INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2-3	TYPICAL CROSS SECTIONS
4-9	LAYOUTS
10-22	CONSTRUCTION DETAILS
23	TEMPORARY WATER POLLUTION CONTROL QUANTITIES
24	CONSTRUCTION AREA SIGNS
25	PAVEMENT DELINEATION QUANTITIES
26-27	SUMMARY OF QUANTITIES
28-31	REVISED STANDARD PLANS

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

STATE OF CALIFORNIA **ACHSSTPHG-P018(045)E**

DEPARTMENT OF TRANSPORTATION

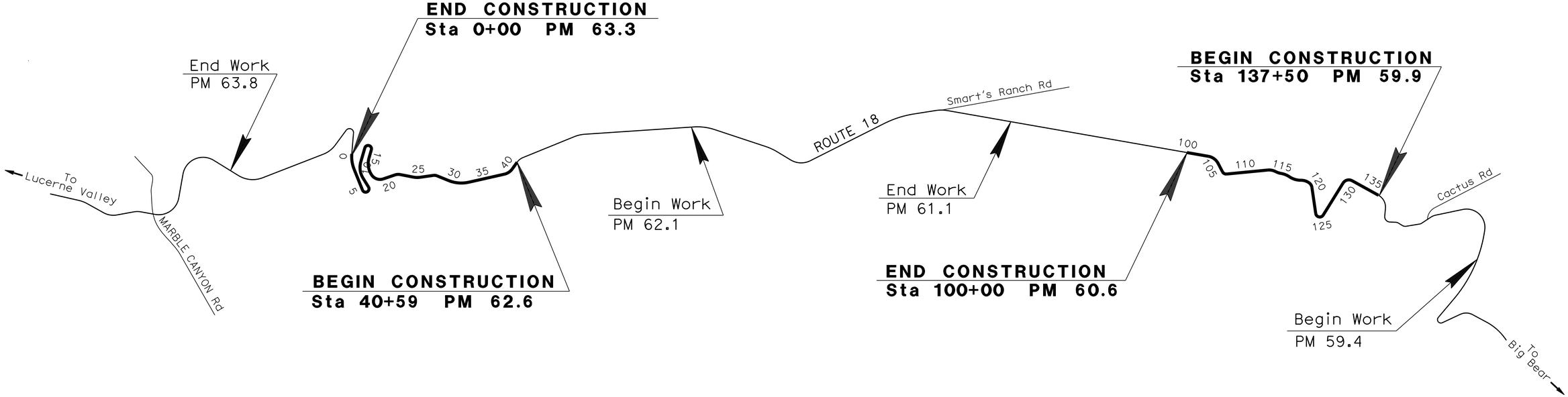
PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN SAN BERNARDINO COUNTY
NEAR BIG BEAR CITY
FROM 0.2 MILE NORTH OF CACTUS ROAD
TO 2.5 MILES SOUTH OF MARBLE CANYON ROAD

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	1	31



NO SCALE

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

Touhida Haider 4-1-14
PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

April 01, 2014
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA

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CONTRACT No.	08-0N4004
PROJECT ID	0800020401

PROJECT MANAGER: MUSTAPHA IAALI
DESIGN ENGINEER: TOUHIDA HAIDER

LAST REVISION 04-01-14
DATE PLOTTED => 03-APR-2014
TIME PLOTTED => 13:05

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	2	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp 12-31-15
CIVIL
STATE OF CALIFORNIA

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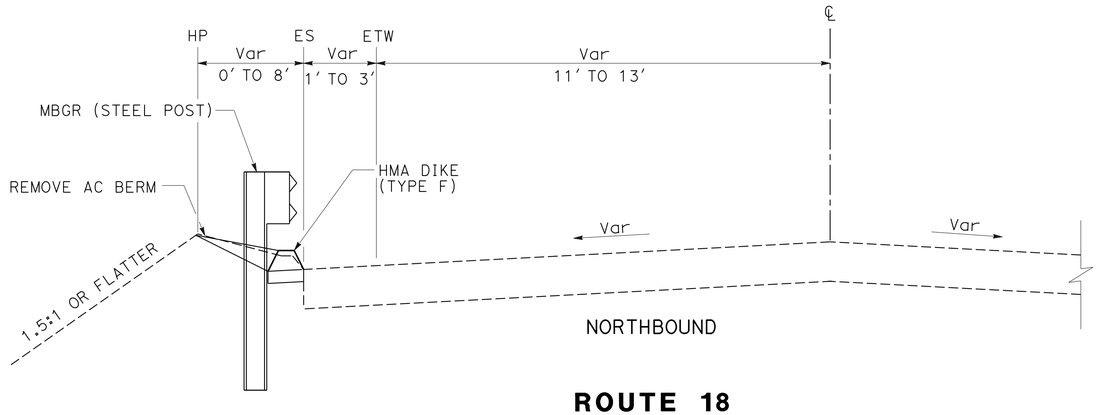
NOTES:

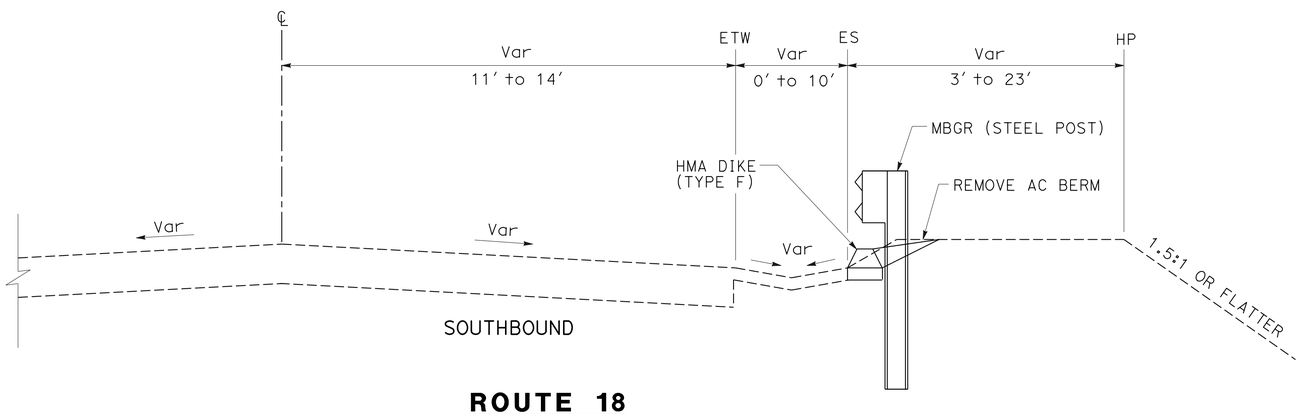
1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. FOR LIMITS OF AC DIKE REMOVAL AND PLACEMENT, SEE LAYOUT SHEETS.
4. FOR LOCATIONS OF MBGR, SEE LAYOUT SHEETS.
5. FOR LENGTHS OF STEEL POSTS, AND TYPES OF POST FOUNDATIONS, SEE CONSTRUCTION DETAILS.



ROUTE 18

Sta 6+10.25 TO Sta 12+66.50

LOCATION 3



ROUTE 18

Sta 0+00 TO Sta 6+18.75

LOCATION 4

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

TYPICAL CROSS SECTIONS

NO SCALE

X-1

REVISED BY | DATE REVISED
TOUHIDA HAIDER | GEORGE MORHIG
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: GEORGE MORHIG
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 03-APR-2014
04-01-14 | TIME PLOTTED => 13:05

BORDER LAST REVISED 7/2/2010 | USERNAME => s125726 | DGN FILE => 0800020401ca001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2231 | PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	3	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp 12-31-15
CIVIL
STATE OF CALIFORNIA

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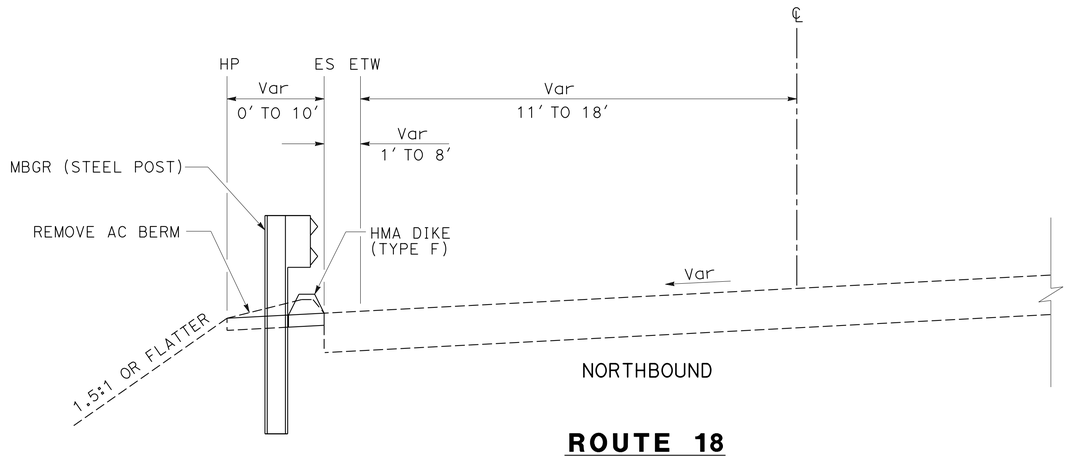
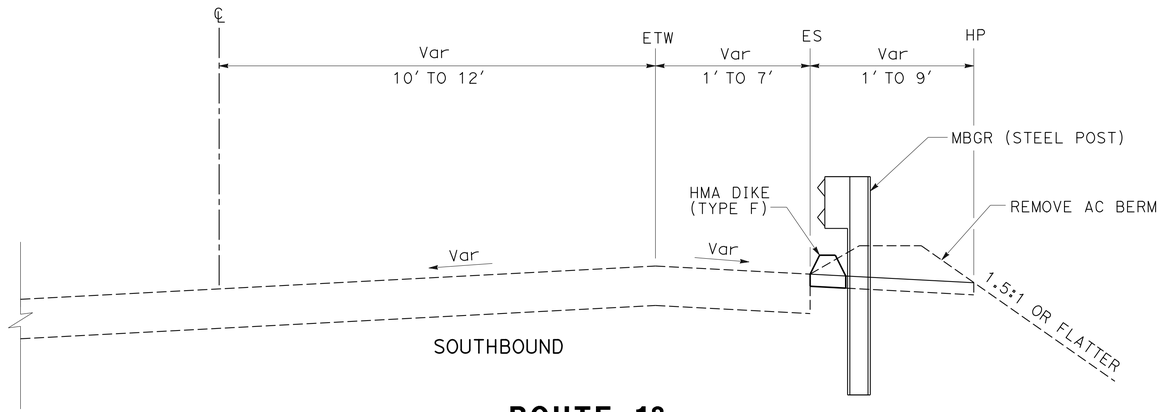


ROUTE 18

Sta 100+00 TO Sta 138+00

LOCATION 1



ROUTE 18

Sta 19+61.15 TO Sta 40+61.15

LOCATION 2

TYPICAL CROSS SECTIONS

NO SCALE

X-2

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

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USERNAME => s125726
DGN FILE => 0800020401ca002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2231
PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	4	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp 12-31-15
CIVIL
STATE OF CALIFORNIA

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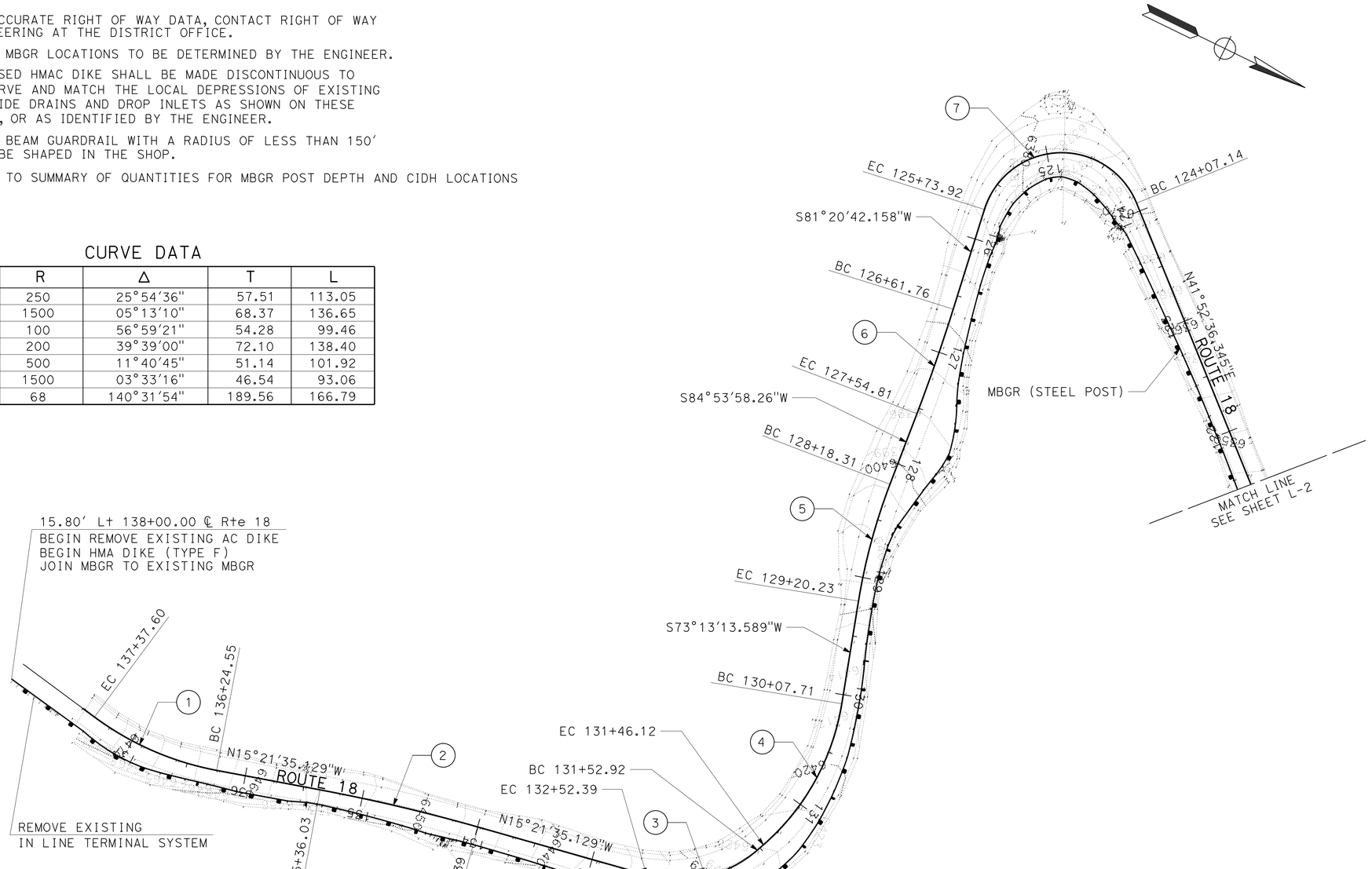
NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXACT MBGR LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. PROPOSED HMAC DIKE SHALL BE MADE DISCONTINUOUS TO PRESERVE AND MATCH THE LOCAL DEPRESSIONS OF EXISTING OVERSIDE DRAINS AND DROP INLETS AS SHOWN ON THESE PLANS, OR AS IDENTIFIED BY THE ENGINEER.
4. METAL BEAM GUARDRAIL WITH A RADIUS OF LESS THAN 150' MUST BE SHAPED IN THE SHOP.
5. REFER TO SUMMARY OF QUANTITIES FOR MBGR POST DEPTH AND CIDH LOCATIONS

CURVE DATA

No. ⑪	R	Δ	T	L
1	250	25°54'36"	57.51	113.05
2	1500	05°13'10"	68.37	136.65
3	100	56°59'21"	54.28	99.46
4	200	39°39'00"	72.10	138.40
5	500	11°40'45"	51.14	101.92
6	1500	03°33'16"	46.54	93.06
7	68	140°31'54"	189.56	166.79



LOCATION 1

Sta 100+00 TO Sta 138+00

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

LAYOUT

SCALE: 1" = 50' **L-1**

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BORDER LAST REVISED 7/2/2010 | USERNAME => s125726 | DGN FILE => 08000204011ea001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2231 | PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	5	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp 12-31-15
CIVIL
STATE OF CALIFORNIA

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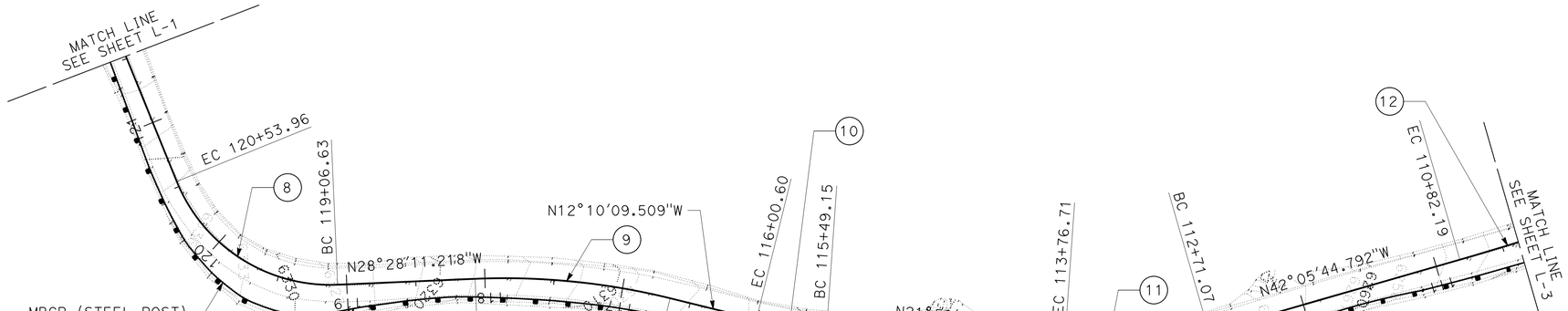
CURVE DATA

No. Ⓗ	R	Δ	T	L
8	120	70°20'47"	84.57	147.33
9	500	16°18'01"	71.61	142.25
10	300	09°49'29"	25.78	51.44
11	301	20°06'07"	53.37	105.64
12	2100	05°48'20"	106.48	212.78



LOCATION 1

Sta 100+00 TO Sta 138+00

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

LAYOUT

SCALE: 1" = 50' **L-2**

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CALCULATED-DESIGNED BY: TOUHIDA HAIDER
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REVISED BY
DATE REVISED

LAST REVISION 04-01-14
DATE PLOTTED => 03-APR-2014
TIME PLOTTED => 13:05

BORDER LAST REVISED 7/2/2010
USERNAME => s125726
DGN FILE => 0800020401ea002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2231
PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	6	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA

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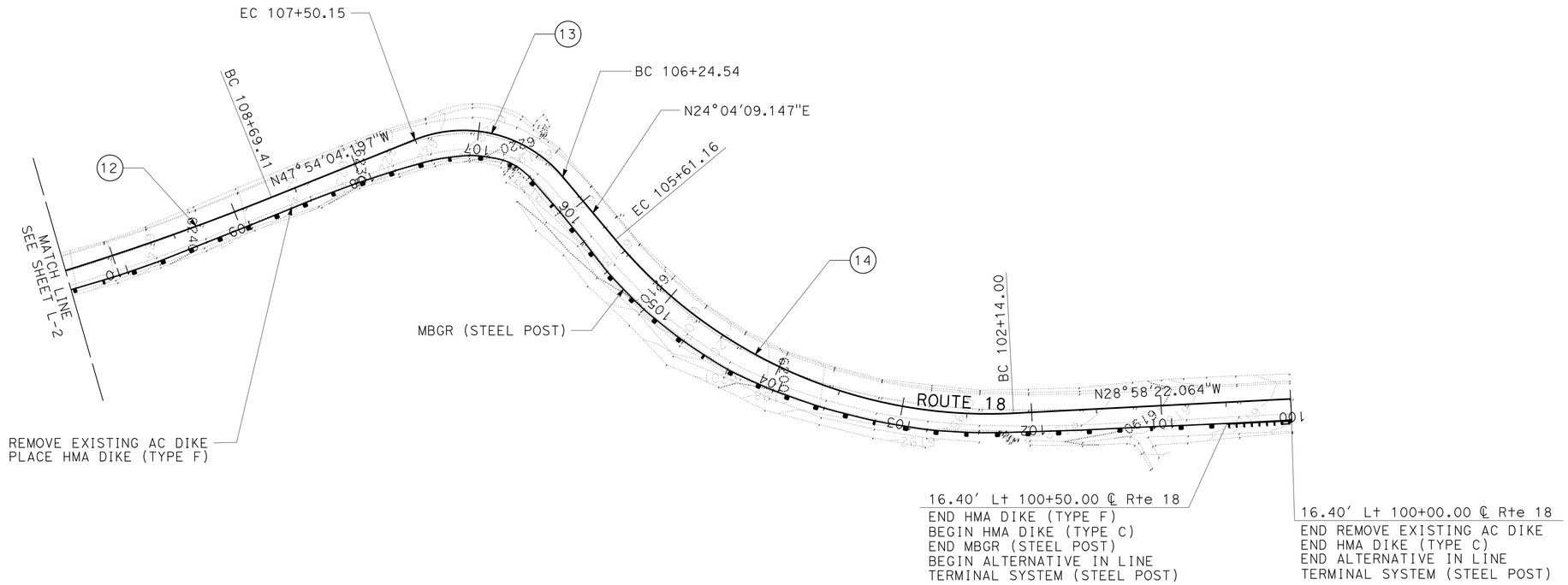
CURVE DATA

No. Ⓡ	R	Δ	T	L
12	2100	05°48'20"	106.48	212.78
13	100	71°58'14"	72.61	125.61
14	375	53°02'31"	187.14	347.16



LOCATION 1

Sta 100+00 TO Sta 138+00

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

LAYOUT

SCALE: 1" = 50' **L-3**

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BORDER LAST REVISED 7/2/2010 | USERNAME => s125726 | DGN FILE => 0800020401ea003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2231 | PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	7	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA

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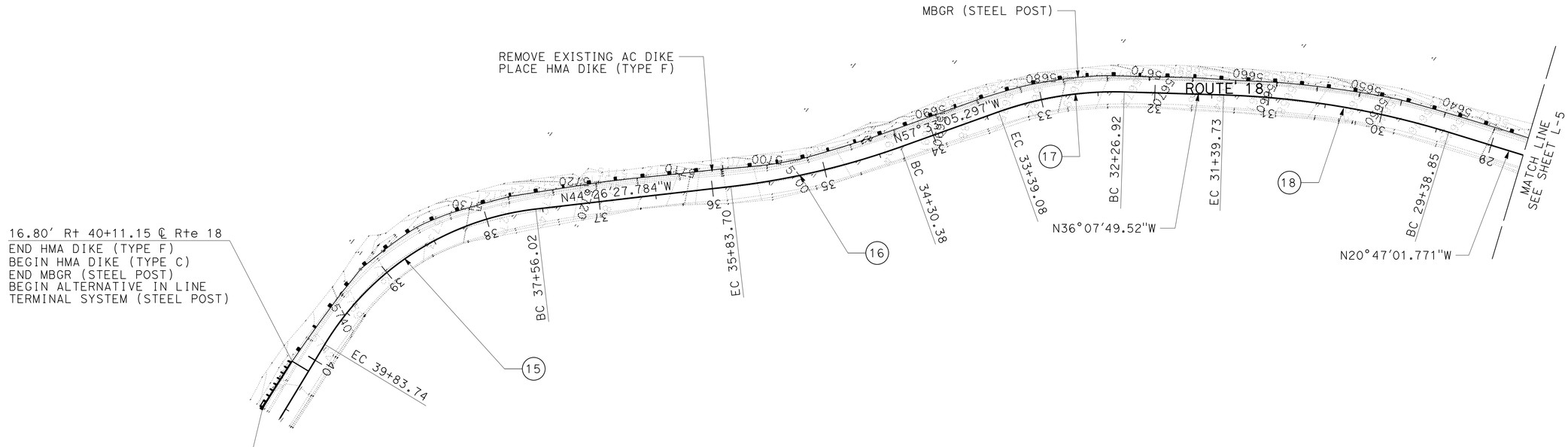
CURVE DATA

No. Ⓡ	R	Δ	T	L
15	250	52°11'21"	122.44	227.72
16	670	13°06'41"	76.99	153.31
17	300	21°25'17"	56.74	112.16
18	750	15°20'42"	101.05	200.88



LOCATION 2

Sta 19+61.15 TO Sta 40+61.15

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

LAYOUT

SCALE: 1" = 50' **L-4**

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BORDER LAST REVISED 7/2/2010 | USERNAME => s125726 | DGN FILE => 08000204011ea004.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2231 | PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	8	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA

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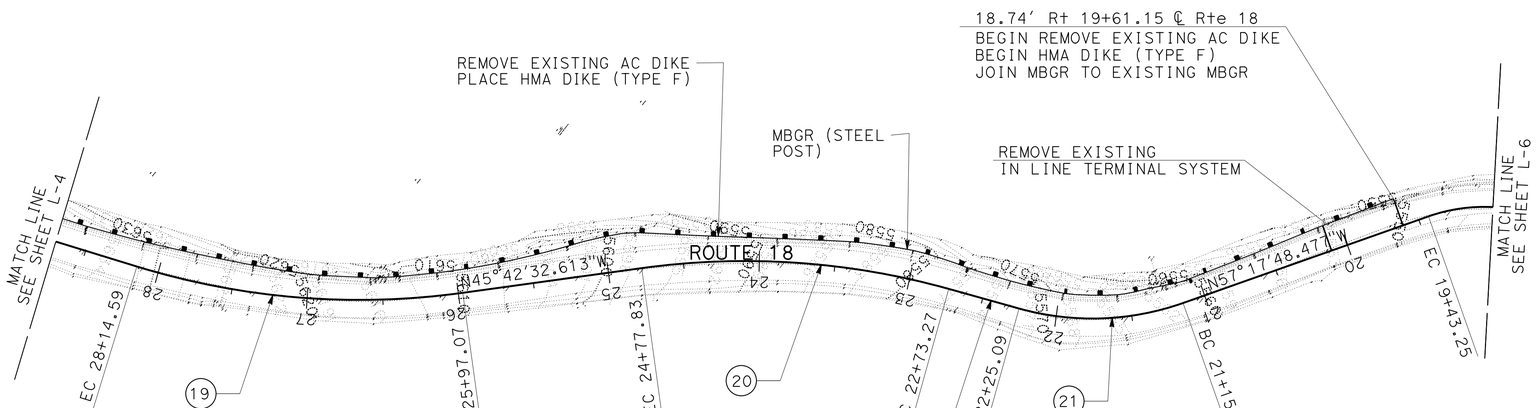
CURVE DATA

No. ⑭	R	Δ	T	L
19	500	24°55'29"	110.50	217.51
20	500	23°26'29"	103.73	204.55
21	180	35°01'37"	56.80	110.04



LOCATION 2

Sta 19+61.15 TO Sta 40+61.15

LAYOUT

SCALE: 1" = 50' **L-5**

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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04-01-14

BORDER LAST REVISED 7/2/2010 | USERNAME => s125726 | DGN FILE => 0800020401ea005.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2231 | PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	9	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA

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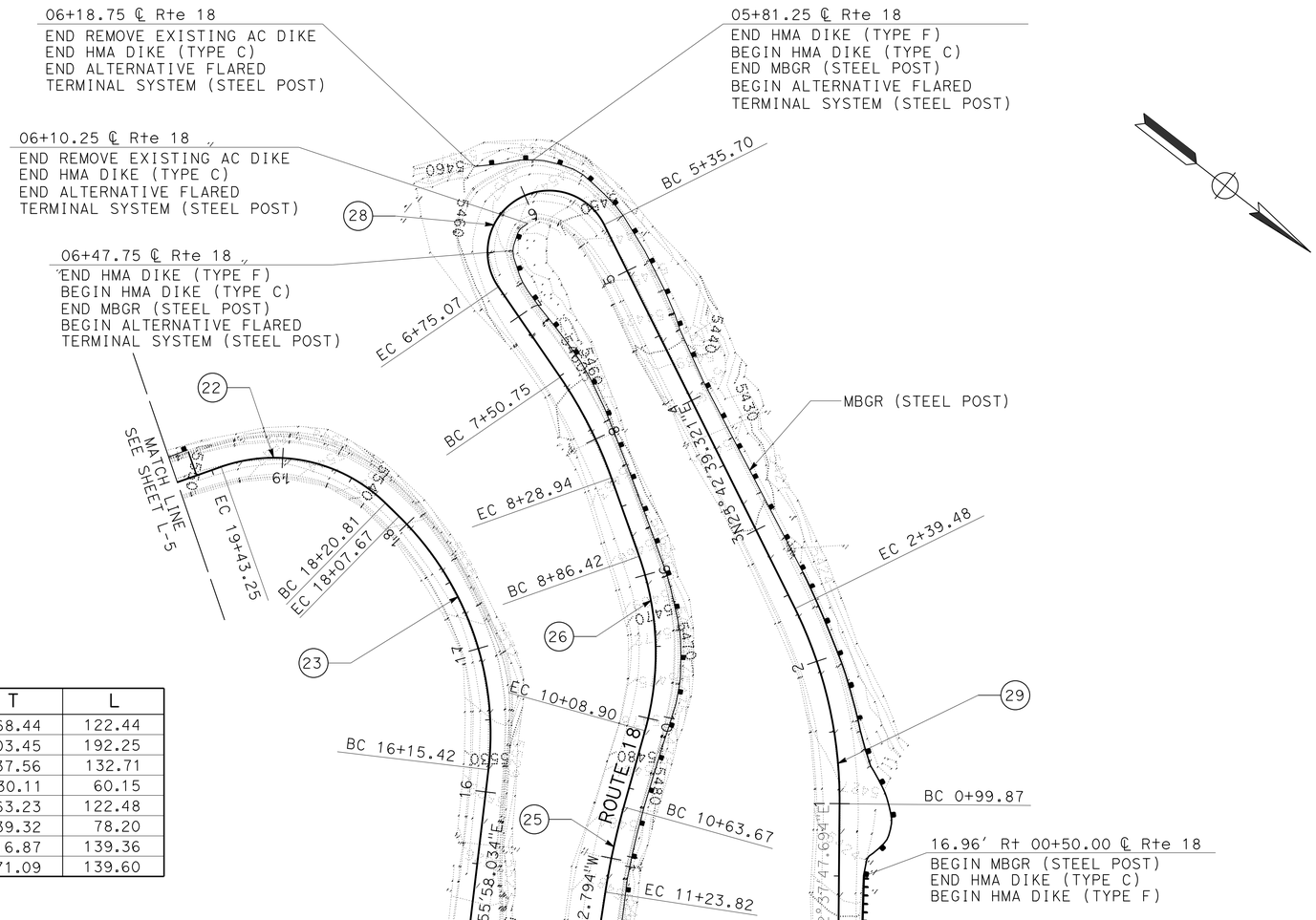

CURVE DATA

No.	R	Δ	T	L
22	110	63°46′33"	68.44	122.44
23	210	52°27′08"	103.45	192.25
24	43	178°04′19"	2537.56	132.71
25	500	06°53′15"	30.11	60.15
26	200	35°05′22"	63.23	122.48
27	300	14°55′54"	39.32	78.20
28	42	187°52′57"	616.87	139.36
29	300	26°39′45"	71.09	139.60

LOCATION 3

Sta 6+10.25 TO Sta 12+66.50

LOCATION 4

Sta 0+00.00 TO Sta 6+18.75

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

LAYOUT

SCALE: 1" = 50′ **L-6**

CALCULATED-DESIGNED BY: TOUHIDA HAIDER
CHECKED BY: GEORGE MORHIG
FUNCTIONAL SUPERVISOR: GEORGE MORHIG
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BORDER LAST REVISED 7/2/2010 | USERNAME => s125726 | DGN FILE => 0800020401ea006.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2231 | PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	10	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA

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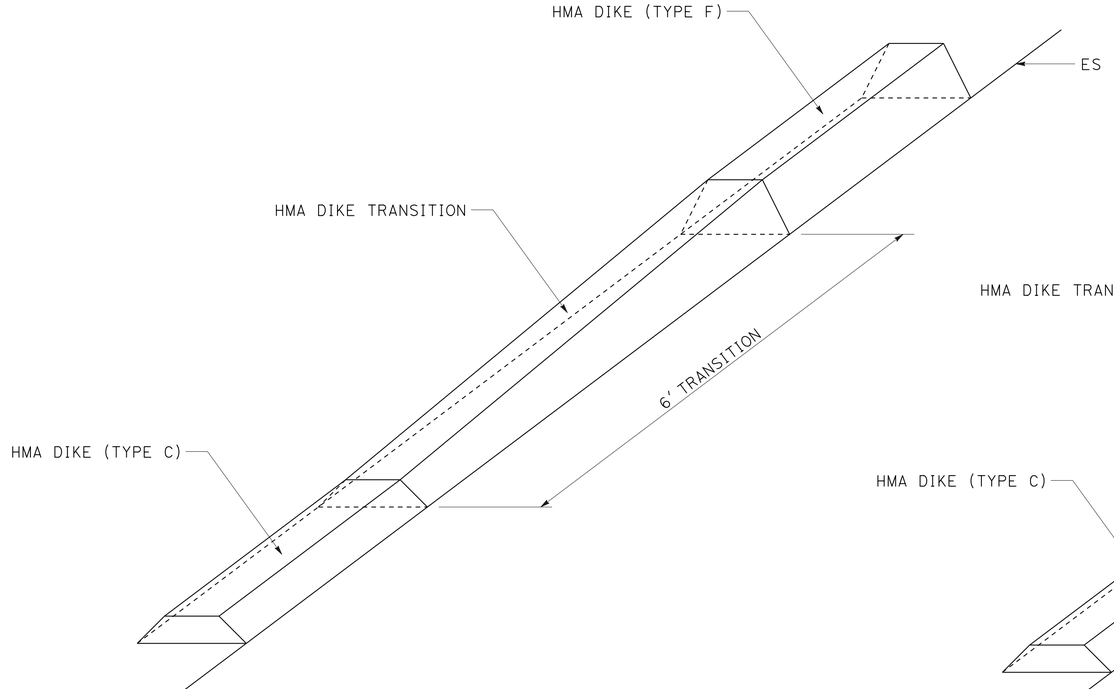

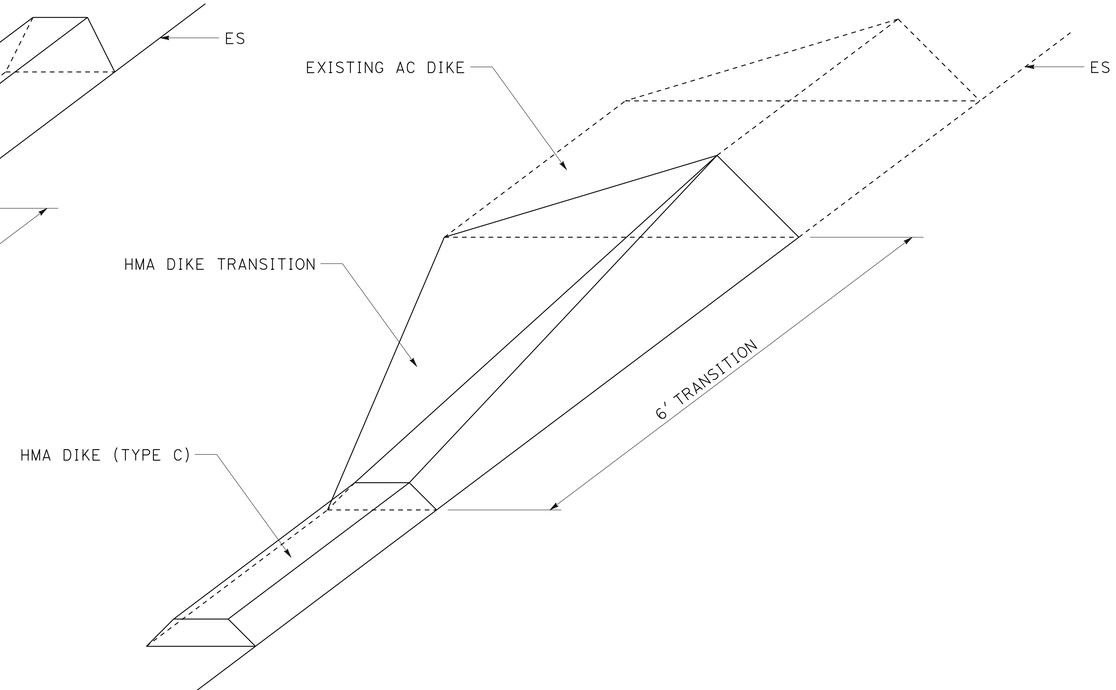

HMA DIKE TRANSITION DETAILS

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

CONSTRUCTION DETAILS

NO SCALE

C-1

CALCULATED-DESIGNED BY: TOUHIDA HAIDER
CHECKED BY: GEORGE MORHIG
FUNCTIONAL SUPERVISOR: GEORGE MORHIG
REVISED BY
DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	11	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA

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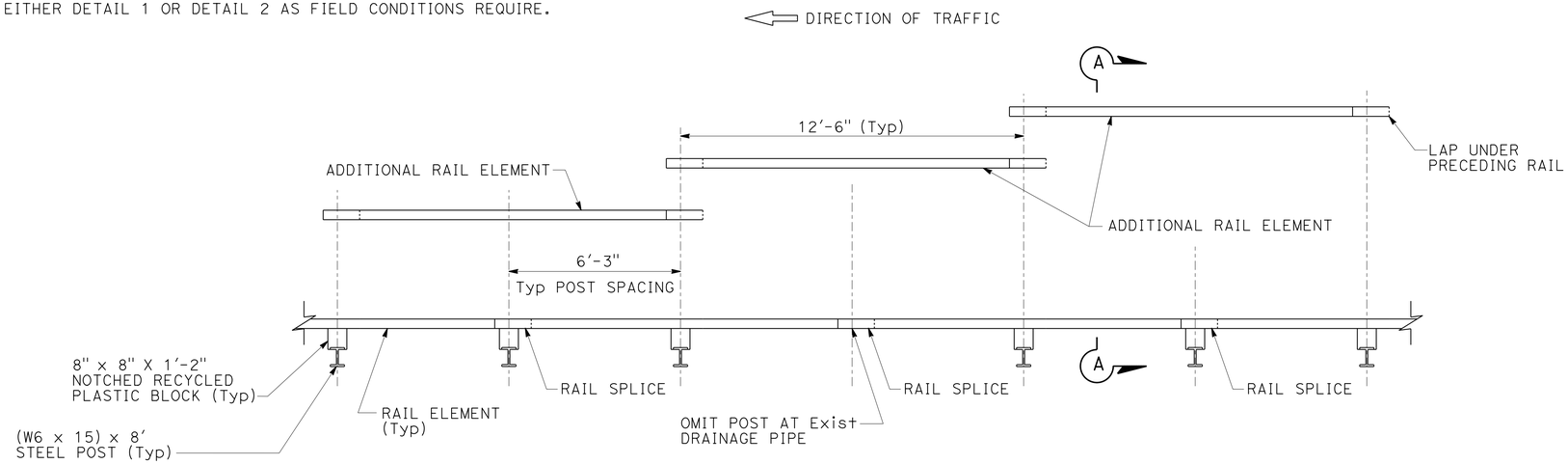
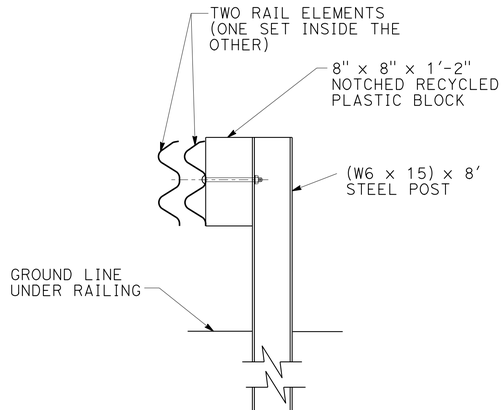
NOTES:

1. SEE STANDARD PLANS FOR DETAILS NOT SHOWN.
2. USE EITHER DETAIL 1 OR DETAIL 2 AS FIELD CONDITIONS REQUIRE.

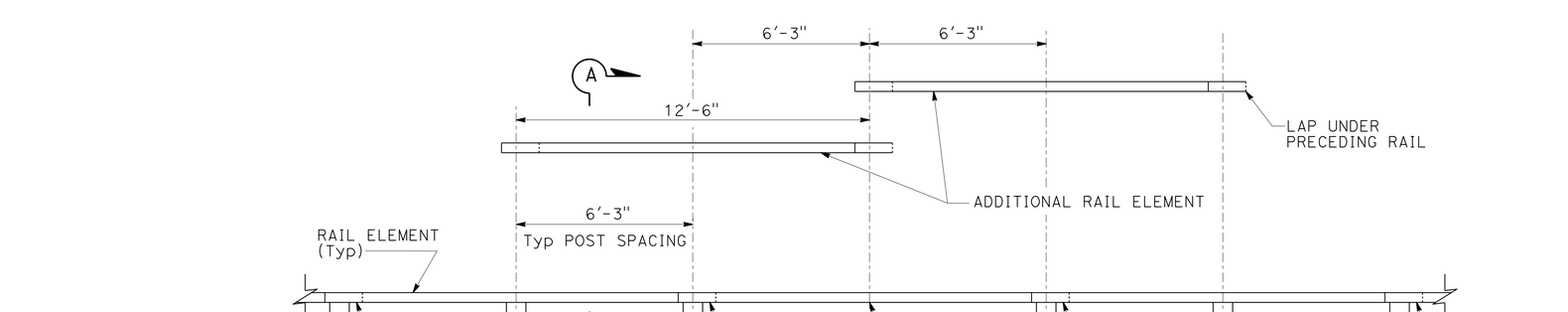


PLAN

DETAIL 1
MBGR WITH ONE POST OMITTED AT RAIL SPLICE



SECTION A-A



PLAN

DETAIL 2
MBGR WITH ONE POST OMITTED AT MID-RAIL SPAN

METAL BEAM GUARDRAIL WITH ONE POST OMITTED

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

CONSTRUCTION DETAILS

NO SCALE

C-2

REVISED BY | DATE REVISED
TOUHIDA HAIDER | GEORGE MORHIG
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR | GEORGE MORHIG
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | DESIGN

LAST REVISION | DATE PLOTTED => 03-APR-2014
04-01-14 | TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010 | USERNAME => s125726 | DGN FILE => 08000204011ga002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2231 | PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	12	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp 12-31-15
CIVIL
STATE OF CALIFORNIA

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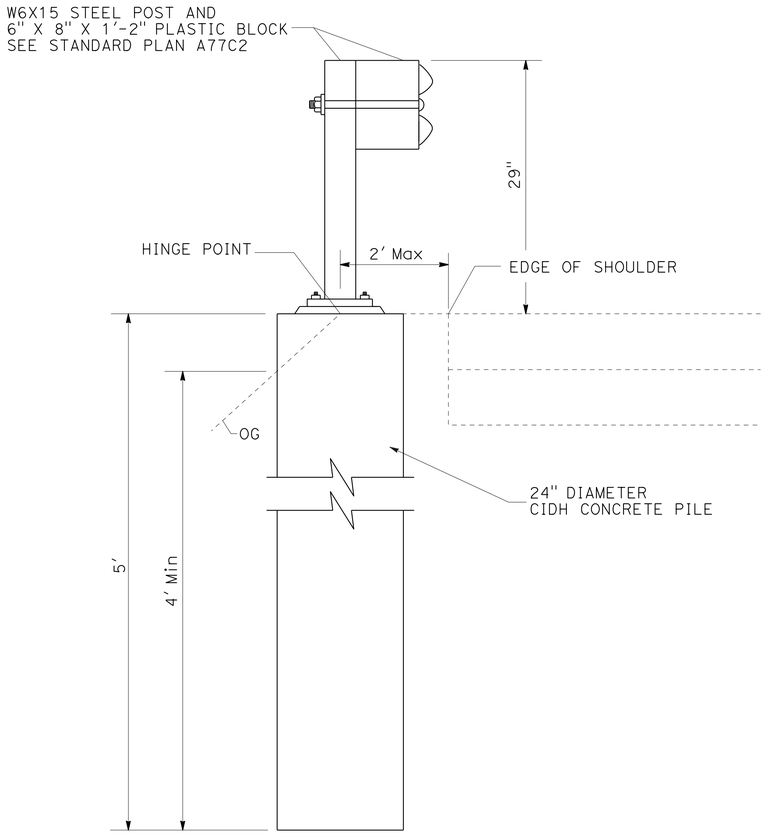
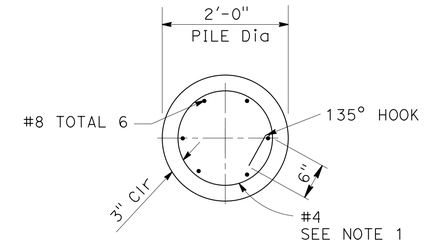
NOTES:

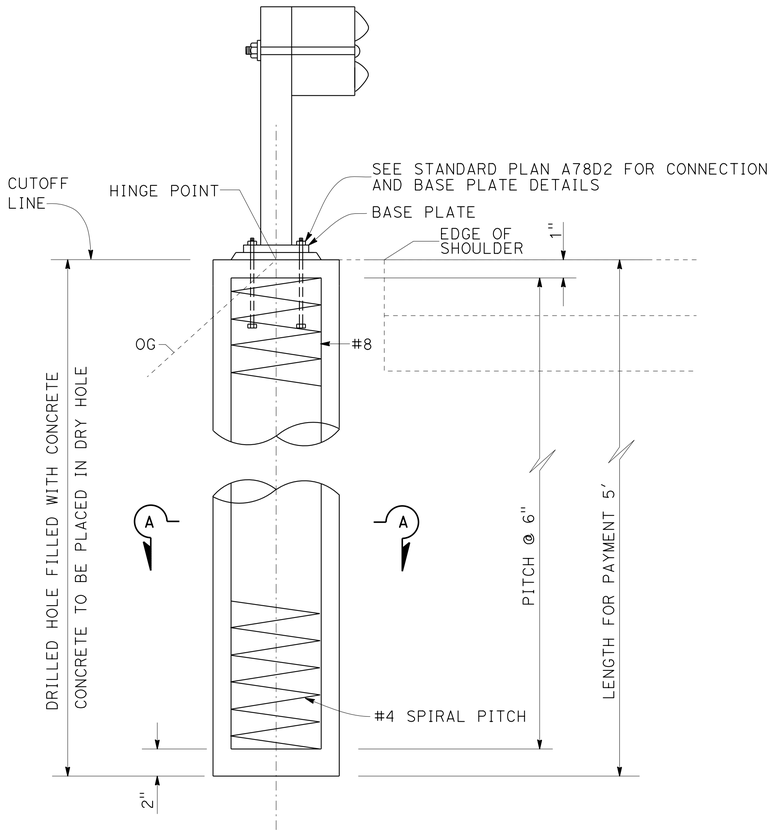
1. LAPPED SPLICES IN SPIRAL PILE REINFORCEMENT SHALL BE LAPPED AT LEAST 80 WIRE/BAR DIAMETERS. SPIRAL PILE REINFORCEMENT AT SPLICES AND AT ENDS SHALL BE TERMINATED WITH A 135° HOOK WITH A 6" TAIL HOOKED AROUND A LONGITUDINAL BAR.
2. FOR ADDITIONAL DIMENSIONS AND INFORMATION ON THE 24" CIDH CONCRETE PILE, SEE STANDARD PLAN B2-3
3. PILE SPACING 6' 3" CENTER-CENTER.
4. MAXIMUM 6 POSTS ON CIDH PILES PER LOCATION.



ELEVATION



SECTION A-A



ELEVATION

24" DIAMETER CIDH PILE WITH MGS

LOCATION (10)

MBGR WITH 24" CIDH PILE DETAILS

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

CONSTRUCTION DETAILS

NO SCALE

C-3

REVISED BY | DATE REVISED
TOUHIDA HAIDER | GEORGE MORHIG
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: GEORGE MORHIG
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION: DATE PLOTTED => 03-APR-2014
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	13	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

TOUHIDA HAIDER No. C74470 Exp. 12-31-15 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-1-14
PLANS APPROVAL DATE

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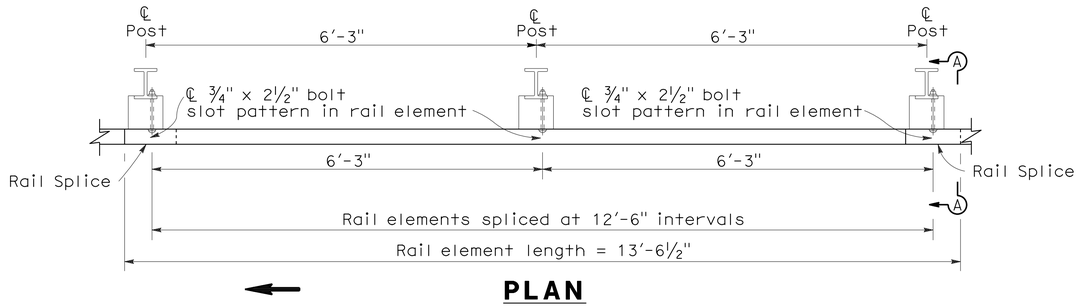
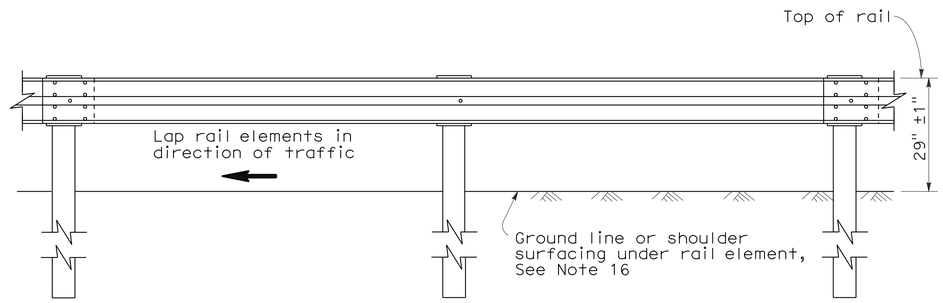
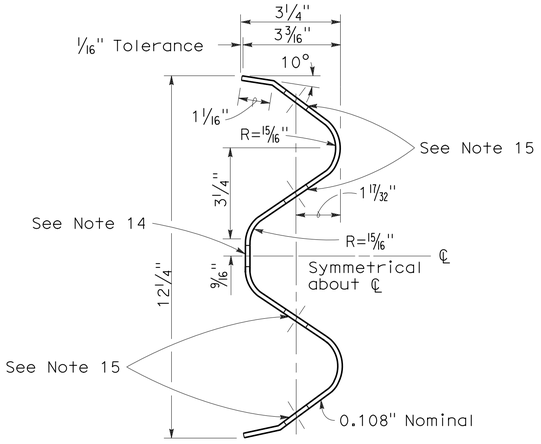


PLAN

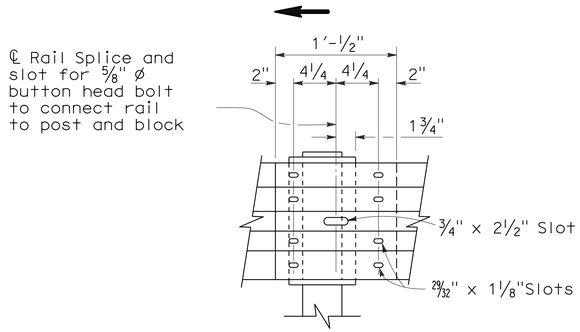


ELEVATION

METAL BEAM GUARD RAILING WITH STEEL POSTS
AND NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCKS



SECTION THRU RAIL ELEMENT



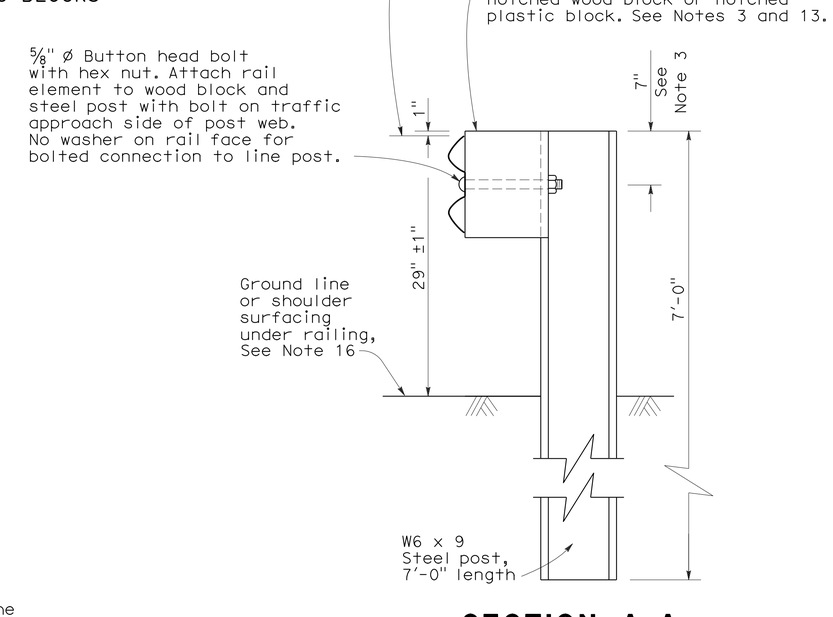
ELEVATION

RAIL ELEMENT SPLICE DETAIL

a) Connect the over lapped end of the rail elements with 5/8" ø x 1 3/8" button head oval shoulder splice bolts inserted into the 29/32" x 1 1/8" slots and bolted together with 5/8" ø recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.

b) The ends of the rail elements are to be overlapped in the direction of traffic (see details).

c) 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.



SECTION A-A

TYPICAL STEEL LINE POST INSTALLATION
See Note 4

NOTES:

1. For details of wood post installations, see Standard Plan A77A1.
2. For details of standard hardware used to construct guard railing, see Standard Plan A77B1.
3. For details of steel posts and notched wood blocks used to construct guard railing, see Standard Plan A77C2.
4. For additional installation details, see Standard Plan A77C3.
5. Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
6. For guard railing typical layouts, see the A77E, A77F and A77G Series of Standard Plans.
7. For terminal system end treatment details, see the A77L Series of Standard Plans. To connect railing to terminal system end treatment, transition the top of railing height at a ratio of 120:1 to terminal system end treatment height plus one 12'-6" standard railing section at the transitioned height for a horizontal connection to the end treatment.
8. For guard railing end anchor details, see Standard Plans A77H1 and A77I2.
9. For details of guard railing transition to bridge railing, see Standard Plan A77J4.
10. For additional details of guard railing connection to bridge railings, see Standard Plans A77J1, A77J2 and A77K1.
11. For dike positioning and guard railing delineation details, see Standard Plan A77C4.
12. Direction of adjacent traffic indicated by → .
13. Notched face of block faces steel post.
14. Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
15. Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
16. Install posts in soil.

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

METAL BEAM GUARD RAILING STANDARD RAILING SECTION (STEEL POST WITH NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCK)

CONSTRUCTION DETAILS

NO SCALE

C-4

REVISED BY	DATE REVISED

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CHECKED BY: GEORGE MORHIG
FUNCTIONAL SUPERVISOR: GEORGE MORHIG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	14	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp 12-31-15
CIVIL
STATE OF CALIFORNIA

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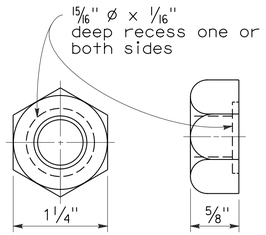
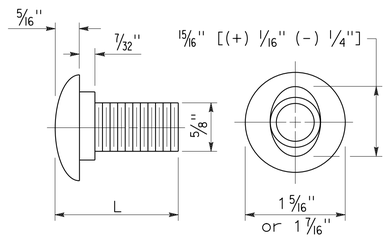


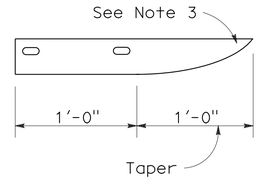
5/8" ø RECESS NUT



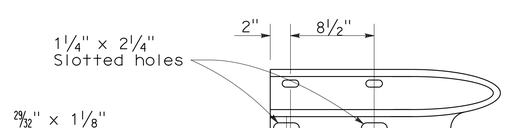
5/8" ø BUTTON HEAD BOLT

L	THREAD LENGTH
1 3/8"	full thread length
2"	full thread length
10"	4" Min thread length
1'-6"	4" Min thread length
** 2 3/4"	2" Min thread length
** 1'-7"	4" Min thread length

** For nested rail applications.



PLAN



ELEVATION

END CAP (TYPE A)

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

METAL BEAM GUARD RAILING STANDARD HARDWARE

CONSTRUCTION DETAILS

NO SCALE

C-5

CALCULATED-DESIGNED BY
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TOUHIDA HAIDER
GEORGE MORHIG
FUNCTIONAL SUPERVISOR
GEORGE MORHIG
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2231
PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	15	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — TOUHIDA HAIDER — No. C74470 — Exp. 12-31-15 — CIVIL — STATE OF CALIFORNIA

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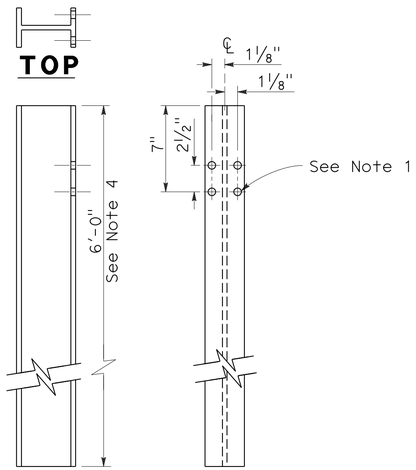
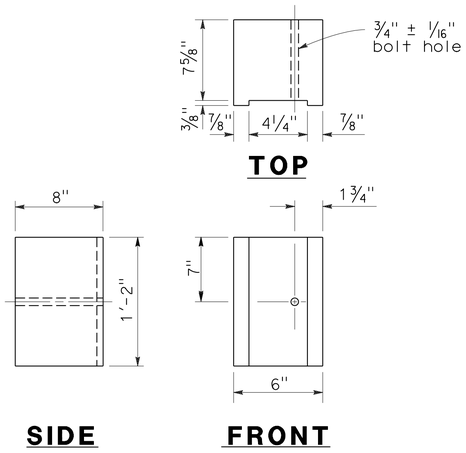
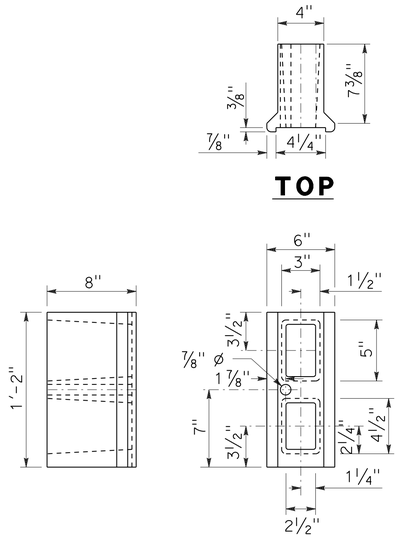


W6 x 9
STEEL POST
See Note 4



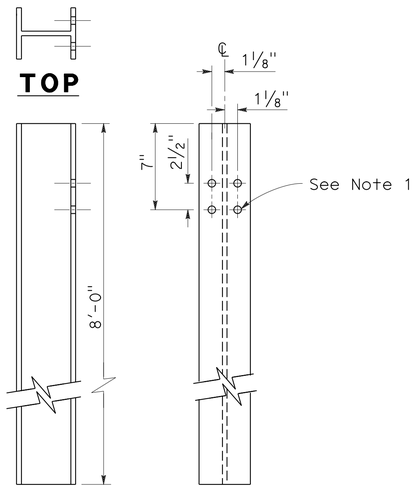
6" x 8"
NOTCHED WOOD BLOCK
See Notes 2 and 3



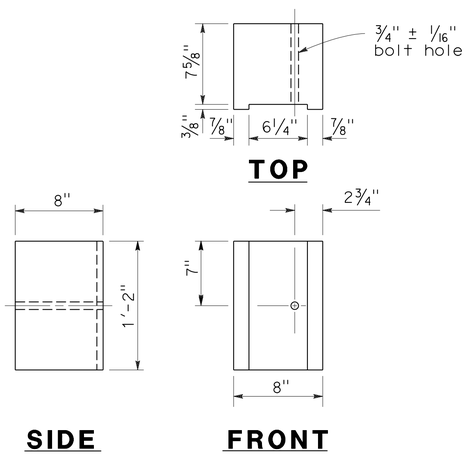
NOTCHED RECYCLED PLASTIC BLOCK
Option 'A'

NOTES:

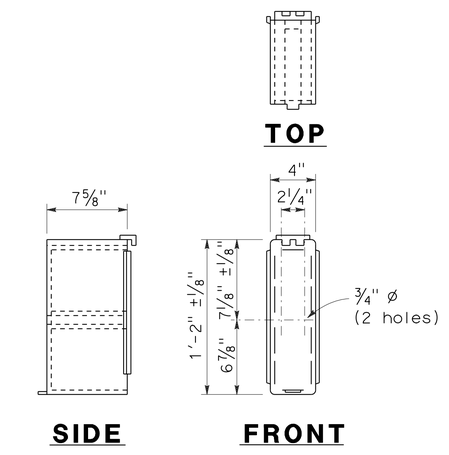
1. All holes in steel post shall be 13/16" Dia maximum.
2. Dimensions shown for wood block are nominal.
3. Notched face of block faces steel post.
4. 6'-0" length posts to be used for typical roadway installation. 7'-0" length posts to be used for narrow roadway installation. See Standard Plan A77C3.



W6 x 15
STEEL POST



8" x 8"
NOTCHED WOOD BLOCK
See Notes 2 and 3



NOTCHED RECYCLED PLASTIC BLOCK
Option 'B'

METAL BEAM GUARD RAILING STEEL POST, NOTCHED WOOD BLOCK AND NOTCHED RECYCLED PLASTIC BLOCK DETAILS

CONSTRUCTION DETAILS

NO SCALE

C-6

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

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TOUHIDA HAIDER
GEORGE MORHIG
FUNCTIONAL SUPERVISOR
GEORGE MORHIG
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

LAST REVISION 04-01-14
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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2231
PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	16	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp 12-31-15
CIVIL
STATE OF CALIFORNIA

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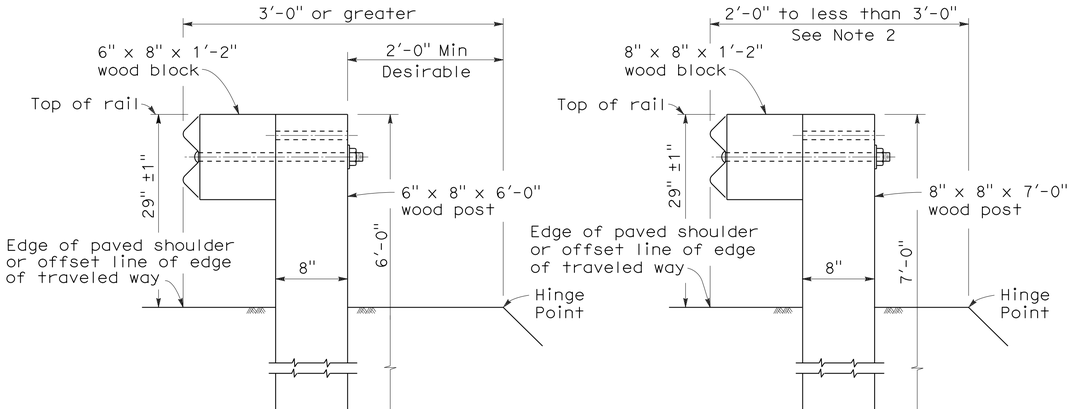
NOTES:

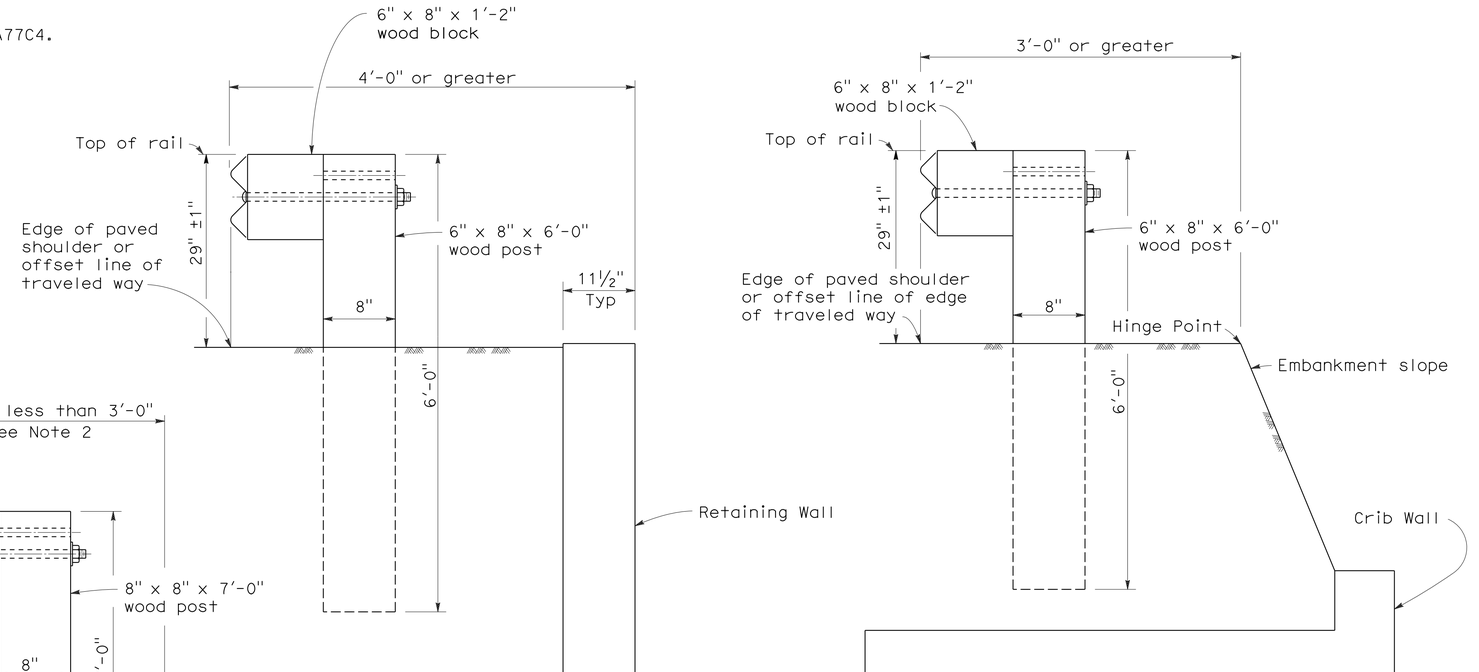
1. These installation details also applicable to steel line post installations. For Detail A, C, and D, where steel line post installations are constructed, W6 x 9 steel post, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For Detail B, where steel line post installations are constructed, W6 x 9 steel post, 7'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For additional installation details, see Standard Plans A77A1 and A77A2.
2. Where the distance between the face of the rail and the hinge point is less than 2'-0", see the Project Plans for special details.
3. For dike positioning with guard railing installations, see Standard Plan A77C4.



DETAIL A
TYPICAL ROADWAY INSTALLATION
See Note 1

DETAIL B
NARROW ROADWAY INSTALLATION
See Note 1

POST EMBEDMENT



DETAIL C

DETAIL D

INSTALLATION AT EARTH RETAINING WALLS

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

METAL BEAM GUARD RAILING TYPICAL LINE POST EMBEDMENT AND HINGE POINT OFFSET DETAILS

CONSTRUCTION DETAILS

NO SCALE

C-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: GEORGE MORHIG
CALCULATED-DESIGNED BY: TOUHIDA HAIDER
CHECKED BY: GEORGE MORHIG
REVISED BY
DATE REVISED

LAST REVISION: DATE PLOTTED => 03-APR-2014
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UNIT 2231
PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	17	31

Touhida Haider 4-1-14
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4-1-14
PLANS APPROVAL DATE

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TOUHIDA HAIDER
No. C74470
Exp 12-31-15
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STATE OF CALIFORNIA

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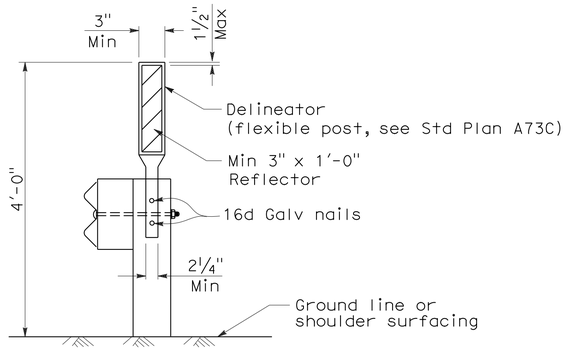
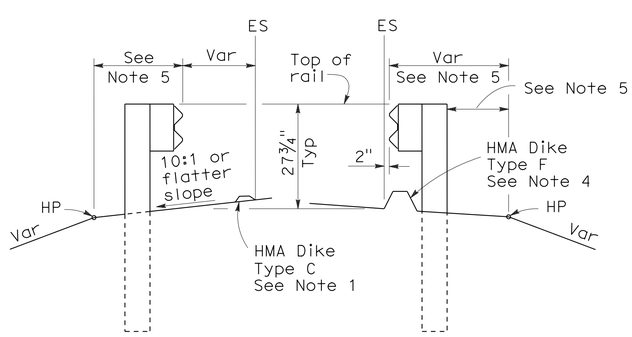
NOTES:

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

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

METAL BEAM GUARD RAILING TYPICAL RAILING DELINEATION AND DIKE POSITIONING DETAILS

CONSTRUCTION DETAILS

NO SCALE

C-8

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UNIT 2231
PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	18	31

Touhida Haider 4-1-14
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No. C74470
Exp. 12-31-15
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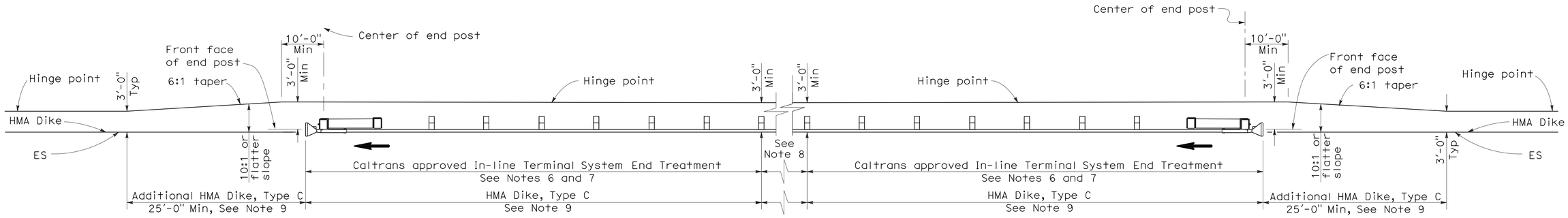
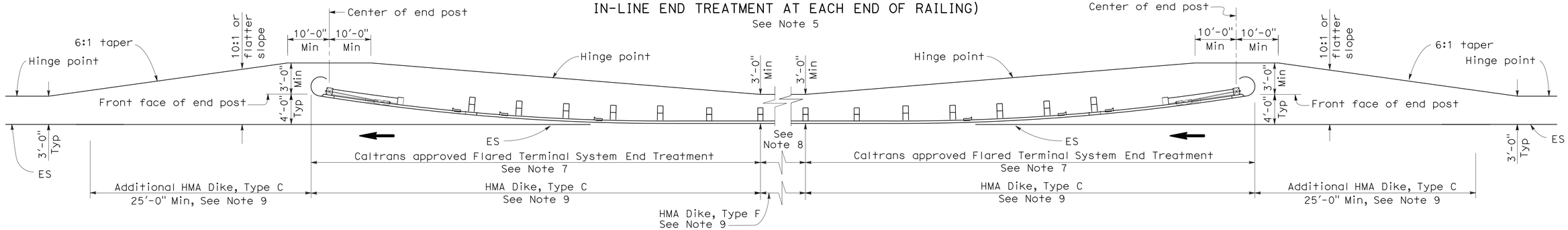


TYPE 11D LAYOUT

(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:

1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
2. Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or 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.
4. Direction of adjacent traffic indicated by ⟶.
5. 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.
6. In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
7. The type of terminal system end treatment to be used will be shown on the Project Plans.
8. 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.
9. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR EMBANKMENTS

CONSTRUCTION DETAILS

NO SCALE

C-9

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY: TOUHIDA HAIDER
CHECKED BY: GEORGE MORHIG
FUNCTIONAL SUPERVISOR: GEORGE MORHIG
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

LAST REVISION 04-01-14
DATE PLOTTED => 03-APR-2014
TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s125726
DGN FILE => 08000204011ga009.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2231
PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	19	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

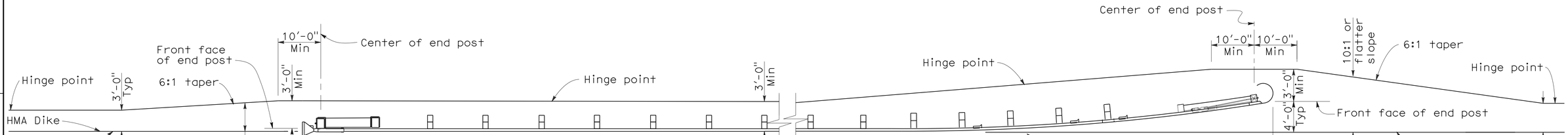
4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA

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

NOTES:

1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
2. Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or 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.
4. Direction of adjacent traffic indicated by ➡.
5. 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.
6. The type of terminal system end treatment to be used will be shown on the Project Plans.
7. 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.
8. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.



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

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR EMBANKMENTS

CONSTRUCTION DETAILS

NO SCALE

C-10

CALCULATED-DESIGNED BY: TOUHIDA HAIDER
CHECKED BY: GEORGE MORHIG
FUNCTIONAL SUPERVISOR: GEORGE MORHIG
REVISED BY | DATE REVISED
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

LAST REVISION: DATE PLOTTED => 03-APR-2014
04-01-14 TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010 | USERNAME => s125726 | DGN FILE => 08000204011ga010.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2231 | PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	20	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA

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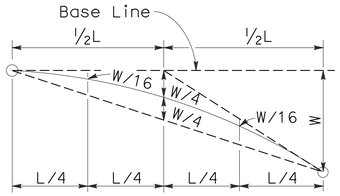
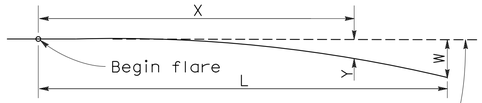


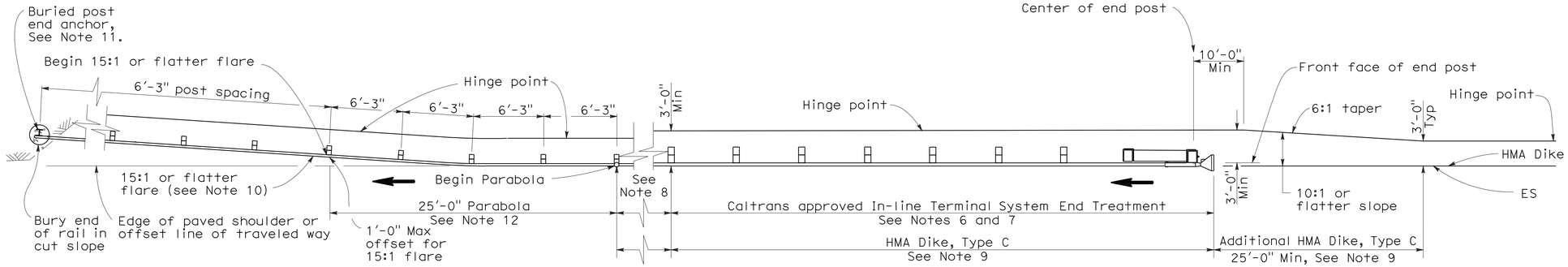
TYPICAL PARABOLIC LAYOUT



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

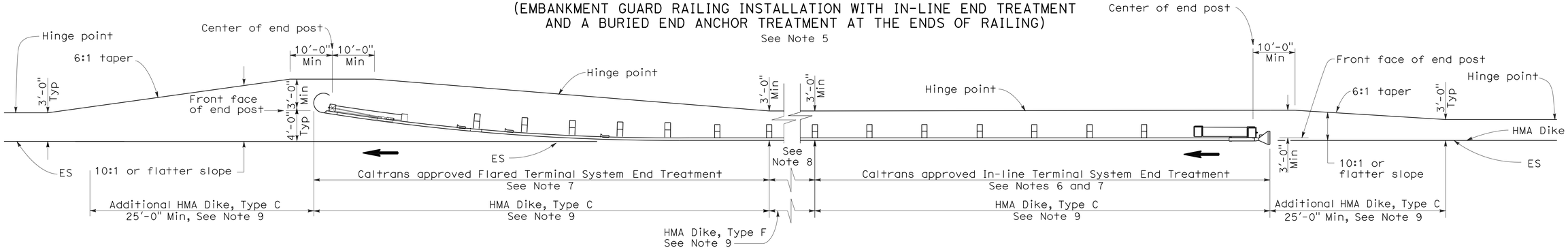
Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

PARABOLIC FLARE OFFSETS



TYPE 11I LAYOUT

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



TYPE 11J LAYOUT

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

NOTES:

1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
2. Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or 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.
4. Direction of adjacent traffic indicated by ⟶ .
5. Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embamkment slopes and a crashworthy end treatment is required for both directions of traffic.
6. In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
7. The type of terminal system end treatment to be used will be shown on the Project Plans.
8. 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.
9. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
10. 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".
11. For details of the buried post end anchor used with Type 11I Layout, see Standard Plan A77I2.
12. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR EMBANKMENTS

CONSTRUCTION DETAILS

NO SCALE

C-11

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY
TOUHIDA HAIDER
CHECKED BY
GEORGE MORHIG
FUNCTIONAL SUPERVISOR
GEORGE MORHIG
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

LAST REVISION | DATE PLOTTED => 03-APR-2014
04-01-14 | TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010 | USERNAME => s125726 | DGN FILE => 08000204011ga011.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2231 | PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	21	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

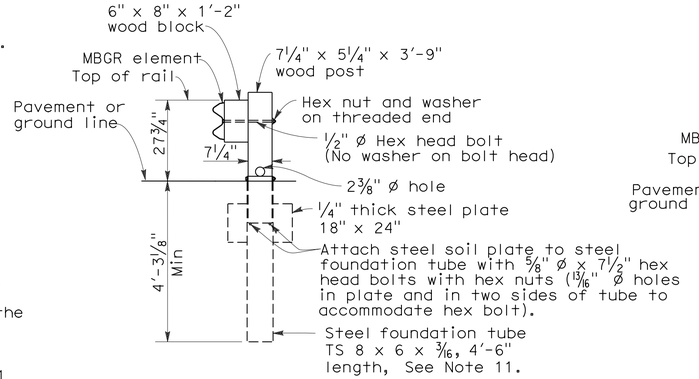
4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — TOUHIDA HAIDER — No. C74470 — Exp. 12-31-15 — CIVIL — STATE OF CALIFORNIA

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

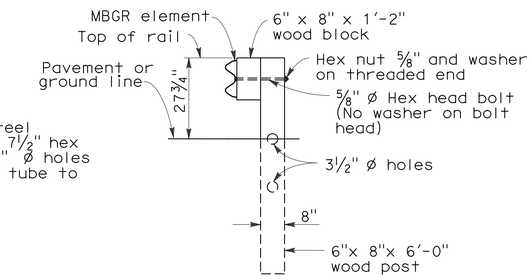
NOTES:

1. For additional details of Terminal System (Type ET), refer to the manufacturer's installation instructions.
2. Terminal System (Type ET) must be constructed so that the full length of the terminal system guard railing is in straight alignment. The Guard Rail Extruder head of the terminal system shall not encroach upon the adjacent paved shoulder or lane. A traffic approach flare of 50:1 or 25:1 for the full length of Terminal System (Type ET) installation may be used where the Guard Rail Extruder head would encroach upon the adjacent paved shoulder or lane.
3. Slide Guard Rail Extruder over the end of the rail element and attach to Post No.1 with lag screws. Do not bolt rail element to post. Guard Rail Extruder attachment brackets have 3 holes in each bracket to provide tolerance adjustment. Use the holes in the bracket closest to center of Post No.1. Drill 1/4" pilot holes to accommodate lag screws.
4. Attach strut to Post Nos. 1 and 2 foundation tubes with hex head bolts, washers and hex nuts. Bolts extend through the strut, steel foundation tube, and wood posts. Channel side of strut to face downward.
5. For length and type of metal beam guard railing or metal barrier railing the terminal system is attached to, see Project Plans. For typical use of this terminal system, see the A77E, A77F and A77G Series of the Standard Plans.
6. Attach rail element to this post and block. Payment for this post, block and hardware included in payment for the type of railing or barrier the terminal system is attached to, not part of the payment for Terminal System (Type ET).
7. Yellow retroreflective sheeting, as provided by Terminal System (Type ET) manufacturer, shall be adhered to the face of extruder head. The sheeting shall be consistent with the design pattern and colors of a Type P object marker panel.
8. Attach rail to Post No.2 (no wood block) in same manner shown in section A-A. Do not bolt rail to Post No.1, See Note 3.
9. Terminal System (Type ET) not to be used where extrusion of the rail on the back side of the installation would be in the path of pedestrian or vehicular traffic.
10. A continuous rail element section between Post Nos.1 and 5 (no intermediate rail splices) may continue to be used in existing installations. New installations shall be constructed as shown with two rail element sections between Post Nos.1 and 5.
11. A 6'-0" length steel foundation tube, TS 8 x 6 x 3/16", without soil plate, may be used in place of the 4'-6" length steel foundation tube and soil plate shown. Minimum embedment of the 6'-0" length tube shall be 5'-9". A 5/8" Ø hex head bolt and nuts shall be installed in the hole in the 6'-0" length tube to keep the wood post from dropping into the tube.



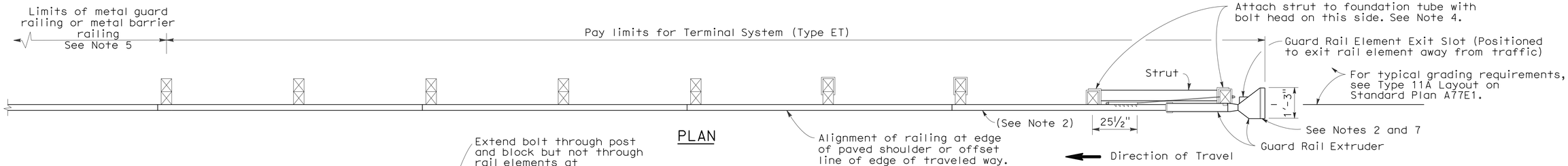
SECTION A-A

Soil plate and wood post attachment to steel foundation tube similar for Post Nos. 1, 2 and 4. Wood blocks not used with Post Nos.1 and 2. See Note 8.

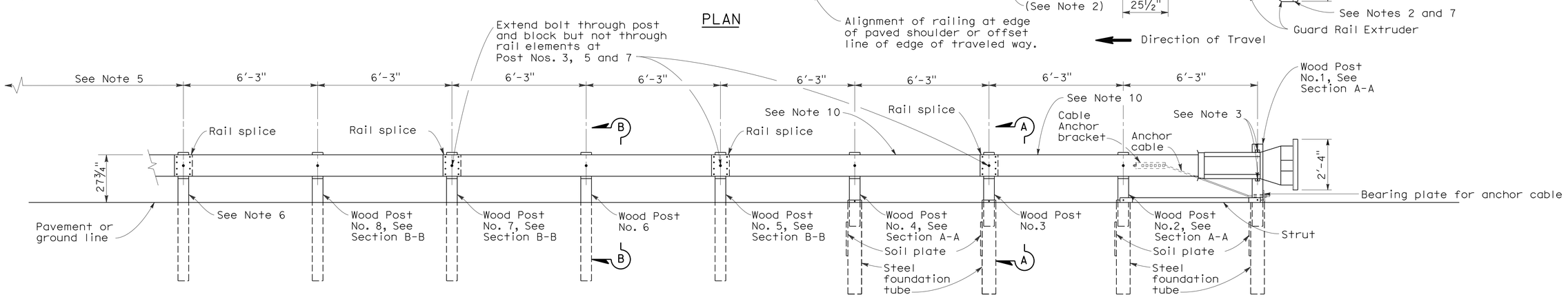


SECTION B-B

Post Nos. 5, 7 and 8 similar except rail elements are not attached to Post Nos. 5 and 7



PLAN



ELEVATION

TERMINAL SYSTEM (TYPE ET)

(Type ET PLUS shown)
See Notes 9 and 10

METAL BEAM RAILING TERMINAL SYSTEM (TYPE ET)

CONSTRUCTION DETAILS

NO SCALE

C-12

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

REVISED BY | DATE REVISED
TOUHIDA HAIDER | GEORGE MORHIG
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: GEORGE MORHIG
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 03-APR-2014
04-01-14 | TIME PLOTTED => 13:06

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	22	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — TOUHIDA HAIDER — No. C74470 — Exp. 12-31-15 — CIVIL — STATE OF CALIFORNIA

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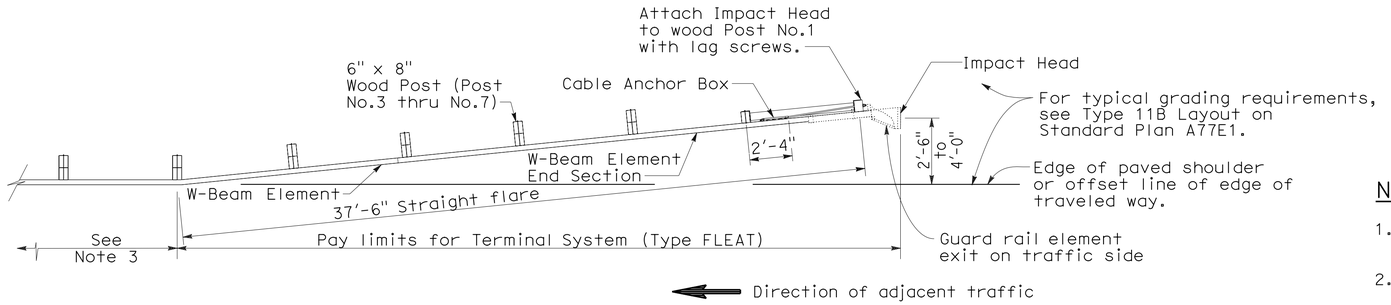
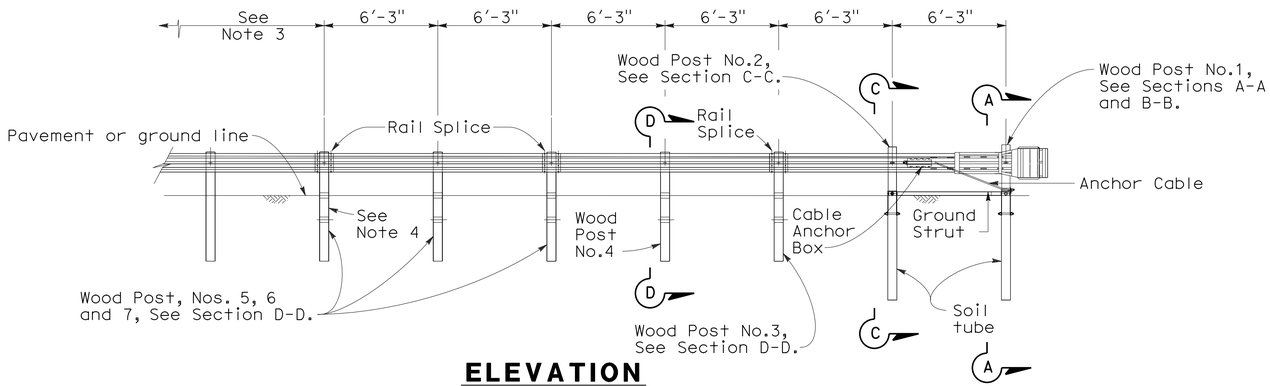


PLAN

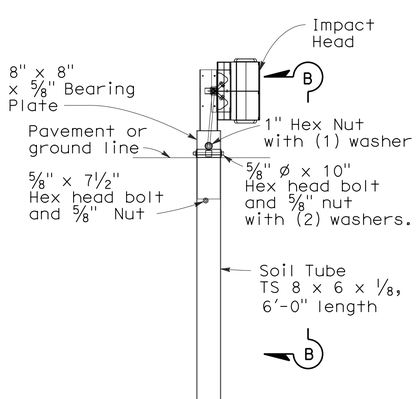


ELEVATION

TERMINAL SYSTEM (TYPE FLEAT)

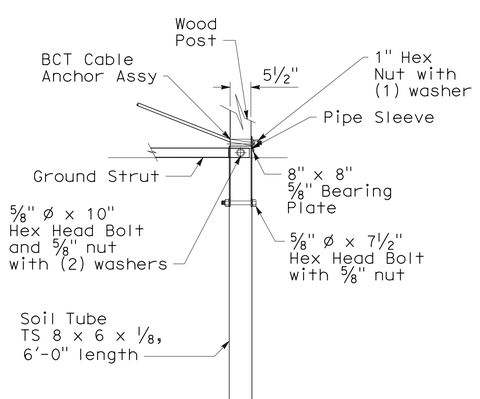
NOTES:

1. For additional details of Terminal System (Type FLEAT), refer to the manufacturer's installation instructions.
2. Terminal System (Type FLEAT) not to be used where extrusion of the rail on the front side of the installation would be in the path of pedestrian traffic.
3. For the length and type of metal beam guard railing or metal barrier railing the terminal system is attached to, see Project Plans. For typical use of this terminal system with guard railing, see the A77E, A77F and A77G Series of the Standard Plans.
4. Attach rail element to this post and block. Payment for this post, block and attaching hardware is included in payment for Terminal System (Type FLEAT).



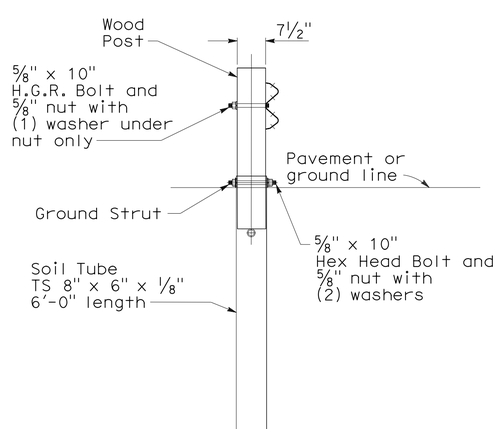
SECTION A-A

Post No.1



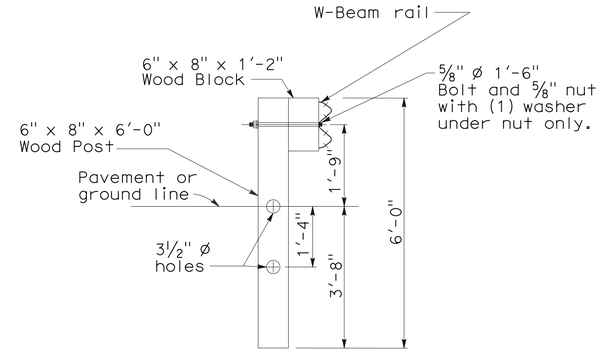
SECTION B-B

Partial view Post No.1



SECTION C-C

at Post No.2



SECTION D-D

Post No.3 through No.7.

EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

METAL BEAM RAILING TERMINAL SYSTEM (TYPE FLEAT)

CONSTRUCTION DETAILS

NO SCALE

C-13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — DESIGN
FUNCTIONAL SUPERVISOR: GEORGE MORHIG
CALCULATED-DESIGNED BY: TOUHIDA HAIDER
CHECKED BY: GEORGE MORHIG
REVISED BY / DATE REVISED

LAST REVISION: DATE PLOTTED => 03-APR-2014 04-01-14 TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010 | USERNAME => s125726 | DGN FILE => 0800020401ga013.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2231 | PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	23	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp 12-31-15
CIVIL
STATE OF CALIFORNIA

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

NOTES:

1. THE QUANTITY OF JOB SITE BMPs SHOWN ON THIS QUANTITIY SHEET (WPCQ-1) ARE INTENDED TO BE USED AS GUIDELINES ONLY.
   FIELD CONDITION MAY NECESSITATE MODIFICATION OR RELOCATION OF BMPs. AND ITS QUANTITIES AS PER INSTRUCTION OF ENGINEER.

TEMPORARY JOB SITE BMPs

TEMPORARY JOB SITE BMPs	UNITS	QUANTITIES
TEMPORARY SOIL BINDER	SQYD	1000

TEMPORARY WATER POLLUTION CONTROL QUANTITIES

NO SCALE

WPCQ-1

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY: TOUHIDA HAIDER
CHECKED BY: GEORGE MORHIG
FUNCTIONAL SUPERVISOR: GEORGE MORHIG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

LAST REVISION 04-01-14
DATE PLOTTED => 03-APR-2014
TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s125726
DGN FILE => 0800020401gd001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2231
PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	24	31

W E Wasser 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
W. E. WASSER
No. C37378
Exp. 6-30-14
CIVIL
STATE OF CALIFORNIA

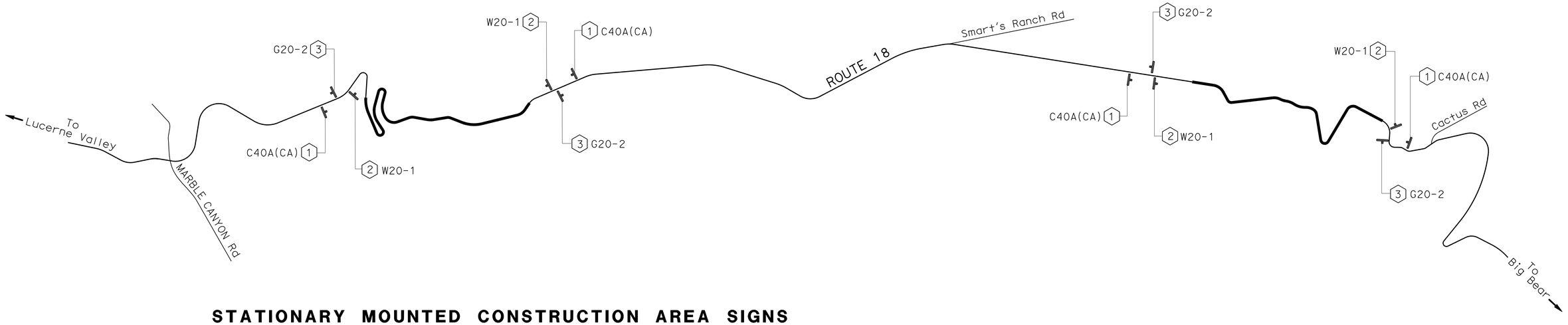
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

LEGEND:

- ONE POST SIGN
- ROAD WORK AREA
- (X) CONSTRUCTION AREA SIGN NUMBER

NOTES:

1. CONSTRUCTION AREA SIGN LOCATIONS SHOWN ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
2. REFER TO STANDARD PLANS T13 FOR TRAFFIC CONTROL REQUIREMENTS.
3. LOCATIONS OF PCMS WILL BE DETERMINED BY THE ENGINEER.



STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No. (X)	SIGN CODE		PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
	FEDERAL	CALIFORNIA				
1		C40A	36" x 36"	TRAFFIC FINES DOUBLED IN WORK ZONES	1 - 4" X 4"	4
2	W20-1		36" x 36"	ROAD WORK AHEAD	1 - 4" X 4"	4
3	G20-2		36" X 18"	END ROAD WORK	1 - 4" X 4"	4

PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)

(EA)
2

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR: W. E. WASSER
CALCULATED-DESIGNED BY: KEVIN NGUYEN
CHECKED BY: THANH TRINH
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 03-APR-2014
04-01-14 TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s125726
DGN FILE => 08000204011a001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2284
PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	25	31

W E Wasser 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
W. E. WASSER
No. C37378
Exp. 6-30-14
CIVIL
STATE OF CALIFORNIA

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

NOTES:

1. PROTECT IN PLACE ALL EXISTING ROADSIDE SIGNS DURING CONSTRUCTION.
2. RESET MARKER & DELINEATOR QUANTITY IS INCLUDED; SNOW POLES, MARKERS, MILE POST MARKERS, & DELINEATORS WITHIN LIMITS OF NEW MGS.
3. GUARD RAILING DELINEATORS ON NEW MGS STEEL POSTS AT APPROXIMATELY 50 FEET SPACING.

GUARD RAILING DELINEATOR CLASS 1 - TYPE F

(EA)
130

RESET MARKER & DELINEATOR

(EA)
75

PAVEMENT DELINEATION QUANTITIES

PDQ-1

REVISED BY | DATE REVISED
KEVIN NGUYEN | THANH TRINH
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: W. E. WASSER
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION 04-01-14
DATE PLOTTED => 03-APR-2014
TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s125726
DGN FILE => 0800020401nc001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2284
PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	26	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

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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. STATIONS ARE APPROXIMATE FOR LIMITS OF HMA DIKE, EXACT LOCATIONS SHALL BE DETERMINED BY THE RESIDENT ENGINEER.

METAL BEAM GUARDRAIL (TABLE 1)

ROUTE	LOCATION	DIRECTION	STATION FROM	STATION TO	MBGR (STEEL POST) LF	MBGR (24" CIDH CONCRETE PILE) LF	ALTERNATIVE FLARED TERMINAL SYSTEM EA	ALTERNATIVE IN LINE TERMINAL SYSTEM EA	REMOVE GUARDRAIL LF	TREATED WOOD WASTE LB	REMOVE ASPHALT CONCRETE DIKE LF	PLACE HMA DIKE (TYPE F) LF	PLACE HMA DIKE (TYPE C) LF	HMA (TYPE A) TON
18	4	SB	0+00.00	0+50.00				1			643.75	531.25	112.50	7.2
	4		0+50.00	5+81.25	531.25									
	4		5+81.25	6+18.75			1							
	3	NB	6+10.25	6+47.75			1				656.25	618.75	37.50	7.7
	3		6+47.75	7+66.50	118.75									
	3		7+66.50	8+60.25	93.75									
	3		8+60.25	8+85.25	25.00									
	3		8+85.25	8+97.75		12.50								
	3		8+97.75	10+10.25	112.50									
	3		10+10.25	10+41.50		31.25								
	3		10+41.50	10+54.00	12.50									
	3		10+54.00	10+85.25		31.25								
	3		10+85.25	11+04.00	18.75									
	3		11+04.00	11+10.25		6.25								
	3		11+10.25	11+54.00	43.75									
	3		11+54.00	12+29.00	75.00									
	3		12+29.00	12+66.50	37.50				37.50	900				
	2	SB	19+61.15	20+11.15	50.00				50.00	1200	2125.00	2050.00	75.00	26.1
	2		20+11.15	20+42.40	31.25									
	2		20+42.40	21+04.90	62.50									
	2		21+04.90	22+54.90	150.00									
	2		22+54.90	22+73.65	18.75									
	2		22+73.65	26+29.90	356.25									
	2		26+29.90	27+54.90	125.00									
	2		27+54.90	29+04.90	150.00									
	2		29+04.90	37+86.15	881.25									
	2		37+86.15	40+11.15	225.00									
	2		40+11.15	40+61.15				1						
TOTAL (TABLE 1)					3118.75	81.25	2	2	87.50	2100	3425.00	3200.00	225	41.0

SUMMARY OF QUANTITIES
Q-1

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: TOUHIDA HAIDER
CHECKED BY: GEORGE MORHIG
FUNCTIONAL SUPERVISOR: GEORGE MORHIG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

LAST REVISION 04-01-14
DATE PLOTTED => 03-APR-2014
TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s125726
DGN FILE => 0800020401pa001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2231
PROJECT NUMBER & PHASE 08000204011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	27	31

Touhida Haider 4-1-14
REGISTERED CIVIL ENGINEER DATE

4-1-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TOUHIDA HAIDER
No. C74470
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA

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

METAL BEAM GUARDRAIL (TABLE 2)

ROUTE	LOCATION	DIRECTION	STATION FROM	STATION TO	MBGR (STEEL POST) LF	MBGR (24" CIDH CONCRETE PILE) LF	ALTERNATIVE FLARED TERMINAL SYSTEM EA	ALTERNATIVE IN LINE TERMINAL SYSTEM EA	REMOVE GUARDRAIL LF	TREATED WOOD WASTE LB	REMOVE ASPHALT CONCRETE DIKE LF	PLACE HMA DIKE (TYPE F) LF	PLACE HMA DIKE (TYPE C) LF	HMA (TYPE A) TON
	1		100+00.00	100+50.00				1						
	1		100+50.00	102+00.00	150.00									
	1		102+00.00	104+62.50	262.50									
	1		104+62.50	105+12.50	50.00									
	1		105+12.50	107+00.00	187.50									
	1		107+00.00	109+56.25	256.25									
	1		109+56.25	110+50.00	93.75									
	1		110+50.00	111+18.75	68.75									
	1		111+18.75	111+50.00		31.25								
	1		111+50.00	111+56.25	6.25									
	1		111+56.25	111+87.50		31.25								
	1		111+87.50	114+62.50	275.00									
	1		114+62.50	114+93.75		31.25								
	1		114+93.75	116+50.00	156.25									
	1		116+50.00	116+81.25		31.25								
	1		116+81.25	117+87.50	106.25									
	1		117+87.50	118+18.75		31.25								
	1		118+18.75	118+25.00	6.25									
	1		118+25.00	118+56.25		31.25								
	1		118+56.25	118+68.75	12.50									
	1		118+68.75	119+50.00	81.25									
18	1	NB	119+50.00	121+37.50	187.50						3825.00	3750.00	75.00	47.3
	1		121+37.50	121+68.75		31.25								
	1		121+68.75	121+75.00	6.25									
	1		121+75.00	122+06.25		31.25								
	1		122+06.25	122+12.50	6.25									
	1		122+12.50	122+43.75		31.25								
	1		122+43.75	122+93.75	50.00									
	1		122+93.75	123+75.00	81.25									
	1		123+75.00	123+93.75	18.75									
	1		123+93.75	128+18.75	425.00									
	1		128+18.75	129+06.25	87.50									
	1		129+06.25	129+37.50		31.25								
	1		129+37.50	129+43.75	6.25									
	1		129+43.75	129+75.00		31.25								
	1		129+75.00	130+50.00	75.00									
	1		130+50.00	134+62.50	412.50									
	1		134+62.50	135+18.75	56.25									
	1		135+18.75	135+50.00		31.25								
	1		135+50.00	136+18.75	68.75									
	1		136+18.75	136+50.00		31.25								
	1		136+50.00	137+50.00	100.00									
	1		137+50.00	138+00.00	50.00				50.00	1200				
TOTAL (TABLE 2)					3343.75	406.30		1	50.00	1200	3800.00	3750.00	75.00	47.3
TOTAL (TABLE 1)					3118.75	81.25	2	2	87.50	2100	3425.00	3200.00	225	41.0
TOTAL (TABLE 1 & TABLE 2)					6462.50	487.50	2	3	137.50	3300	7250.00	6950.00	300.00	88.30

24" CIDH CONCRETE PILING

LOCATION	LF
4	
3	85
2	
1	390
TOTAL	475

SUMMARY OF QUANTITIES
Q-2

REVISED BY | DATE REVISED
TOUHIDA HAIDER | GEORGE MORHIG
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: GEORGE MORHIG
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

LAST REVISION 04-01-14 | DATE PLOTTED => 03-APR-2014 | TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010 | USERNAME => s125726 | DGN FILE => 08000204011pa002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2231 | PROJECT NUMBER & PHASE 08000204011

M

Maint	MAINTENANCE
Max	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAILING
Med	MEDIAN
MGS	MIDWEST GUARDRAIL SYSTEM
MH	MANHOLE
Min	MINIMUM
Misc	MISCELLANEOUS
Misc I & S	MISCELLANEOUS IRON AND STEEL
Mkr	MARKER
Mod	MODIFIED, MODIFY
Mon	MONUMENT
MP	METAL PLATE
MPGR	METAL PLATE GUARD RAILING
MR	MOVEMENT RATING
MSE	MECHANICALLY STABILIZED EMBANKMENT
Mt	MOUNTAIN, MOUNT
Mtl	MATERIAL
MVP	MAINTENANCE VEHICLE PULLOUT

N

N	NORTH
NB	NORTHBOUND
No.	NUMBER (MUST HAVE PERIOD)
Nos.	NUMBERS (MUST HAVE PERIOD)
NPS	NOMINAL PIPE SIZE
NS	NEAR SIDE
NSP	NEW STANDARD PLAN
NTS	NOT TO SCALE

O

Oblr	OBLITERATE
OC	OVERCROSSING
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OG	ORIGINAL GROUND
OGAC	OPEN GRADED ASPHALT CONCRETE
OGFC	OPEN GRADED FRICTION COURSE
OH	OVERHEAD
OHWM	ORDINARY HIGH WATER MARK
O-O	OUT TO OUT
Opp	OPPOSITE
OSD	OVERSIDE DRAIN

P

P	PAGE
PAP	PERFORATED ALUMINUM PIPE
PB	PULL BOX
PC	POINT OF CURVATURE, PRECAST
PCC	POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
PCP	PERFORATED CONCRETE PIPE, PRESTRESSED CONCRETE PIPE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PEC	PERMIT TO ENTER AND CONSTRUCT
Ped	PEDESTRIAN
Ped OC	PEDESTRIAN OVERCROSSING
Ped UC	PEDESTRIAN UNDERCROSSING
Perm Mtl	PERMEABLE MATERIAL

P continued

PG	PROFILE GRADE
PI	POINT OF INTERSECTION
PJP	PARTIAL JOINT PENETRATION
Pkwy	PARKWAY
℄,PL	PLATE
P/L	PROPERTY LINE
PM	POST MILE, TIME FROM NOON TO MIDNIGHT
PN	PAVING NOTCH
POC	POINT OF HORIZONTAL CURVE
POT	POINT OF TANGENT
POVC	POINT OF VERTICAL CURVE
PP	PIPE PILE, PLASTIC PIPE, POWER POLE
PPL	PREFORMED PERMEABLE LINER
PPP	PERFORATED PLASTIC PIPE
PRC	POINT OF REVERSE CURVE
PRF	PAVEMENT REINFORCING FABRIC
PRVC	POINT OF REVERSE VERTICAL CURVE
PS&E	PLANS, SPECIFICATIONS AND ESTIMATES
PS, P/S	PRESTRESSED
PSP	PERFORATED STEEL PIPE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
Pvmt	PAVEMENT

Q

Qty	QUANTITY

R

R	RADIUS
R & D	REMOVE AND DISPOSE
R & S	REMOVE AND SALVAGE
R/C	RATE OF CHANGE
RCA	REINFORCED CONCRETE ARCH
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
Rd	ROAD
Reinf	REINFORCED, REINFORCEMENT, REINFORCING
Rel	RELOCATE
Repl	REPLACEMENT
Ret	RETAINING
Rev	REVISED, REVISION
Rdwy	ROADWAY
RHMA	RUBBERIZED HOT MIX ASPHALT
Riv	RIVER
RM	ROAD-MIXED
RP	RADIUS POINT, REFERENCE POINT
RR	RAILROAD
RSP	ROCK SLOPE PROTECTION, REVISED STANDARD PLAN
Rt	RIGHT
Rte	ROUTE
RW	REDWOOD, RETAINING WALL
R/W	RIGHT OF WAY
Rwy	RAILWAY

S

S	SOUTH, SUPPLEMENT
SAE	STRUCTURE APPROACH EMBANKMENT
Salv	SALVAGE
SAPP	STRUCTURAL ALUMINUM PLATE PIPE
SB	SOUTHBOUND
SC	SAND CUSHION
SCSP	SLOTTED CORRUGATED STEEL PIPE
SD	STORM DRAIN
Sec	SECOND, SECTION
Sep	SEPARATION
SG	SUBGRADE
Shld	SHOULDER
Sht	SHEET
Sim	SIMILAR
℄	STATION LINE
SM	SELECTED MATERIAL
Spec	SPECIAL, SPECIFICATIONS
SPP	SLOTTED PLASTIC PIPE
SS	SLOPE STAKE
SSBM	STRAP AND SADDLE BRACKET METHOD
SSD	STRUCTURAL SECTION DRAIN
SSPA	STRUCTURAL STEEL PLATE ARCH
SSPP	STRUCTURAL STEEL PLATE PIPE
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH
SSRP	STEEL SPIRAL RIB PIPE
St	STREET
Sta	STATION
STBB	SINGLE THRIE BEAM BARRIER
Std	STANDARD
Str	STRUCTURE
Surf	SURFACING
SW	SIDEWALK, SOUND WALL
Swr	SEWER
Sym	SYMMETRICAL
S4S	SURFACE 4 SIDES

T

T	SEMI-TANGENT
Tan	TANGENT
TBB	THRIE BEAM BARRIER
Tbr	TIMBER
TC	TOP OF CURB
TCB	TRAFFIC CONTROL BOX
TCE	TEMPORARY CONSTRUCTION EASEMENT
Tel	TELEPHONE
Temp	TEMPORARY
TG	TOP OF GRADE
Tot	TOTAL
TP	TELEPHONE POLE
TPB	TREATED PERMEABLE BASE
TPM	TREATED PERMEABLE MATERIAL
Trans	TRANSITION

T continued

TS	TRANSVERSE, TRAFFIC SIGNAL, TUBULAR STEEL
Typ	TYPICAL

U

UC	UNDERCROSSING
UD	UNDERDRAIN
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UP	UNDERPASS

V

V	VALVE, DESIGN SPEED
Var	VARIABLE, VARIES
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
Vert	VERTICAL
Via	VIADUCT
Vol	VOLUME

W

W	WEST, WIDTH
WB	WESTBOUND
WH	WEEP HOLE
WM	WIRE MESH
WS	WATER SURFACE
WSP	WELDED STEEL PIPE
Wt	WEIGHT
WV	WATER VALVE
WW	WINGWALL
WWLOL	WINGWALL LAYOUT LINE

X

X Sec	CROSS SECTION
Xing	CROSSING

Y

Yr	YEAR
Yrs	YEARS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	28	31

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

Grace M. Tsushima No. C49814 Exp. 9-30-14 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 4-1-14

UNIT OF MEASUREMENT SYMBOLS:

Some of the symbols used in the project plan quantity tables and in the Bid Item List are:

TABLE A

SYMBOL USED	DEFINITIONS
ACRE	ACRE
CF	CUBIC FOOT
CY	CUBIC YARD
EA	EACH
GAL	GALLON
LB	POUND
LF	LINEAR FOOT
SQFT	SQUARE FOOT
SQYD	SQUARE YARD
STA	100 FEET
TAB	TABLET
TON	2,000 POUNDS

Some of the symbols used in the plans other than in the project plan quantity tables are:

TABLE B

SYMBOL USED	DEFINITIONS
ksi	KIPS PER SQUARE INCH
ksf	KIPS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
psf	POUNDS PER SQUARE FOOT
lb/ft^3, pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
ø	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
kip	1,000 POUNDS
cal	CALORIE
ft	FOOT OR FEET
gal	GALLON

* For use on a sign panel only

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ABBREVIATIONS (SHEET 2 OF 2)

NO SCALE

RSP A10B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A10B DATED MAY 20, 2011 - PAGE 2 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A10B

2010 REVISED STANDARD PLAN RSP A10B

6-7-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	29	31

REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Michael Janzen — No. 44788 — Exp. 03-31-14 — CIVIL — STATE OF CALIFORNIA

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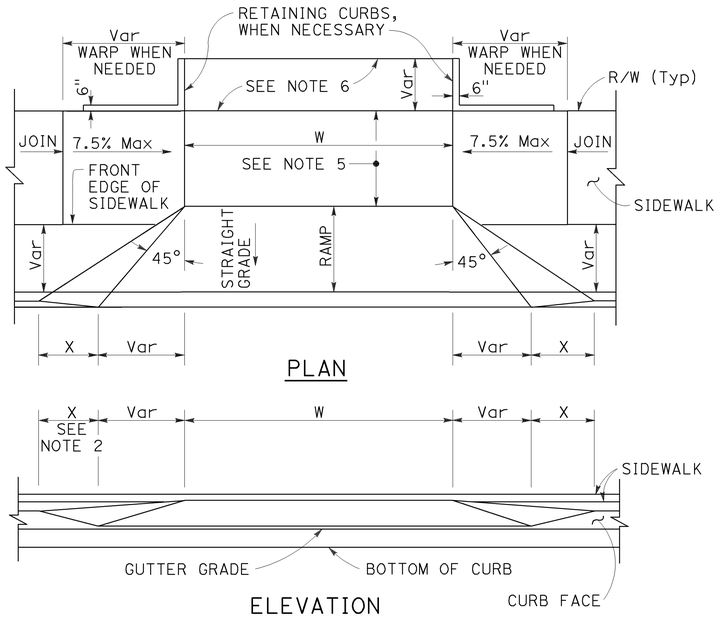
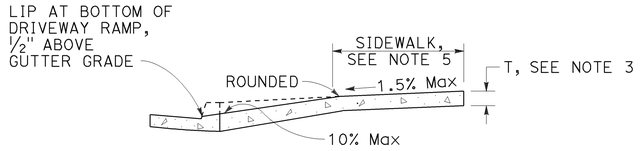
TO ACCOMPANY PLANS DATED 4-1-14



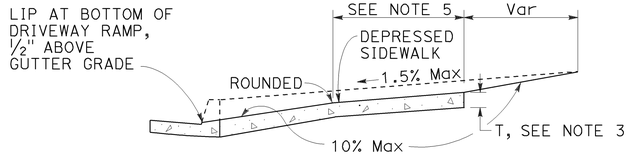
PLAN

ELEVATION



CASE A

Typical driveway, sidewalk not depressed



CASE B

Driveway with depressed sidewalk

SECTIONS

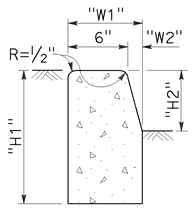
TABLE A

CURB TYPE	DIMENSIONS			
	"H1"	"H2"	"W1"	"W2"
A1-6	1'-2"	6"	7½"	1½"
A1-8	1'-4"	8"	8"	2"
A2-6	1'-0"	6"	2'-7½"	1½"
A2-8	1'-2"	8"	2'-8"	2"
A3-6	6"	5"	7¼"	1¼"
A3-8	8"	7"	7¾"	1¾"
B1-4	1'-0"	4"	7½"	2½"
B1-6	1'-2"	6"	9"	4"
B2-4	10"	4"	2'-7½"	2½"
B2-6	1'-0"	6"	2'-9"	4"
B3-4	4"	3"	7"	2"
B3-6	6"	5"	8½"	3½"
D-4	10"	4"	1'-6"	1'-1"
D-6	1'-0"	6"	2'-2"	1'-9"

CURB QUANTITIES

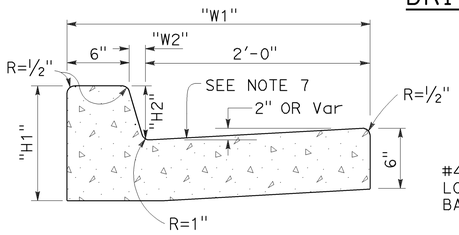
TYPE	CUBIC YARDS PER LINEAR FOOT
A1-6	0.02585
A1-8	0.03084
A2-6	0.05903
A2-8	0.06379
A3-6	0.01036
A3-8	0.01435
B1-4	0.02185
B1-6	0.02930
B2-4	0.05515
B2-6	0.06171
B3-4	0.00641
B3-6	0.01074
B4	0.05709
D-4	0.04083
D-6	0.06804
E	0.06661

DRIVEWAYS



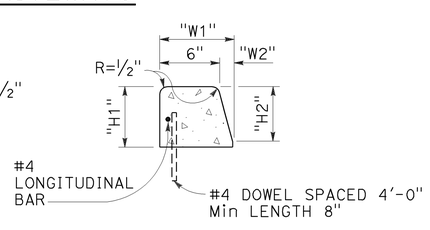
TYPE A1 CURBS

See Table A



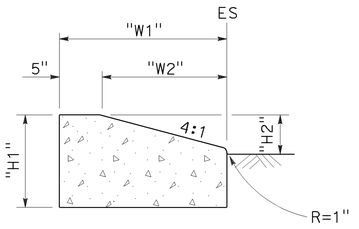
TYPE A2 CURBS

See Table A



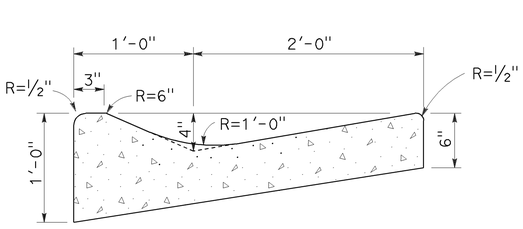
TYPE A3 CURBS

Superimposed on existing pavement
See Table A

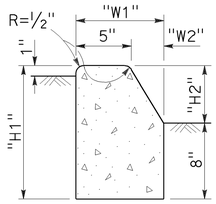


TYPE D CURBS

See Table A

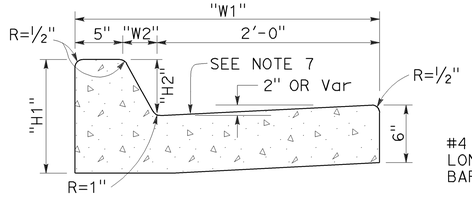


TYPE E CURB



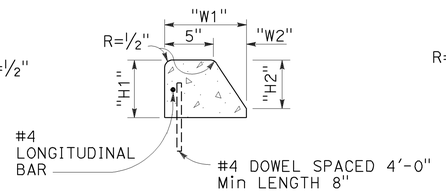
TYPE B1 CURBS

See Table A



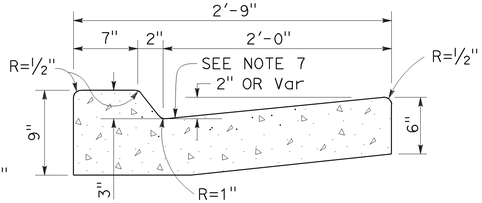
TYPE B2 CURBS

See Table A

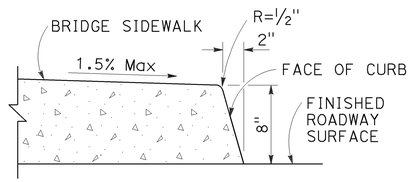


TYPE B3 CURBS

Superimposed on existing pavement
See Table A



TYPE B4 CURBS



TYPE H CURB

On Bridges

CURBS

NOTES:

1. Case A driveway section typically applies.
2. X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
3. Sidewalk and ramp thickness "T" at driveway shall be 4" for residental and 6" for commercial.
4. Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.
5. Minimum width of clear passageway for sidewalk shall be 4'-2".
6. Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".
7. Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURBS AND DRIVEWAYS

NO SCALE

RSP A87A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A87A
DATED MAY 20, 2011 - PAGE 119 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A87A

2010 REVISED STANDARD PLAN RSP A87A

7-8-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	30	31

REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Michael Janzen
No. 44788
Exp. 03-31-14
CIVIL
STATE OF CALIFORNIA

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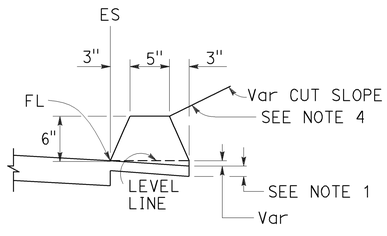
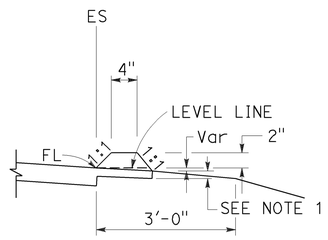
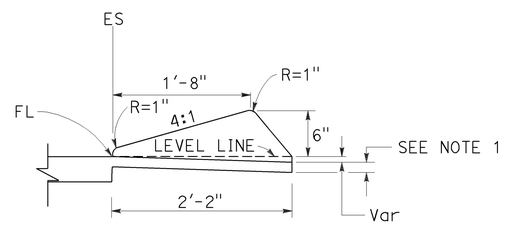
TO ACCOMPANY PLANS DATED 4-1-14



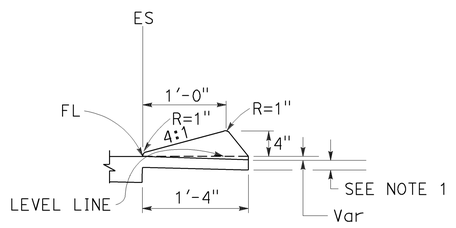
TYPE A
See Note 3



TYPE C



TYPE D



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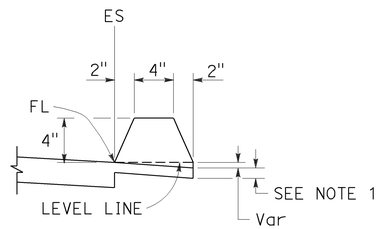
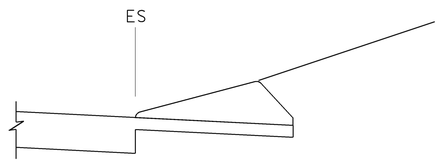
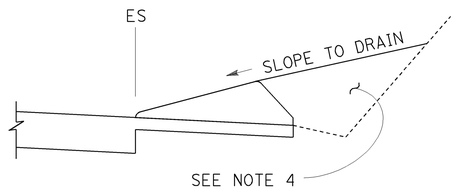


TYPE F
See Note 5

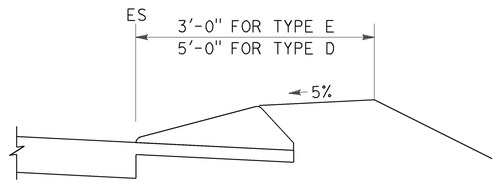
DIKES



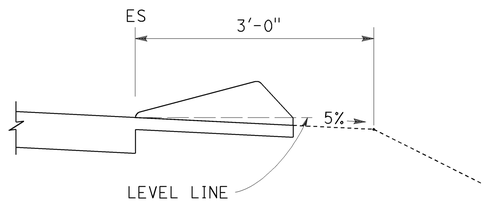
CASE C-1
Cut Slope



CASE C-2
Cut Slope



CASE F



CASE R
See Note 2

TYPE D AND E BACKFILL DETAILS

NOTES:

1. For HMA shoulders only, extend top layer of HMA placed on the shoulder under dike with no joint at the ES. For projects with OGFC shoulders, do not extend OGFC under dike. See project plans for modified dike detail.
2. Case R applies to retrofit only projects where restrictive conditions do not provide enough width for Case F backfill.
3. Type A dike only to be used where restrictive slope conditions do not provide enough width to use Type D or Type E dike.
4. Fill and compact with excavated material to top of dike.
5. Use Type F dike, where dike is required with guard railing installations. See Revised Standard Plan RSP A77N4 for dike positioning details.

DIKE QUANTITIES

TYPE	CUBIC YARDS PER LINEAR FOOT
A	0.0135
C	0.0038
D	0.0293
E	0.0130
F	0.0066

Quantities based on 5% cross slope.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

HOT MIX ASPHALT DIKES

NO SCALE

RSP A87B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A87B
DATED MAY 20, 2011 - PAGE 120 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A87B

2010 REVISED STANDARD PLAN RSP A87B

6-27-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	18	59.9/63.3	31	31

REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Gurinderpal Bhullar — No. C48815 — Exp. 9-30-14 — 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.

TO ACCOMPANY PLANS DATED 4-1-14

NOTES:

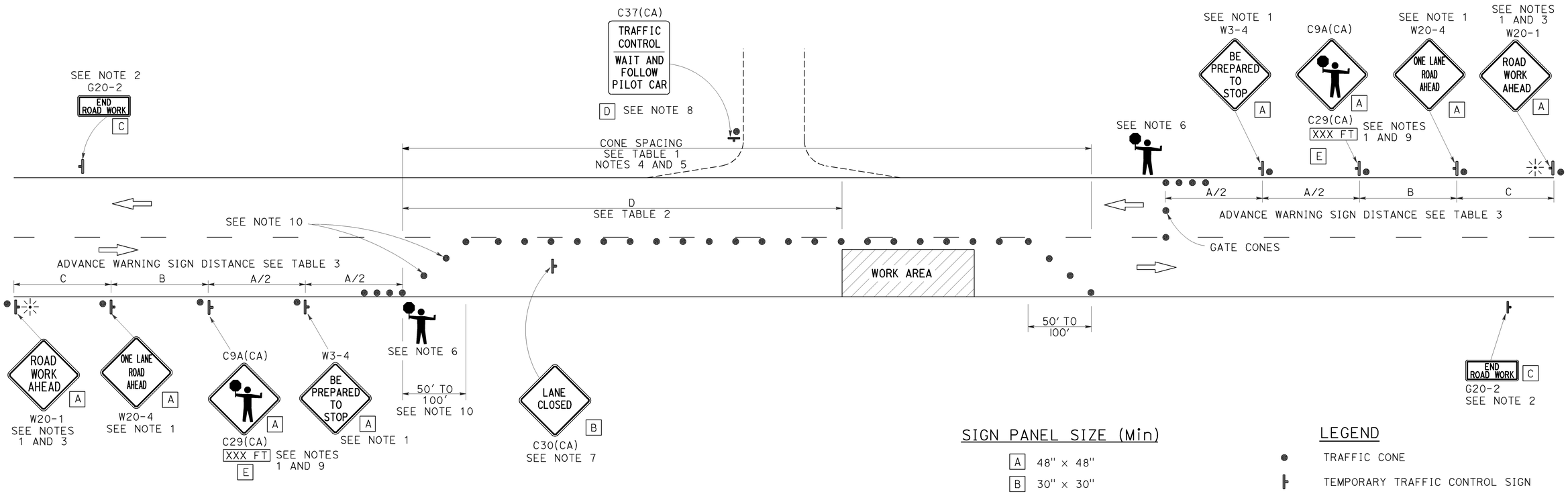
See Revised Standard Plan RSP T9 for tables.

Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as approriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.

California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL



SIGN PANEL SIZE (Min)

A	48" × 48"
B	30" × 30"
C	36" × 18"
D	36" × 42"
E	20" × 7"

LEGEND

- TRAFFIC CONE
- TEMPORARY TRAFFIC CONTROL SIGN
- PORTABLE FLASHING BEACON
- FLAGGER

NOTES:

1. Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
2. A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane control unless the end of work area is obvious, or ends within a larger project's limits.
3. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a W20-4 sign for the first advance warning sign.
4. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
5. Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
6. Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging-station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.
7. Place C30(CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
8. When a pilot car is used, place a C37(CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign with black legend on white background at all intersections, driveways and alleys without a flagger within traffic control area. Signs shall be clean and visible at all times. Where traffic can not be effectively self-regulated, at least one flagger shall be used at each intersection within traffic control area.
9. An optional C29(CA) sign may be placed below the C9A(CA) sign.
10. Either traffic cones or barricades shall be placed on the taper. Barricades shall be Type I, II, or III.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAYS

NO SCALE

RSP T13 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T13
DATED MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T13

2010 REVISED STANDARD PLAN RSP T13

4-2-13