARRIER
(Steel post with notched wood or notched plastic blocks)
See Note 1



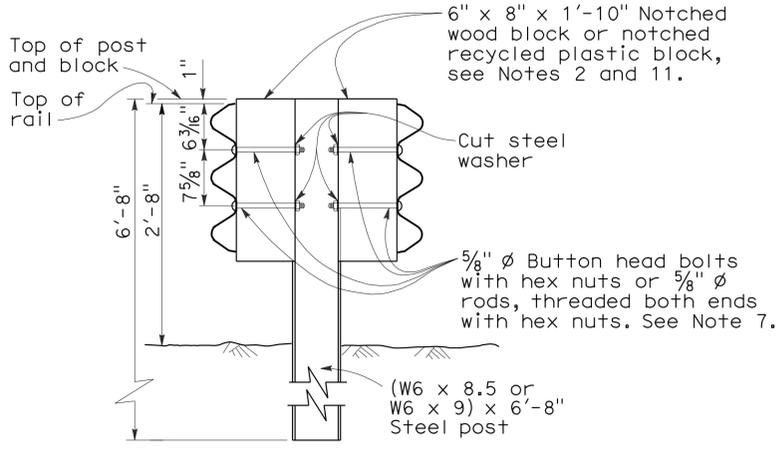
ELEVATION
DOUBLE THRIE BEAM BARRIER
(Steel post with notched wood or notched plastic blocks)
See Note 1



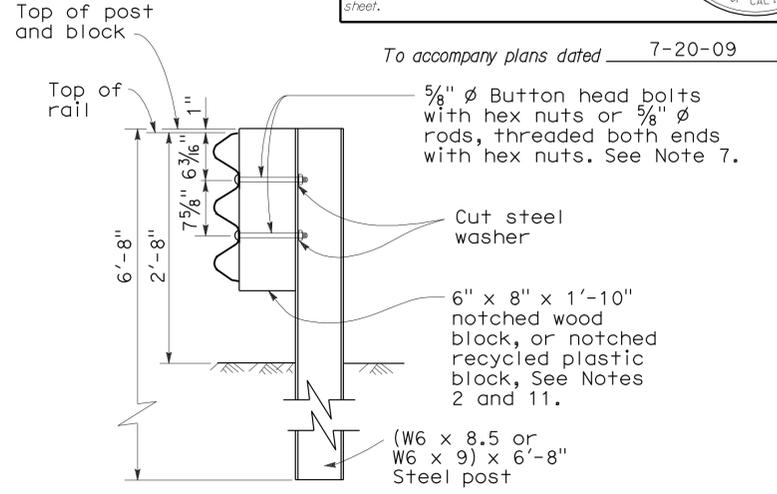
PLAN
SINGLE THRIE BEAM BARRIER
(Steel post with notched wood or notched plastic blocks)
See Note 1



ELEVATION
SINGLE THRIE BEAM BARRIER
(Steel post with notched wood or notched plastic blocks)
See Note 1

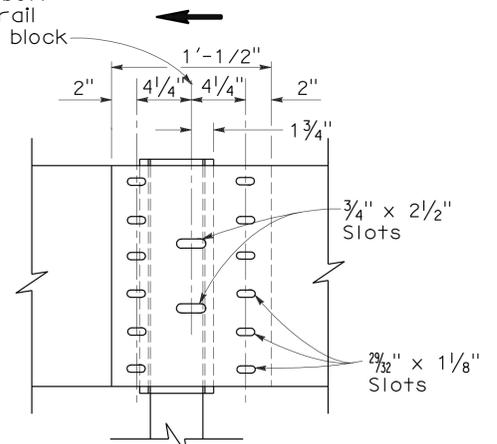


SECTION A-A
TYPICAL STEEL LINE POST INSTALLATION



SECTION B-B
TYPICAL STEEL LINE POST INSTALLATION

⊗ Rail splice and slots for 5/8" ⌀ button head bolt to connect rail to post and block



ELEVATION
RAIL ELEMENT SPLICE DETAIL

- Connect the overlapped ends of the thrie beam rail elements with 5/8" ⌀ x 1 1/8" button head oval shoulder bolts inserted into the 2 3/32" x 1 1/8" slots and bolted together with 5/8" ⌀ x 1 1/8" recessed hex nuts. Recess of hex nut points toward rail element. A total of 12 bolts and nuts are to be used at each rail splice connection.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used. Where a return cap is to be attached to the ends of rail elements, a total of 8 of the above described splice bolts and nuts are to be used.

NOTES:

- For details of the cross section of the thrie beam rail element and details for wood post with wood block installations, see Standard Plan A78A.
- For details of standard hardware, posts and blocks used to construct thrie beam barrier, see Revised Standard Plan RSP A78C1 and Standard Plan A78C2.
- Thrie beam barrier post spacing to be 6'-3" center to center, except as otherwise noted.
- Top of barrier rail to be 2'-8" above ground line or shoulder surfacing under the rail element.
- For barrier end treatments and barrier connections, see Standard Plans A78E1, A78E2 and A78E3, Revised Standard Plans RSPs A78F1 and A78F2, Standard Plan A78G and Revised Standard Plan RSP A78H.
- For connection to Concrete Barrier, see Revised Standard Plan RSP A78I.
- Attach rail element to block and steel post with 2 bolts or rods on approaching traffic side of block and post web. No washer on rail face for rod or bolted connections to line post.
- For details of thrie beam barrier on bridges, see Standard Plan A78D2. For details of thrie beam barrier at fixed objects, see Standard Plan A78D1.
- Direction of traffic indicated by →.
- Notched face of block faces steel post.

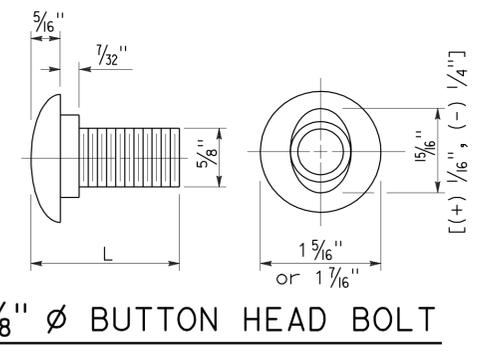
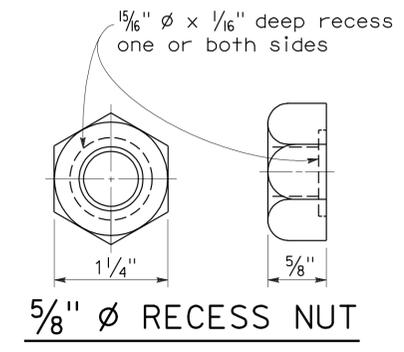
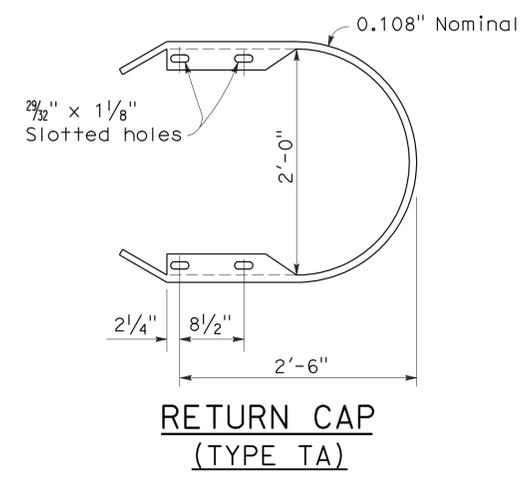
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
THRIE BEAM BARRIER
STANDARD BARRIER RAILING
SECTION (STEEL POST
WITH NOTCHED WOOD BLOCK
OR NOTCHED RECYCLED
PLASTIC BLOCK)
NO SCALE

RSP A78B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A78B
DATED MAY 1, 2006 - PAGE 84 OF THE STANDARD PLANS BOOK DATED MAY 2006.

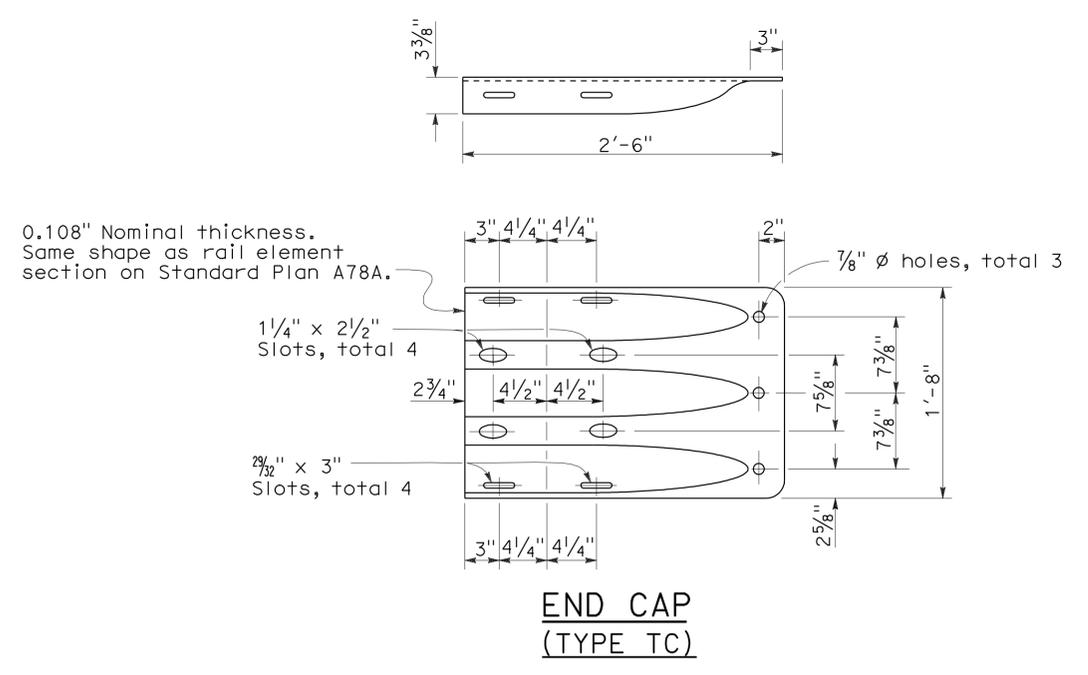
REVISED STANDARD PLAN RSP A78B

2006 REVISED STANDARD PLAN RSP A78B

To accompany plans dated 7-20-09



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
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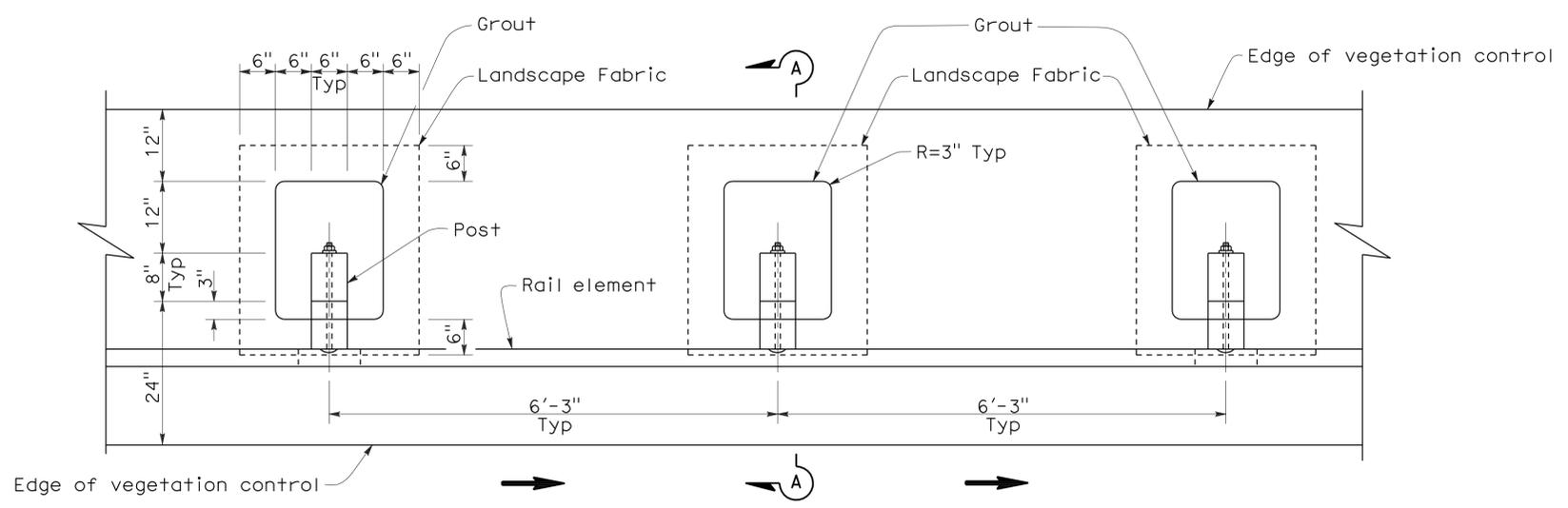
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

October 20, 2006
PLANS APPROVAL DATE

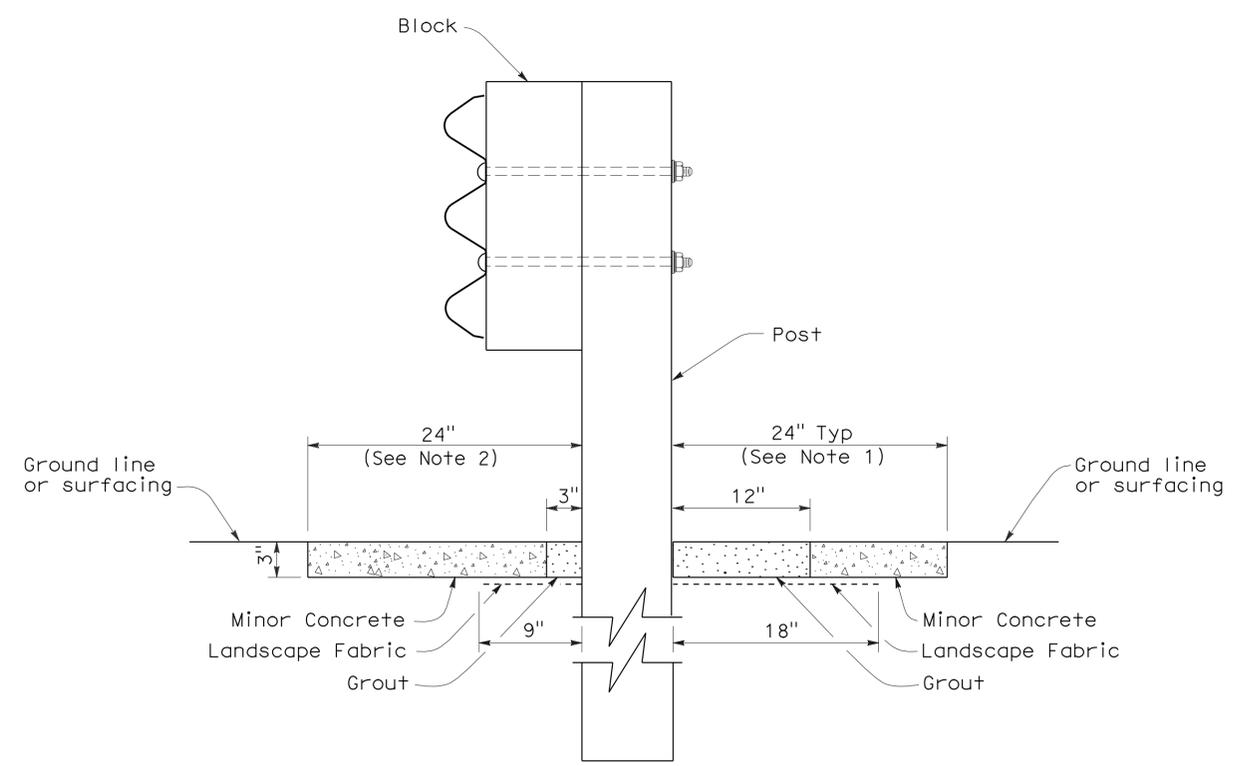
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To accompany plans dated 7-20-09



PLAN



SECTION A-A

NOTES:

1. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
2. Where dike is constructed under barrier, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
3. Direction of adjacent traffic indicated by → .

2006 NEW STANDARD PLAN NSP A78C3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**SINGLE THRIE BEAM BARRIER
TYPICAL VEGETATION CONTROL
STANDARD BARRIER RAILING SECTION**

NO SCALE
NSP A78C3 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A78C3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	48	59

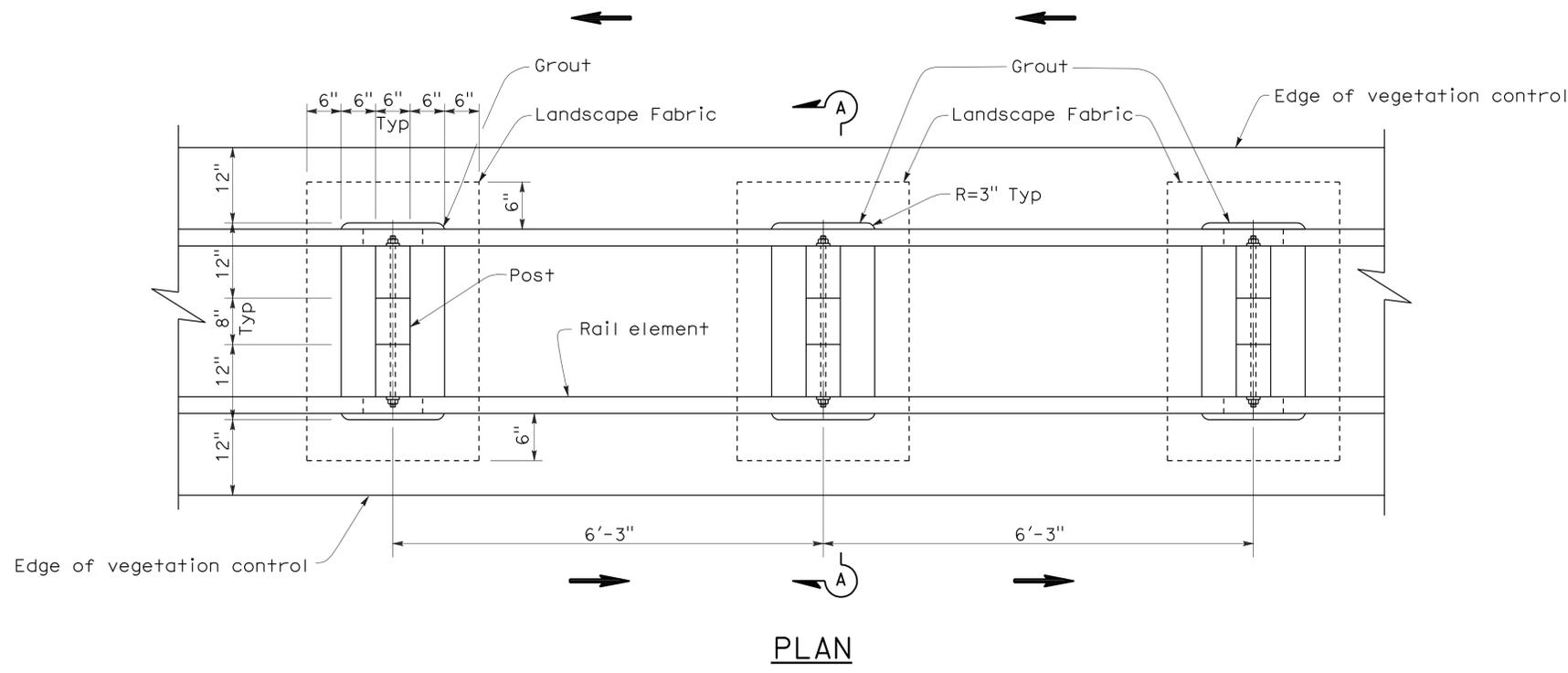
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

October 20, 2006
PLANS APPROVAL DATE

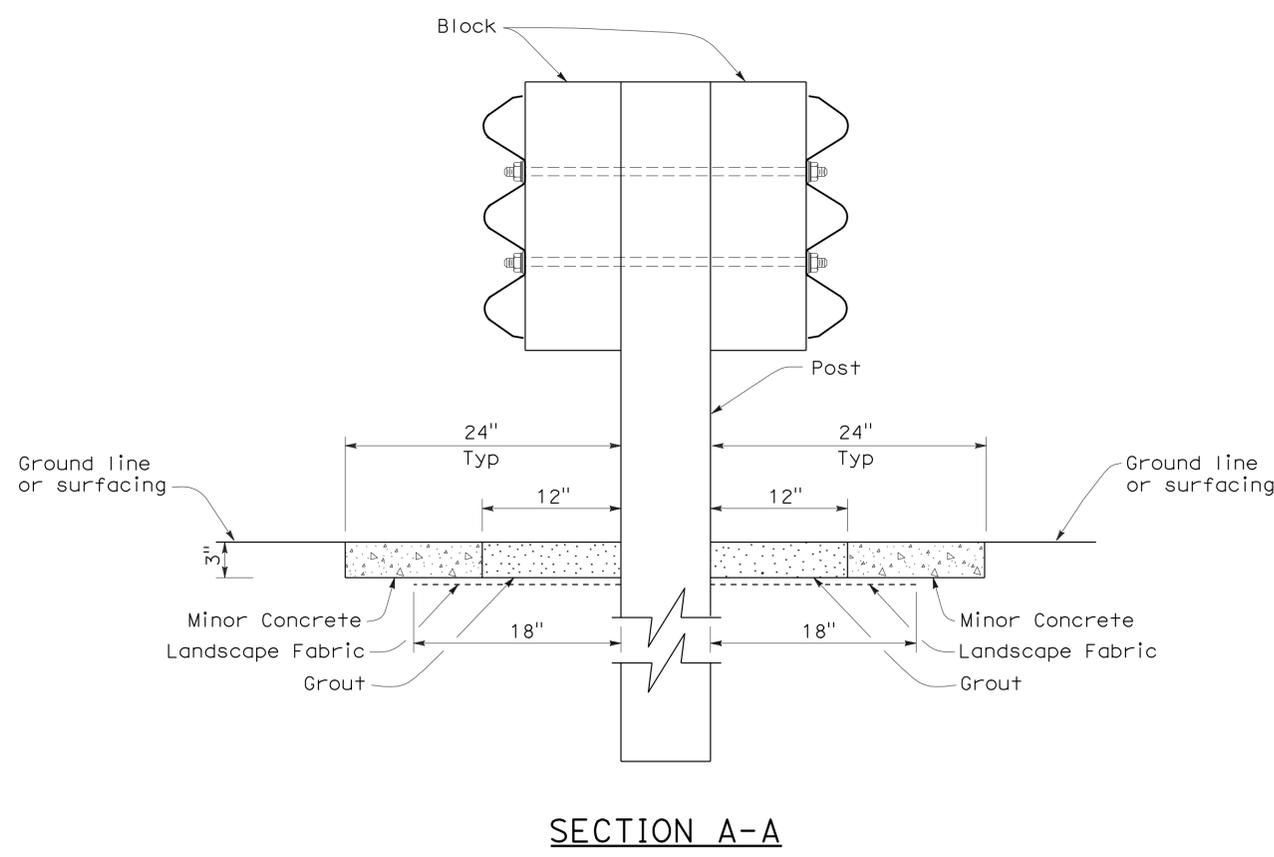
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To accompany plans dated 7-20-09



NOTE:
1. Direction of adjacent traffic indicated by →.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**DOUBLE THRIE BEAM BARRIER
TYPICAL VEGETATION CONTROL
STANDARD BARRIER RAILING SECTION**

NO SCALE
NSP A78C4 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A78C4

2006 NEW STANDARD PLAN NSP A78C4

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05	SB	1	R25.1/M29.4	49	59

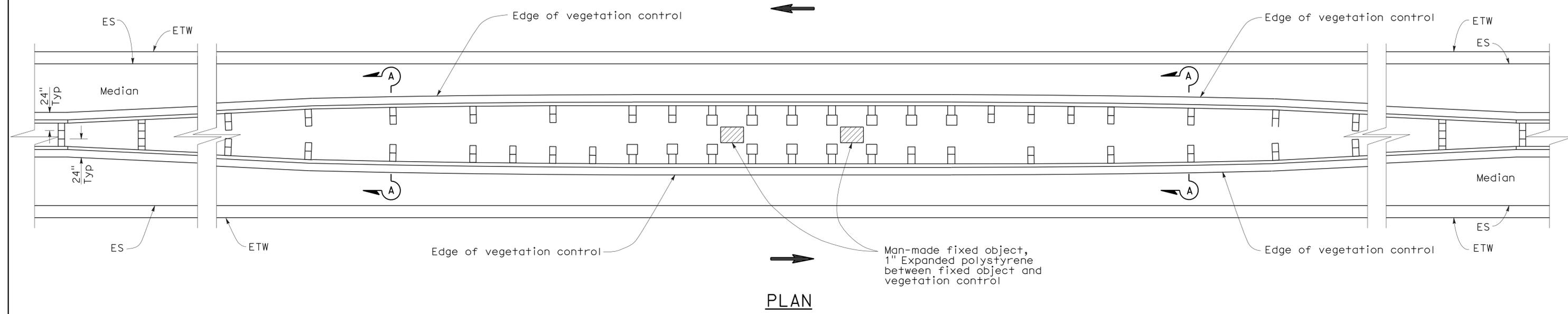
Randell D. Hiatt
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October 20, 2006
PLANS APPROVAL DATE

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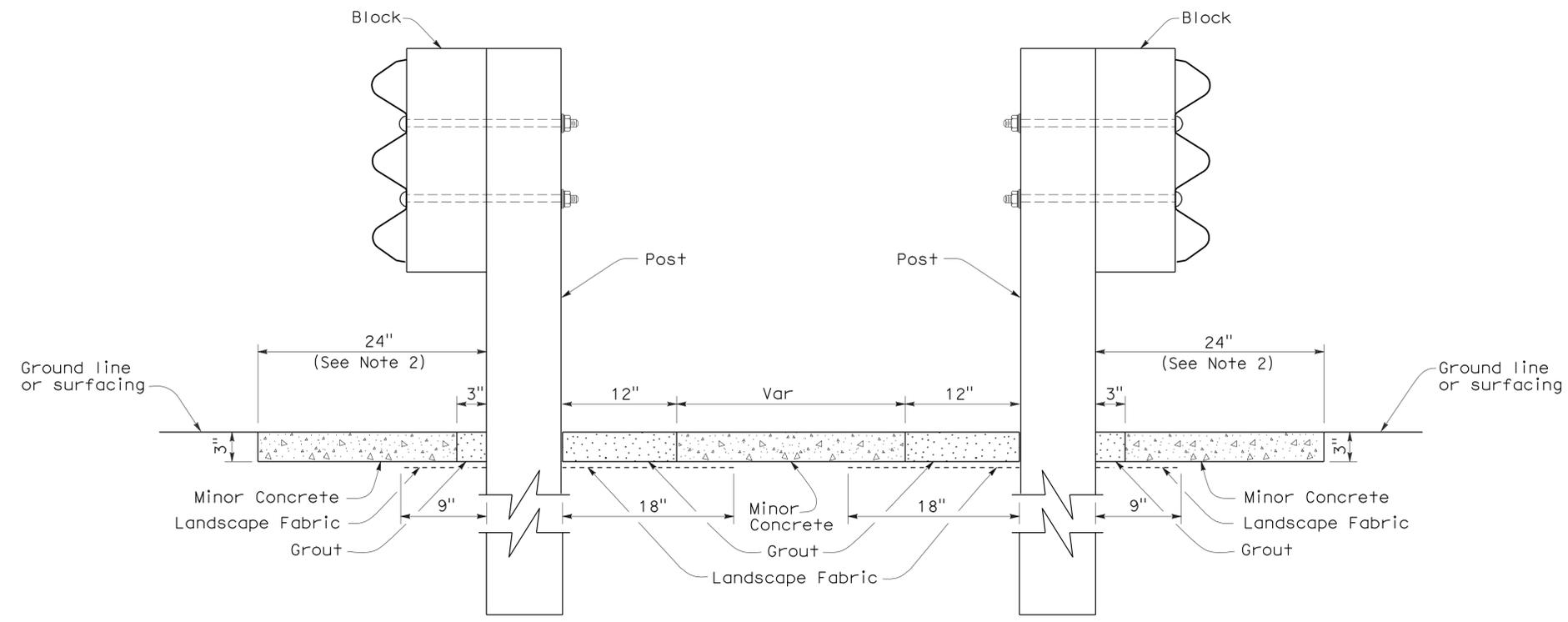
To accompany plans dated 7-20-09



PLAN

NOTES:

1. See New Standard Plan NSP A78C3 for additional vegetation control.
2. Where dike is constructed under barrier, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
3. Direction of adjacent traffic indicated by ←.



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**THRIE BEAM BARRIER
TYPICAL VEGETATION CONTROL
AT FIXED OBJECTS
IN MEDIAN**

NO SCALE
NSP A78C5 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP A78C5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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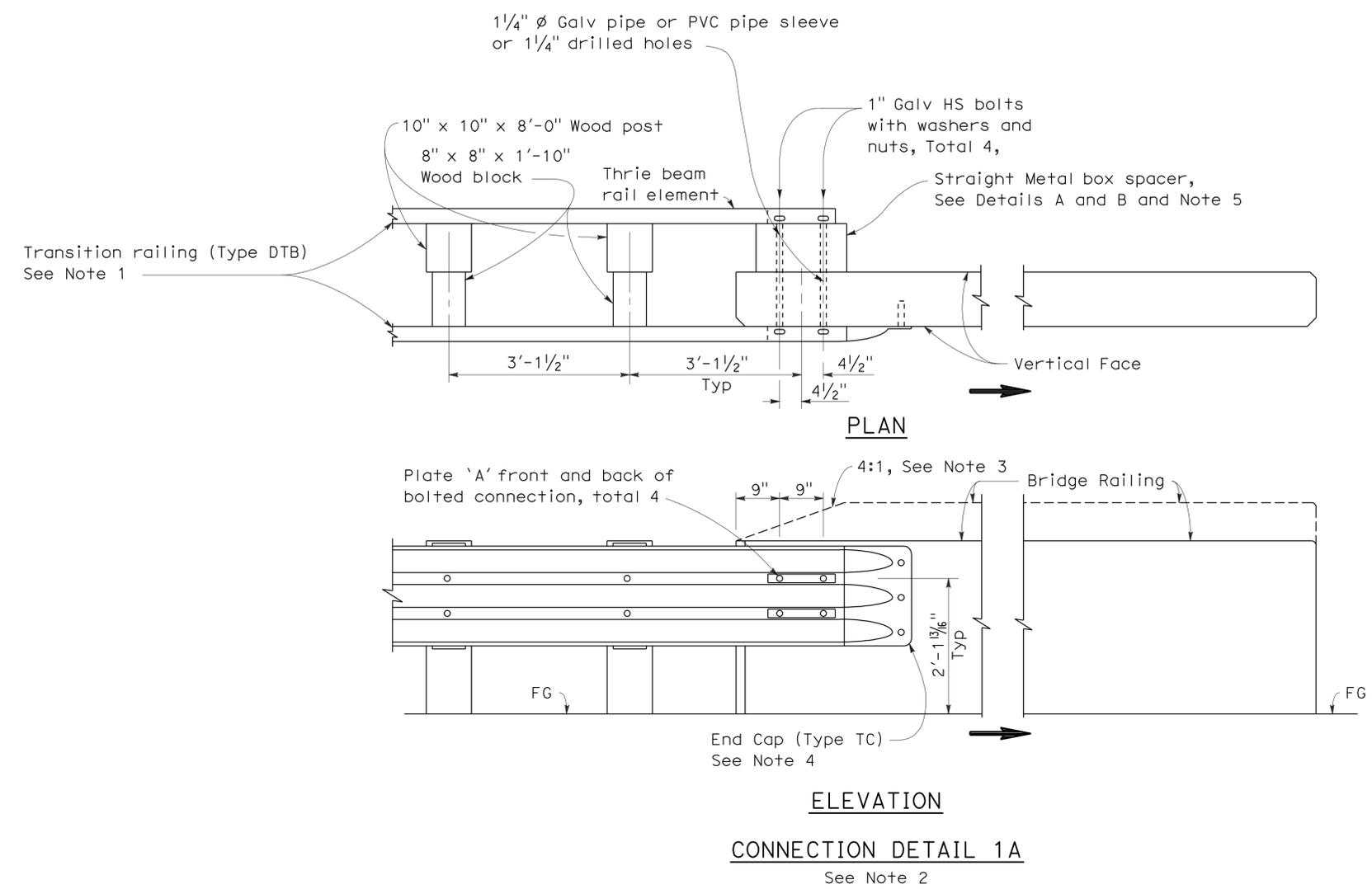
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

Randell D. Hiatt
REGISTERED PROFESSIONAL ENGINEER
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Exp. 6-30-09
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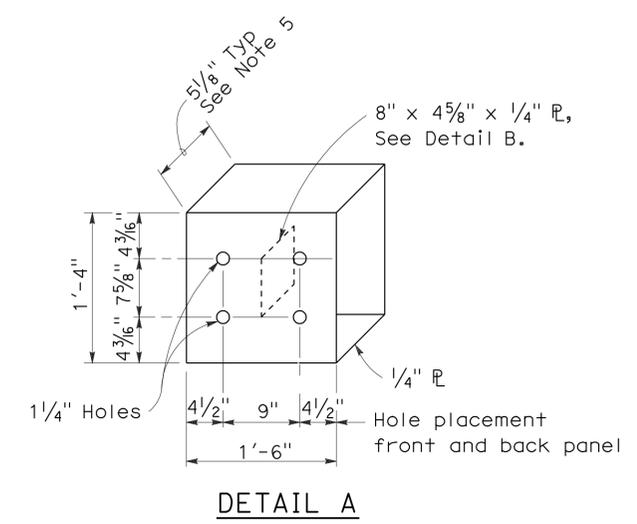
To accompany plans dated 7-20-09



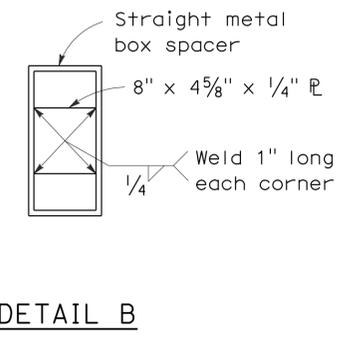
NOTES:

- For additional details of Transition Railing (Type DTB), see Standard Plans A78K. Transition Railing (Type DTB) transitions the standard 12 gage double thrie beam barrier to a heavier gage double thrie beam railing section then to a heavier gage nested double thrie beam barrier section which then is connected to the concrete bridge railing.
- For typical use of Connection Detail 1A, see Type 25A Connection Layout on Revised Standard Plan RSP A78H.
- Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail 1A, 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 Plan A78C1.
- See Standard Plan A78K for additional details regarding depth dimension for straight metal box spacer.
- Direction of adjacent traffic indicated by ➡.

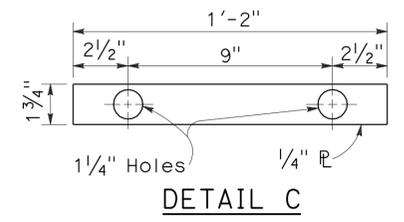
DOUBLE THRIE BEAM BARRIER CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK



DETAIL A
STRAIGHT METAL BOX SPACER



DETAIL B



DETAIL C
PLATE 'A'

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**DOUBLE THRIE BEAM BARRIER
CONNECTION TO
BRIDGE RAILINGS
WITHOUT SIDEWALKS**

NO SCALE

RSP A78F1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A78F1
DATED MAY 1, 2006 - PAGE 92 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A78F1

2006 REVISED STANDARD PLAN RSP A78F1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	51	59

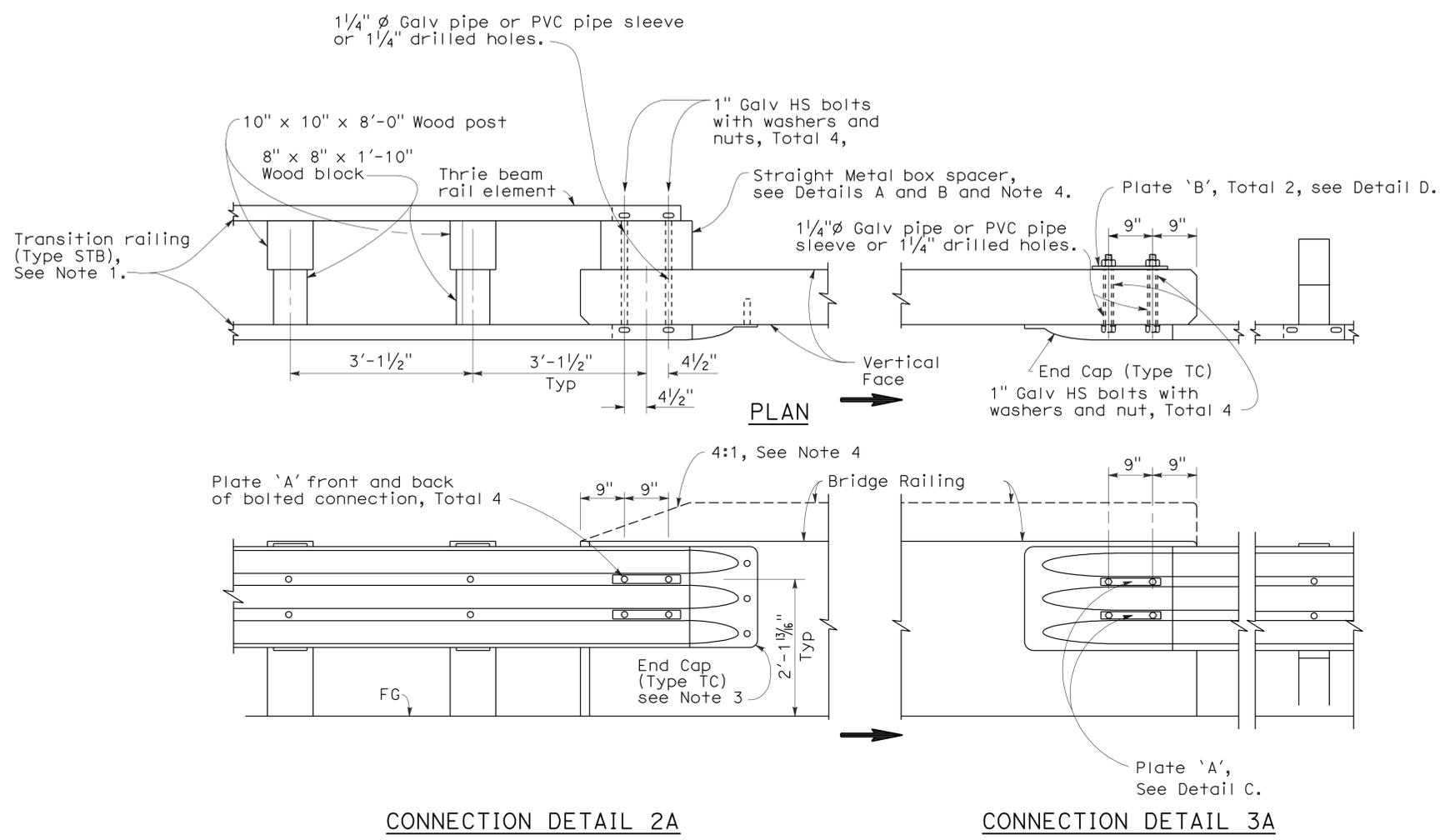
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

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 7-20-09



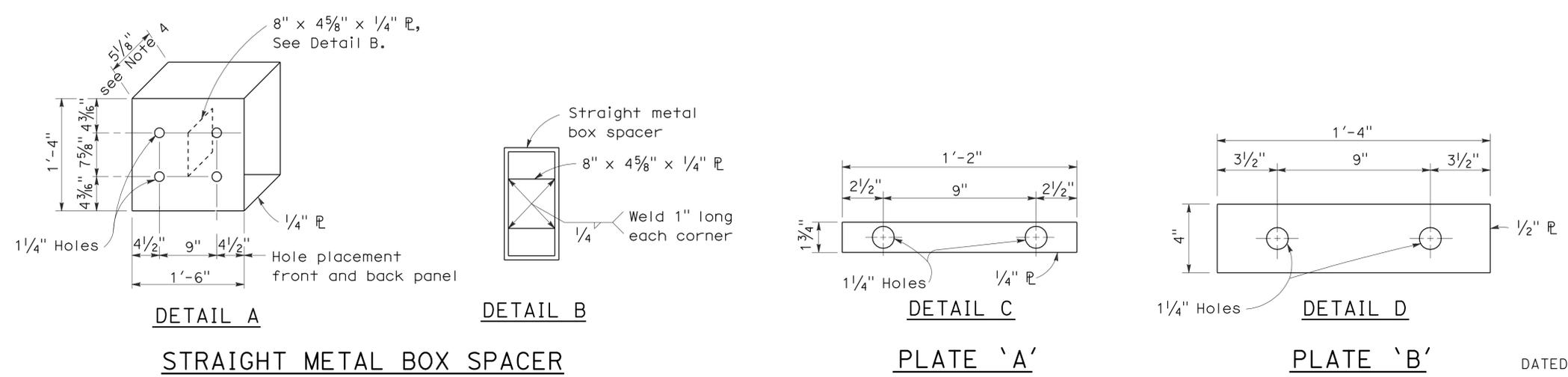
NOTES:

1. For additional details of Transition Railing (Type STB), see Standard Plans A78J. Transition Railing (Type STB) transitions the standard 12 gage single thrie beam barrier to a heavier gage single thrie beam railing section then to a heavier gage nested double thrie beam barrier section which then is connected to the concrete bridge railing.
2. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail 2A, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
3. For details of End Cap (Type TC), see Standard Plan A78C1.
4. See Standard Plan A78J for additional details regarding depth dimension for straight metal box spacer.
5. Direction of adjacent traffic indicated by ➡.

CONNECTION DETAIL 2A **CONNECTION DETAIL 3A**

ELEVATION

SINGLE THRIE BEAM BARRIER CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SINGLE THRIE BEAM BARRIER CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS

NO SCALE

RSP A78F2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A78F2
DATED MAY 1, 2006 - PAGE 93 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A78F2

2006 REVISED STANDARD PLAN RSP A78F2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	52	59

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

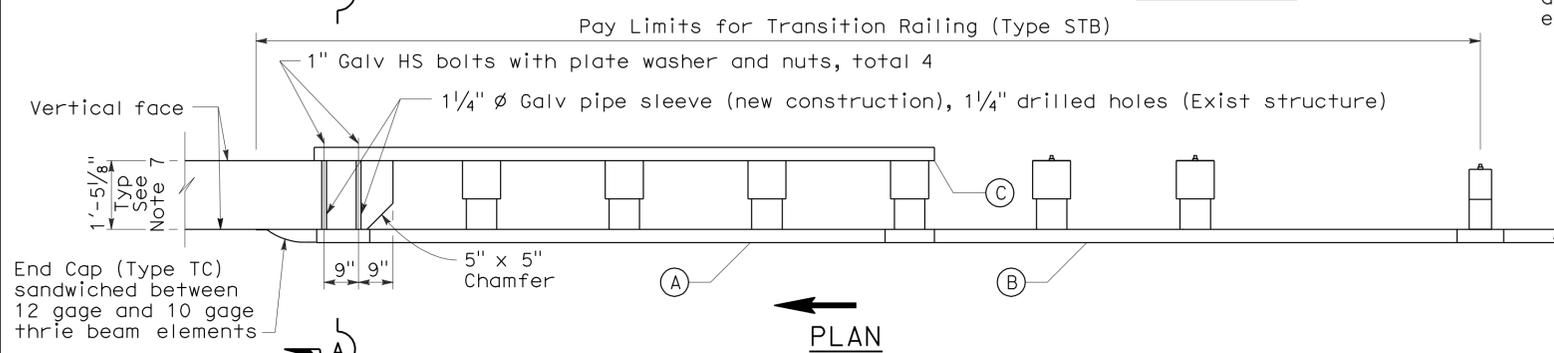
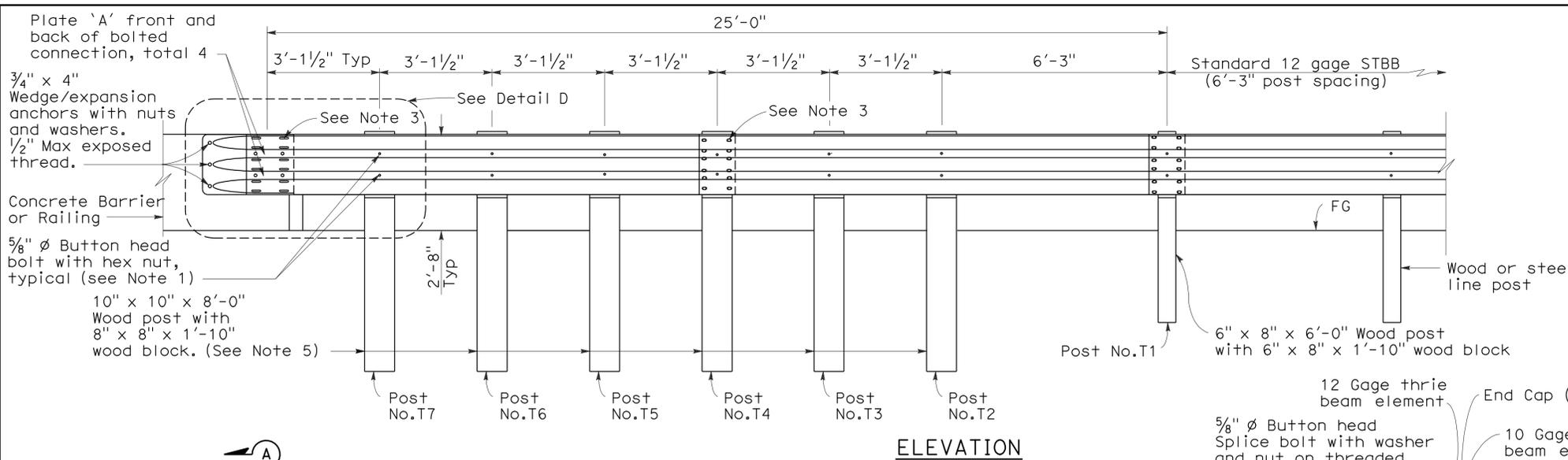
To accompany plans dated 7-20-09

LEGEND

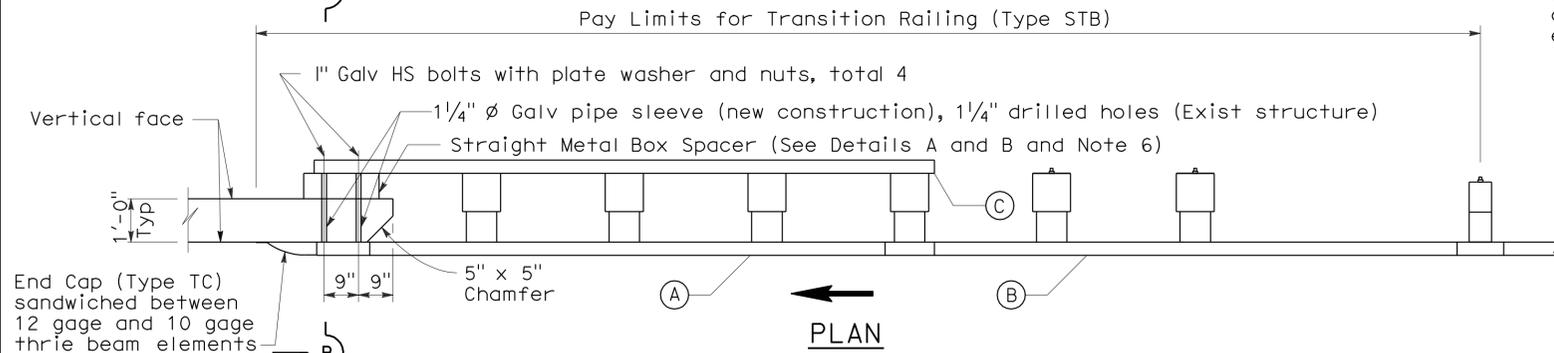
- (A) Nested thrie beam elements (one 12 gage element nested over one 10 gage element).
 - (B) One 10 gage thrie beam element.
 - (C) One 12 gage thrie beam element.
- 10 gage = 0.135" thick
12 gage = 0.108" thick

NOTES:

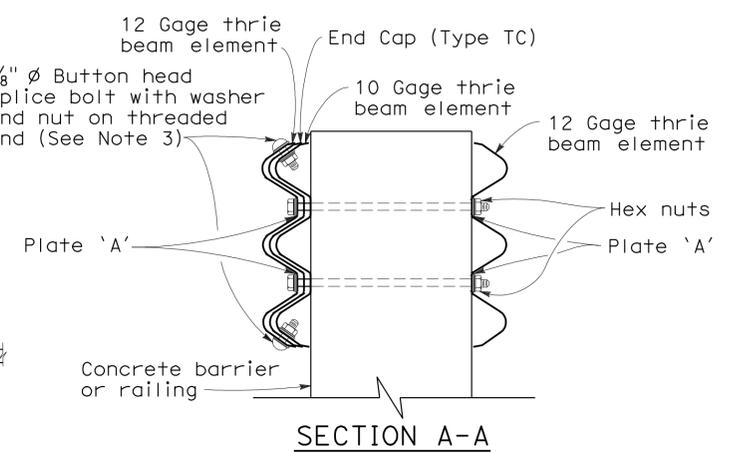
1. Use 5/8" ø Button head bolts and hex nuts for connection to posts. No washer on rail face for bolted connections to post.
2. The nested rail elements, end cap and single 10 gage thrie beam element, may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
3. Exterior splice bolt holes for rail element splices at Post No.T4 and the connection to the concrete barrier or railing shall be the standard 3/32" x 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1/4" ø. Only the top 2 and the bottom 2 splice bolts with washers and nuts are required for rail splices at Post No.T4 and the connection to the concrete barrier or railing.
4. Direction of adjacent traffic indicated by ➡.
5. The top elevation of Post Nos.T2 through T7 shall not project more than 1" above the top elevation of the rail element.
6. The depth of the metal box spacer varies from the 5/8" to 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 17 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1/2" metal plates similar to Plate 'A' are to be used as spacers.
7. Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Post No.4 through No.7 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
8. For details of End Cap (Type TC), see Revised Standard Plan RSP A78C1.



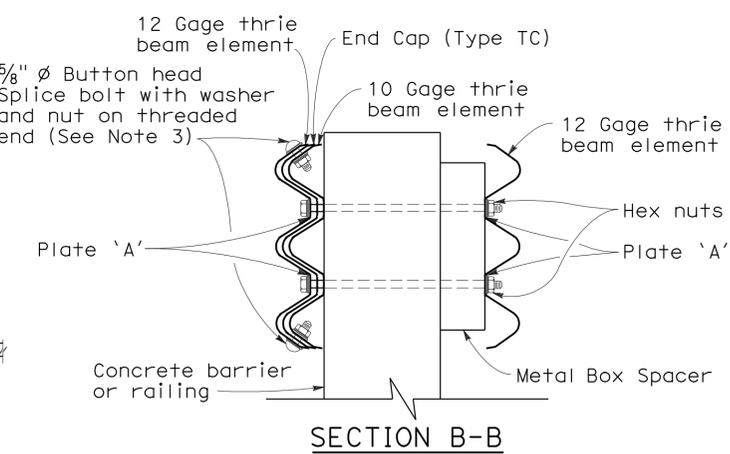
TRANSITION RAILING (TYPE STB)
(No Blockout Attachment)



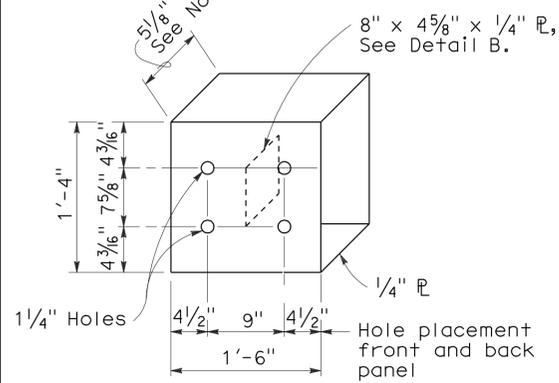
TRANSITION RAILING (TYPE STB)
(Blockout Attachment)



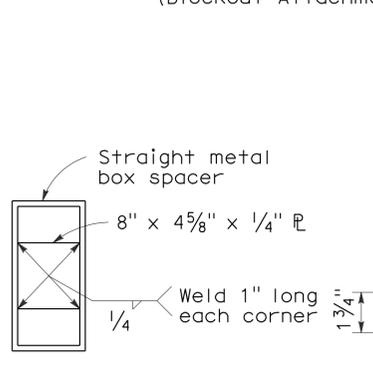
SECTION A-A



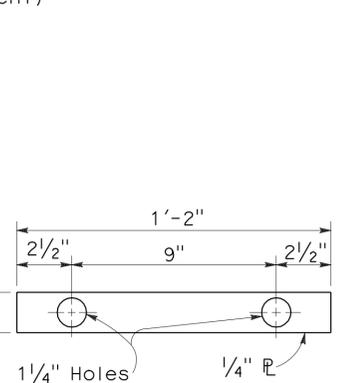
SECTION B-B



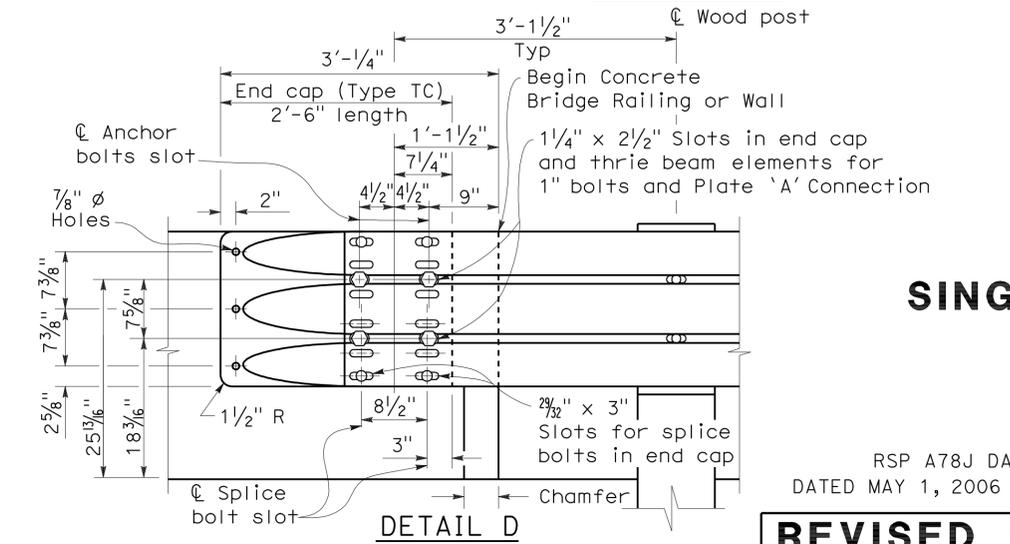
DETAIL A
STRAIGHT METAL BOX SPACER



DETAIL B



DETAIL C
PLATE 'A'



DETAIL D

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**SINGLE THRIE BEAM BARRIER
TRANSITION RAILING
(TYPE STB)**

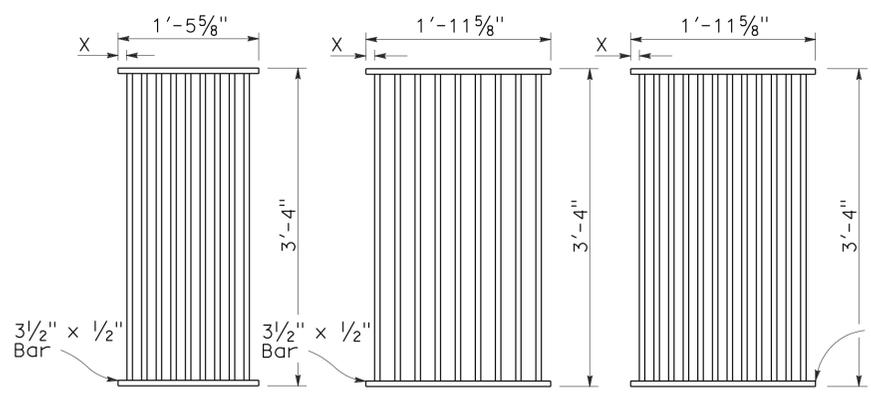
NO SCALE

RSP A78J DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A78J
DATED MAY 1, 2006 - PAGE 97 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A78J

2006 REVISED STANDARD PLAN RSP A78J

To accompany plans dated 7-20-09

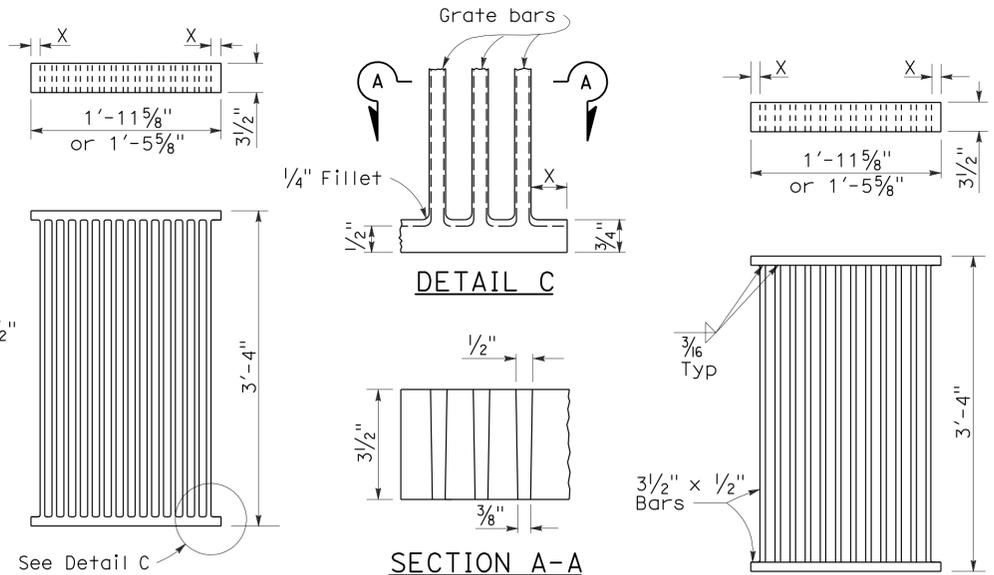


TYPE 18-9
1 3/8" Clear spacing. Use within the roadbed on highways where bicycles and pedestrians are excluded.

TYPE 24-9
2" Clear spacing. Use in locations off the roadbed on all types of highways.

TYPE 24-12
1 3/8" Clear spacing. Use within the roadbed on highways where bicycles and pedestrians are excluded.

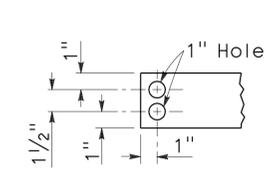
RECTANGULAR GRATE DETAILS
(See table below)



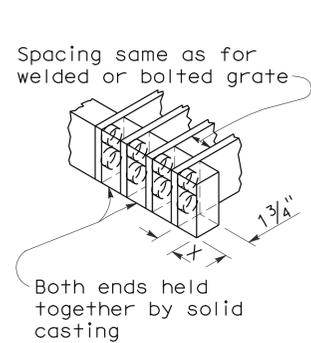
ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE

ALTERNATIVE WELDED GRATE

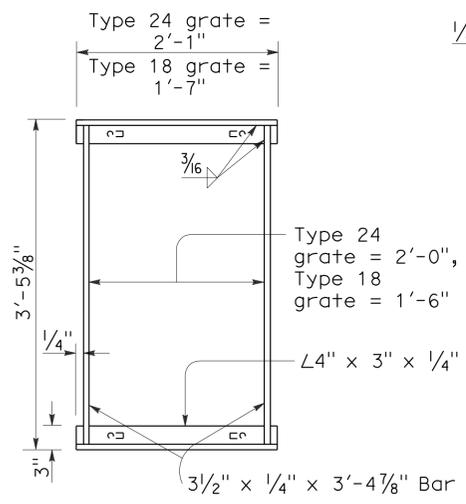
CAST END BLOCK



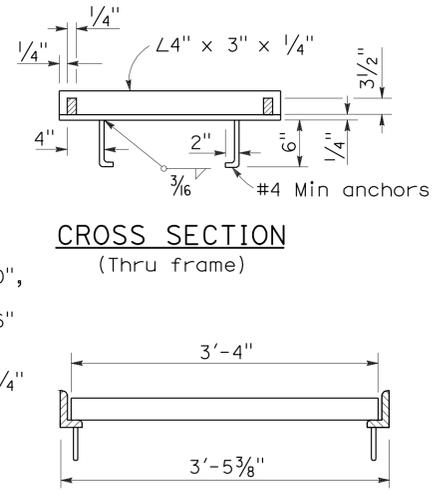
END OF BAR



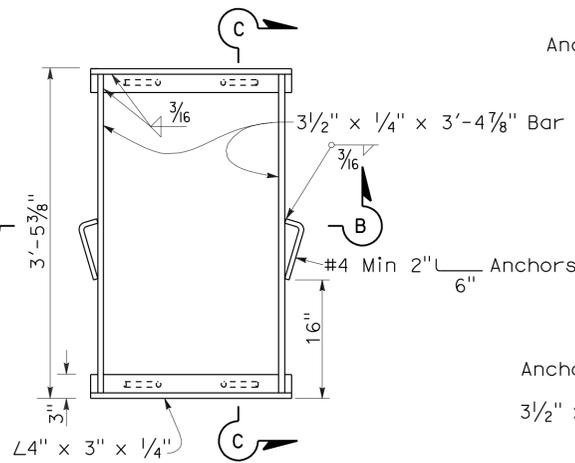
ALTERNATIVE CAST NODULAR IRON OR CAST STEEL END BLOCK GRATE



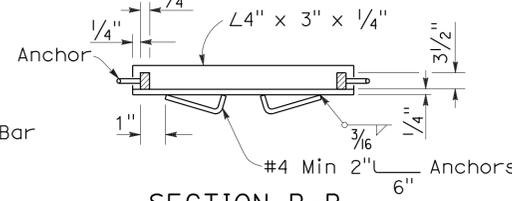
TYPICAL FRAME



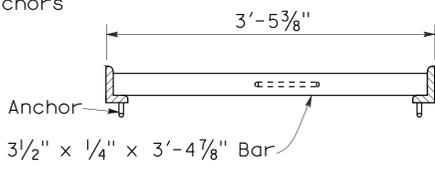
LONGITUDINAL SECTION
(Thru frame and grate)



TYPICAL FRAME



SECTION B-B



SECTION C-C

ALTERNATIVE ANCHOR FOR RECTANGULAR FRAME
(For details not shown, See Rectangular Frame Details)

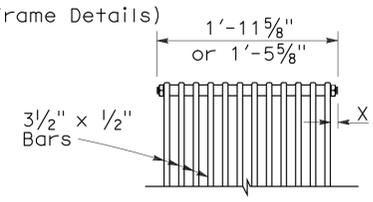
RECTANGULAR FRAME DETAILS
(For all rectangular grates)

GRATE BAR SPACING TABLE

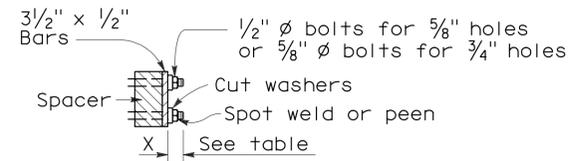
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

INLET TYPE	COVER TYPE	WEIGHT LB
OS	PLATE	174
OL-7	PLATE	170
OL-10	PLATE	170
OL-14	PLATE	170
OL-21	PLATE	170
OCPI	PLATE	112
OCPI	REDWOOD	42
OMP	PLATE	177
OMPI	PLATE	177

INLET TYPE	GRATE TYPE	NO. OF GRATES	WEIGHT LB
GDO	24-12	2	634
GOL-7	24-12	1	326
GOL-10	24-12	1	326
G0,G1,G2,G3,G4 (TYPE 24)	24-9	1	263
	24-12	1	326
G4 (TYPE 18),G5,G6	18-9	1	249
GT1	18-9	2	498
GT2	18-9	2	498
GT3	24-12	2	652
GT4	24-12	2	652
TRASH RACK			22

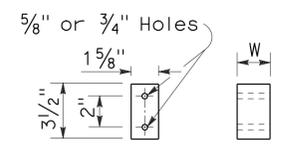


BOLTED END BLOCK

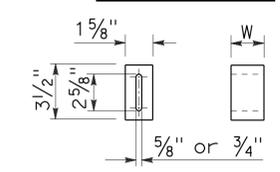


BOLTING DETAIL

ALTERNATIVE BOLTED GRATE



BAR SPACER



ALTERNATIVE SPACER
W = 1 3/8" or 2"

BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS

(See General Notes, No 8)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
GRATE DETAILS
NO SCALE

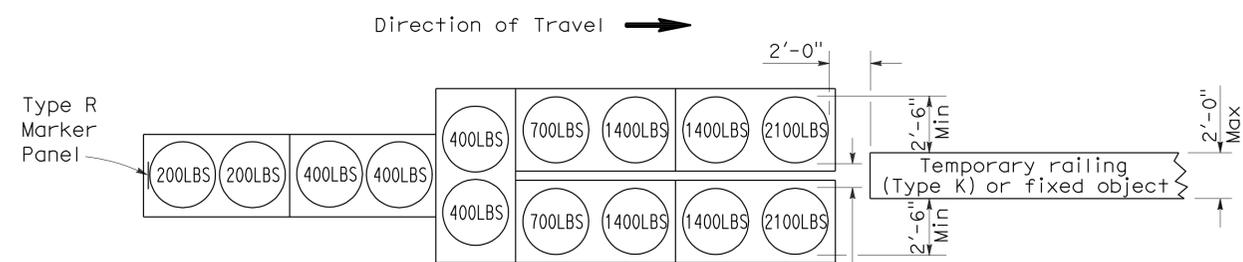
RSP D77A DATED JANUARY 18, 2008 SUPERSEDES STANDARD PLAN D77A
DATED MAY 1, 2006 - PAGE 155 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D77A

2006 REVISED STANDARD PLAN RSP D77A

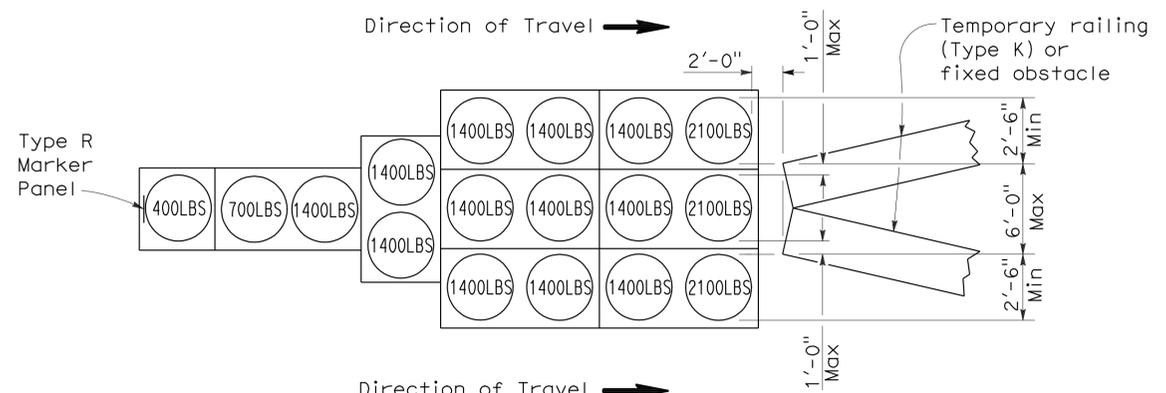
To accompany plans dated 7-20-09

2006 REVISED STANDARD PLAN RSP T1A



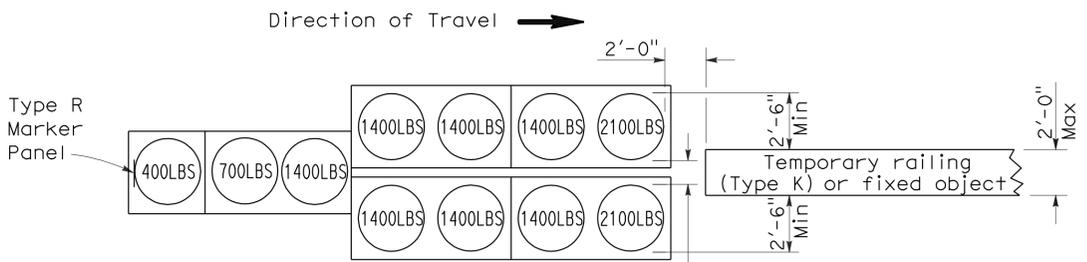
ARRAY 'TU14'

Approach speed 45 mph or more



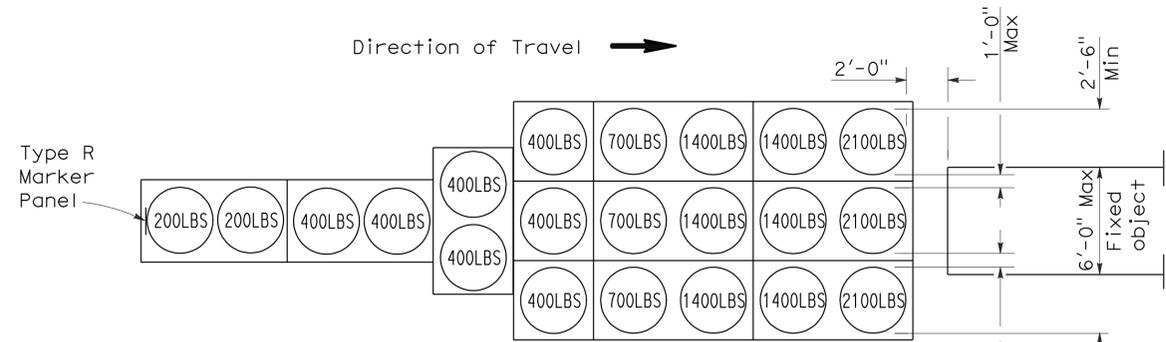
ARRAY 'TU17'

Approach speed less than 45 mph



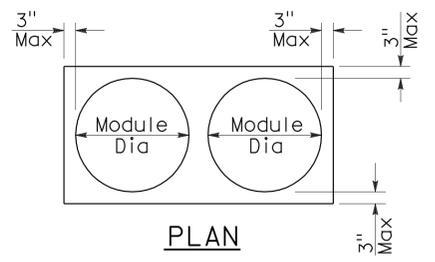
ARRAY 'TU11'

Approach speed less than 45 mph

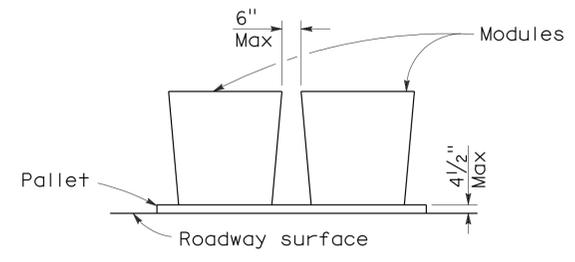


ARRAY 'TU21'

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

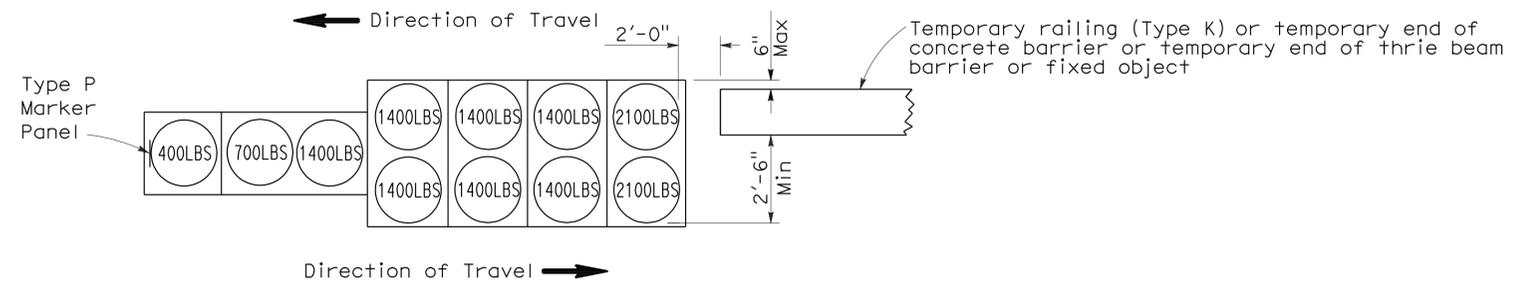
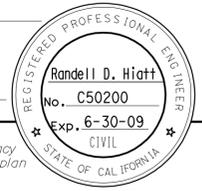
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	55	59

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

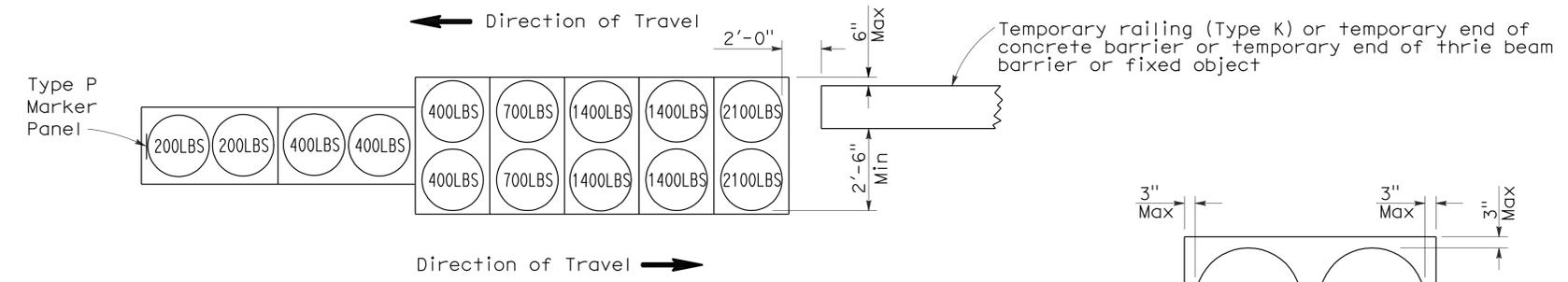
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To accompany plans dated 7-20-09



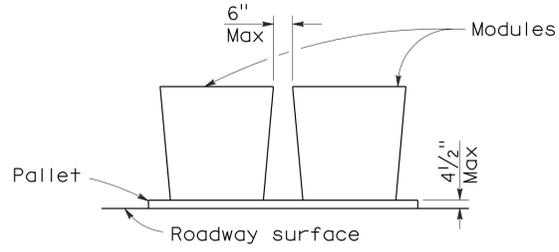
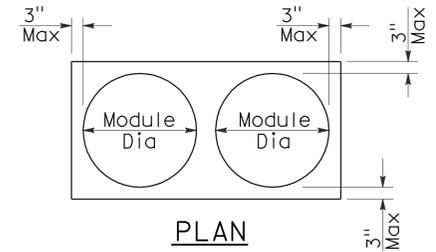
ARRAY 'TB11'

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
05	SB	1	R25.1/M29.4	56	59

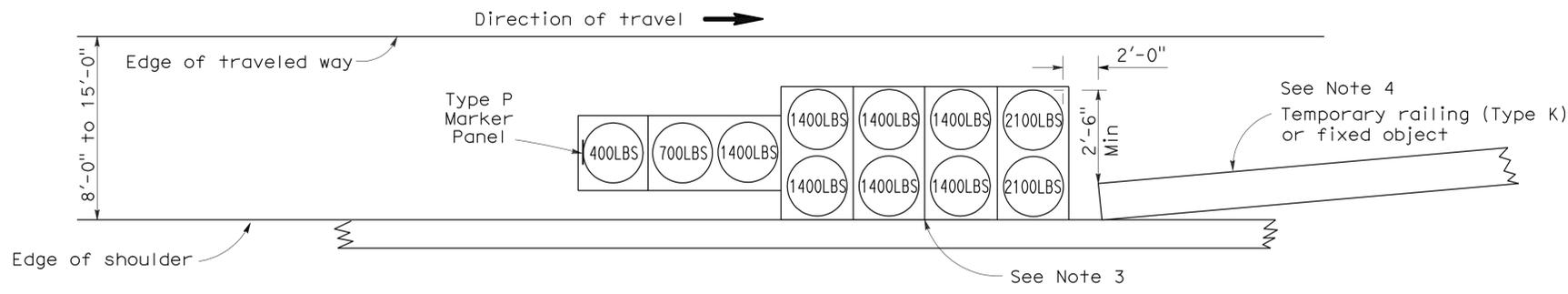
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

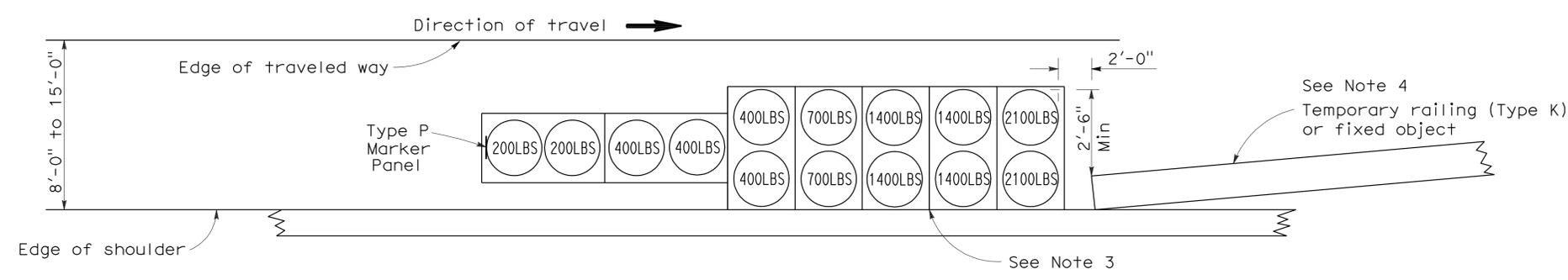
Randell D. Hiatt
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

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To accompany plans dated 7-20-09



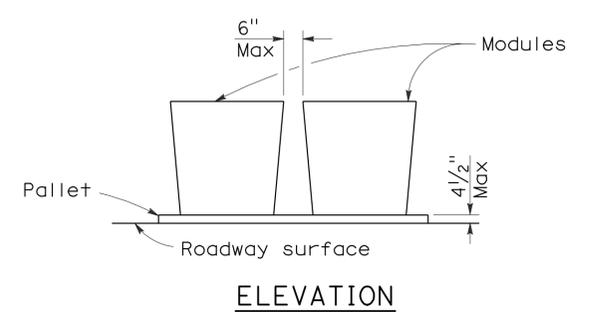
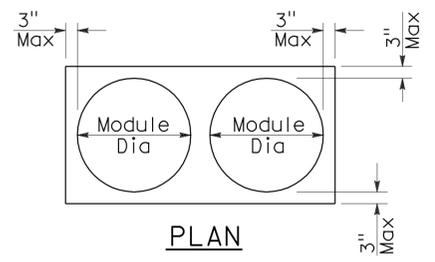
ARRAY 'TS11'
Approach speed less than 45 mph
See Note 9



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
05	SB	1	R25.1/M29.4	58	59

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 PLANS APPROVAL DATE
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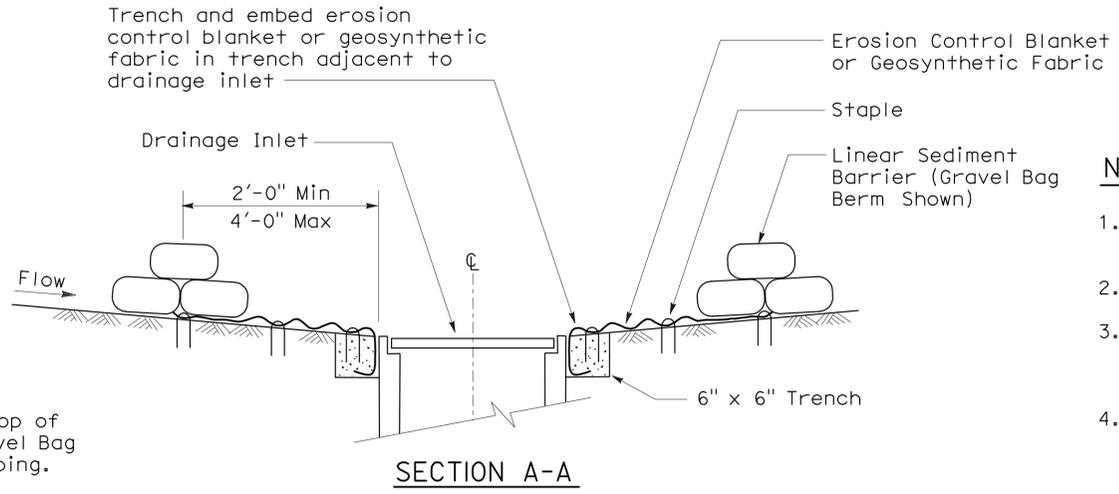
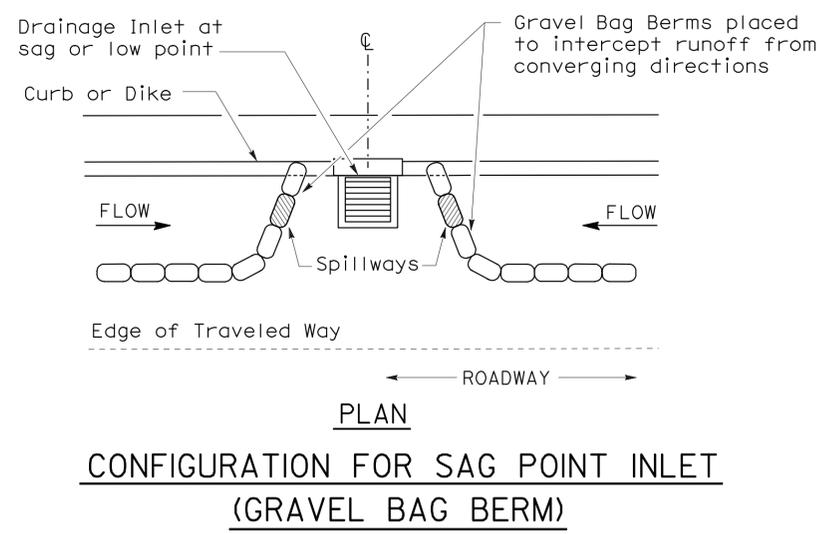


To accompany plans dated 7-20-09

GRAVEL BAG BERM (TYPE 3A) SPACING TABLE

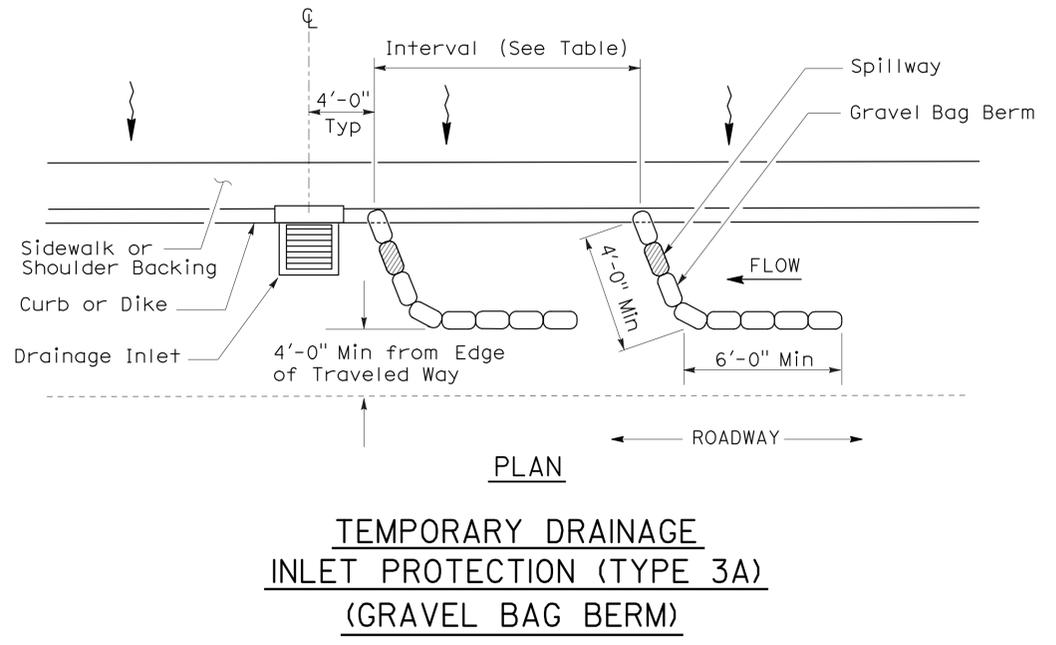
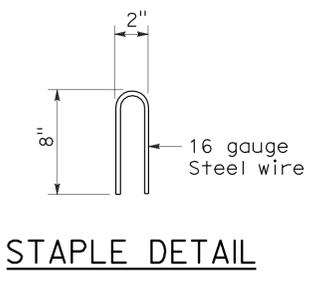
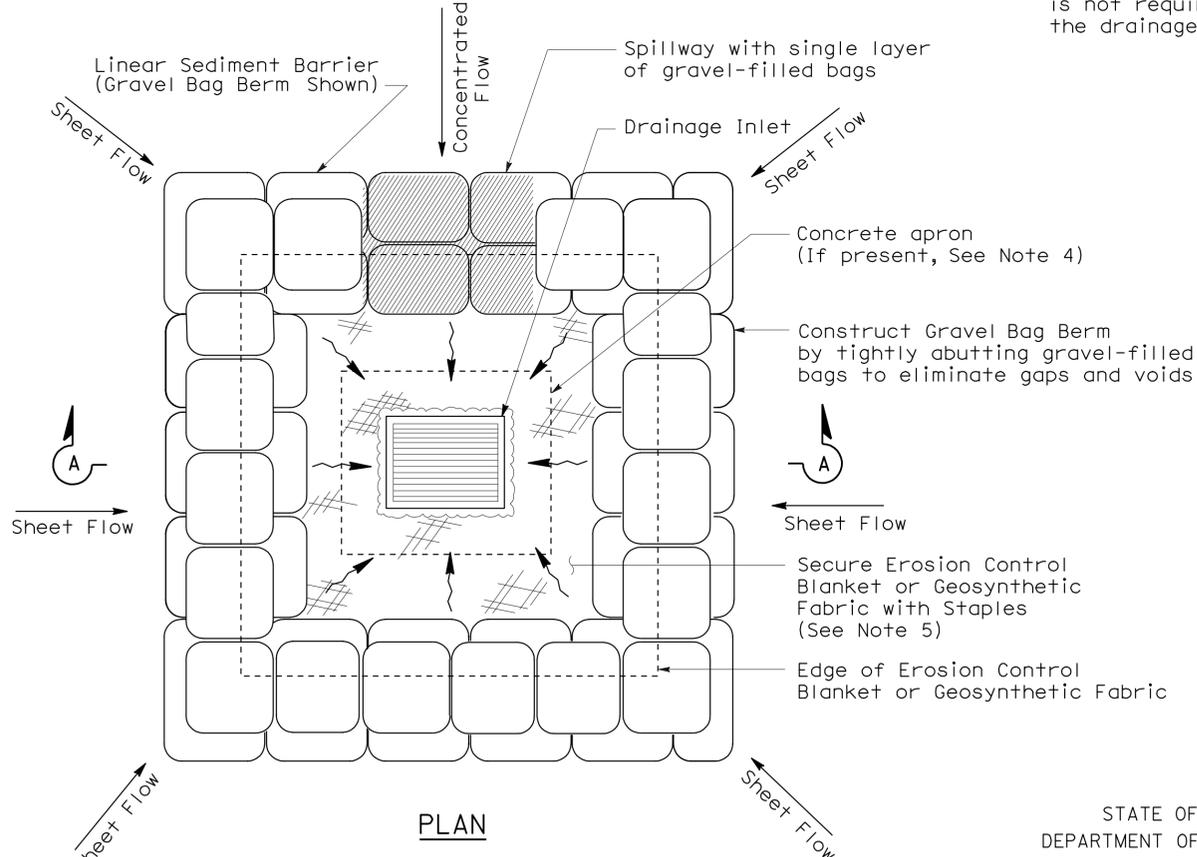
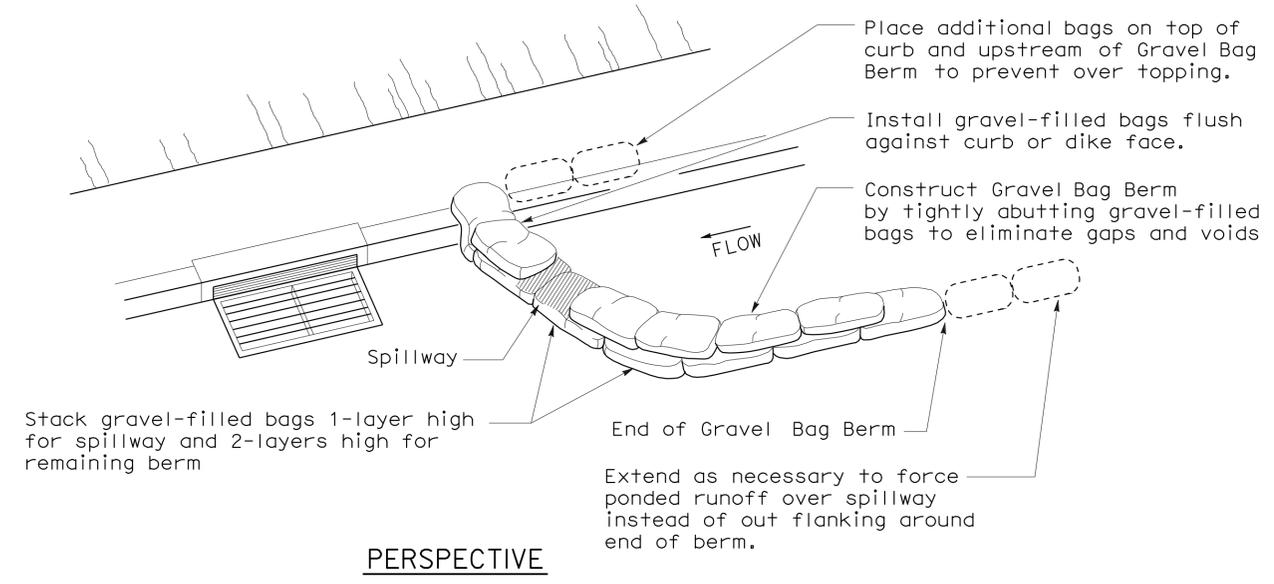
SLOPE OF ROADWAY (PERCENT)	1 to 3.9	4 to 5.9	6 to 7.9	8 to 10	10+
INTERVAL BETWEEN BERM	100'	75'	50'	25'	12'

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



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.



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

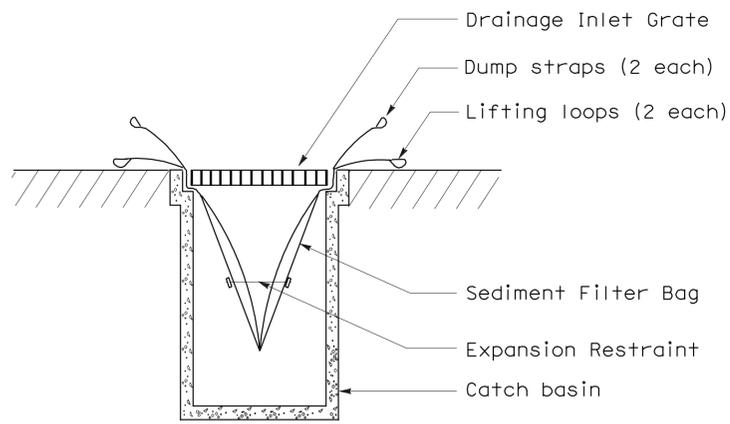
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	1	R25.1/M29.4	59	59

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT

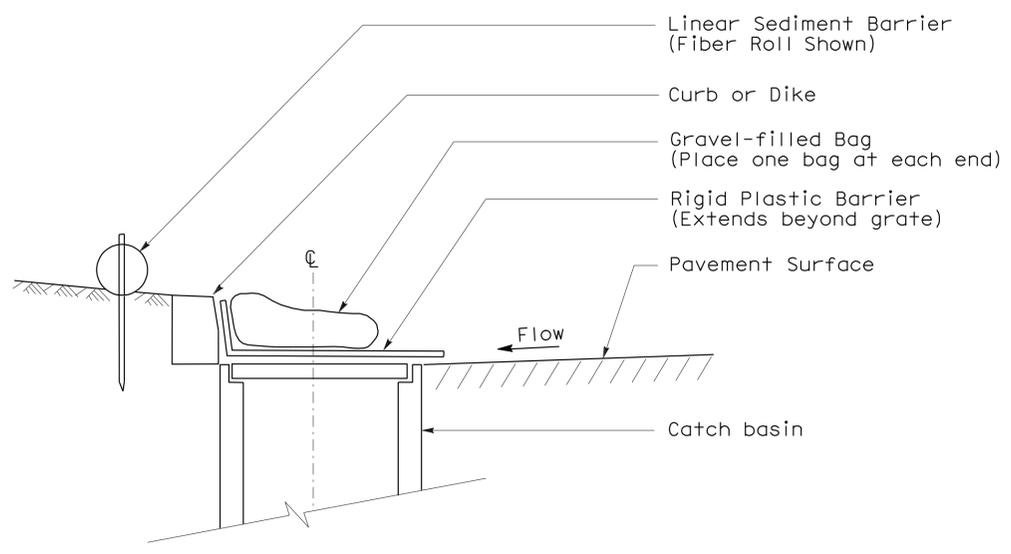
August 15, 2008
 PLANS APPROVAL DATE

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 11-04-08
 08-11-08
 Date

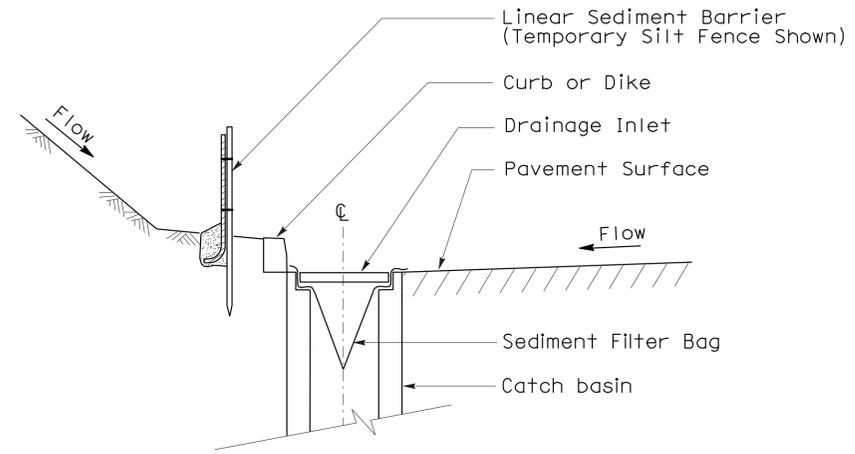
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



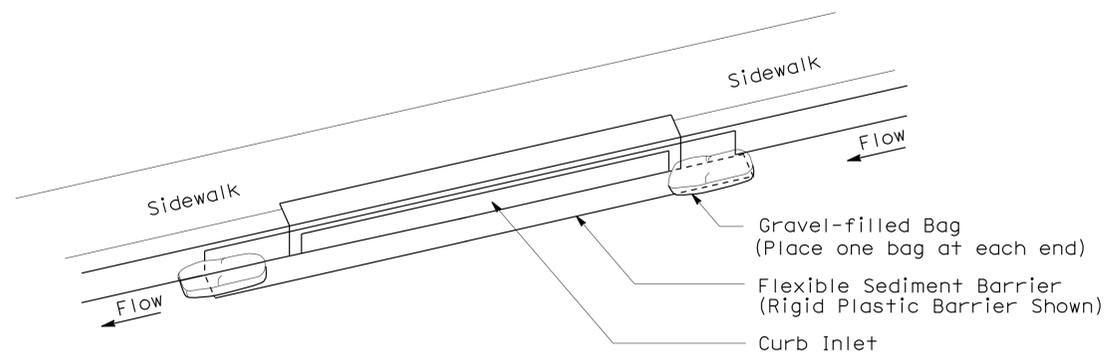
SECTION B-B
SEDIMENT FILTER BAG DETAIL



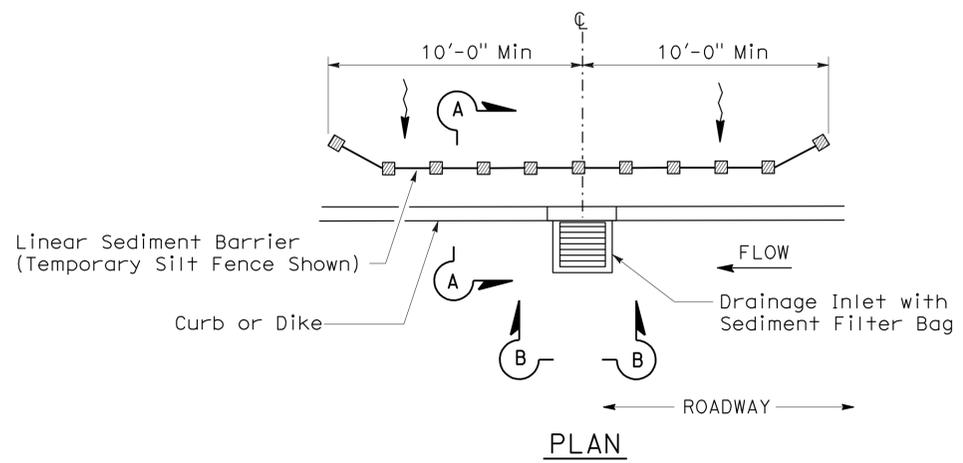
SECTION
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 6A)
(CATCH BASIN WITH GRATE)



SECTION A-A



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



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

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

To accompany plans dated 7-20-09

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.