ACNH-X037(158)E

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	1	104

INDEX OF PLANS

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

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN LOS ANGELES COUNTY AT VARIOUS LOCATIONS FROM WB 134 TO NB 170 CONNECTOR OVERCROSSING TO FIGUEROA STREET UNDERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

LOCATION MAP

Begin Work
Sta "134/170 CONNECTOR" 41+27

(1) **LOCATION OF CONSTRUCTION**
WB 134 TO NB 170 CONNECTOR OC
Br No. 53-1452F PM 0.0

End Work
Sta "ROUTE 134" 181+00

BURBANK

CITY LIMITS

Los Angeles River

ROUTE 134

To Burbank

ROUTE 5

GLENDALE

SAN FERNANDO

VERDUGO

N ZOO DR

W DORAN St

Rd

LA RIVER OH

LA River

ROUTE 5

ROUTE 170

To San Fernando

CAMARILLO St

ROUTE 101

To Ventura

ROUTE 134

TUJUNGA Ave

LANKERSHIM Blvd

To Hollywood

ROUTE 101

42+59.49 VENTURA Fwy = 829+98.93 RIVERSIDE Drive

LOS ANGELES

Begin Work
Sta "ROUTE 5" 289+50

To Los Angeles

Southern Pacific Transportation Co

COLORADO Blvd

End Work
Sta "COLORADO St Ext" 0+00

Begin Work
Sta "Rte 134 COLORADO St ON RAMP" 10+00

End Work
Sta "Rte 134 COLORADO St OFF RAMP" 15+00

(2) **LOCATION OF CONSTRUCTION**
RIVERSIDE DRIVE UC
Br No. 53-1345F PM 0.0

(3) **LOCATION OF CONSTRUCTION**
LOS ANGELES RIVER BRIDGE
Br No. 53-1072 PM L4.6

(4) **LOCATION OF CONSTRUCTION**
EDENHURST AVENUE UC
Br No. 53-1108 PM L4.8

(5) **LOCATION OF CONSTRUCTION**
MONTE BONITO DRIVE UC
Br No. 53-1023 L/R PM L9.7

(6) **LOCATION OF CONSTRUCTION**
FIGUEROA STREET UC
Br No. 53-1024 L/R PM L9.9

GLENDALE

CITY LIMITS

Eagle Rock Reservoir

ROUTE 134

HILL DRIVE

HILLMONT Ave

LOS ANGELES

CITY LIMITS

PASADENA

To Pasadena

FIGUEROA St

COLORADO Blvd

AVENUE 64

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

NO SCALE

PROJECT MANAGER: JOHN K. LEE

DESIGN ENGINEER: AINSLEY C. KUNG

1-9-12
PROJECT ENGINEER — DATE
REGISTERED CIVIL ENGINEER

April 16, 2012
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — AINSLEY C KUNG — No. C74005 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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

CONTRACT No.	07-273404
PROJECT ID	0700020838

LAST REVISION: DATE PLOTTED => 19-JUN-2012
01-11-12 TIME PLOTTED => 14:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	2	104

REGISTERED CIVIL ENGINEER — DATE: 1-9-12

4-16-12
PLANS APPROVAL DATE

AINSLEY C KUNG
No. C 74005
Exp. 6/30/13
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

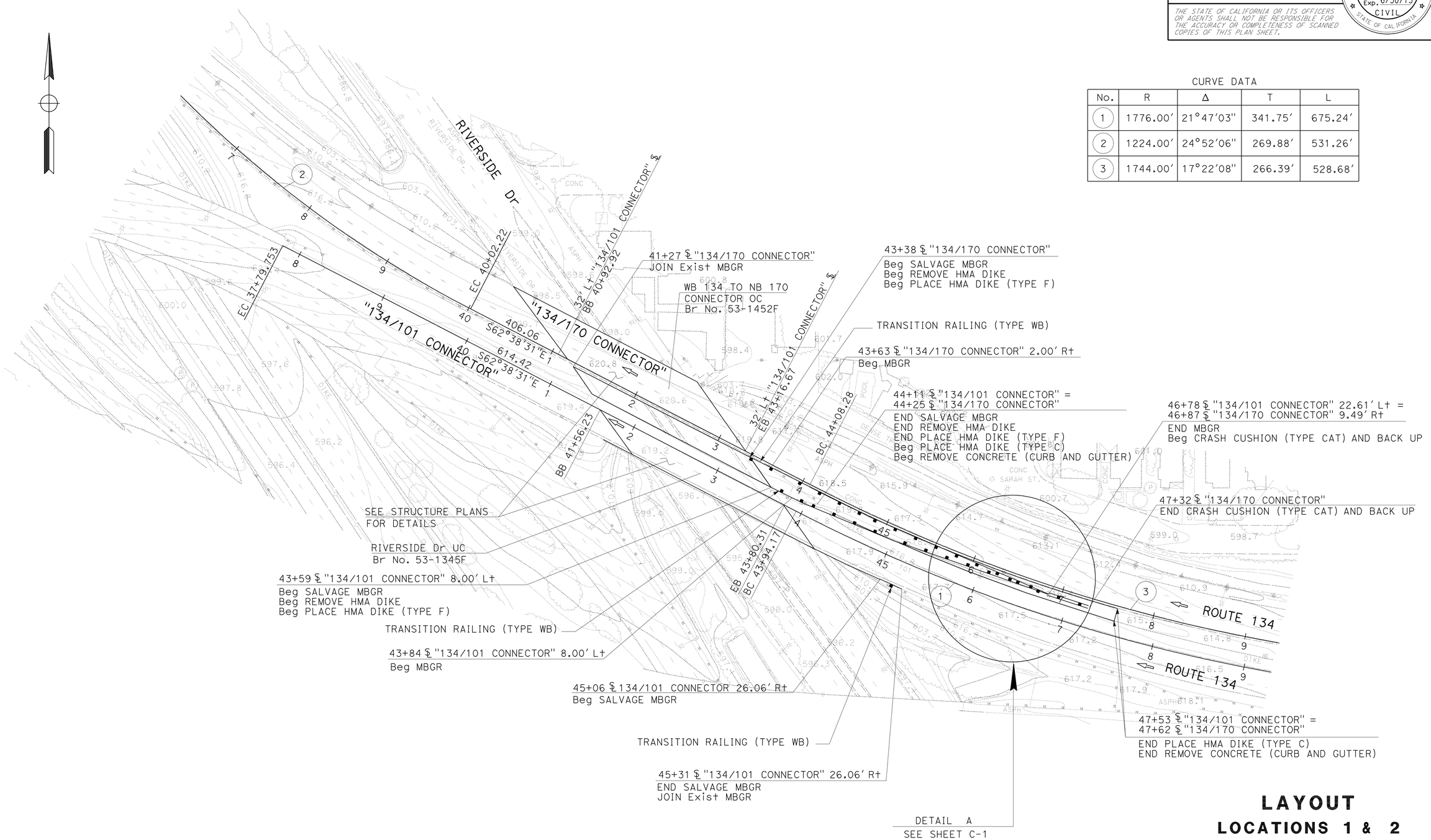
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

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

CURVE DATA

No.	R	Δ	T	L
1	1776.00′	21°47′03"	341.75′	675.24′
2	1224.00′	24°52′06"	269.88′	531.26′
3	1744.00′	17°22′08"	266.39′	528.68′



LAYOUT
LOCATIONS 1 & 2

SCALE: 1" = 50′

L-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

CALCULATED-DESIGNED BY: AINSLEY C KUNG
CHECKED BY: ANTOINE NADER
FUNCTIONAL SUPERVISOR: DEREK HIGA

REVISED BY	DATE REVISED

LAST REVISION | DATE PLOTTED => 17-APR-2012
01-11-12 | TIME PLOTTED => 08:42

BORDER LAST REVISED 7/2/2010

USERNAME => s114640
DGN FILE => 727340eq001.dgn

RELATIVE BORDER SCALE IS IN INCHES: 0 1 2 3

UNIT 1811

PROJECT NUMBER & PHASE 07000208381

NOTE:

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	3	104

REGISTERED CIVIL ENGINEER — 1-9-12 DATE

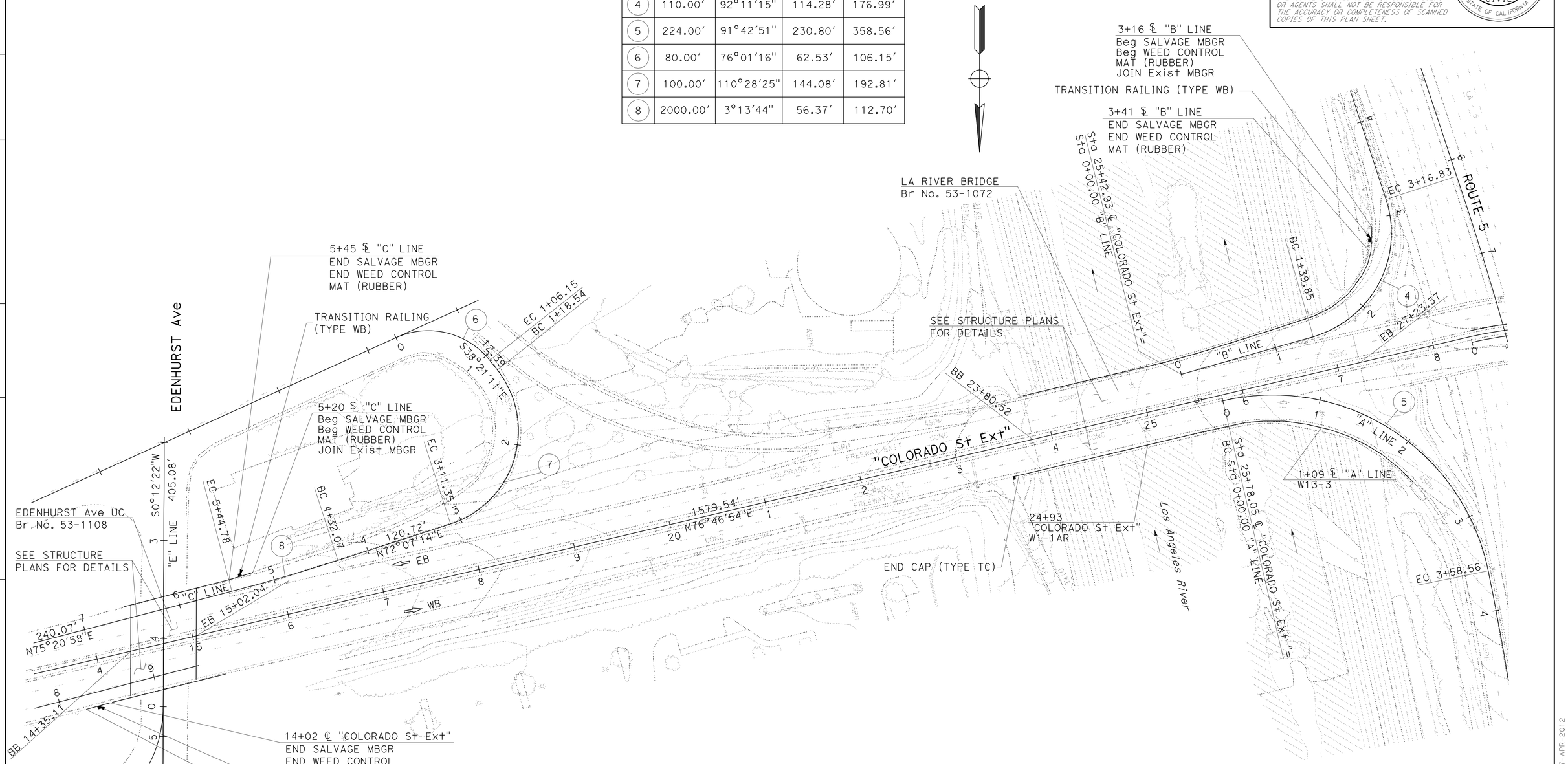
4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
AINSLEY C KUNG
No. C 74005
Exp. 6/30/13
CIVIL
STATE OF CALIFORNIA

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

CURVE DATA

No.	R	Δ	T	L
4	110.00′	92°11′15"	114.28′	176.99′
5	224.00′	91°42′51"	230.80′	358.56′
6	80.00′	76°01′16"	62.53′	106.15′
7	100.00′	110°28′25"	144.08′	192.81′
8	2000.00′	3°13′44"	56.37′	112.70′



LAYOUT
LOCATIONS 3 & 4

SCALE: 1" = 50′

L-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — DESIGN

FUNCTIONAL SUPERVISOR: DEREK HIGA

CALCULATED-DESIGNED BY: AINSLEY C KUNG

CHECKED BY: ANTOINE NADER

REVISED BY | DATE REVISED

LAST REVISION | DATE PLOTTED => 17-APR-2012 | 01-11-12 | TIME PLOTTED => 08:42

BORDER LAST REVISED 7/2/2010

USERNAME => s114640
DGN FILE => 727340eq002.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 1811

PROJECT NUMBER & PHASE 07000208381

NOTE:

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

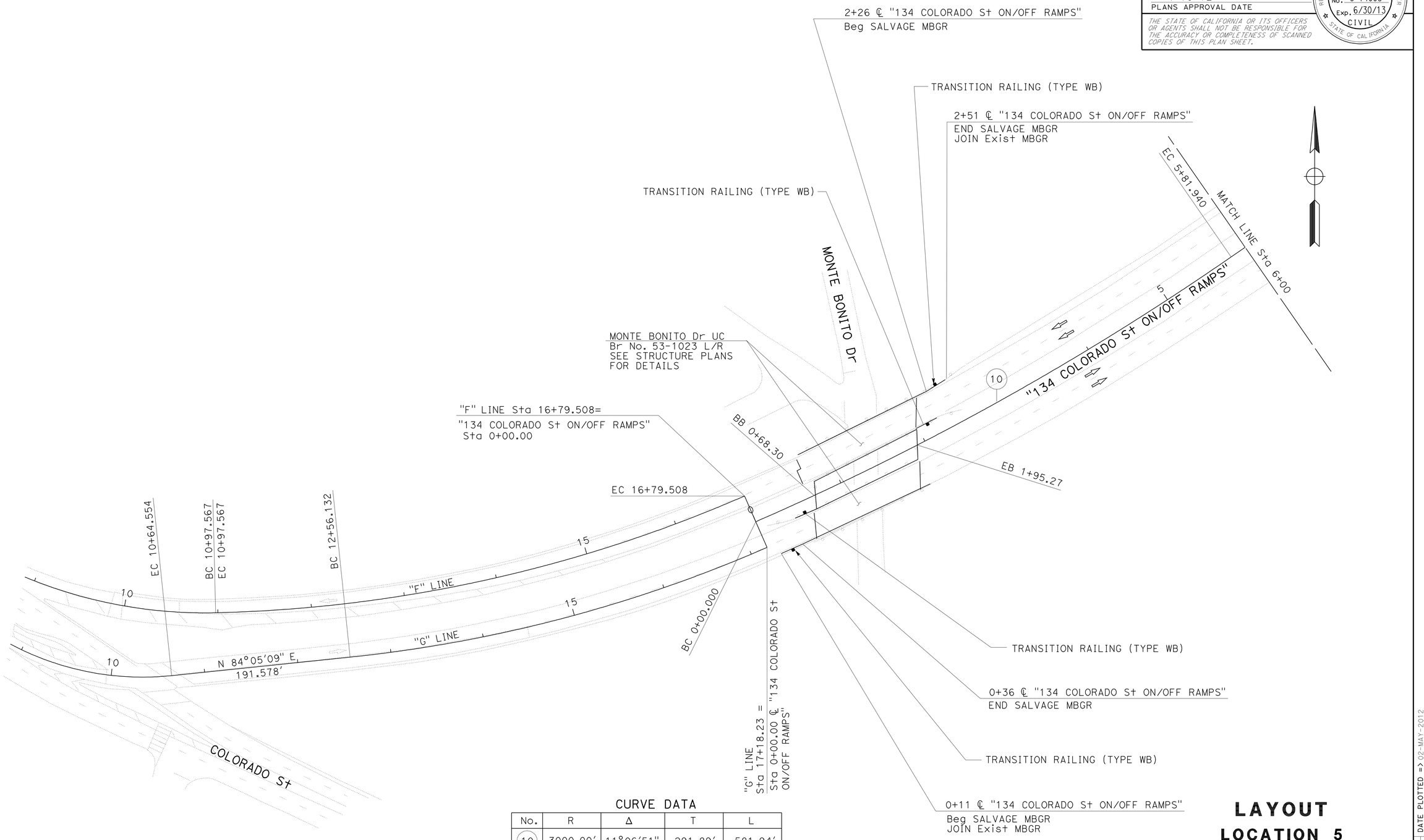
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	4	104

REGISTERED CIVIL ENGINEER — DATE: 1-9-12

AINSLEY C KUNG No. C 74005 Exp. 6/30/13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
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
(10)	3000.00′	11°06′51"	291.89′	581.94′

LAYOUT
LOCATION 5
SCALE: 1" = 50′

L-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

FUNCTIONAL SUPERVISOR: DEREK HIGA
CALCULATED-DESIGNED BY: AINSLEY C KUNG
CHECKED BY: ANTOINE NADER
REVISED BY
DATE REVISED

LAST REVISION: DATE PLOTTED => 02-MAY-2012
01-09-12 | TIME PLOTTED => 10:07

BORDER LAST REVISED 7/2/2010
USERNAME => s121614
DGN FILE => 727340ea003.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1811
PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	5	104

REGISTERED CIVIL ENGINEER — 1-9-12 DATE

AINSLEY C KUNG, No. C 74005, Exp. 6/30/13, CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
PLANS APPROVAL DATE

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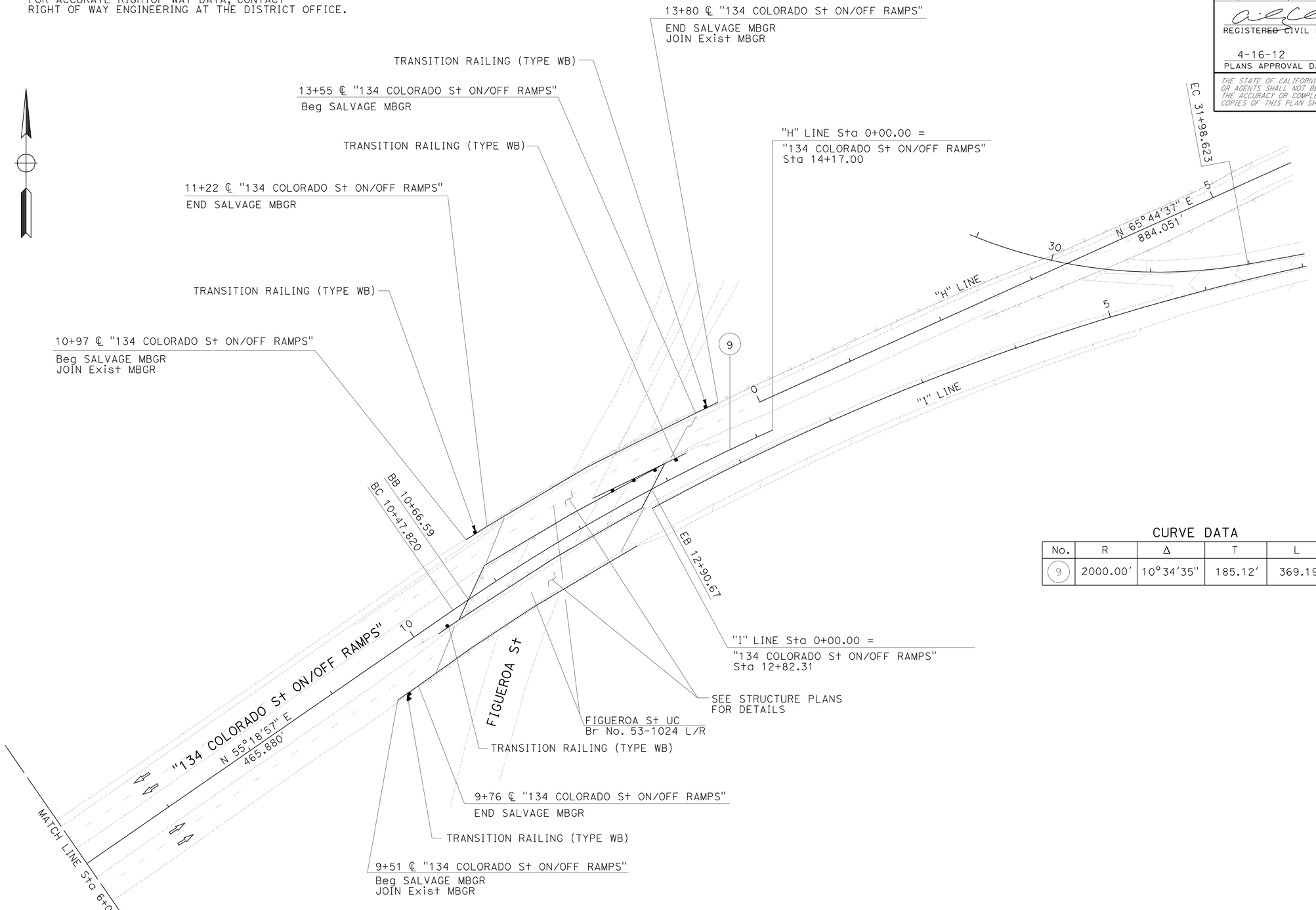
NOTE:
FOR ACCURATE RIGHTOF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



CURVE DATA

No.	R	Δ	T	L
(9)	2000.00′	10°34′35"	185.12′	369.19′

LAYOUT
LOCATION 6
SCALE: 1" = 50′

L-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: DEREK HIGA
CALCULATED-DESIGNED BY: AINSLEY C KUNG
CHECKED BY: ANTOINE NADER
REVISED BY
DATE REVISED

LAST REVISION 01-09-12
DATE PLOTTED => 17-APR-2012
TIME PLOTTED => 10:02

BORDER LAST REVISED 7/2/2010
USERNAME => s109858
DGN FILE => 727340ea004.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1811
PROJECT NUMBER & PHASE 07000208381

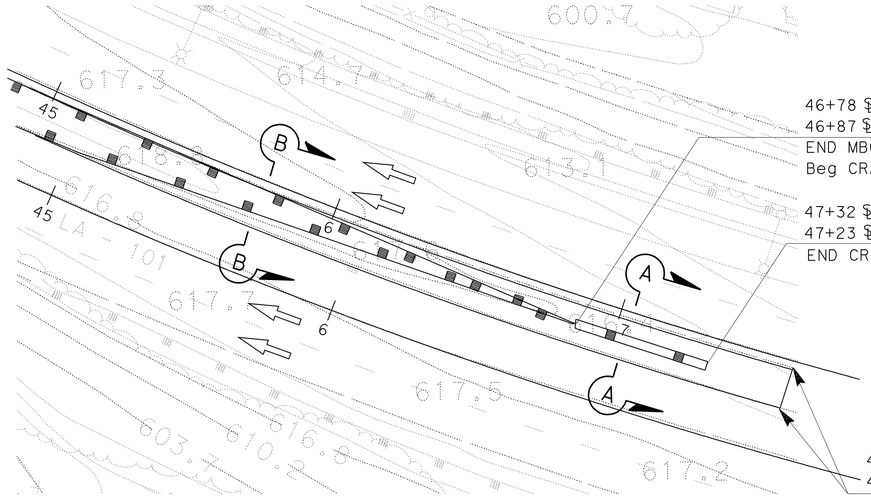
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	6	104

REGISTERED CIVIL ENGINEER — DATE 1-9-12

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
AINSLEY C KUNG
No. C 74005
Exp. 6/30/13
CIVIL
STATE OF CALIFORNIA

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

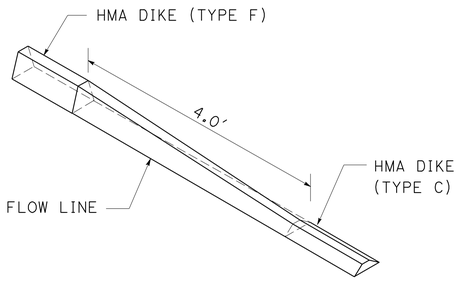


46+78 ℄ "134/101 CONNECTOR" =
46+87 ℄ "134/170 CONNECTOR"
END MBGR
Beg CRASH CUSHION (TYPE CAT)

47+32 ℄ "134/170 CONNECTOR" =
47+23 ℄ "134/101 CONNECTOR"
END CRASH CUSHION (TYPE CAT)

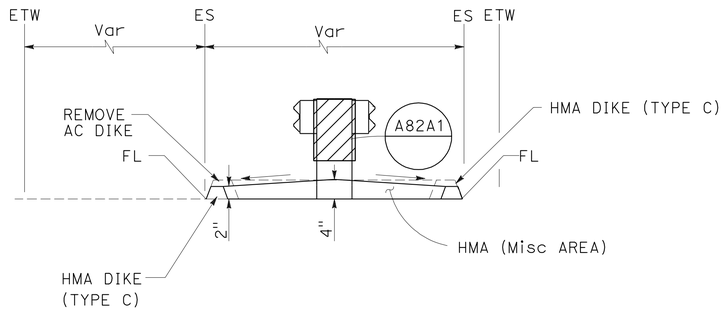
47+62 ℄ 134/170 CONNECTOR =
47+53 ℄ 134/101 CONNECTOR
END PLACE HMA DIKE (TYPE C)
END REMOVE CONCRETE (CURB AND GUTTER)

DETAIL A

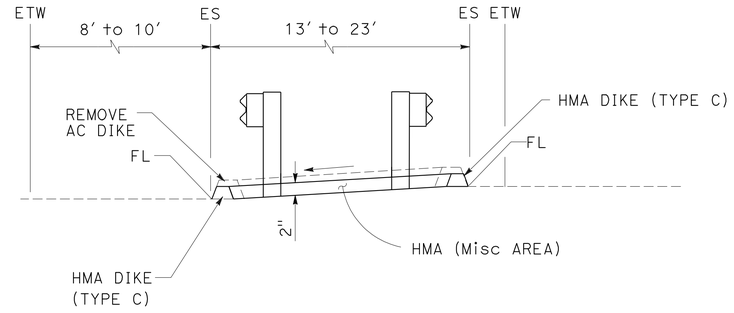


HMA DIKE TRANSITION

TYPE C TO TYPE F



SECTION A-A



SECTION B-B

PLACE HMA (Misc AREA)

CONSTRUCTION DETAILS

NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

FUNCTIONAL SUPERVISOR: DEREK HIIGA
CALCULATED-DESIGNED BY: AINSLEY C KUNG
CHECKED BY: ANTOINE NADER
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 17-APR-2012
TIME PLOTTED => 09:59

BORDER LAST REVISED 7/2/2010
USERNAME => s109858
DGN FILE => 727340ga001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1811
PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	7	104

REGISTERED ~~CIVIL ENGINEER~~ 1-9-12 DATE

AINSLEY C KUNG No. C 74005 Exp. 6/30/13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
PLANS APPROVAL DATE

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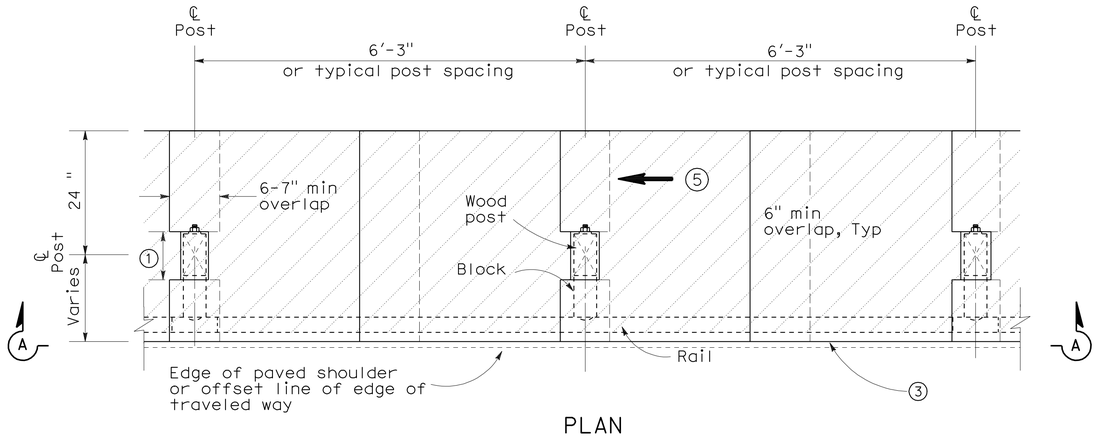
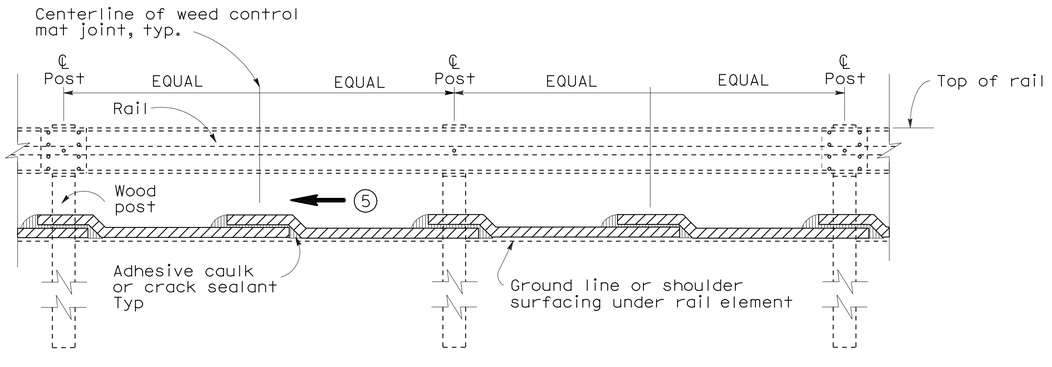
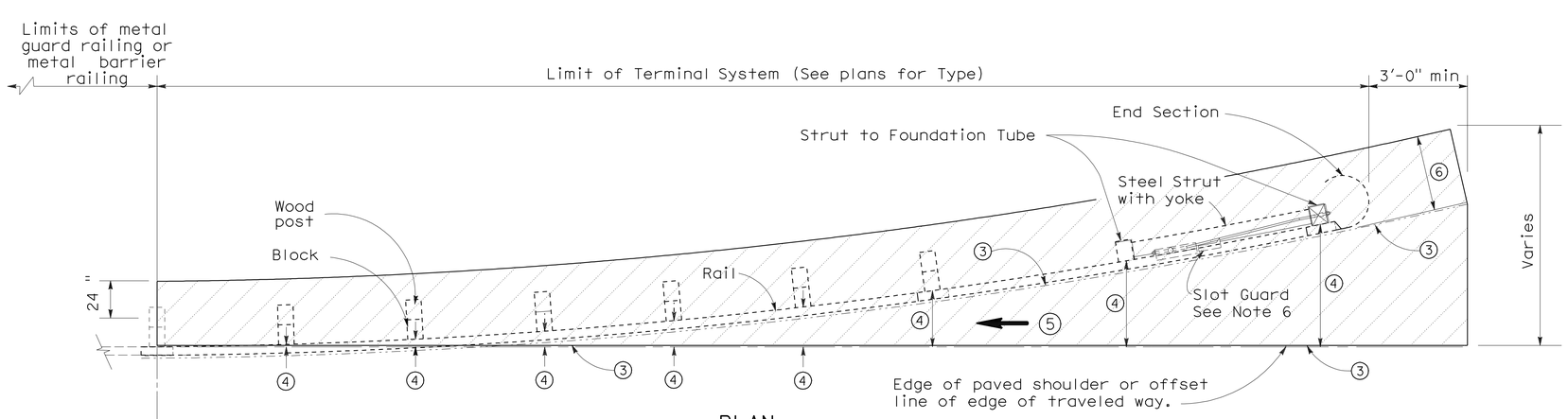


PLAN



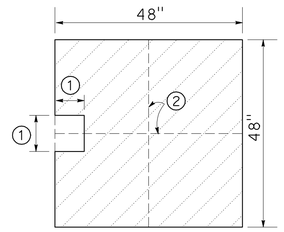
SECTION A-A

WEED CONTROL MAT (RUBBER) UNDER MBGR



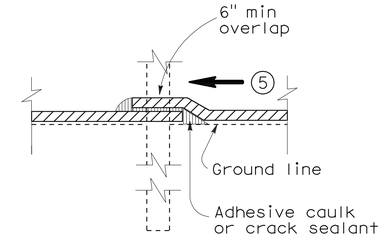
PLAN

WEED CONTROL MAT (RUBBER) AT MBGR TERMINAL SYSTEM

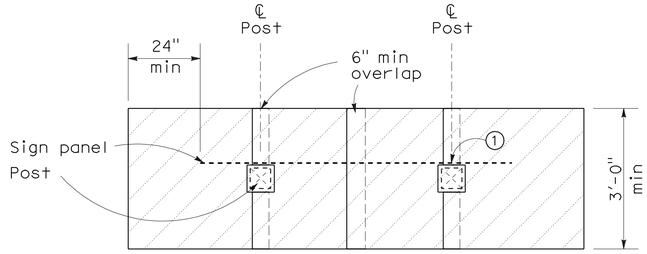


PLAN

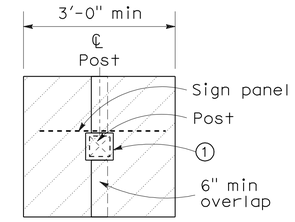
WEED CONTROL MAT (RUBBER)
TYPICAL TILE SECTION



TYPICAL SECTION at Sign Post



PLAN
(Two Post Sign)



PLAN
(Single Post Sign)

WEED CONTROL MAT (RUBBER) UNDER ROADSIDE SIGN

LEGEND:

Weed control mat (Rubber)

NOTES:

1. Cutout dimensions to fit snugly around wood or metal post for MBGR. (See plans for exact size and dimensions)
2. Weed control mat (rubber) tile may be comprised of four - 24" x 24" tile mats.
3. Trim weed control mat (rubber) flush with edge of shoulder, pavement or weed mat. Fill joints and openings with adhesive caulking or crack sealant.
4. See Standard Plans for corresponding post offset dimensions for terminal system.
5. Lap weed control mat in direction of water flow.
6. Dimension: 3'-0" or greater. Align with rail at end section.

CONSTRUCTION DETAILS

NO SCALE

C-2

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY: AINSLEY C KUNG
CHECKED BY: ANTOINE NADER
FUNCTIONAL SUPERVISOR: DEREK HIGA
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 17-APR-2012
TIME PLOTTED => 09:59

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	8	104

Aghajanian 1-17-12
REGISTERED CIVIL ENGINEER DATE

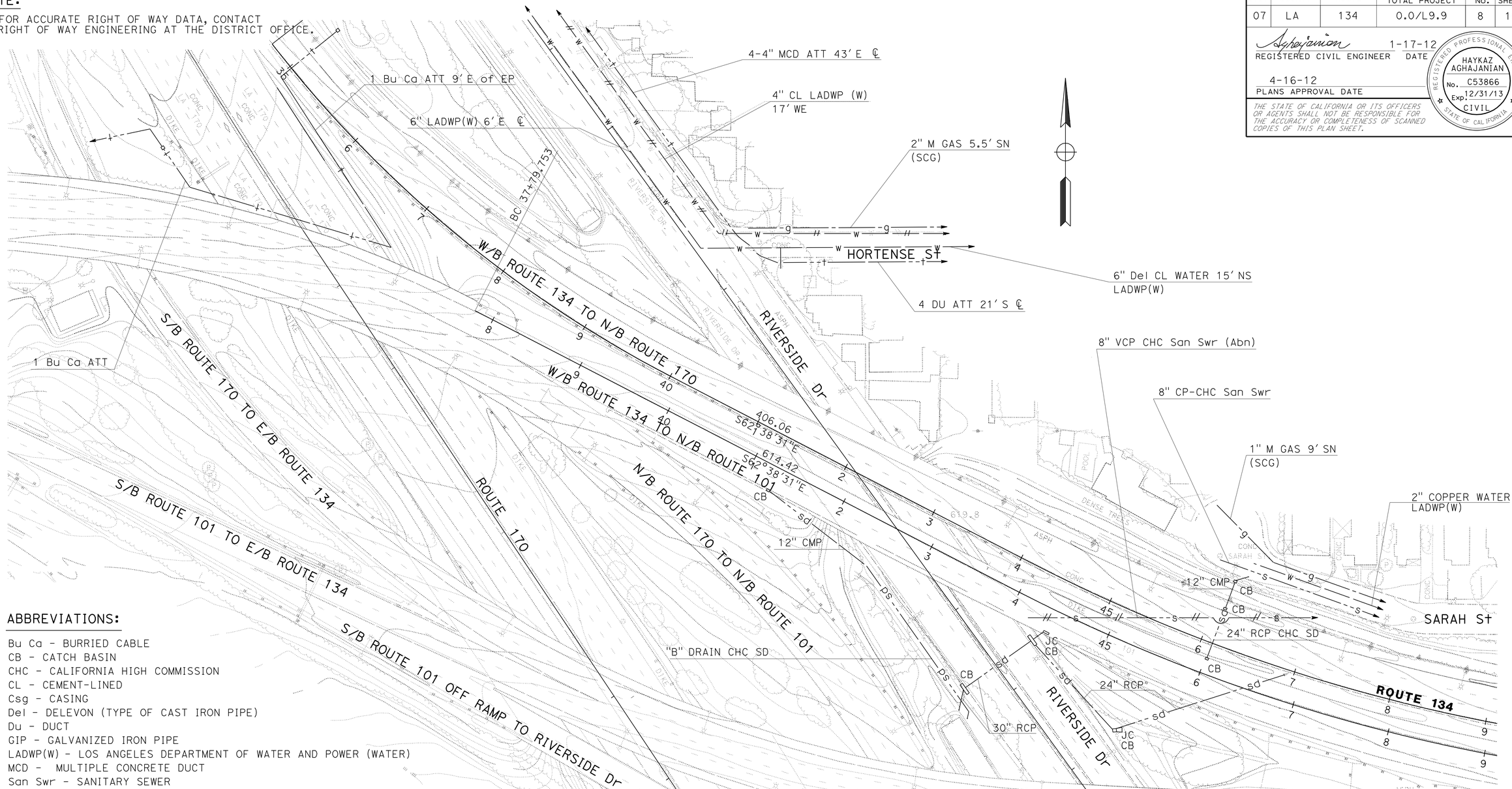
4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
HAYKAZ AGHAJANIAN
No. C53866
Exp. 12/31/13
CIVIL
STATE OF CALIFORNIA

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

NOTE:

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



ABBREVIATIONS:

Bu Ca - BURRIED CABLE
CB - CATCH BASIN
CHC - CALIFORNIA HIGH COMMISSION
CL - CEMENT-LINED
Csg - CASING
Del - DELEVON (TYPE OF CAST IRON PIPE)
Du - DUCT
GIP - GALVANIZED IRON PIPE
LADWP(W) - LOS ANGELES DEPARTMENT OF WATER AND POWER (WATER)
MCD - MULTIPLE CONCRETE DUCT
San Swr - SANITARY SEWER
Spl - SPLICE
TRD - TRANSITE DUCT

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. LOCATION OF UTILITY FACILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
3. UTILITY OWNERSHIP ON THIS PROJECT:

ELECTRIC - LOS ANGELES DEPARTMENT OF WATER AND POWER	LADWP(P)
GAS - SOUTHERN CALIFORNIA GAS COMPANY	(SCG)
WATER - LOS ANGELES DEPARTMENT OF WATER AND POWER	LADWP(W)
SEWER - LOS ANGELES COUNTY SEWER	
TELEPHONE - AMERICAN TELEPHONE AND TELEGRAPH	(ATT)

UTILITY PLAN

SCALE: 1" = 50'

U-1

APPROVED FOR UTILITY INFORMATION ONLY

REVISED BY | DATE REVISED
ANTOINE NADER | H. AGHAJANIAN
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: CELINA AVILES
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 17-APR-2012
01-19-12 | TIME PLOTTED => 09:59

BORDER LAST REVISED 7/2/2010
USERNAME => s109858
DGN FILE => 727340ka001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1811
PROJECT NUMBER & PHASE 07000208381

NOTE:

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	9	104

Aghajanian 1-17-12
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
HAYKAZ AGHAJANIAN
No. C53866
Exp 12/31/13
CIVIL
STATE OF CALIFORNIA

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

Bu Ca ATT 72' W ℄
OFF RAMP
ON RAMP
1 Bu Ca ATT 5' E OF EP
ROUTE 5
N97°19'28"W 1000.00'
24" RCP SD
GDO
18" APC
G2
JC3
ON RAMP
COLORADO STREET ENTRANCE
COLORADO STREET EXIT
ON RAMP
OFF RAMP
18" RCP SD
Spl. BOX
CB-37
G-1
1 WIRE IN 0.75" GIP Csg.
1 Bu Ca 2' EW (Abn)
ATT Du
12" SLOTTED CSP
2'-6" CMP
JC-3
G-1
33" RCP SD
2 Bu WIRE ATT 68' E ℄
DENSE TREES
ASPH
CONC

APPROVED FOR UTILITY INFORMATION ONLY

UTILITY PLAN

SCALE: 1" = 50'

U-2

CALCULATED-DESIGNED BY	ANTOINE NADER	REVISED BY	
CHECKED BY	H. AGHAJANIAN	DATE REVISED	
FUNCTIONAL SUPERVISOR	CELINA AVILES		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION 00-00-00
DATE PLOTTED => 02-MAY-2012
TIME PLOTTED => 10:08

BORDER LAST REVISED 7/2/2010 | USERNAME => s121614 | DGN FILE => 727340ka002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1811 | PROJECT NUMBER & PHASE 07000208381

NOTE:

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

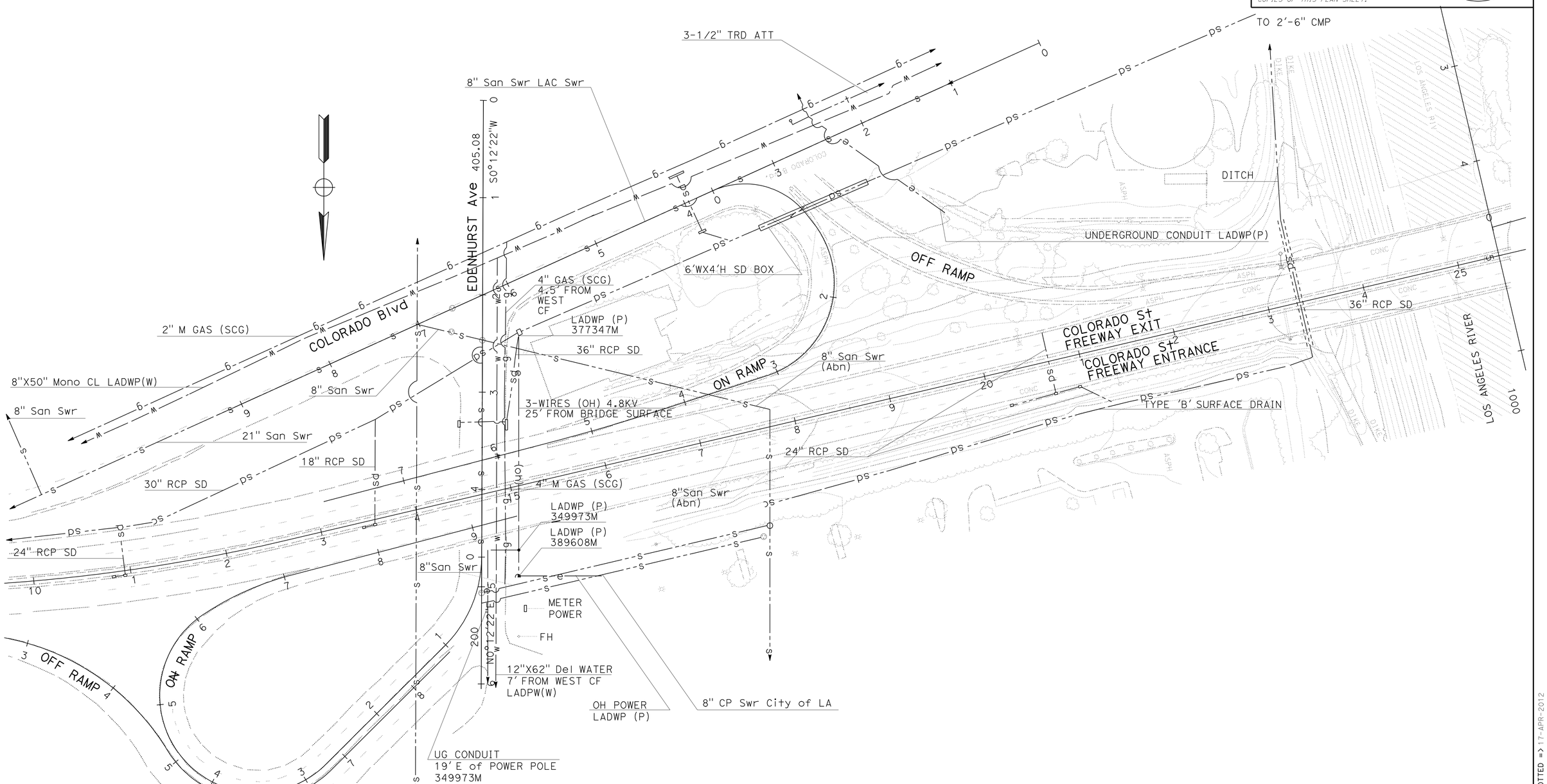
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	10	104

Aghajanian 1-17-12
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
HAYKAZ AGHAJANIAN
No. C53866
Exp. 12/31/13
CIVIL
STATE OF CALIFORNIA

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



UTILITY PLAN

SCALE: 1" = 50'

U-3

APPROVED FOR UTILITY INFORMATION ONLY

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: H. AGHAJANIAN

FUNCTIONAL SUPERVISOR: CELINA AVILES

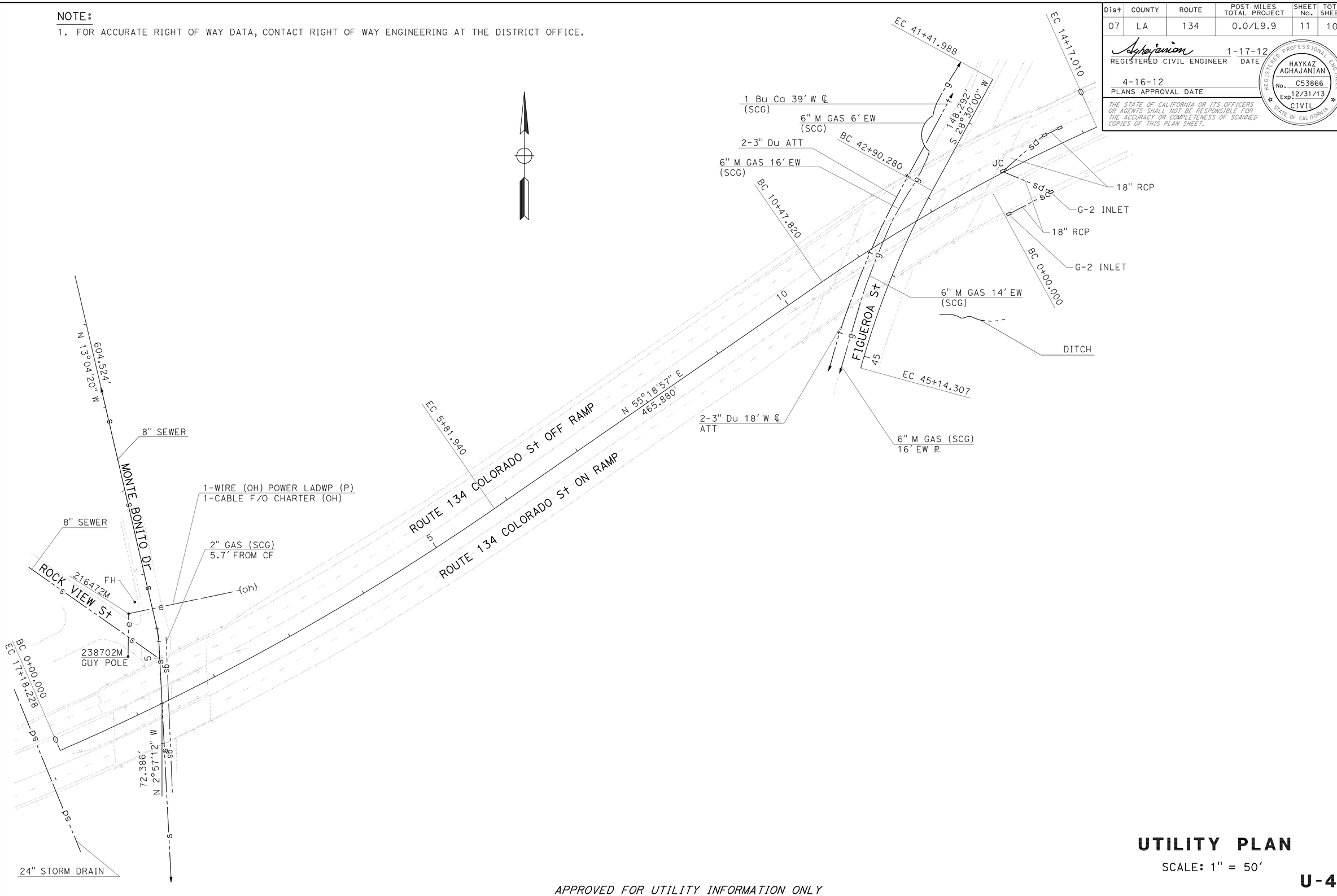
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 17-APR-2012
01-19-12 | TIME PLOTTED => 10:00

BORDER LAST REVISED 7/2/2010 | USERNAME => s109858 | DGN FILE => 727340ka003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1811 | PROJECT NUMBER & PHASE 07000208381

NOTE:

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



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	11	104

Aghajanian 1-17-12
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
HAYKAZ AGHAJANIAN
No. C53866
Exp 12/31/13
CIVIL
STATE OF CALIFORNIA

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

CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: H. AGHAJANIAN
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR: CELINA AVILES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

APPROVED FOR UTILITY INFORMATION ONLY

UTILITY PLAN

SCALE: 1" = 50'

U-4

LAST REVISION 00-00-00
DATE PLOTTED => 17-APR-2012
TIME PLOTTED => 10:00

BORDER LAST REVISED 7/2/2010
USERNAME => s109858
DGN FILE => 727340ka004.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1811
PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	12	104

REGISTERED CIVIL ENGINEER — DATE 1-9-12

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
AINSLEY C KUNG
No. C 74005
Exp. 6/30/13
CIVIL
STATE OF CALIFORNIA

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

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No. (X)	SIGN CODE		PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	No. OF SIGNS
	FEDERAL	CALIFORNIA				
1		C40(CA)	144" x 60"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	2 - 6" x 8"	9
2	W20-1		48" x 48"	ROAD WORK AHEAD	1 - 6" x 6"	9
3	G20-2		48" x 24"	END ROAD WORK	1 - 4" x 6"	7

NOTES:

1. LOCATIONS OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
2. FOR ADDITIONAL CONSTRUCTION AREA SIGNS, SEE STAGE CONSTRUCTION AND TRAFFIC HANDLING PLANS.
3. C40(CA) SIGNS SHALL BE BLACK LEGNED/BORDER ON WHITE RETROREFLECTIVE BACKGROUND.

LOCATIONS 1 & 2

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
AINSLEY C KUNG	ANTOINE NADER		

FUNCTIONAL SUPERVISOR: DEREK HIGA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 17-APR-2012
00-00-00 | TIME PLOTTED => 10:00

BORDER LAST REVISED 7/2/2010 | USERNAME => s109858 | DGN FILE => 7273401a001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1811 | PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	13	104

REGISTERED CIVIL ENGINEER — DATE: 1-9-12

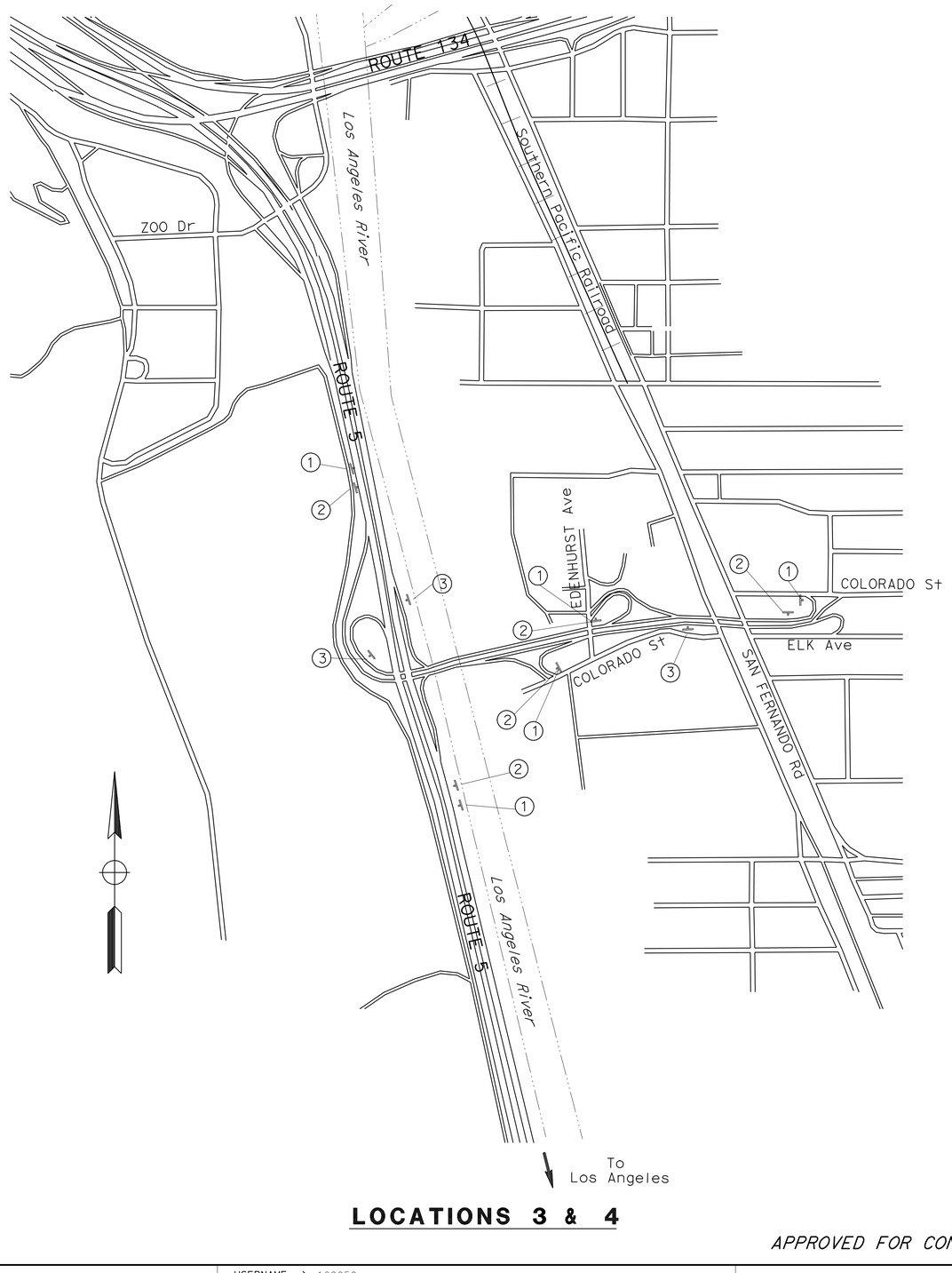
REGISTERED PROFESSIONAL ENGINEER
AINSLEY C KUNG
No. C 74005
Exp. 6/30/13
CIVIL
STATE OF CALIFORNIA

4-16-12
PLANS APPROVAL DATE

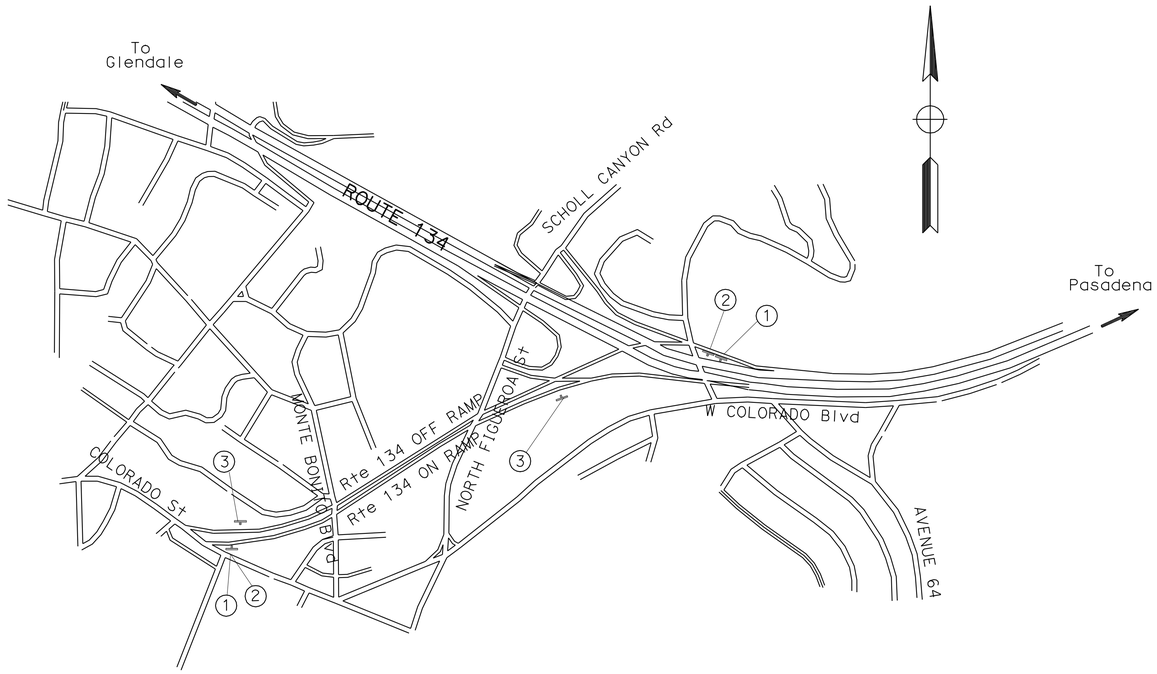
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

1. LOCATIONS OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
2. FOR ADDITIONAL CONSTRUCTION AREA SIGNS, SEE STAGE CONSTRUCTION AND TRAFFIC HANDLING PLANS.



LOCATIONS 3 & 4



LOCATIONS 5 & 6

CONSTRUCTION AREA SIGNS

NO SCALE

CS-2

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CALCULATED-DESIGNED BY		
CHECKED BY		
FUNCTIONAL SUPERVISOR	DEREK HIGA	
REVISED BY	AINSLEY C KUNG	
DATE REVISED	ANTOINE NADER	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

LAST REVISION | DATE PLOTTED => 17-APR-2012
00-00-00 | TIME PLOTTED => 10:00

BORDER LAST REVISED 7/2/2010 | USERNAME => s109858 | DGN FILE => 7273401a002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 00000000001

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	14	104

REGISTERED CIVIL ENGINEER — DATE: 1-9-12

PLANS APPROVAL DATE: 4-16-12

REGISTERED PROFESSIONAL ENGINEER — AINSLEY C KUNG — No. C 74005 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

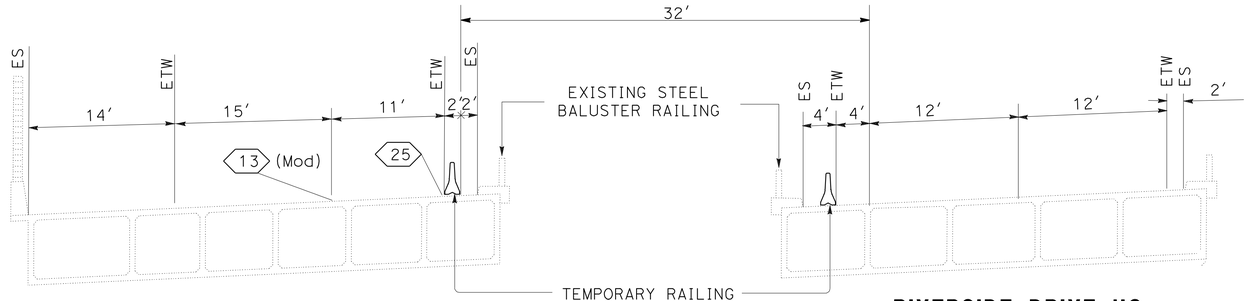
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

LEGENDS:

- DIRECTION OF TRAFFIC
- CHANNELIZER (SURFACE MOUNTED)
- TEMPORARY RAILING (TYPE K)
- TEMPORARY CRASH CUSHION
- No. — TEMPORARY TRAFFIC STRIPE DETAIL No.
- ROADSIDE SIGN ONE-POST

NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.



W/B 134 TO N/B 170 CONNECTOR

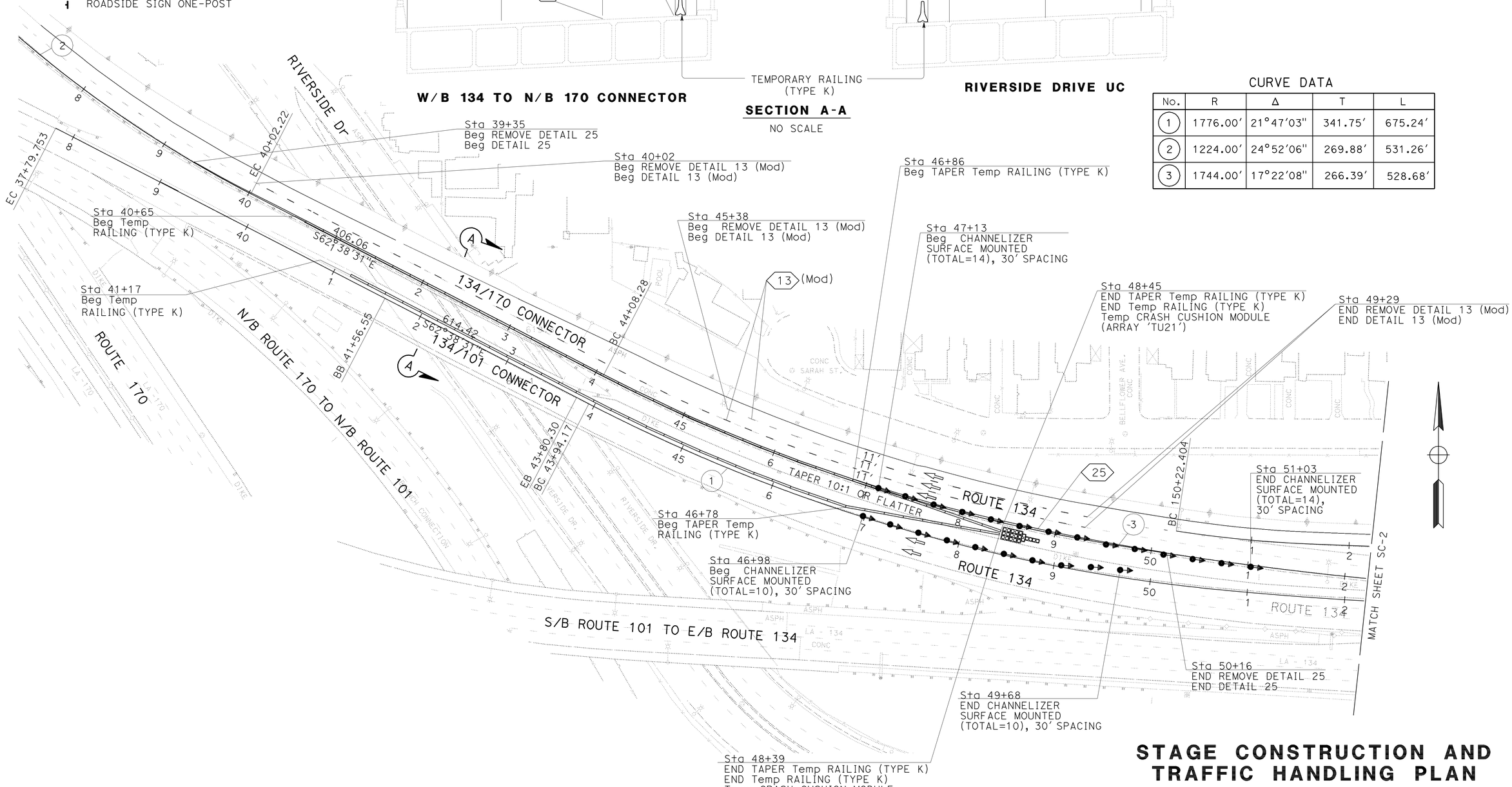
SECTION A-A

NO SCALE

RIVERSIDE DRIVE UC

CURVE DATA

No.	R	Δ	T	L
1	1776.00′	21°47′03"	341.75′	675.24′
2	1224.00′	24°52′06"	269.88′	531.26′
3	1744.00′	17°22′08"	266.39′	528.68′



STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 1 & 2

STAGE 1

SCALE: 1" = 50′

SC-1

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: AINSLEY C KUNG
FUNCTIONAL SUPERVISOR: DEREK HIGA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

LAST REVISION: 11-21-11
DATE PLOTTED => 17-APR-2012
TIME PLOTTED => 09:29

BORDER LAST REVISED 7/2/2010
USERNAME => s114926
DGN FILE => 727340ma001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1811
PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	15	104

REGISTERED CIVIL ENGINEER — DATE 1-9-12

REGISTERED PROFESSIONAL ENGINEER — AINSLEY C KUNG — No. C 74005 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

4-16-12
PLANS APPROVAL DATE

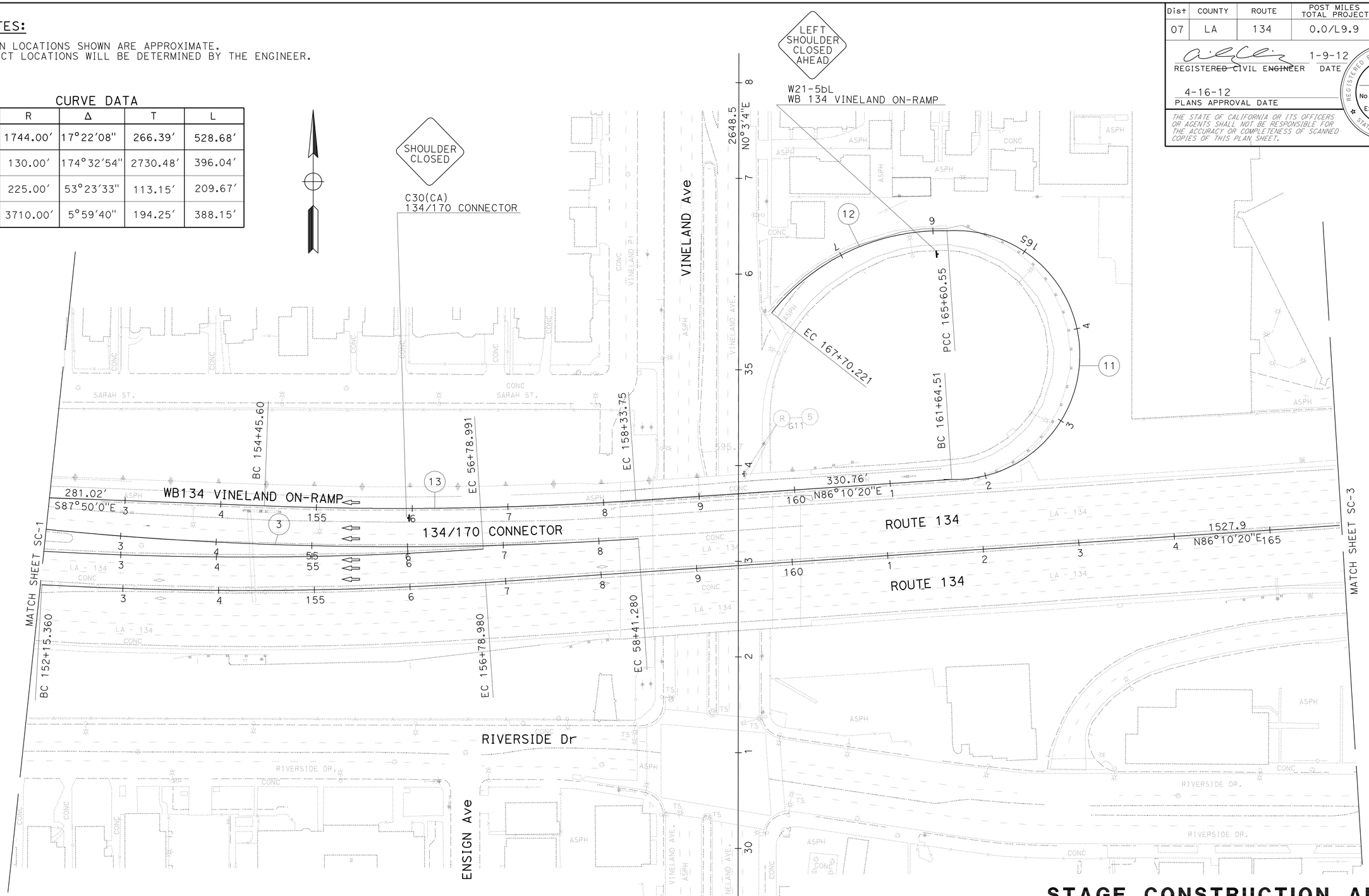
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

CURVE DATA

No.	R	Δ	T	L
(3)	1744.00′	17°22′08"	266.39′	528.68′
(11)	130.00′	174°32′54"	2730.48′	396.04′
(12)	225.00′	53°23′33"	113.15′	209.67′
(13)	3710.00′	5°59′40"	194.25′	388.15′



STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 1 & 2

STAGE 1

SCALE: 1" = 50′

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

SC-2

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: AINSLEY C KUNG
FUNCTIONAL SUPERVISOR: DEREK HIGA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 17-APR-2012
11-21-11 | TIME PLOTTED => 09:29

BORDER LAST REVISED 7/2/2010 | USERNAME => s114926 | DGN FILE => 727340ma002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1811 | PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	16	104

REGISTERED CIVIL ENGINEER — 1-9-12 DATE

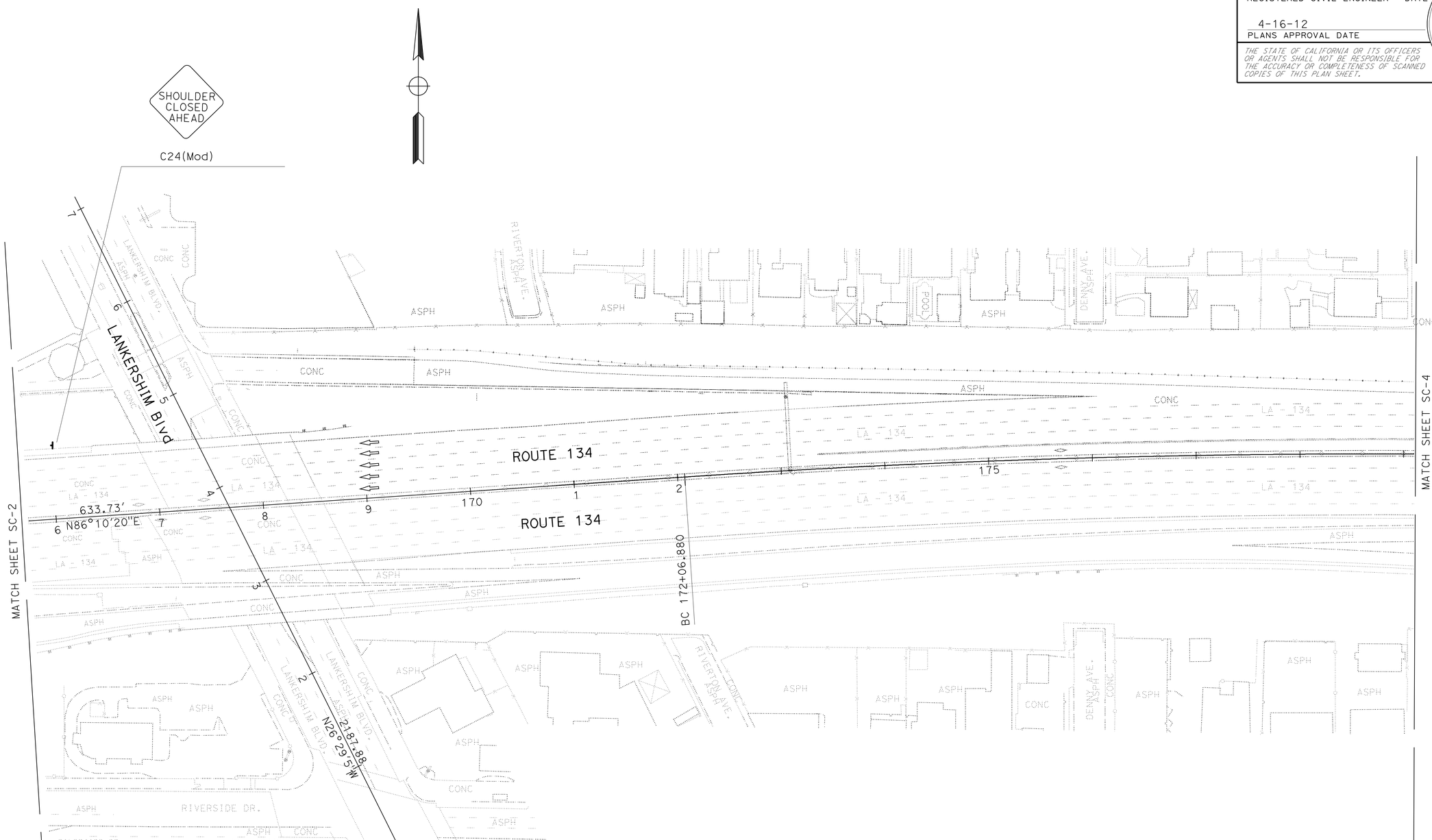
AINSLEY C KUNG No. C 74005 Exp. 6/30/13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
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.

NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.



STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 1 & 2

STAGE 1

SCALE: 1" = 50'

SC-3

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY
ANTOINE NADER

CHECKED BY
AINSLEY C KUNG

FUNCTIONAL SUPERVISOR
DEREK HIGA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION
DATE PLOTTED => 17-APR-2012
TIME PLOTTED => 09:29
11-21-11

BORDER LAST REVISED 7/2/2010

USERNAME => s114926
DGN FILE => 727340ma003.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 1811

PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	17	104

REGISTERED ~~CIVIL ENGINEER~~ 1-9-12 DATE

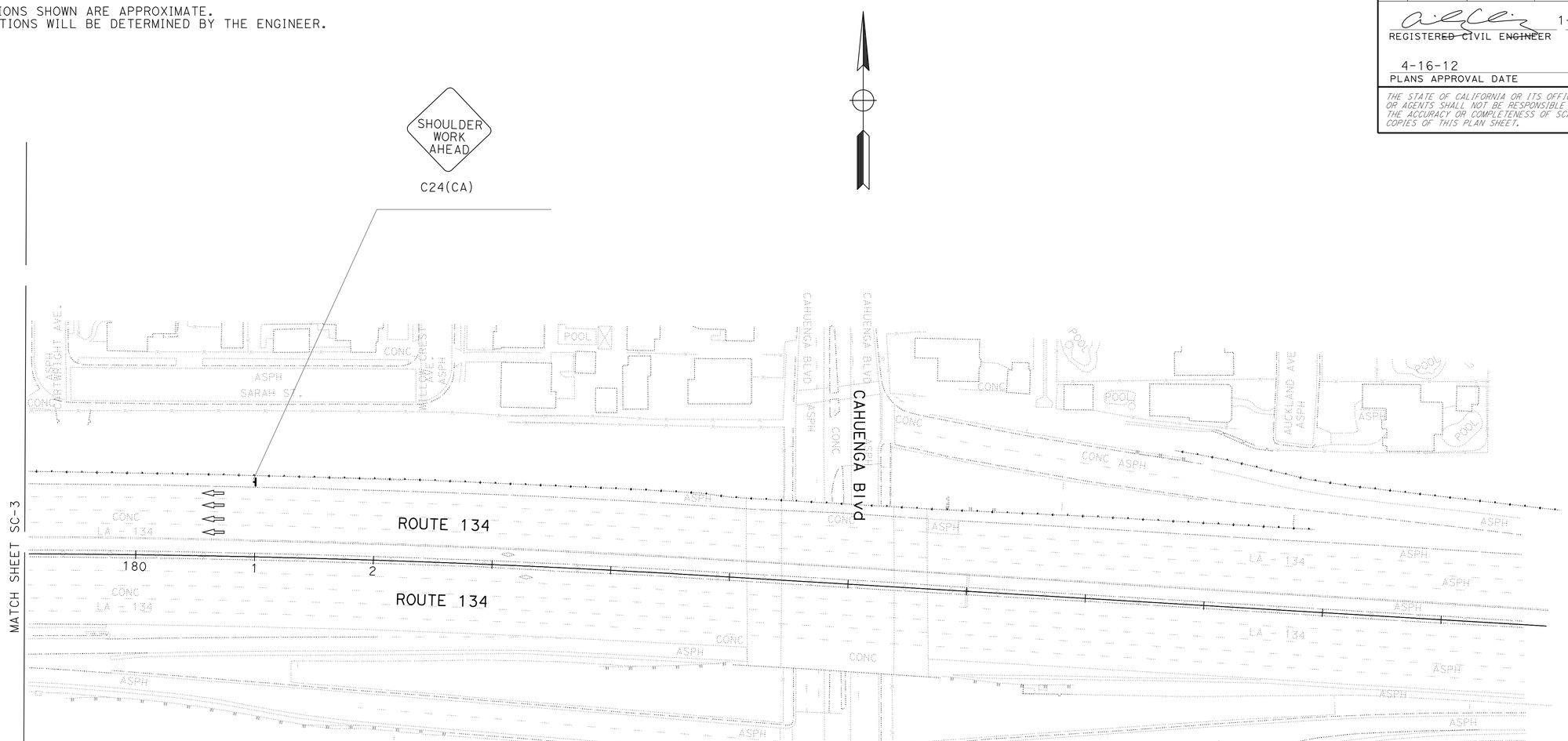
AINSLEY C KUNG No. C 74005 Exp. 6/30/13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
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.

NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.



APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 1 & 2

STAGE 1

SCALE: 1" = 50'

SC-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

FUNCTIONAL SUPERVISOR: DEREK HIGA

CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: AINSLEY C KUNG

REVISED BY
DATE REVISED

LAST REVISION 11-21-11
DATE PLOTTED => 17-APR-2012
TIME PLOTTED => 09:29

BORDER LAST REVISED 7/2/2010

USERNAME => s114926
DGN FILE => 727340ma004.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 1811

PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	18	104

REGISTERED CIVIL ENGINEER — 1-9-12 DATE

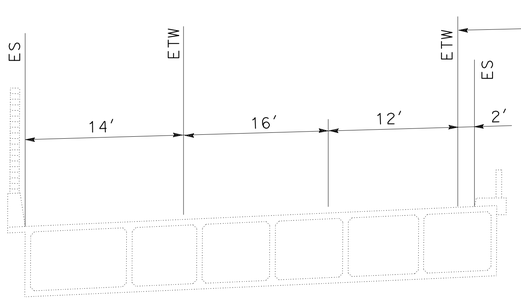
4-16-12
PLANS APPROVAL DATE

AINSLEY C KUNG No. C 74005 Exp. 6/30/13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

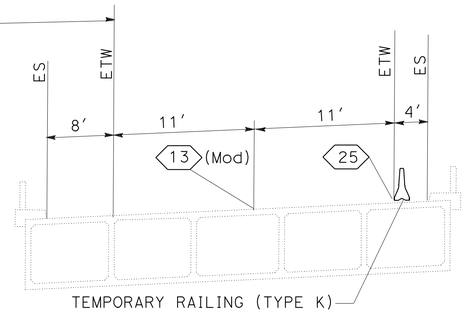
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

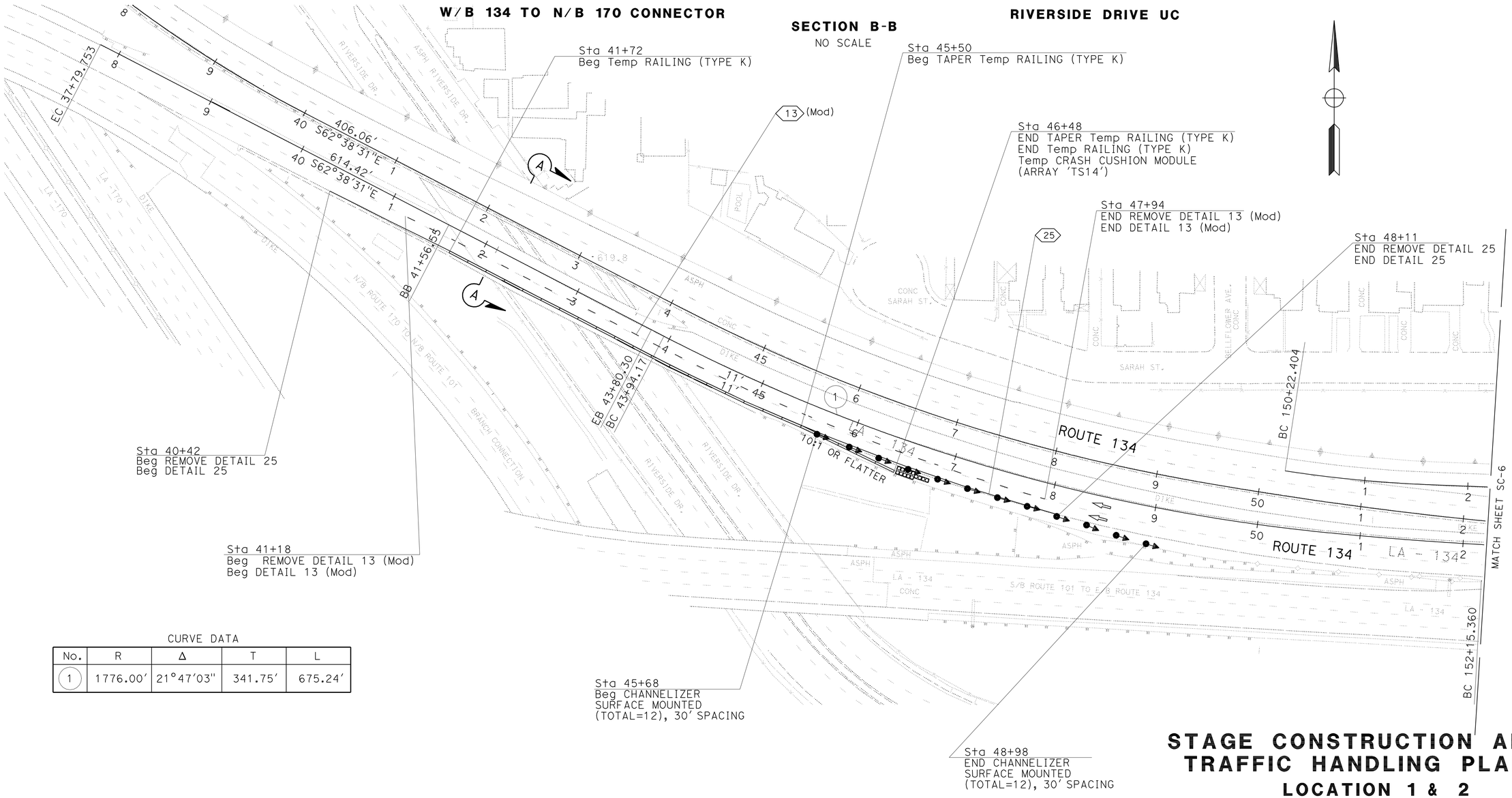


W/B 134 TO N/B 170 CONNECTOR



RIVERSIDE DRIVE UC

SECTION B-B
NO SCALE



CURVE DATA

No.	R	Δ	T	L
(1)	1776.00′	21°47′03″	341.75′	675.24′

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 1 & 2

STAGE 2

SCALE: 1" = 50′

SC-5

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

LAST REVISION | DATE PLOTTED => 17-APR-2012
11-21-11 | TIME PLOTTED => 09:29

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

FUNCTIONAL SUPERVISOR: DEREK HIGA

CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: AINSLEY C KUNG

REVISED BY | DATE REVISED

BORDER LAST REVISED 7/2/2010 | USERNAME => s114926 | DGN FILE => 727340ma005.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1811 | PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	19	104

REGISTERED CIVIL ENGINEER — DATE 1-9-12

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
AINSLEY C KUNG
No. C 74005
Exp. 6/30/13
CIVIL
STATE OF CALIFORNIA

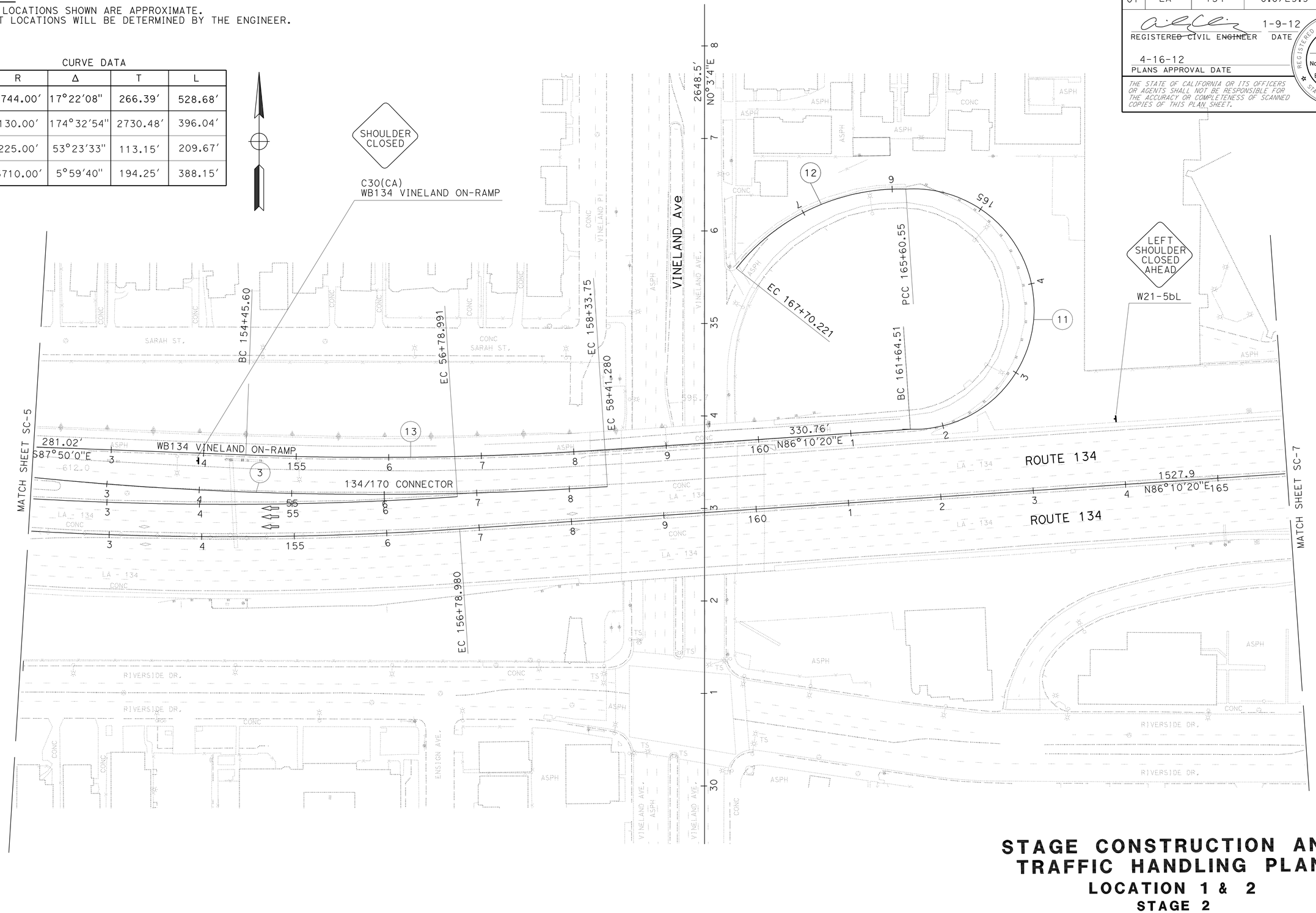
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

CURVE DATA

No.	R	Δ	T	L
(3)	1744.00′	17°22′08"	266.39′	528.68′
(11)	130.00′	174°32′54"	2730.48′	396.04′
(12)	225.00′	53°23′33"	113.15′	209.67′
(13)	3710.00′	5°59′40"	194.25′	388.15′



STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 1 & 2

STAGE 2

SCALE: 1" = 50′

SC-6

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

REVISED BY | DATE REVISED
ANTOINE NADER | AINSLEY C KUNG
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: DEREK HIGA
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

LAST REVISION | DATE PLOTTED => 17-APR-2012
11-21-11 | TIME PLOTTED => 09:39

BORDER LAST REVISED 7/2/2010 | USERNAME => s114926 | DGN FILE => 727340ma006.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1811 | PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	20	104

REGISTERED CIVIL ENGINEER — DATE: 1-9-12

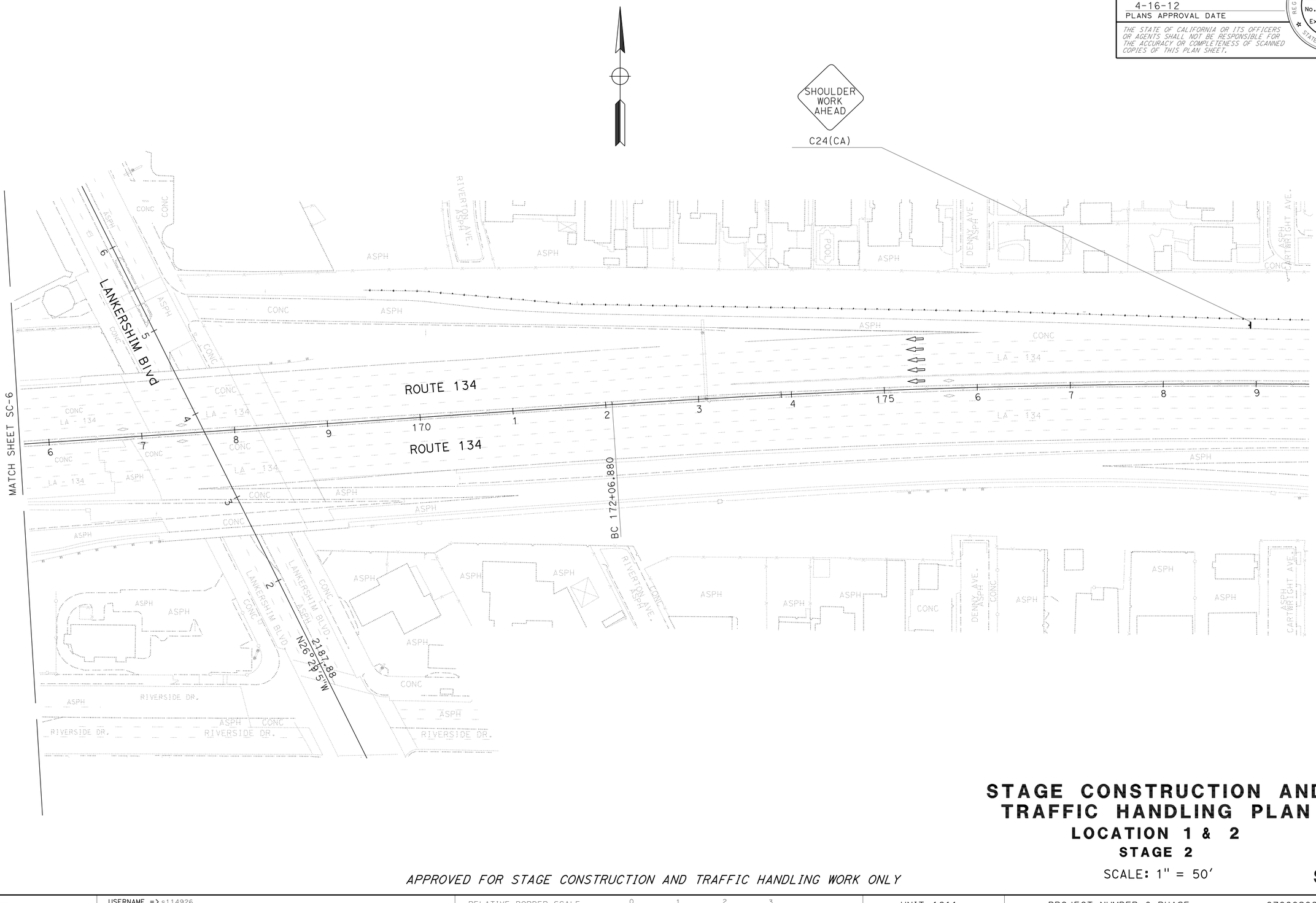
AINSLEY C KUNG
No. C 74005
Exp. 6/30/13
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

4-16-12
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.

NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.



STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 1 & 2

STAGE 2

SCALE: 1" = 50'

SC-7

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

FUNCTIONAL SUPERVISOR: DEREK HIGA

CALCULATED-DESIGNED BY
CHECKED BY

ANTOINE NADER
AINSLEY C KUNG

REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 17-APR-2012
11-21-11 | TIME PLOTTED => 09:29

BORDER LAST REVISED 7/2/2010

USERNAME => s114926
DGN FILE => 727340ma007.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 1811

PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	21	104

REGISTERED ~~CIVIL ENGINEER~~ 1-9-12 DATE

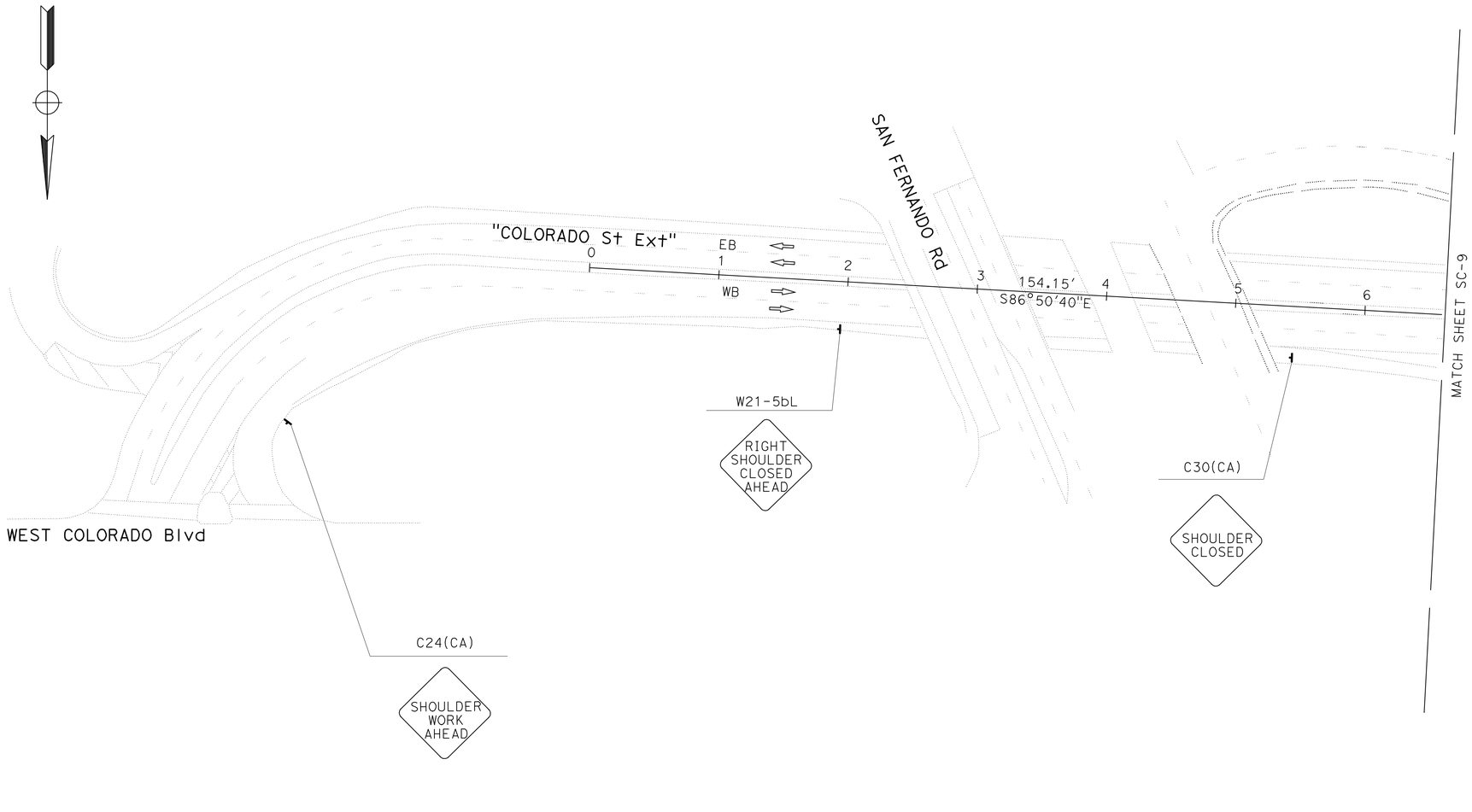
4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
AINSLEY C KUNG
No. C 74005
Exp. 6/30/13
CIVIL
STATE OF CALIFORNIA

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

NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.



APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 3 & 4

SCALE: 1" = 50'

SC-8

REVISED BY | DATE REVISED
ANTOINE NADER | AINSLEY C KUNG
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: DEREK HIGA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

LAST REVISION | DATE PLOTTED => 17-APR-2012
12-27-11 | TIME PLOTTED => 09:30

BORDER LAST REVISED 7/2/2010
USERNAME => s114926
DGN FILE => 727340ma008.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1811
PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	22	104

REGISTERED CIVIL ENGINEER — DATE 1-9-12

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — AINSLEY C KUNG — No. C 74005 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

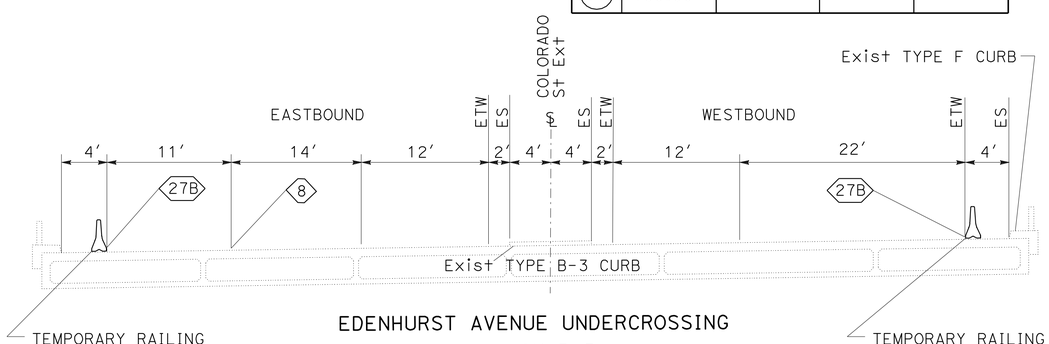
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

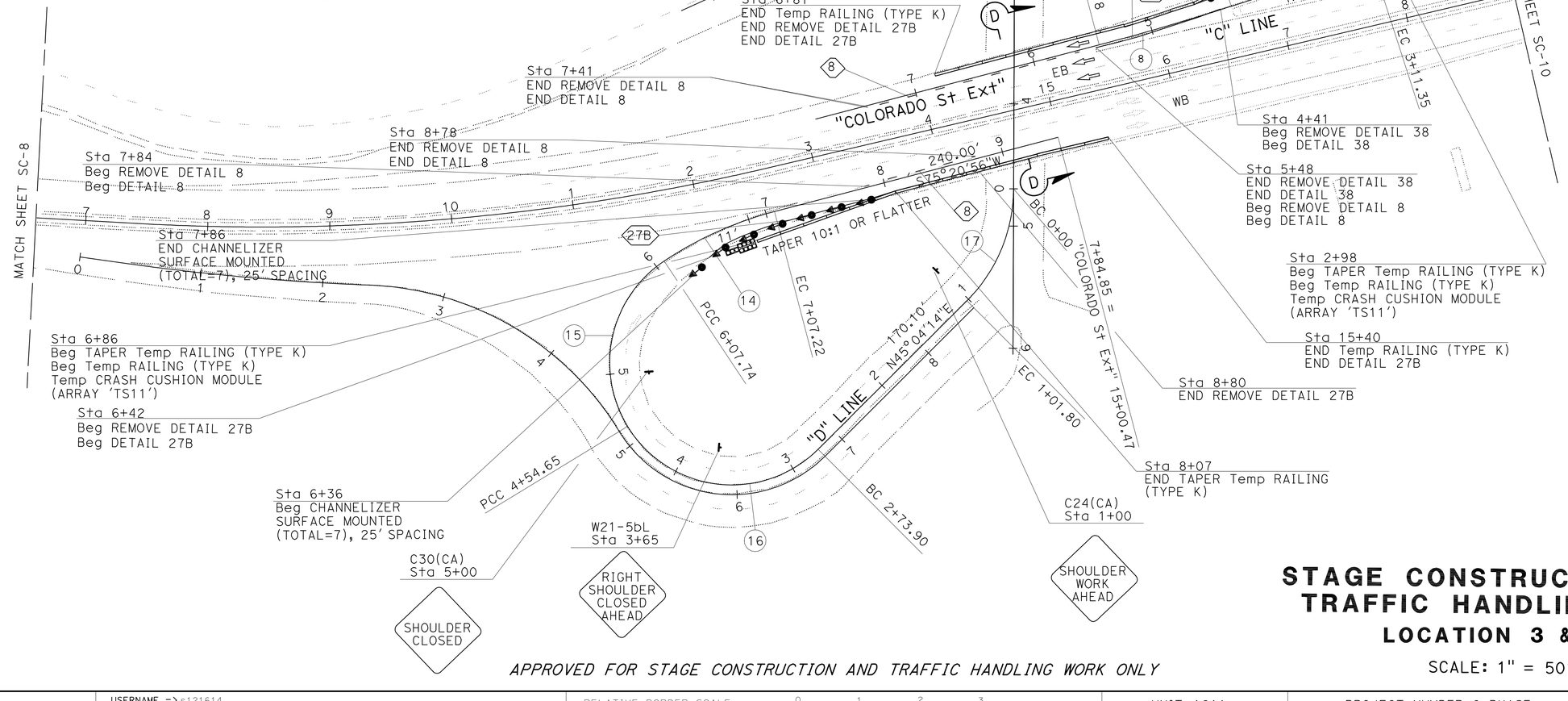
SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

CURVE DATA

No.	R	Δ	T	L
6	80.00′	76°01′16"	62.53′	106.15′
7	100.00′	110°28′25"	144.08′	192.81′
8	2000.00′	3°13′44"	56.37′	112.70′
14	300.00′	19°00′00"	50.20′	99.48′
15	100.00′	87°42′44"	96.09′	153.09′
16	100.00′	103°33′58"	127.00′	180.76′
17	130.00′	44°51′54"	53.67′	101.80′



EDENHURST AVENUE UNDERCROSSING
SECTION D-D
NO SCALE



APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 3 & 4

SCALE: 1" = 50′

SC-9

REVISED BY | DATE REVISED
ANTOINE NADER | AINSLEY C KUNG
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: DEREK HIGA
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 17-APR-2012 | TIME PLOTTED => 11:37

BORDER LAST REVISED 7/2/2010 | USERNAME => s121614 | DGN FILE => 727340ma009.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1811 | PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	23	104

REGISTERED CIVIL ENGINEER — 1-9-12 DATE

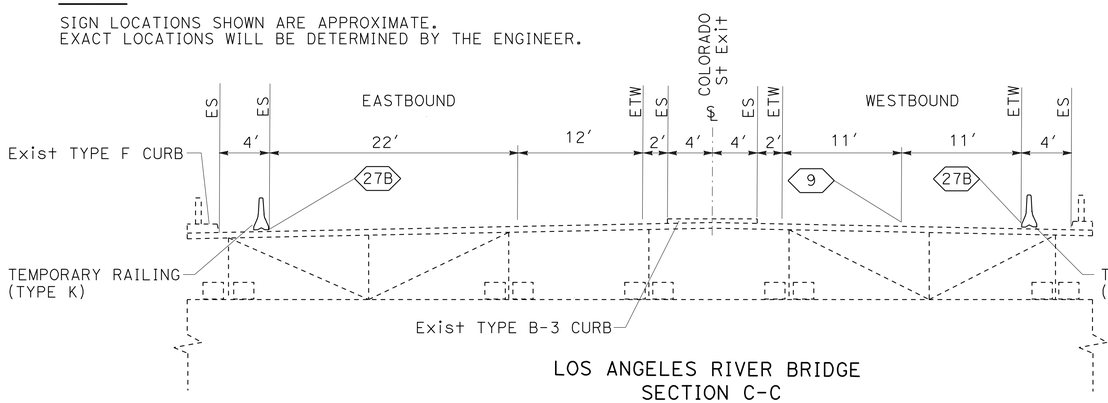
AINSLEY C KUNG No. C 74005 Exp. 6/30/13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
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.

NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.



LOS ANGELES RIVER BRIDGE
SECTION C-C
NO SCALE

CURVE DATA

No.	R	Δ	T	L
(4)	110.00′	92°11′15"	114.28′	176.99′
(5)	224.00′	91°42′51"	230.80′	358.56′

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 3 & 4

SCALE: 1" = 50′

SC-10

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: AINSLEY C KUNG
FUNCTIONAL SUPERVISOR: DEREK HIGA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

LAST REVISION | DATE PLOTTED => 17-APR-2012
00-00-00 | TIME PLOTTED => 11:42

BORDER LAST REVISED 7/2/2010

USERNAME => s121614
DGN FILE => 727340ma010.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 1811

PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	24	104

REGISTERED ~~CIVIL ENGINEER~~ 1-9-12 DATE

AINSLEY C KUNG No. C 74005 Exp.6/30/13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
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.

NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE.
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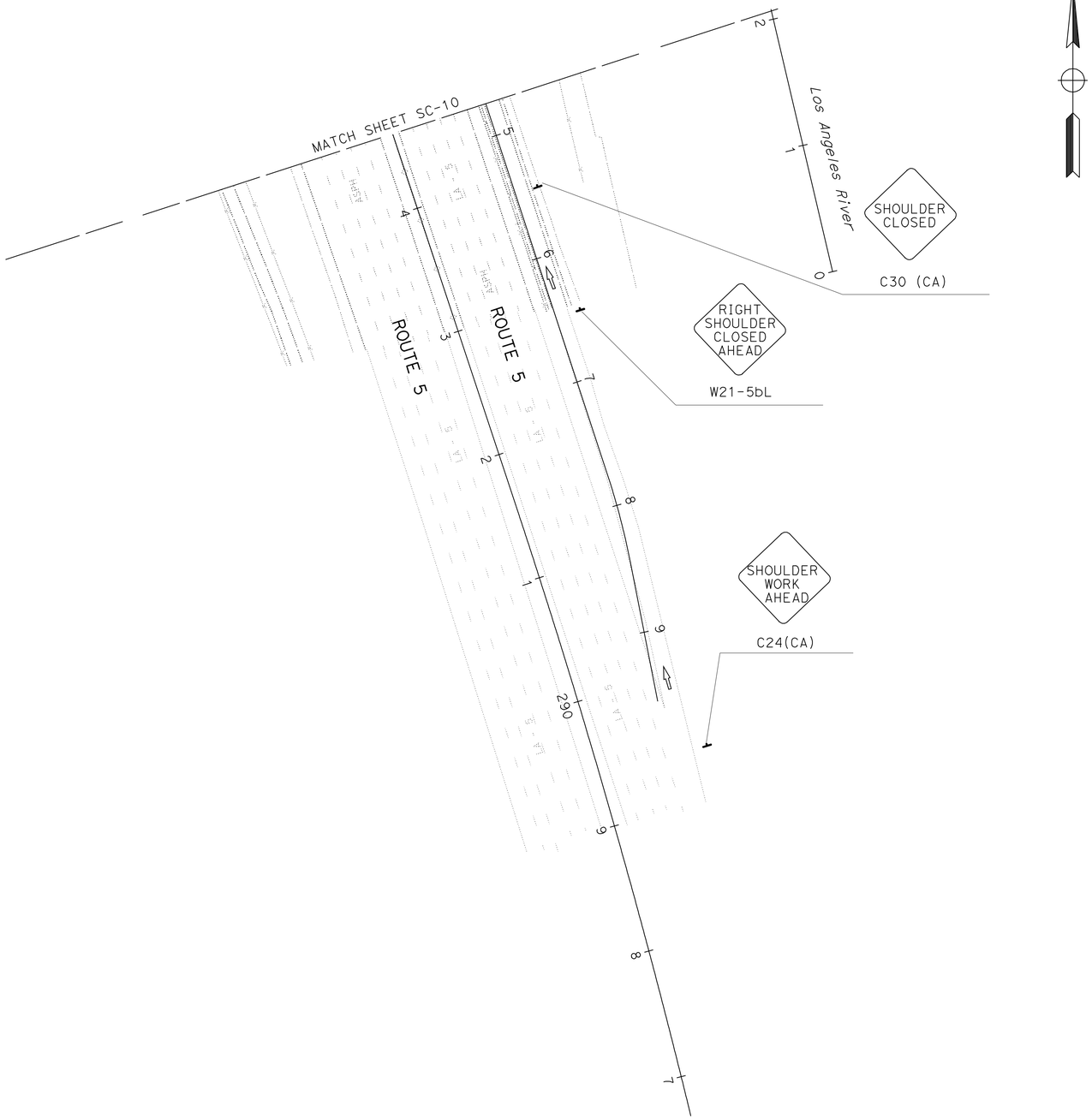


APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 3 & 4

SCALE: 1"=50'

SC-11

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: AINSLEY C KUNG
FUNCTIONAL SUPERVISOR: DEREK HIGA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

LAST REVISION: DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:32 11-21-11

BORDER LAST REVISED 7/2/2010 | USERNAME => s124496 DGN FILE => 727340ma011.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1811 | PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	25	104

REGISTERED CIVIL ENGINEER — DATE 1-9-12

AINSLEY C KUNG No. C 74005 Exp. 6/30/13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
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.

REVISED BY | DATE REVISED

ANTOINE NADER | AINSLEY C KUNG

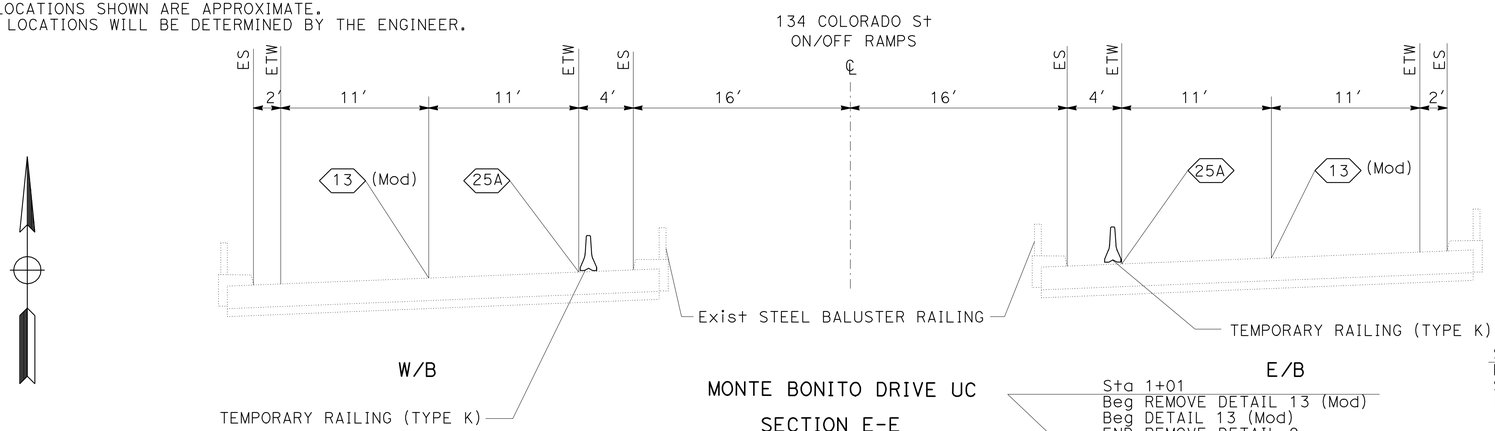
CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR: DEREK HIGA

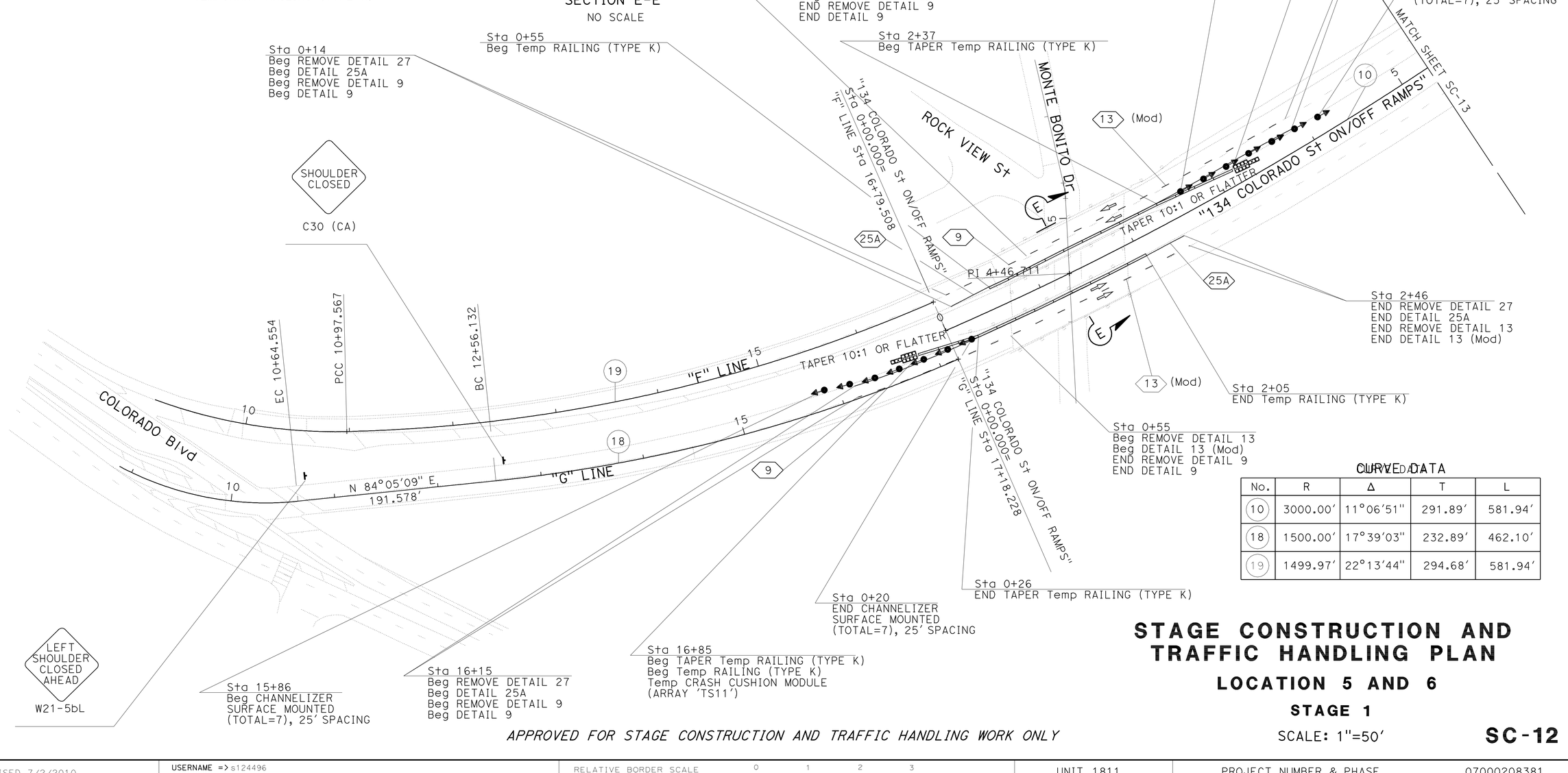
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.



MONTE BONITO DRIVE UC
SECTION E-E
NO SCALE



CURVE DATA

No.	R	Δ	T	L
10	3000.00′	11°06′51"	291.89′	581.94′
18	1500.00′	17°39′03"	232.89′	462.10′
19	1499.97′	22°13′44"	294.68′	581.94′

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 5 AND 6

STAGE 1

SCALE: 1"=50′

SC-12

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

LAST REVISION 11-21-11 | DATE PLOTTED => 17-APR-2012 | TIME PLOTTED => 08:32

BORDER LAST REVISED 7/2/2010 | USERNAME => s124496 | DGN FILE => 727340ma012.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1811 | PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	26	104

REGISTERED CIVIL ENGINEER 1-9-12 DATE

4-16-12
PLANS APPROVAL DATE

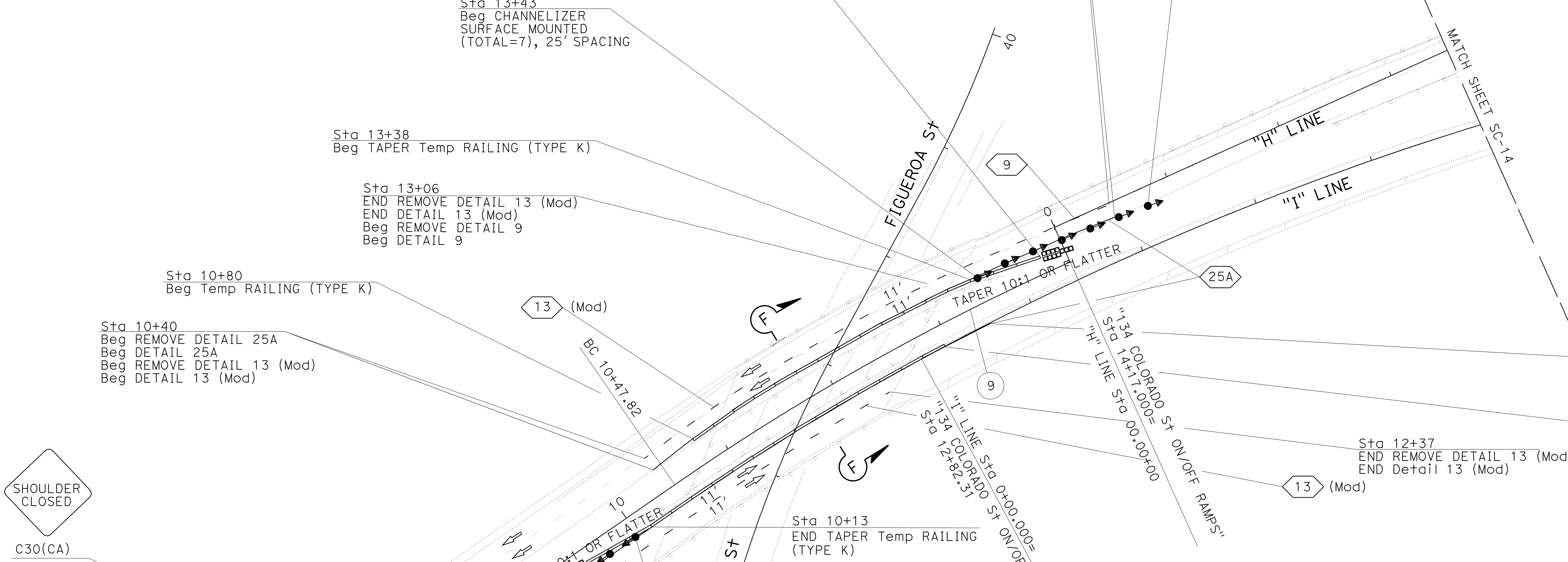
REGISTERED PROFESSIONAL ENGINEER AINSLEY C KUNG No. C 74005 Exp. 6/30/13 CIVIL STATE OF CALIFORNIA

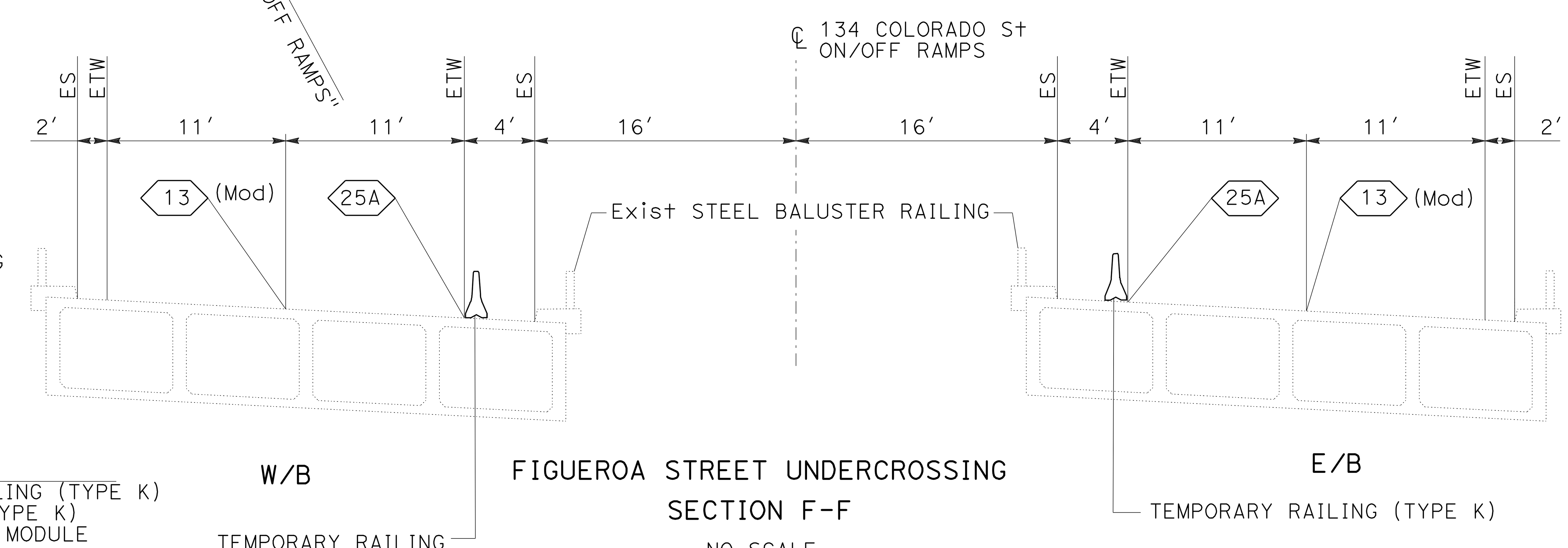
NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

CURVE DATA

No.	R	Δ	T	L
9	2000.00′	10°34′35"	185.12′	369.19′





FIGUEROA STREET UNDERCROSSING
SECTION F-F
NO SCALE

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 5 AND 6

STAGE 1

SCALE: 1"=50′

SC-13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: DEREK HIGA
CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: AINSLEY C KUNG
REVISED BY
DATE REVISED

LAST REVISION 11-22-11
DATE PLOTTED => 17-APR-2012
TIME PLOTTED => 11:44

NOTES:

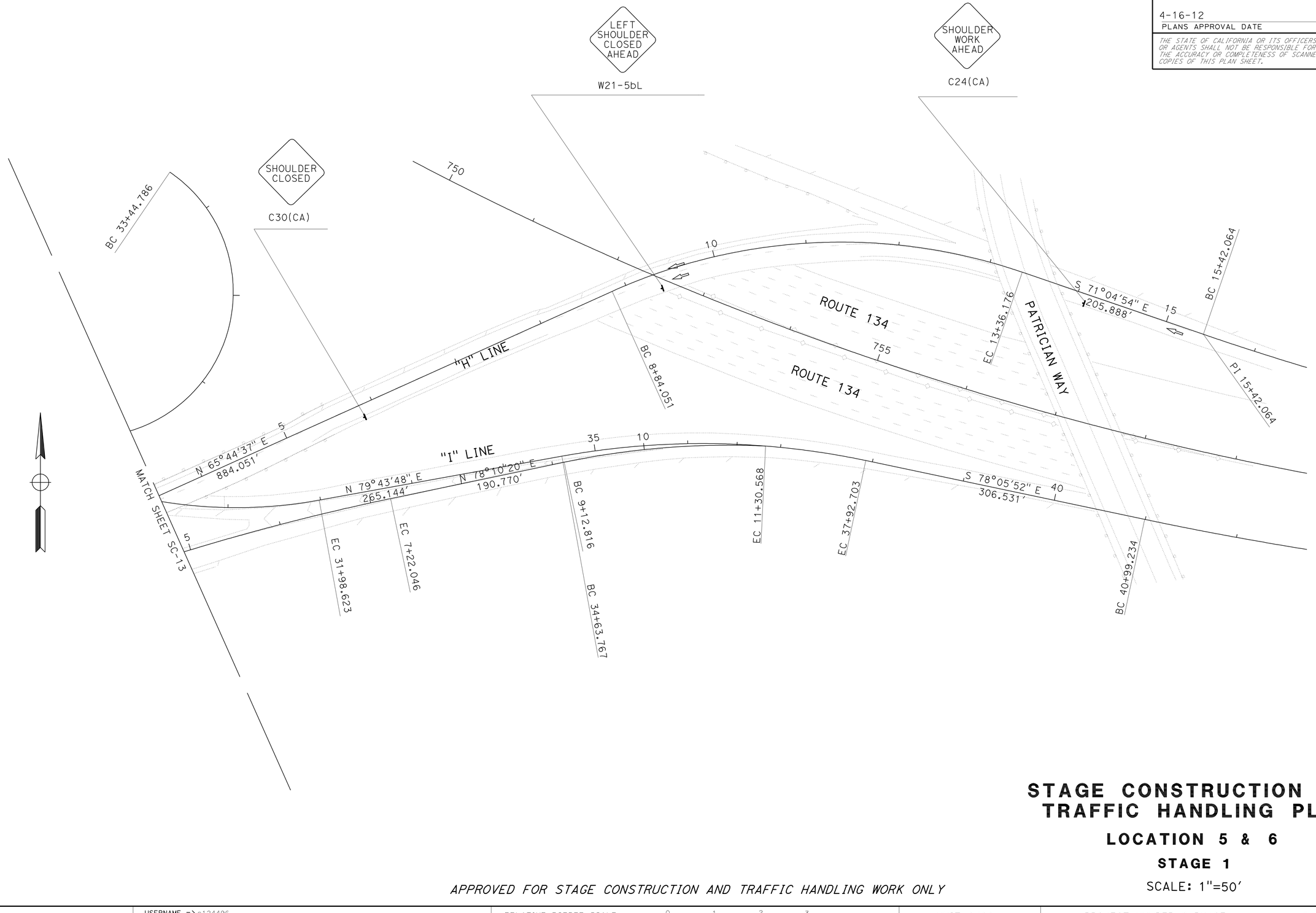
SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	27	104

REGISTERED CIVIL ENGINEER — DATE: 1-9-12

AINSLEY C KUNG No. C 74005 Exp. 6/30/13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
PLANS APPROVAL DATE



STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 5 & 6

STAGE 1

SCALE: 1"=50'

SC-14

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: AINSLEY C KUNG
FUNCTIONAL SUPERVISOR: DEREK HIGA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION DATE PLOTTED => 17-APR-2012
LAST REVISION TIME PLOTTED => 08:32
11-22-11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	28	104

REGISTERED CIVIL ENGINEER — DATE 1-9-12

AINSLEY C KUNG No. C 74005 Exp. 6/30/13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
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.

REVISED BY | DATE REVISED

ANTOINE NADER | AINSLEY C KUNG

CALCULATED-DESIGNED BY | CHECKED BY

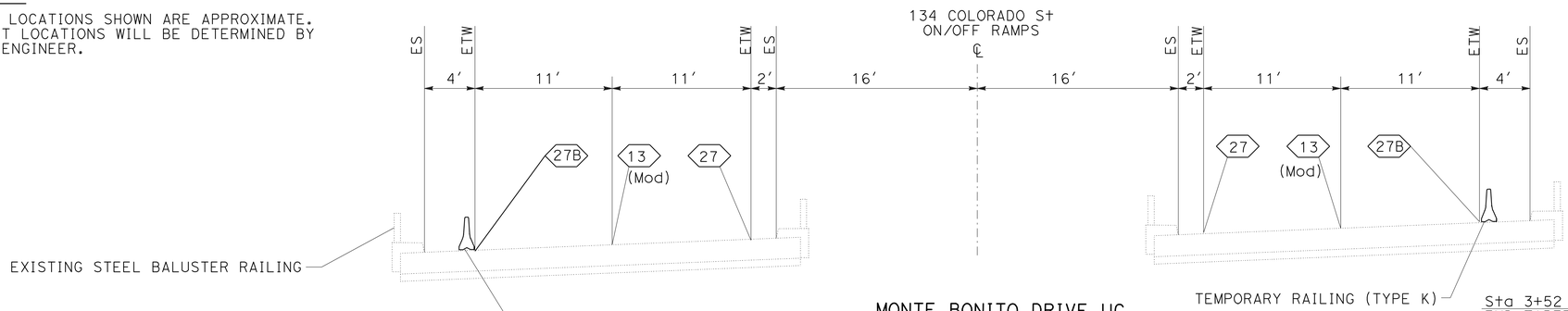
FUNCTIONAL SUPERVISOR: DEREK HIGA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® DESIGN

NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.



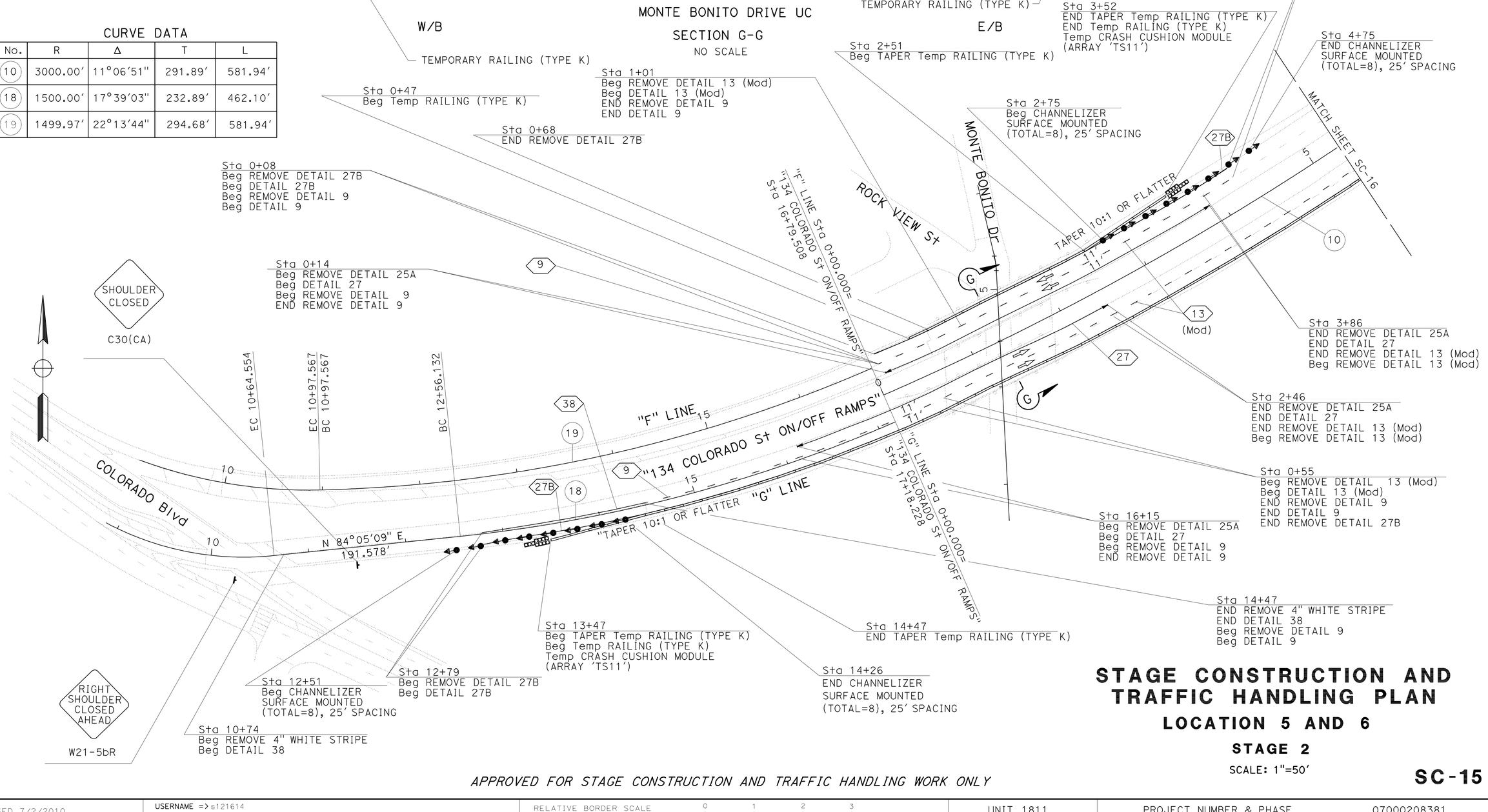
CURVE DATA

No.	R	Δ	T	L
10	3000.00′	11°06′51"	291.89′	581.94′
18	1500.00′	17°39′03"	232.89′	462.10′
19	1499.97′	22°13′44"	294.68′	581.94′

MONTE BONITO DRIVE UC

SECTION G-G

NO SCALE



STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 5 AND 6

STAGE 2

SCALE: 1"=50′

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

SC-15

LAST REVISION | DATE PLOTTED => 17-APR-2012
11-22-11 | TIME PLOTTED => 11:47

BORDER LAST REVISED 7/2/2010 | USERNAME => s121614 | DGN FILE => 727340ma015.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1811 | PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	29	104

REGISTERED CIVIL ENGINEER — DATE: 1-9-12

AINSLEY C KUNG No. C 74005 Exp. 6/30/13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
PLANS APPROVAL DATE

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NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

Sta 2+24
FLASHING ARROW SIGN (FAS)
END REMOVE DETAIL 27B
END DETAIL 27B
END REMOVE DETAIL 9

CURVE DATA

No.	R	Δ	T	L
(9)	2000.00′	10°34′35"	185.12′	369.19′

Sta 1+18
END TAPER Temp RAILING (TYPE K)
END Temp RAILING (TYPE K)
Temp CRASH CUSHION MODULE
(ARRAY 'TS11')

Sta 0+10
Beg CHANNELIZER
SURFACE MOUNTED
(TOTAL=11), 25′ SPACING

Sta 14+15
Beg TAPER Temp RAILING (TYPE K)

Sta 13+06
END REMOVE DETAIL 13 (Mod)
Beg REMOVE DETAIL 9

Sta 10+80
Beg Temp RAILING (TYPE K)

Sta 9+81
Beg REMOVE DETAIL 27B
Beg DETAIL 27B
Beg REMOVE DETAIL 13 (Mod)

SHOULDER CLOSED

C30(CA)

BC 10+47.820

FIGUEROA St

40

TAPER 10:1 OR FLATTER

"H" LINE

"I" LINE

MATCH SHEET SC-17

Sta 2+60
END CHANNELIZER
SURFACE MOUNTED
(TOTAL=11), 25′ SPACING

Sta 0+48
END REMOVE DETAIL 25A
END DETAIL 25A
END REMOVE DETAIL 9
Beg REMOVE DETAIL 9

Sta 0+63
END REMOVE DETAIL 25A
END DETAIL 27

Sta 0+31
END REMOVE DETAIL 27B
END DETAIL 27B

"134 COLORADO St ON/OFF RAMPS"
Sta 14+17.010=
"H" LINE Sta 0+00.00

"134 COLORADO St ON/OFF RAMPS"
Sta 12+82.331=
"I" LINE Sta 0+00.000

Sta 12+63
END Temp RAILING (TYPE K)

Sta 12+37
END REMOVE DETAIL 13 (Mod)
END Detail 13 (Mod)

Sta 12+19
Beg REMOVE DETAIL 27B

N 55°18′57" E
465.880′

EC 45+14.307

Sta 10+40
Beg REMOVE DETAIL 25A
Beg DETAIL 25A
Beg REMOVE DETAIL 13 (Mod)
END REMOVE DETAIL 13 (Mod)

Sta 9+25
Beg REMOVE DETAIL 25A
Beg DETAIL 27
Beg REMOVE DETAIL 13 (Mod)
END REMOVE DETAIL 13 (Mod)

EC 5+81.940

"134 COLORADO St ON/OFF RAMPS"

MATCH SHEET SC-15

13 (Mod)

W/B
TEMPORARY RAILING (TYPE K)
EXISTING STEEL BALUSTER RAILING

FIGUEROA STREET UNDERCROSSING
SECTION H-H
NO SCALE

℄ 134 COLORADO St ON/OFF RAMPS

E/B
TEMPORARY RAILING (TYPE K)

LEGEND:

Flashing Arrow Sign (FAS)

FAS Support or Trailer

Direction of Traffic

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 5 AND 6

STAGE 2

SCALE: 1"=50′

SC-16

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — DESIGN
FUNCTIONAL SUPERVISOR: DEREK HIGA
CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: AINSLEY C KUNG
REVISED BY | DATE REVISED

LAST REVISION: DATE PLOTTED => 17-APR-2012
11-22-11 TIME PLOTTED => 11:52

BORDER LAST REVISED 7/2/2010
USERNAME => s121614
DGN FILE => 727340ma016.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1811
PROJECT NUMBER & PHASE 07000208381

NOTES:

SIGN LOCATIONS SHOWN ARE APPROXIMATE.
EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

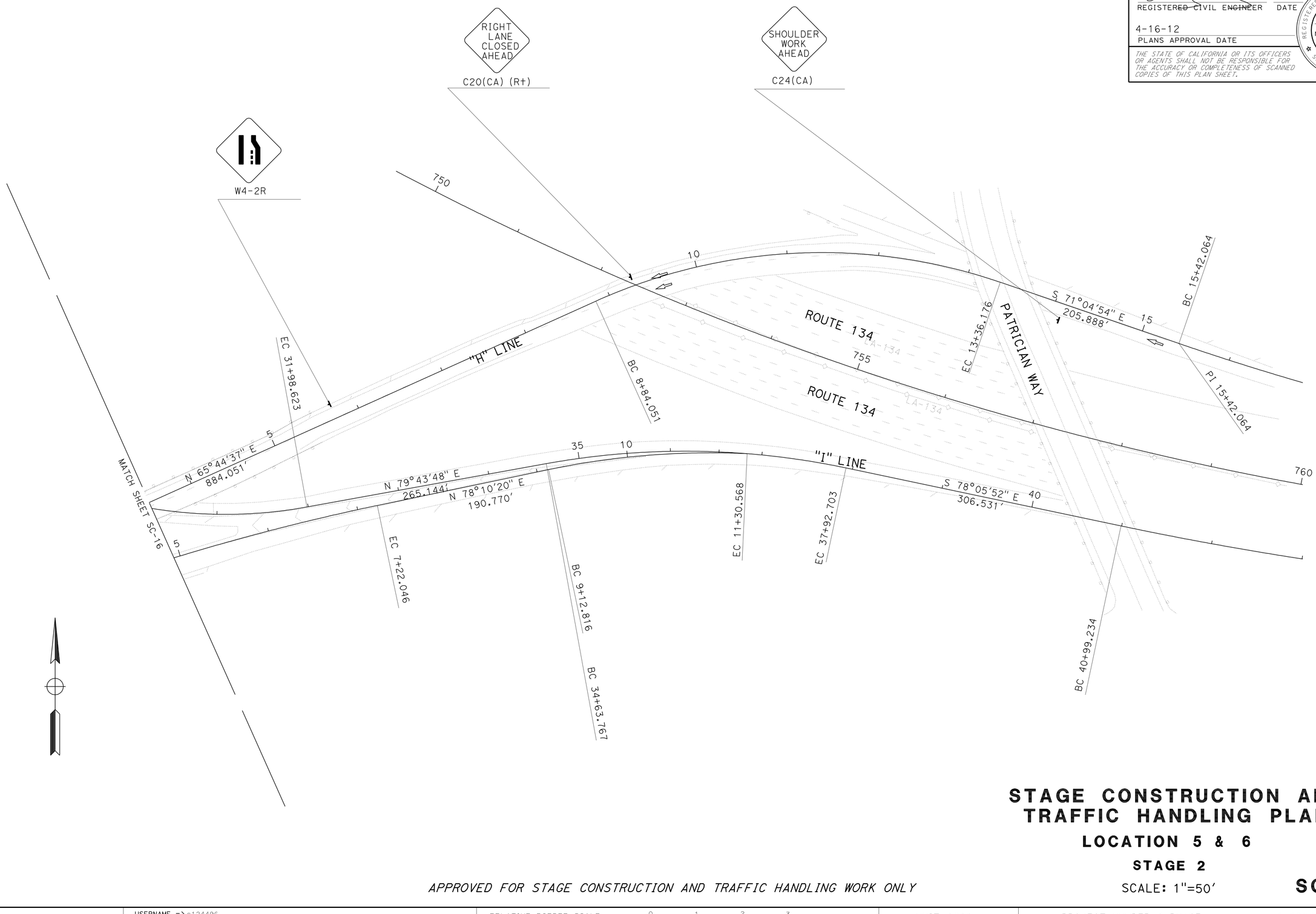
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	30	104

REGISTERED CIVIL ENGINEER — DATE: 1-9-12

AINSLEY C KUNG
No. C 74005
Exp. 6/30/13
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

4-16-12
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.



STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 5 & 6

STAGE 2

SCALE: 1"=50'

SC-17

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: DEREK HIGA
CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: AINSLEY C KUNG
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 17-APR-2012
TIME PLOTTED => 08:32

BORDER LAST REVISED 7/2/2010
USERNAME => s124496
DGN FILE => 727340ma017.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1811
PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	31	104

REGISTERED CIVIL ENGINEER — DATE: 1-9-12

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
AINSLEY C KUNG
No. C 74005
Exp. 6/30/13
CIVIL
STATE OF CALIFORNIA

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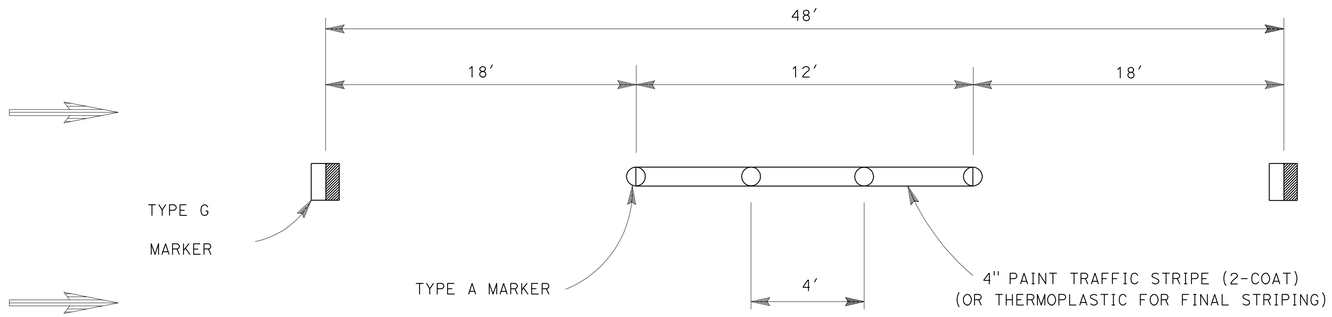


DETAIL 13 (Mod)

STAGE CONSTRUCTION DETAILS

NO SCALE

SCD-1

REVISED BY | DATE REVISED
AINSLEY C KUNG | CALCULATED-DESIGNED BY
CHECKED BY
FUNCTIONAL SUPERVISOR: DEREK HIGA
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

LAST REVISION | DATE PLOTTED => 17-APR-2012
12-27-11 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/1/2010 | USERNAME => s119571 | DGN FILE => 727340mb001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1811 | PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	32	104

REGISTERED CIVIL ENGINEER — 1-9-12 DATE

AINSLEY C KUNG No. C74005 Exp. 6/30/13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
PLANS APPROVAL DATE

TEMPORARY RAILING (TYPE K)

DIRECTION	SHEET No.	LOCATION	LF
		STAGE 1	
		Rte 134 TO Rte 170 Conn	
WB	SC-1	Sta 40+65 TO 46+86	620
WB	SC-1	Sta 46+86 TO 48+45	160
		RIVERSIDE Dr. UC	
WB	SC-1	Sta 41+17 TO 46+78	560
WB	SC-1	Sta 46+78 TO 48+39	160
		EDENHURST Ave UC	
WB	SC-9	Sta 6+86 TO 8+07	120
WB	SC-9	Sta 8+07 TO 9+47	140
WB	SC-9	Sta 15+00 TO 15+40	40
EB	SC-9	Sta 2+98 TO 4+61	160
EB	SC-9	Sta 4+61 TO 6+81	220
		LOS ANGELES RIVER BRIDGE	
WB	SC-10	Sta 20+12 TO 23+32	320
WB	SC-10	Sta 23+32 TO 25+78	246
WB	SC-10	Sta 0+00 TO 2+60	234
EB	SC-10	Sta 23+66 TO 25+43	177
EB	SC-10	Sta 0+00 TO 3+26	303
EB	SC-10	Sta 3+26 TO 4+07	80
		MONTE BONITO Dr UC	
EB	SC-12	Sta 16+85 TO 17+18.2	34
EB	SC-12	Sta 0+00 TO 0+26	26
EB	SC-12	Sta 0+26 TO 2+05	180
WB	SC-12	Sta 0+55 TO 2+37	180
WB	SC-12	Sta 2+37 TO 3+17	80
		FIGUEROA St UC	
EB	SC-13	Sta 9+53 TO 10+13	60
EB	SC-13	Sta 10+13 TO 12+73	260
EB	SC-13	Sta 0+00 TO 0+22	20
WB	SC-13	Sta 10+80 TO 13+38	260
WB	SC-13	Sta 13+38 TO 13+97	60
		SUBTOTAL	4700

DIRECTION	SHEET No.	LOCATION	LF
		STAGE 2	
		RIVERSIDE Dr UC	
WB	SC-5	Sta 41+72 TO 45+50	380
WB	SC-5	Sta 45+50 TO 46+48	100
		MONTE BONITO Dr UC	
EB	SC-15	Sta 13+47 TO 14+47	100
EB	SC-15	Sta 14+47 TO 17+18.2	271
EB	SC-15	Sta 0+00 TO 5+29	529
WB	SC-15	Sta 0+47 TO 2+51	200
WB	SC-15	Sta 2+51 TO 3+52	100
		FIGUEROA St UC	
EB	SC-16	Sta 5+29 TO 12+63	730
WB	SC-16	Sta 10+80 TO 14+15	340
WB	SC-16	Sta 14+15 TO 1+18	120
		SUBTOTAL	2870
		TOTAL	7570

CHANNELIZER (SURFACE MOUNTED)

SHEET No.	EA
SC-1	24
SC-5	12
SC-9	16
SC-10	23
SC-12	14
SC-13	12
SC-15	16
SC-16	11
TOTAL	128

TEMPORARY CRASH CUSHION MODULE

SHEET No.	EA
SC-1	21
SC-5	14
SC-9	22
SC-10	22
SC-12	22
SC-13	22
SC-15	22
SC-16	11
TOTAL	156

STAGE CONSTRUCTION AND TRAFFIC HANDLING QUANTITIES

SCQ-1

REVISED BY | DATE REVISED
ANTOINE NADER | AINSLEY C KUNG
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: DEREK HIGA
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION 08-05-11
DATE PLOTTED => 17-APR-2012
TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010
USERNAME => s119571
DGN FILE => 727340mc001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1811
PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	33	104

REGISTERED CIVIL ENGINEER — DATE: 1-9-12

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — AINSLEY C KUNG — No. C 74005 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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

SHEET NUMBER	LOCATION/STATION	DIRECTION	REMOVE PAVEMENT MARKER	REMOVE THERMOPLASTIC TRAFFIC STRIPE (WHITE)							REMOVE THERMOPLASTIC TRAFFIC STRIPE (YELLOW HAZARDOUS WASTE)		
				4" BROKEN WHITE DETAIL 13 (Mod)	4" SOLID WHITE DETAIL 27B	4" SOLID WHITE	8" SOLID WHITE DETAIL 38	4" BROKEN WHITE DETAIL 8	4" BROKEN WHITE DETAIL 9	8" SOLID WHITE DETAIL 38B	4" SOLID YELLOW DETAIL 25	4" SOLID YELLOW DETAIL 25A	4" DOUBLE YELLOW DETAIL 27
			EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
	STAGE 1												
	Rte 134 TO Rte 170 CONNECTOR												
SC-1	Sta 39+35 TO 50+16	WB	163	330							1081		
	EDENHURST Ave UC												
SC-9	Sta 2+40 TO 6+81	EB	8		441		214	74	14				
SC-9	Sta 6+42 TO 8+80	WB			238			36					
	LOS ANGELES RIVER BRIDGE												
SC-10	Sta 0+00 TO 2+75	WB	22		275	362				322			
SC-10	Sta 0+00 TO 4+49	EB			449								
SC-10	Sta 19+33 TO 25+62	WB	14						184				
SC-10	Sta 23+25 TO 25+43	EB			218								
SC-10	Sta 25+62 TO 25+78	WB	2		16					32			
	MONTE BONITO Dr UC												
SC-12	Sta 0+00 TO 2+46	EB	29						16			246	492
SC-12	Sta 0+14 TO 3+86	WB	43	72					26			372	744
SC-12	Sta 16+15 TO 17+18	EB	6						31			103	206
	FIGUEROA St UC												
SC-13	Sta 0+00 TO 0+48	WB	5						14			48	
SC-13	Sta 9+25 TO 13+37	EB	44	312									824
SC-13	Sta 10+40 TO 14+17	WB	49	266					33			377	
	STAGE 2												
	RIVERSIDE Dr UC												
SC-5	Sta 40+42 TO 48+11	WB	89	169							769		
	MONTE BONITO Dr UC												
SC-15	Sta 0+00 TO 5+29	EB	65		55								
SC-15	Sta 0+08 TO 4+22	WB	57	9	60				2				
SC-15	Sta 12+79 TO 17+18	EB	21		440	373			49				
	FIGUEROA St UC												
SC-16	Sta 0+00 TO 0+63	EB	4		31								
SC-16	Sta 0+00 TO 2+24	WB	10		224				52				
SC-16	Sta 5+29 TO 12+74	EB	92		55								
SC-16	Sta 9+81 TO 14+17	WB	56	15	436								
	SUBTOTAL		779	1173	2938	735	214	110	421	354	1850	1146	2266
	TOTAL			5945							5262		

STAGE CONSTRUCTION AND TRAFFIC HANDLING QUANTITIES

SCQ-2

CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: AINSLEY C KUNG
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR: DEREK HIGA
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

LAST REVISION | DATE PLOTTED => 17-APR-2012
11-22-11 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010
USERNAME => s119571
DGN FILE => 727340mc002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1811
PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	34	104

REGISTERED CIVIL ENGINEER — DATE: 1-9-12

AINSLEY C KUNG
No. C 74005
Exp. 6/30/13
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

4-16-12
PLANS APPROVAL DATE

NOTE:

1. SEE STAGE CONSTRUCTION AND TRAFFIC HANDLING QUANTITY PLAN FOR ADDITIONAL QUANTITY.

SHEET NUMBER	LOCATION/STATION	DIRECTION	PAVEMENT MARKER			PAINT TRAFFIC STRIPE (2-COAT)							
			RETRO REFLECTIVE		NON-REFLECTIVE								
			TYPE G	TYPE H	TYPE A	4" BROKEN WHITE DETAIL 13 (Mod)	4" SOLID WHITE DETAIL 27B	4"SOLID YELLOW DETAIL 25	4" SOLID YELLOW DETAIL 25A	8" SOLID WHITE DETAIL 38	8" SOLID WHITE DETAIL 38B	4" BROKEN WHITE DETAIL 8	4" BROKEN WHITE DETAIL 9
			EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF
	STAGE 1												
	Rte 134 TO Rte 170 CONNECTOR												
SC-1	Sta 39+35 TO 50+16	WB	29	24	110	1318		1081					
	LOS ANGELES RIVER BRIDGE												
SC-10	Sta 0+00 TO 5+23	WB	22				275			248	161		
SC-10	Sta 0+00 TO 4+49	EB					449						
SC-10	Sta 19+33 TO 25+62	WB	14				619						629
SC-10	Sta 23+25 TO 25+43	EB					218						
SC-10	Sta 25+62 TO 25+78	WB	2				16				16		
	EDENHURST Ave UC												
SC-10	Sta 2+40 TO 6+81	EB	8				441			107		193	
SC-10	Sta 6+42 TO 9+48	WB					306					94	
SC-10	Sta 15+00 TO 15+40	WB					40						
	MONTE BONITO Dr UC												
SC-13	Sta 0+00 TO 2+46	EB	7	12	16	191			246				55
SC-13	Sta 0+14 TO 3+86	WB	10	17	24	285			372				87
SC-13	Sta 16+15 TO 17+18	EB	3	5					103				104
	FIGUEROA St UC												
SC-14	Sta 0+00 TO 0+48	WB	2	3					48				48
SC-14	Sta 9+25 TO 13+37	EB	8	19	26	312			412				
SC-14	Sta 10+40 TO 14+17	WB	10	16	23	266			377				111
	STAGE 2												
	RIVERSIDE Dr UC												
SC-5	Sta 40+42 TO 48+11	WB	15	17	57	676		769					
	MONTE BONITO Dr UC												
SC-16	Sta 0+00 TO 5+29	EB	13		40	474	529						55
SC-16	Sta 0+08 TO 4+22	WB	11		27	321	414						93
SC-16	Sta 10+74 TO 17+18	EB	14				440			373			272
	FIGUEROA St UC												
SC-17	Sta 0+00 TO 0+63	EB					31						
SC-17	Sta 0+00 TO 2+24	WB					224						
SC-17	Sta 5+29 TO 12+74	EB	16		59	708	745						
SC-17	Sta 9+81 TO 14+17	WB					436						
	SUBTOTAL		184	113	382	4551	5183	1850	1558	728	177	287	1454
	TOTAL		297		382	15788							

STAGE CONSTRUCTION AND TRAFFIC HANDLING QUANTITIES

SCQ-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: DEREK HIGA
CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: AINSLEY C KUNG
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 17-APR-2012 | TIME PLOTTED => 09:04 | 11-22-11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	35	104

REGISTERED CIVIL ENGINEER — DATE: 1-9-12

PLANS APPROVAL DATE: 4-16-12

REGISTERED PROFESSIONAL ENGINEER — AINSLEY C KUNG — No. C 74005 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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

SHEET NUMBER	LOCATION/STATION	DIRECTION	REMOVE PAVEMENT MARKER	REMOVE PAINTED TRAFFIC STRIPE							
				4" BROKEN WHITE DETAIL 13 (Mod)	4" SOLID WHITE DETAIL 27B	4" BROKEN WHITE DETAIL 8	4" BROKEN WHITE DETAIL 9	8" SOLID WHITE DETAIL 38	8" SOLID WHITE DETAIL 38B	4"SOLID YELLOW DETAIL 25	4" SOLID YELLOW DETAIL 25A
			EA	LF	LF	LF	LF	LF	LF	LF	LF
	STAGE 2										
	MONTE BONITO Dr UC										
SC-16	Sta 0+00 TO 5+29	EB	34	48			16				246
SC-16	Sta 0+08 TO 4+22	WB	51	72			26				372
SC-16	Sta 12+79 TO 17+18	EB	8				31				104
	FIGUEROA St UC										
SC-17	Sta 0+00 TO 0+63	EB	4								63
SC-17	Sta 0+00 TO 2+24	WB	5				14				48
SC-17	Sta 5+29 TO 12+74	EB	49	78							349
SC-17	Sta 9+81 TO 14+17	WB	49	67			33				377
	PAVEMENT DELINEATION										
	W/B LA-134 TO N/B LA-170										
PD-1	Sta 39+35 TO 50+16	WB	163	330						1081	
	RIVERSIDE Dr UC										
PD-1	Sta 40+42 TO 48+11	WB	89	169						769	
	LOS ANGELES RIVER BRIDGE										
PD-2	Sta 0+00 TO 5+23	WB	34		275			220	322		
PD-2	Sta 0+00 TO 4+49	EB			449						
PD-2	Sta 19+33 TO 25+78	WB	16		635		184		32		
PD-2	Sta 23+25 TO 25+43	EB			218						
	EDENHURST Ave UC										
PD-3	Sta 2+40 TO 6+81	EB	8		441	74	14	214			
PD-3	Sta 6+42 TO 9+48	WB			306	36					
PD-3	Sta 15+00 TO 15+40	WB			40						
	MONTE BONITO Dr UC										
PD-4	Sta 0+00 TO 5+29	EB	53	119	529		16				
PD-4	Sta 0+08 TO 4+22	WB	38	81	414		28				
PD-4	Sta 10+74 TO 17+18	EB	24		440		80	336			
	FIGUEROA St UC										
PD-5	Sta 0+00 TO 0+63	EB			31						
PD-5	Sta 0+00 TO 2+24	WB			224						
PD-5	Sta 5+29 TO 12+74	EB	75	177	745						
PD-5	Sta 9+81 TO 14+17	WB			436						
	SUBTOTAL FROM SCQ-2		779								
	SUBTOTAL		700	1141	5183	110	442	770	354	1850	1559
	TOTAL		1479	11409							

STAGE CONSTRUCTION AND TRAFFIC HANDLING QUANTITIES

SCQ-4

CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: NGUYEN MAI
FUNCTIONAL SUPERVISOR: DEREK HIGA
REVISED BY / DATE REVISED:
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — DESIGN — Caltrans

LAST REVISION | DATE PLOTTED => 17-APR-2012 | TIME PLOTTED => 09:04 | 01-11-12

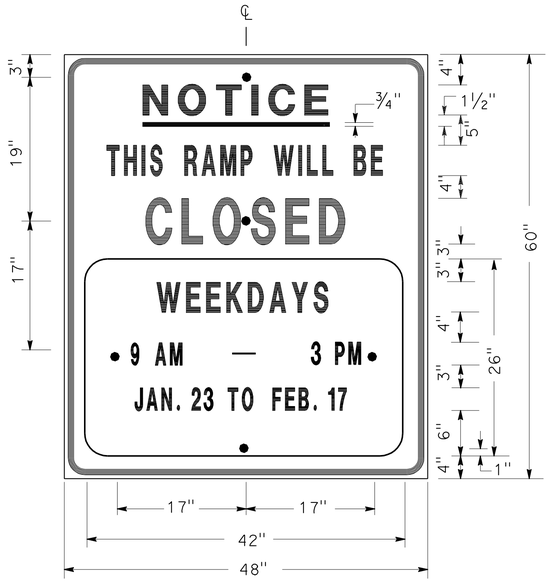
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	36	104

8-31-11
REGISTERED CIVIL ENGINEER DATE

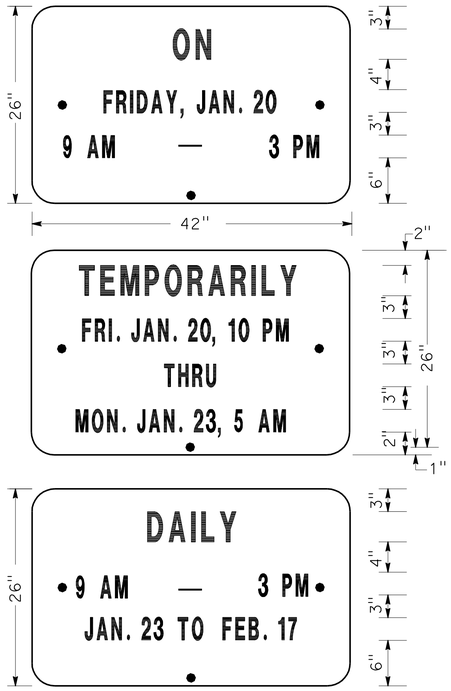
BENJAMIN RAMOS No. C 61340 Exp. 6-30-13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
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.



SIGN SP-1



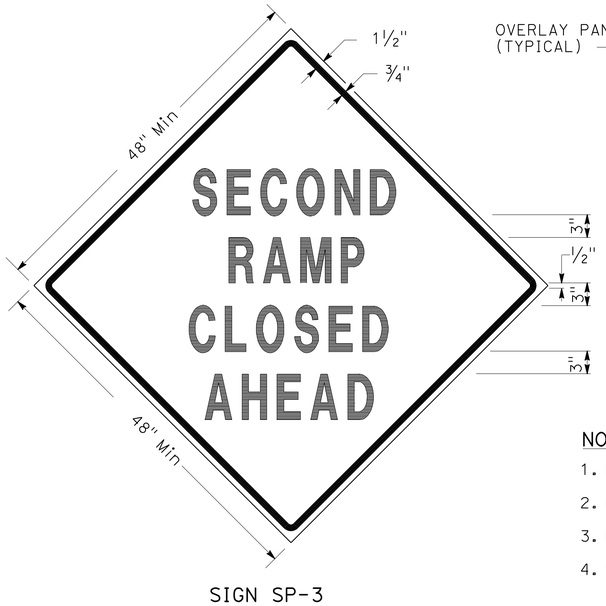
ALTERNATE OVERLAY PANELS (TYPICAL)

NOTES: (SIGN SP-1)

1. SIGNS SHALL HAVE ORANGE RETROREFLECTORIZED BACKGROUND WITH BLACK BORDER AND LETTERS.
2. BOLT HOLES SHALL BE 3/8" DIAMETER.
3. BASE MATERIAL SHALL BE ALUMINUM (MINIMUM 0.06").
4. SIGNS SHALL BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 6' ABOVE GROUND.

SIZE	BORDER WIDTH	MARGIN WIDTH	LETTER SIZE					CORNER RADIUS
			LINE 1	LINE 2*	LINE 3	LINE 4	LINE 5,6 & 7*	
48"x60"	1 1/4"	3/4"	4E	4D	6E	4D		3"
42"x26"	OVERLAY						3D	1 1/2"
* CONDENSED SPACING IF NECESSARY								

SPECIAL ADVANCE NOTICE PUBLICITY SIGN



SIGN SP-3

SIGN SP-5

NOTES: (SIGNS SP-3 & SP-5)

1. LETTERS - 6" SERIES D.
2. LETTERS AND BORDERS - BLACK ON RETROREFLECTORIZED ORANGE BACKGROUND.
3. BASE MATERIAL SHALL BE ALUMINUM (MINIMUM 0.06").
4. SIGNS SHALL BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 6' ABOVE GROUND.

SPECIAL SIGN FOR EXIT RAMP CLOSURES

SIGN SP-4

NOTES: (SIGN SP-4)

1. LETTERS - 6" SERIES C.
2. LETTERS AND BORDERS - BLACK ON RETROREFLECTORIZED WHITE BACKGROUND.
3. BASE MATERIAL SHALL BE ALUMINUM (MINIMUM 0.06").
4. SIGNS SHALL BE PLACED AT RAMP ENTRANCES IN ADDITION TO SIGNS POSTED IN ACCORDANCE WITH STANDARD PLAN T14.

SPECIAL SIGN FOR ENTRANCE RAMP CLOSURES

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM FOR RAMP CLOSURES, DETOUR SIGNS AND MISCELLANEOUS DETAILS
SHEET 1 OF 2

NO SCALE

THD-1

CALCULATED-DESIGNED BY	ALBERT K YU				
CHECKED BY	JOCELYN C CHIANG				
FUNCTIONAL SUPERVISOR	MARTIN OREGEL				
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DTM	Caltrans			

LAST REVISION | DATE PLOTTED => 17-APR-2012
00-00-00 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010 | USERNAME => s119571 | DGN FILE => 727340me001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1887 | PROJECT NUMBER & PHASE 07000208381

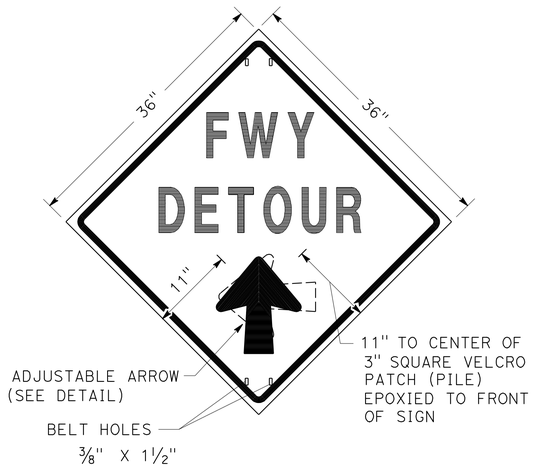
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	37	104

8-31-11
REGISTERED CIVIL ENGINEER DATE

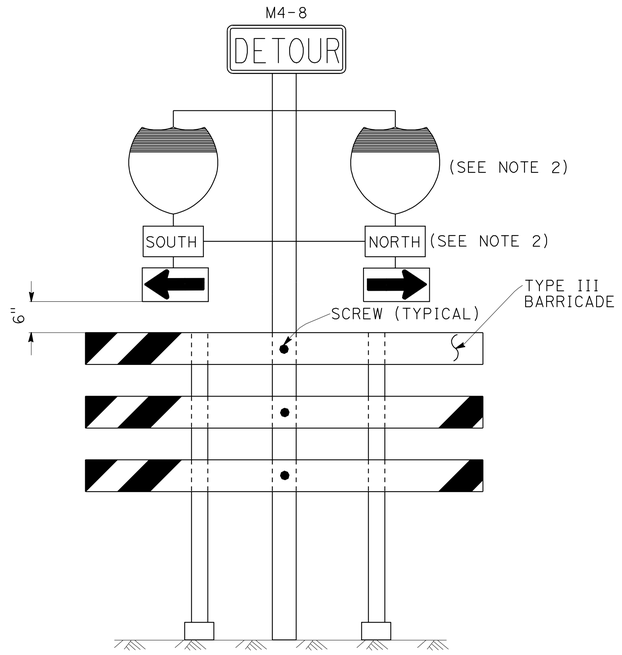
4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
BENJAMIN RAMOS
No. C 61340
Exp. 6-30-13
CIVIL
STATE OF CALIFORNIA

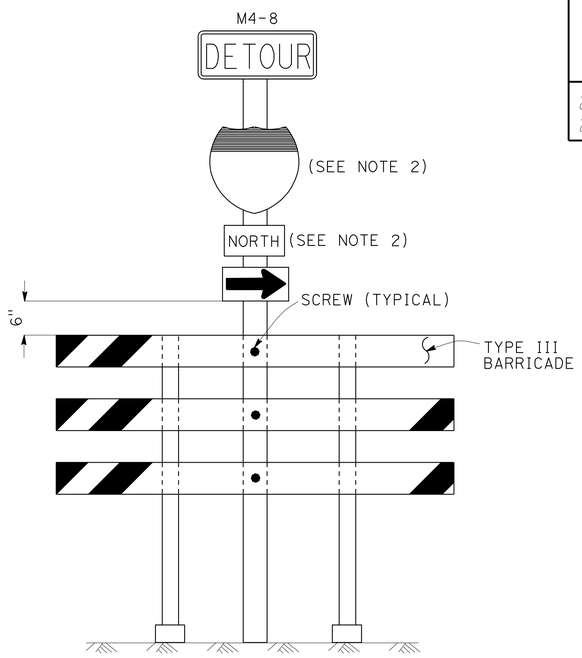
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



SIGN SP-2



SIGN SP-6 (SEE NOTE 1)



SIGN SP-7 (SEE NOTE 1)

NOTES: (SIGN SP-2)

1. LETTERS -6" SERIES E.
2. LETTERS, BORDER AND ARROW - BLACK ON RETROREFLECTORIZED ORANGE BACKGROUND.
3. BASE MATERIAL FOR SIGNS AND ARROWS SHALL BE ALUMINUM (MINIMUM 0.06").
4. BELTS (LUGGAGE STRAPS) SHALL BE 1" WIDE BY 48" LONG, MADE OF COTTON OR POLYPROPYLENE WEB MATERIAL.
5. SIGNS SHALL BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 6' ABOVE GROUND EXCEPT AS OTHERWISE SHOWN ON OTHER TRAFFIC HANDLING DETAILS PLANS.

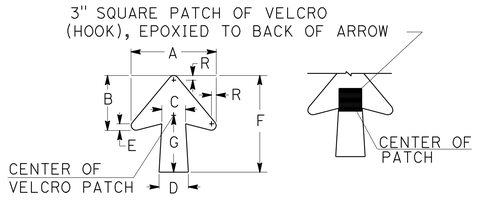
ABBREVIATION

(CA) CALIFORNIA CODE

NOTES: (SIGNS SP-6 & SP-7)

1. IN LIEU OF PLACING SIGNS ON TYPE III BARRICADES, SIGNS, INCLUDING POSTS, MAY BE PLACED INTO THE GROUND OR FASTENED ONTO ELECTROLIERS.
2. USE APPROPRIATE ROUTE SHIELD [G26-2(CA), G27-2(CA), G28-2(CA)] AND CARDINAL DIRECTION [NORTH (M3-1), SOUTH (M3-3), EAST (M3-2), WEST (M3-4)]

SPECIAL PORTABLE FREEWAY DETOUR SIGNS



DIMENSIONS							
A	B	C	D	E	F	G	R
11 1/4"	7 1/4"	3 1/8"	4"	7/8"	13"	7 1/2"	5/8"

SPECIAL PORTABLE FREEWAY DETOUR SIGN

ADJUSTABLE ARROW DETAIL

TRAFFIC HANDLING DETAILS

TRAFFIC CONTROL SYSTEM FOR RAMP CLOSURES, DETOUR SIGNS AND MISCELLANEOUS DETAILS

SHEET 2 OF 2

NO SCALE

THD-2

CALCULATED-DESIGNED BY: ALBERT K YU
CHECKED BY: JOCELYN C CHIANG
REVISED BY: JC
DATE REVISED: 7/10
FUNCTIONAL SUPERVISOR: MARTIN OREGEL
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DTM Caltrans

LAST REVISION | DATE PLOTTED => 17-APR-2012
00-00-00 | TIME PLOTTED => 09:04

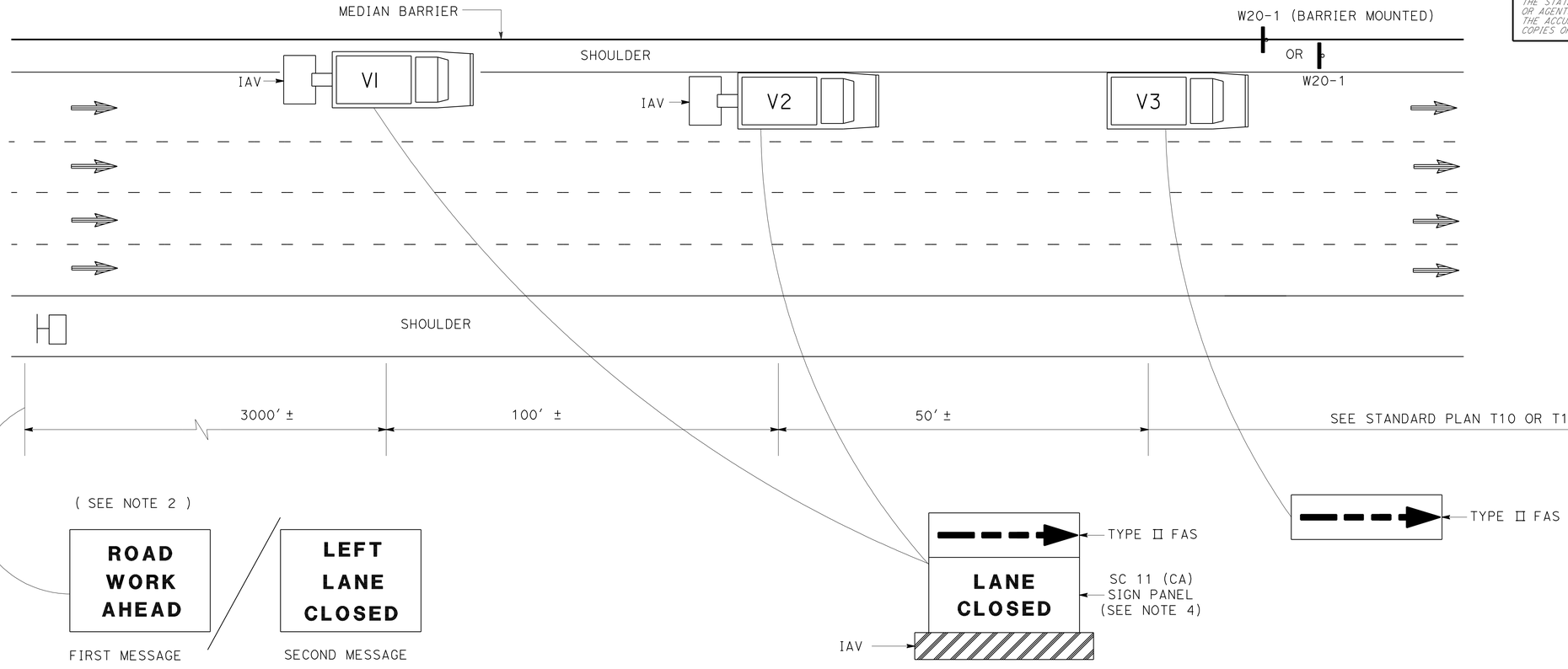
BORDER LAST REVISED 7/2/2010
USERNAME => s119571
DGN FILE => 727340me002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1887
PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	38	104

8-31-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
BENJAMIN RAMOS
No. C 61340
Exp. 6-30-13
CIVIL
STATE OF CALIFORNIA



NOTES:

1. LANE CLOSURES SHALL NOT BE PLACED ON CREST VERTICAL CURVES OR ON HORIZONTAL CURVES.
2. PCMS SHALL BE ACTIVATED PRIOR TO TRAFFIC CONTROL ACTIVITIES ON THE LANE.
3. A MINIMUM SIGHT DISTANCE OF 1500′ SHALL BE PROVIDED IN ADVANCE OF PCMS.
4. VEHICLE-MOUNTED SIGN PANELS SHALL BE TYPE III OR IV RETROREFLECTORIZED SHEETING, BLACK ON WHITE OR BLACK ON ORANGE WITH 8" MINIMUM SERIES D LETTERS PER CALTRANS SIGN SPECIFICATIONS.

LEGEND

V1, V2	SHADOW VEHICLE
V3	WORK/APPLICATION VEHICLE
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	DIRECTION OF TRAVEL
	CONSTRUCTION AREA SIGN

ABBREVIATIONS

FAS	FLASHING ARROW SIGN
IAV	IMPACT ATTENUATOR VEHICLE
CMS	CHANGEABLE MESSAGE SIGN
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
(CA)	CALIFORNIA CODE

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM
FOR MEDIAN SHOULDERS LESS THAN 8 FEET

NO SCALE

THD-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DTM
FUNCTIONAL SUPERVISOR: MARTIN OREGEL
CALCULATED-DESIGNED BY: ALBERT K YU
CHECKED BY: JOCELYN C CHIANG
REVISED BY: JC
DATE REVISED: 7/10

LAST REVISION
DATE PLOTTED => 17-APR-2012
TIME PLOTTED => 09:04
00-00-00

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	39	104

8-31-11
REGISTERED CIVIL ENGINEER DATE

BENJAMIN RAMOS
No. C 61340
Exp. 6-30-13
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

4-16-12
PLANS APPROVAL DATE

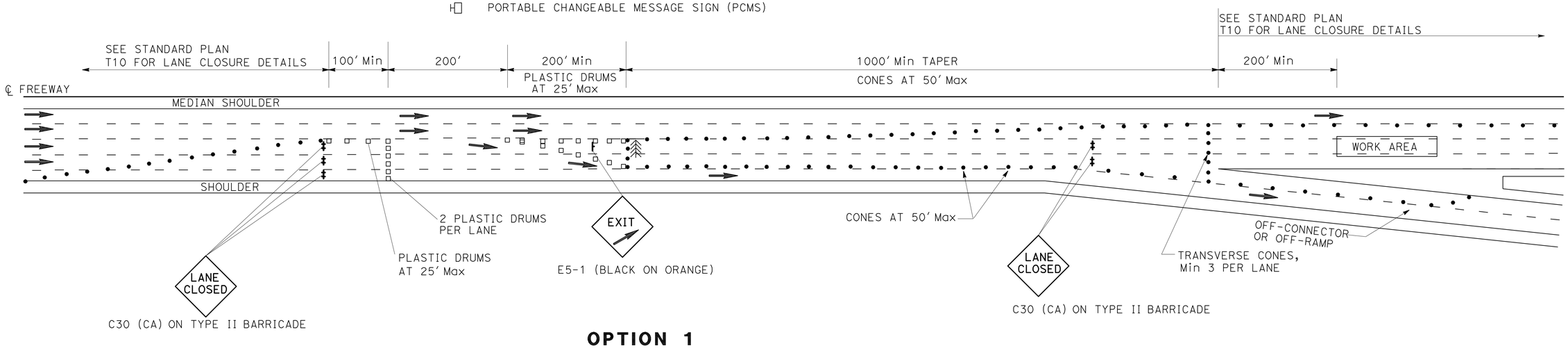
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

LEGEND

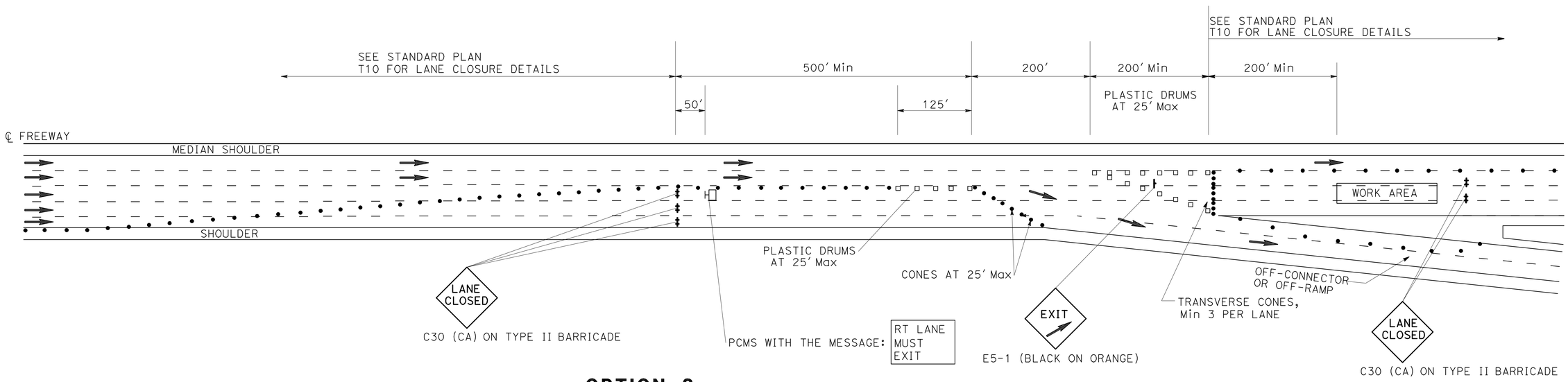
- CONE
- TRAFFIC PLASTIC DRUM
- FLASHING ARROW SIGN
- PORTABLE SIGN
- DIRECTION OF TRAVEL
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

ABBREVIATIONS

(CA) CALIFORNIA CODE



OPTION 1



OPTION 2

TRAFFIC HANDLING DETAILS

TRAFFIC CONTROL SYSTEM FOR SLIP-RAMP AT OFF-CONNECTOR OR OFF-RAMP

NO SCALE

THD-4

CALCULATED-DESIGNED BY	JC	REVISED BY	
CHECKED BY	7/10	DATE REVISED	
ALBERT K YU			
JOCELYN C CHIANG			
FUNCTIONAL SUPERVISOR			
MARTIN OREGEL			

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DTM
Caltrans®

LAST REVISION 00-00-00
DATE PLOTTED => 17-APR-2012
TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010
USERNAME => s119571
DGN FILE => 727340me004.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1887
PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	40	104

8-31-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
BENJAMIN RAMOS
No. C 61340
Exp. 6-30-13
CIVIL
STATE OF CALIFORNIA

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

NOTES:

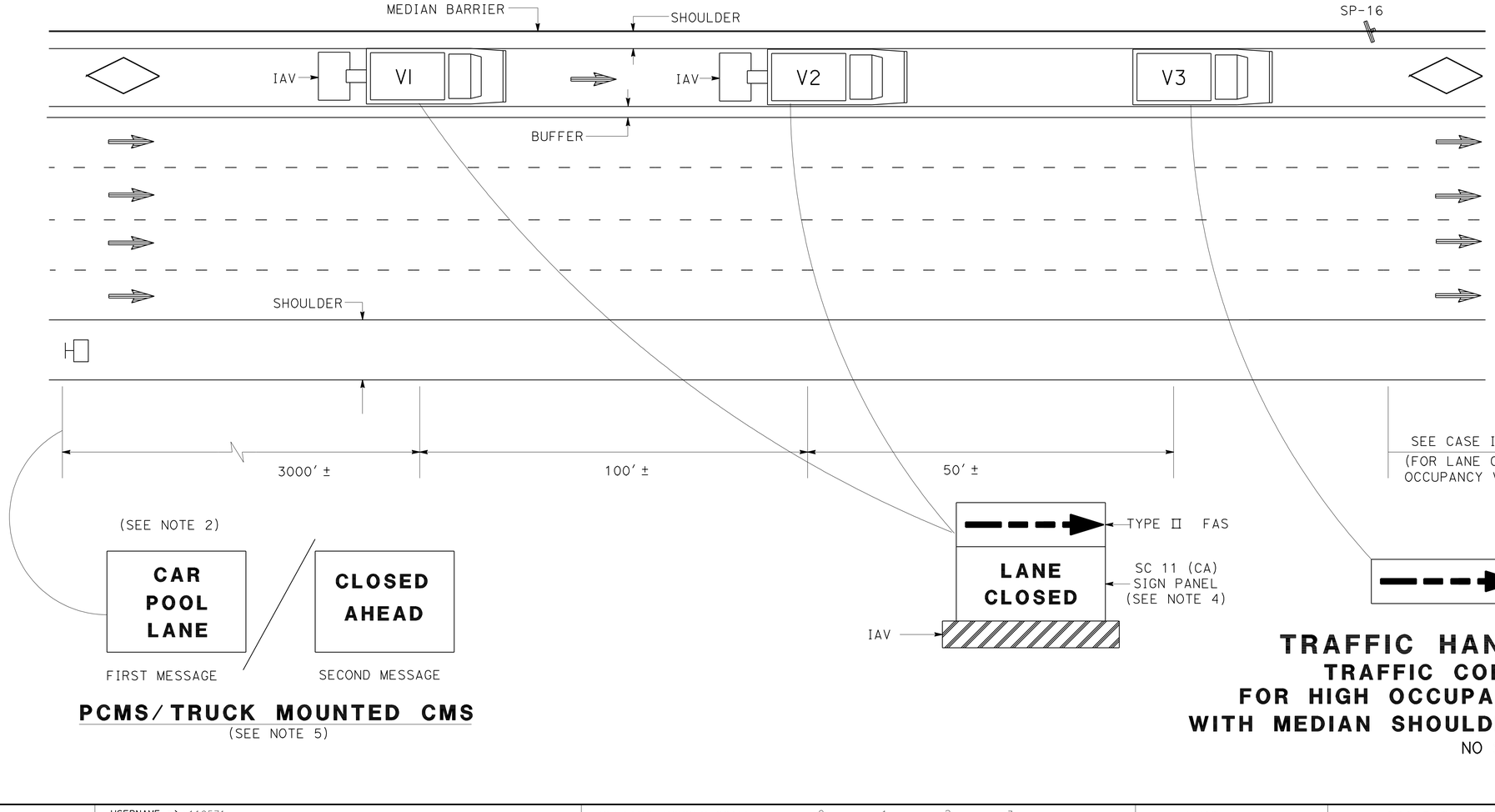
1. LANE CLOSURES SHALL NOT BE PLACED ON CREST VERTICAL CURVES OR ON HORIZONTAL CURVES.
2. PCMS SHALL BE ACTIVATED PRIOR TO TRAFFIC CONTROL ACTIVITIES ON THE HOV LANE.
3. A MINIMUM SIGHT DISTANCE OF 1500' SHALL BE PROVIDED IN ADVANCE OF PCMS.
4. VEHICLE-MOUNTED SIGN PANELS SHALL BE TYPE III OR IV RETROREFLECTORIZED SHEETING, BLACK ON WHITE OR BLACK ON ORANGE WITH 8" MINIMUM SERIES D LETTERS PER CALTRANS SIGN SPECIFICATIONS.
5. PLACE PCMS ON THE MEDIAN SHOULDER WHERE SUFFICIENT ROOM (SUCH AS CHP ENFORCEMENT AREAS) EXISTS.

LEGEND

V1, V2	SHADOW VEHICLE
V3	WORK/APPLICATION VEHICLE
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	DIRECTION OF TRAVEL
	HOV LANE

ABBREVIATIONS

FAS	FLASHING ARROW SIGN
IAV	IMPACT ATTENUATOR VEHICLE
CMS	CHANGEABLE MESSAGE SIGN
(CA)	CALIFORNIA CODE
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
HOV	HIGH OCCUPANCY VEHICLE



PCMS/TRUCK MOUNTED CMS
(SEE NOTE 5)

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM FOR HIGH OCCUPANCY VEHICLE LANES WITH MEDIAN SHOULDERS LESS THAN 8 FEET

NO SCALE

THD-5

REVISED BY	DATE REVISED
JC	7/10

CALCULATED-DESIGNED BY: ALBERT K YU
CHECKED BY: JOCELYN C CHIANG
FUNCTIONAL SUPERVISOR: MARTIN OREGEL
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DTM
Caltrans

LAST REVISION | DATE PLOTTED => 17-APR-2012
00-00-00 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010
USERNAME => s119571
DGN FILE => 727340me005.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1887
PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	41	104

8-31-11
REGISTERED CIVIL ENGINEER DATE

BENJAMIN RAMOS No. C 61340 Exp. 6-30-13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
PLANS APPROVAL DATE

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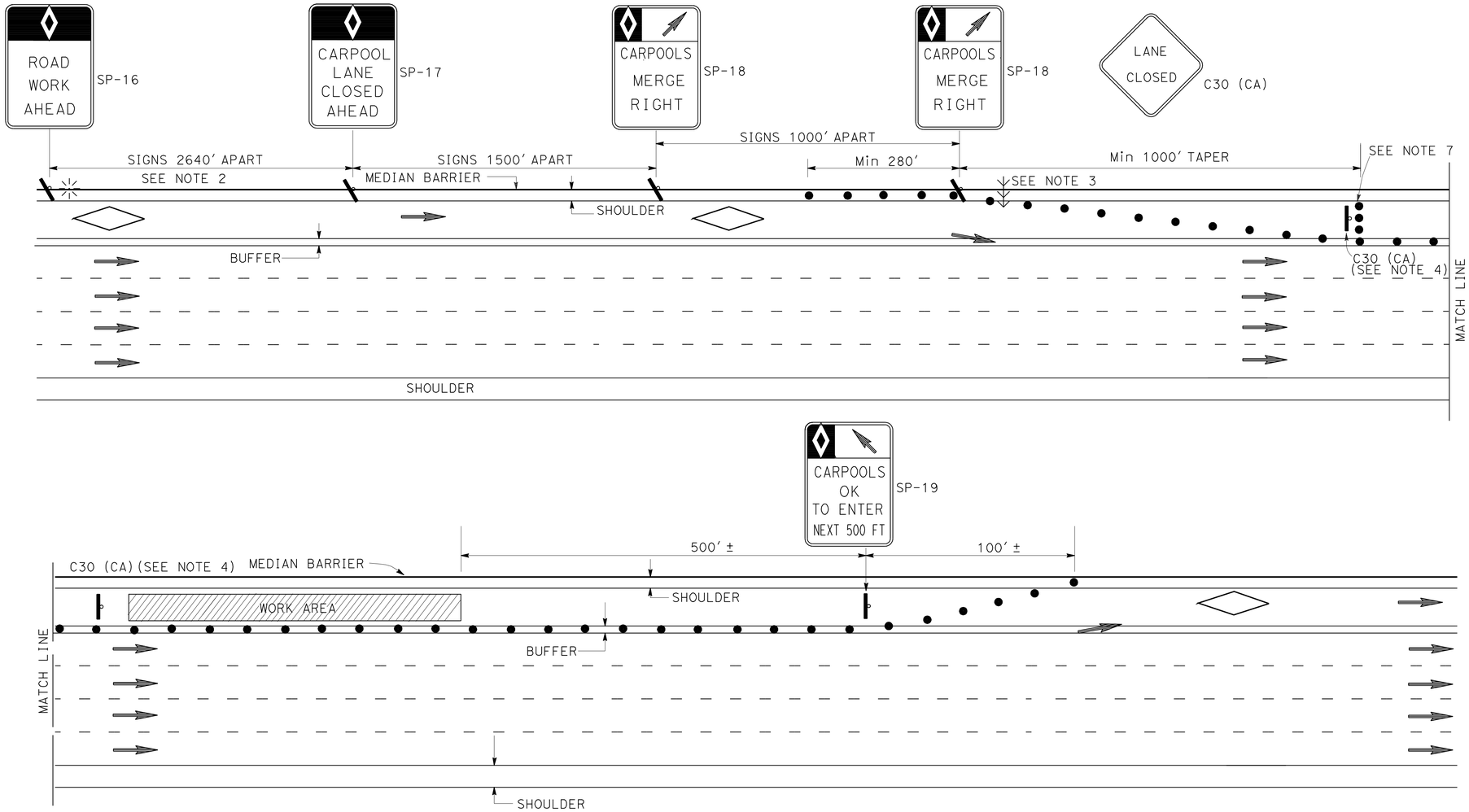

ABBREVIATIONS

(CA) CALIFORNIA CODE

HOV HIGH OCCUPANCY VEHICLE

NOTES: FOR CASE I AND CASE II

1. AT LEAST ONE PERSON SHALL BE ASSIGNED TO FULL TIME MAINTENANCE OF TRAFFIC CONTROL DEVICES ON NIGHT LANE CLOSURES OR DAY-TIME CLOSURES EXCEEDING 1 MILE LENGTH, INCLUDING TAPERS.
2. ADVANCE WARNING SIGN INSTALLATIONS SHALL BE EQUIPPED WITH FLAGS FOR DAYTIME CLOSURES. TYPE B HIGH INTENSITY FLASHING WARNING LIGHTS SHALL BE USED ON SP-16 SIGNS DURING NIGHT LANE CLOSURES. FLAGS AND WARNING LIGHTS SHALL BE ATTACHED TO SIGNS AS APPROVED BY THE ENGINEER.
3. THE FLASHING ARROW SIGN SHALL BE TYPE I.
4. PLACE C30 (CA) SIGNS EVERY 2000' THROUGHOUT THE LENGTH OF LANE CLOSURE.
5. A MINIMUM 1500' OF SIGHT DISTANCE SHALL BE PROVIDED WHERE POSSIBLE FOR VEHICLES APPROACHING THE FLASHING ARROW SIGN. LANE CLOSURES SHALL NOT BE PLACED ON CREST VERTICAL CURVES OR ON HORIZONTAL CURVES.
6. PORTABLE DELINEATORS PLACED AT ONE-HALF THE SPACING INDICATED FOR TRAFFIC CONES MAY BE USED INSTEAD OF CONES FOR DAYTIME CLOSURES.
7. A MINIMUM OF 3 CONES SHALL BE PLACED TRANSVERSELY ACROSS CLOSED LANES WHERE TAPERS END AND EVERY 2000'. TWO TYPE II BARRICADES MAY BE USED INSTEAD OF 3 CONES. THE ALIGNMENT OF CONES OR BARRICADES MAY BE SHIFTED FROM THE TRANSVERSE ALIGNMENT TO PROVIDE ACCESS TO WORK.
8. IF AN INGRESS/EGRESS AREA IS WITHIN 5250' UPSTREAM OR DOWNSTREAM OF THE WORK AREA, LANE CLOSURES SHALL BE EXTENDED TO THAT AREA AS SHOWN IN CASE II.
9. SIGNS SP-16, 17, 18, AND 19 MAY BE OVERLAID ON EXISTING CARPOOL SIGNS IN MEDIANS AS APPROVED BY THE ENGINEER.
10. SIGNS SP-16, 17, 18, AND C30 (CA) SHALL BE BLACK ON ORANGE BACKGROUND. SIGN SP-19 SHALL BE BLACK ON WHITE BACKGROUND. DIAMONDS ON SIGNS SHALL BE WHITE.
11. FOR CLOSURE OF LANE(S) ADJACENT TO HOV LANES, SEE CASE II.
12. THE MAXIMUM SPACING BETWEEN CONES SHALL BE APPROXIMATELY 50' IN TAPERS AND 100' ON TANGENTS.

LEGEND

- CONE
- FLASHING BEACON
- HOV LANE
- FLASHING ARROW SIGN
- PORTABLE SIGN
- DIRECTION OF TRAVEL

SIGN PANEL

SIZE (MIN)

SP-16 36" X 54"
SP-17 36" X 54"
SP-18 36" X 48"
SP-19 36" X 60"
C30 (CA) 30" X 30"
G20-2 48" X 24"

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM FOR HIGH OCCUPANCY VEHICLE LANES AT NON-INGRESS/EGRESS AREAS
CASE I
NO SCALE

THD-6

CALCULATED-DESIGNED BY	CHECKED BY	FUNCTIONAL SUPERVISOR	REVISED BY	DATE REVISED
ALBERT K YU	JOCELYN C CHIANG	MARTIN OREGEL	JC	7/10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DTM Caltrans®

LAST REVISION: DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 09:05 00-00-00

BORDER LAST REVISED 7/2/2010 | USERNAME => s119571 DGN FILE => 727340me006.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1887 | PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	42	104

REGISTERED CIVIL ENGINEER — 8-31-11 DATE

4-16-12 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — BENJAMIN RAMOS — No. C 61340 — Exp. 6-30-13 — CIVIL — STATE OF CALIFORNIA

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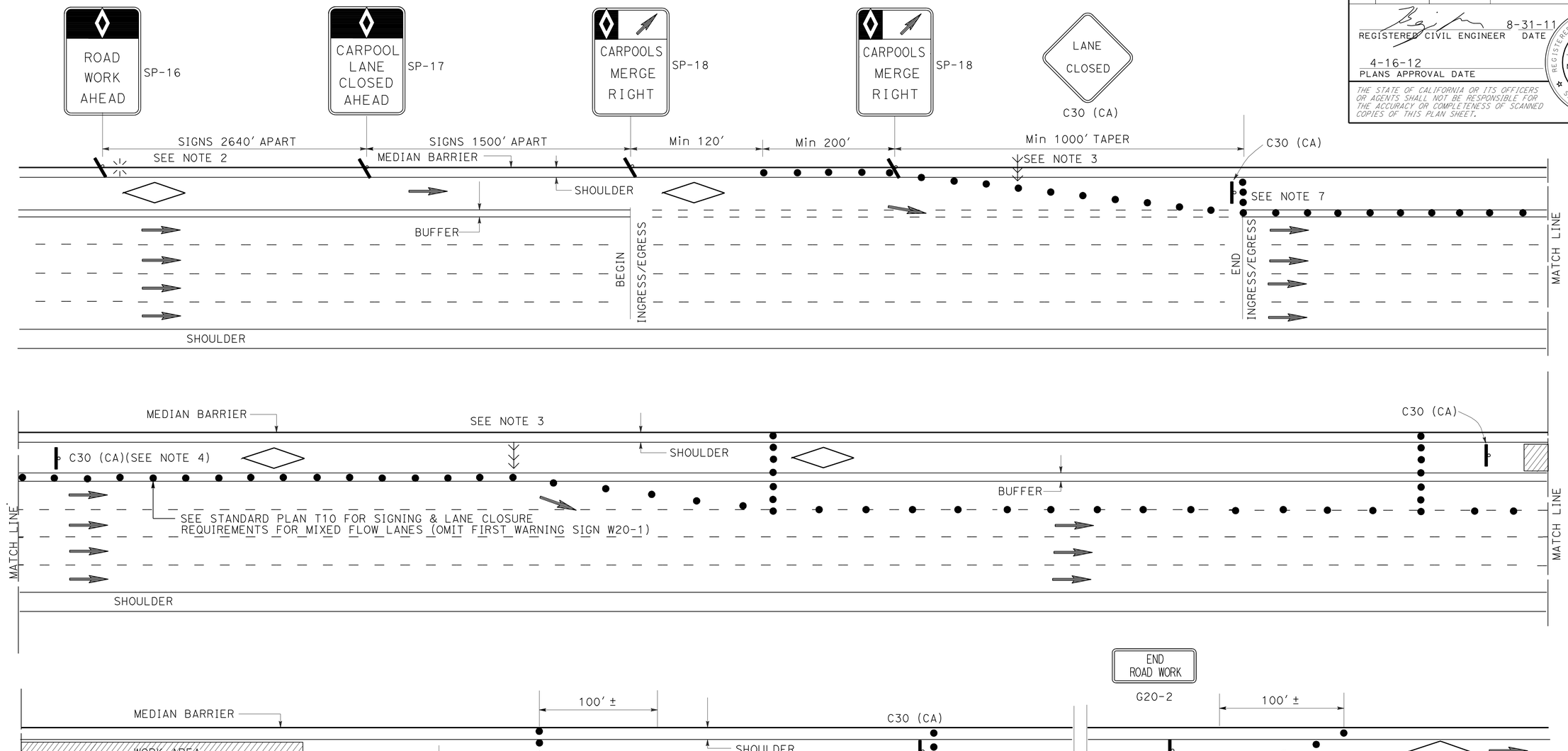


NOTES:

1. SEE CASE I FOR NOTES, LEGENDS AND ABBREVIATIONS FOR THIS SHEET.
2. CLOSURES OF ONE MIXED FLOW TRAFFIC LANE ADJACENT TO HOV LANE SHOWN. MULTIPLE MIXED FLOW LANE CLOSURES ARE SIMILAR.

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM FOR HIGH OCCUPANCY VEHICLE LANES AND ADJACENT FREEWAY LANES BETWEEN INGRESS/EGRESS AREAS
CASE II

NO SCALE

THD-7

CALCULATED-DESIGNED BY	JC	REVISED BY	
CHECKED BY	7/10	DATE REVISED	
FUNCTIONAL SUPERVISOR	ALBERT K YU		
	JOCELYN C CHIANG		
	MARTIN OREGEL		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — DTM — Caltrans

LAST REVISION DATE PLOTTED => 17-APR-2012
00-00-00 TIME PLOTTED => 09:05

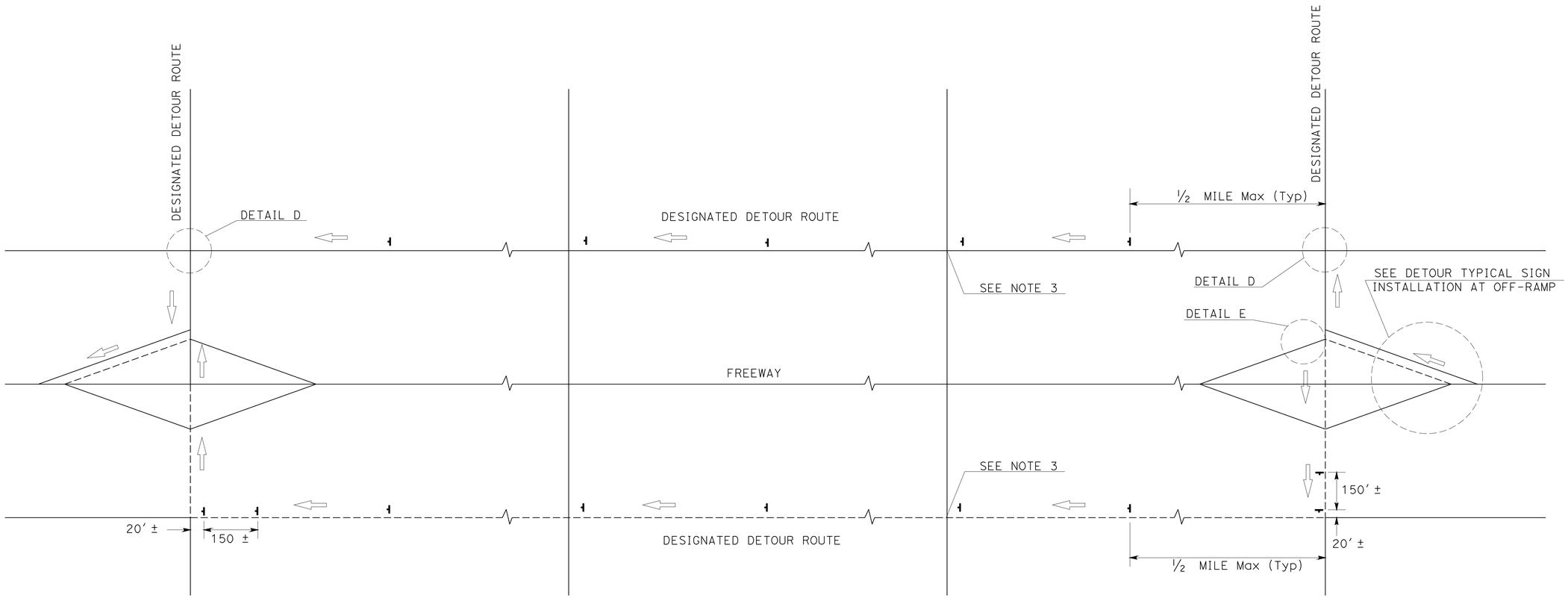
BORDER LAST REVISED 7/2/2010 | USERNAME => s119571 | DGN FILE => 727340me007.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1887 | PROJECT NUMBER & PHASE 07000208381

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	43	104

8-31-11
REGISTERED CIVIL ENGINEER DATE

BENJAMIN RAMOS
No. C 61340
Exp. 6-30-13
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

4-16-12
PLANS APPROVAL DATE



TYPICAL DETOUR SIGN INSTALLATION ALONG DESIGNATED DETOUR ROUTE

LEGEND

⊣	TEMPORARY SIGN (SP-2)
AND/OR	DESIGNATED DETOUR ROUTE
⇨	DIRECTION OF TRAVEL

NOTES:

1. SP-2 SIGNS SHALL NOT BE INSTALLED ON BARRICADES EXCEPT AS OTHERWISE SHOWN.
2. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
3. SP-2 SIGNS SHALL BE POSTED AT SIGNALIZED INTERSECTIONS ALONG THE DESIGNATED DETOUR ROUTE OR ½ MILE MAXIMUM APART.

TRAFFIC HANDLING DETAILS

TRAFFIC CONTROL SYSTEM FOR DETOUR SIGN INSTALLATION ALONG DESIGNATED DETOUR ROUTE

SHEET 1 OF 2

NO SCALE

THD-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DTM
Caltrans

FUNCTIONAL SUPERVISOR: MARTIN OREGEL
CALCULATED-DESIGNED BY: ALBERT K YU
CHECKED BY: JOCELYN C CHIANG
REVISED BY: JC
DATE REVISED: 7/10

LAST REVISION DATE PLOTTED => 17-APR-2012
TIME PLOTTED => 09:05
00-00-00

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	44	104

8-31-11
REGISTERED CIVIL ENGINEER DATE

BENJAMIN RAMOS No. C 61340 Exp. 6-30-13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
PLANS APPROVAL DATE

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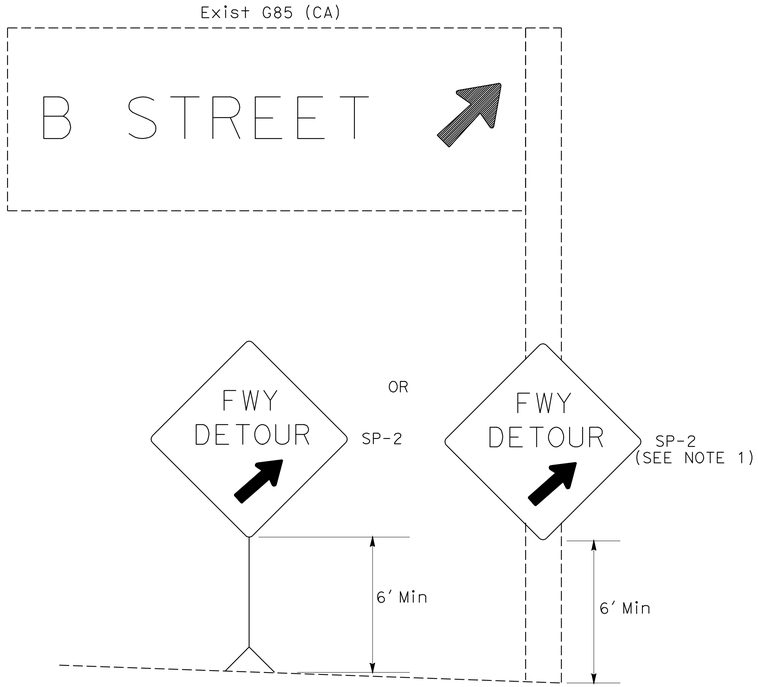
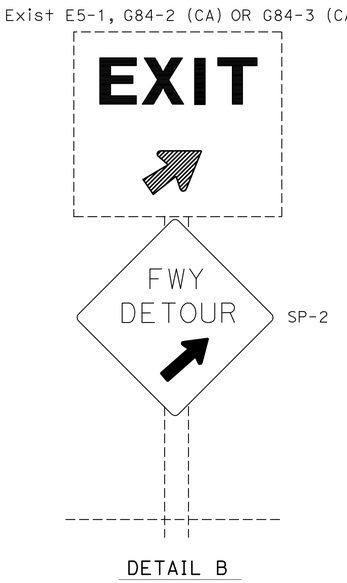
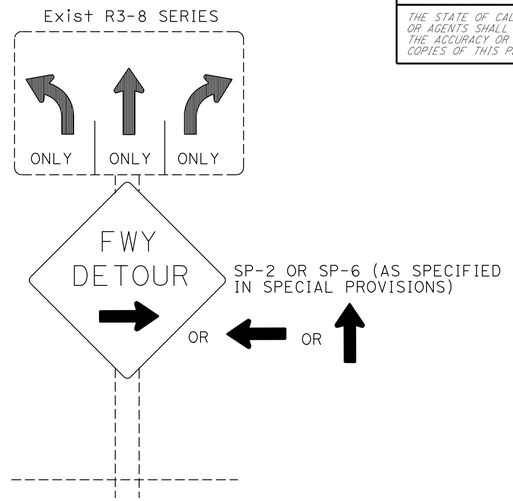


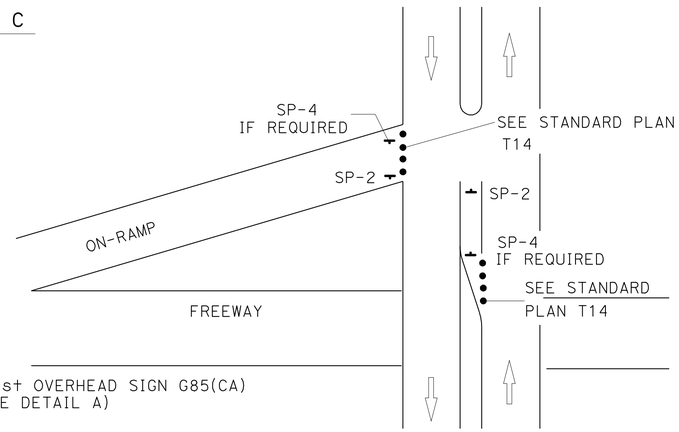
DETAIL A



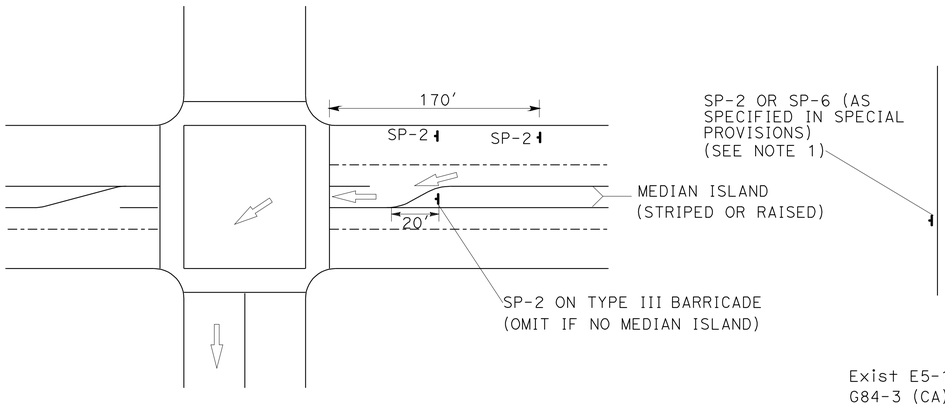
DETAIL B



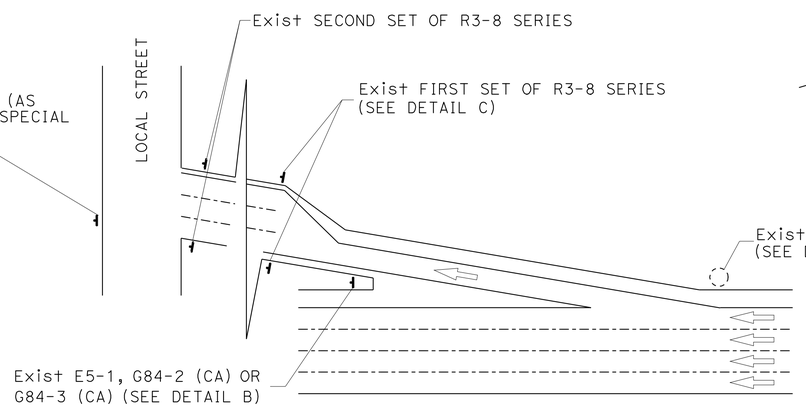
DETAIL C



DETAIL E



DETAIL D



TYPICAL DETOUR SIGN INSTALLATION AT OFF-RAMP

NOTES:

1. TEMPORARY SIGNS MAY BE STRAPPED ON EXISTING ELECTROLIER, SIGNAL POSTS, OR SIGN POSTS.
2. OMIT DETAIL A AND DETAIL B FOR FULL FREEWAY CLOSURES.
3. SEE TRAFFIC HANDLING DETAILS PLAN-TRAFFIC CONTROL SYSTEM FOR RAMP CLOSURES, DETOUR SIGNS AND MISCELLANEOUS DETAILS SHEET 2 OF 2 FOR SP-6.

ABBREVIATIONS

(CA) CALIFORNIA CODE

LEGENDS

- TRAFFIC CONE
- TEMPORARY SIGN
- DIRECTION OF TRAVEL
- EXISTING OVERHEAD SIGN

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM FOR DETOUR SIGN INSTALLATION ALONG DESIGNATED DETOUR ROUTE
SHEET 2 OF 2

NO SCALE

THD-9

REVISED BY	DATE REVISED
JC	8/10

ALBERT K YU
JOCELYN C CHIANG
MARTIN OREGEL

CALCULATED-DESIGNED BY
CHECKED BY
FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DTM
Caltrans

LAST REVISION => DATE PLOTTED => 17-APR-2012
00-00-00 TIME PLOTTED => 09:05

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	45	104

REGISTERED CIVIL ENGINEER — DATE: 1-9-12

AINSLEY C KUNG No. C 74005 Exp. 6/30/13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-16-12
PLANS APPROVAL DATE

NOTE:

1. SEE STAGE CONSTRUCTION AND TRAFFIC HANDLING QUANTITY PLAN FOR ADDITIONAL QUANTITY.

PAVEMENT DELINEATION QUANTITIES

LOCATION	DIRECTION	THERMOPLASTIC PAVEMENT MARKING			PAVEMENT MARKER			THERMOPLASTIC TRAFFIC STRIPE								
					RETRO REFLECTIVE		NON-REFLECTIVE									
		TYPE V ARROW	HOV DIAMOND SYMBOL	REMOVE PAVEMENT MARKING	TYPE G	TYPE H	TYPE A	4" BROKEN WHITE DETAIL 13 (Mod)	4" SOLID WHITE DETAIL 27B	4" BROKEN WHITE DETAIL 8	4" BROKEN WHITE DETAIL 9	4" DOUBLE YELLOW DETAIL 27	4"SOLID YELLOW DETAIL 25	4" SOLID YELLOW DETAIL 25A	8" SOLID WHITE DETAIL 38	8" SOLID WHITE DETAIL 38B
STATION		SQFT	SQFT	SQFT	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF
Rte 134 TO Rte 170 CONNECTOR																
Sta 39+35 TO 50+16	WB				29	24	110	1318					1081			
RIVERSIDE Dr UC																
Sta 40+42 TO 48+11	WB				15	17	57	676					769			
LOS ANGELES RIVER BRIDGE																
Sta 0+00 TO 5+23	WB	33	11	44	32				275						362	161
Sta 0+00 TO 4+49	EB								449							
Sta 19+33 TO 25+78	WB				16				635		629					16
Sta 23+25 TO 25+43	EB								218							
EDENHURST Ave UC																
Sta 2+40 TO 6+81	EB				8				548	193	47				107	
Sta 6+42 TO 9+48	WB								306	94						
Sta 15+00 TO 15+40	WB								40							
MONTE BONITO Dr UC																
Sta 0+00 TO 5+29	EB				13	7	40	474	529		55	492				
Sta 0+08 TO 4+22	WB				11	9	27	321	414		93	744				
Sta 10+74 TO 17+18	EB				23	3			440		272	206			373	
FIGUEROA St UC																
Sta 0+00 TO 0+63	EB					2			31			126				
Sta 0+00 TO 2+24	WB				6	3			224		224			48		
Sta 5+29 TO 12+74	EB				16	9	59	708	745			698				
Sta 9+81 TO 14+17	WB				11	16	27	325	436		111			377		
SUBTOTAL FROM SCQ-3					184	113	382									
SUBTOTAL THIS SHEET		33	11	44	180	90	320	3822	5290	287	1431	2266	1850	425	842	177
TOTAL		44		44	567		702	15371							1019	

PAVEMENT DELINEATION QUANTITIES

PDQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — DESIGN

CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: AINSLEY C KUNG
FUNCTIONAL SUPERVISOR: DEREK HIGA
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 17-APR-2012 | 01-05-12 | TIME PLOTTED => 09:05

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	46	104

REGISTERED CIVIL ENGINEER — DATE: 1-9-12

REGISTERED PROFESSIONAL ENGINEER
AINSLEY C KUNG
No. C 74005
Exp. 6/30/13
CIVIL
STATE OF CALIFORNIA

4-16-12
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.

ROADWAY ITEMS

SHEET NUMBER	SHOULDER SIDE	STATION/LOCATION	DIRECTION	TRANSITION RAILING (TYPE WB)	SALVAGE MBGR	METAL BEAM GUARD RAILING (WOOD POST)	END CAP (TYPE TC)	PLACE HMA (Misc AREA)	MINOR HMA	REMOVE AC DIKE	PLACE HMA DIKE		REMOVE Conc (CURB AND GUTTER)	REMOVE Conc PAVEMENT	CRASH CUSHION (TYPE CAT)	CRASH CUSHION (TYPE CAT) BACKUP	Temp DRAINAGE INLET PROTECTION	WEED CONTROL MAT (RUBBER)
											TYPE C	TYPE F						
				EA	LF	LF	EA	SQYD	TON	LF	LF	LF	LF	SQYD	EA	EA	EA	SQYD
		W/B LA-134 TO N/B 170																
L-1	MEDIAN	Sta 41+27 TO 47+61		1	87	324	1	667	118	87	337	82	337	513	1	1	1	
L-1	RIGHT	Sta 41+27 TO 47+61															1	
		RIVERSIDE DRIVE UC																
L-1	MEDIAN	Sta 41+44 TO 47+53		1	52	294	1		1	52	342	52	342					
L-1	RIGHT	Sta 41+77 TO 45+31	WB	1	25		1											
L-1	LEFT	Sta 41+00 TO 45+31	WB														1	
		LOS ANGELES RIVER BRIDGE																
L-2	LEFT	Sta 0+00 TO 6+56	EB	1	25		1											8.4
L-2	RIGHT	Sta 20+00 TO 21+00	EB														2	
L-2	RIGHT	Sta 19+15 TO 25+78	WB				1										5	
		EDENHURST AVENUE UC																
L-2	RIGHT	Sta 5+20 TO 6+56	EB	1	25		1											8.4
L-2	RIGHT	Sta 13+77 TO 15+24	WB	1	25		1											8.4
L-2	LEFT	Sta 13+50 TO 15+24	WB														2	
		MONTE BONITO DRIVE UC																
L-3	RIGHT	Sta 0+11 TO 1+84	EB	2	25		2											
L-3	LEFT	Sta 0+71 TO 2+51	WB	2	25		2											
		FIGUEROA STREET UC																
L-4	RIGHT	Sta 9+51 TO 12+42	EB	2	25		2										2	
L-4	LEFT	Sta 10+97 TO 13+80	WB	3	50		3										2	
		TOTAL		15	364	618	16	667	119	139	679	134	679	513	1	1	16	25.2

SUMMARY OF QUANTITIES

Q-1

CALCULATED-DESIGNED BY: AINSLEY C KUNG
CHECKED BY: NGUYEN MAI
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR: DEREK HIGA
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 17-APR-2012 | TIME PLOTTED => 09:05 | 11-22-11

BORDER LAST REVISED 7/2/2010 | USERNAME => s119571 | DGN FILE => 727340pa001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1811 | PROJECT NUMBER & PHASE 07000208381

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	134	0.0/L9.9	47	104

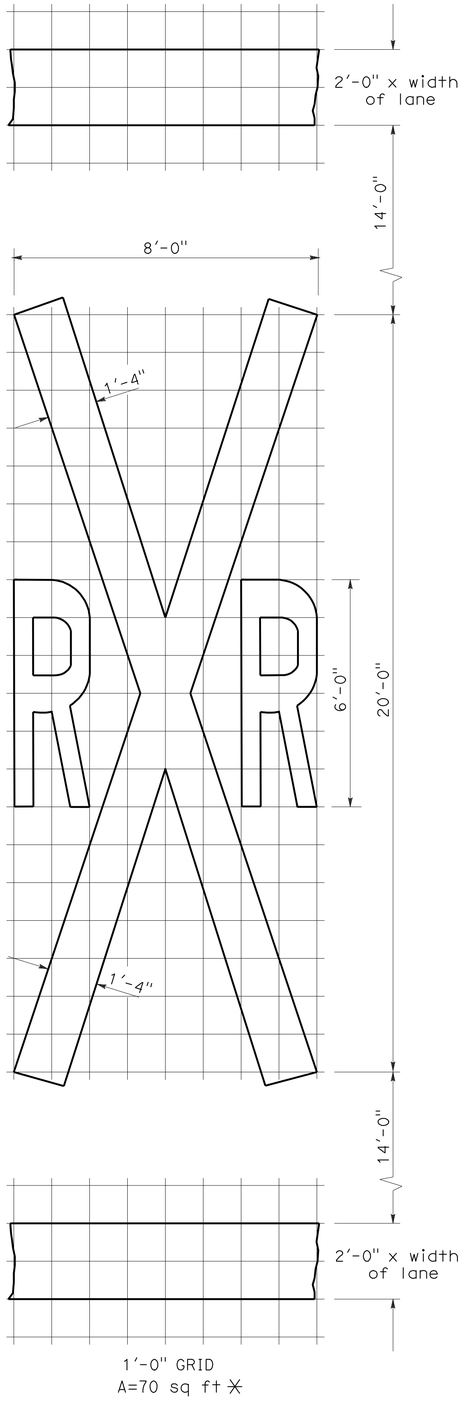
Donald E. Howe
REGISTERED CIVIL ENGINEER

Donald E. Howe
No. C46402
Exp. 3-31-09
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

June 6, 2008
PLANS APPROVAL DATE

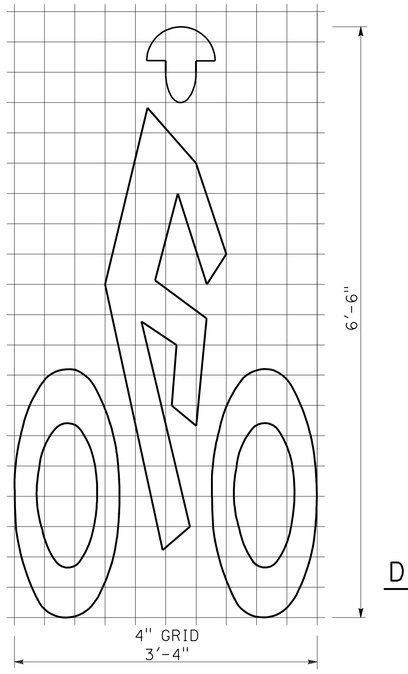
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 4-16-12

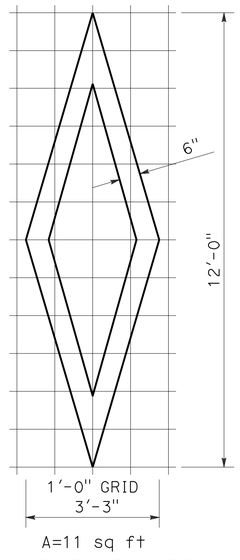


RAILROAD CROSSING SYMBOL

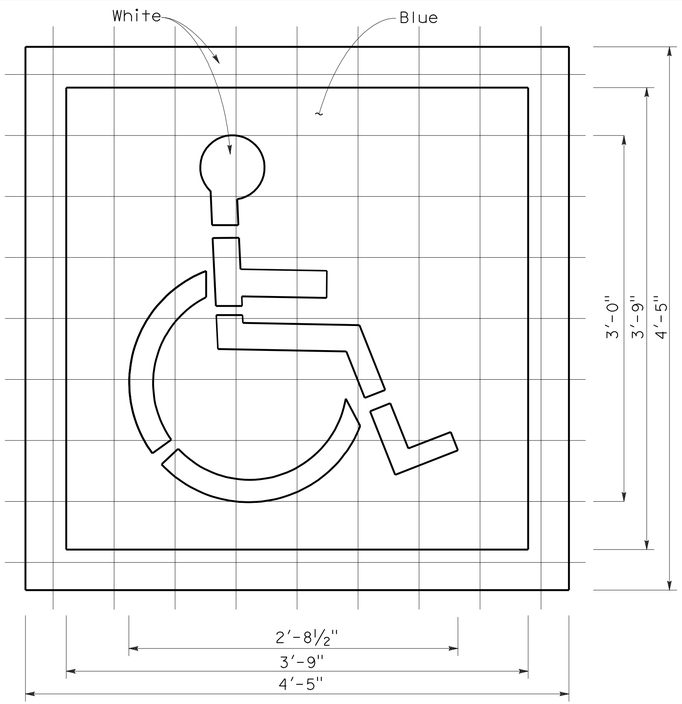
✳70 sq ft DOES NOT INCLUDE THE 2'-0" x VARIABLE WIDTH TRANSVERSE LINES.



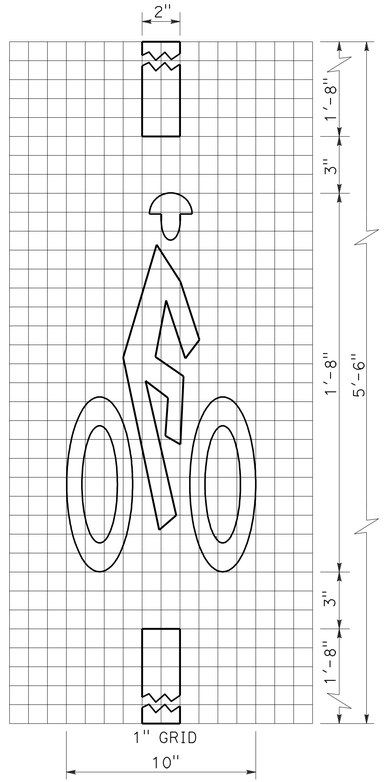
BIKE LANE SYMBOL



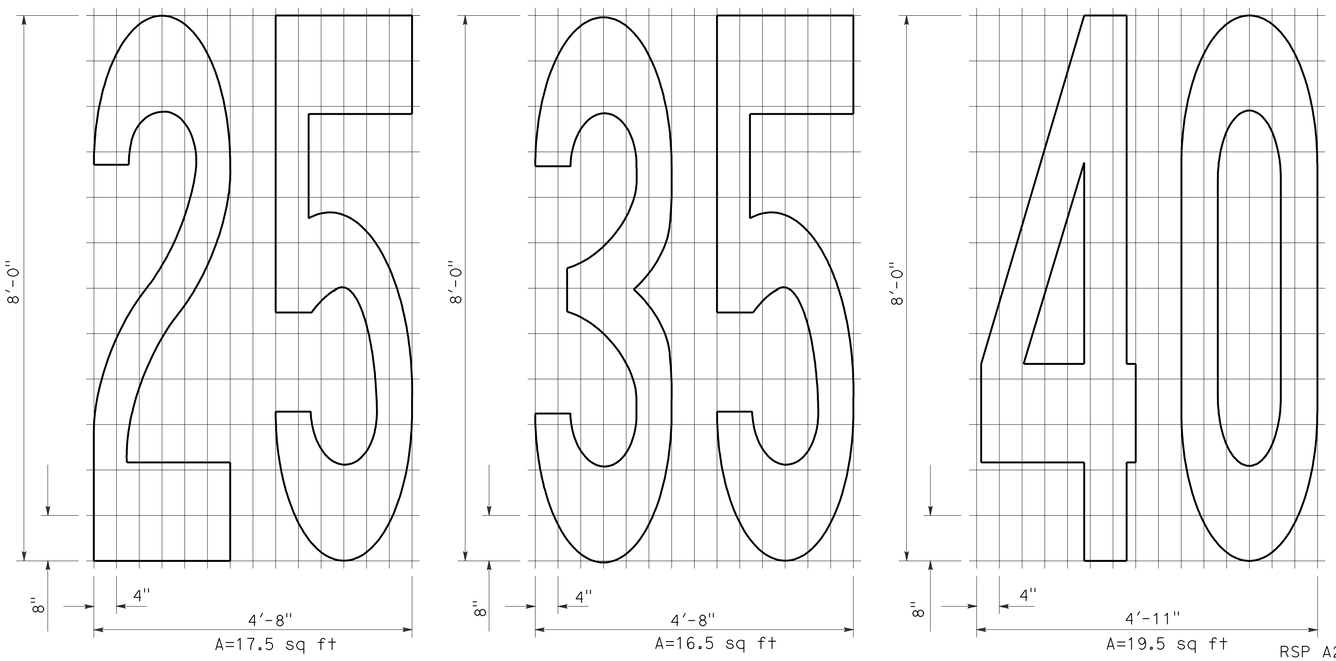
DIAMOND SYMBOL



INTERNATIONAL SYMBOL OF ACCESSIBILITY MARKING



BICYCLE LOOP DETECTOR SYMBOL



NUMERALS

NOTE:

1. Minor variations in dimensions may be accepted by the Engineer.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKINGS SYMBOLS AND NUMERALS

NO SCALE

RSP A24C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A24C DATED MAY 1, 2006 - PAGE 11 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A24C

2006 REVISED STANDARD PLAN RSP A24C

5-27-09

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	48	104

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-11 CIVIL — STATE OF CALIFORNIA

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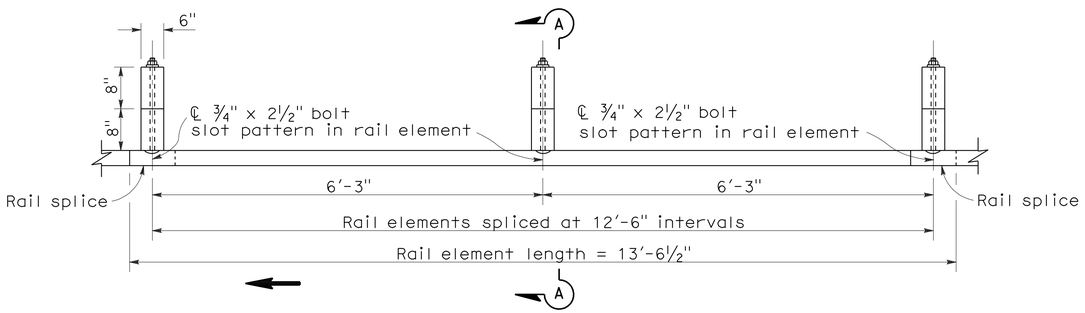
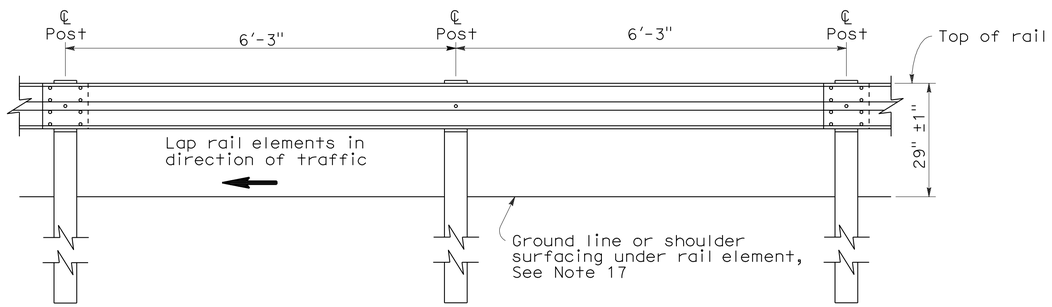
To accompany plans dated 4-16-12

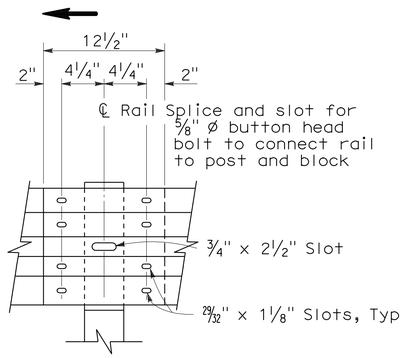


PLAN



ELEVATION

METAL BEAM GUARD RAILING WITH WOOD POST AND BLOCKS



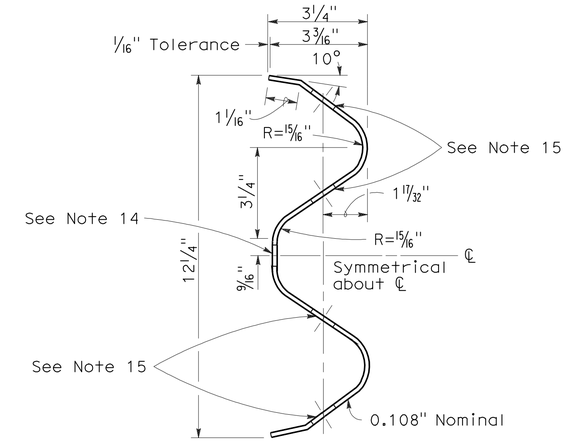
ELEVATION

RAIL ELEMENT SPLICE DETAIL

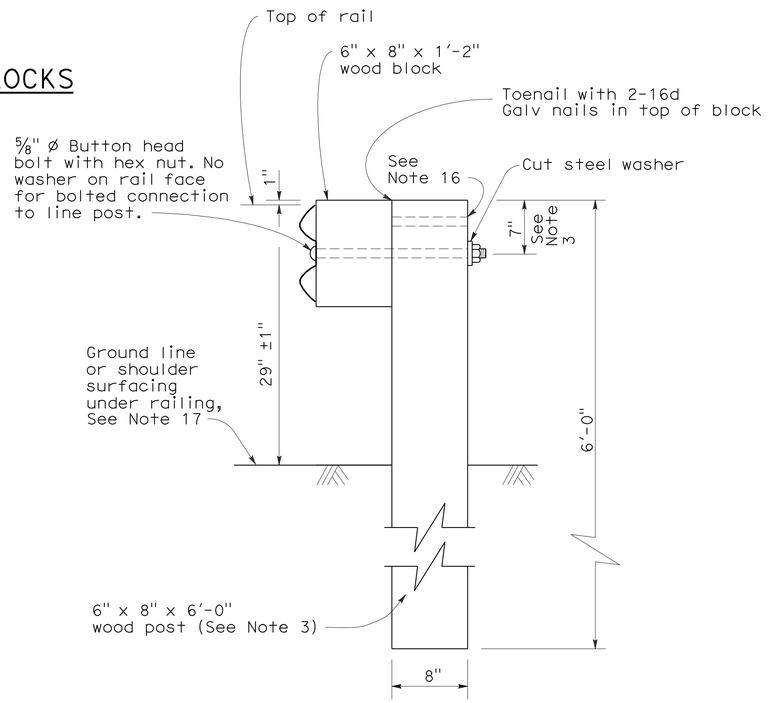
a) Connect the over lapped end of the rail elements with ⅝" ø x 1⅜" button head oval shoulder splice bolts inserted into the 29/32" x 1⅛" slots and bolted together with ⅝" ø recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice 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 THRU RAIL ELEMENT



SECTION A-A
TYPICAL WOOD LINE POST INSTALLATION
See Note 4

NOTES:

1. For details of steel post installations, see Standard Plan A77A2.
2. For details of standard hardware used to construct guard railing, see Standard Plan A77B1.
3. For details of wood posts and wood blocks used to construct guard railing, see Standard Plan A77C1.
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 guard railing connection details to abutments and walls, see Standard Plan A77J3.
12. Direction of adjacent traffic indicated by →.
13. For typical guard railing delineation and dike positioning details, see Standard Plan A77C4.
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. Additional hole in uppermost portion of line post is for potential future adjustments of railing height. See Standard Plan A77C1.
17. Install posts in soil.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING STANDARD RAILING SECTION (WOOD POST WITH WOOD BLOCK)

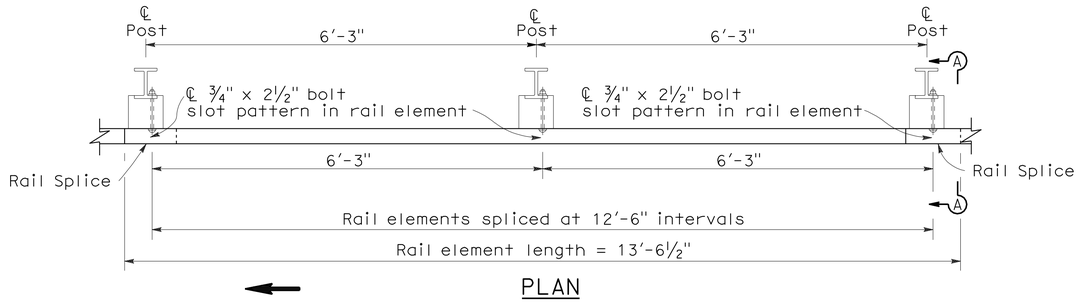
NO SCALE

RSP A77A1 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77A1 DATED MAY 1, 2006 - PAGE 41 OF THE STANDARD PLANS BOOK DATED MAY 2006.

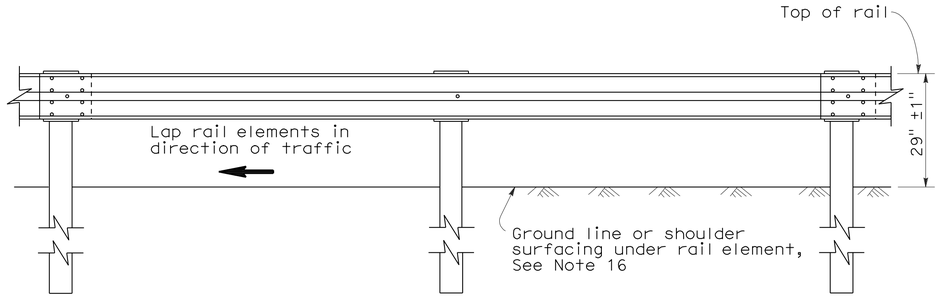
REVISED STANDARD PLAN RSP A77A1

2006 REVISED STANDARD PLAN RSP A77A1

3-10-11

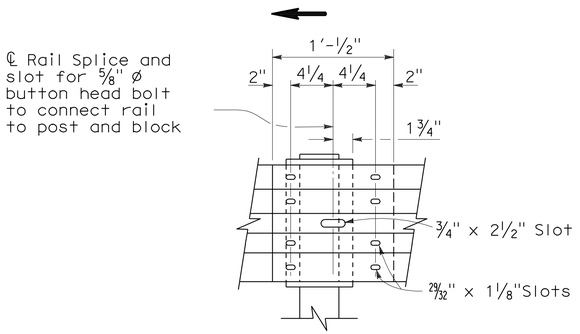


PLAN



ELEVATION

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



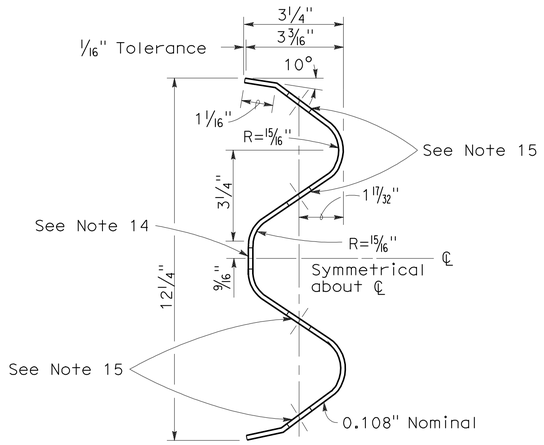
ELEVATION

RAIL ELEMENT SPLICE DETAIL

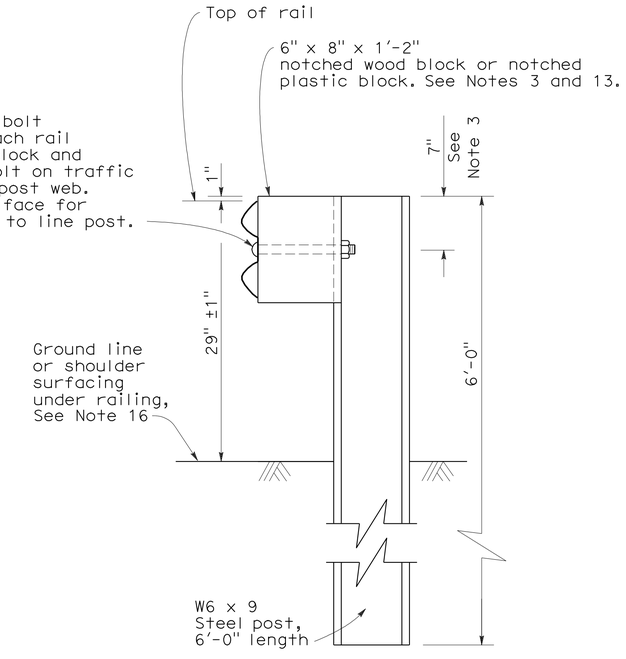
a) Connect the over lapped end of the rail elements with ⅝" ø x 1⅜" button head oval shoulder splice bolts inserted into the 29/32" x 1⅛" slots and bolted together with ⅝" ø recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice 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 THRU RAIL ELEMENT



SECTION A-A

TYPICAL STEEL LINE POST INSTALLATION

See Note 4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	49	104

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-11 — CIVIL — STATE OF CALIFORNIA

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

To accompany plans dated 4-16-12

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.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP A77A2 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77A2 DATED MAY 1, 2006 - PAGE 42 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77A2

2006 REVISED STANDARD PLAN RSP A77A2

5-4-11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	50	104

To accompany plans dated 4-16-12

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-11 — CIVIL — STATE OF CALIFORNIA

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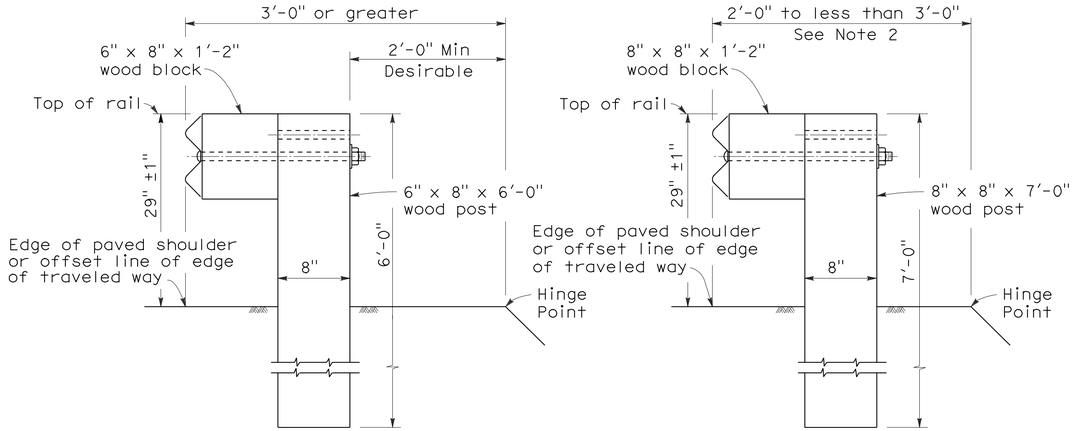
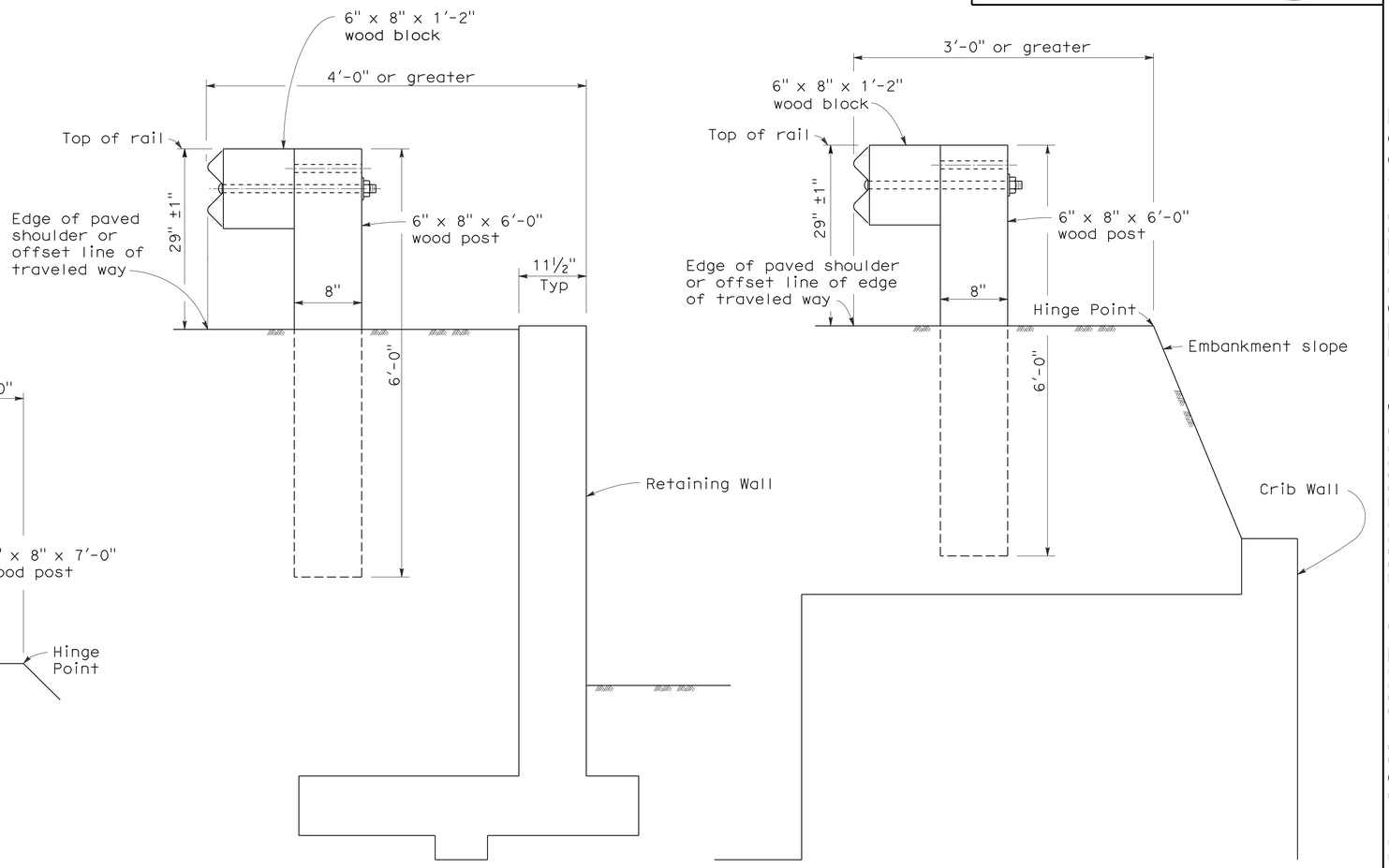


DETAIL A
TYPICAL ROADWAY INSTALLATION
See Note 1

DETAIL B
NARROW ROADWAY INSTALLATION
See Note 1

POST EMBEDMENT



DETAIL C

DETAIL D

INSTALLATION AT EARTH RETAINING WALLS

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.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP A77C3 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77C3
DATED MAY 1, 2006 - PAGE 46 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77C3

2006 REVISED STANDARD PLAN RSP A77C3

3-10-11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	51	104

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

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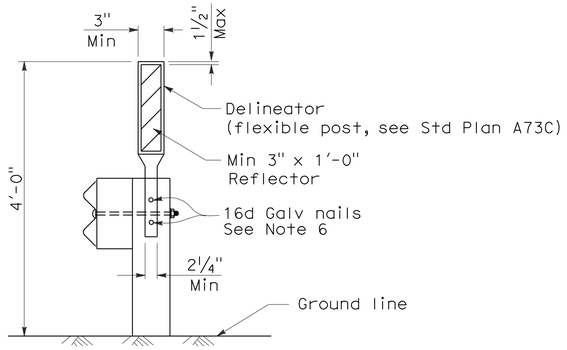
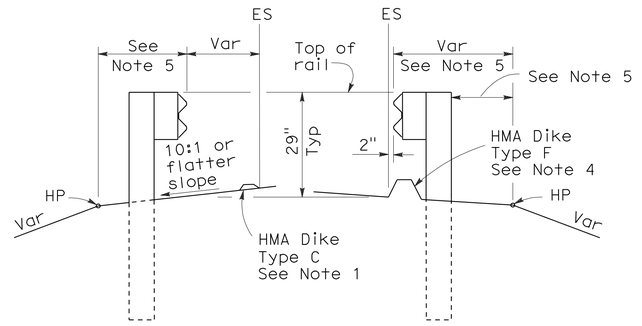
To accompany plans dated 4-16-12

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 Standard Plans A87A and A87B.
5. For details of typical distance between the face of rail and hinge point, see Standard Plan A77C3.
6. For steel line posts, use ¼ - 20 self-tapping screws in 0.22" diameter holes or ¼" bolts in 9/32" diameter holes.



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 MAY 20, 2011 SUPERSEDES RSP A77C4 DATED JUNE 6, 2008 AND 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

3-10-11

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	134	0.0/L9.9	52	104

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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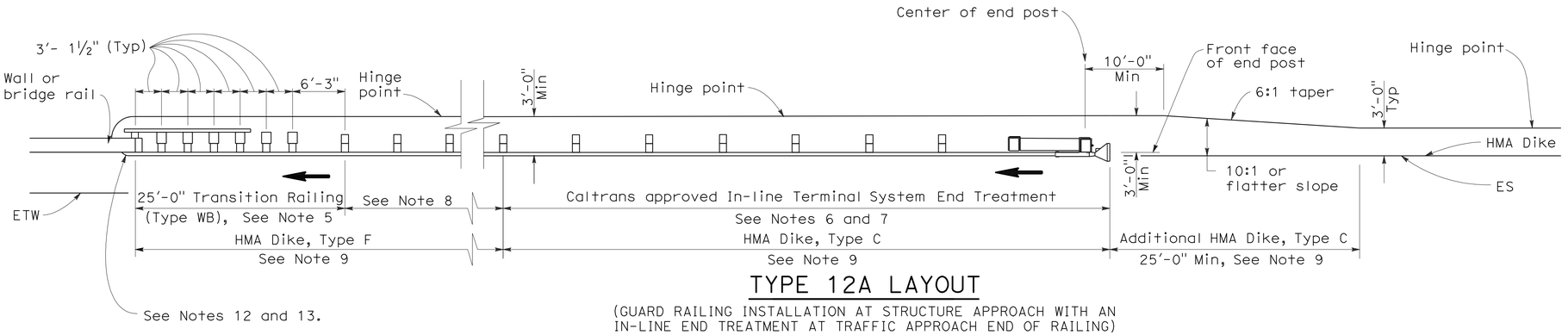
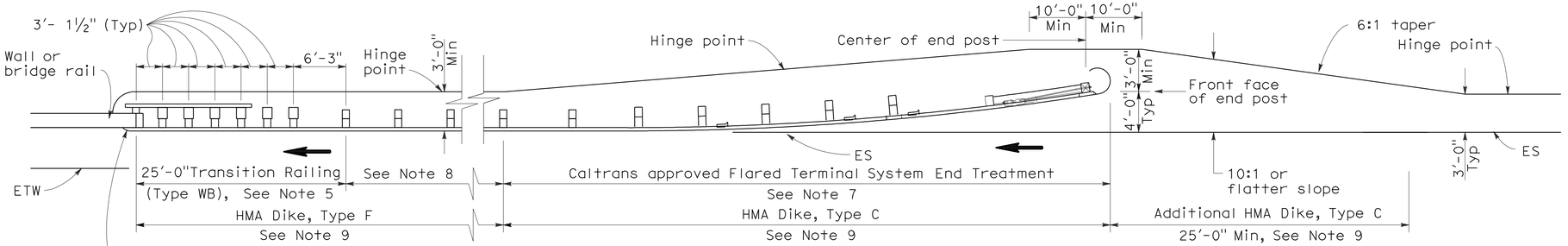
To accompany plans dated 4-16-12



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:

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 posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
4. Direction of adjacent traffic indicated by ➞.
5. For Transition Railing (Type WB) details for Types 12A and 12B Layouts, see Standard Plan A77J4.
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, 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.
9. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
10. Type 12A or Type 12B Layouts are typically used:
    a. 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.
    b. 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.
    c. To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
    d. To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
11. 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.
12. 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.
13. For additional details of a typical connection to walls or abutments, see Standard Plan A77J3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR STRUCTURE APPROACH

NO SCALE

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

REVISED STANDARD PLAN RSP A77F1

2006 REVISED STANDARD PLAN RSP A77F1

12-10-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	53	104

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-11 CIVIL — STATE OF CALIFORNIA

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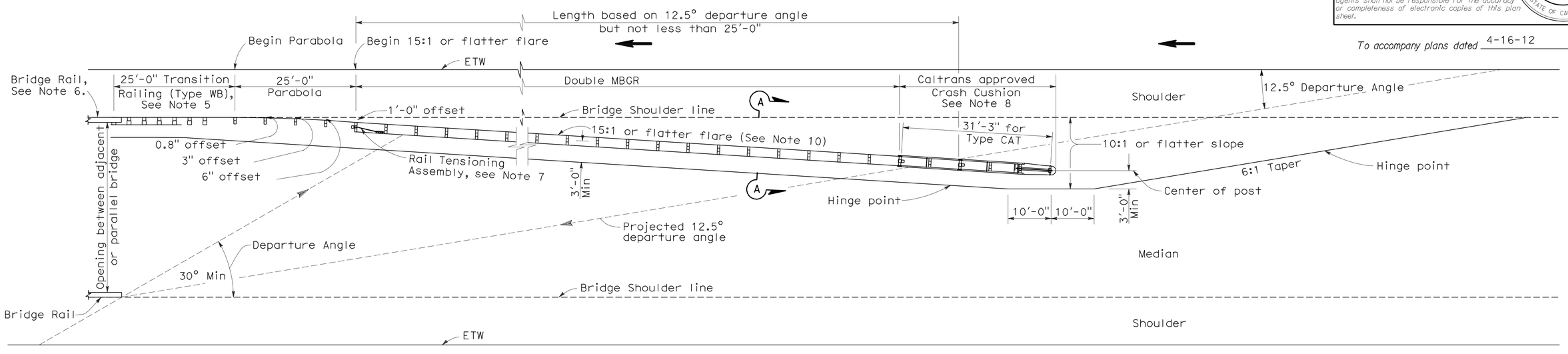
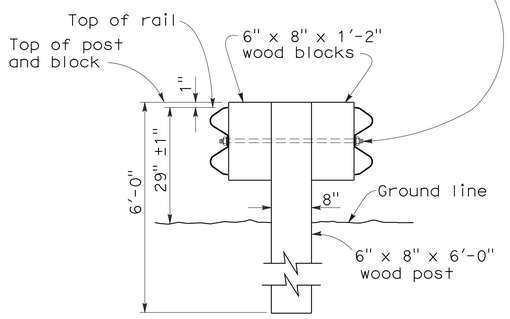
To accompany plans dated 4-16-12



TYPE 12E LAYOUT

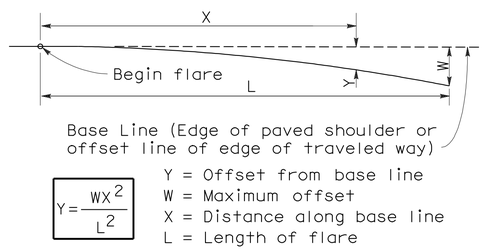
See Note 10

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

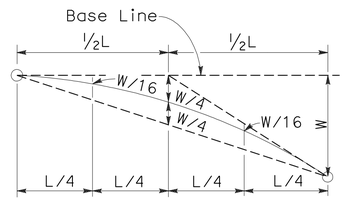
TYPICAL DOUBLE METAL BEAM GUARD RAILING



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

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

PARABOLIC FLARE OFFSETS



TYPICAL PARABOLIC LAYOUT

NOTES:

1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
2. Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
4. Direction of adjacent traffic indicated by ⟶.
5. For Transition Railing (Type WB) details, see Standard Plan A77J4.
6. For additional details of a typical connection to bridge rail, see Connection Detail AA on Revised Standard Plan RSP A77J1.
7. For Rail Tensioning Assembly details, see Standard Plan A77H2.
8. The type of Crash Cushion to be used will be shown on the Project Plans.
9. 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.
10. The 15:1 or flatter flare is measured off of the edge of traveled way.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR STRUCTURE APPROACH

NO SCALE

RSP A77F3 DATED MAY 20, 2011 SUPERSEDES RSP A77F3 DATED JUNE 6, 2008 AND STANDARD PLAN A77F3 DATED MAY 1, 2006 - PAGE 56 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77F3

2006 REVISED STANDARD PLAN RSP A77F3

3-10-11

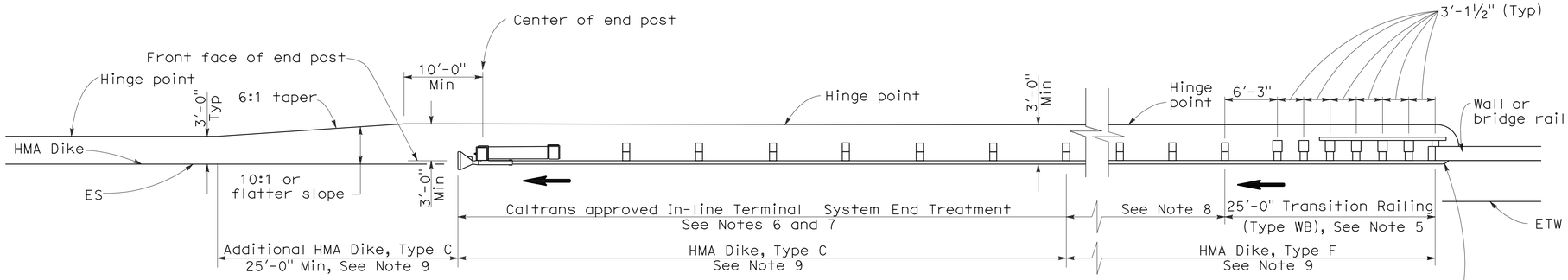
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	134	0.0/L9.9	54	104

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

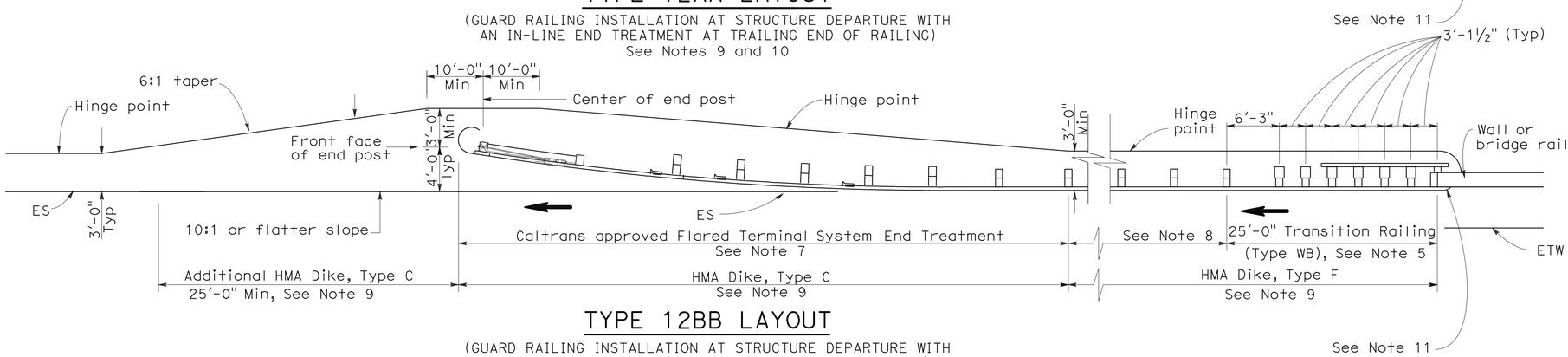
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 4-16-12



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:

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 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.
4. Direction of adjacent traffic indicated by ➞.
5. For Transition Railing (Type WB) details for Types 12AA and 12BB Layouts, see Standard Plan A77J4.
6. In-line Terminal System Treatments are used where site conditions will not accommodate a flared end treatment.
7. The type of terminal system to be used will be shown on the Project Plans.
8. 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.
9. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
10. 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.
11. 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

2006 REVISED STANDARD PLAN RSP A77F4

12-10-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	55	104

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-11 — CIVIL — STATE OF CALIFORNIA

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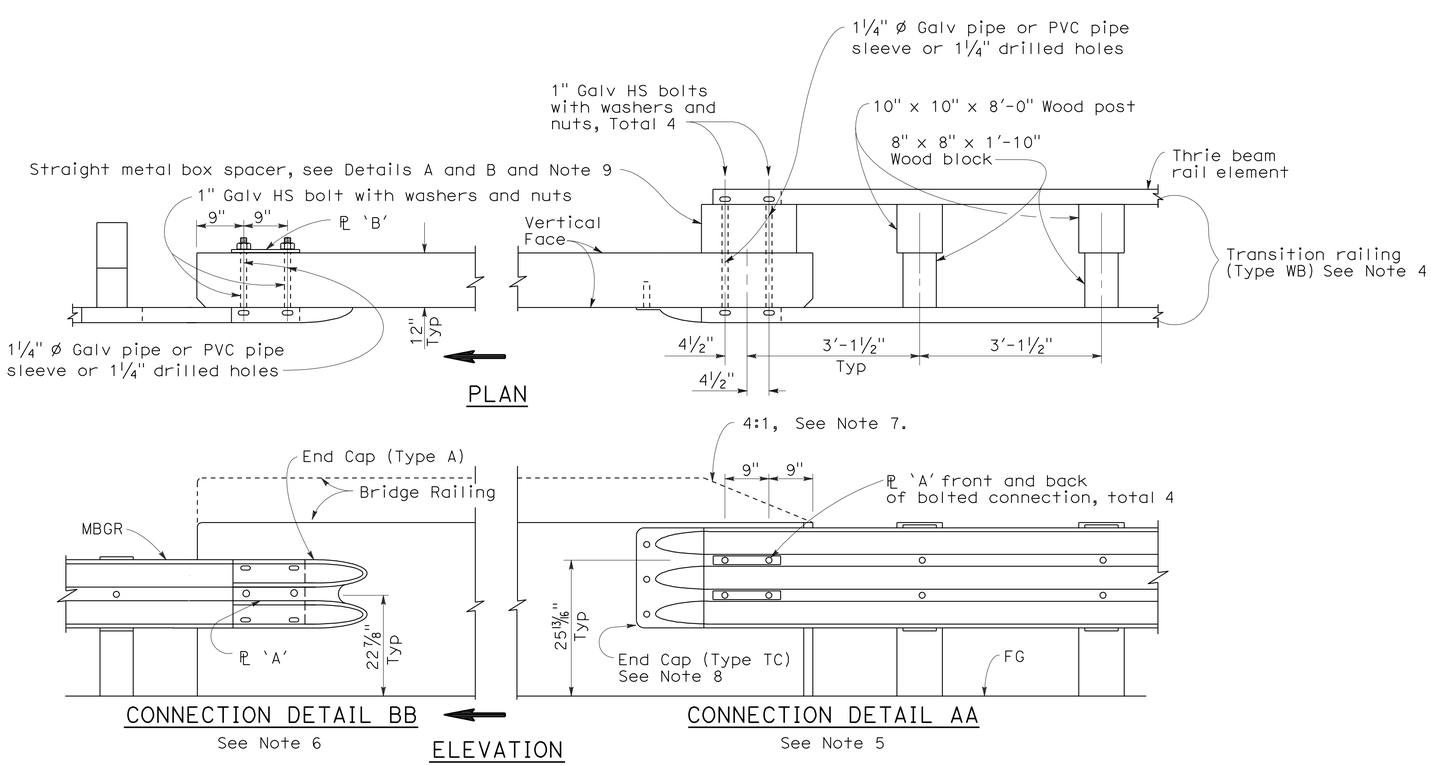
To accompany plans dated 4-16-12



GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

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.

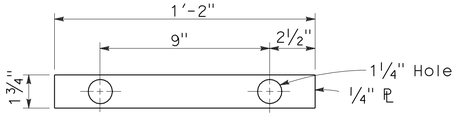


PLATE 'A'

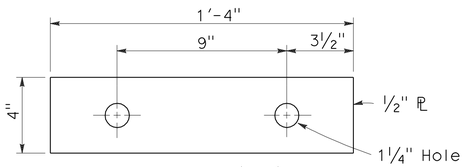
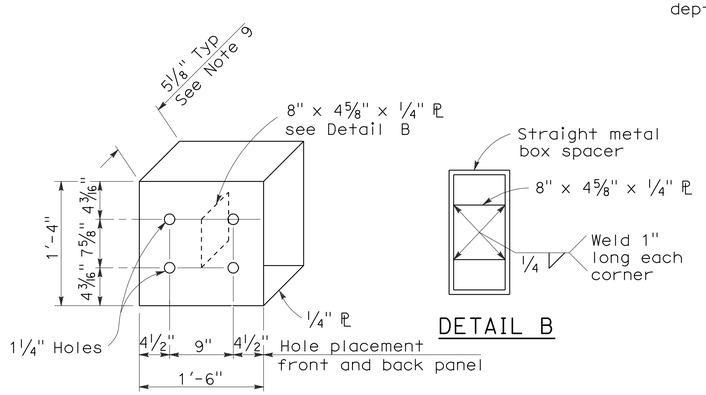


PLATE 'B'
(For backside of connection BB)



DETAIL A

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 MAY 20, 2011 SUPERSEDES RSP A77J1 DATED JUNE 6, 2008 AND STANDARD PLAN A77J1 DATED MAY 1, 2006 - PAGE 72 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77J1

2006 REVISED STANDARD PLAN RSP A77J1

3-10-11

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	134	0.0/L9.9	56	104

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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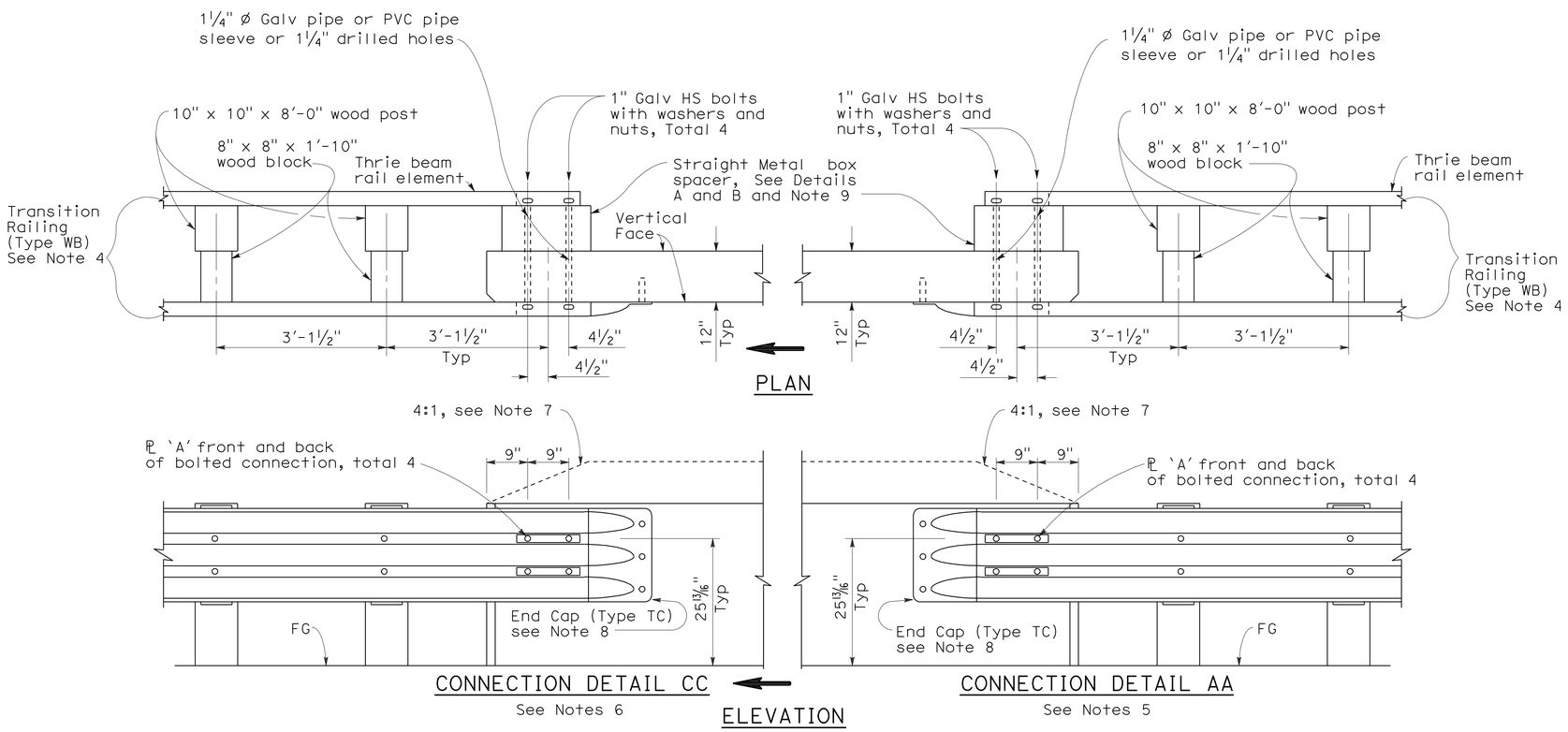
To accompany plans dated 4-16-12



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.

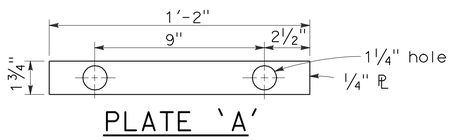


PLATE 'A'

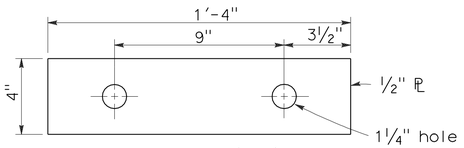
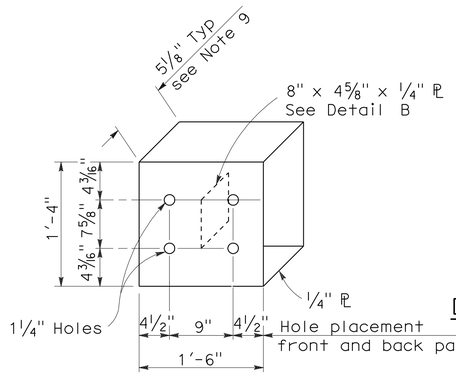
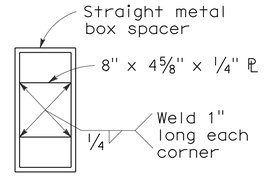


PLATE 'B'
(For backside of connection BB)



DETAIL A



DETAIL B

STRAIGHT METAL BOX SPACER

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

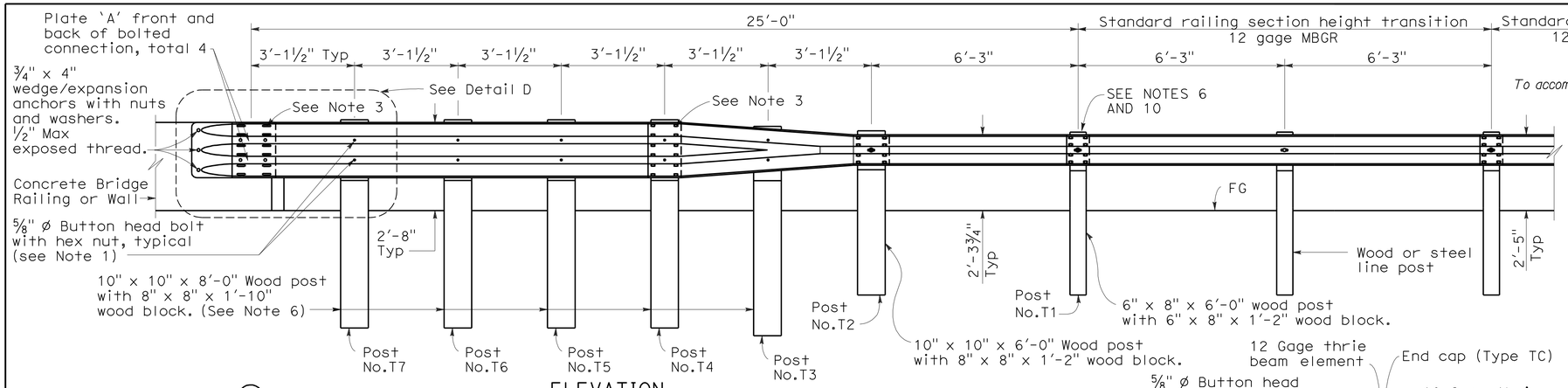
NO SCALE

RSP A77J2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J2
DATED MAY 1, 2006 - PAGE 73 OF THE STANDARD PLANS BOOK DATED MAY 2006.

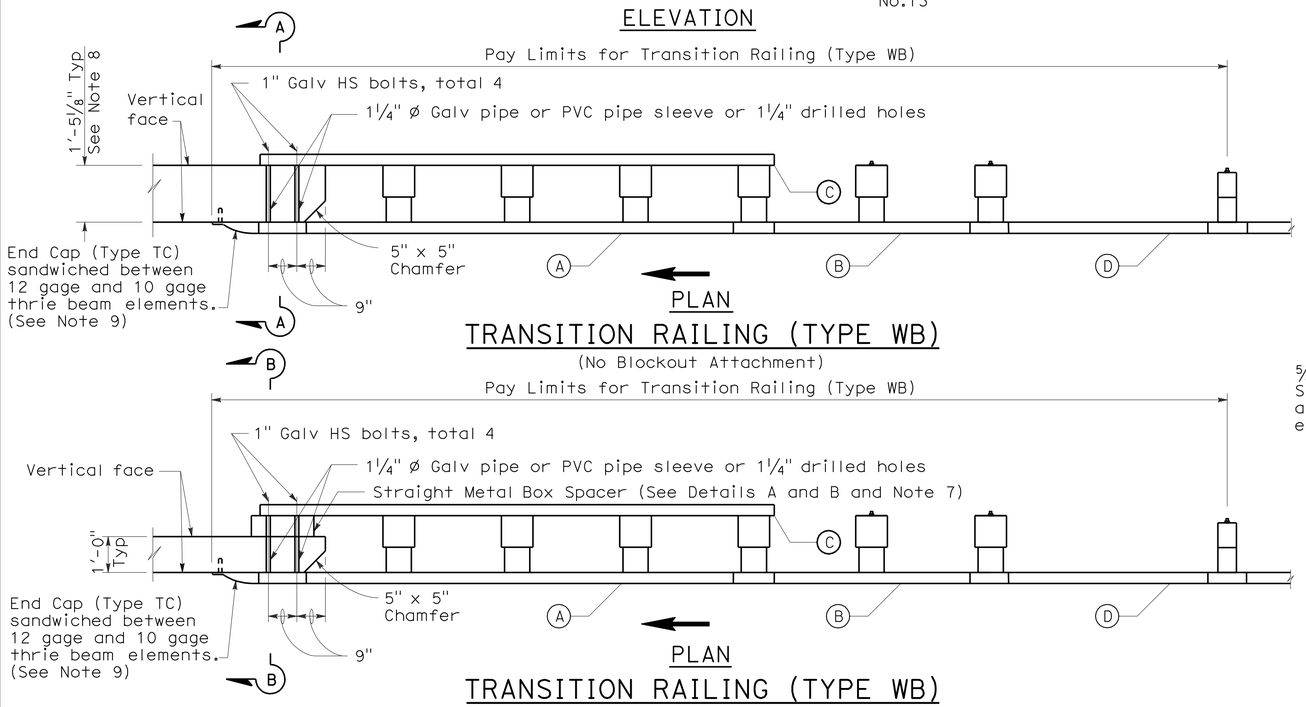
REVISED STANDARD PLAN RSP A77J2

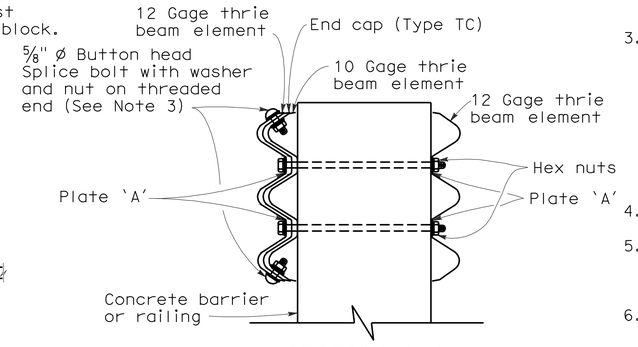
2006 REVISED STANDARD PLAN RSP A77J2

12-10-07

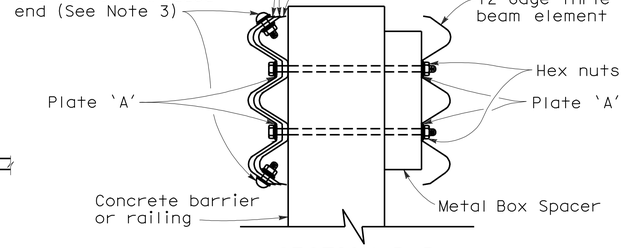


ELEVATION

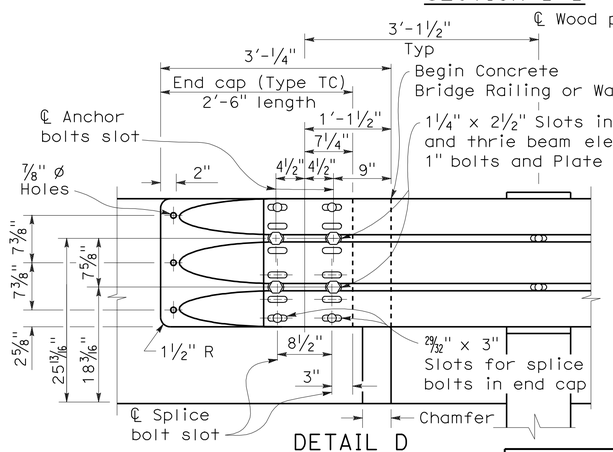




SECTION A-A



SECTION B-B



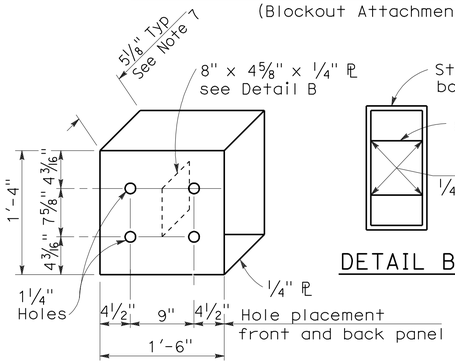
DETAIL D

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'-3½" length)

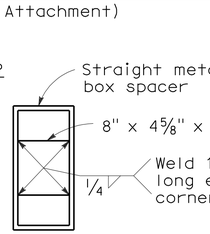
10 gage = 0.135" thick

12 gage = 0.108" thick

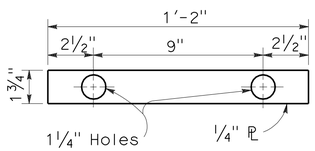


DETAIL A

STRAIGHT METAL BOX SPACER



DETAIL B



DETAIL C

PLATE 'A'

NOTES:

1. Use ⅝" ø Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
2. 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.
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 29⁄32" x 1⅛" slot size. Interior splice bolt holes at these locations may be increased up to 1¼" 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 Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
6. Typically, the railing connected to Transition Railing (Type WB) will be either standard railing section of metal beam guard railing with height transition ratio of 120:1 or an approved Caltrans end treatment attached to Post No. T1.
7. The depth of the metal box spacer varies from the 5⅛" to 1½" 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 17⅛". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1½", metal plates similar to Plate 'A' are to be used as spacers.
8. Where the width of the concrete railing or wall is greater than 17⅛", wood blocks are to be used to fill the space created between the backside of Posts No. T4 through No. T7 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.
9. 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.
10. Conform standard railing section height to 2'-3¾" at Post No. T1 using height transition ratio of 120:1.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	57	104

To accompany plans dated 4-16-12

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-11 — CIVIL — STATE OF CALIFORNIA

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STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TRANSITION RAILING (TYPE WB)

NO SCALE

RSP A77J4 DATED MAY 20, 2011 SUPERSEDES
RSP A77J4 DATED JUNE 5, 2009, 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

5-14-09

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	58	104

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-11 — CIVIL — STATE OF CALIFORNIA

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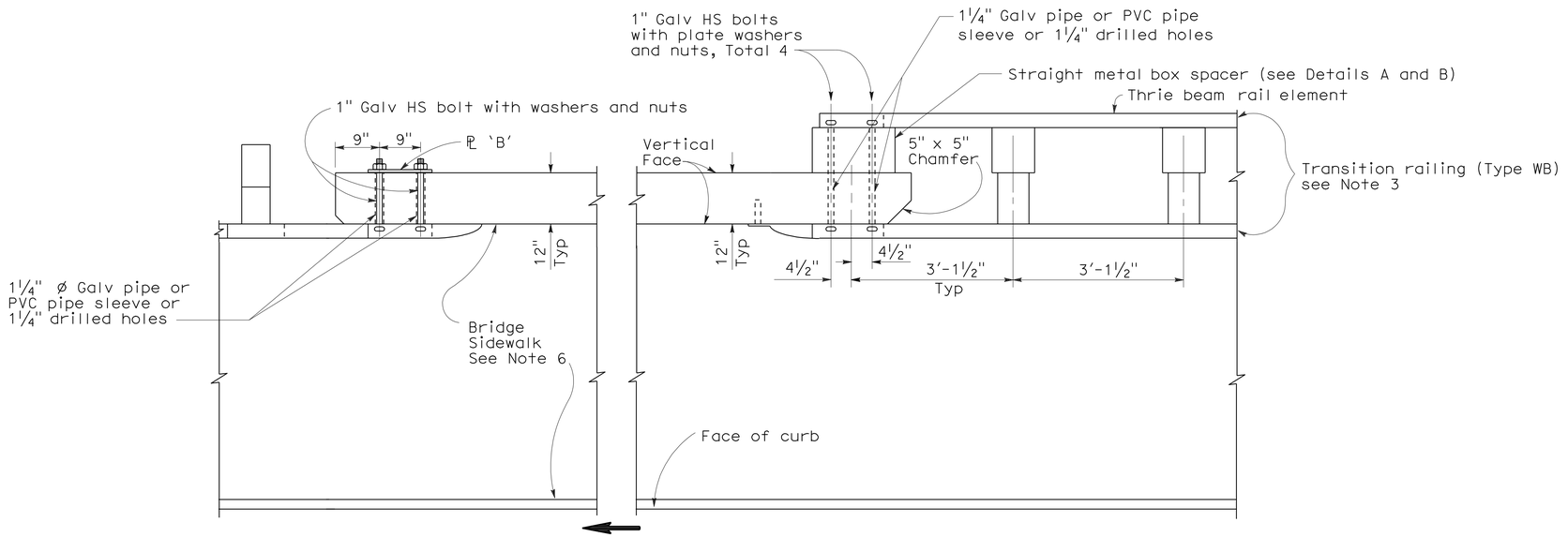
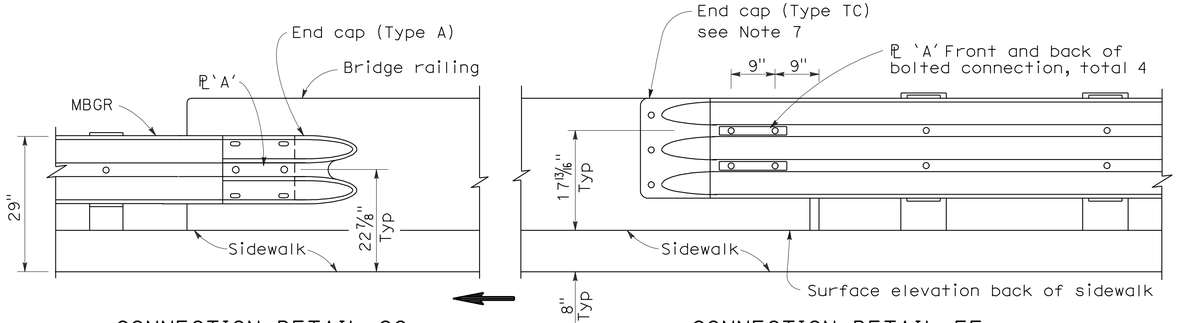
To accompany plans dated 4-16-12



PLAN



CONNECTION DETAIL GG
See Notes 5

ELEVATION

CONNECTION DETAIL FF
See Notes 4

GUARD RAILING CONNECTION TO BRIDGE RAILING WITH SIDEWALKS

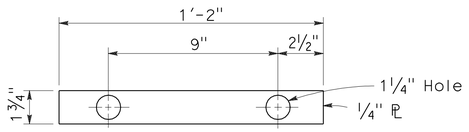


PLATE 'A'

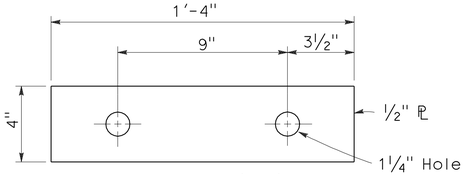
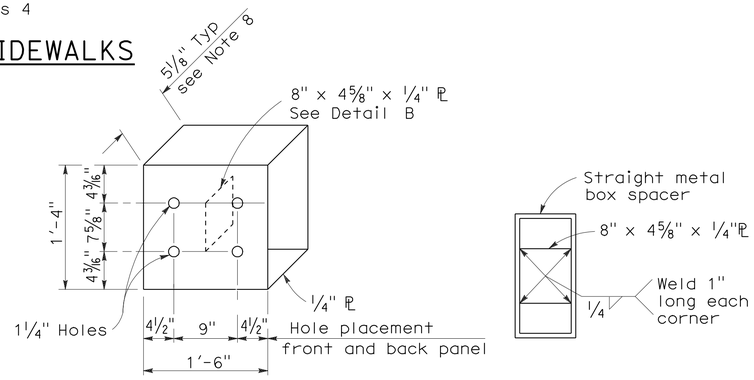


PLATE 'B'
(For backside of connection SB)



DETAIL A

DETAIL B

STRAIGHT METAL BOX SPACER

NOTES:

1. See Standard Plan A77K2 for additional connection details to bridges with sidewalks.
2. Direction of adjacent traffic indicated by ➡.
3. 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 which is connected to the concrete bridge railing.
4. For typical use of Connection Detail FF, see Layout Types 12A and 12B on Standard Plan A77F1.
5. For typical use of Connection Detail GG, see Layout Type 12D on Standard Plan A77F2 and Layout Type 12DD on Standard Plan A77F5.
6. Where the bridge sidewalk is not continued beyond the end of the bridge railing, the portion of the sidewalk beyond each end of the bridge railing shall be transitioned down from the top elevation of the sidewalk, for its entire width, to the finished grade of the adjacent roadbed. The longitudinal slope of each sidewalk elevation transition shall not exceed 8.33 percent.
7. For details of End Cap (Type TC), see Standard Plan A77J4.
8. 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 WITH SIDEWALKS DETAILS No.1

NO SCALE

RSP A77K1 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77K1
DATED MAY 1, 2006 - PAGE 76 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77K1

2006 REVISED STANDARD PLAN RSP A77K1

3-10-11

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	134	0.0/L9.9	59	104

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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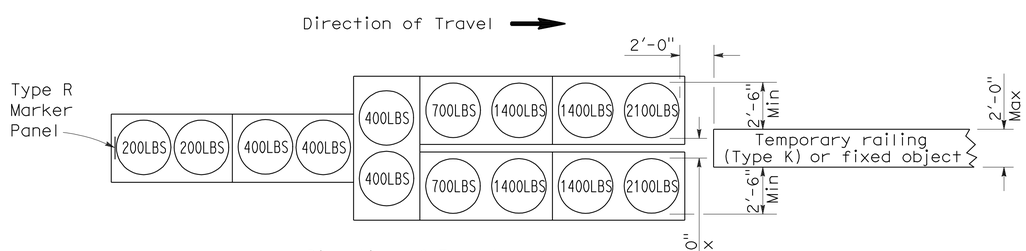
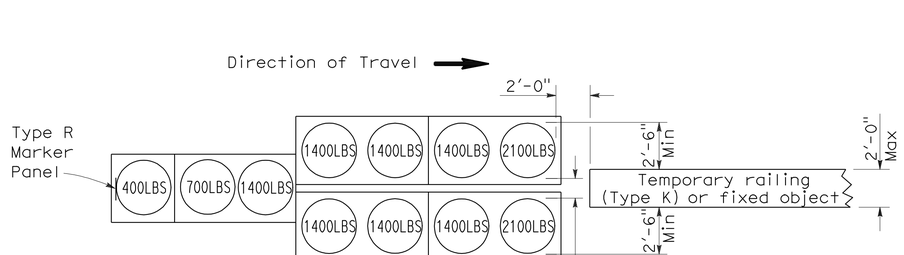
To accompany plans dated 4-16-12



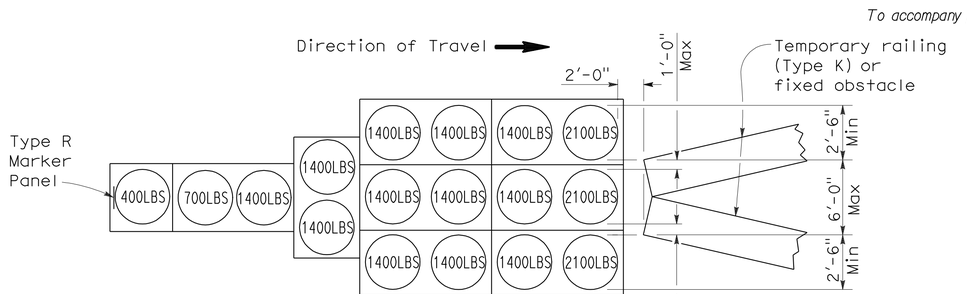
ARRAY 'TU14'

Approach speed 45 mph or more



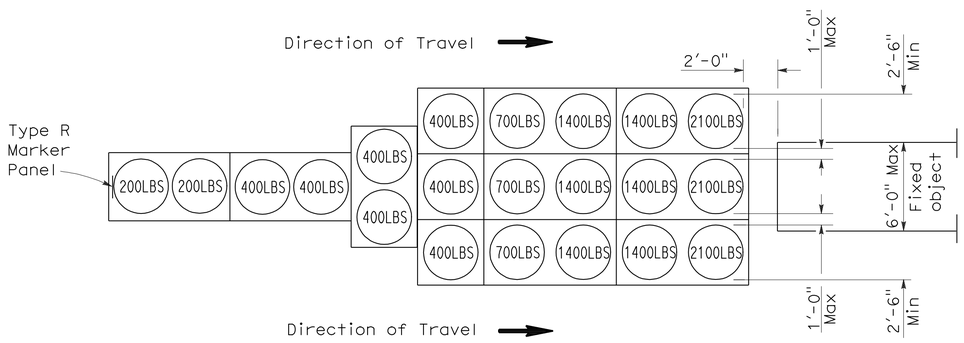
ARRAY 'TU11'

Approach speed less than 45 mph



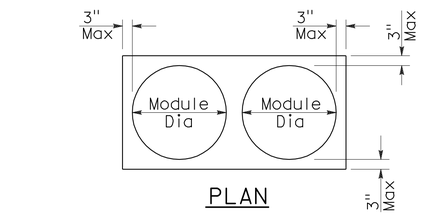
ARRAY 'TU17'

Approach speed less than 45 mph

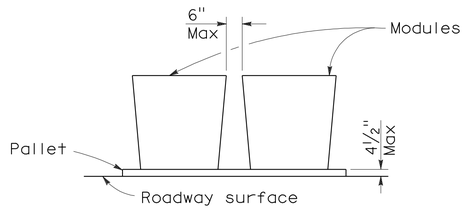


ARRAY 'TU21'

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

2006 REVISED STANDARD PLAN RSP T1A

5-15-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	134	0.0/L9.9	60	104

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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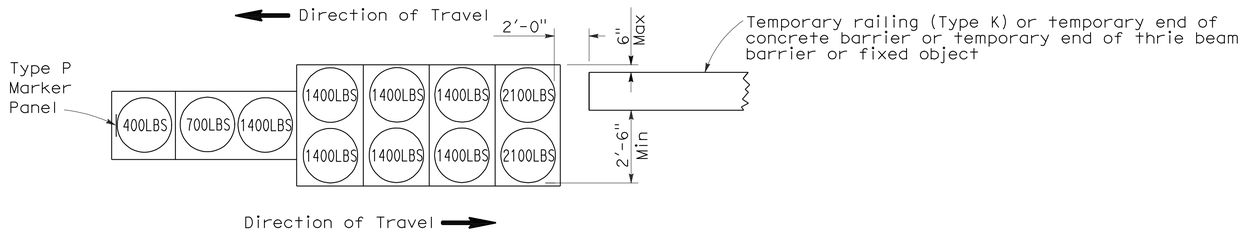
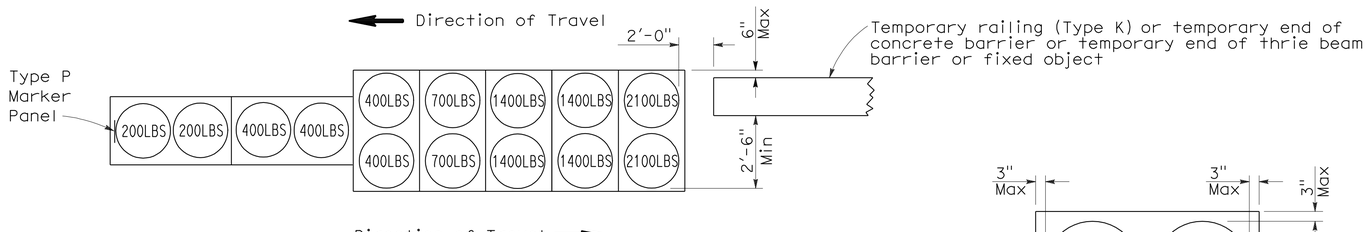
To accompany plans dated 4-16-12



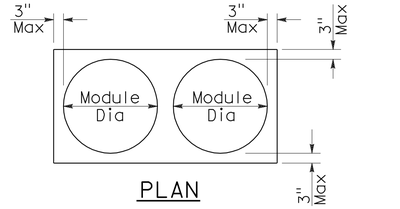
ARRAY 'TB11'

Approach speed less than 45 mph

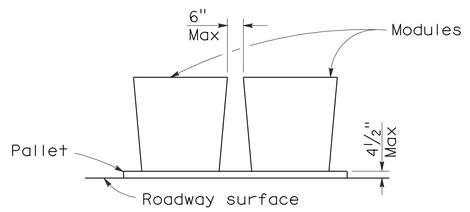


ARRAY 'TB14'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY CRASH CUSHION, SAND FILLED (BIDIRECTIONAL)

NO SCALE

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

REVISED STANDARD PLAN RSP T1B

2006 REVISED STANDARD PLAN RSP T1B

5-15-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	134	0.0/L9.9	61	104

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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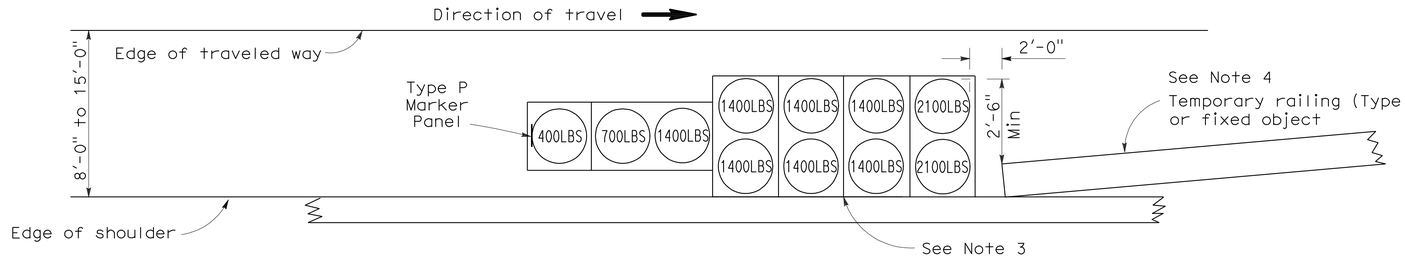
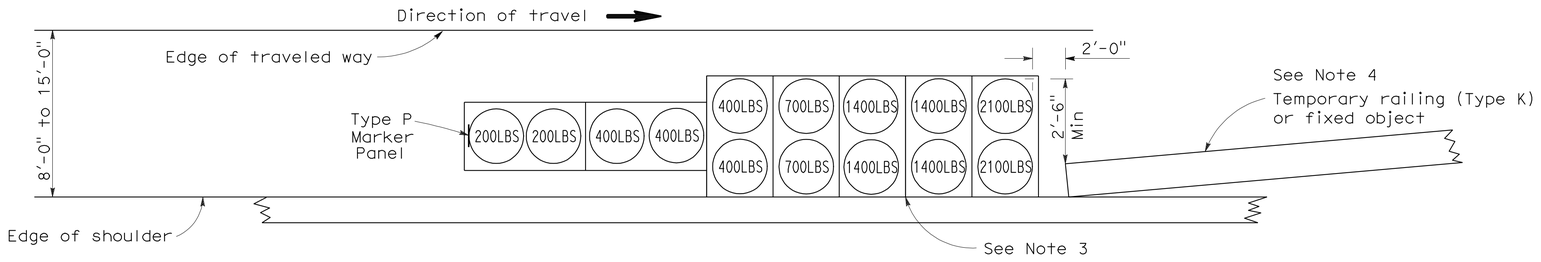
To accompany plans dated 4-16-12



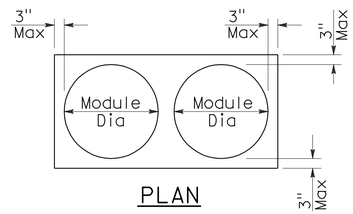
ARRAY 'TS11'

Approach speed less than 45 mph
See Note 9

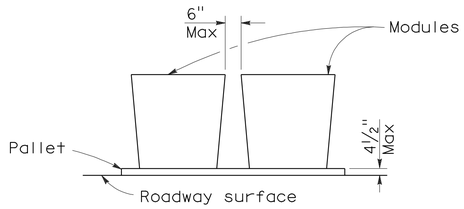


ARRAY 'TS14'

Approach speed 45 mph or more
See Note 9



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 11

NOTES:

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

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

5-15-08

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	62	104

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-11 — CIVIL — STATE OF CALIFORNIA

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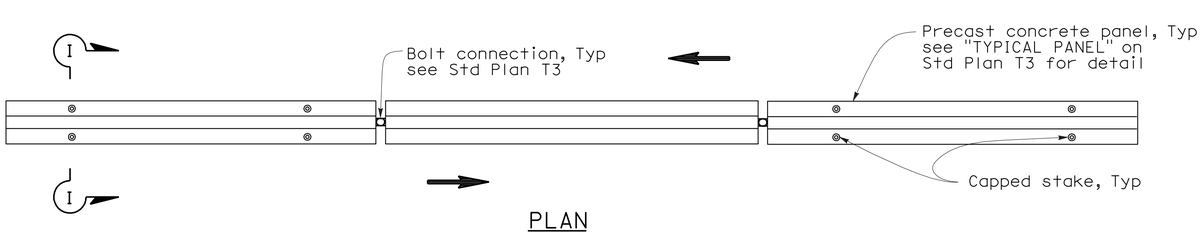
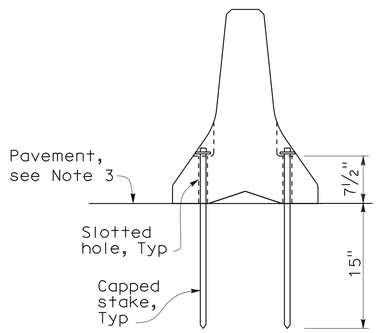
To accompany plans dated 4-16-12



PLAN

RAILING STAKING CONFIGURATION FOR TWO-WAY TRAFFIC

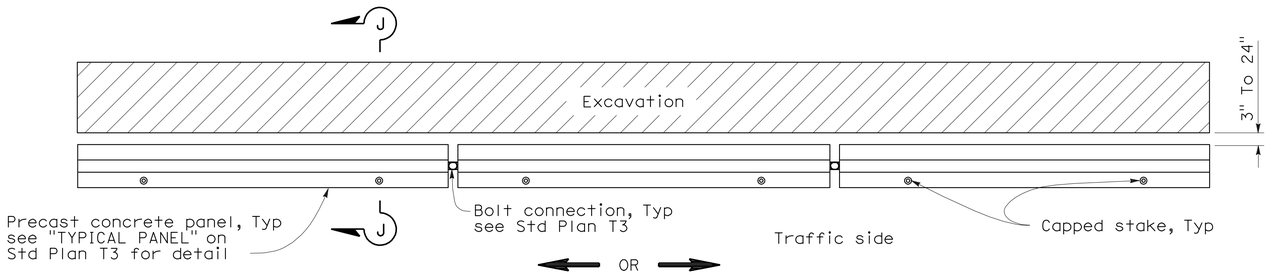
See Note 1



SECTION I-I

NOTES:

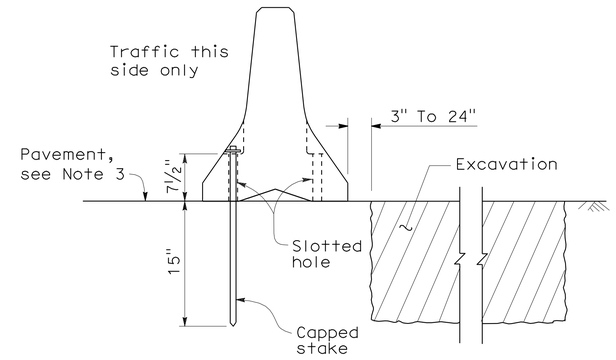
1. Where Type K Temporary Railing is placed as a temporary or long term barrier in two-way traffic on highways with less than 24" from the edge of traveled way, use four capped stakes per every other panel with end panels staked.
2. Where Type K Temporary Railing is placed 3" to 24" from the edge of an excavation on highways, use two capped stakes per panel along the traffic side.
3. Staked Type K Temporary Railing must be supported by at least 4" thick concrete, hot mix asphalt or existing asphalt concrete pavement.
4. The minimum yield strength for the washer must be 60,000 psi.
5. Direction of adjacent traffic indicated by ⟹.



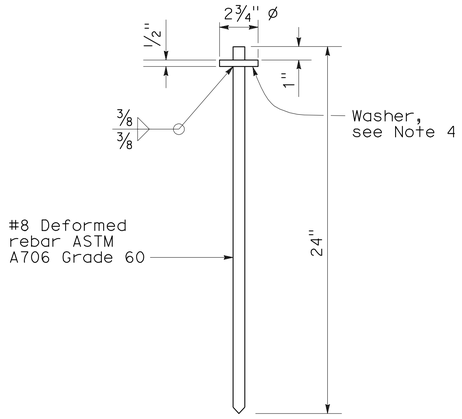
PLAN

RAILING STAKING CONFIGURATION ADJACENT TO AN EXCAVATION

See Note 2



SECTION J-J



CAPPED STAKE DETAIL

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY RAILING (TYPE K)

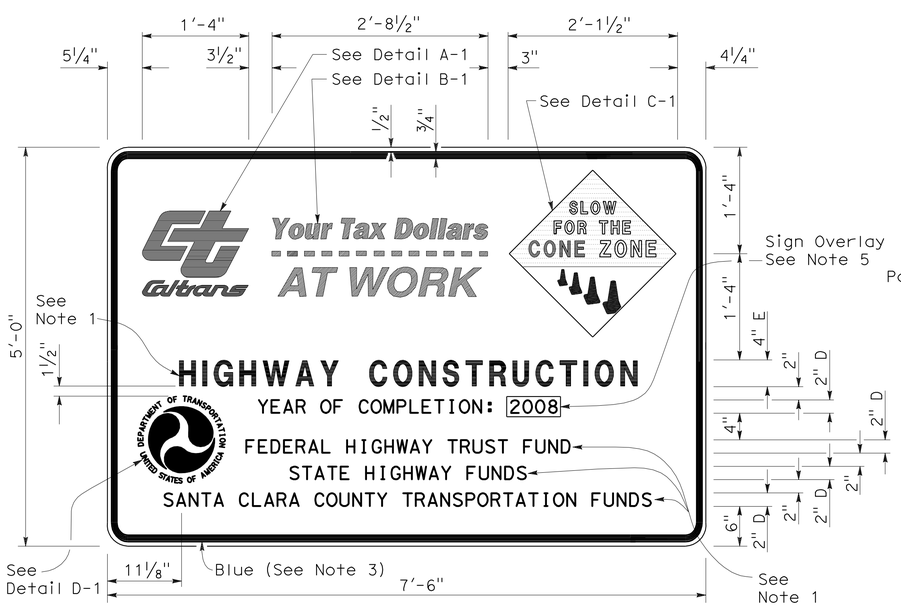
NO SCALE

NSP T3A DATED MAY 20, 2011 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

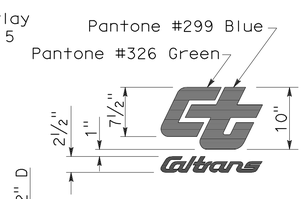
NEW STANDARD PLAN NSP T3A

2006 NEW STANDARD PLAN NSP T3A

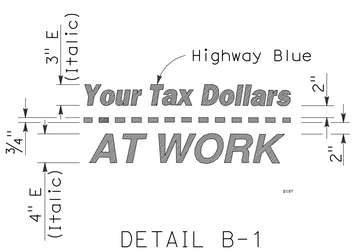
8-31-10



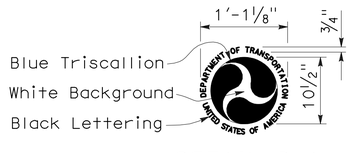
TYPE 1



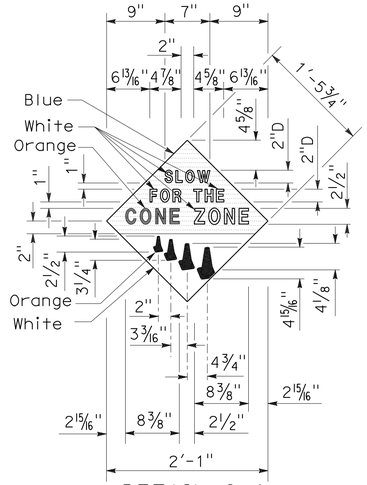
DETAIL A-1



DETAIL B-1
(See Note 3)



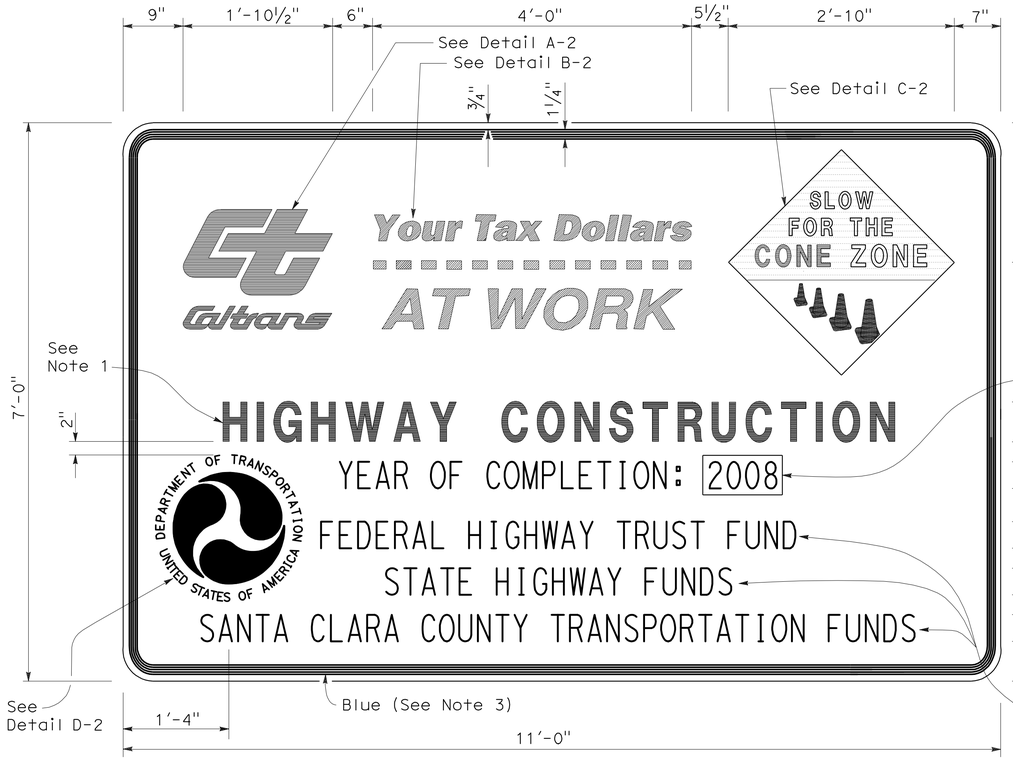
DETAIL D-1
(See Note 6)



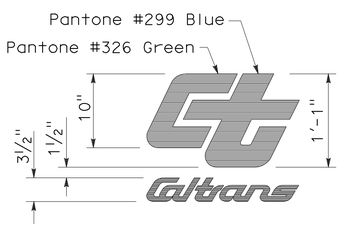
DETAIL C-1
(See Note 4)

NOTES:

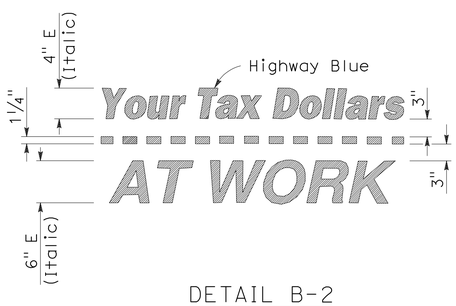
1. The sign messages shown for type of project and fund types are examples only. See the Special Provisions for the applicable type of project and fund type messages to be used.
2. Except as otherwise shown, the legend of sign shall be black on a white background (non-reflective).
3. The border of the signs and details "B-1" and "B-2" shall be blue (non-reflective).
4. The diamond in details "C-1" and "C-2" shall be blue for the background of message, " SLOW FOR THE CONE ZONE", and white background for the orange cones. The color and type of font for the "SLOW FOR THE CONE ZONE" message shall be: "SLOW" white D; "FOR THE" white D; "CONE" orange Arial font; "ZONE" white Arial font.
5. Year of completion of project construction shown on the overlay is an example only. See the Special Provisions.
6. Use when the Project involves Federal Highway Trust Fund.



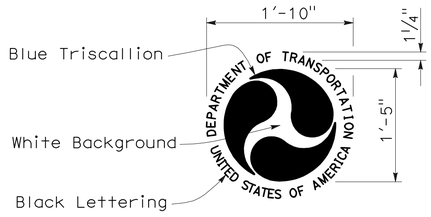
TYPE 2



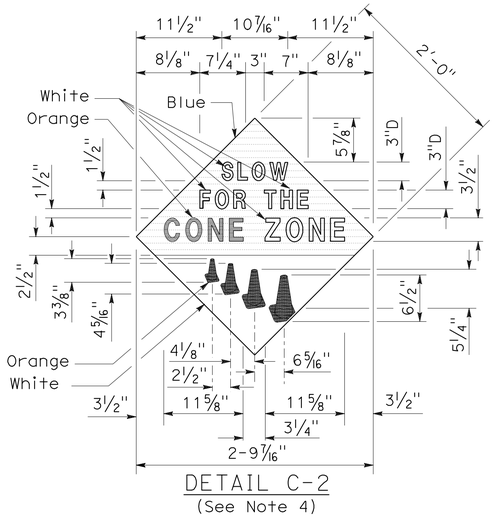
DETAIL A-2



DETAIL B-2
(See Note 3)



DETAIL D-2
(See Note 6)



DETAIL C-2
(See Note 4)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PROJECT FUNDING IDENTIFICATION SIGNS

NO SCALE

RSP T7 DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN T7
DATED MAY 1, 2006 - PAGE 217 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T7

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	134	0.0/L9.9	63	104

Greg W. Edwards
REGISTERED CIVIL ENGINEER

November 17, 2006
PLANS APPROVAL DATE

Greg W. Edwards No. C36386 Exp. 6-30-08 CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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To accompany plans dated 4-16-12

2006 REVISED STANDARD PLAN RSP T7

9-7-06

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	134	0.0/L9.9	64	104

Robert B Schott
LICENSED LANDSCAPE ARCHITECT

August 15, 2008
PLANS Approval DATE

LICENSED LANDSCAPE ARCHITECT — Robert B. Schott 3035 — Signature — 11-04-08 Renewal Date — 08-11-08 Date — STATE OF CALIFORNIA

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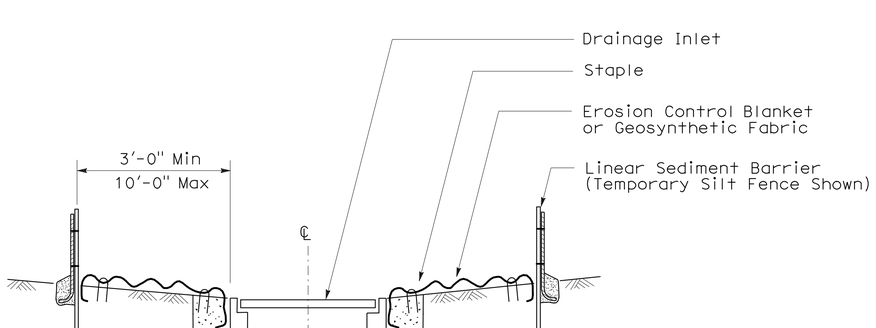
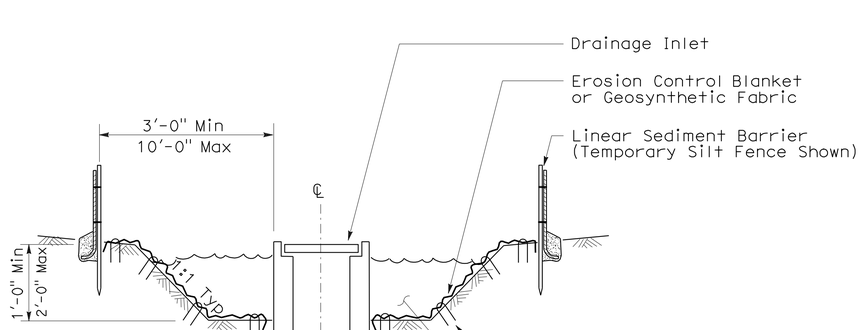
To accompany plans dated 4-16-12



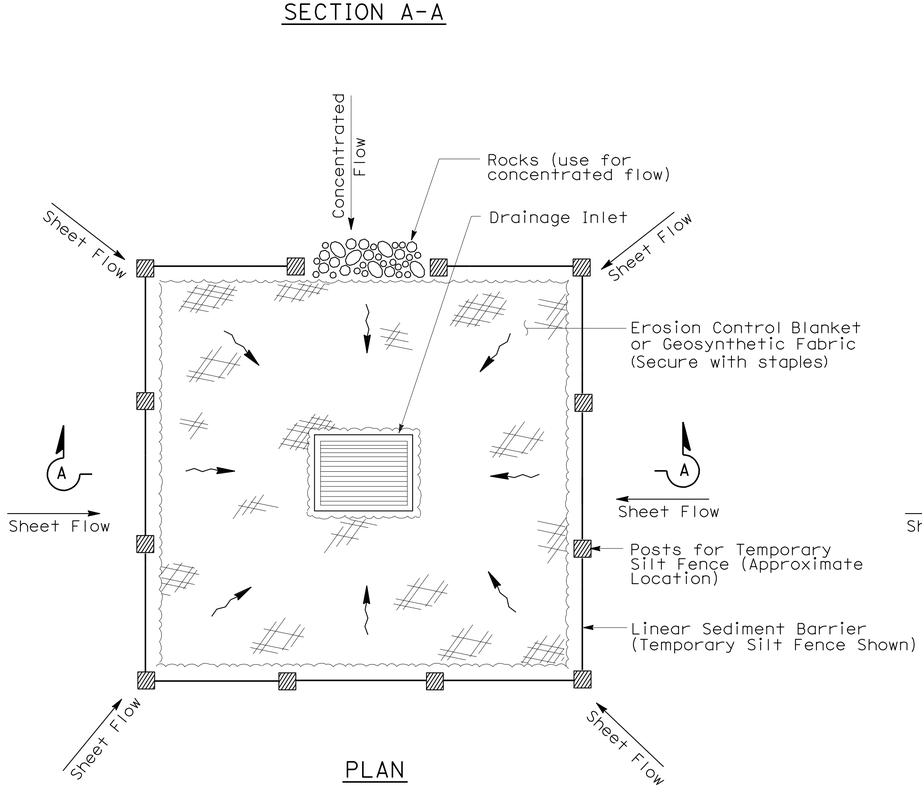
SECTION A-A



SECTION B-B

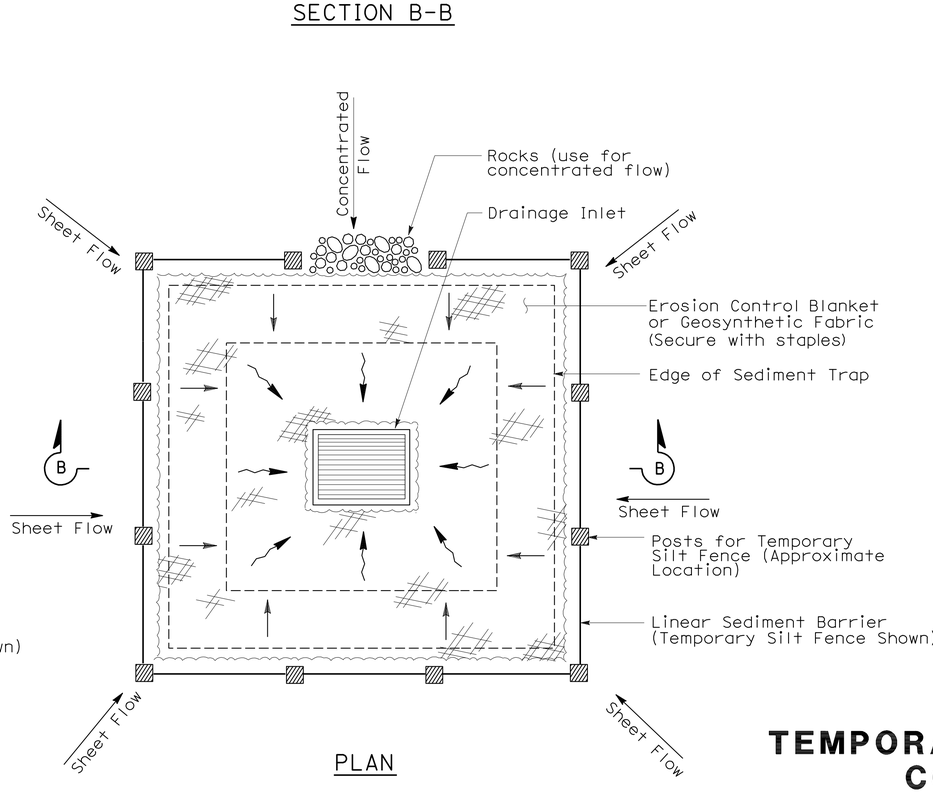
NOTES:

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



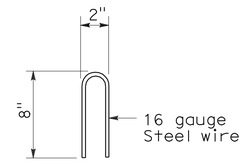
PLAN

TEMPORARY DRAINAGE INLET PROTECTION (TYPE 1)



PLAN

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



STAPLE DETAIL

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

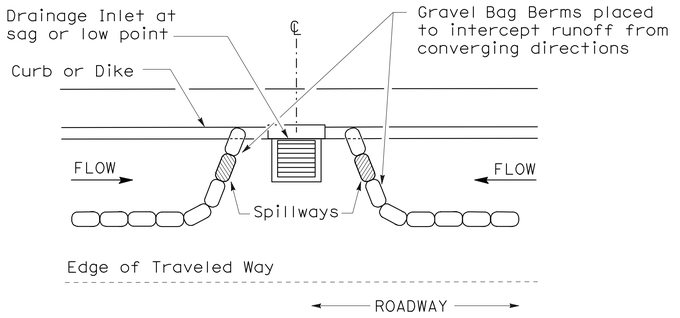
NO SCALE

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

NEW STANDARD PLAN NSP T61

2006 NEW STANDARD PLAN NSP T61

7-11-08



PLAN

CONFIGURATION FOR SAG POINT INLET (GRAVEL BAG BERM)

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	134	0.0/L9.9	65	104

Robert B Schott
LICENSED LANDSCAPE ARCHITECT

August 15, 2008
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT Robert B. Schott 3025 Signature 11-04-08 Renewal Date 08-11-08 Date STATE OF CALIFORNIA

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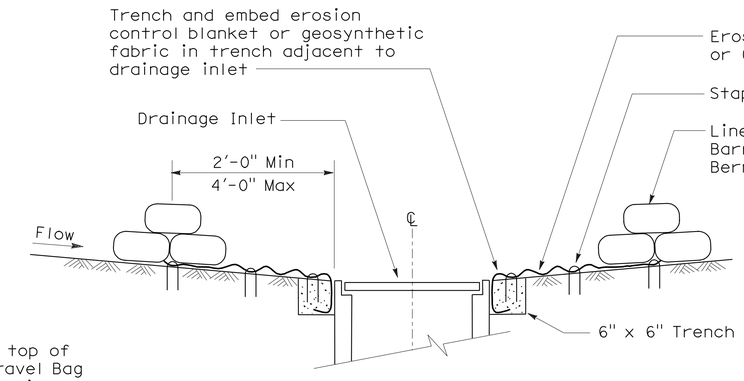
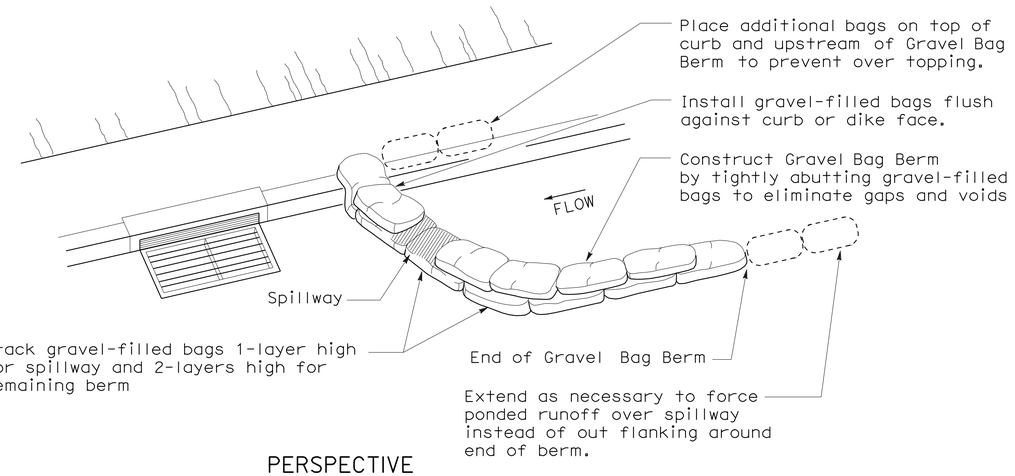
To accompany plans dated 4-16-12



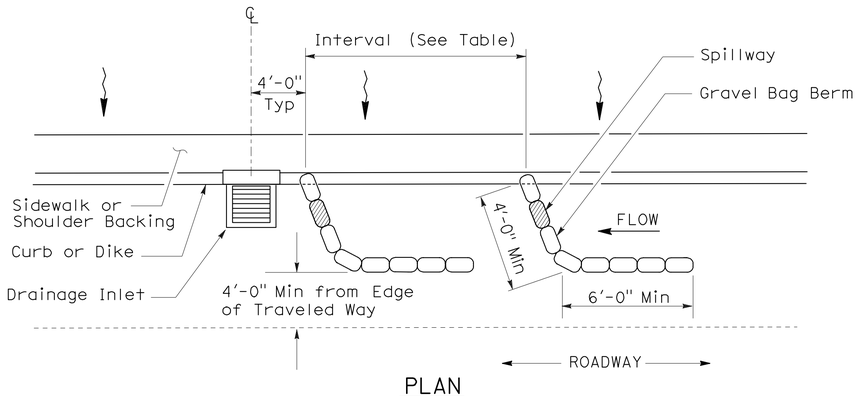
SECTION A-A

NOTES:

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

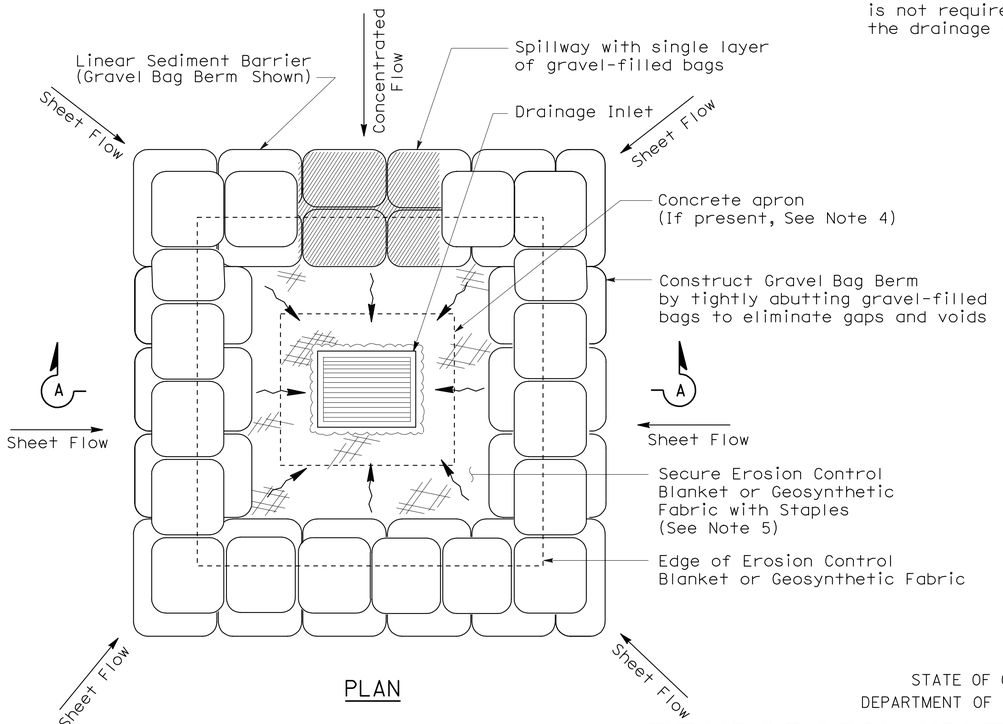


PERSPECTIVE



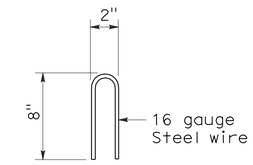
PLAN

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



PLAN

TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3B)



STAPLE DETAIL

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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.

NEW STANDARD PLAN NSP T62

2006 NEW STANDARD PLAN NSP T62

7-11-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	134	0.0/L9.9	66	104

Robert B Schott
LICENSED LANDSCAPE ARCHITECT

August 15, 2008
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT — Robert B. Schott 3895 — Signature Date 11-04-08 — Renewal Date 08-11-08 — STATE OF CALIFORNIA

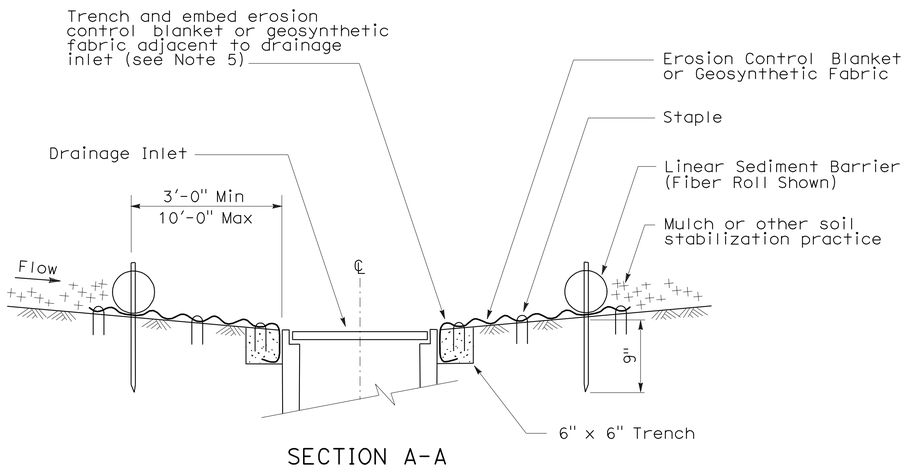
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 4-16-12

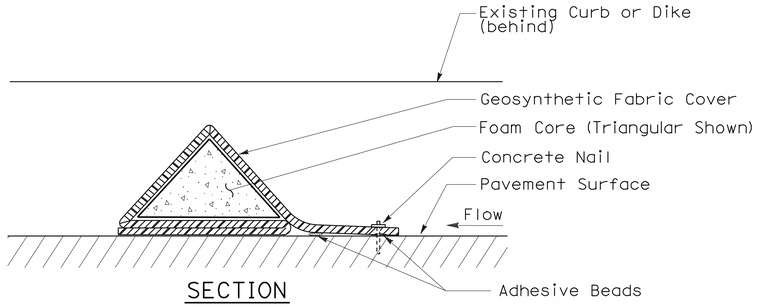
2006 NEW STANDARD PLAN NSP T63

FLEXIBLE SEDIMENT BARRIER SPACING TABLE

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

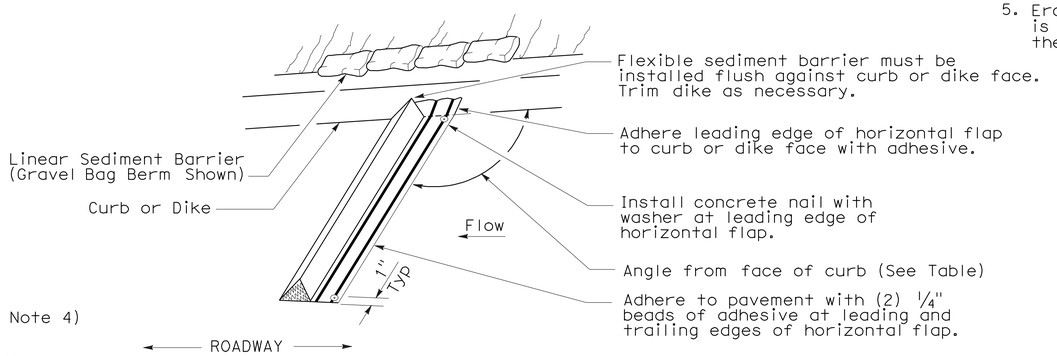


SECTION A-A



SECTION

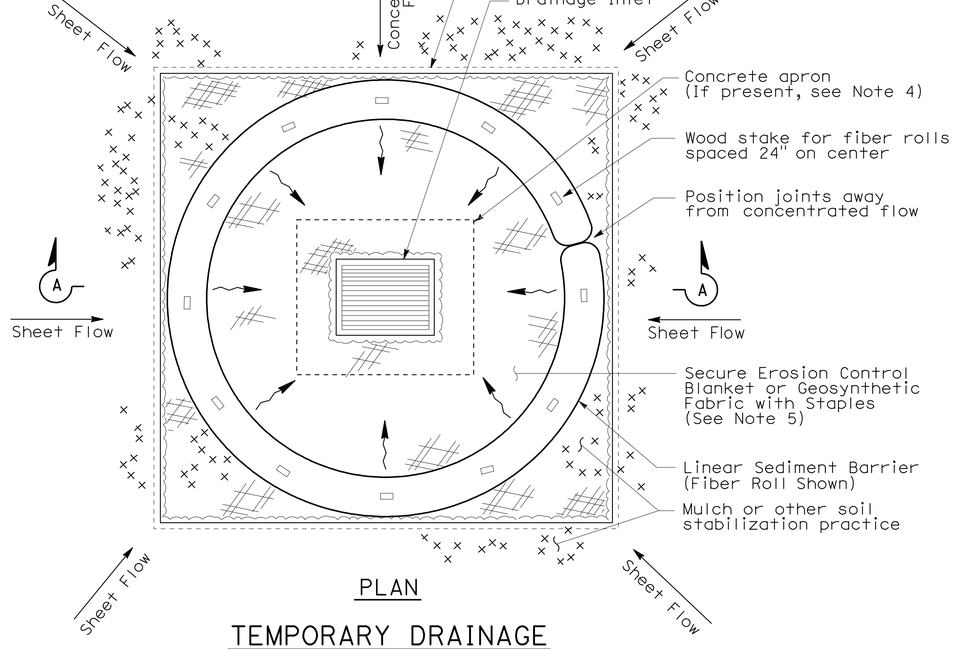
FLEXIBLE SEDIMENT BARRIER DETAIL (FOAM BARRIER SHOWN)



PERSPECTIVE

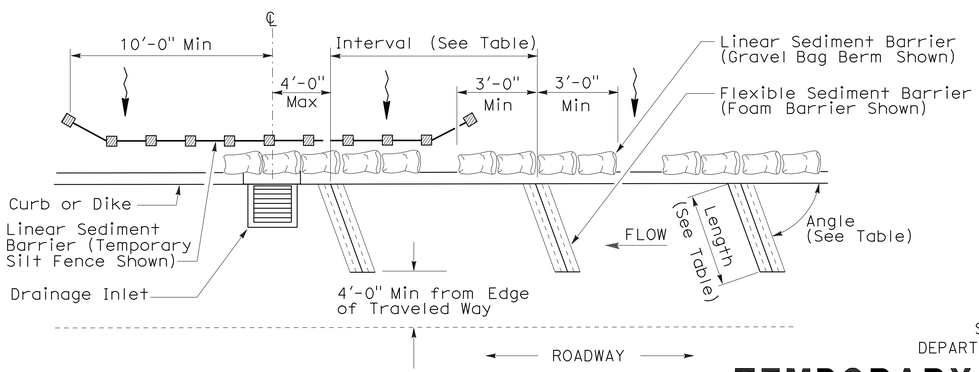
NOTES:

1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 flexible sediment barriers 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.



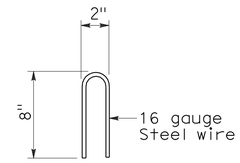
PLAN

TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4A)



PLAN

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



STAPLE DETAIL

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE

NSP T63 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP T63

7-11-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	134	0.0/L9.9	67	104

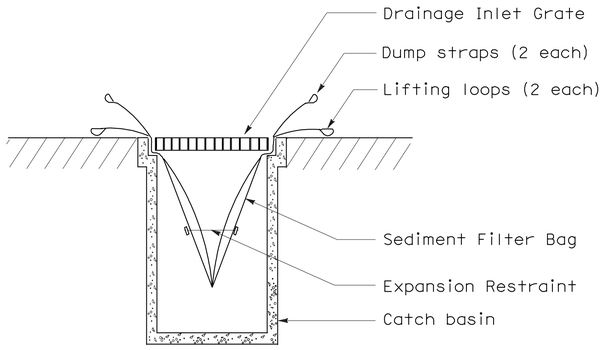
Robert B Schott
LICENSED LANDSCAPE ARCHITECT

August 15, 2008
PLANS APPROVAL DATE

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

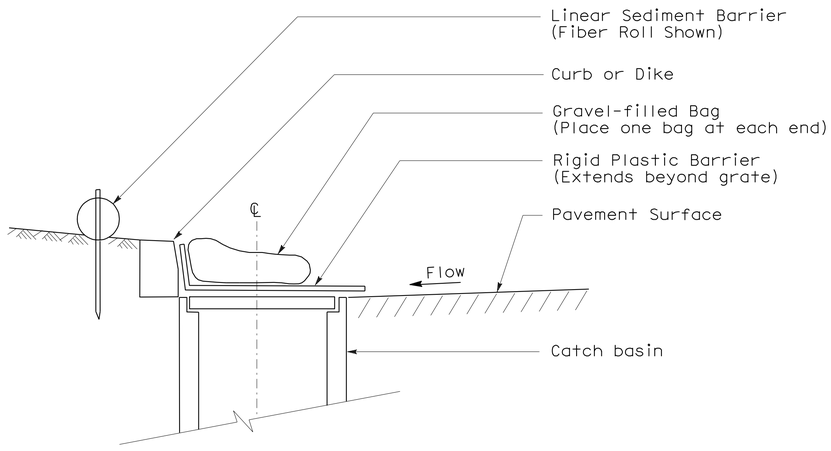
LICENSED LANDSCAPE ARCHITECT — Robert B. Schott 3035 — Signature — 11-04-08 Renewal Date — 08-11-08 Date — STATE OF CALIFORNIA

To accompany plans dated 4-16-12



SECTION B-B

SEDIMENT FILTER BAG DETAIL

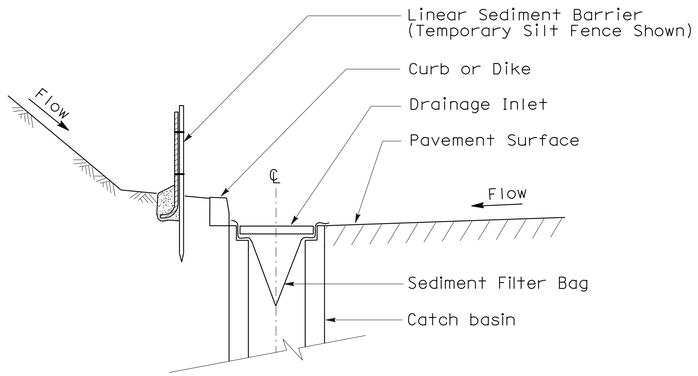


SECTION

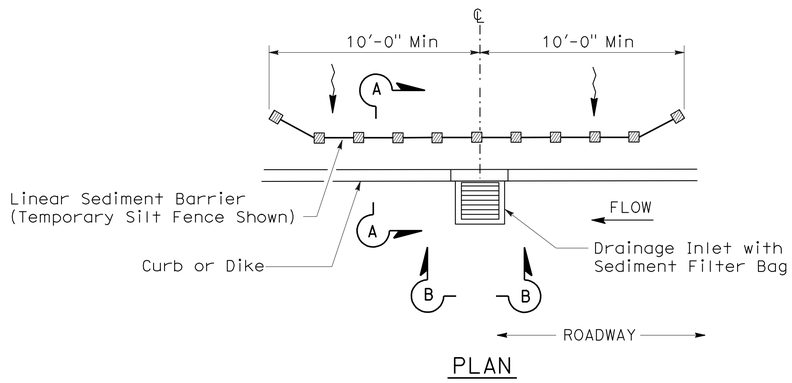
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 6A) (CATCH BASIN WITH GRATE)

NOTES:

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

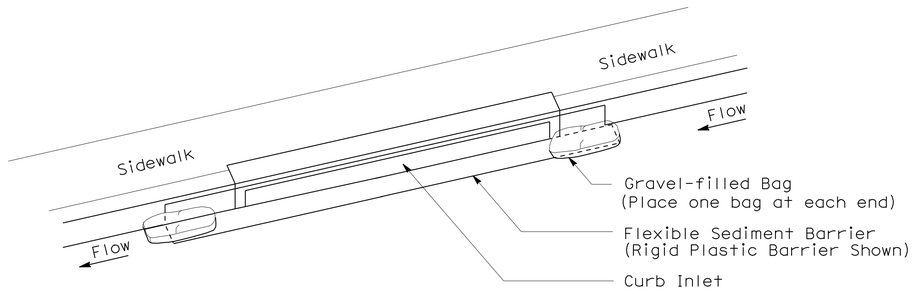


SECTION A-A



PLAN

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



PERSPECTIVE

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE

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

NEW STANDARD PLAN NSP T64

2006 NEW STANDARD PLAN NSP T64

7-11-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	134	0.0/L9.9	68	104

REGISTERED CIVIL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Efthymios Delis — No. C51434 — Exp. 6-30-08 CIVIL — STATE OF CALIFORNIA

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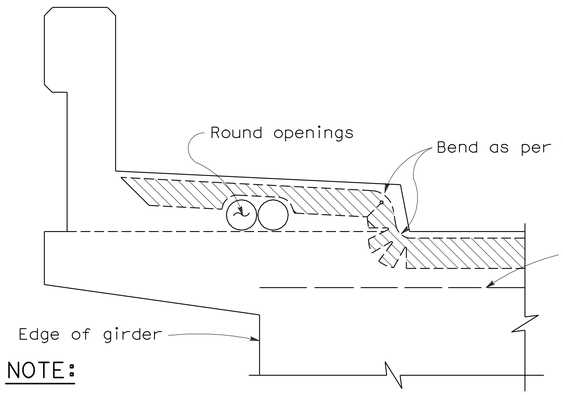
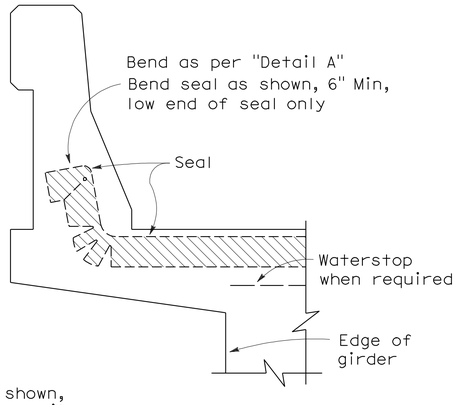
To accompany plans dated 4-16-12



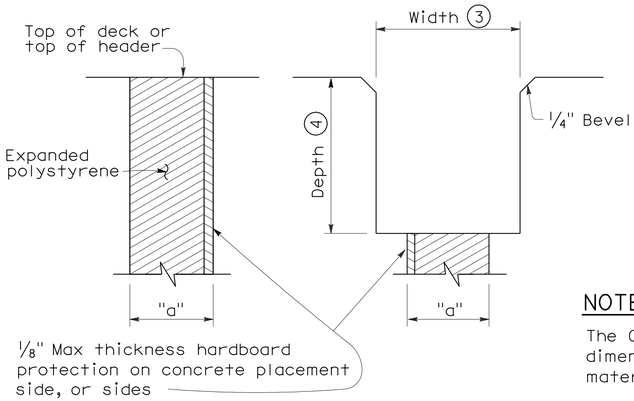
NOTE:

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

CONCRETE BARRIER AND SIDEWALK



CONCRETE BARRIER

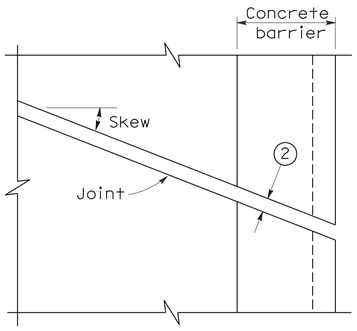


FORMING DETAIL SAWCUT DETAIL

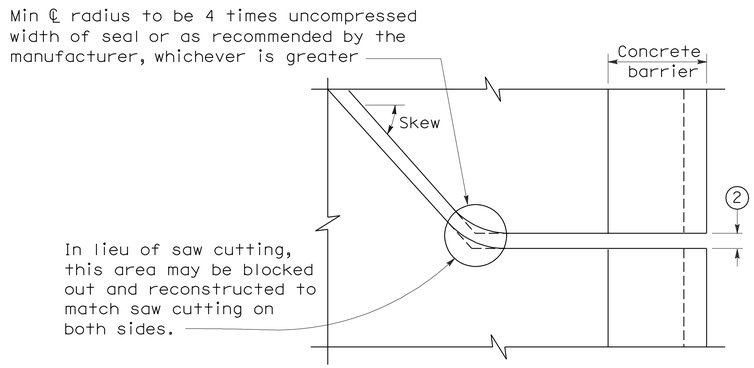
NOTE:

The Contractor shall verify all controlling field dimensions before ordering or fabricatiing any material.

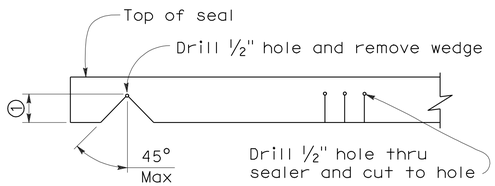
JOINT SEALS DETAILS

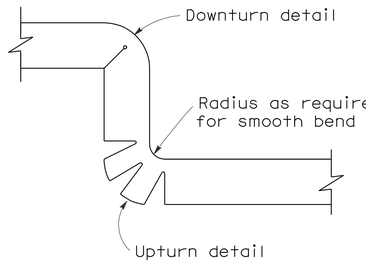


PLAN OF JOINT (SKEW ≤ 20°)



PLAN OF JOINT (SKEW > 20°)





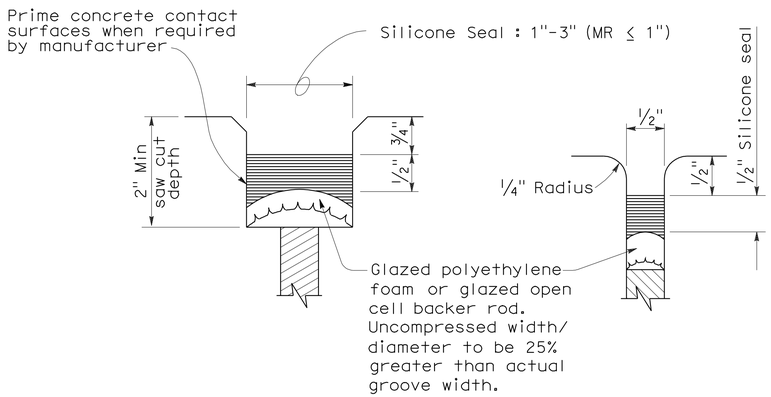
DETAIL A

NOTES:

1. Make smooth cuts from the bottom of seal to 1½" clear of top leaving at least one complete cell between the top of the cut and top of the seal. When necessary cut back of seal to clear conduit and round openings.
2. Opening in barrier to match width of sawn deck joint.
3. Sawcut groove widths shall be as ordered by the Engineer.
4. Depth of sawcut: Type A - Depth to be 2" minimum.
   Type B - Depth to be equal to or greater than the depth of seal measured along the contact surface, when compressed to minimum width position (W_2) plus dimensions shown.
5. MR (movement rating) as shown on other plan sheets.
6. Other depths must be approved by the Engineer.

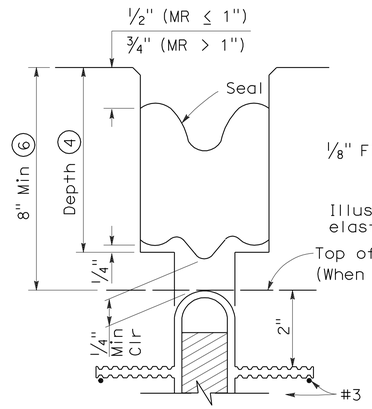
DIMENSIONS "a" OF JOINT REQUIRED

Movement Rating (MR) (5)	Bridge Type	"a" Dimension Deck Concrete Placed		
		Winter	Fall-Spring	Summer
2"	All except CIP/PS	1½"	1¼"	¾"
	CIP/PS	1¼"	1"	½"
1½"	All except CIP/PS	1¼"	1"	½"
	CIP/PS	1"	¾"	½"
1"	All except CIP/PS	1"	¾"	½"
	CIP/PS	¾"	½"	½"
½"	All except CIP/PS	¾"	¾"	½"
	CIP/PS	½"	½"	½"

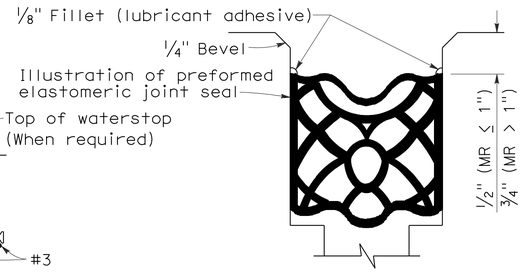


TYPE A SEAL
Movement rating : Silicone = 1" Max

TYPE AL SEAL
Longitudinal joints only



TYPE B JOINT SEAL
IN MINIMUM WIDTH POSITION (W_2)



TYPE B SEAL
Movement Rating ≤ 2"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")

NO SCALE

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

REVISED STANDARD PLAN RSP B6-21

2006 REVISED STANDARD PLAN RSP B6-21

5-8-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	134	0.0/L9.9	69	104

REGISTERED CIVIL ENGINEER

June 30, 2006
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Tillat Satter
No. C42892
Exp. 03-31-08
CIVIL
STATE OF CALIFORNIA

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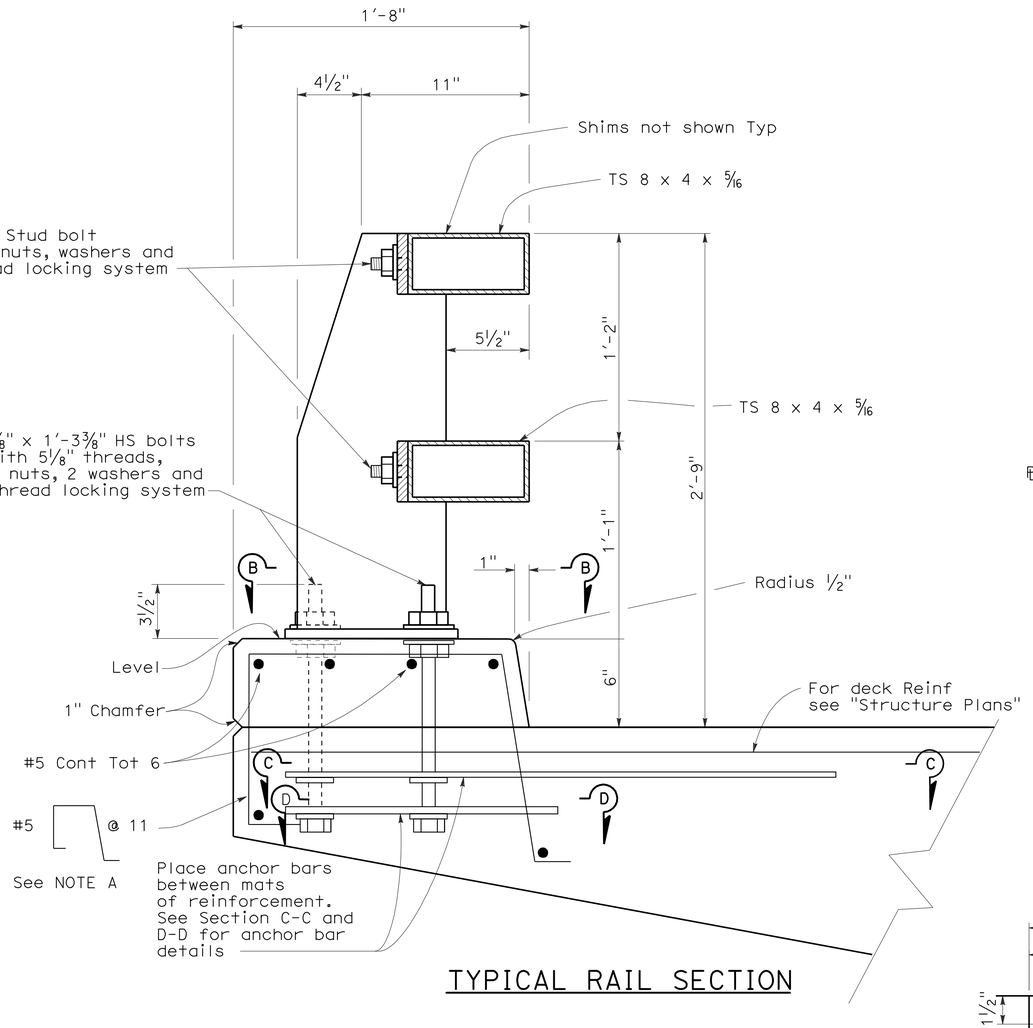
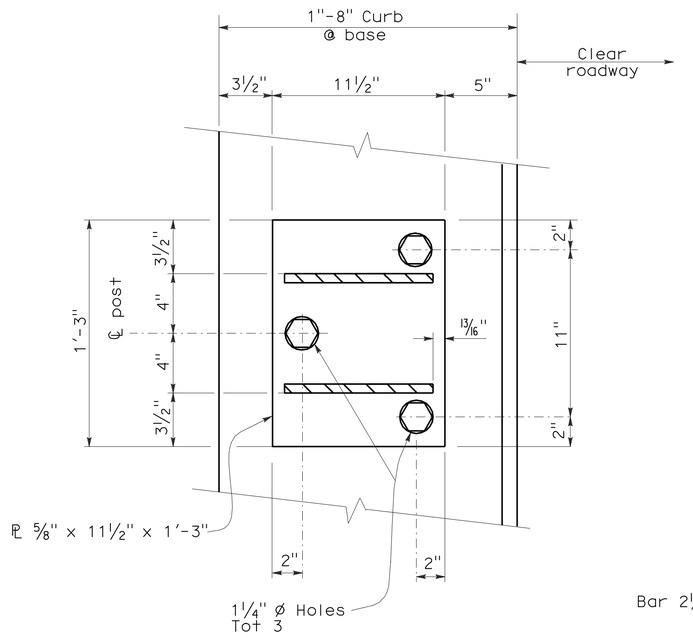
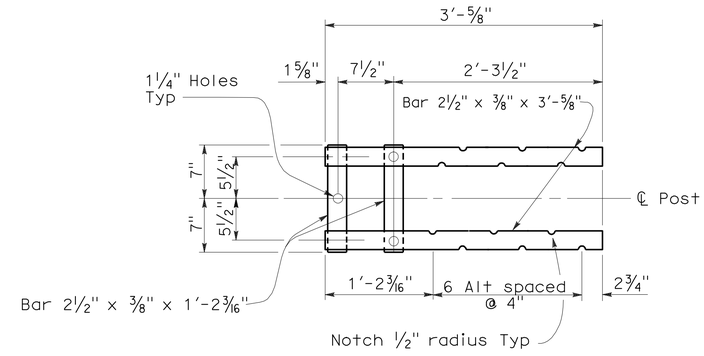
To accompany plans dated 4-16-12



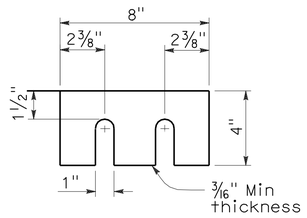
TYPICAL RAIL SECTION



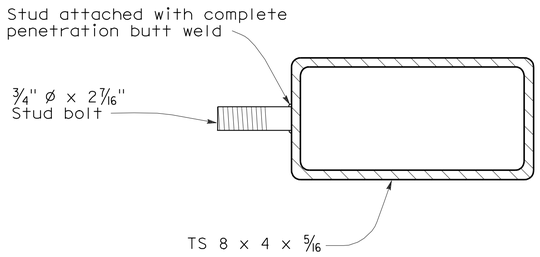
SECTION B-B



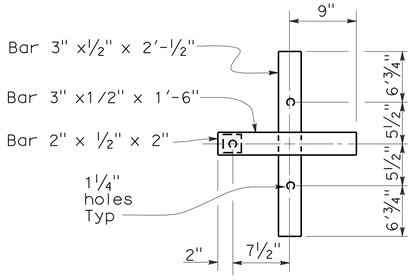
SECTION C-C
Top Anchorage



SHIMS REQUIRED FOR TOP AND BOTTOM RAIL



SECTION AT POST



SECTION D-D
Lower Anchorage

STUD BOLT DETAIL

NOTE A

Adjust spacing to clear scupper opening by 2" if applicable.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CALIFORNIA ST-10 BRIDGE RAIL (SHEET 1 OF 3)

NO SCALE

RSP B11-68 DATED JUNE 30, 2006 SUPERSEDES STANDARD PLAN DATED MAY 1, 2006 - PAGE 284 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B11-68

2006 REVISED STANDARD PLAN RSP B11-68

6-19-06

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	70	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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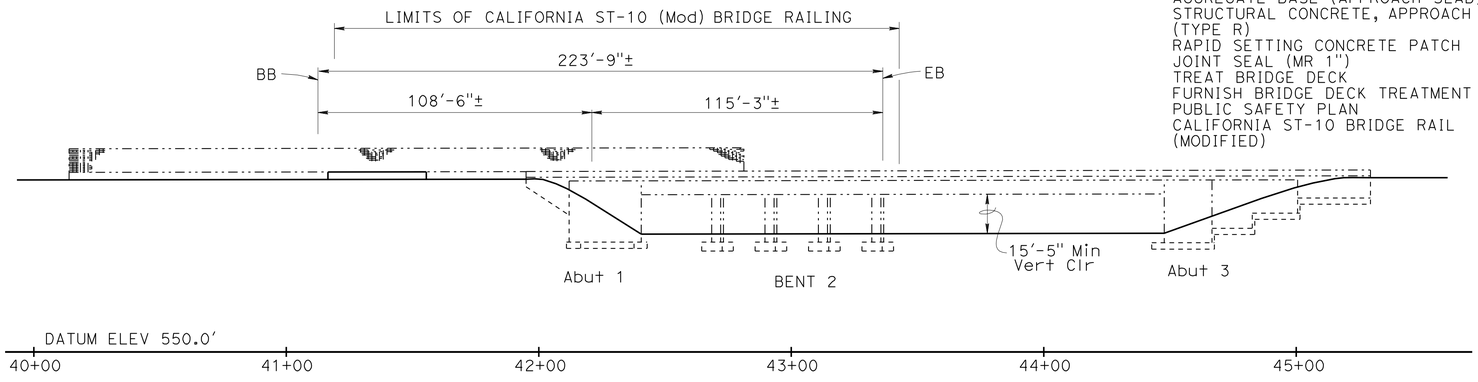
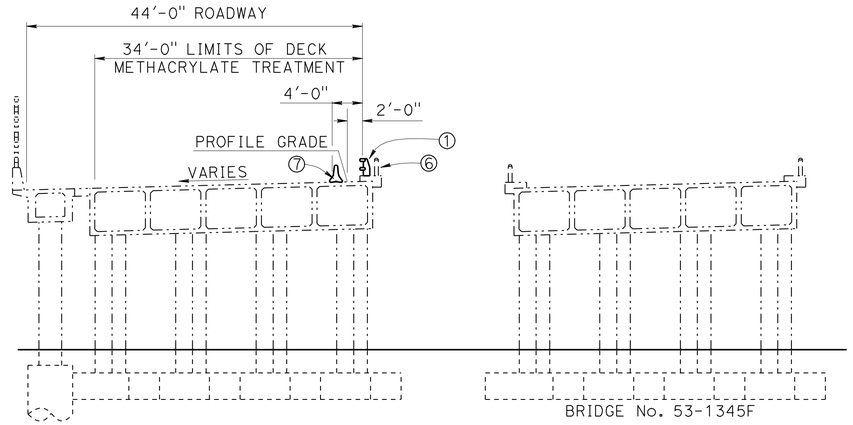
QUANTITIES

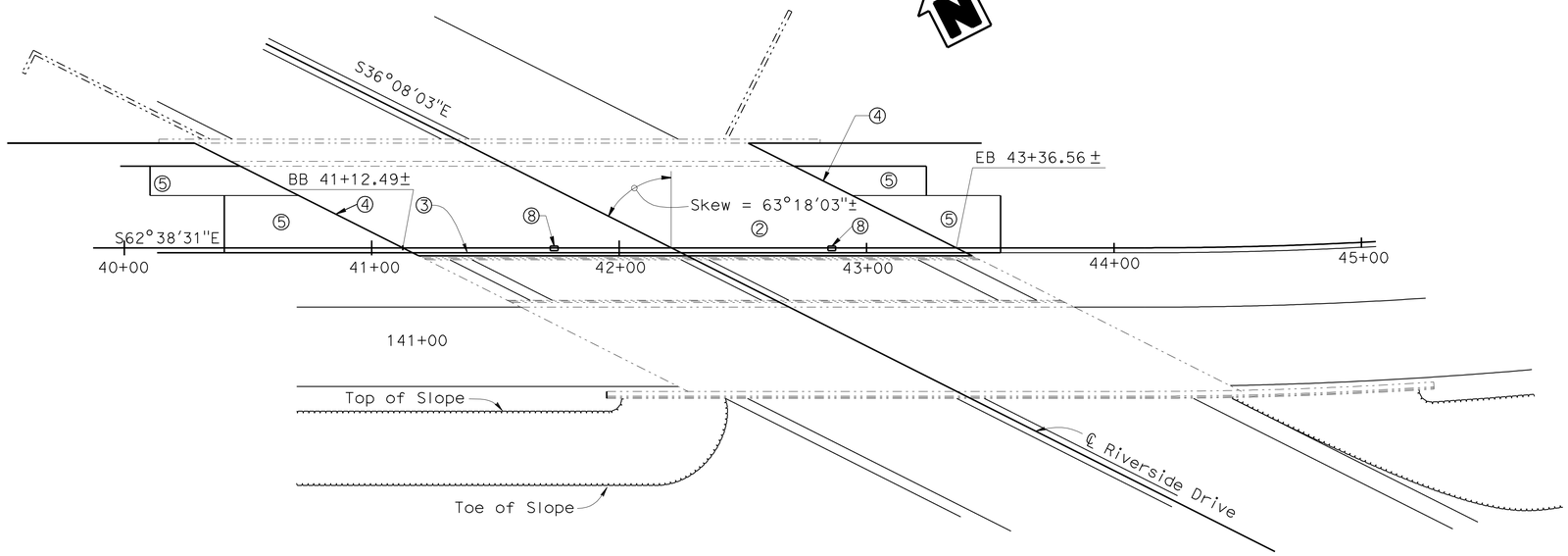
SALVAGE METAL BRIDGE RAILING	221	LF
REMOVE UNSOUND CONCRETE	32	CF
PREPARE CONCRETE BRIDGE DECK SURFACE	8,370	SQFT
BRIDGE REMOVAL (PORTION), LOCATION D	LUMP	SUM
AGGREGATE BASE (APPROACH SLAB)	12	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	120	CY
RAPID SETTING CONCRETE PATCH	39	CF
JOINT SEAL (MR 1")	155	LF
TREAT BRIDGE DECK	8,370	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	93	GAL
PUBLIC SAFETY PLAN	LUMP	SUM
CALIFORNIA ST-10 BRIDGE RAIL (MODIFIED)	221	LF



ELEVATION
1" = 30'



TYPICAL SECTION
1" = 10'-0"

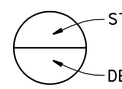


PLAN
1" = 30'

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

STANDARD PLANS MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A77J1	METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 1
A77J2	METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 2
RSP B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")



NOTES:
① California ST-10 Bridge Rail (modified)
② Prepare entire Bridge Deck, Curb and Curb Face and treat with Methacrylate
③ Repair spalled areas on Concrete Curbs (see MISCELLANEOUS DETAILS sheet)
④ Replace Joint Seal (MR=1")
⑤ Structure Approach Type R(30S)
⑥ Salvage Existing Railing
⑦ Temporary Railing (Type K) (Stage 1) - see Road Plans
⑧ Existing 25"x15"x12" Electrical Pull Boxes - Contractor to verify locations

NOTE:
No Methacrylate application required on widened portion of Structure

X Douglas J Dunrud
DESIGN ENGINEER

DESIGN	BY S. Galgiani	CHECKED L. Han	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE		
DETAILS	BY L. Xiong	CHECKED S. Galgiani	LAYOUT	BY S. Galgiani	CHECKED L. Han	
QUANTITIES	BY S. Galgiani	CHECKED L. Han	SPECIFICATIONS	BY X	PLANS AND SPECS COMPARED X	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 53-1452F
POST MILE 0.03

W/B 134 TO N/B 170 CONNECTOR O.C.
GENERAL PLAN

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381
CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
01-10-12	11-21-11	11-28-11	12-06-11	1	6

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10)

FILE => 53-1452f_01_gp.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:56

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	71	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
DOUGLAS JAMES DUNRUD
No. C47240
Exp 12-31-11
CIVIL
STATE OF CALIFORNIA

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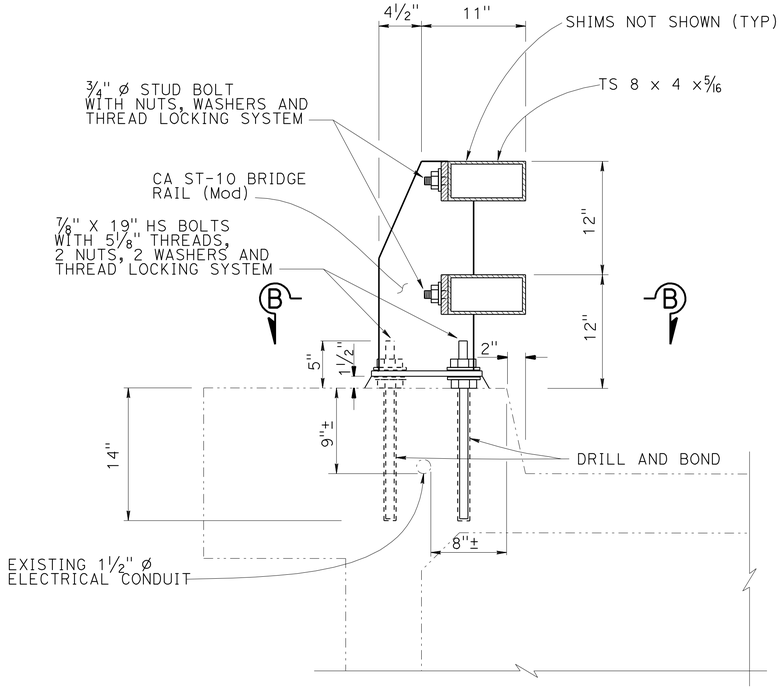


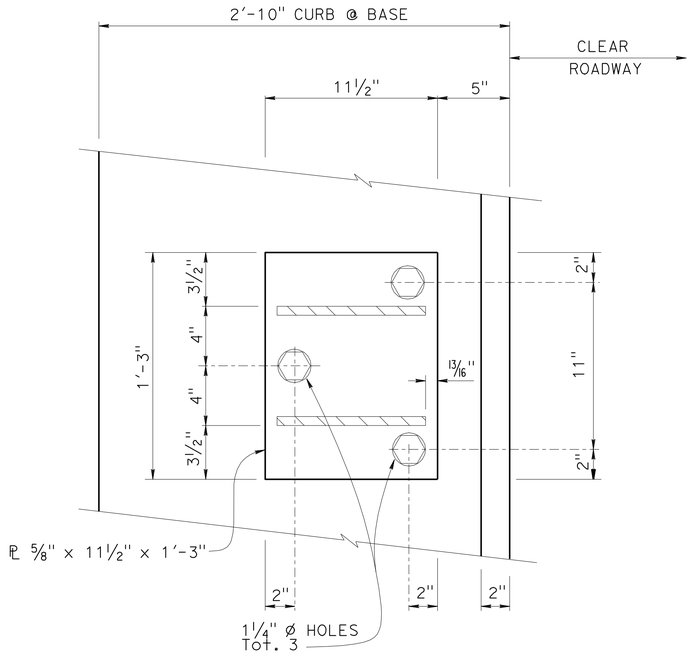
NOTE: Existing Railing not shown

TYPICAL RAIL SECTION

1½" = 1'-0"

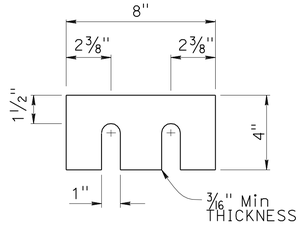
NOTE:

Contractor to avoid placing Rail Post at location of 2 EA 15"X25"X12" Existing Electrical Pull Boxes, Contractor to verify Pull Box locations

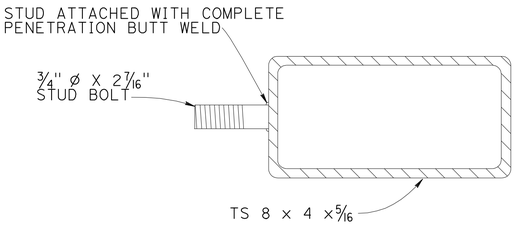


SECTION B-B

No Scale



SHIMS REQUIRED FOR TOP AND BOTTOM RAIL



SECTION AT POST

STUD BOLD DETAILS

NO SCALE

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1452F	W/B 134 TO N/B 170 CONNECTOR O.C.	
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 0.03	CALIFORNIA ST-10 (MOD) DETAIL No. 1	
QUANTITIES	BY S. Galgiani	CHECKED L. Han					

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
11-21-11	12-06-11	10-14-11	10-21-11	2	6

FILE => 53-1452f_brd_01.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:57

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	72	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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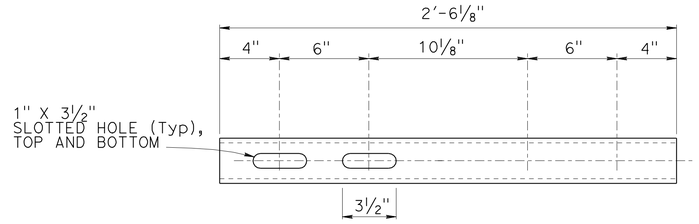
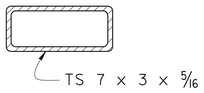
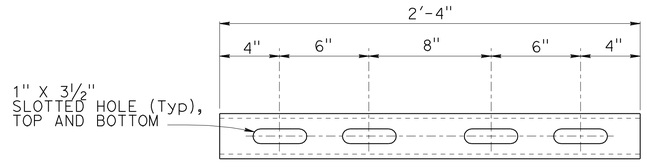


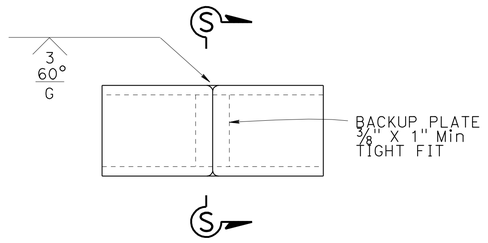
EXPANSION SLEEVE DETAIL

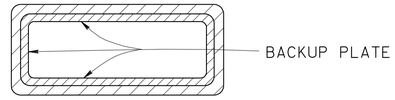


SECTION SLEEVE



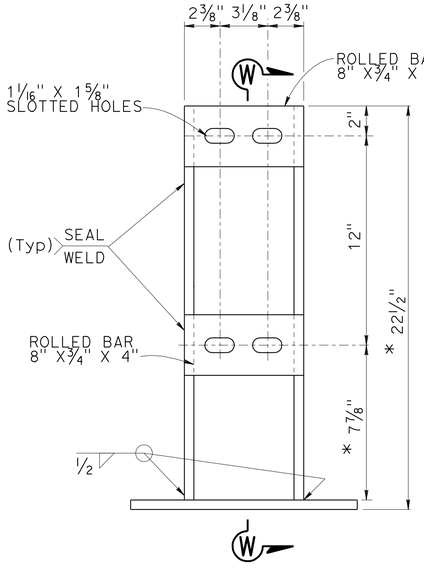
STANDARD SLEEVE DETAIL



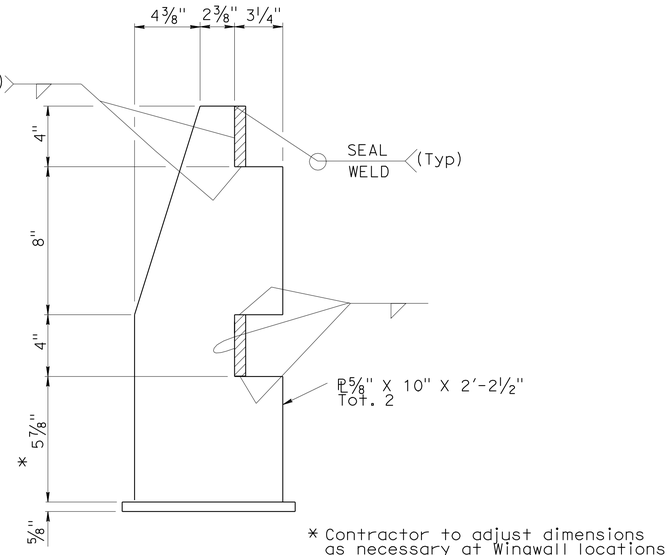


SECTION S-S

ALTERNATED TUBE WELDED SPLICE



ELEVATION



SECTION W-W

* Contractor to adjust dimensions as necessary at Wingwall locations only to maintain a smooth Top of Rail Profile

POST DETAIL

NOTES:

1. All Structural Steel shall be glavanized after fabrication.
2. Anchor bolts may be tack welded (shop or field) to anchorage.
3. All rough edges on posts and rails shall be ground smooth.
4. Tubing shall be bent or fabricated to fit horizontal curve when radius is less than 896'.
5. After installation of rail, the exposed rail bolt threads shall be painted with two coats of zinc rich paint conforming to the requirement of Seciton 75-1.05 galvanizing of the Standard Specifications.
6. The alternative welded splice may be used in lieu of The Standard splice.
7. Each rail length shall be continuous over a minimum of two posts.
8. The contractor shall check that the tubular sleeves splices conform to the dimensions indicated to assure proper clearance.
9. Except for Expansion Splices, not more than one Splice shall be permitted per same side of post.
10. See Project Plans for Approach Guard Railing details.

NO SCALE

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1452F
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 0.03
QUANTITIES	BY S. Galgiani	CHECKED L. Han			

W/B 134 TO N/B 170 CONNECTOR O.C.

CALIFORNIA ST-10 (MOD) DETAIL No. 2

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381
CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
12-06-11	01-10-12	10-11-11	10-11-11	3	6

FILE => 53-1452f_brd_02.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:57

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	73	104

REGISTERED CIVIL ENGINEER — 11-15-11 DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD — No. C47240 — Exp 12-31-11 — CIVIL — STATE OF CALIFORNIA

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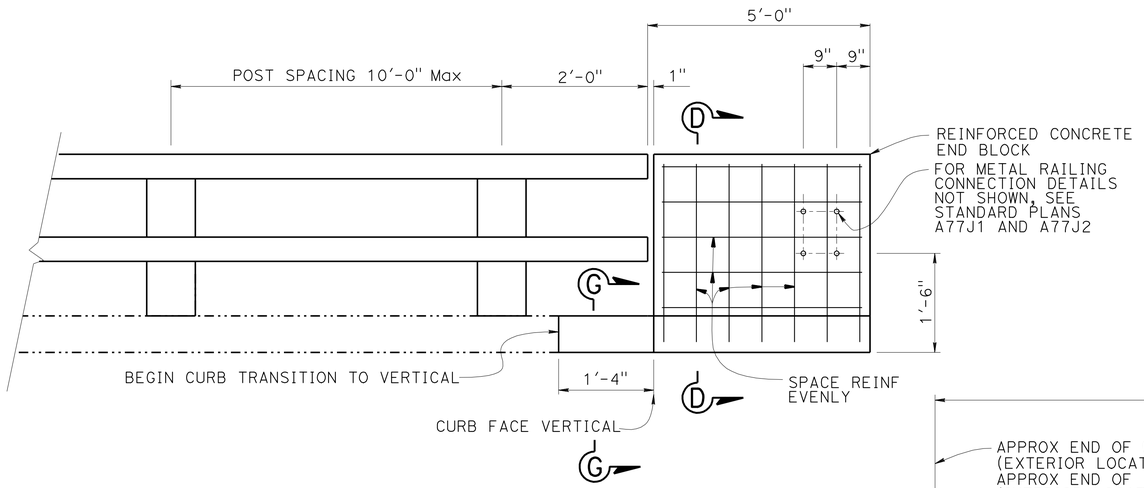
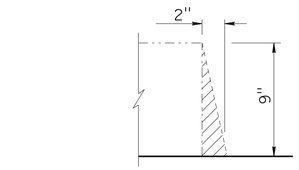
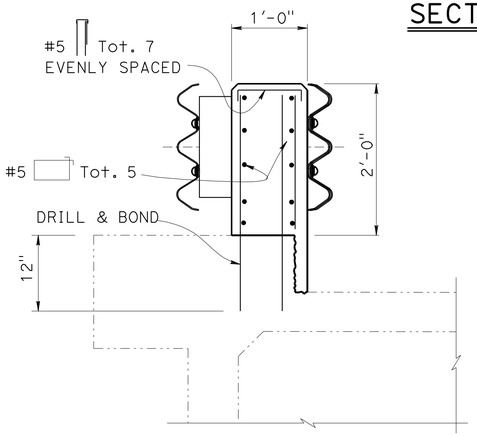


END OF RAILING ELEVATION



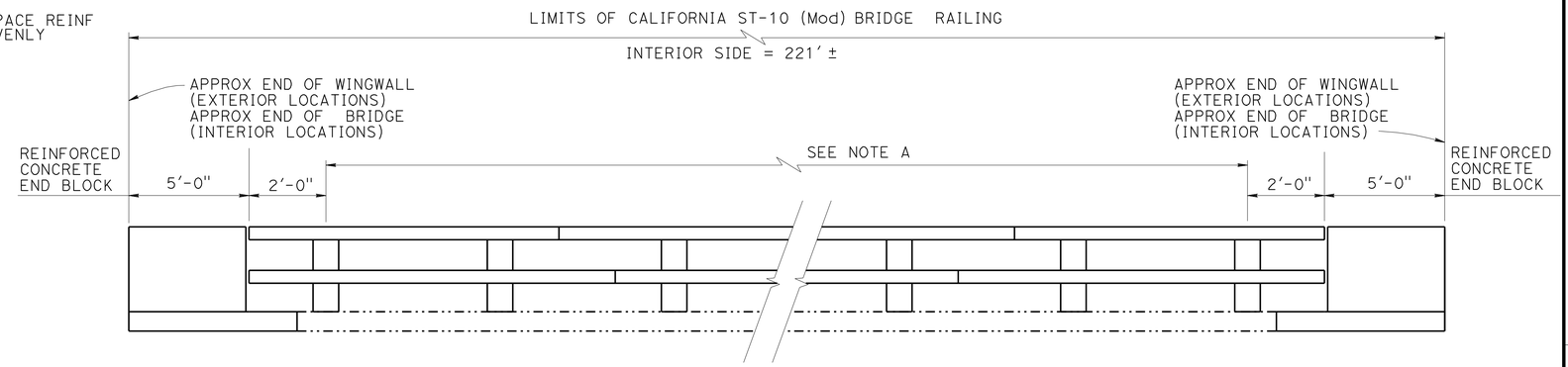
Limits of Existing Curb Face Removal

SECTION G-G



SECTION D-D

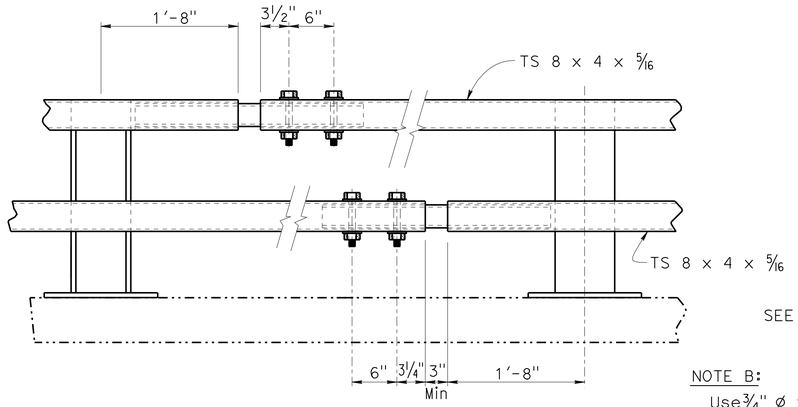
NOTE: New Approach Slab to be placed prior to drilling and bonding HS Bolts



BRIDGE RAILING ELEVATION

NOTE A:

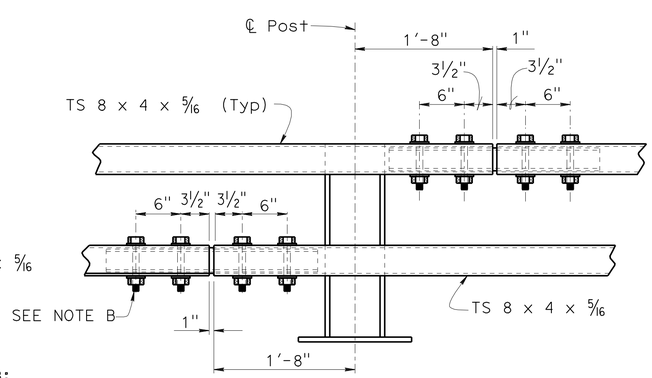
Post spacing and/or block length to be adjusted to fit Bridge length or Wingwall length. Maximum post spacing is 10'-0". Place an Expansion Splice @ BB and EB.



EXPANSION SPLICE

NOTE B:

Use ¾" Ø x 5 5/16" HS bolts with washers, fully tensioned. 1" holes in rail (typ)



STANDARD SPLICE

NO SCALE

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1452F	W/B 134 TO N/B 170 CONNECTOR O.C.	
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 0.03	CALIFORNIA ST-10 (MOD) DETAIL No. 3	
QUANTITIES	BY S. Galgiani	CHECKED L. Han					

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
12-06-11	01-10-12	11-21-11	11-28-11	4	6

FILE => 53-1452f_brd_03.dgn

DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:57
USERNAME => s128843

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	74	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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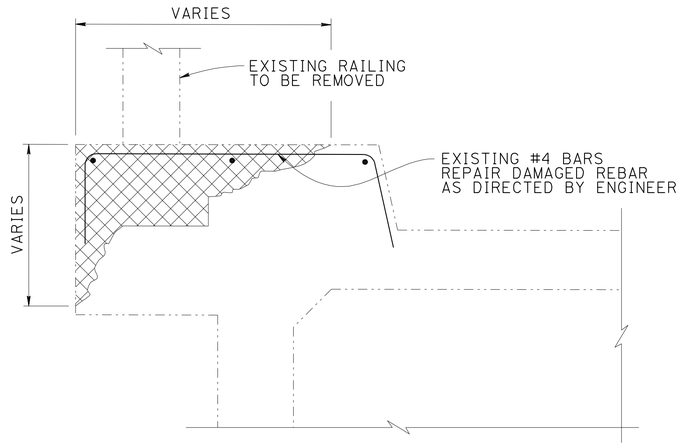
CONCRETE CURB REPAIR TABLE				
APPROXIMATE AREA DAMAGED (PERCENT	AVERAGE DEPTH (INCHES)	APPROXIMATE CURB AREA (SQ FT)	UNSOUND CONCRETE (CF)	RAPID SETTING CONCRETE PATCH (CF)
10	5	763	32	39



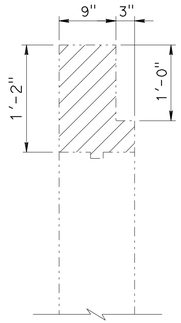
NOTE:

¾" SAWCUT OF CONCRETE AND REMOVE UNSOUND CONCRETE AROUND RAIL POSTS AND PATCH WITH RAPID SET PATCHING SYSTEM AS DIRECTED BY ENGINEER

LIMITS OF UNSOUND CONCRETE REMOVAL AND RAPID SETTING CONCRETE

CONCRETE REPAIR DETAIL AT EXISTING RAIL POSTS

1½" = 1'-0"



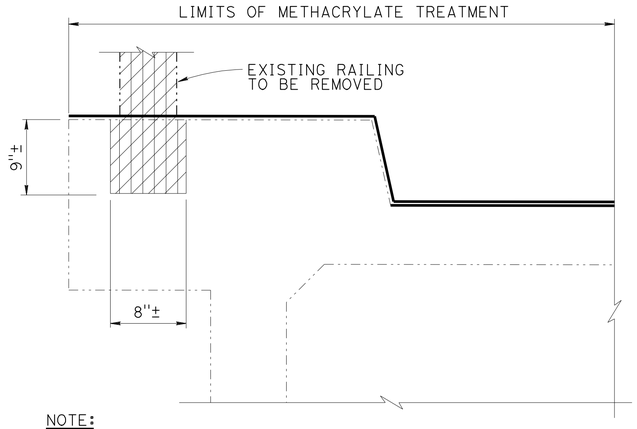
LIMITS OF EXISTING BACKWALL REMOVAL

NOTE:

EXISTING BACKWALL VERTICAL REINFORCEMENT TO REMAIN IN PLACE.

BRIDGE REMOVAL DETAIL FOR NEW APPROACH SLAB

1" = 1'-0"



NOTE:

¾" SAWCUT OF GROUT/CONCRETE AND REMOVE GROUT, RAMMED SAND, PEA GRAVEL AND MELTED SULPHUR AROUND RAIL POSTS AND PATCH WITH RAPID SET PATCHING SYSTEM AS DIRECTED BY ENGINEER

LIMITS OF BRIDGE REMOVAL PORTION

RAIL POST REMOVAL DETAIL AT EXISTING RAIL POSTS

1½" = 1'-0"

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1452F	W/B 134 TO N/B 170 CONNECTOR O.C.
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 0.03	MISCELLANEOUS DETAILS
QUANTITIES	BY S. Galgiani	CHECKED L. Han				

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381
CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 10-26-11 | 9-1-11 | 10-14-11 | 10-21-11

SHEET 5 OF 6

FILE => 53-1452f_miscdet.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:57

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	75	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

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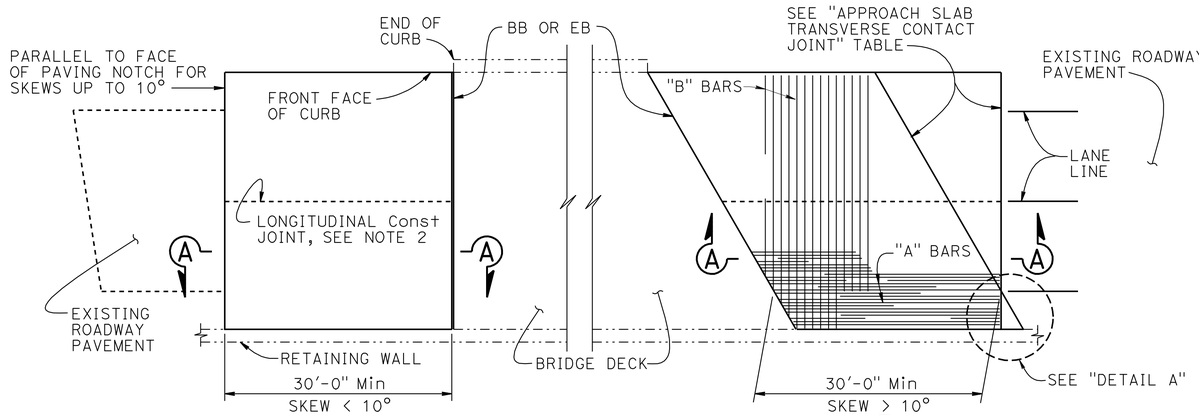
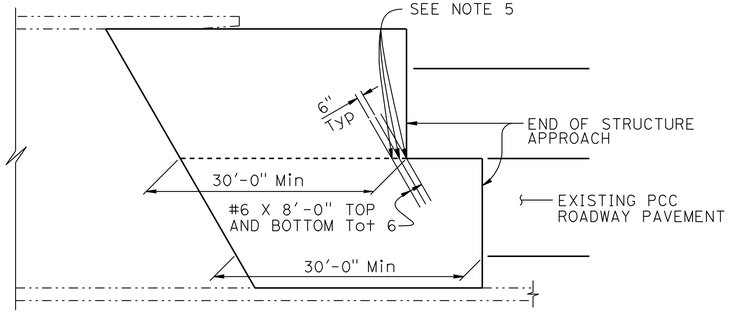
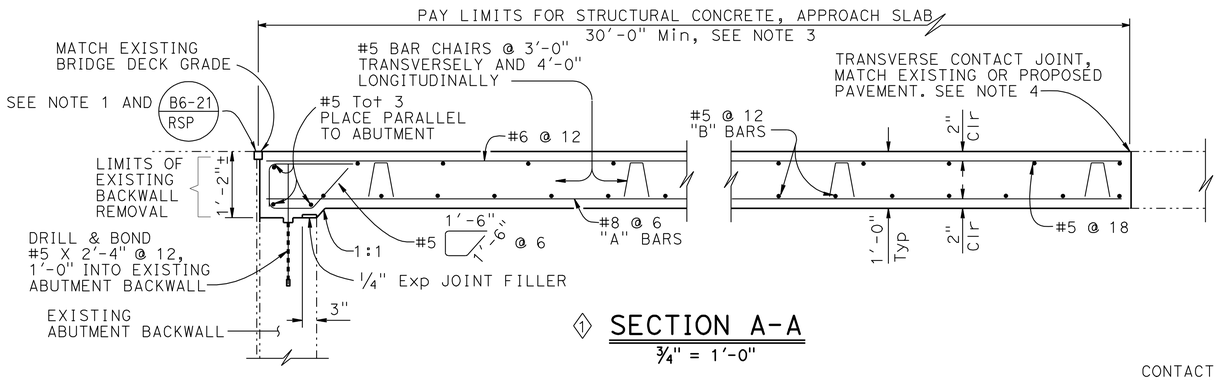
REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp. 12-31-11 CIVIL — STATE OF CALIFORNIA



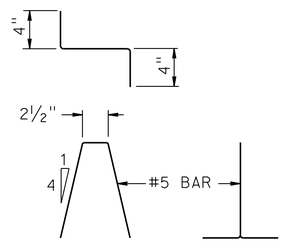
① PLAN
1" = 10'



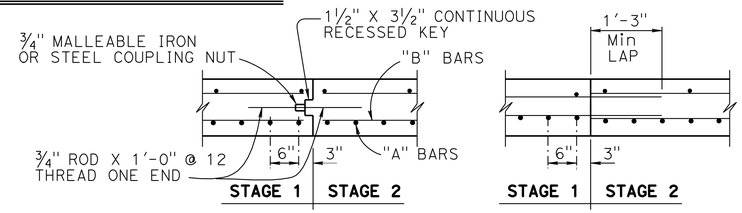
STRUCTURE APPROACH - END STAGGER DETAIL
NO SCALE

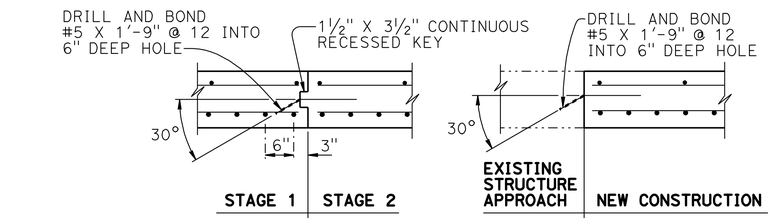


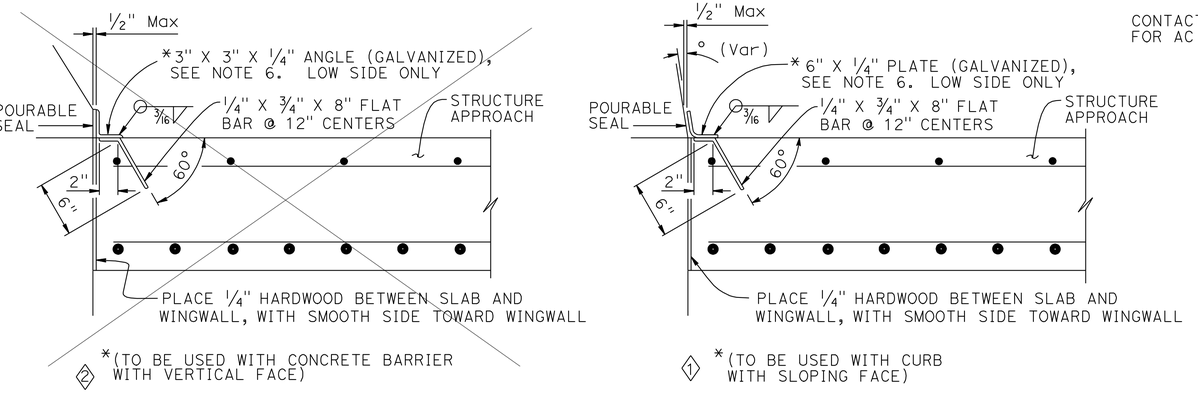
① SECTION A-A
¾" = 1'-0"



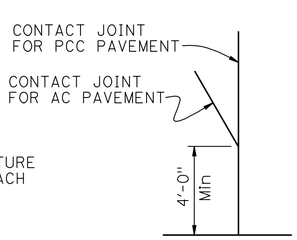
BAR CHAIR DETAIL
1½" = 1'-0"



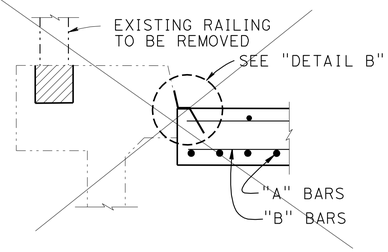




DETAIL B
1½" = 1'-0"



DETAIL A
No Scale



② SECTION C-C
¾" = 1'-0"

APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	PARALLEL TO FACE OF PN	PARALLEL TO FACE OF PN
10° - 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER LINES 24' TO 36' APART
> 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER AT EACH LANE LINE

LONGITUDINAL CONSTRUCTION JOINT ALTERNATIVES
¾" = 1'-0"

NOTES:
1. Sealed joint,for MR see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required
2. Longitudinal construction joints, when permitted by Engineer, shall be located on lane lines
3. Transverse contact joint shall be a minimum of 5'-0" from an existing or constructed weakened plane joint
4. For transverse contact joint with new PCC paving, refer to Revised Standard Plan P10
5. Couplers are required for stage construction
6. End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable

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

REVISED STANDARD DRAWING
FILE NO. xs3-130
APPROVAL DATE July 2011

① DETAIL MODIFIED
② DETAIL DELETED

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 53-1452F
POST MILE 0.03

W/B 134 TO N/B 170 CONNECTOR O.C.
STRUCTURE APPROACH TYPE R(30S)

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
10-14-11	10-21-11	10-27-11	01-10-12	6	6

FILE => 53-1452f_sapp30s.dgn

USERNAME => s1128813 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:57

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	76	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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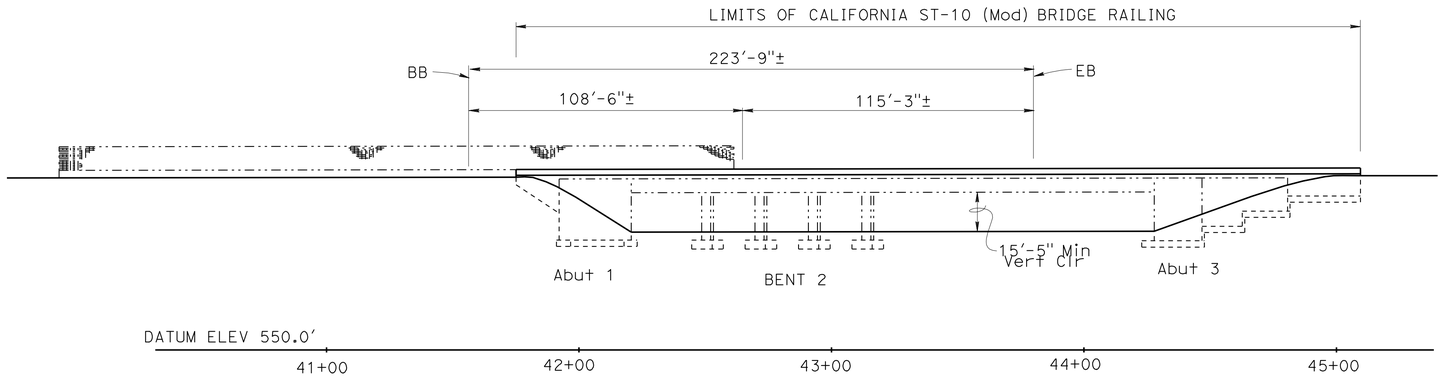
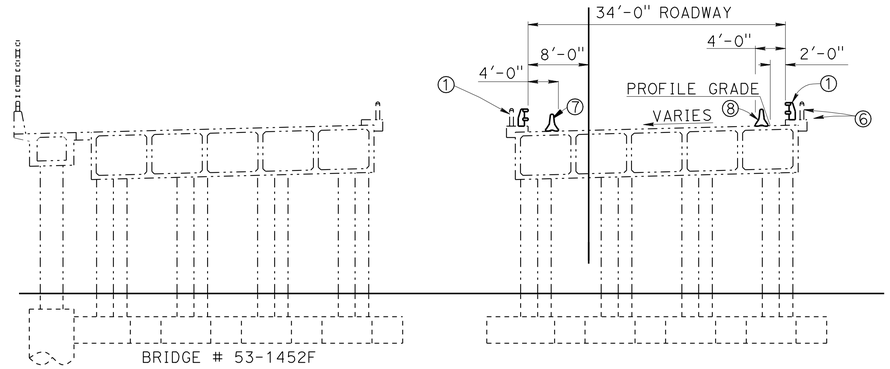


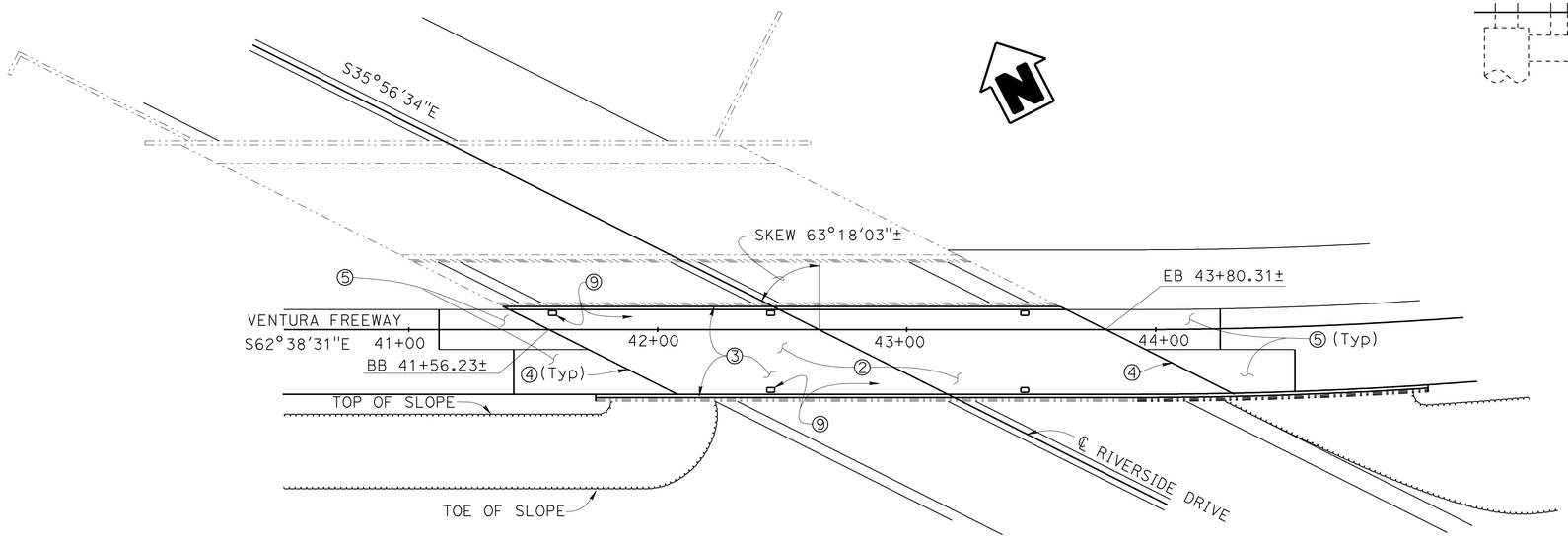
ELEVATION
1" = 30'

QUANTITIES

SALVAGE METAL BRIDGE RAILING	555	LF
REMOVE UNSOUND CONCRETE	90	CF
PREPARE CONCRETE BRIDGE DECK SURFACE	9,550	SQFT
BRIDGE REMOVAL (PORTION), LOCATION C	LUMP	SUM
AGGREGATE BASE (APPROACH SLAB)	12	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	119	CY
RAPID SETTING CONCRETE PATCH	108	CF
JOINT SEAL (MR 1")	154	LF
TREAT BRIDGE DECK	9,550	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	106	GAL
PUBLIC SAFETY PLAN	LUMP	SUM
CALIFORNIA ST-10 BRIDGE RAIL (MODIFIED)	553	LF



TYPICAL SECTION
1" = 10'-0"



PLAN
1" = 30'

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

STANDARD PLANS MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A77J1	METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 1
A77J2	METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 2
RSP B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")

STANDARD PLAN SHEET No.
DETAIL No.

NOTES:

① California ST-10 Bridge Rail (modified)
② Prepare entire Bridge, Deck Curb and Curb Face and treat with Methacrylate
③ Repair spalled concrete areas on Curb and Bridge Deck (see MISCELLANEOUS DETAILS sheet)
④ Replace Joint Seal (MR=1")
⑤ Structure Approach Type R(30S)
⑥ Salvage Existing Railing
⑦ Temporary Railing (Type K) (Stage 1) - see Road Plans
⑧ Temporary Railing (Type K) (Stage 2) - see Road Plans
⑨ Existing 25"x15"x12" Electrical Pull Boxes - Contractor to verify locations

X Douglas J Dunrud
DESIGN ENGINEER

DESIGN	BY S. Galgiani	CHECKED L. Han	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE			
DETAILS	BY L. Xiong	CHECKED S. Galgiani	LAYOUT	BY S. Galgiani	CHECKED L. HAn		
QUANTITIES	BY S. Galgiani	CHECKED L. Han	SPECIFICATIONS	BY X	PLANS AND SPECS COMPARED X		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 53-1345F
POST MILE 0.04

RIVERSIDE DRIVE UC (BRIDGE RAIL REPLACE)
GENERAL PLAN

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
11-21-11	12-06-11	01-10-12	11-11-11	1	6

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10)

FILE => 53-1345f_01_gp.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:57

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	77	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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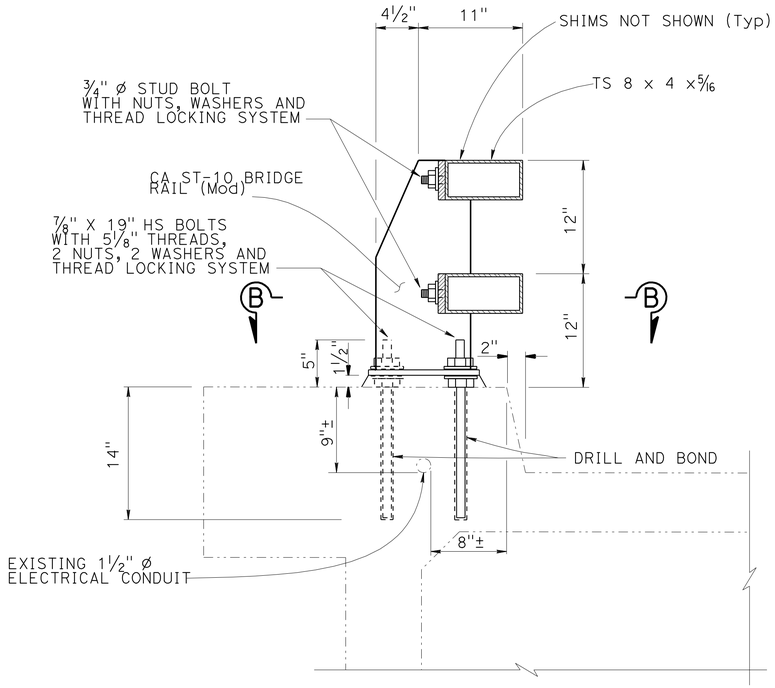


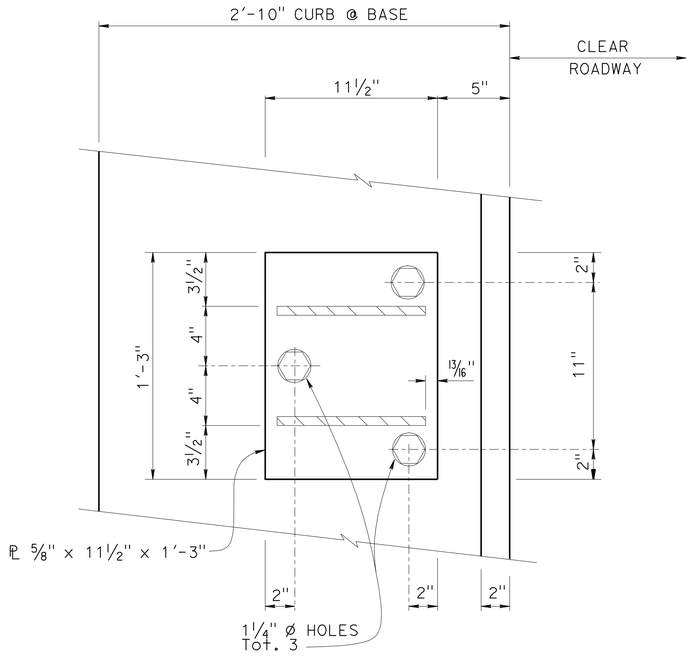
NOTE: Existing Railing not shown

TYPICAL RAIL SECTION

1½" = 1'-0"

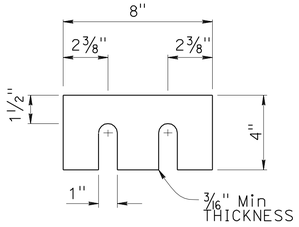
NOTE:

Contractor to avoid placing Rail Post at location of 5 EA 25"x15"x12" Existing Electrical Pull Boxes located on both Bridge sides,
Contractor to verify Pull Box locations

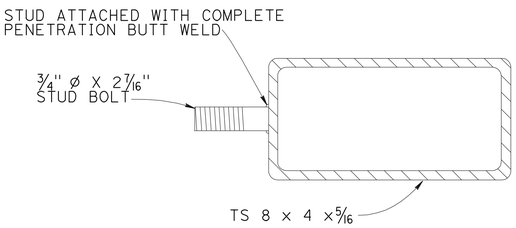


SECTION B-B

No Scale



SHIMS REQUIRED FOR TOP AND BOTTOM RAIL



SECTION AT POST

STUD BOLD DETAILS

No Scale

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1345F	RIVERSIDE DRIVE UC (BRIDGE RAIL REPLACE)	
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 0.04	CALIFORNIA ST-10 (MOD) DETAIL No. 1	
QUANTITIES	BY S. Galgiani	CHECKED L. Han					

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
11-21-11	09-21-11	10-14-11	10-21-11	2	6

FILE => 53-1345f_brd_01.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:57

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	78	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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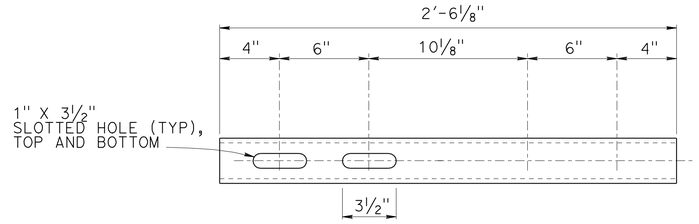
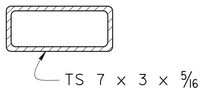
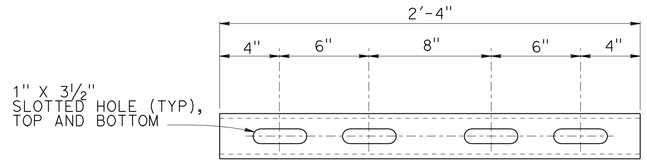


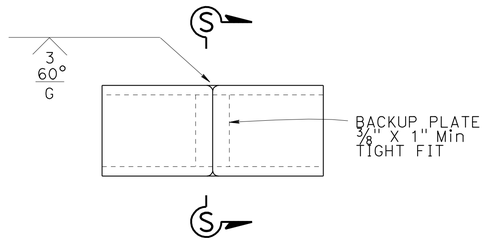
EXPANSION SLEEVE DETAIL

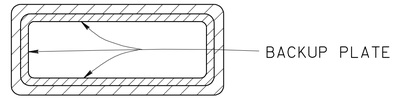


SECTION SLEEVE



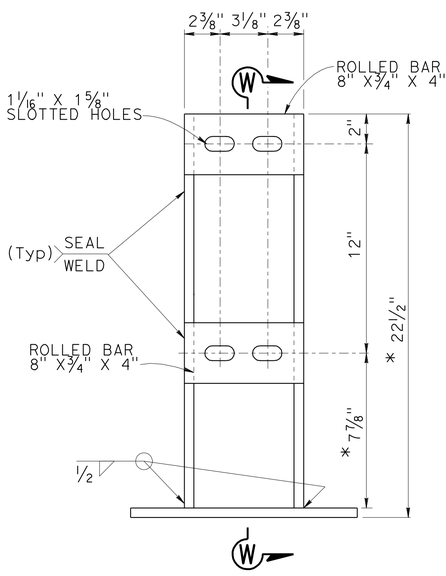
STANDARD SLEEVE DETAIL



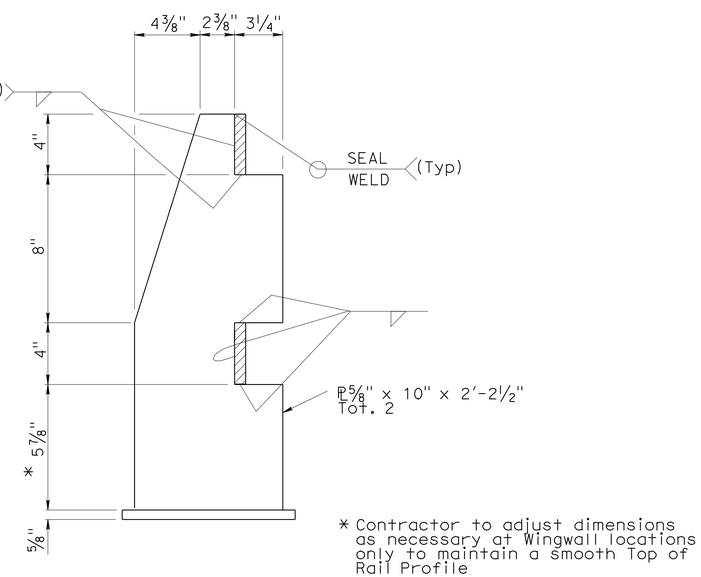


SECTION S-S

ALTERNATED TUBE WELDED SPLICE



ELEVATION



SECTION W-W

* Contractor to adjust dimensions as necessary at Wingwall locations only to maintain a smooth Top of Rail Profile

POST DETAIL

NOTES:

1. All Structural Steel shall be glavanized after fabrication.
2. Anchor bolts may be tack welded (shop or field) to anchorage.
3. All rough edges on posts and rails shall be ground smooth.
4. Tubing shall be bent or fabricated to fit horizontal curve when radius is less than 896'.
5. After installation of rail, the exposed rail bolt threads shall be painted with two coats of zinc rich paint conforming to the requirement of Seciton 75-1.05 galvanizing of the Standard Specifications.
6. The alternative welded splice may be used in lieu of The Standard splice.
7. Each rail length shall be continuous over a minimum of two posts.
8. The contractor shall check that the tubular sleeves splices conform to the dimensions indicated to assure proper clearance.
9. Except for Expansion Splices, not more than one Splice shall be permitted per same side of post.
10. See Project Plans for Approach Guard Railing details.

NO SCALE

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1345F; POST MILE 0.04
DETAILS	BY K. Kubo	CHECKED S. Galgiani			
QUANTITIES	BY S. Galgiani	CHECKED L. Han			

RIVERSIDE DRIVE UC (BRIDGE RAIL REPLACE)

CALIFORNIA ST-10 (MOD) DETAIL No. 2

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381
CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
01-10-12	09-07-11	10-14-11	10-31-11	3	6

FILE => 53-1345f_brd_02.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:57

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	79	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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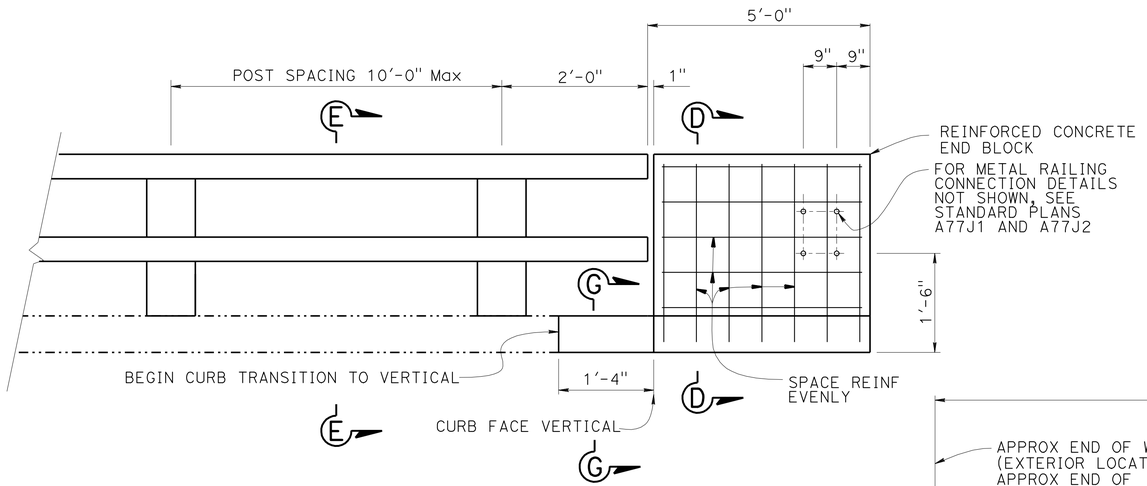
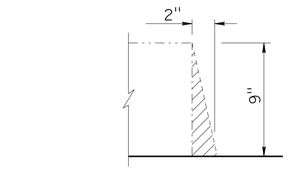
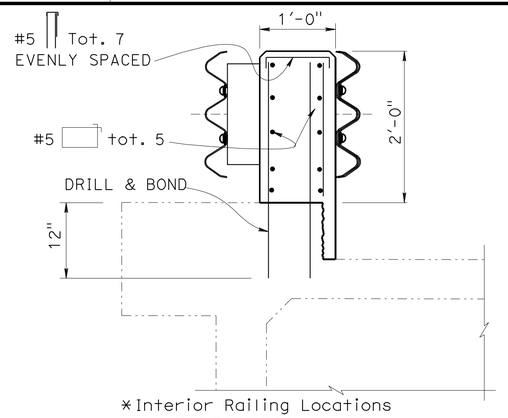


END OF RAILING ELEVATION

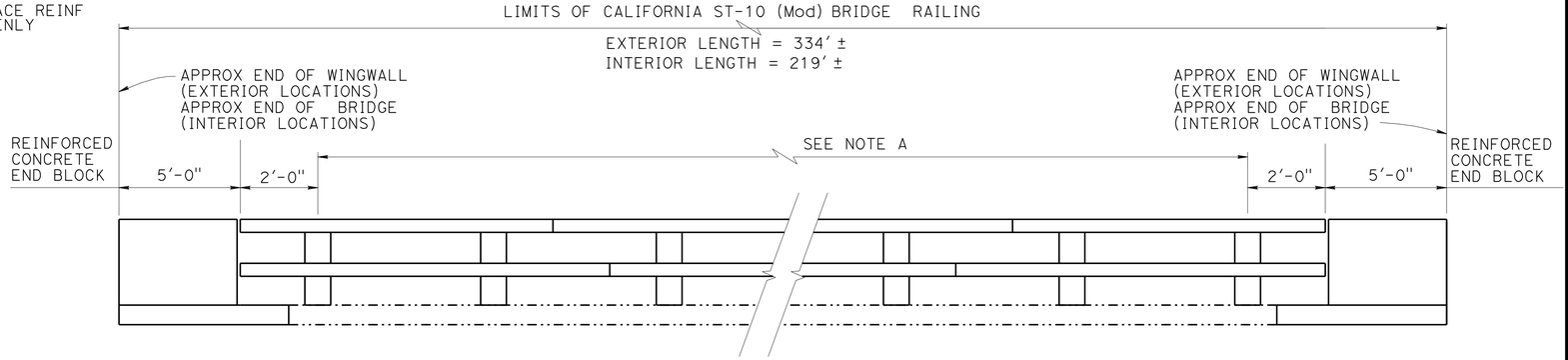


Limits of Existing Curb Face Removal

SECTION G-G



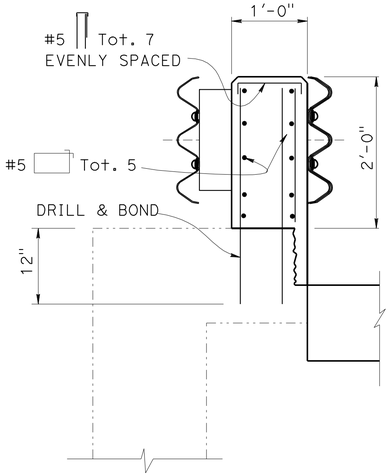
SECTION F-F



BRIDGE RAILING ELEVATION

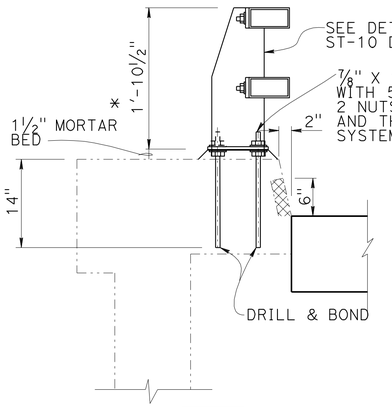
NOTE A:

Post spacing and/or block length to be adjusted to fit Bridge length or Wingwall length. Maximum post spacing is 10'-0". Place an Expansion Splice @ BB and EB.



* For Exterior Railing Locations only, see 'SECTION F-F' for Interior Railing Locations

SECTION D-D

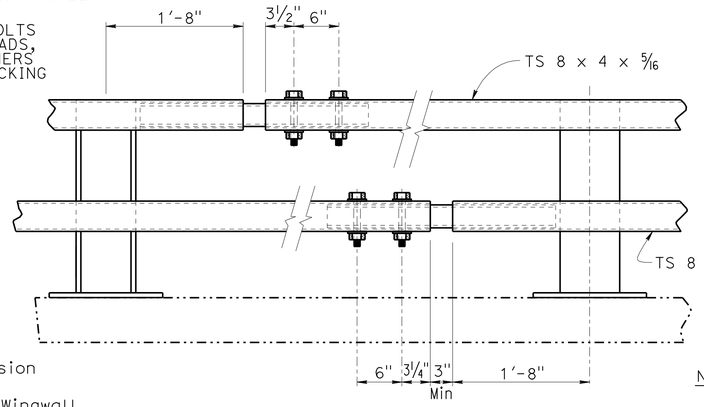


Limits of Clean Expansion Joint at 2" Depth

* Contractor to adjust dimension as necessary at Wingwall locations only to maintain a smooth Top of Rail Profile

** For Exterior Railing Locations only

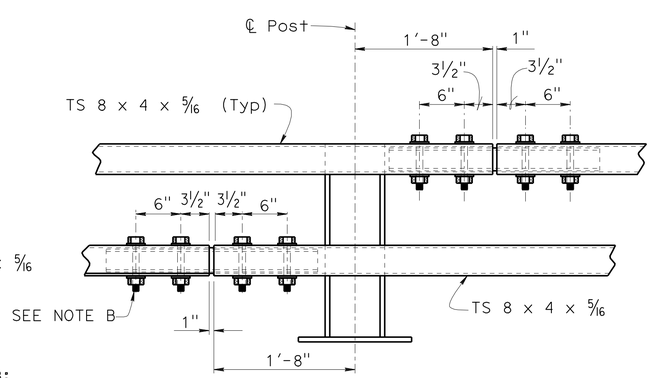
SECTION E-E



EXPANSION SPLICE

NOTE B:

Use ¾" Ø x 5⅝" HS bolts with washers, fully tensioned. 1" holes in rail (typ)



STANDARD SPLICE

No Scale

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1345F	RIVERSIDE DRIVE UC (BRIDGE RAIL REPLACE)	
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 0.04	CALIFORNIA ST-10 (MOD) DETAIL No. 3	
QUANTITIES	BY S. Galgiani	CHECKED L. Han					

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
10-26-11	10-27-11	11-21-11	01-10-12	4	6

FILE => 53-1345f_brd_03.dgn

USERNAME => s128863 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:58

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	80	104

REGISTERED CIVIL ENGINEER — DATE 11-15-11

PLANS APPROVAL DATE 4-16-12

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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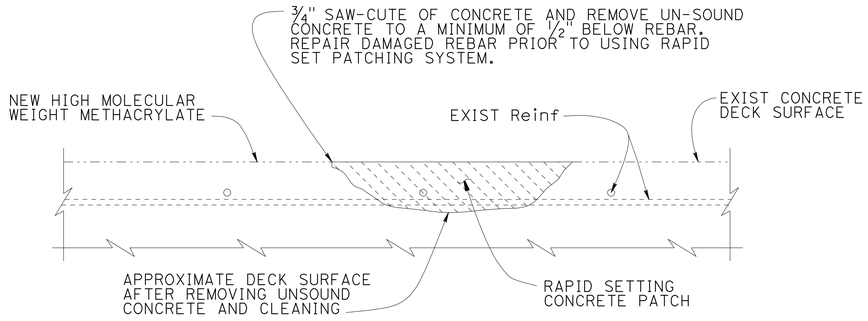
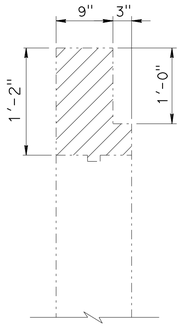


DECK REPAIR DETAIL

REINFORCEMENT MAY BE ENCOUNTERED DURING DECK CONCRETE REMOVAL.
NO SCALE

DECK REPAIR TABLE				
APPROXIMATE AREA DAMAGED (PERCENT)	AVERAGE DEPTH (INCHES)	APPROXIMATE DECK AREA (SQ FT)	UNSOUND CONCRETE (CF)	RAPID SETTING CONCRETE PATCH (CF)
1.25	3	7607	24	24



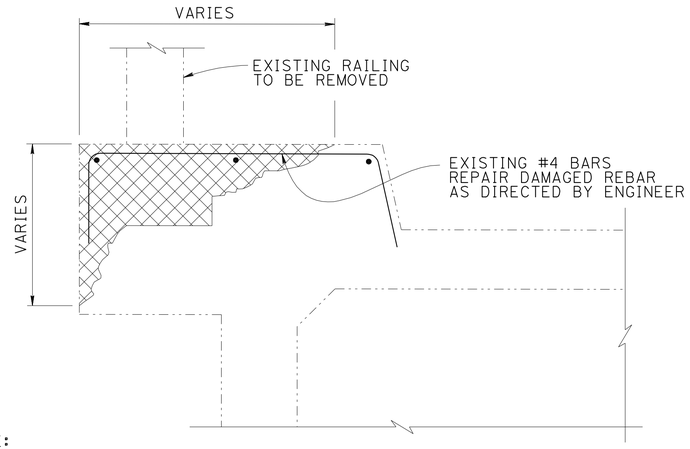
LIMITS OF EXISTING BACKWALL REMOVAL

NOTE:

EXISTING BACKWALL VERTICAL REINFORCEMENT TO REMAIN IN PLACE.

BRIDGE REMOVAL DETAIL FOR NEW APPROACH SLAB

1" = 1'-0"



NOTE:

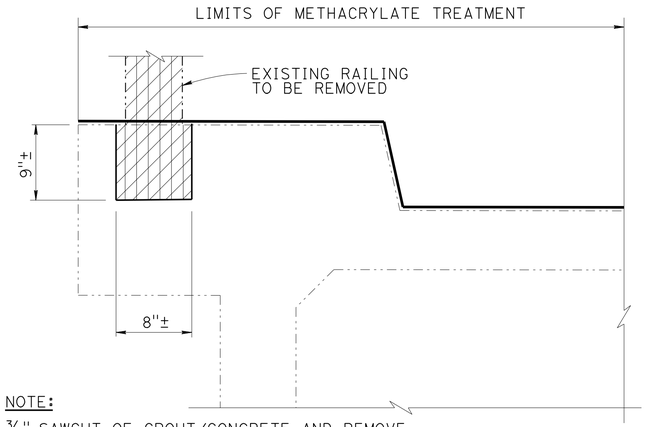
3/4" SAWCUT OF CONCRETE AND REMOVE UNSOUND CONCRETE AROUND RAIL POSTS AND PATCH WITH RAPID SET PATCHING SYSTEM AS DIRECTED BY ENGINEER

LIMITS OF UNSOUND CONCRETE REMOVAL AND RAPID SETTING CONCRETE

CONCRETE REPAIR DETAIL AT EXISTING RAIL POSTS

1½" = 1'-0"

CONCRETE CURB REPAIR TABLE				
APPROXIMATE AREA DAMAGED (PERCENT)	AVERAGE DEPTH (INCHES)	APPROXIMATE CURB AREA (SQ FT)	UNSOUND CONCRETE (CF)	RAPID SETTING CONCRETE PATCH (CF)
8	5	1943	65	84



NOTE:

3/4" SAWCUT OF GROUT/CONCRETE AND REMOVE GROUT, RAMMED SAND, PEA GRAVEL AND MELTED SULPHUR AROUND RAIL POSTS AND PATCH WITH RAPID SET PATCHING SYSTEM AS DIRECTED BY ENGINEER

LIMITS OF BRIDGE REMOVAL PORTION

RAIL POST REMOVAL DETAIL AT EXISTING RAIL POSTS

1½" = 1'-0"

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1345F	RIVERSIDE DRIVE UC (BRIDGE RAIL REPLACE)	
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 0.04	MISCELLANEOUS DETAILS	
QUANTITIES	BY S. Galgiani	CHECKED L. Han					

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
08-31-11	9-1-11	10-14-11	10-21-11	5	6

FILE => 53-1345f_miscdet.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:58

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	81	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp. 12-31-11 CIVIL — STATE OF CALIFORNIA

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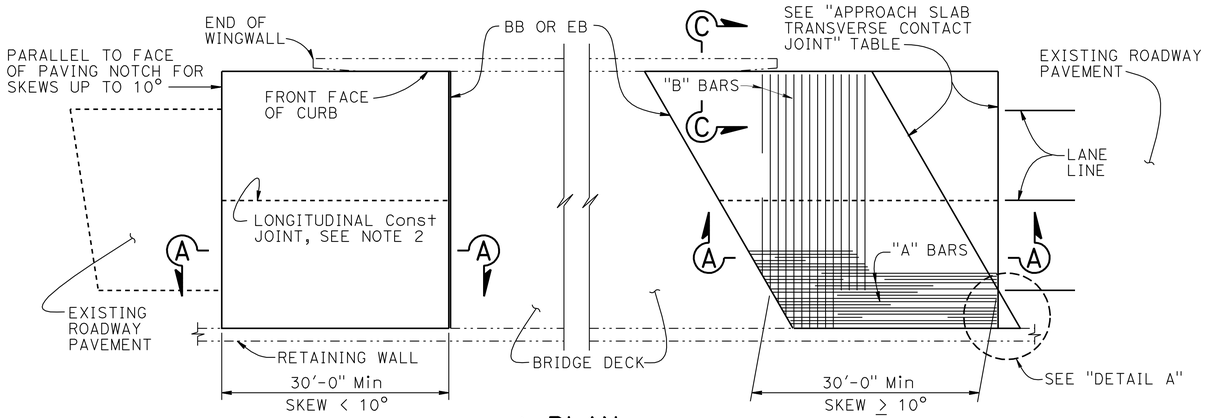
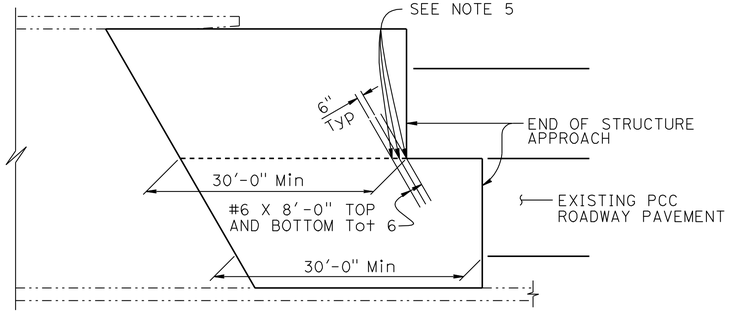
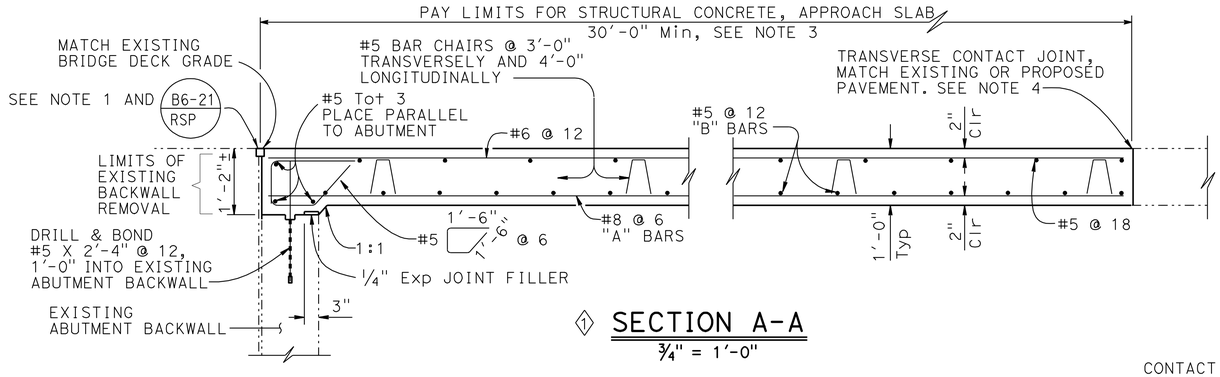


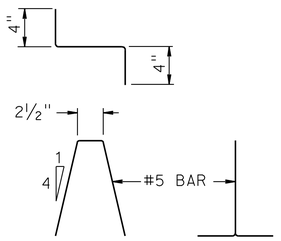
① PLAN
1" = 10'



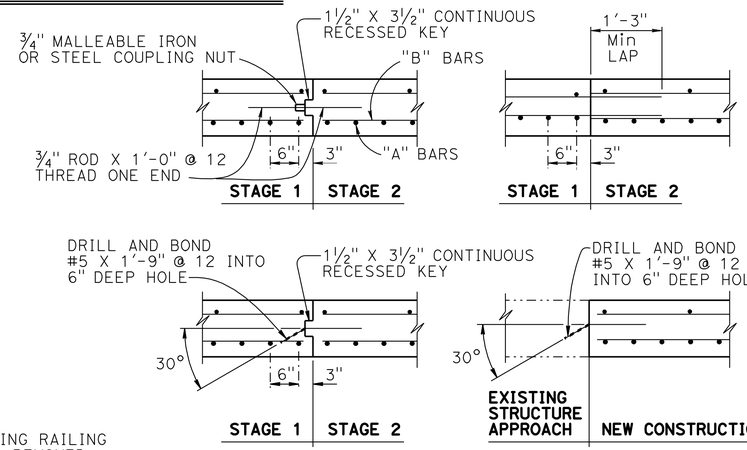
STRUCTURE APPROACH - END STAGGER DETAIL
NO SCALE

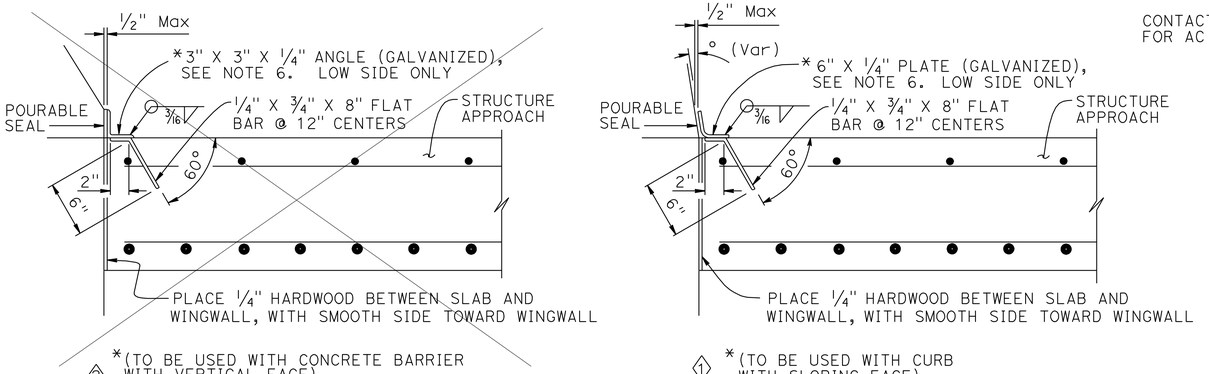


① SECTION A-A
3/4" = 1'-0"



BAR CHAIR DETAIL
1 1/2" = 1'-0"

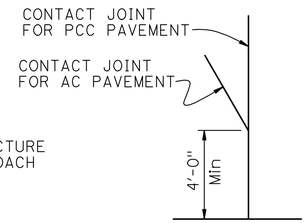




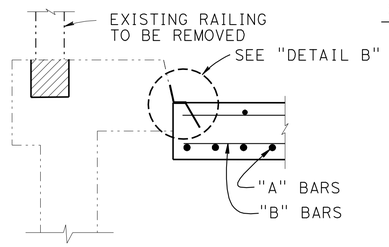
② *(TO BE USED WITH CONCRETE BARRIER WITH VERTICAL FACE)

① *(TO BE USED WITH CURB WITH SLOPING FACE)

DETAIL B
1 1/2" = 1'-0"



DETAIL A
No Scale



① SECTION C-C
3/4" = 1'-0"

LONGITUDINAL CONSTRUCTION JOINT ALTERNATIVES
3/4" = 1'-0"

APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	PARALLEL TO FACE OF PN	PARALLEL TO FACE OF PN
10° - 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER LINES 24' TO 36' APART
> 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER AT EACH LANE LINE

NOTES:
1. Sealed joint,for MR see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required
2. Longitudinal construction joints, when permitted by Engineer, shall be located on lane lines
3. Transverse contact joint shall be a minimum of 5'-0" from an existing or constructed weakened plane joint
4. For transverse contact joint with new PCC paving, refer to Revised Standard Plan P10
5. Couplers are required for stage construction
6. End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable

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

REVISED STANDARD DRAWING

FILE NO. xs3-130

APPROVAL DATE July 2011

① DETAIL MODIFIED
② DETAIL DELETED

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 53-1345F
POST MILE 0.04

RIVERSIDE DRIVE UC (BRIDGE RAIL REPLACE)

STRUCTURE APPROACH TYPE R(30S)

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

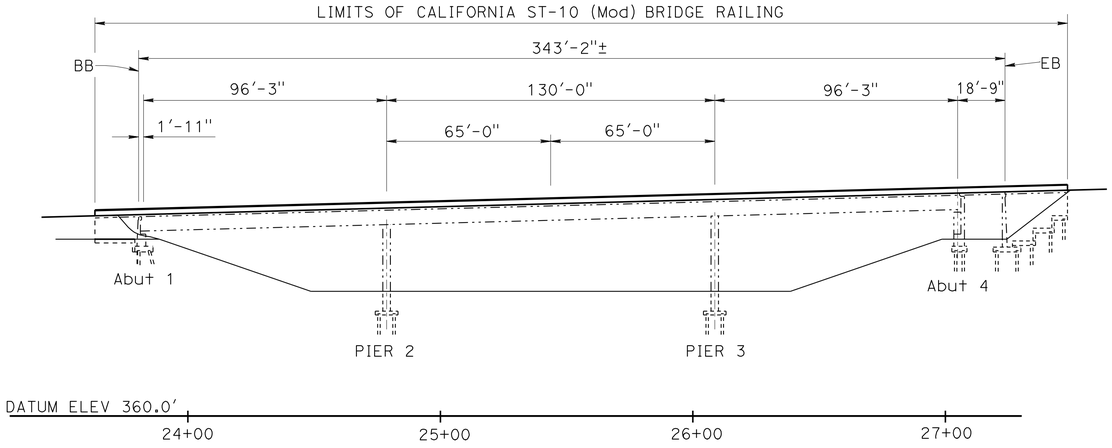
UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381
CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

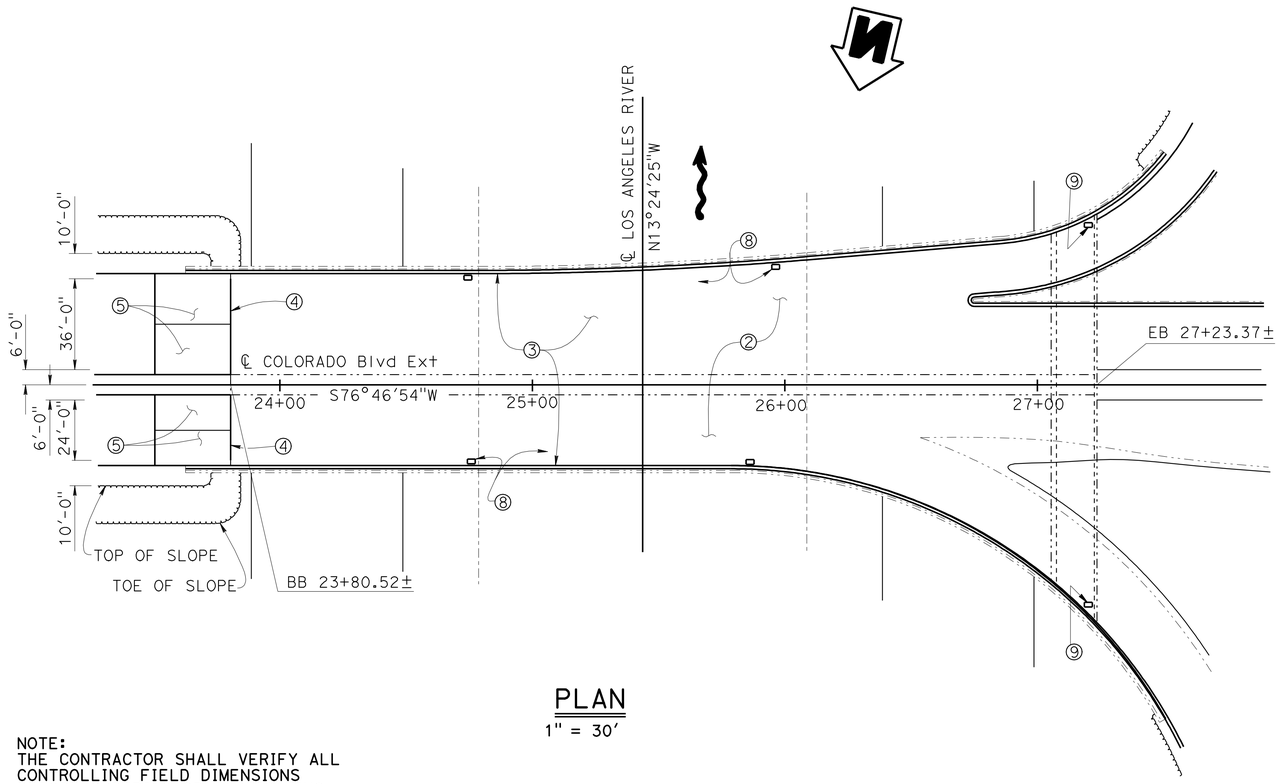
REVISION DATES				SHEET	OF
10-14-11	10-27-11	01-10-12		6	6

FILE => 53-1345f_sapp30s.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:58



ELEVATION
1" = 30'



PLAN
1" = 30'

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

QUANTITIES

SALVAGE METAL BRIDGE RAILING	824	LF
REMOVE UNSOUND CONCRETE	162	CF
PREPARE CONCRETE BRIDGE DECK SURFACE	29,830	SQFT
BRIDGE REMOVAL (PORTION), LOCATION E	LUMP	SUM
AGGREGATE BASE (APPROACH SLAB)	7	CY
STRUCTURAL CONCRETE, BRIDGE	14	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	67	CY
DRILL AND BOND DOWEL	207	LF
RAPID SETTING CONCRETE PATCH	185	CF
JOINT SEAL (MR 1")	72	LF
BAR REINFORCING STEEL (BRIDGE)	3,300	LB
TREAT BRIDGE DECK	29,830	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	332	GAL
PUBLIC SAFETY PLAN	LUMP	SUM
CALIFORNIA ST-10 BRIDGE RAIL (MODIFIED)	824	LF

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	82	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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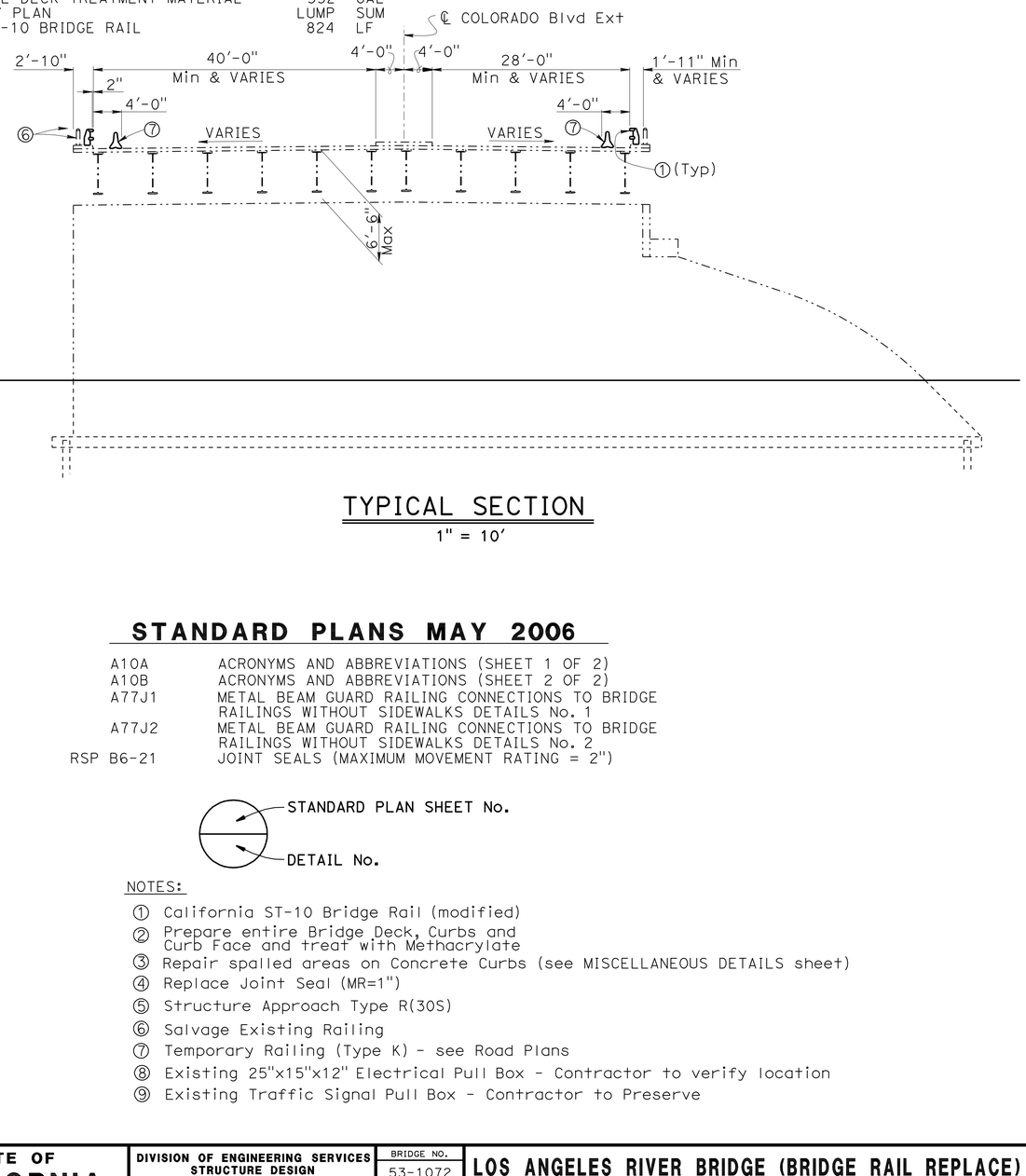

TYPICAL SECTION
1" = 10'

STANDARD PLANS MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A77J1	METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 1
A77J2	METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 2
RSP B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")

STANDARD PLAN SHEET No.
DETAIL No.

NOTES:
① California ST-10 Bridge Rail (modified)
② Prepare entire Bridge Deck, Curbs and Curb Face and treat with Methacrylate
③ Repair spalled areas on Concrete Curbs (see MISCELLANEOUS DETAILS sheet)
④ Replace Joint Seal (MR=1")
⑤ Structure Approach Type R(30S)
⑥ Salvage Existing Railing
⑦ Temporary Railing (Type K) - see Road Plans
⑧ Existing 25"x15"x12" Electrical Pull Box - Contractor to verify location
⑨ Existing Traffic Signal Pull Box - Contractor to Preserve

X Douglas J Dunrud
DESIGN ENGINEER

DESIGN	BY S. Galgiani	CHECKED L. Han	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	
DETAILS	BY L. Xiong	CHECKED S. Galgiani	LAYOUT	BY S. Galgiani	CHECKED L. Han
QUANTITIES	BY S. Galgiani	CHECKED L. Han	SPECIFICATIONS	BY X	PLANS AND SPECS COMPARED X

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 53-1072
POST MILE 4.6

LOS ANGELES RIVER BRIDGE (BRIDGE RAIL REPLACE)
GENERAL PLAN

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381
CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
12-05-11	1-10-12	10-21-11	10-26-11	1	6

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10)

FILE => 53-1072_01_gp.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:58

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	83	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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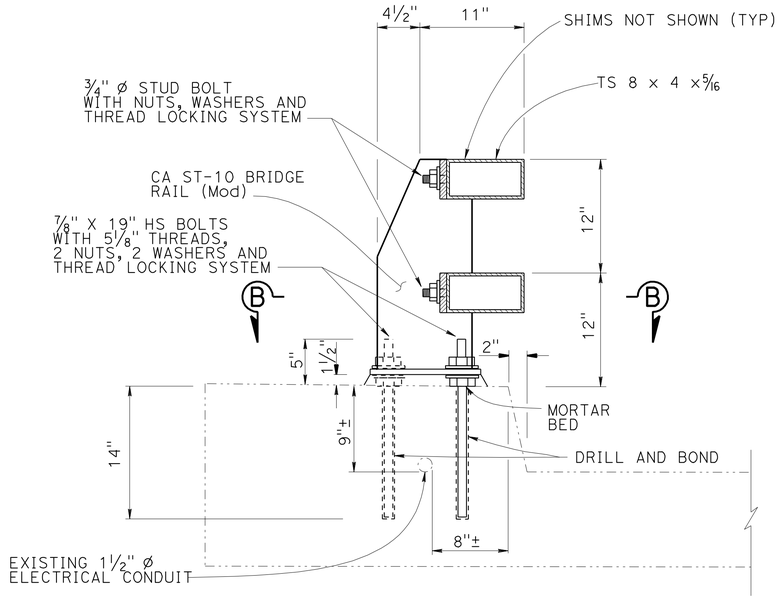


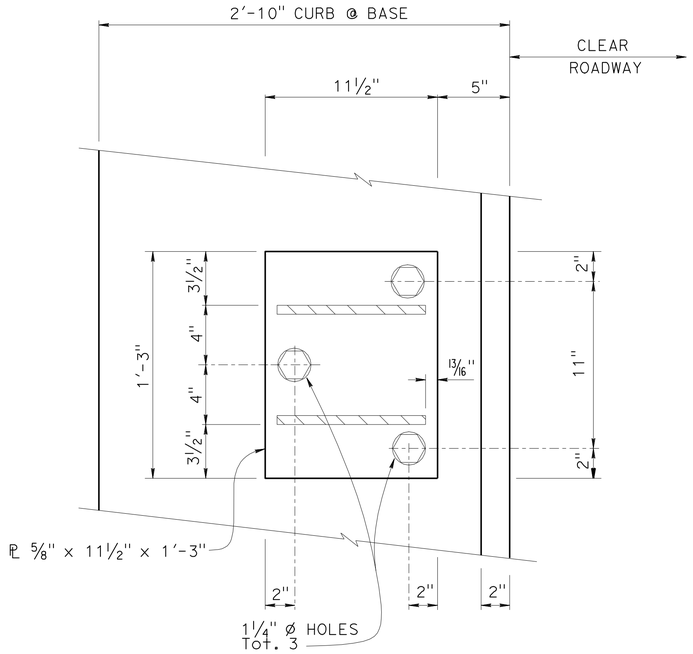
NOTE: Existing Railing not shown

TYPICAL RAIL SECTION

1½" = 1'-0"

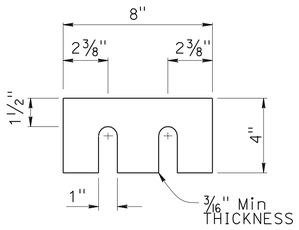
NOTE:

Contractor to avoid placing Rail Post at locations of 4 EA 25"x15"x12" Existing Electrical Pull Box located on both Bridge side, Contractor to verify Pull Box locations

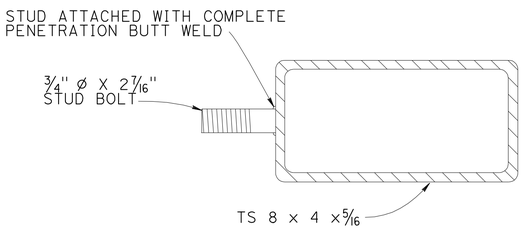


SECTION B-B

No Scale



SHIMS REQUIRED FOR TOP AND BOTTOM RAIL



SECTION AT POST

STUD BOLD DETAILS

No Scale

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1072	LOS ANGELES RIVER BRIDGE (BRIDGE RAIL REPLACE)	
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 4.6	CALIFORNIA ST-10 (MOD) DETAIL No. 1	
QUANTITIES	BY S. Galgiani	CHECKED L. Han					

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
11-21-11	09-01-11	10-21-11	10-21-11	2	6

FILE => 53-1072_brd_01.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:58

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	84	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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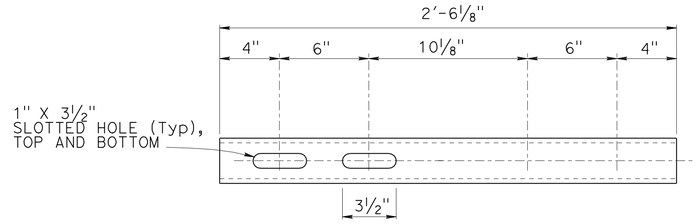
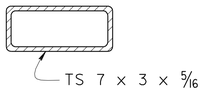
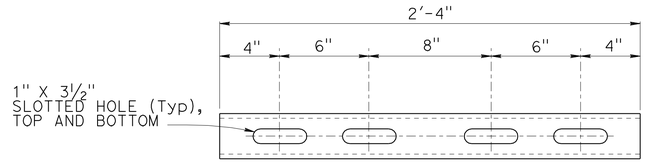


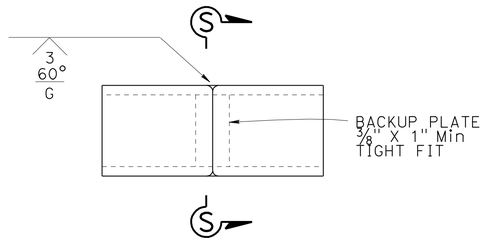
EXPANSION SLEEVE DETAIL

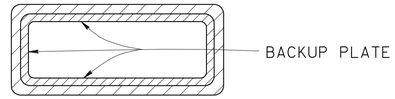


SECTION SLEEVE



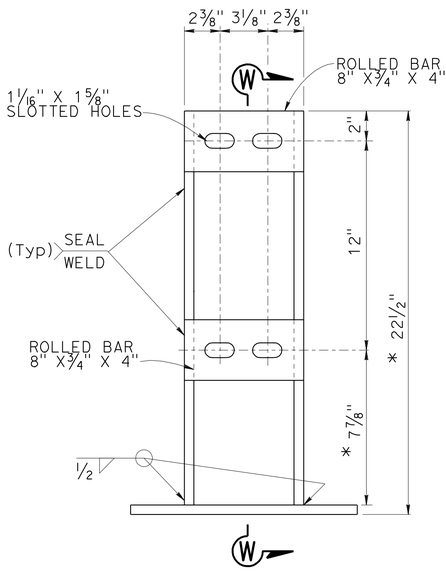
STANDARD SLEEVE DETAIL



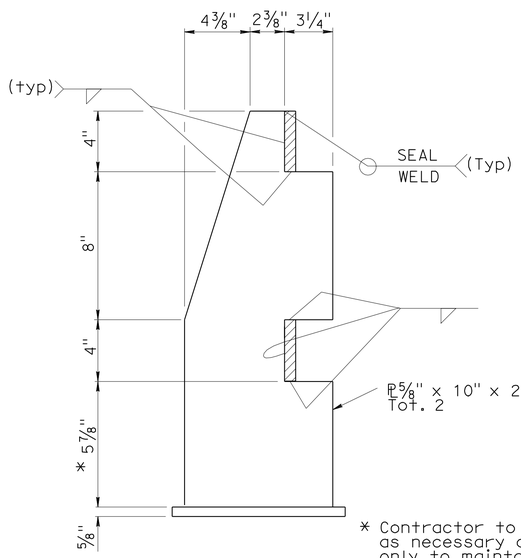


SECTION S-S

ALTERNATED TUBE WELDED SPLICE



ELEVATION



SECTION W-W

* Contractor to adjust dimensions as necessary at Wingwall locations only to maintain a smooth Top of Rail Profile. Add 1 1/2" to these dimensions for Rail Posts on Wing Walls.

POST DETAIL

NOTES:

1. All Structural Steel shall be glavanized after fabrication.
2. Anchor bolts may be tack welded (shop or field) to anchorage.
3. All rough edges on posts and rails shall be ground smooth.
4. Tubing shall be bent or fabricated to fit horizontal curve when radius is less than 896'.
5. After installation of rail, the exposed rail bolt threads shall be painted with two coats of zinc rich paint conforming to the requirement of Seciton 75-1.05 galvanizing of the Standard Specifications.
6. The alternative welded splice may be used in lieu of The Standard splice.
7. Each rail length shall be continuous over a minimum of two posts.
8. The contractor shall check that the tubular sleeves splices conform to the dimensions indicated to assure proper clearance.
9. Except for Expansion Splices, not more than one Splice shall be permitted per same side of post.
10. See Project Plans for Approach Guard Railing details.

NO SCALE

	BY	CHECKED
DESIGN	S. Galgiani	L. Han
DETAILS	K. Kubo	S. Galgiani
QUANTITIES	S. Galgiani	L. Han

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 53-1072
POST MILE 4.6

LOS ANGELES RIVER BRIDGE (BRIDGE RAIL REPLACE)

CALIFORNIA ST-10 (MOD) DETAIL No. 2

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381
CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
08-24-11	09-01-11	10-14-11	10-21-11	3	6

FILE => 53-1072_brd_02.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:59

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	85	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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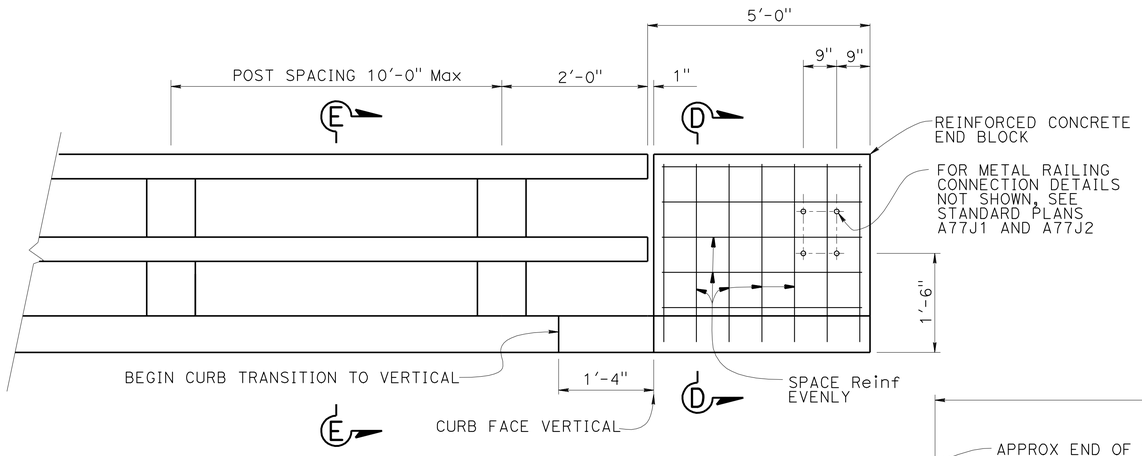
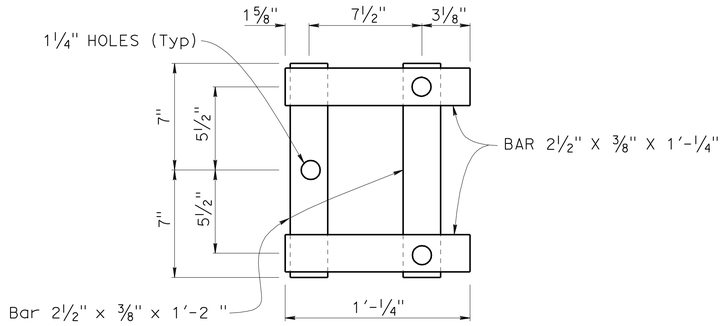
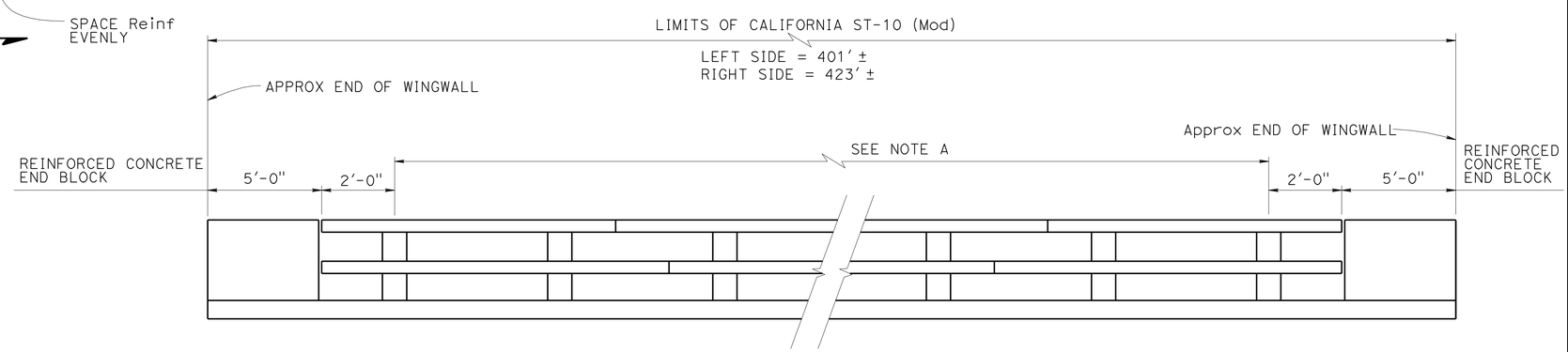


END OF RAILING ELEVATION



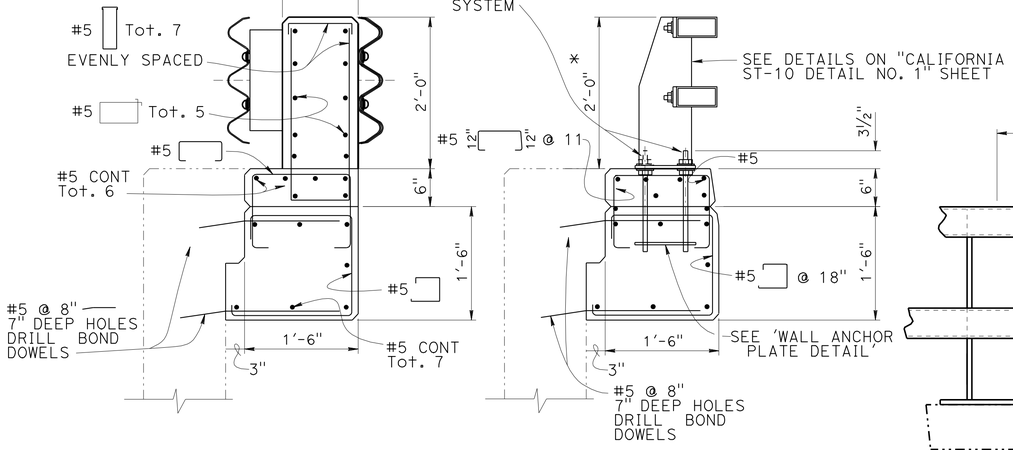
WALL ANCHOR PLATE DETAIL



BRIDGE RAILING ELEVATION

NOTE A:

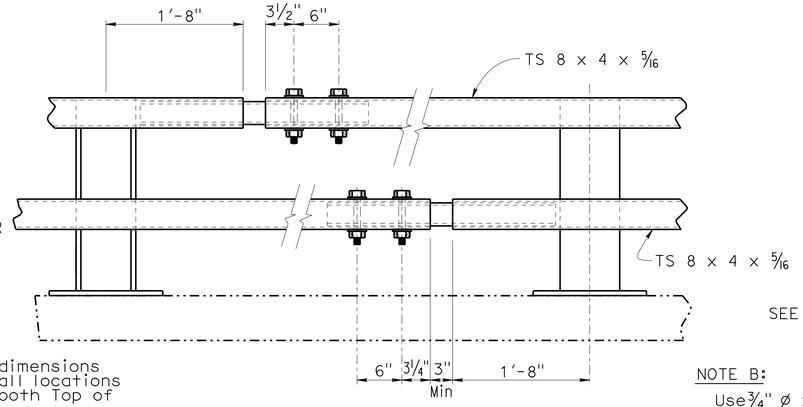
Post spacing and/or block length to be adjusted to fit Bridge length or Wingwall length. Maximum post spacing is 10'-0". Place an Expansion Splice @ BB and EB, and at HInge locations.



SECTION D-D

SECTION E-E

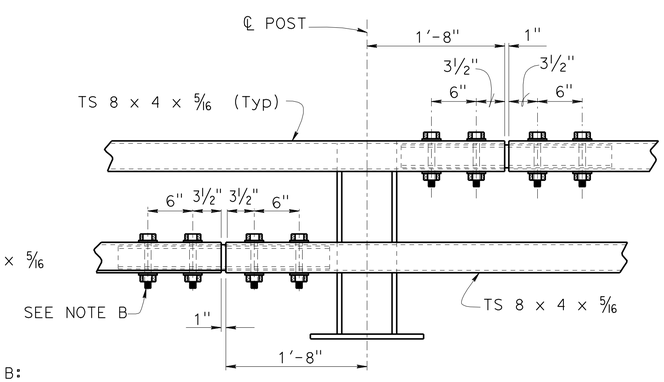
* Contractor to adjust dimensions as necessary at Wingwall locations only to maintain a smooth Top of Wall Profile



EXPANSION SPLICE

NOTE B:

Use 3/4" Ø x 5 5/16" HS bolts with washers, fully tensioned. 1" holes in rail (typ)



STANDARD SPLICE

No Scale

	BY	CHECKED
DESIGN	S. Galgiani	L. Han
DETAILS	K. Kubo	S. Galgiani
QUANTITIES	S. Galgiani	L. Han

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO.	LOS ANGELES RIVER BRIDGE (BRIDGE RAIL REPLACE)
53-1072	
POST MILE	CALIFORNIA ST-10 (MOD) DETAIL No. 3
4.6	

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
10-26-11	11-21-11	01-10-12	10-21-11	4	6

FILE => 53-1072_brd_03.dgn

DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:59
USERNAME => s128843

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	86	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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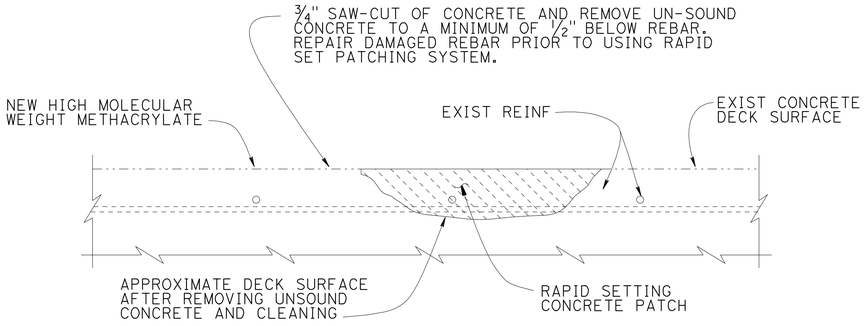
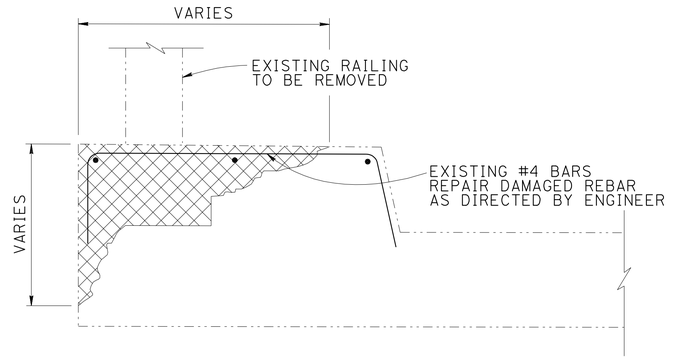


DECK REPAIR DETAIL

REINFORCEMENT MAY BE ENCOUNTERED DURING DECK CONCRETE REMOVAL.
NO SCALE



NOTE:
¾" SAWCUT OF CONCRETE AND REMOVE UNSOUND CONCRETE AROUND RAIL POSTS AND PATCH WITH RAPID SET PATCHING SYSTEM AS DIRECTED BY ENGINEER

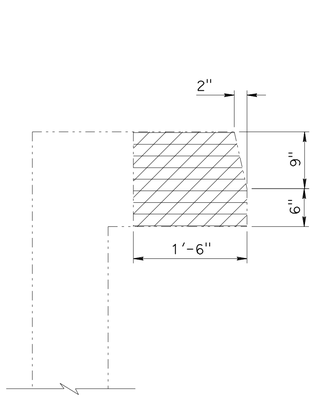
LIMITS OF UNSOUND CONCRETE REMOVAL AND RAPID SETTING CONCRETE

CONCRETE REPAIR DETAIL AT EXISTING RAIL POSTS

1½" = 1'-0"

DECK REPAIR TABLE				
APPROXIMATE AREA DAMAGED (PERCENT)	AVERAGE DEPTH (INCHES)	APPROXIMATE DECK AREA (SQ FT)	UNSOUND CONCRETE (CF)	RAPID SETTING CONCRETE PATCH (CF)
1	3	27,012	68	68

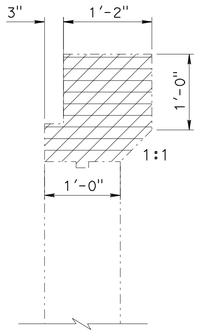
CONCRETE CURB REPAIR TABLE				
APPROXIMATE AREA DAMAGED (PERCENT)	AVERAGE DEPTH (INCHES)	APPROXIMATE CURB AREA (SQ FT)	UNSOUND CONCRETE (CF)	RAPID SETTING CONCRETE PATCH (CF)
8	5	2,818	94	117



LIMITS OF BRIDGE REMOVAL (WINGWALL)

BRIDGE REMOVAL DETAIL AT WINGWALLS ABUT 1 & 4

1" = 1'-0"

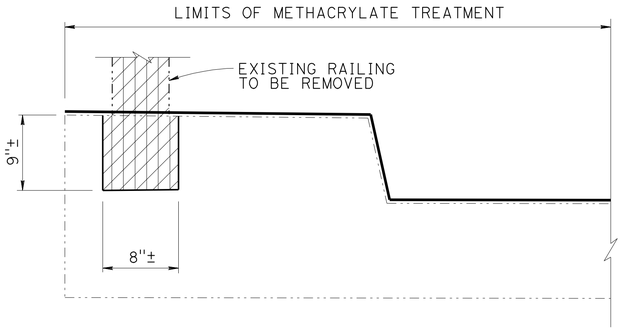


LIMITS OF EXISTING BACKWALL REMOVAL

NOTE:
FOR ABUTMENT 1 ONLY. EXISTING VERTICAL BACKWALL REINFORCEMENT TO REMAIN IN PLACE.

BRIDGE REMOVAL DETAIL FOR NEW APPROACH SLAB

1" = 1'-0"



NOTE:
¾" SAWCUT OF GROUT/CONCRETE AND REMOVE GROUT, RAMMED SAND, PEA GRAVEL AND MELTED SULPHUR AROUND RAIL POSTS AND PATCH WITH RAPID SET PATCHING SYSTEM AS DIRECTED BY ENGINEER

LIMITS OF BRIDGE REMOVAL PORTION

RAIL POST REMOVAL DETAIL AT EXISTING RAIL POSTS

1½" = 1'-0"

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1072	LOS ANGELES RIVER BRIDGE (BRIDGE RAIL REPLACE)		
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 4.6	MISCELLANEOUS DETAILS		
QUANTITIES	BY S. Galgiani	CHECKED L. Han						

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
10-26-11	01-10-12	10-14-11	10-21-11	5	6

FILE => 53-1072_miscdet.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:59

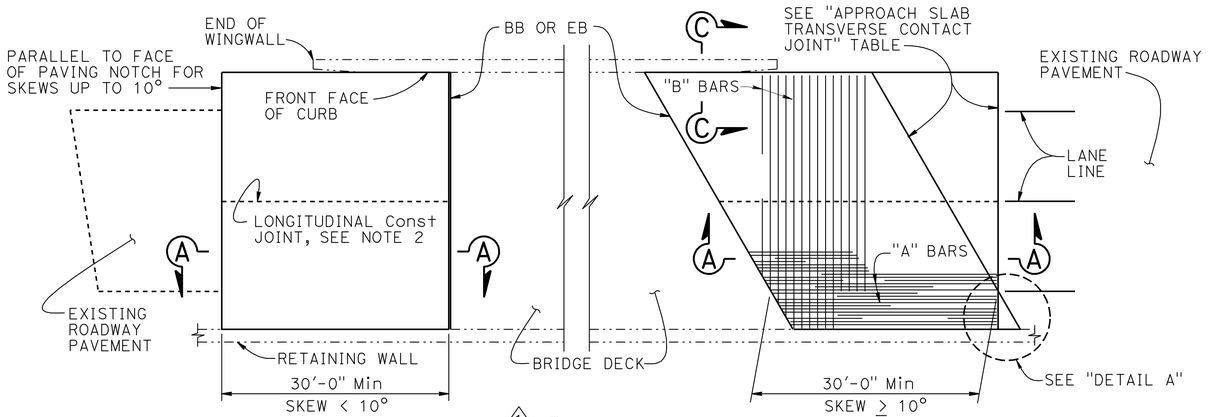
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	87	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

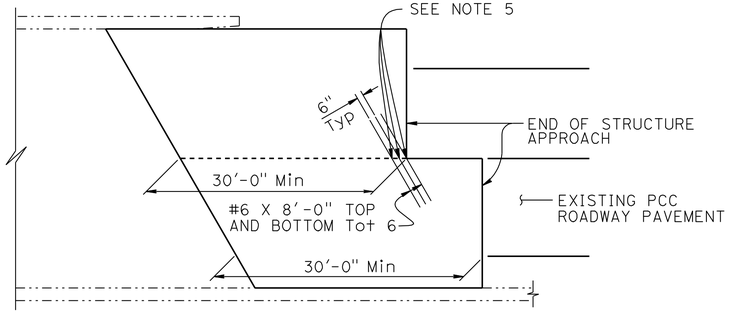
4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAME DUNRUD No. C47240 Exp. 12-31-11 CIVIL — STATE OF CALIFORNIA

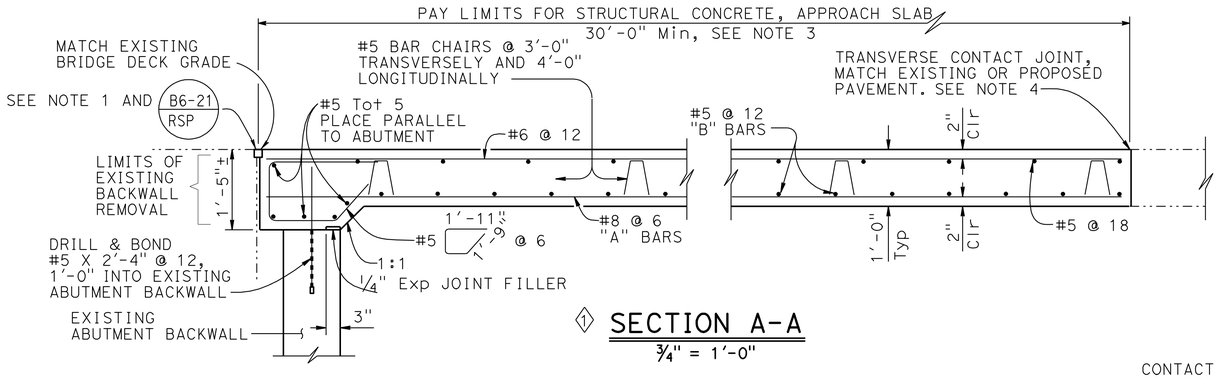
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



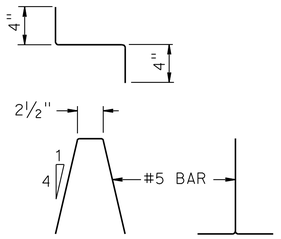
① PLAN
1" = 10'



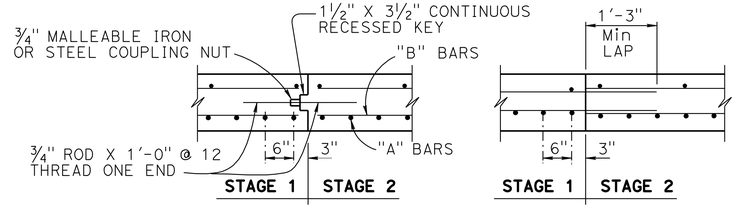
STRUCTURE APPROACH - END STAGGER DETAIL
NO SCALE

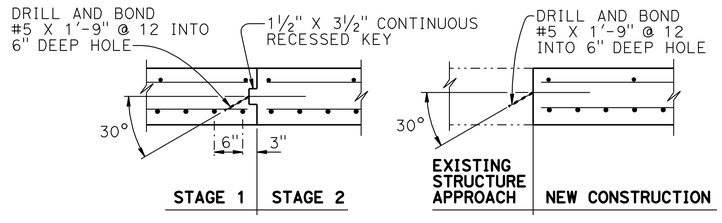


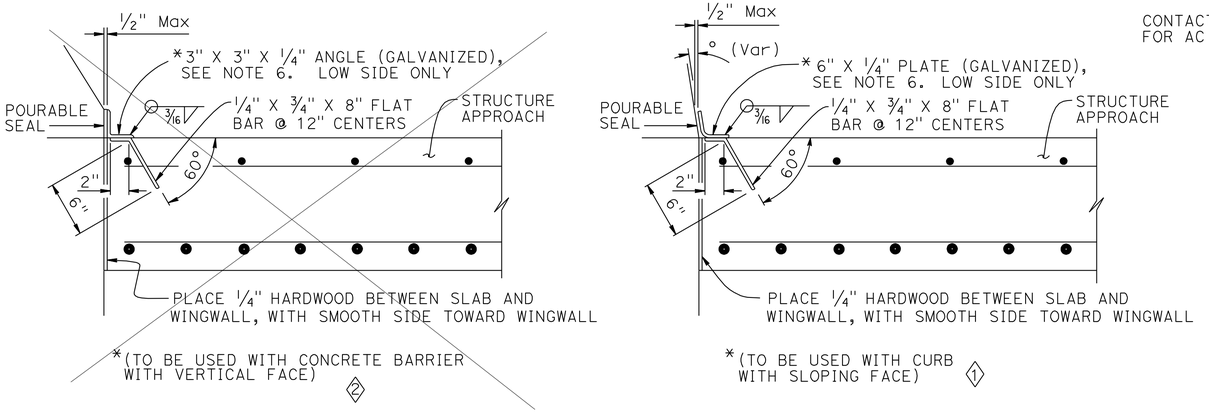
① SECTION A-A
¾" = 1'-0"



BAR CHAIR DETAIL
1½" = 1'-0"

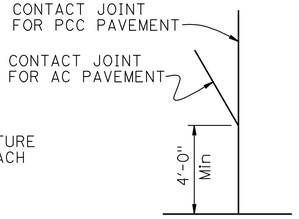




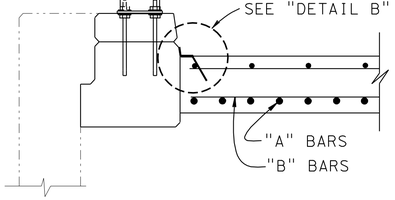


DETAIL B
1½" = 1'-0"

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



DETAIL A
No Scale



① SECTION C-C
¾" = 1'-0"

APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	PARALLEL TO FACE OF PN	PARALLEL TO FACE OF PN
10° - 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER LINES 24' TO 36' APART
> 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER AT EACH LANE LINE

LONGITUDINAL CONSTRUCTION JOINT ALTERNATIVES
¾" = 1'-0"

NOTES:
1. Sealed joint,for MR see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required
2. Longitudinal construction joints, when permitted by Engineer, shall be located on lane lines
3. Transverse contact joint shall be a minimum of 5'-0" from an existing or constructed weakened plane joint
4. For transverse contact joint with new PCC paving, refer to Revised Standard Plan P10
5. Couplers are required for stage construction
6. End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable

REVISED STANDARD DRAWING
FILE NO. xs3-130
APPROVAL DATE July 2011

① DETAIL MODIFIED
② DETAIL DELETED

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 53-1072
POST MILE 4.6

LOS ANGELES RIVER BRIDGE (BRIDGE RAIL REPLACE)
STRUCTURE APPROACH TYPE R(30S)

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381
CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
09-01-11	10-21-11	11-21-11	01-10-12	6	6

FILE => 53-1072_sapp30s.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:59

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	88	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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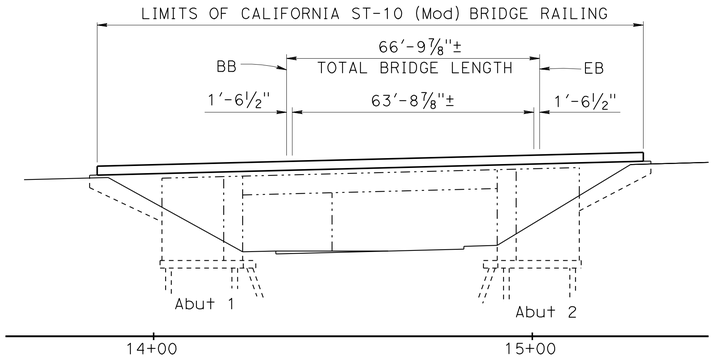
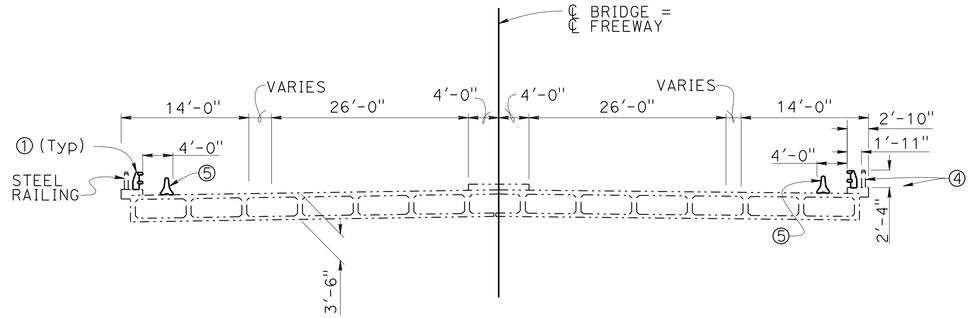
QUANTITIES

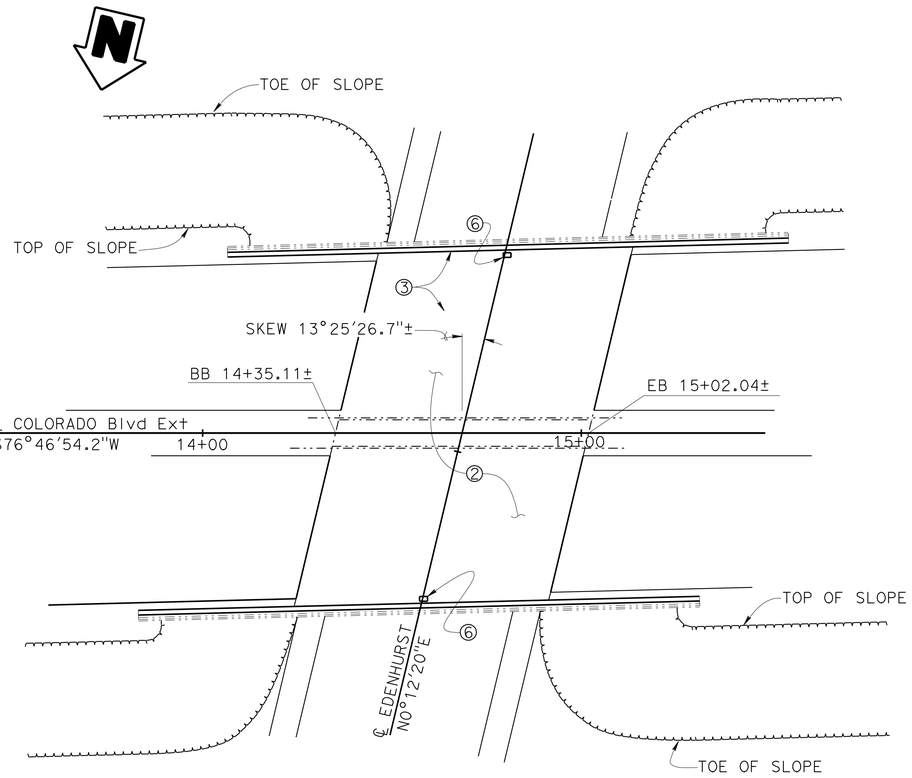
SALVAGE METAL BRIDGE RAILING	282	LF
REMOVE UNSOUND CONCRETE	39	CF
PREPARE CONCRETE BRIDGE DECK SURFACE	6,600	SQFT
BRIDGE REMOVAL (PORTION), LOCATION F	LUMP	SUM
RAPID SETTING CONCRETE PATCH	48	CF
TREAT BRIDGE DECK	6,600	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	73	GAL
PUBLIC SAFETY PLAN	LUMP	SUM
CALIFORNIA ST-10 BRIDGE RAIL (MODIFIED)	282	LF



ELEVATION
1" = 20'-0"



TYPICAL SECTION
1" = 10'-0"

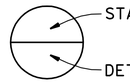


NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

PLAN
1" = 20'-0"

STANDARD PLANS MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A77J1	METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 1
A77J2	METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 2



NOTES:
① California ST-10 Bridge Rail (modified)
② Prepare entire Bridge Deck, Curbs and Curb Face and treat with Methacrylate
③ Repair spalled areas on Concrete Curbs (see MISCELLANEOUS DETAILS sheet)
④ Salvage Existing Railing
⑤ Temporary Railing (Type K) - see Road Plans
⑥ Existing 25"x15"x12" Electrical Pull Boxes - Contractor to verify location

X Douglas J Dunrud
DESIGN ENGINEER

DESIGN	BY S. Galgiani	CHECKED L. Han	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	
DETAILS	BY L. Xiong	CHECKED S. Galgiani	LAYOUT	BY S. Galgiani	CHECKED L. Han
QUANTITIES	BY S. Galgiani	CHECKED L. Han	SPECIFICATIONS	BY X	PLANS AND SPECS COMPARED X

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 53-1108
POST MILE 4.83

EDENHURST Ave UC (BRIDGE RAIL REPLACE)
GENERAL PLAN

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
11-1-11	12-06-11	01-09-12	10-26-11	1	5

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10)

FILE => 53-1108_01_gp.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:59

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	89	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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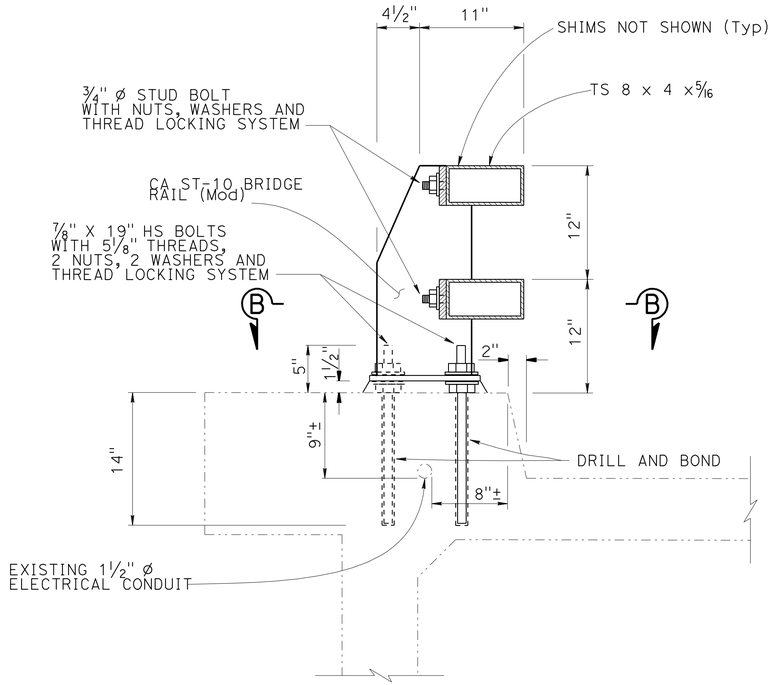
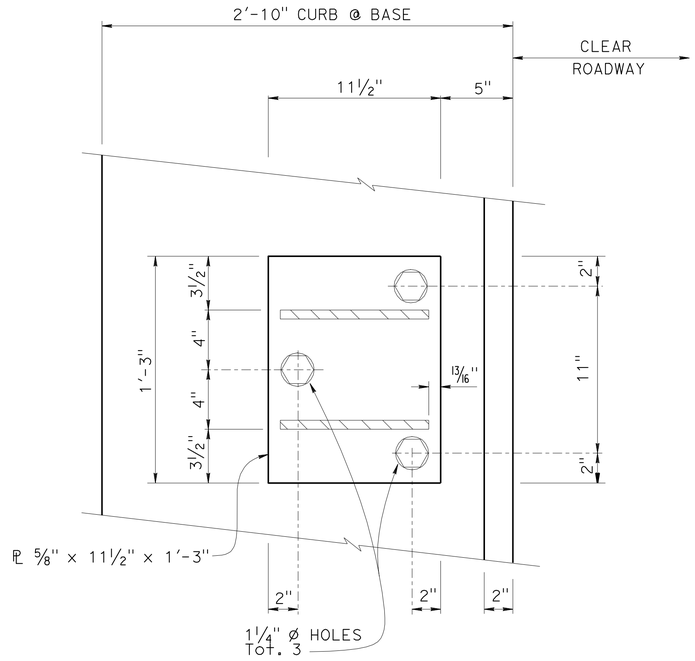


NOTE: Existing Railing not shown

TYPICAL RAIL SECTION

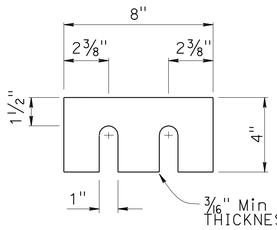
1½" = 1'-0"

NOTE:
Contractor to avoid placing Rail Post at locations of 2 EA 25"x15"x12" Existing Electrical Pull Boxes located on both Bridge sides,
Contractor to verify Pull Box locations

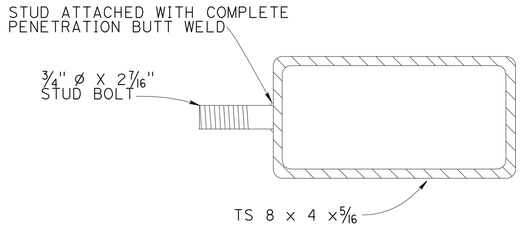


SECTION B-B

NO SCALE



SHIMS REQUIRED FOR TOP AND BOTTOM RAIL



SECTION AT POST

STUD BOLD DETAILS

NO SCALE

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1108	EDENHURST Ave UC (BRIDGE RAIL REPLACE)	
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 4.83	CALIFORNIA ST-10 (MOD) DETAIL No. 1	
QUANTITIES	BY S. Galgiani	CHECKED L. Han					

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
12-06-11	09-01-11	10-14-11	10-21-11	2	5

FILE => 53-1108_brd_01.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:59

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	90	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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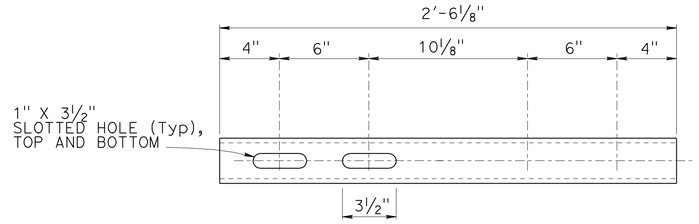
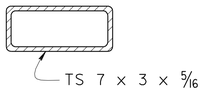
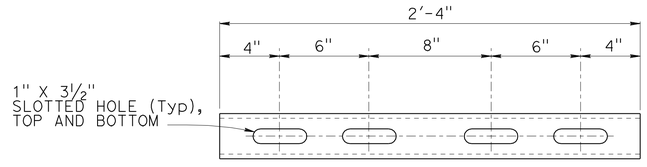


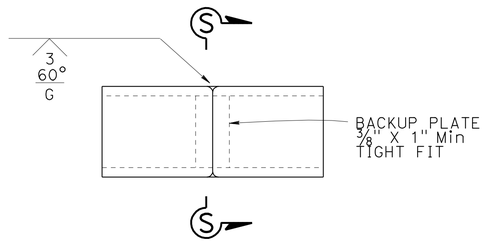
EXPANSION SLEEVE DETAIL

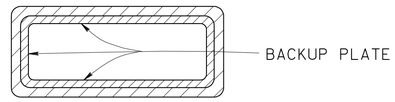


SECTION SLEEVE



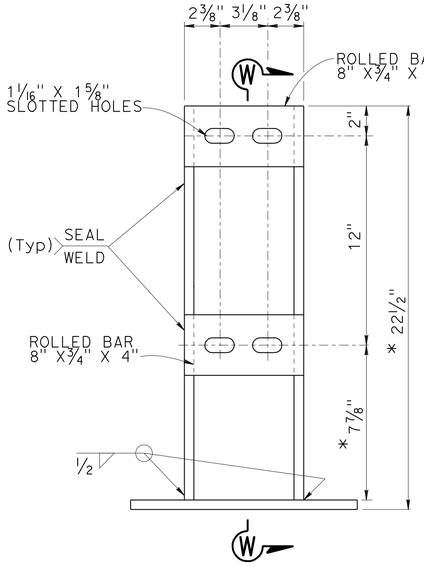
STANDARD SLEEVE DETAIL



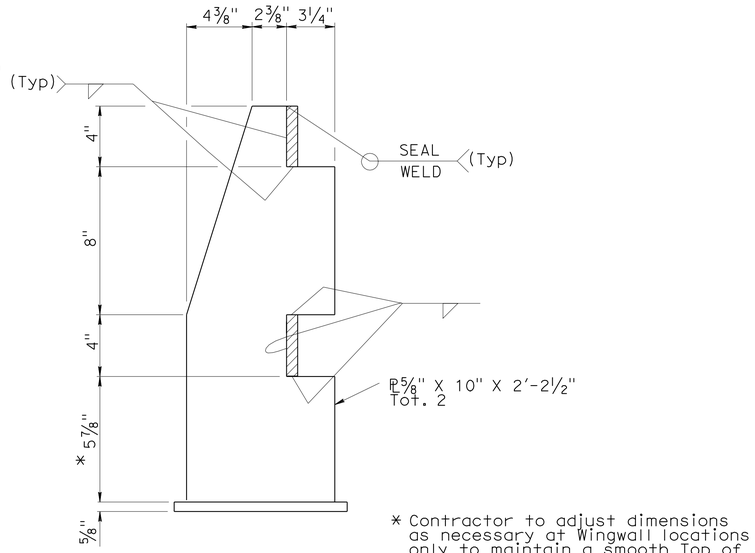


SECTION S-S

ALTERNATED TUBE WELDED SPLICE



ELEVATION



SECTION W-W

* Contractor to adjust dimensions as necessary at Wingwall locations only to maintain a smooth Top of Rail Profile

POST DETAIL

NOTES:

1. All Structural Steel shall be glavanized after fabrication.
2. Anchor bolts may be tack welded (shop or field) to anchorage.
3. All rough edges on posts and rails shall be ground smooth.
4. Tubing shall be bent or fabricated to fit horizontal curve when radius is less than 896'.
5. After installation of rail, the exposed rail bolt threads shall be painted with two coats of zinc rich paint conforming to the requirement of Seciton 75-1.05 galvanizing of the Standard Specifications.
6. The alternative welded splice may be used in lieu of The Standard splice.
7. Each rail length shall be continuous over a minimum of two posts.
8. The contractor shall check that the tubular sleeves splices conform to the dimensions indicated to assure proper clearance.
9. Except for Expansion Splices, not more than one Splice shall be permitted per same side of post.
10. See Project Plans for Approach Guard Railing details.

NO SCALE

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1108
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 4.83
QUANTITIES	BY S. Galgiani	CHECKED L. Han			

EDENHURST Ave UC (BRIDGE RAIL REPLACE)

CALIFORNIA ST-10 (MOD) DETAIL No. 2

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381
CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
12-06-11	01-10-12	10-11-11	10-11-11	3	5

FILE => 53-1108_brd_02.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 09:00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	91	104

REGISTERED CIVIL ENGINEER — 11-15-11 DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD — No. C47240 — Exp 12-31-11 — CIVIL — STATE OF CALIFORNIA

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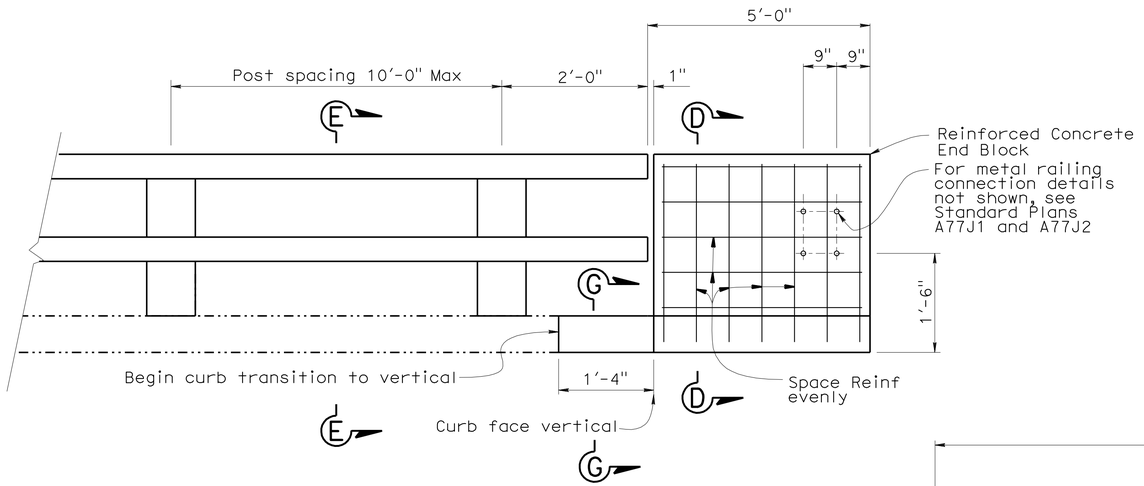
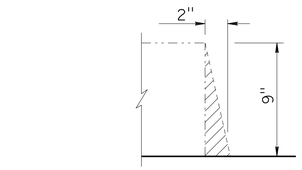
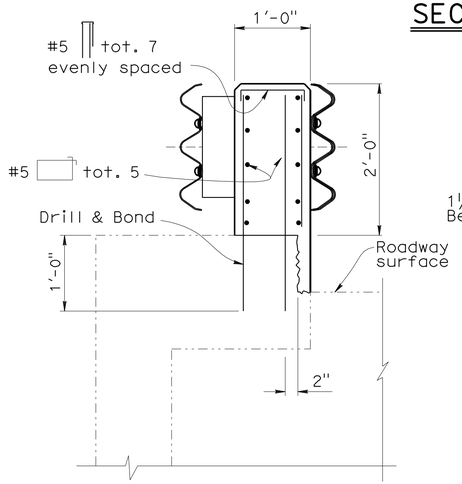


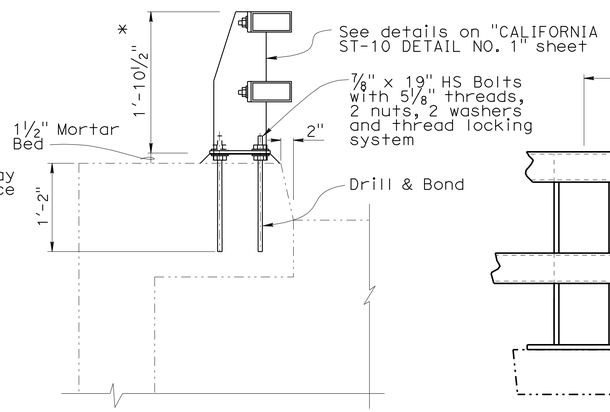
END OF RAILING ELEVATION



Limits of Existing Curb Face Removal

SECTION G-G

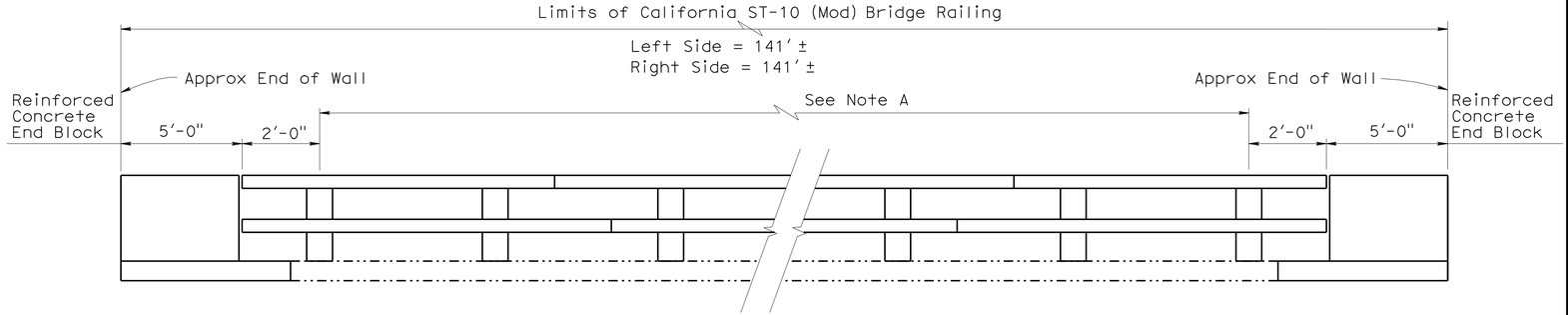




* Contractor to adjust dimension as necessary at wingwall locations only to maintain a smooth Top of Rail Profile

SECTION D-D

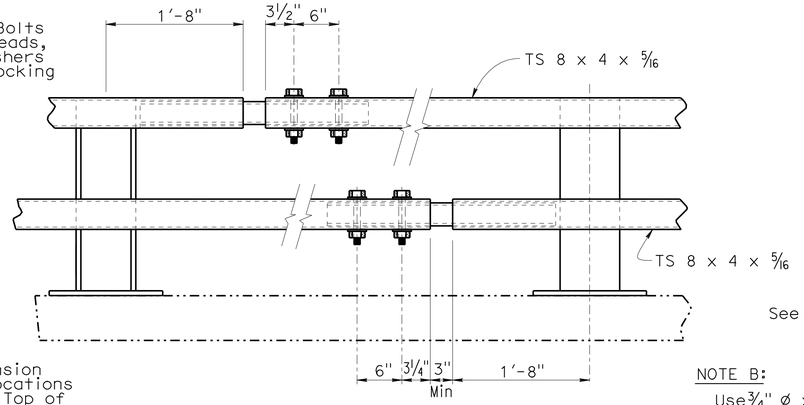
SECTION E-E



BRIDGE RAILING ELEVATION

NOTE A:

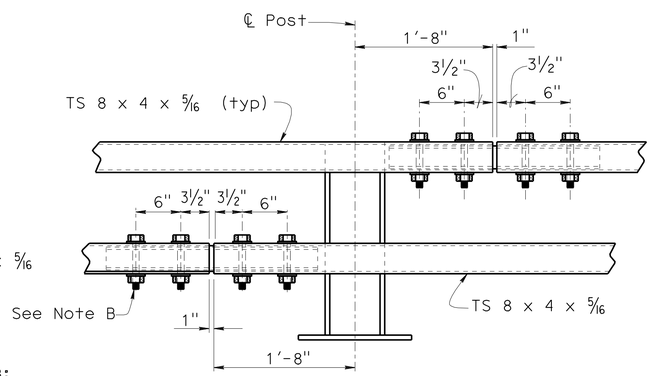
Post spacing and/or block length to be adjusted to fit Bridge length or Wingwall length. Maximum post spacing is 10'-0". Place an Expansion Splice @ BB and EB.



EXPANSION SPLICE

NOTE B:

Use ¾" Ø x 5⅝" HS bolts with washers, fully tensioned. 1" holes in rail (typ)



STANDARD SPLICE

No Scale

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1108
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 4.83
QUANTITIES	BY S. Galgiani	CHECKED L. Han			

EDENHURST Ave UC (BRIDGE RAIL REPLACE)

CALIFORNIA ST-10 (MOD) DETAIL No. 3

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
01-10-12	10-21-11	11-21-11	12-06-11	4	5

FILE => 53-1108_brd_03.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 09:00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	92	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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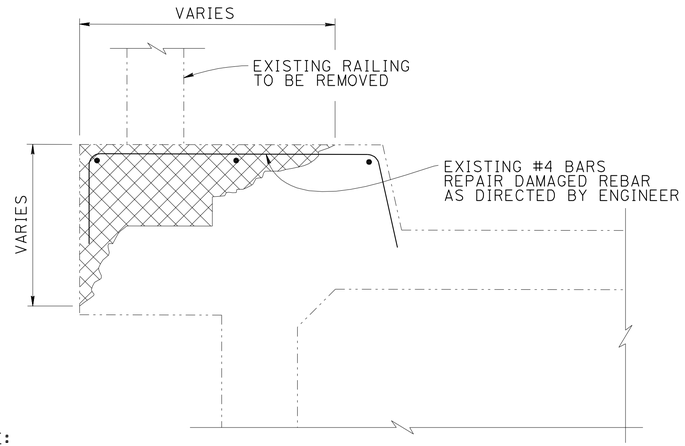
CONCRETE CURB REPAIR TABLE				
APPROXIMATE AREA DAMAGED (PERCENT)	AVERAGE DEPTH (INCHES)	APPROXIMATE CURB AREA (SQ FT)	UNSOUND CONCRETE (CF)	RAPID SETTING CONCRETE PATCH (CF)
10	5	946	39	48

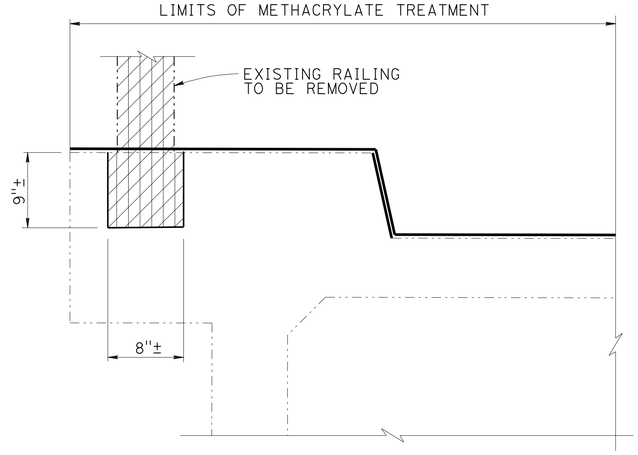


NOTE:
¾" SAWCUT OF CONCRETE AND REMOVE UNSOUND CONCRETE AROUND RAIL POSTS AND PATCH WITH RAPID SET PATCHING SYSTEM AS DIRECTED BY ENGINEER

LIMITS OF UNSOUND CONCRETE REMOVAL AND RAPID SETTING CONCRETE

CONCRETE REPAIR DETAIL AT EXISTING RAIL POSTS

1½" = 1'-0"



NOTE:
¾" SAWCUT OF GROUT/CONCRETE AND REMOVE GROUT, RAMMED SAND, PEA GRAVEL AND MELTED SULPHUR AROUND RAIL POSTS AND PATCH WITH RAPID SET PATCHING SYSTEM AS DIRECTED BY ENGINEER

LIMITS OF BRIDGE REMOVAL PORTION

RAIL POST REMOVAL DETAIL AT EXISTING RAIL POSTS

1½" = 1'-0"

	BY	CHECKED
DESIGN	S. Galgiani	L. Han
DETAILS	K. Kubo	S. Galgiani
QUANTITIES	S. Galgiani	L. Han

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 53-1108
POST MILE 4.83

EDENHURST Ave UC (BRIDGE RAIL REPLACE)
MISCELLANEOUS DETAILS

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381
CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
12-06-11	9-1-11	10-14-11	10-21-11	5	5

FILE => 53-1108_miscdet.dgn

USERNAME => s128843 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 09:00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	93	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp. 12-31-11 CIVIL — STATE OF CALIFORNIA

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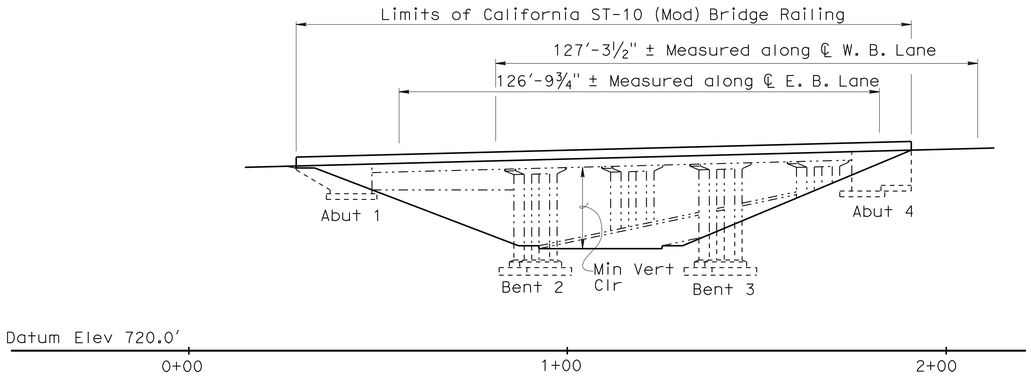
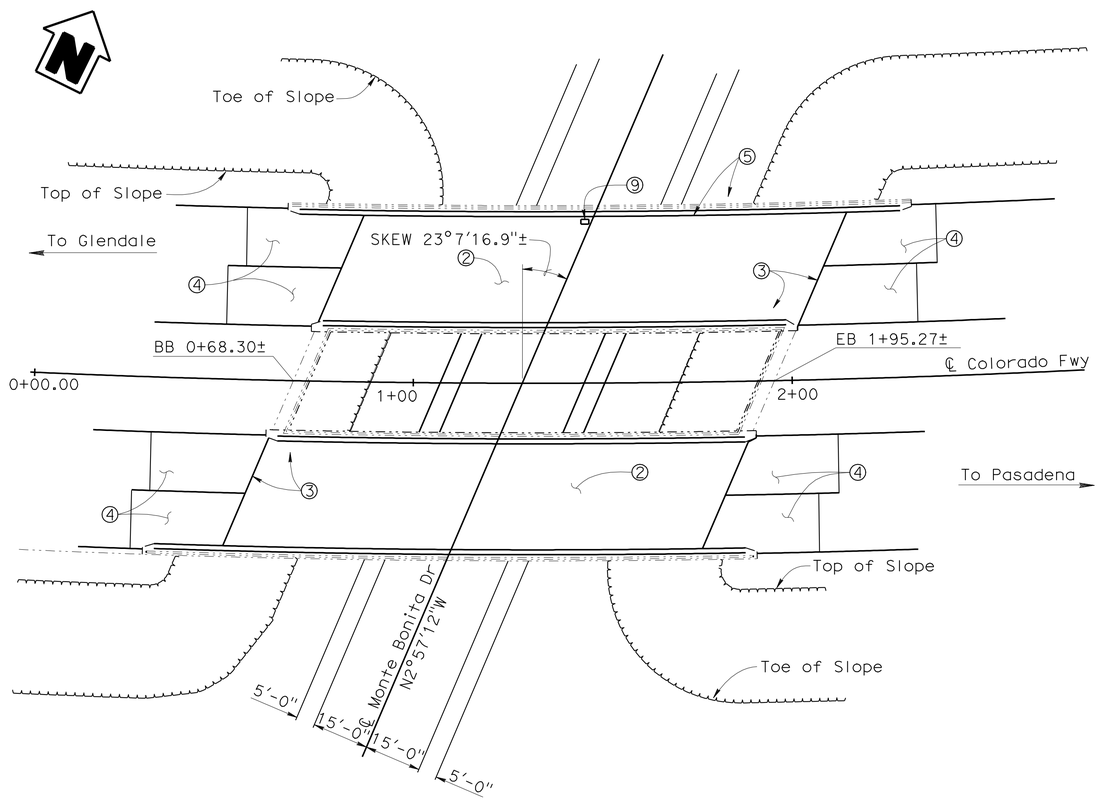


ELEVATION
1" = 20

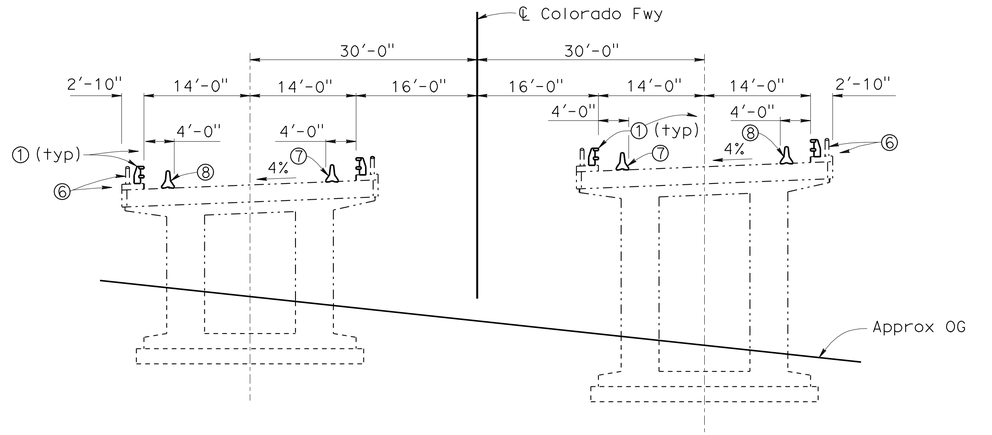
QUANTITIES

SALVAGE METAL BRIDGE RAILING	548	LF
REMOVE UNSOUND CONCRETE	68	CF
PREPARE CONCRETE BRIDGE DECK SURFACE	9,230	SQFT
BRIDGE REMOVAL (PORTION), LOCATION A	LUMP	SUM
AGGREGATE BASE (APPROACH SLAB)	14	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	138	CY
RAPID SETTING CONCRETE PATCH	88	CF
JOINT SEAL (MR 1")	128	LF
TREAT BRIDGE DECK	9,230	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	103	GAL
PUBLIC SAFETY PLAN	LUMP	SUM
CALIFORNIA ST-10 BRIDGE RAIL (MODIFIED)	548	LF



PLAN
1" = 20

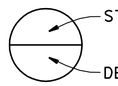
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



TYPICAL SECTION
1" = 10

STANDARD PLANS MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A77J1	METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 1
A77J2	METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 2
RSP B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")



NOTES:

① California ST-10 Bridge Rail (modified)
② Prepare Concrete Bridge Deck, Curbs and Curb Face and treat with Methacrylate
③ Replace Joint Seal (MR=1")
④ Structure Approach Type R(30S)
⑤ Repair spalled areas on Concrete Curbs (see MISCELLANEOUS DETAILS sheet)
⑥ Salvage Existing Railing
⑦ Temporary Railing (Type K) (Stage 1) - see Road Plans
⑧ Temporary Railing (Type K) (Stage 2) - see Road Plans
⑨ Existing 25"x15"x12" Electrical Pull Box - Contractor to verify location

X Douglas J Dunrud
DESIGN ENGINEER

	BY	CHECKED
DESIGN	S. Galgiani	L. Han
DETAILS	L. Xiong	S. Galgiani
QUANTITIES	S. Galgiani	L. Han

LOAD & RESISTANCE FACTOR DESIGN — LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE

	BY	CHECKED
LAYOUT	S. Galgiani	L. Han
SPECIFICATIONS	X	PLANS AND SPECS COMPARED: X

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 53-1023R/L
POST MILE 9.72

MONTE BONITO DRIVE UC
GENERAL PLAN

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
12-05-11	1-9-12	10-25-11	11-21-11	1	6

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10)

FILE => 53-1023l_01_gp.dgn

USERNAME => s1244961 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:47

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	94	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD — No. C47240 — Exp. 12-31-11 — CIVIL — STATE OF CALIFORNIA

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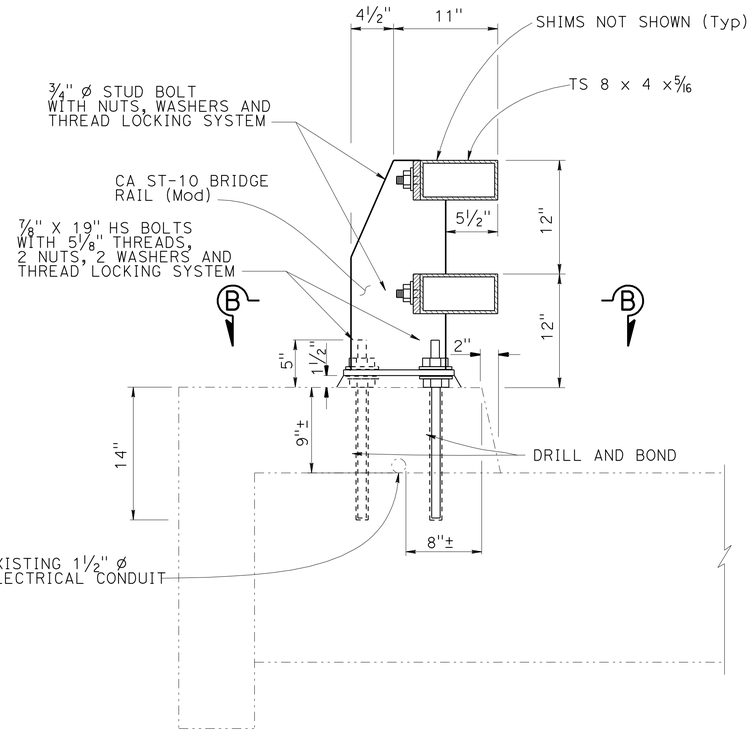
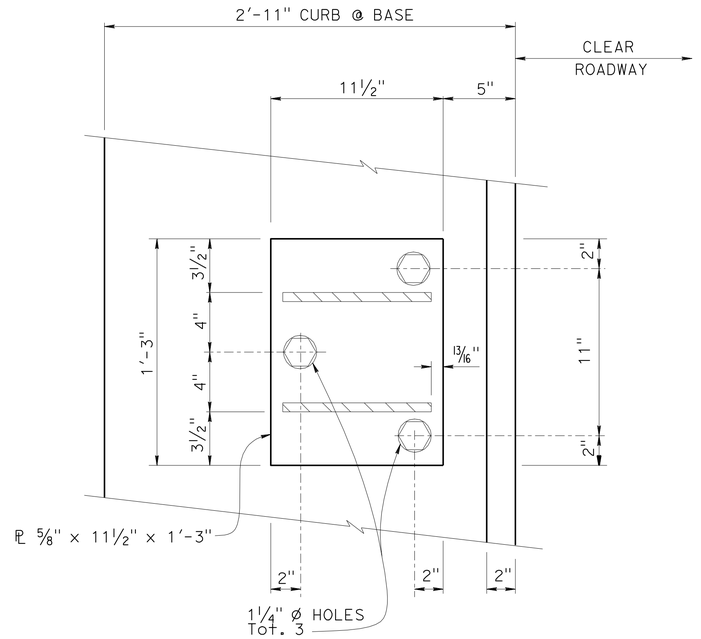


TYPICAL RAIL SECTION

1½" = 1'-0"

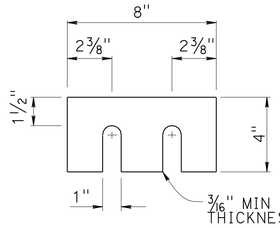
NOTE:

Contractor to avoid placing Rail Post at location of 1 Existing 15"x25"x12" Electrical Pull Box, Contractor to verify Pull Box location

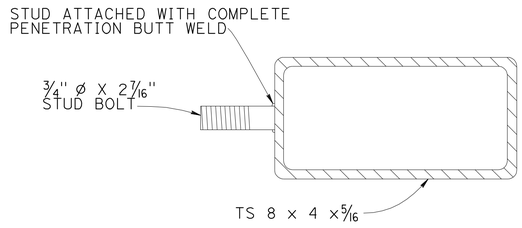


SECTION B-B

NO SCALE



SHIMS REQUIRED FOR TOP AND BOTTOM RAIL



SECTION AT POST

STUD BOLT DETAIL

NO SCALE

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1023R/L	MONTE BONITO DRIVE UC	
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 9.72	CALIFORNIA ST-10 (MOD) DETAIL No. 1	
QUANTITIES	BY S. Galgiani	CHECKED L. Han					

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
11-21-11	12-06-11	10-14-11	10-28-11	2	6

FILE => 53-1023r_brd_01.dgn

USERNAME => s124496 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:47

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	95	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp. 12-31-11 CIVIL — STATE OF CALIFORNIA

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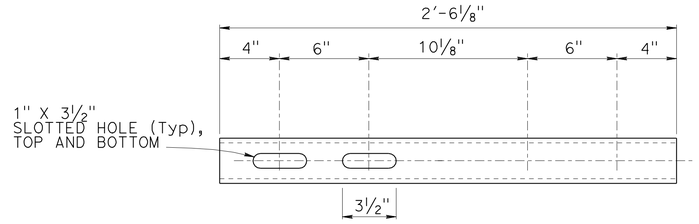
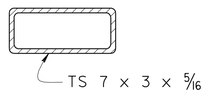
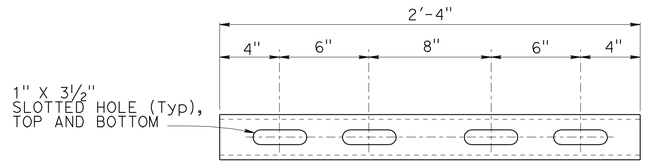


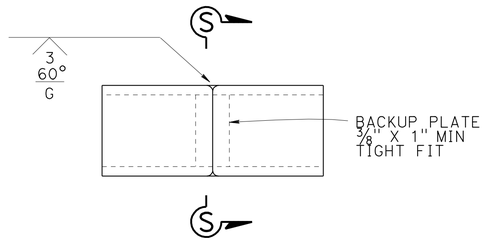
EXPANSION SLEEVE DETAIL

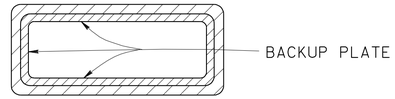


SECTION SLEEVE



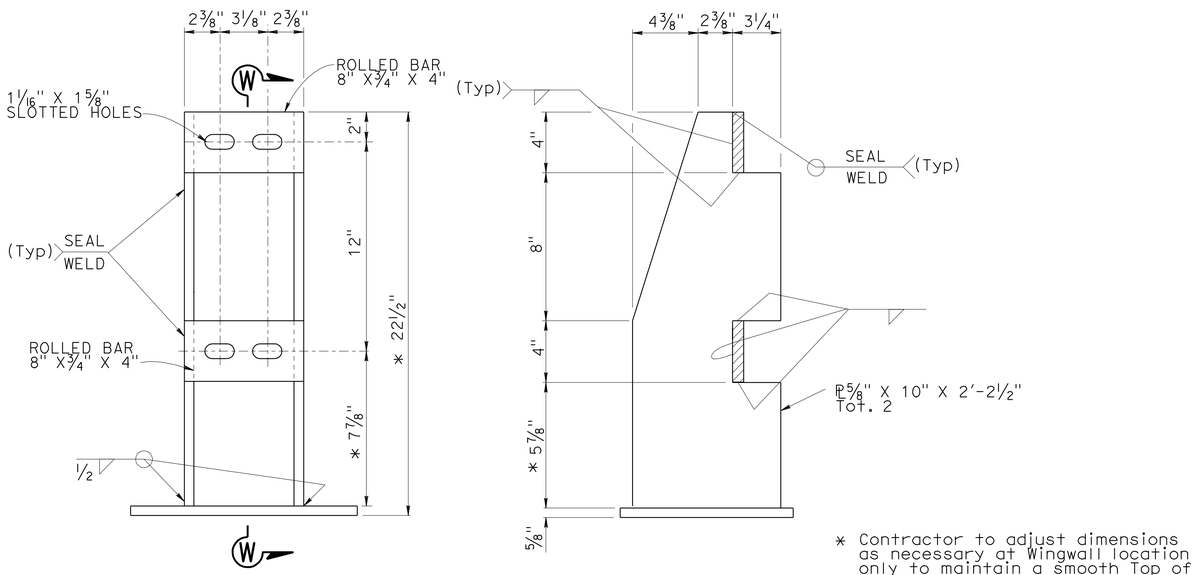
STANDARD SLEEVE DETAIL





SECTION S-S

ALTERNATED TUBE WELDED SPLICE



ELEVATION

SECTION W-W

* Contractor to adjust dimensions as necessary at Wingwall location only to maintain a smooth Top of Rail Profile

POST DETAIL

NOTES:

1. All Structural Steel shall be glavanized after fabrication.
2. Anchor bolts may be tack welded (shop or field) to anchorage.
3. All rough edges on posts and rails shall be ground smooth.
4. Tubing shall be bent or fabricated to fit horizontal curve when radius is less than 896'.
5. After installation of rail, the exposed rail bolt threads shall be painted with two coats of zinc rich paint conforming to the requirement of Seciton 75-1.05 galvanizing of the Standard Specifications.
6. The alternative welded splice may be used in lieu of The Standard splice.
7. Each rail length shall be continuous over a minimum of two posts.
8. The contractor shall check that the tubular sleeves splices conform to the dimensions indicated to assure proper clearance.
9. Except for Expansion Splices, not more than one Splice shall be permitted per same side of post.
10. See Project Plans for Approach Guard Railing details.

NO SCALE

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1023L/R; POST MILE 9.72
DETAILS	BY K. Kubo	CHECKED S. Galgiani			
QUANTITIES	BY S. Galgiani	CHECKED L. Han			

MONTE BONITO DRIVE UC

CALIFORNIA ST-10 (MOD) DETAIL No. 2

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381
CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
12-06-11	01-10-12	10-14-11	10-14-11	3	6

FILE => 53-1023r_brd_02.dgn

USERNAME => s124496 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:47

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	96	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp. 12-31-11 CIVIL — STATE OF CALIFORNIA

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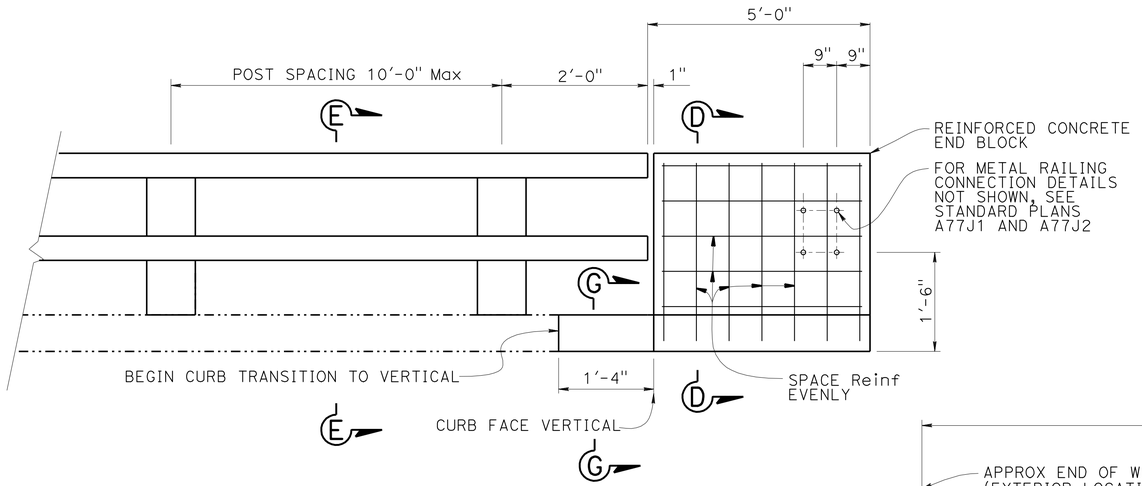
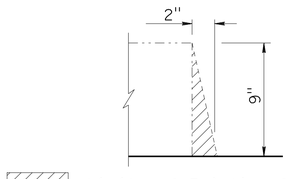
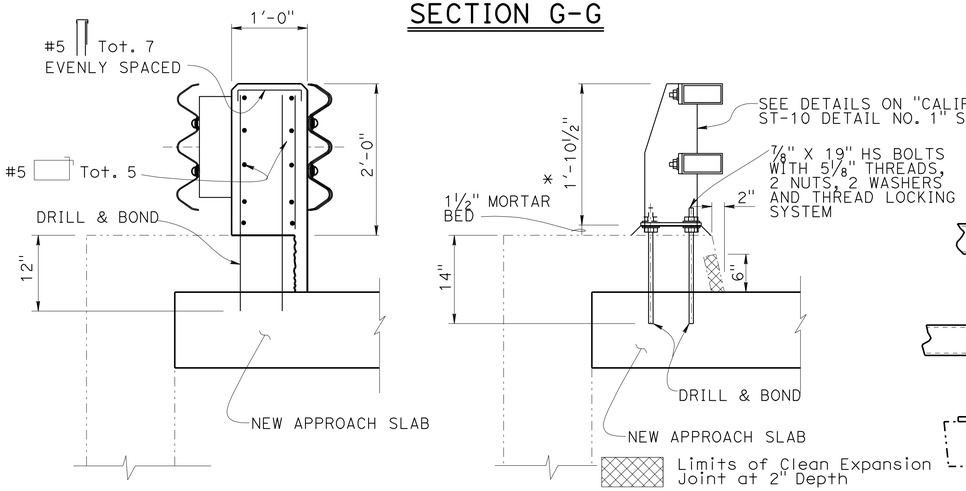


END OF RAILING ELEVATION



Limits of Existing Curb Face Removal

SECTION G-G



* For Exterior Railing Locations only, see 'SECTION F-F' for Interior Railing Locations

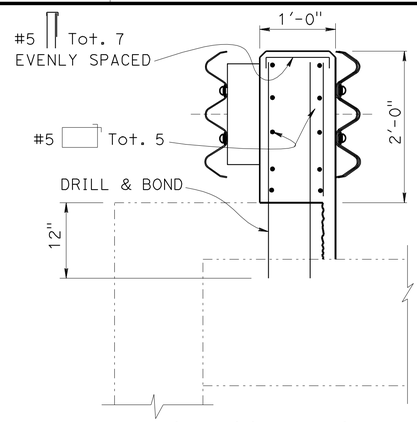
* Contractor to adjust dimension as necessary at Wingwall locations only to maintain a smooth Top of Rail Profile

** For Exterior Railing Locations only

SECTION D-D

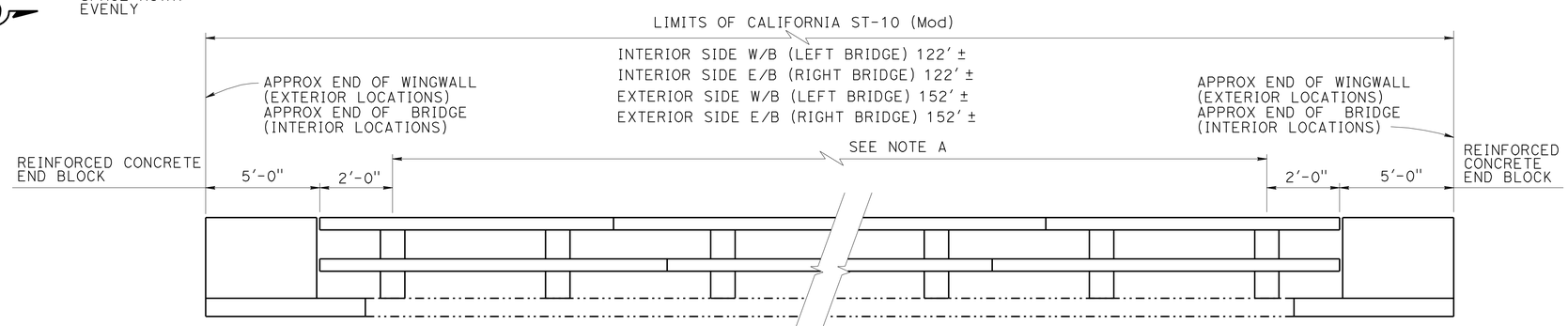
SECTION E-E

NOTE: New Approach Slab to be placed prior to drilling and bonding HS Bolts



*Interior Railing Locations

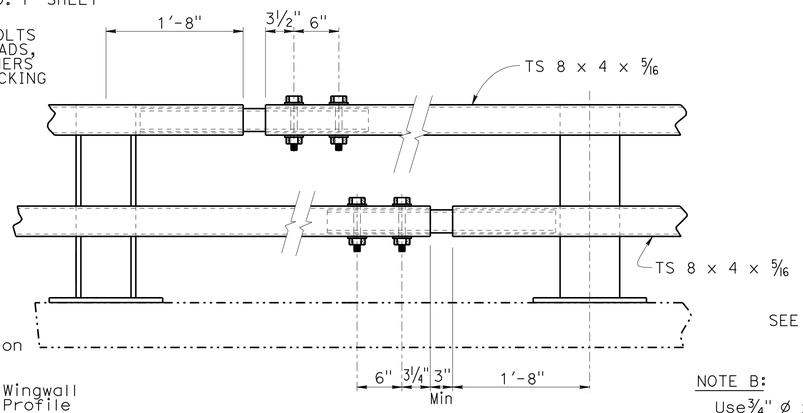
SECTION F-F



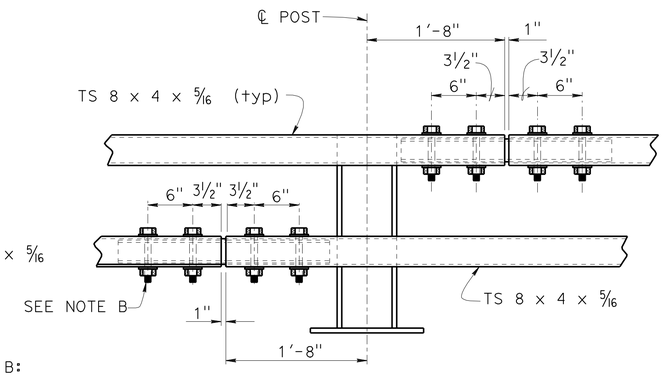
BRIDGE RAILING ELEVATION

NOTE A:

Post spacing and/or block length to be adjusted to fit Bridge length or Wingwall length. Maximum post spacing is 10'-0". Place an Expansion Splice @ BB and EB.



EXPANSION SPLICE



NOTE B:

Use ¾" ø x 5⅝" HS bolts with washers, fully tensioned. 1" holes in rail (typ)

STANDARD SPLICE

NO SCALE

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1023R/L
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 9.72
QUANTITIES	BY S. Galgiani	CHECKED L. Han			

MONTE BONITO DRIVE UC
CALIFORNIA ST-10 (MOD) DETAIL No. 3

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
01-10-12	10-27-11	11-21-11	12-06-11	4	6

FILE => 53-1023r_brd_03.dgn

USERNAME => s124496 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:47

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	97	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp. 12-31-11 CIVIL — STATE OF CALIFORNIA

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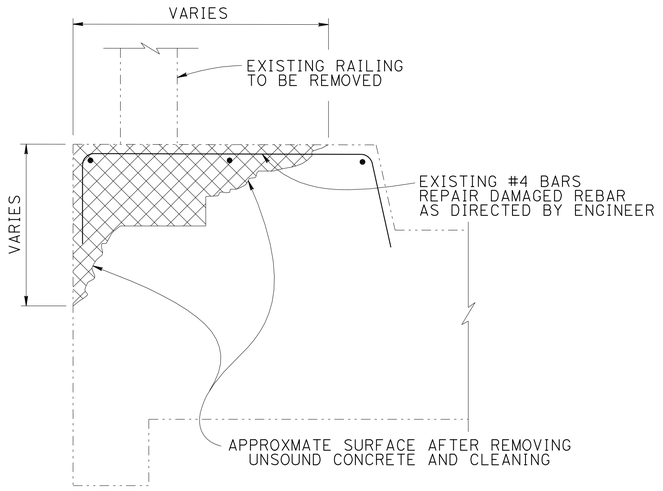
CONCRETE CURB REPAIR TABLE				
APPROXIMATE AREA DAMAGED (PERCENT)	AVERAGE DEPTH (INCHES)	APPROXIMATE CURB AREA (SQ FT)	UNSOUND CONCRETE (CF)	RAPID SETTING CONCRETE PATCH (CF)
8	5	2032	68	88

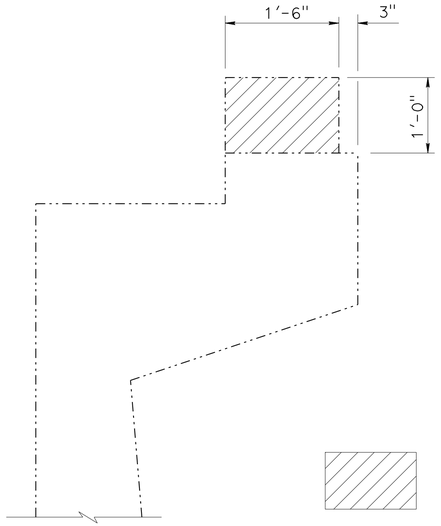


NOTE:
¾" SAWCUT OF CONCRETE AND REMOVE UNSOUND CONCRETE AROUND RAIL POSTS AND PATCH WITH RAPID SET PATCHING SYSTEM AS DIRECTED BY ENGINEER

LIMITS OF UNSOUND CONCRETE REMOVAL AND RAPID SETTING CONCRETE

CONCRETE REPAIR DETAIL AT EXISTING RAIL POSTS

1½" = 1'-0"

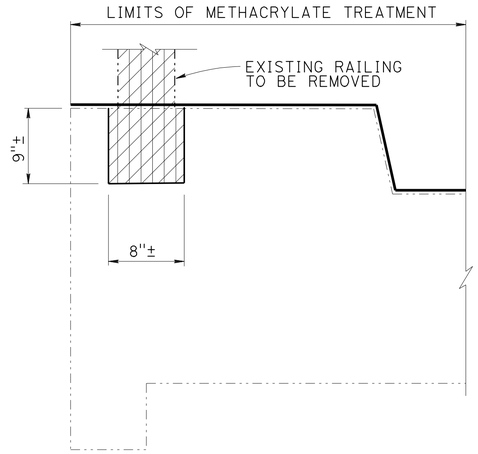


LIMITS OF EXISTING BACKWALL REMOVAL

NOTE:
EXISTING VERTICAL BACKWALL REINFORCEMENT TO REMAIN IN PLACE

BRIDGE REMOVAL DETAIL FOR NEW APPROACH SLAB

1" = 1'-0"



NOTE:
¾" SAWCUT OF GROUT/CONCRETE AND REMOVE GROUT, RAMMED SAND, PEA GRAVEL AND MELTED SULPHUR AROUND RAIL POSTS AND PATCH WITH RAPID SET PATCHING SYSTEM AS DIRECTED BY ENGINEER

LIMITS OF BRIDGE REMOVAL PORTION

RAIL POST REMOVAL DETAIL AT EXISTING RAIL POSTS

1½" = 1'-0"

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1023	MONTE BONITO DRIVE UC	
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 9.72	MISCELLANEOUS DETAILS	
QUANTITIES	BY S. Galgiani	CHECKED L. Han					

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
10-25-11	12-06-11	10-14-11	10-18-11	5	6

FILE => 53-1023r_miscdet.dgn

USERNAME => s124496 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:48

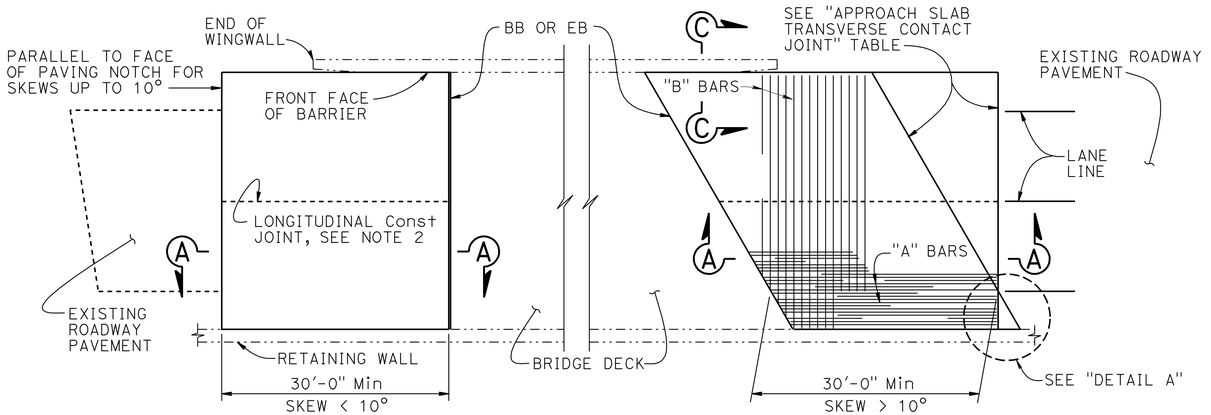
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	98	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

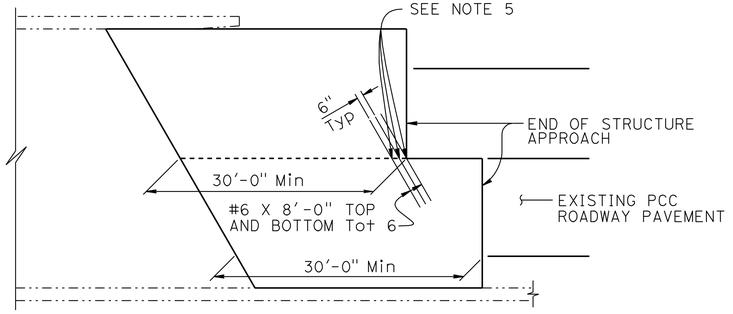
4-16-12
PLANS APPROVAL DATE

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

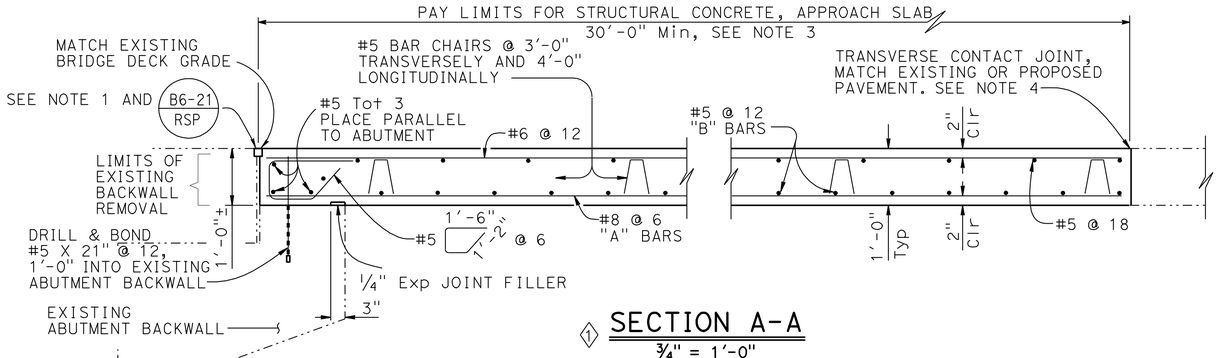
REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp. 12-31-11 CIVIL — STATE OF CALIFORNIA



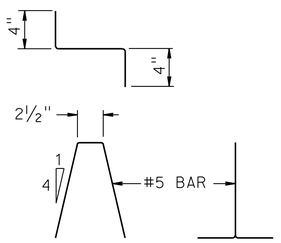
PLAN
1" = 10'



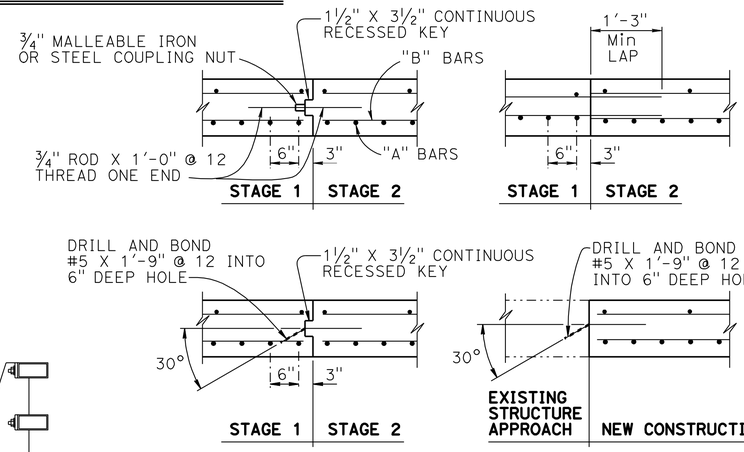
STRUCTURE APPROACH - END STAGGER DETAIL
NO SCALE



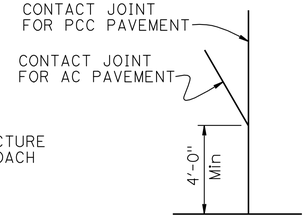
① SECTION A-A
3/4" = 1'-0"



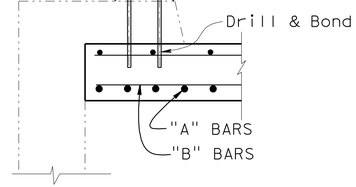
BAR CHAIR DETAIL
1 1/2" = 1'-0"



LONGITUDINAL CONSTRUCTION JOINT ALTERNATIVES
3/4" = 1'-0"

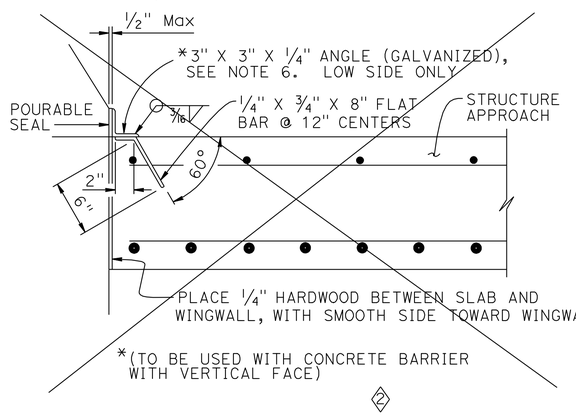


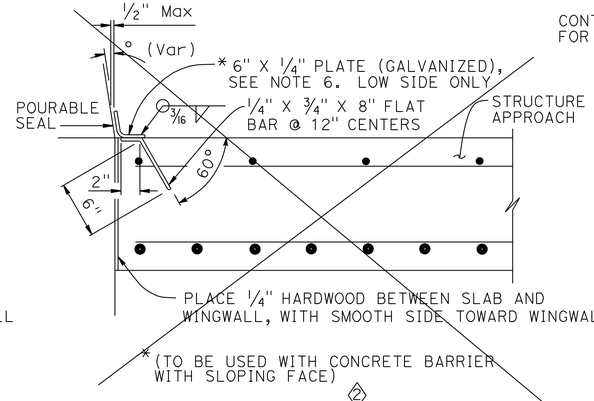
DETAIL A
No Scale



NOTE: Drill and Bond HS Bolts into Existing Curb and New Approach Slab

① SECTION C-C
3/4" = 1'-0"





DETAIL B
1 1/2" = 1'-0"

NOTES:
1. Sealed joint,for MR see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required
2. Longitudinal construction joints, when permitted by Engineer, shall be located on lane lines
3. Transverse contact joint shall be a minimum of 5'-0" from an existing or constructed weakened plane joint
4. For transverse contact joint with new PCC paving, refer to Revised Standard Plan P10
5. Couplers are required for stage construction
6. End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable

APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	PARALLEL TO FACE OF PN	PARALLEL TO FACE OF PN
10° - 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER LINES 24' TO 36' APART
> 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER AT EACH LANE LINE

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

REVISED STANDARD DRAWING

FILE NO. xs3-130

APPROVAL DATE July 2011

① DETAIL MODIFIED
② DETAIL DELETED

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 53-1023
POST MILE 9.72

MONTE BONITO DRIVE UC
STRUCTURE APPROACH TYPE R(30S)

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381
CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
08-01-11	11-23-11	12-06-11	01-10-12	6	6

FILE => 53-1023r_sapp30s.dgn

USERNAME => s1224496 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:48

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	99	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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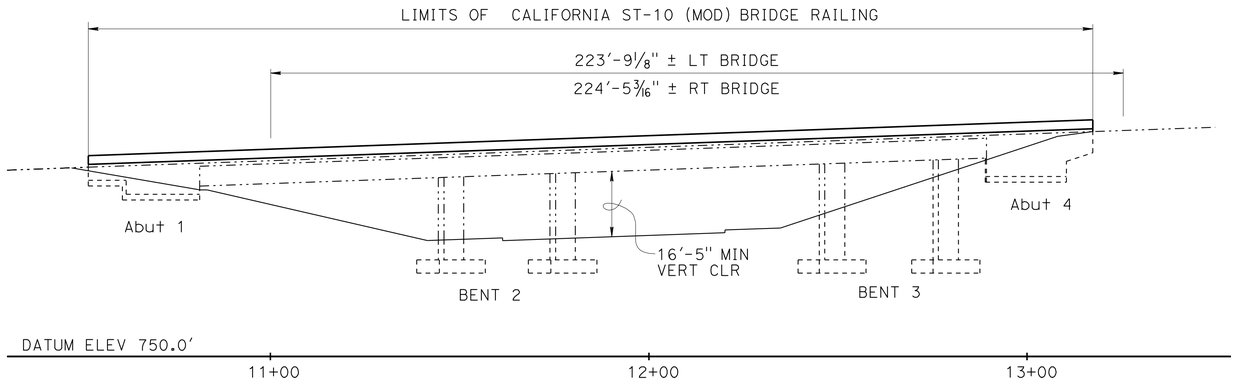
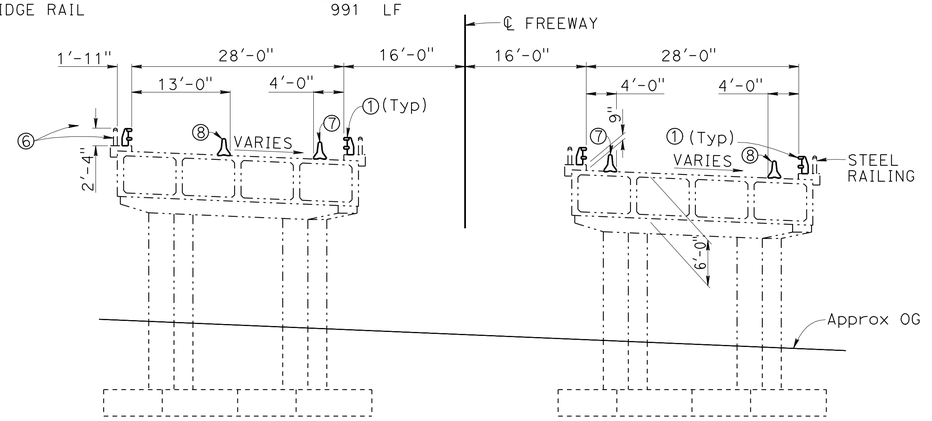
QUANTITIES

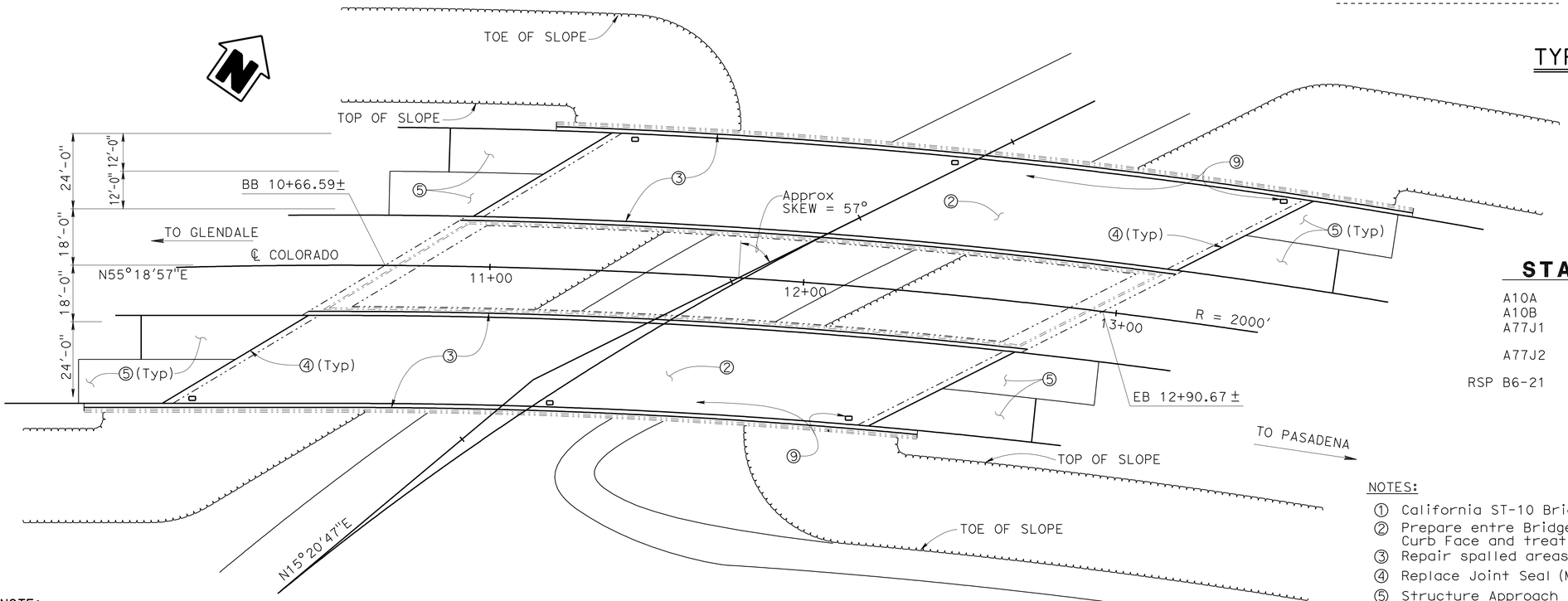
SALVAGE METAL BRIDGE RAILING	957	LF
REMOVE UNSOUND CONCRETE	76	CF
PREPARE CONCRETE BRIDGE DECK SURFACE	16,197	SQFT
BRIDGE REMOVAL (PORTION), LOCATION B	LUMP	SUM
AGGREGATE BASE (APPROACH SLAB)	17	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	170	CY
RAPID SETTING CONCRETE PATCH	111	CF
JOINT SEAL (MR 1")	214	LF
TREAT BRIDGE DECK	16,197	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	180	GAL
PUBLIC SAFETY PLAN	LUMP	SUM
CALIFORNIA ST-10 BRIDGE RAIL (MODIFIED)	991	LF



ELEVATION
1" = 20'



TYPICAL SECTION
1" = 10'



PLAN
1" = 20'

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

STANDARD PLANS MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A77J1	METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 1
A77J2	METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 2
RSP B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")

STANDARD PLAN SHEET No.
DETAIL No.

NOTES:
1. California ST-10 Bridge Rail (modified)
2. Prepare entre Bridge Deck, Curbs and Curb Face and treat with Methacrylate
3. Repair spalled areas on Concrete Curbs (see MISCELLANEOUS DETAILS sheet)
4. Replace Joint Seal (MR=1")
5. Structure Approach Type R(30S)
6. Salvage Existing Railing
7. Temporary Railing (Type K) (Stage 1) - see Road Plans
8. Temporary Railing (Type K) (Stage 2) - see Road Plans
9. Existing 25"x15"x12" Electrical Pull Box - Contractor to verify location

X Douglas J Dunrud
DESIGN ENGINEER

DESIGN	BY S. Galgiani	CHECKED L. Han	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE		
DETAILS	BY L. Xiong	CHECKED S. Galgiani	LAYOUT	BY S. Galgiani	CHECKED L. Han	
QUANTITIES	BY S. Galgiani	CHECKED L. Han	SPECIFICATIONS	BY X	PLANS AND SPECS COMPARED X	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 53-1024R/L
POST MILE 9.91

FIGUEROA STREET UNDERCROSSING
GENERAL PLAN

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
11-21-11	12-06-11	1-9-12	01-10-12	1	6

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10)

FILE => 53-1024l_01_gp.dgn

USERNAME => s1124496 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:48

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	100	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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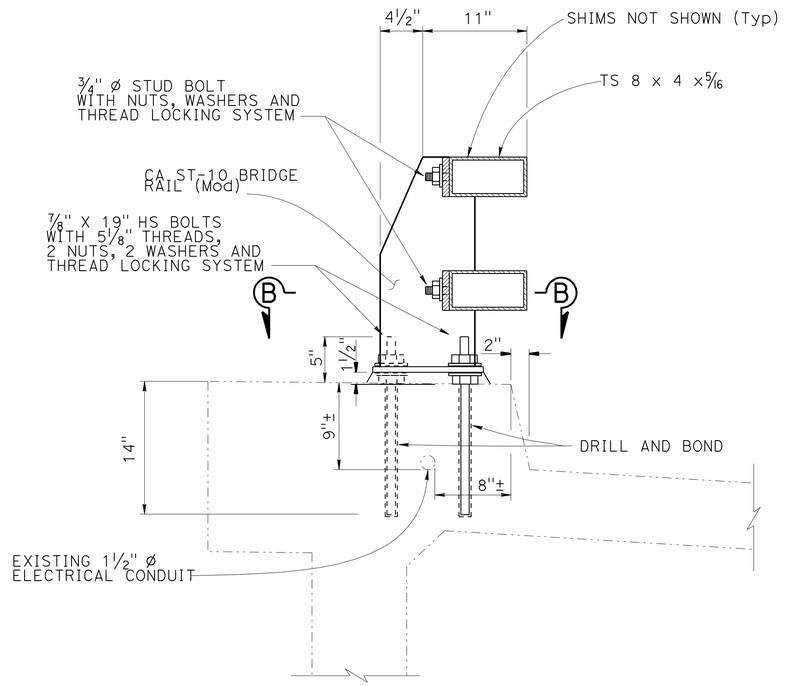


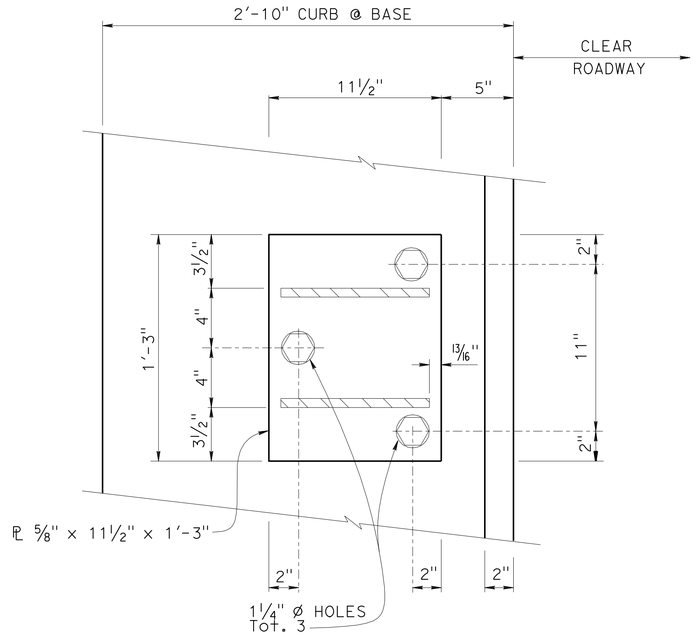
NOTE: Existing Railing not shown

TYPICAL RAIL SECTION

1½" = 1'-0"

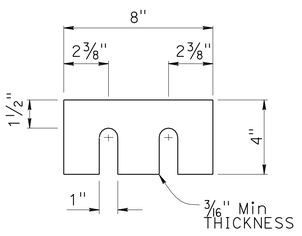
NOTE:

Contractor to avoid placing Rail Post at locations of 6 EA 25"x15"x12" Existing Electrical Pull Boxes located on both Exterior Railing locations, Contractor to verify Pull Box locations

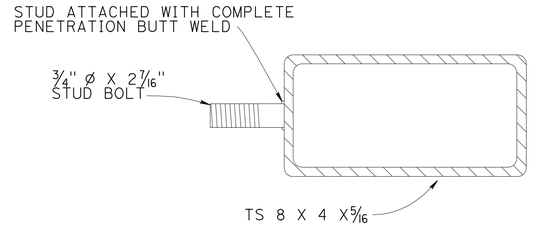


SECTION B-B

No Scale



SHIMS REQUIRED FOR TOP AND BOTTOM RAIL



SECTION AT POST

STUD BOLD DETAILS

No Scale

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1024L/R	FIGUEROA STREET UNDERCROSSING	
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 9.91	CALIFORNIA ST-10 (MOD) DETAIL No. 1	
QUANTITIES	BY S. Galgiani	CHECKED L. Han					

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
11-21-11	12-06-11	10-14-11	10-20-11	2	6

FILE => 53-1024l_brd_01.dgn

USERNAME => s124496 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:48

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	101	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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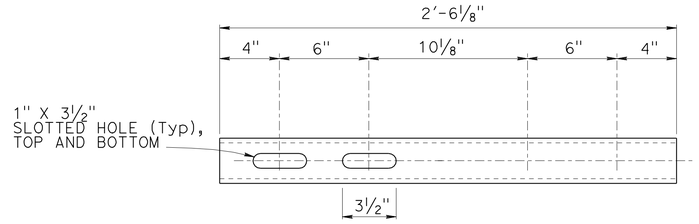
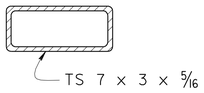
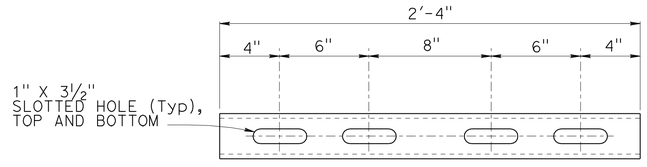


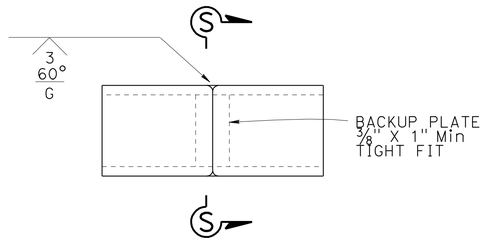
EXPANSION SLEEVE DETAIL

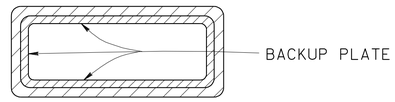


SECTION SLEEVE



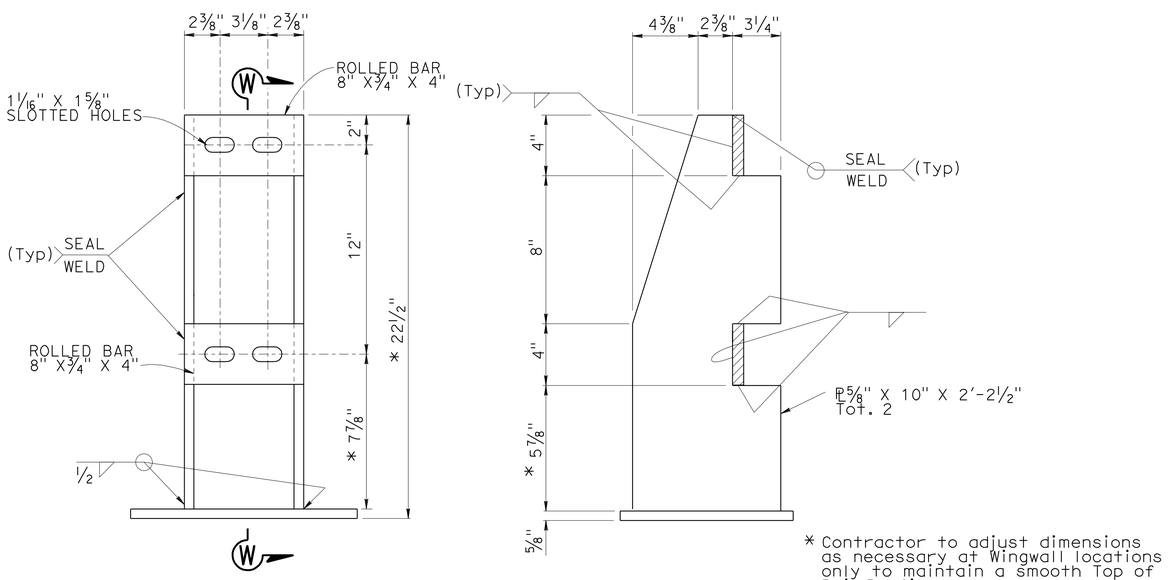
STANDARD SLEEVE DETAIL





SECTION S-S

ALTERNATED TUBE WELDED SPLICE



ELEVATION

SECTION W-W

POST DETAIL

NOTES:

1. All Structural Steel shall be glavanized after fabrication.
2. Anchor bolts may be tack welded (shop or field) to anchorage.
3. All rough edges on posts and rails shall be ground smooth.
4. Tubing shall be bent or fabricated to fit horizontal curve when radius is less than 896'.
5. After installation of rail, the exposed rail bolt threads shall be painted with two coats of zinc rich paint conforming to the requirement of Seciton 75-1.05 galvanizing of the Standard Specifications.
6. The alternative welded splice may be used in lieu of The Standard splice.
7. Each rail length shall be continuous over a minimum of two posts.
8. The contractor shall check that the tubular sleeves splices conform to the dimensions indicated to assure proper clearance.
9. Except for Expansion Splices, not more than one Splice shall be permitted per same side of post.
10. See Project Plans for Approach Guard Railing details.

NO SCALE

	BY	CHECKED
DESIGN	S. Galgiani	L. Han
DETAILS	K. Kubo	S. Galgiani
QUANTITIES	S. Galgiani	L. Han

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 53-1024L/R
POST MILE 9.91

FIGUEROA STREET UNDERCROSSING
CALIFORNIA ST-10 (MOD) DETAIL No. 2

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381
CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
01-10-12	09-07-11	10-11-11	12-06-11	3	6

FILE => 53-1024l_brd_02.dgn

USERNAME => s124496 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:48

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	102	104

REGISTERED CIVIL ENGINEER — DATE 11-15-11

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD — No. C47240 — Exp 12-31-11 — CIVIL — STATE OF CALIFORNIA

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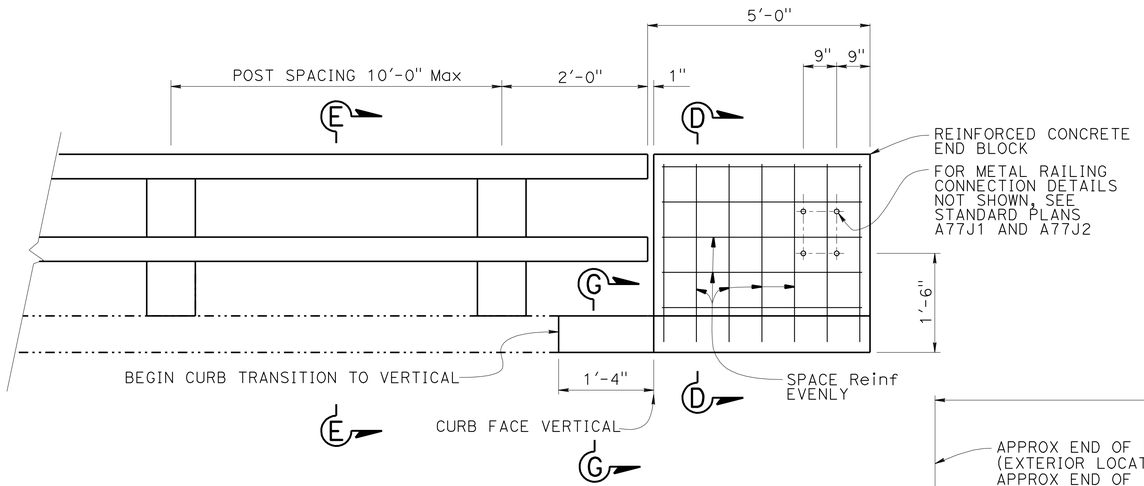
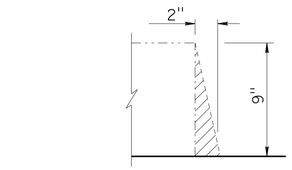
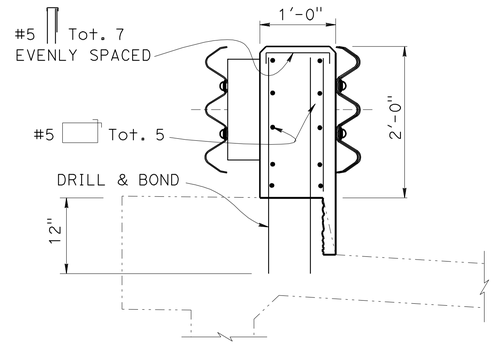


END OF RAILING ELEVATION



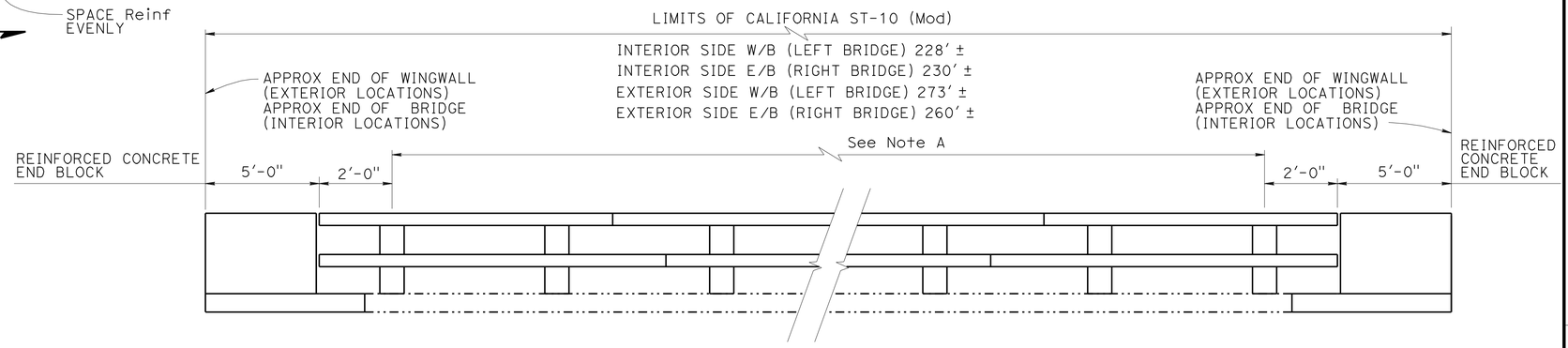
LIMITS OF EXISTING CURB FACE REMOVAL

SECTION G-G



* Interior Railing Locations

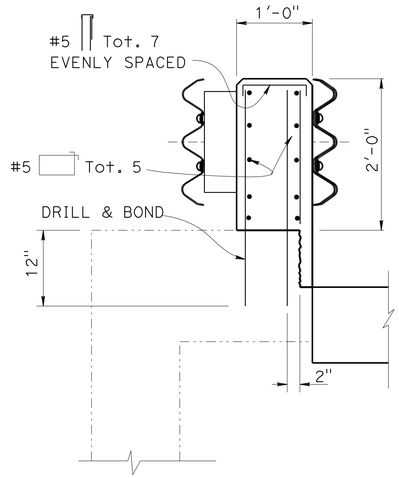
SECTION F-F



BRIDGE RAILING ELEVATION

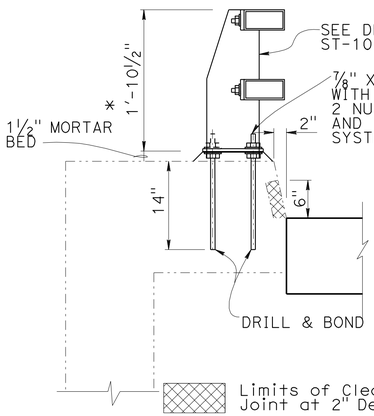
NOTE A:

Post spacing and/or block length to be adjusted to fit Bridge length or Wingwall length. Maximum post spacing is 10'-0". Place an Expansion Splice @ BB and EB, and at any Hinge locations.



* For Exterior Railing Locations only, see 'SECTION F-F' for Interior Railing Locations

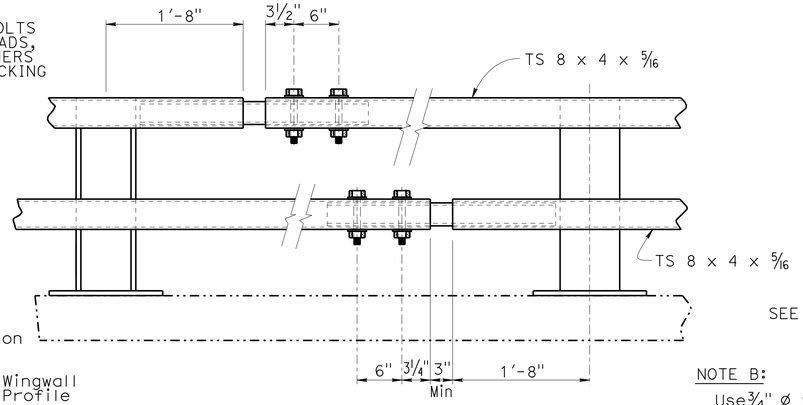
SECTION D-D



* Contractor to adjust dimension as necessary at Wingwall locations only to maintain a smooth Top of Rail Profile

** For Exterior Railing Locations only

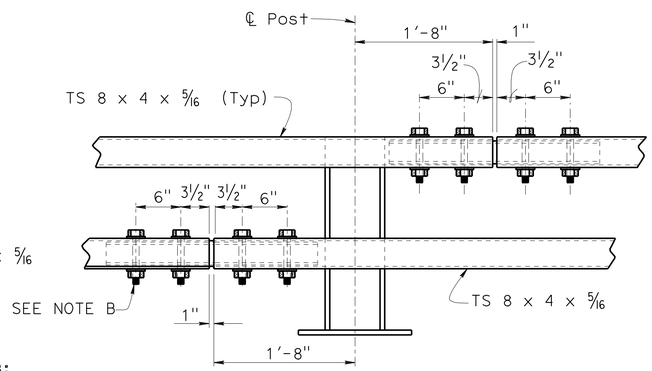
SECTION E-E



EXPANSION SPLICE

NOTE B:

Use 3/4" Ø x 5 5/16" HS bolts with washers, fully tensioned. 1" holes in rail (typ)



STANDARD SPLICE

No Scale

	BY	CHECKED
DESIGN	S. Galgiani	L. Han
DETAILS	K. Kubo	S. Galgiani
QUANTITIES	S. Galgiani	L. Han

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 53-1024R/L
POST MILE 9.91

FIGUEROA STREET UNDERCROSSING
CALIFORNIA ST-10 (MOD) DETAIL No. 3

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381
CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
10-21-11	11-21-11	12-06-11	01-10-12	4	6

FILE => 53-1024l_brd_03.dgn

USERNAME => s124396 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:48

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	103	104

Douglas J Dunrud 11-15-11
REGISTERED CIVIL ENGINEER DATE

4-16-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp 12-31-11 CIVIL — STATE OF CALIFORNIA

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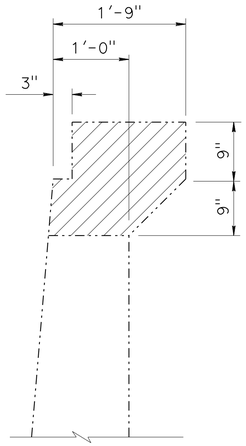
CONCRETE CURB REPAIR TABLE				
APPROXIMATE AREA DAMAGED (PERCENT)	AVERAGE DEPTH (INCHES)	APPROXIMATE CURB AREA (SQ FT)	UNSOUND CONCRETE (CF)	RAPID SETTING CONCRETE PATCH (CF)
5	5	3647	76	111

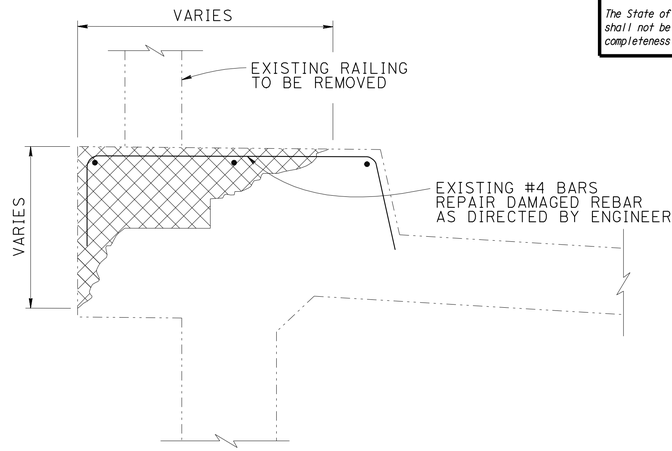


LIMITS OF EXISTING BACKWALL REMOVAL

NOTE: EXISTING LUMBER NOT SHOWN

BRIDGE REMOVAL DETAIL FOR NEW APPROACH SLAB

1" = 1'-0"



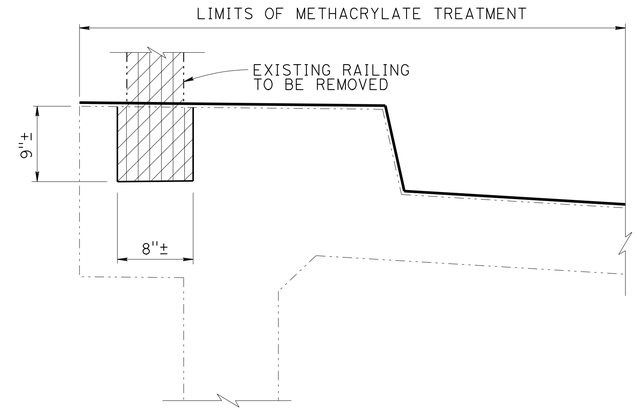
NOTE:

¾" SAWCUT OF CONCRETE AND REMOVE UNSOUND CONCRETE AROUND RAIL POSTS AND PATCH WITH RAPID SET PATCHING SYSTEM AS DIRECTED BY ENGINEER

LIMITS OF UNSOUND CONCRETE REMOVAL AND RAPID SETTING CONCRETE

CONCRETE REPAIR DETAIL AT EXISTING RAIL POSTS

1½" = 1'-0"



NOTE:

¾" SAWCUT OF GROUT/CONCRETE AND REMOVE GROUT, RAMMED SAND, PEA GRAVEL AND MELTED SULPHUR AROUND RAIL POSTS AND PATCH WITH RAPID SET PATCHING SYSTEM AS DIRECTED BY ENGINEER

LIMITS OF BRIDGE REMOVAL PORTION

RAIL POST REMOVAL DETAIL AT EXISTING RAIL POSTS

1½" = 1'-0"

DESIGN	BY S. Galgiani	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 53-1024	FIGUEROA STREET UNDERCROSSING	
DETAILS	BY K. Kubo	CHECKED S. Galgiani			POST MILE 9.91	MISCELLANEOUS DETAILS	
QUANTITIES	BY S. Galgiani	CHECKED L. Han					

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3613
PROJECT NUMBER & PHASE: 07000208381 CONTRACT NO.: 07-273401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
12-06-11	9-1-11	10-14-11	10-26-11	5	6

FILE => 53-1024i_miscdet.dgn

USERNAME => s124496 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:48

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	134	0.0/L9.9	104	104

REGISTERED CIVIL ENGINEER — 11-15-11 DATE

4-16-12 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DOUGLAS JAMES DUNRUD No. C47240 Exp. 12-31-11 CIVIL — STATE OF CALIFORNIA

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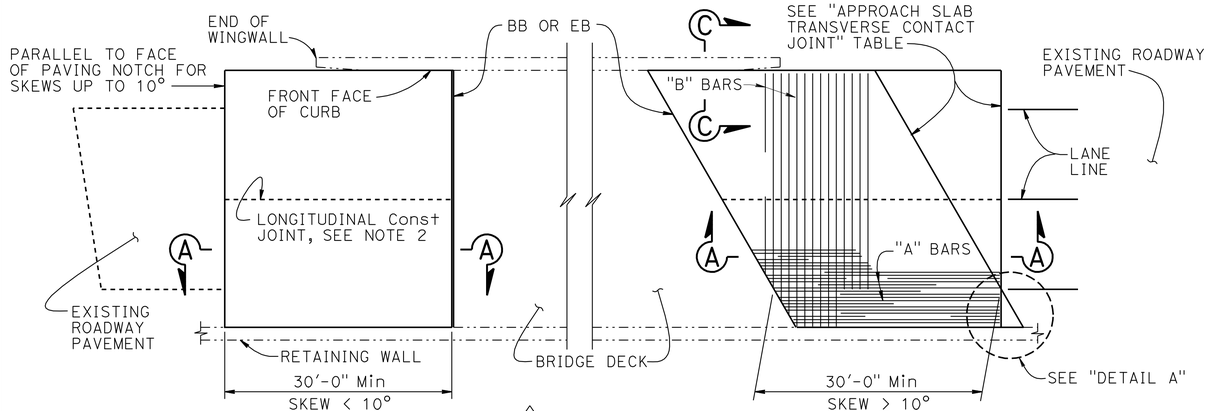
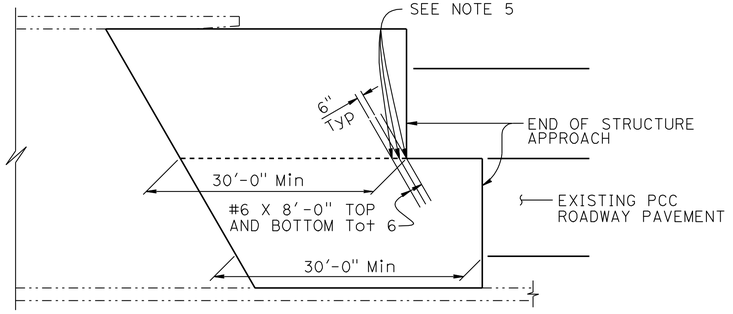
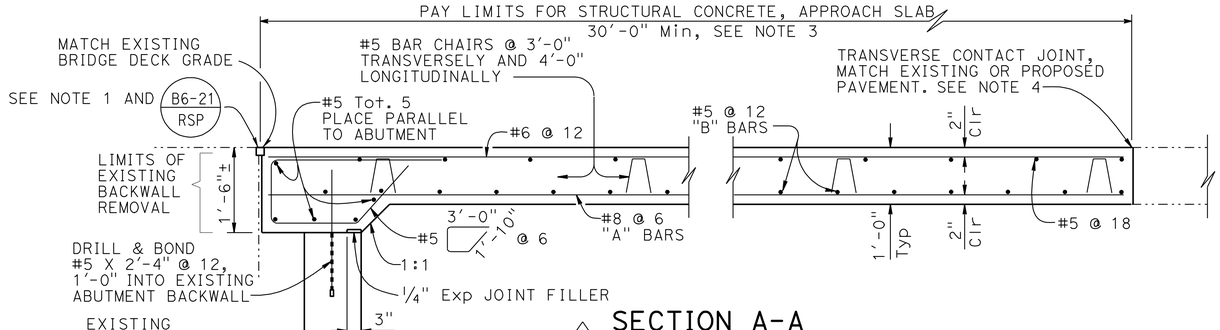


◇1 PLAN
1" = 10'

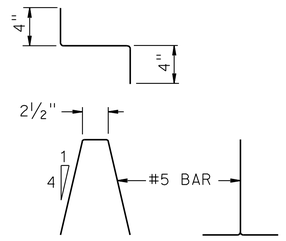


STRUCTURE APPROACH - END STAGGER DETAIL

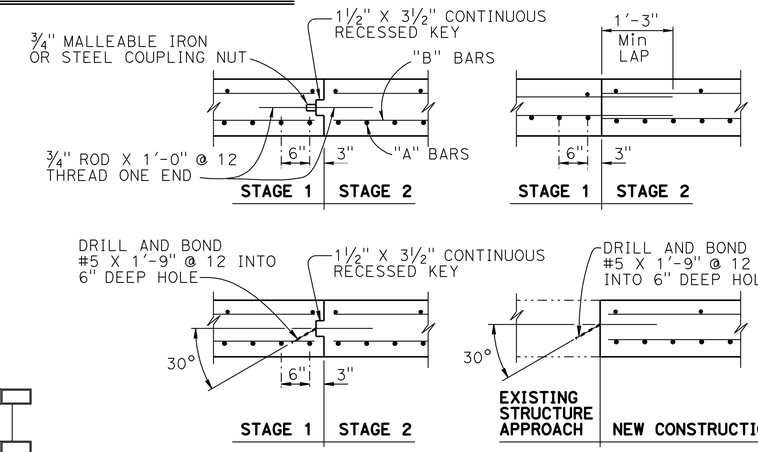
NO SCALE

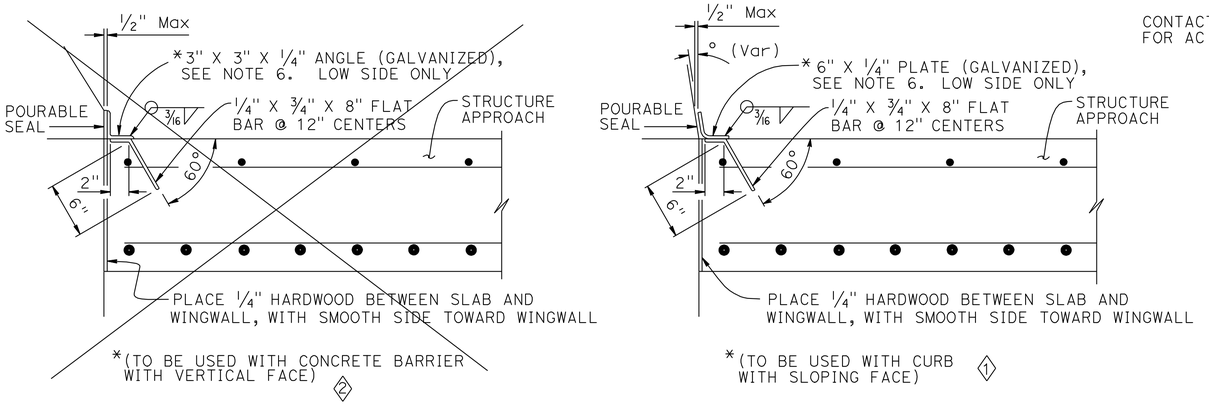


◇1 SECTION A-A
¾" = 1'-0"

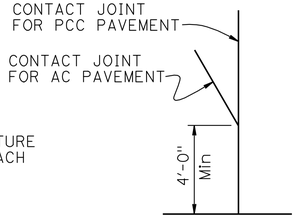


BAR CHAIR DETAIL
1½" = 1'-0"

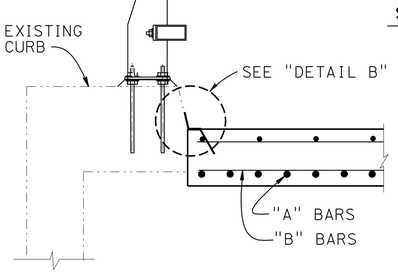




DETAIL B
1½" = 1'-0"



DETAIL A
No Scale



◇1 SECTION C-C
¾" = 1'-0"

LONGITUDINAL CONSTRUCTION JOINT ALTERNATIVES

¾" = 1'-0"

NOTES:

1. Sealed joint,for MR see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required
2. Longitudinal construction joints, when permitted by Engineer, shall be located on lane lines
3. Transverse contact joint shall be a minimum of 5'-0" from an existing or constructed weakened plane joint
4. For transverse contact joint with new PCC paving, refer to Revised Standard Plan P10
5. Couplers are required for stage construction
6. End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable

APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	PARALLEL TO FACE OF PN	PARALLEL TO FACE OF PN
10° - 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER LINES 24' TO 36' APART
> 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER AT EACH LANE LINE

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

REVISED STANDARD DRAWING

FILE NO. xs3-130

APPROVAL DATE July 2011

◇1 DETAIL MODIFIED
◇2 DETAIL DELETED

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 53-1024
POST MILE 9.91

FIGUEROA STREET UNDERCROSSING
STRUCTURE APPROACH TYPE R(30S)

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

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12-06-11	01-10-12	10-26-11	11-14-11	6	6

USERNAME => s124396 DATE PLOTTED => 17-APR-2012 TIME PLOTTED => 08:48

FILE => 53-1024l_sapp30s.dgn