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THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT FROM 0.5 MILE NORTH OF ROUTE 15/58 SEPARATION TO EAST MAIN STREET UNDERCROSSING 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 SAN BERNARDINO COUNTY**  
**IN AND NEAR BARSTOW**

ACIM-015-1(229)176E

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SbD	15	70.6/74.9	1	42

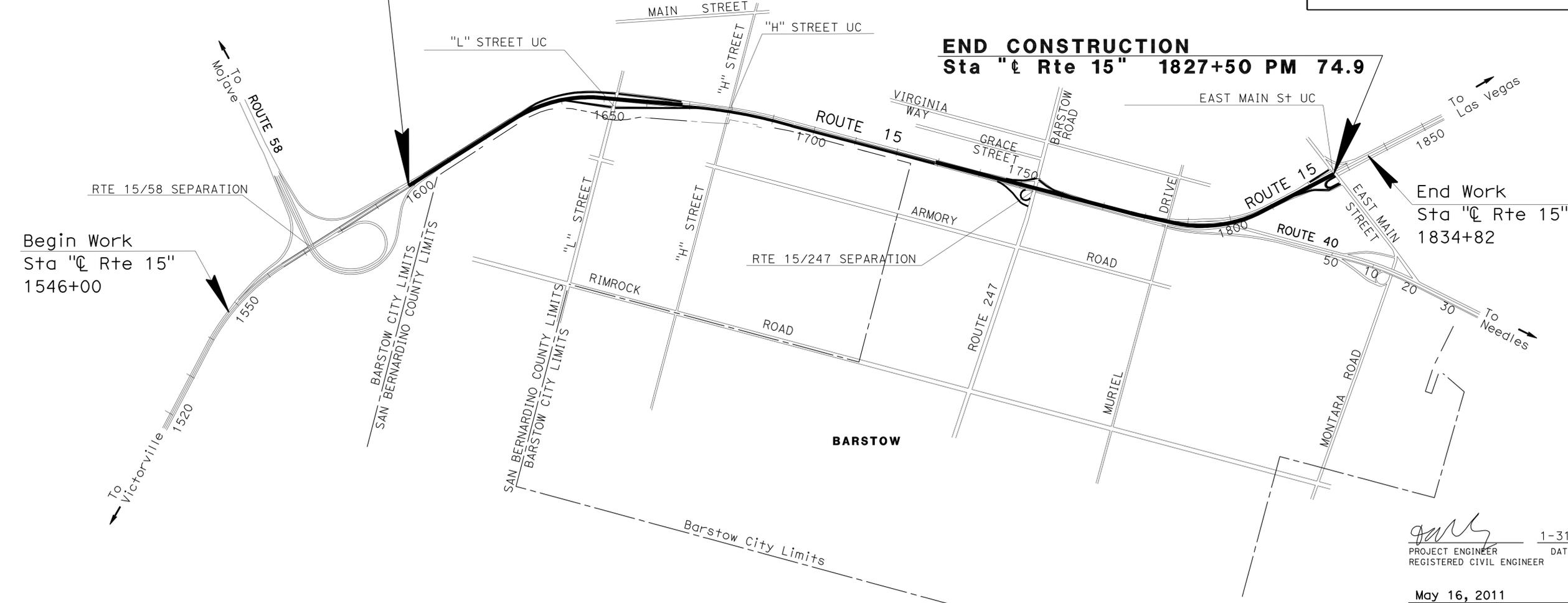




LOCATION MAP

**BEGIN CONSTRUCTION**  
 Sta "C Rte 15" 1597+72 PM 70.6

**END CONSTRUCTION**  
 Sta "C Rte 15" 1827+50 PM 74.9



PROJECT MANAGER	JUAN LIZARDE
DESIGN ENGINEER	DAI HOANG

  
 PROJECT ENGINEER  
 REGISTERED CIVIL ENGINEER  
 DATE: 1-31-11  
 PLANS APPROVAL DATE: May 16, 2011  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
 DAI HOANG  
 No. C64203  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

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

NO SCALE

DATE PLOTTED => 21-SEP-2011 TIME PLOTTED => 06:01



**NOTES:**

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. REPLACE RUMBLE STRIPS (SEE STD A40B).
4. THIS PROJECT IS INTENDED TO CORRECT DEFICIENCIES IN THE EXIST. CROSS SLOPE. FOR MORE DETAILS, SEE CAICE CROSS SECTIONS ARE PART OF THE CONTRACT AND ARE AVAILABLE FOR REVIEW BY THE CONTRACTOR.
5. EXISTING DI WITHIN THE SHOULDER, OVERLAY HMA SHOULDER AT DI DEPRESSIONS (SEE STD D78C).
6. RAMP TERMINI USE RAPID STRENGTH CONCRETE (RSC).
7. LOL1,2,3,4 MAIN LINE, LOL A1,A2,A3,B1,B2 RAMP ARE THE LAYOUT LINES AT INSIDE ETW. ALL LAYOUT LINES INFORMATION, CAICE CROSS SECTIONS ARE PART OF THE CONTRACT AND ARE AVAILABLE FOR REVIEW BY THE CONTRACTOR.
8. (\*) NO SURVEY DATA AT THESE RAMPS, THEREFORE NO CAICE CROSS SECTIONS. THE LENGTH OF OVERLAY OF RAMPS. SEE Q-SHEET.
9. (\*\*) STATION GAP. NO OVERLAY WORK ON BRIDGE DECK & APPROACH SLABS AT BRIDGES NO. 54-1115 "L STREET" UNDERCROSSING AND NO. 54-0551 "H STREET" UNDERCROSSING.

DESIGN DESIGNATION (ROUTE 15) PM70.6/74.11 (6 LANES)  
 2009 ADT = 72,200, DHV = 7,590, DS = 63% SB, T(ADT)= 22%, T(DHV)= 11%, V/C= 0.96, LOS E  
 2020 ADT = 82,700, DHV = 8,690, DS = 61%SB, T(ADT)= 21%, T(DHV)= 10%, V/C= 1.05, LOS F  
 V= 65 MPH

**ABBREVIATIONS:**

- ADT AVERAGE DAILY TRAFFIC
- DHV DESIGN HOUR VOLUME
- DS DIRECTIONAL SPLIT
- T TRUCK % IN DHV
- ESAL EQUIVALENT SINGLE AXLE LOAD
- V/C VOLUME TO CAPACITY
- V DESIGN SPEED
- RSC RAPID STRENGTH CONCRETE
- PMS PLANT MIX SURFACING
- FLC CURB FLOW LINE
- ACFL ASPHALT CONCRETE FLOW LINE

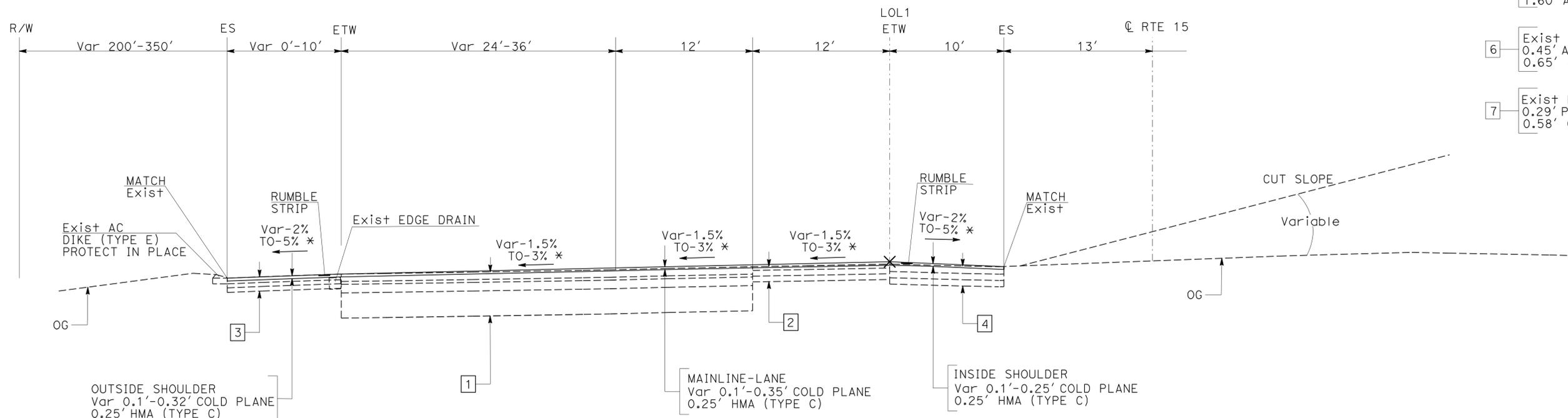
	TRAFFIC INDEX	INSIDE LANES	INSIDE SHOULDER	OUTSIDE LANES	OUTSIDE SHOULDER	RAMPS
10 YEAR	11.5	7.5	13.5	8.5	9.0	
10 YEAR(ESAL)	8,754,297	175,086	35,017,187	700,344	N/A	
20 YEAR	13.0	8.0	15.0	9.5	10.0	
20 YEAR(ESAL)	19,232,205	384,644	76,928,818	1,538,576	N/A	

DESIGN DESIGNATION (ROUTE 15) PM74.11/74.9 (4 LANES)  
 2009 ADT = 48,600, DHV = 5,610, DS = 63% SB, T(ADT)= 17%, T(DHV)= 8%, V/C= 1.0, LOS F  
 2020 ADT = 61,900, DHV = 6,970, DS = 61%SB, T(ADT)= 16%, T(DHV)= 8%, V/C= 1.2, LOS F  
 V = 65 MPH

	TRAFFIC INDEX	INSIDE LANES	INSIDE SHOULDER	OUTSIDE LANES	OUTSIDE SHOULDER	RAMPS
10 YEAR	13.5	8.5	13.5	8.5	9.0	
10 YEAR(ESAL)	26,826,308	536,526	26,826,308	536,526	N/A	
20 YEAR	15.0	9.5	15.0	9.5	10.0	
20 YEAR(ESAL)	65,635,715	1,312,714	65,635,715	1,312,714	N/A	

**TYPICAL PAVEMENT STRUCTURE SECTIONS**

1. Exist PAVEMENT  
0.65' AC (TYPE A)  
0.25' ATPB  
0.75' AB CL2  
2.20' AS CL2
2. Exist PAVEMENT  
Var 0.33'-0.43' AC (TYPE A)  
0.50' AB  
0.50' AS
3. Exist PAVEMENT  
0.50' AC (TYPE A)  
0.35' AB CL2  
0.40' AS CL2
4. Exist PAVEMENT  
0.65' AC (TYPE A)  
0.55' AB  
0.55' AS
5. Exist PAVEMENT  
0.60' AC (TYPE A)  
0.65' AB CL2  
1.60' AS CL2
6. Exist PAVEMENT  
0.45' AC (TYPE A)  
0.65' AB CL2
7. Exist PAVEMENT  
0.29' PMS (TYPE B)  
0.58' CTB CLB



**ROUTE 15 SOUTHBOUND**

\* EXCEPT IN SUPERELEVATION

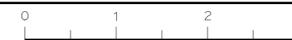
Sta 1597+72 TO Sta 1606+75 LOL1= Sta 1597+72 TO Sta 1606+75 Q RTE 15  
 Sta 1608+25 TO Sta 1651+56 LOL1= Sta 1608+25 TO Sta 1651+41.5 Q RTE 15 (\*\*)  
 Sta 1653+89 TO Sta 1666+75 LOL1= Sta 1653+74.8 TO Sta 1666+60.64 Q RTE 15  
 Sta 1667+25 TO Sta 1668+14 LOL1= Sta 1667+10.64 TO Sta 1668+00 Q RTE 15

(\*\*) SEE NOTE 9

**TYPICAL CROSS SECTIONS**

NO SCALE

**X-1**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	3	42

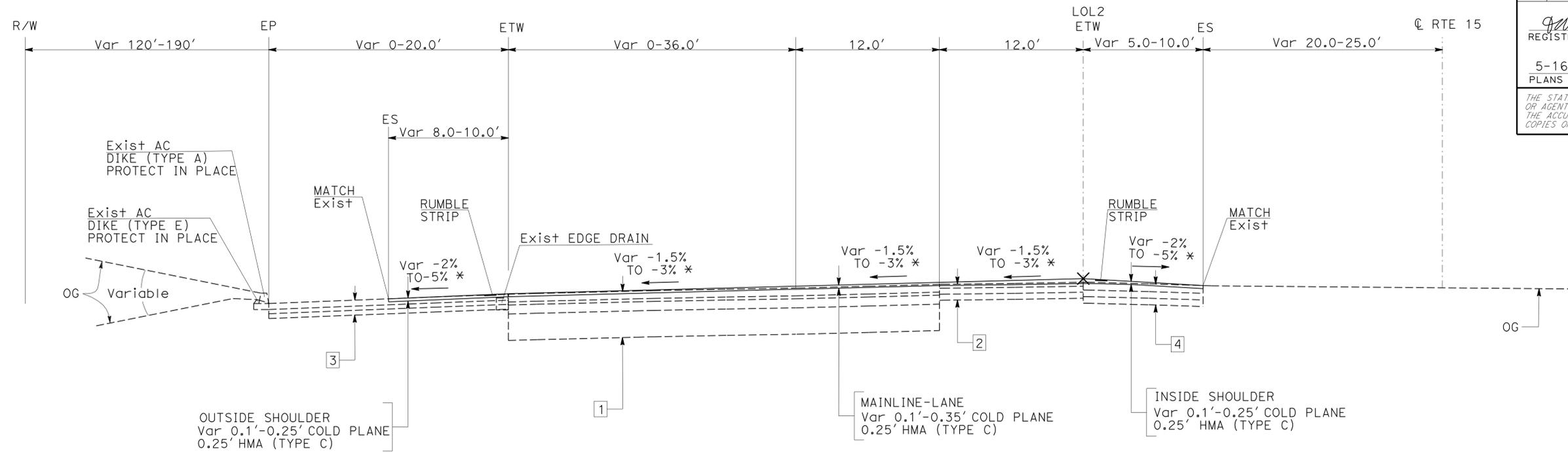
  

REGISTERED CIVIL ENGINEER	DATE
5-16-11	1-31-11
PLANS APPROVAL DATE	

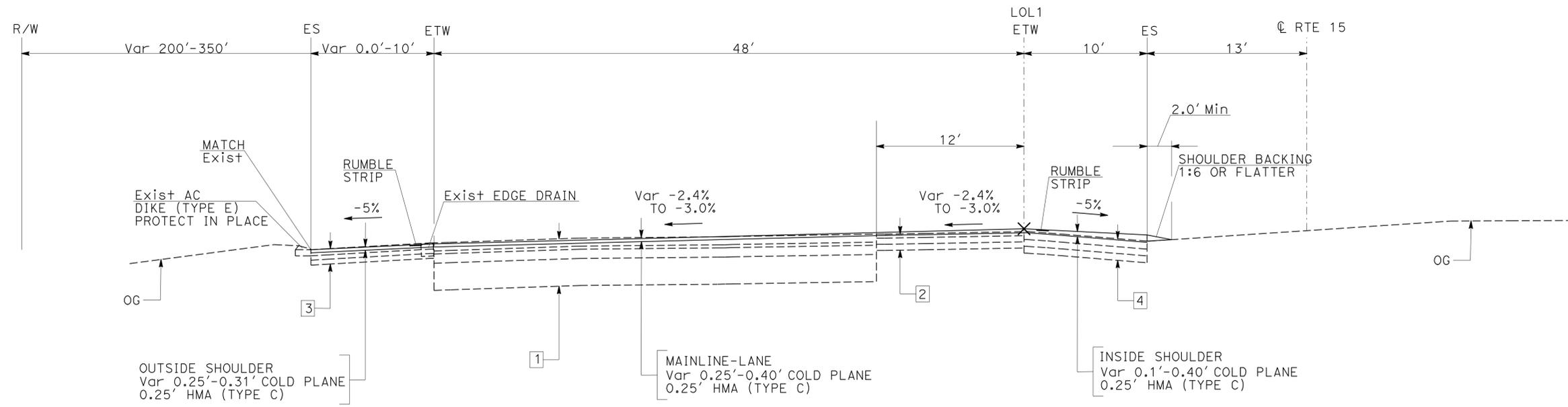
REGISTERED PROFESSIONAL ENGINEER	DAI HOANG
No. C64203	
Exp. 6-30-11	
CIVIL	

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**ROUTE 15 SOUTHBOUND**

\* EXCEPT IN SUPERELEVATION  
 STA 1729+50 TO STA 1823+75 LOL2 = STA 1729+50 TO STA 1823+97.1 CL RTE 15  
 STA 1825+25 TO STA 1827+27.9 LOL2 = STA 1825+47.1 TO STA 1827+50 CL RTE 15



**ROUTE 15 SOUTHBOUND**

STA 1606+75 TO STA 1608+25 LOL1 = STA 1606+75 TO STA 1608+25 CL RTE 15  
 STA 1666+75 TO STA 1667+25 LOL1 = STA 1666+60.64 TO STA 1667+10.64 CL RTE 15

**TYPICAL CROSS SECTIONS**

NO SCALE

**X-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 SERGIO E. AVILA  
 FUNCTIONAL SUPERVISOR  
 HANNAH NGUYEN  
 DAI HOANG  
 REVISIONS BY DATE  
 CALCULATED/DESIGNED BY CHECKED BY  
 BORDER LAST REVISED 7/2/2010

USERNAME => trminguye  
 DGN FILE => 80k150ca002.dgn



UNIT 2237

PROJECT NUMBER & PHASE

0800003331

LAST REVISION DATE PLOTTED => 17-MAY-2011  
 01-31-11 TIME PLOTTED => 07:19

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	4	42

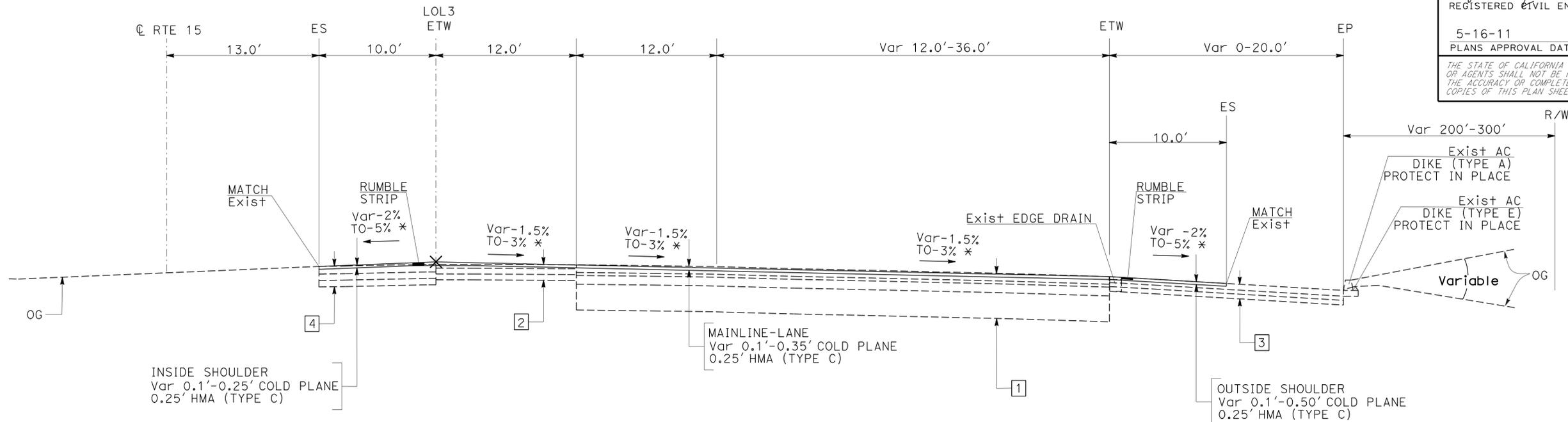
  

REGISTERED CIVIL ENGINEER	DATE
5-16-11	1-31-11
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
No. C64203
Exp. 6-30-11
CIVIL

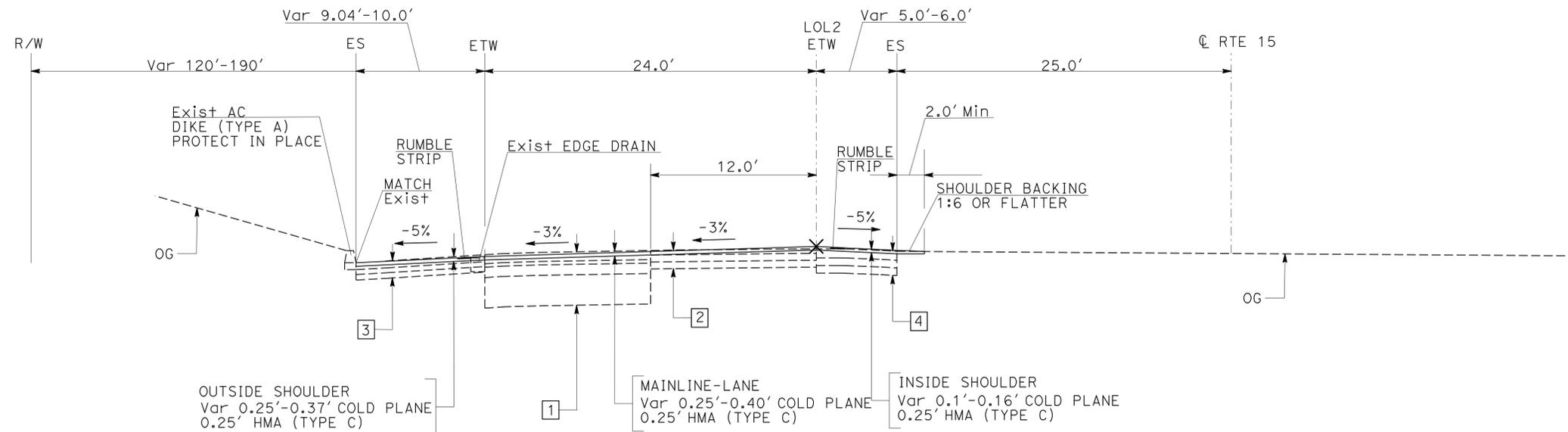
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**ROUTE 15 NORTHBOUND**

\* EXCEPT IN SUPERELEVATION

- STA 1597+72 TO STA 1604+25 LOL3 = STA 1597+72 TO STA 1604+25 CL RTE 15
- STA 1605+25 TO STA 1606+25 LOL3 = STA 1605+25 TO STA 1606+25 CL RTE 15
- STA 1607+75 TO STA 1609+25 LOL3 = STA 1607+75 TO STA 1609+25 CL RTE 15
- STA 1613+25 TO STA 1644+75 LOL3 = STA 1613+25 TO STA 1644+87.85 CL RTE 15
- STA 1645+75 TO STA 1651+20.4 LOL3 = STA 1645+88.63 TO STA 1651+34.7 CL RTE 15

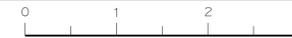


**ROUTE 15 SOUTHBOUND**

- STA 1823+75 TO STA 1825+25 LOL2 = STA 1823+97.1 TO STA 1825+47.1 CL RTE 15

**TYPICAL CROSS SECTIONS**  
NO SCALE  
**X-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
 CALCULATED/DESIGNED BY: HANNAH NGUYEN  
 CHECKED BY: DAI HOANG  
 REVISED BY: HANNAH NGUYEN  
 DATE REVISED: 5-16-11



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	5	42

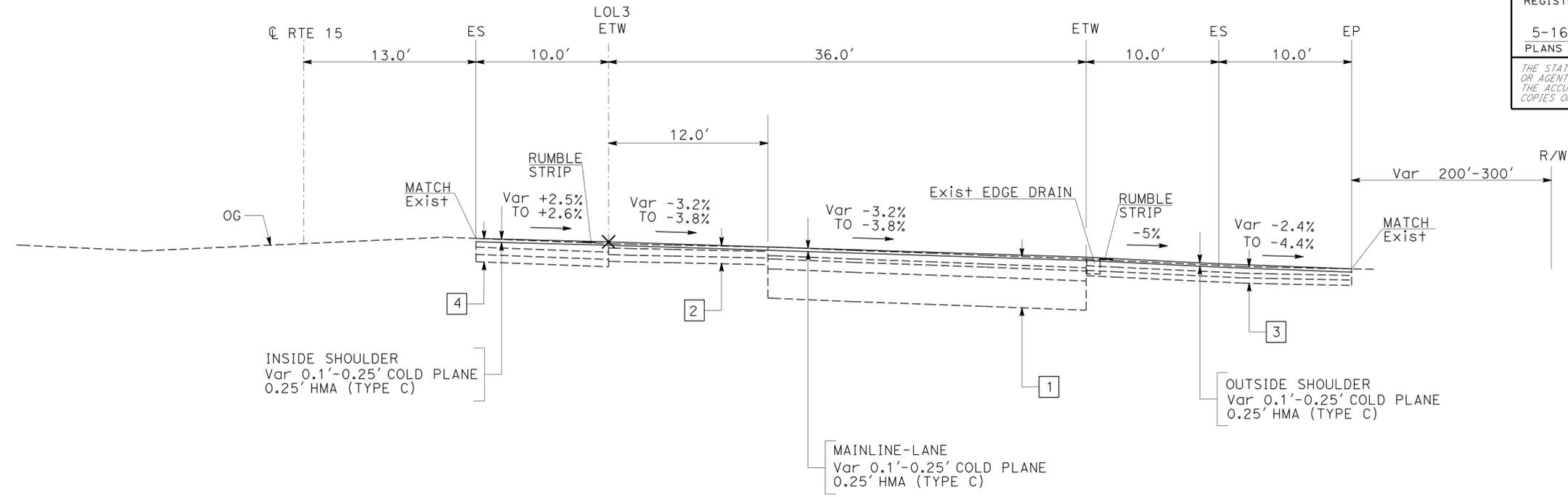
  

REGISTERED CIVIL ENGINEER	DATE	1-31-11
5-16-11 PLANS APPROVAL DATE		

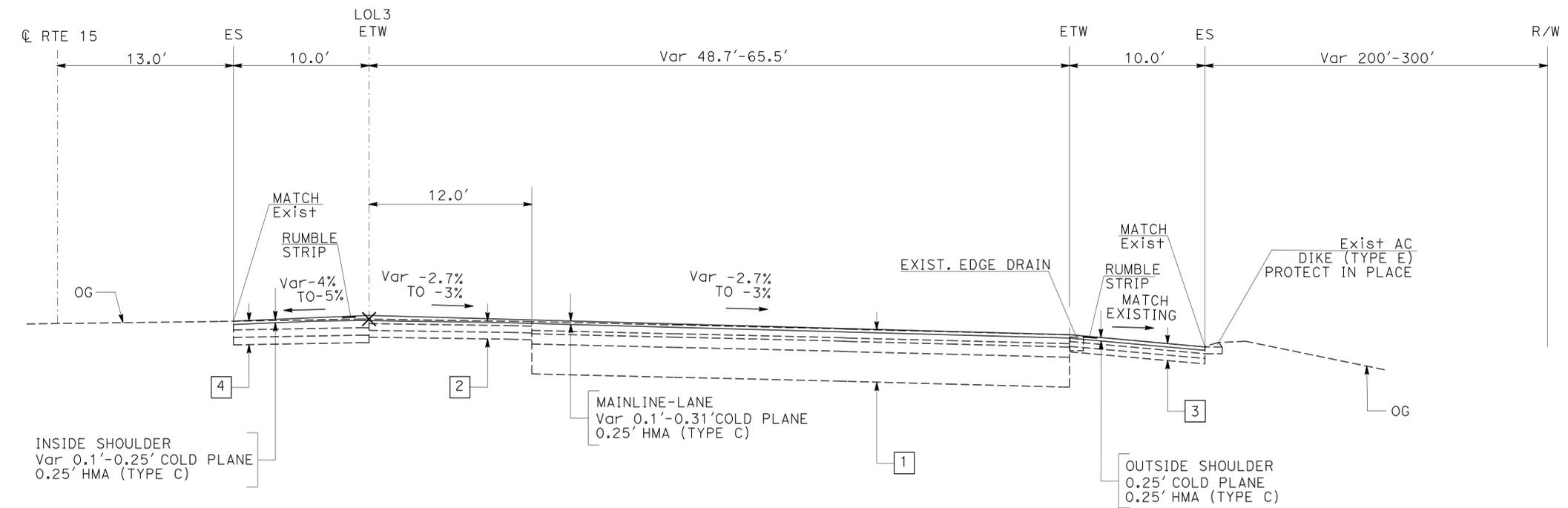
  

REGISTERED PROFESSIONAL ENGINEER	No. C64203
Exp. 6-30-11	CIVIL

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**ROUTE 15 NORTHBOUND**  
 STA 1644+75 TO STA 1645+75 LOL3 = STA 1644+87.85 TO STA 1645+88.63 CL RTE 15



**ROUTE 15 NORTHBOUND**  
 STA 1604+25 TO STA 1605+25 LOL3 = STA 1604+25 TO STA 1605+25 CL RTE 15  
 STA 1606+25 TO STA 1607+75 LOL3 = STA 1606+25 TO STA 1607+75 CL RTE 15  
 STA 1609+25 TO STA 1613+25 LOL3 = STA 1609+25 TO STA 1613+25 CL RTE 15

**TYPICAL CROSS SECTIONS**  
 NO SCALE  
**X-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
 CALCULATED/DESIGNED BY: [blank]  
 CHECKED BY: [blank]  
 DAI HOANG  
 HANNAH NGUYEN  
 REVISED BY: [blank] DATE: [blank]

USERNAME => trminguye  
 DGN FILE => 80k150ca004.dgn



UNIT 2237

PROJECT NUMBER & PHASE

0800003331

LAST REVISION: DATE PLOTTED => 17-MAY-2011  
 TIME PLOTTED => 07:19

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	6	42

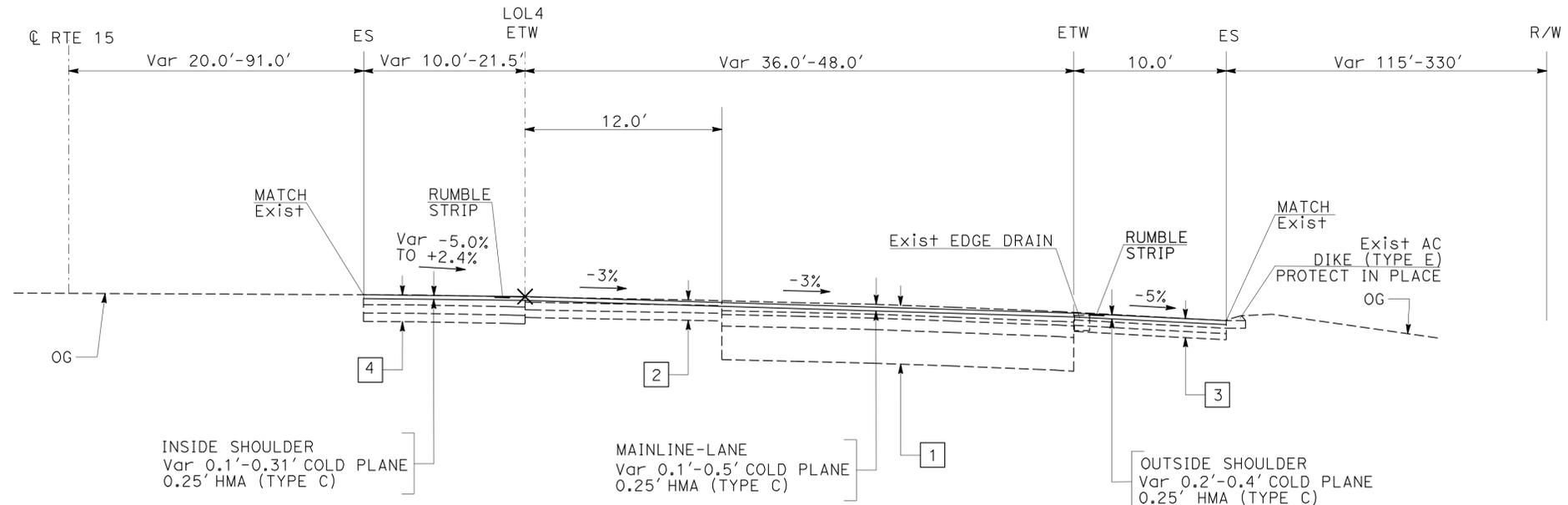
  

REGISTERED CIVIL ENGINEER	DATE
<i>[Signature]</i>	1-31-11
PLANS APPROVAL DATE	
5-16-11	

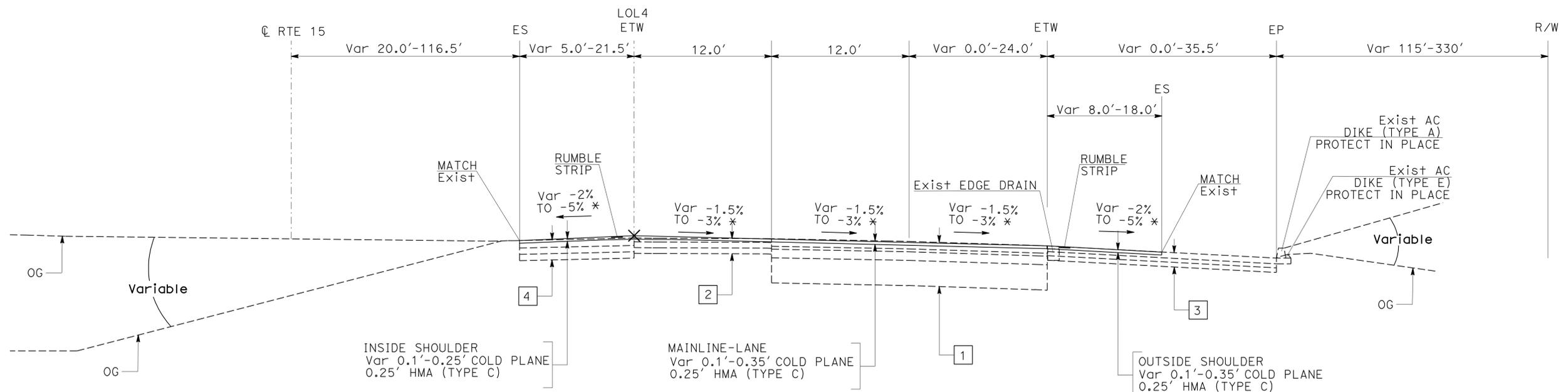
REGISTERED PROFESSIONAL ENGINEER
DAI HOANG
No. C64203
Exp. 6-30-11
CIVIL

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**ROUTE 15 NORTHBOUND**

- STA 1686+00 TO STA 1688+50 LOL4 = STA 1686+13.35 TO STA 1688+67.80  $\text{\textcircled{C}}$  RTE 15
- STA 1689+25 TO STA 1689+75 LOL4 = STA 1689+41 TO STA 1689+91  $\text{\textcircled{C}}$  RTE 15
- STA 1691+75 TO STA 1692+25 LOL4 = STA 1691+91 TO STA 1692+37.53  $\text{\textcircled{C}}$  RTE 15
- STA 1722+75 TO STA 1724+75 LOL4 = STA 1722+91.27 TO STA 1724+91.27  $\text{\textcircled{C}}$  RTE 15
- STA 1726+75 TO STA 1727+75 LOL4 = STA 1726+91.27 TO STA 1727+91.27  $\text{\textcircled{C}}$  RTE 15
- STA 1732+75 TO STA 1733+75 LOL4 = STA 1732+91.27 TO STA 1733+91.27  $\text{\textcircled{C}}$  RTE 15
- STA 1734+25 TO STA 1734+75 LOL4 = STA 1734+41.27 TO STA 1734+91.27  $\text{\textcircled{C}}$  RTE 15
- STA 1735+50 TO STA 1737+50 LOL4 = STA 1735+66.27 TO STA 1737+66.27  $\text{\textcircled{C}}$  RTE 15



**ROUTE 15 NORTHBOUND**

- \* EXCEPT IN SUPERELEVATION
- STA 1653+63 TO STA 1678+10.34 LOL4 = STA 1653+63 TO STA 1678+15  $\text{\textcircled{C}}$  RTE 15 (\*\*)
- (\*\*) STA 1680+10.12 TO STA 1686+00 LOL4 = STA 1680+14.68 TO STA 1686+13.35  $\text{\textcircled{C}}$  RTE 15
- STA 1688+50 TO STA 1689+25 LOL4 = STA 1688+67.80 TO STA 1689+41  $\text{\textcircled{C}}$  RTE 15
- STA 1689+75 TO STA 1691+75 LOL4 = STA 1689+91 TO STA 1691+91  $\text{\textcircled{C}}$  RTE 15
- STA 1692+25 TO STA 1721+75 LOL4 = STA 1692+37.53 TO STA 1721+91.27  $\text{\textcircled{C}}$  RTE 15
- STA 1724+75 TO STA 1726+75 LOL4 = STA 1724+91.27 TO STA 1726+91.27  $\text{\textcircled{C}}$  RTE 15
- STA 1727+75 TO STA 1732+75 LOL4 = STA 1727+91.27 TO STA 1732+91.27  $\text{\textcircled{C}}$  RTE 15
- STA 1733+75 TO STA 1734+25 LOL4 = STA 1733+91.27 TO STA 1734+41.27  $\text{\textcircled{C}}$  RTE 15
- STA 1734+75 TO STA 1735+50 LOL4 = STA 1734+91.27 TO STA 1735+66.27  $\text{\textcircled{C}}$  RTE 15
- STA 1739+00 TO STA 1743+75 LOL4 = STA 1739+16.27 TO STA 1743+91.27  $\text{\textcircled{C}}$  RTE 15
- STA 1744+75 TO STA 1747+25 LOL4 = STA 1744+91.27 TO STA 1747+41.27  $\text{\textcircled{C}}$  RTE 15
- STA 1748+25 TO STA 1811+50 LOL4 = STA 1748+41.27 TO STA 1811+44.19  $\text{\textcircled{C}}$  RTE 15

**TYPICAL CROSS SECTIONS**  
NO SCALE  
**X-5**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
DESIGN  
Caltrans

(\*\*) SEE NOTE 9

USERNAME => frmguyue  
DGN FILE => 80k150ca005.dgn



UNIT 2237

PROJECT NUMBER & PHASE

0800003331

DATE PLOTTED => 17-MAY-2011  
TIME PLOTTED => 07:19

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	7	42

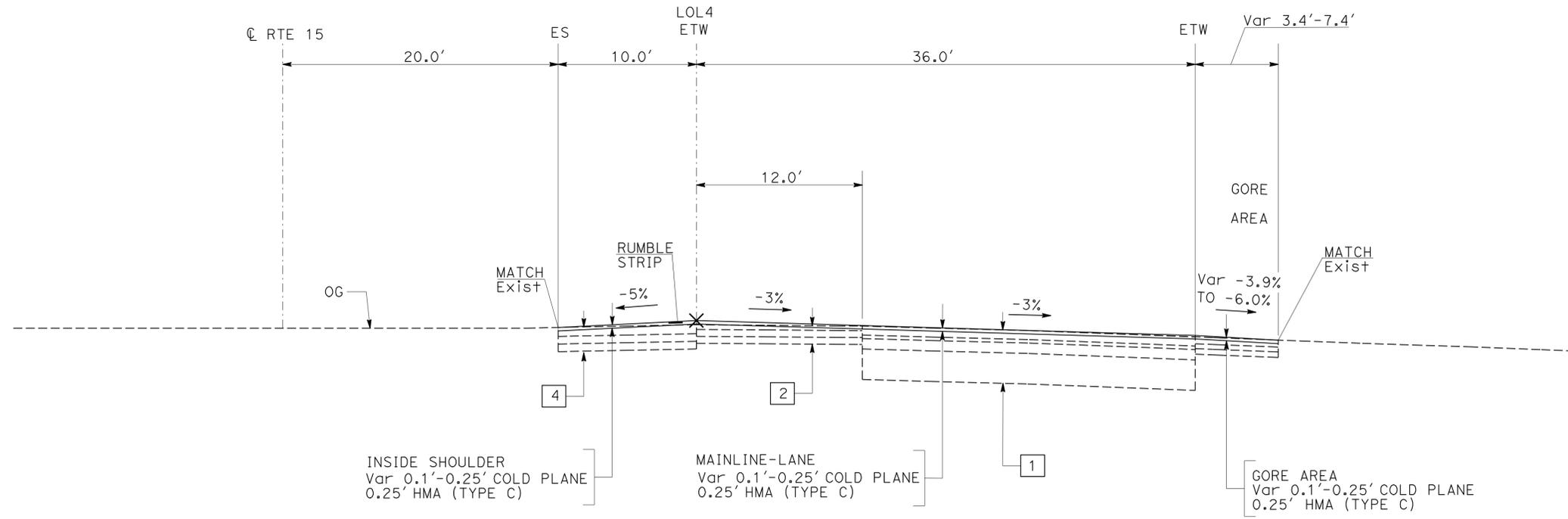
  

REGISTERED CIVIL ENGINEER	DATE
5-16-11	1-31-11
PLANS APPROVAL DATE	

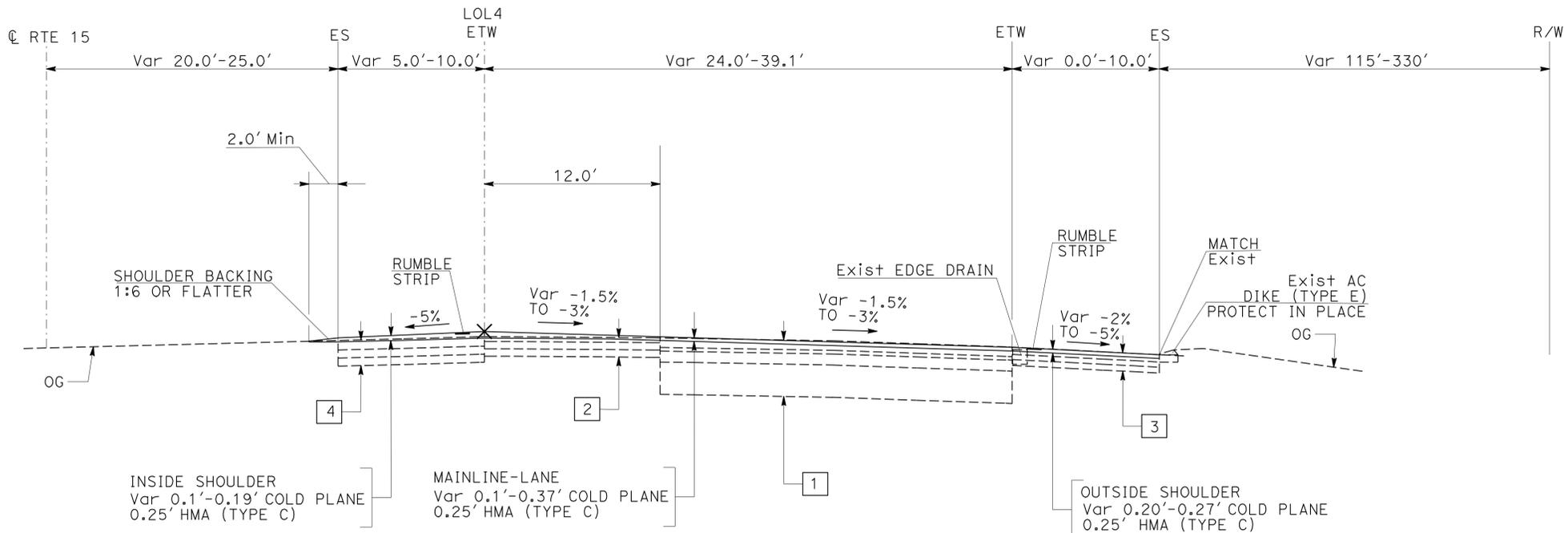
  

REGISTERED PROFESSIONAL ENGINEER	DAI HOANG
No. C64203	
Exp. 6-30-11	
CIVIL	

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**ROUTE 15 NORTHBOUND**  
 STA 1737+50 TO STA 1739+00 LOL4 = STA 1737+66.27 TO STA 1739+16.27 @ RTE 15



**ROUTE 15 NORTHBOUND**  
 STA 1721+75 TO STA 1722+75 LOL4 = STA 1721+91.27 TO STA 1722+91.27 @ RTE 15  
 STA 1816+69.20 TO STA 1827+55.81 LOL4 = STA 1816+63.39 TO STA 1827+50 @ RTE 15

**TYPICAL CROSS SECTIONS**  
 NO SCALE  
**X-6**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
 CALCULATED/DESIGNED BY: [blank]  
 CHECKED BY: [blank]  
 DAI HOANG  
 HANNAH NGUYEN  
 REVISED BY: [blank]  
 DATE REVISED: [blank]

LAST REVISION DATE PLOTTED => 17-MAY-2011  
 01-31-11 TIME PLOTTED => 07:19

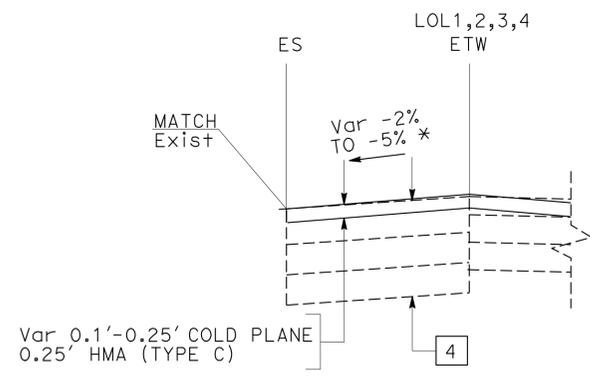
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	8	42

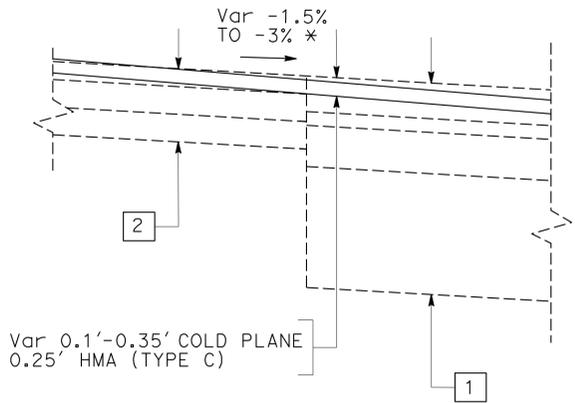
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5-16-11	1-31-11
PLANS APPROVAL DATE	

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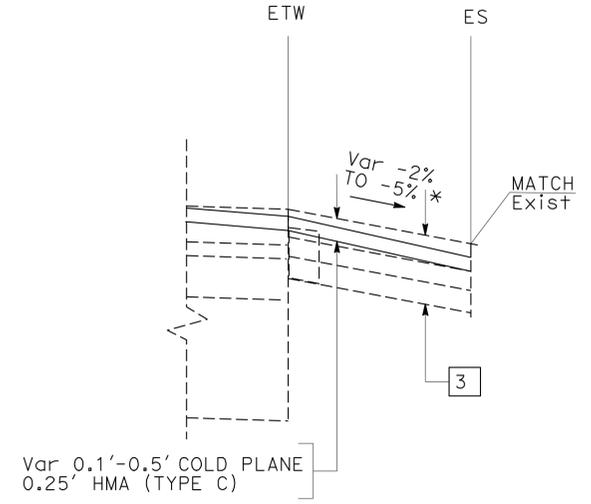


**INSIDE SHOULDER**

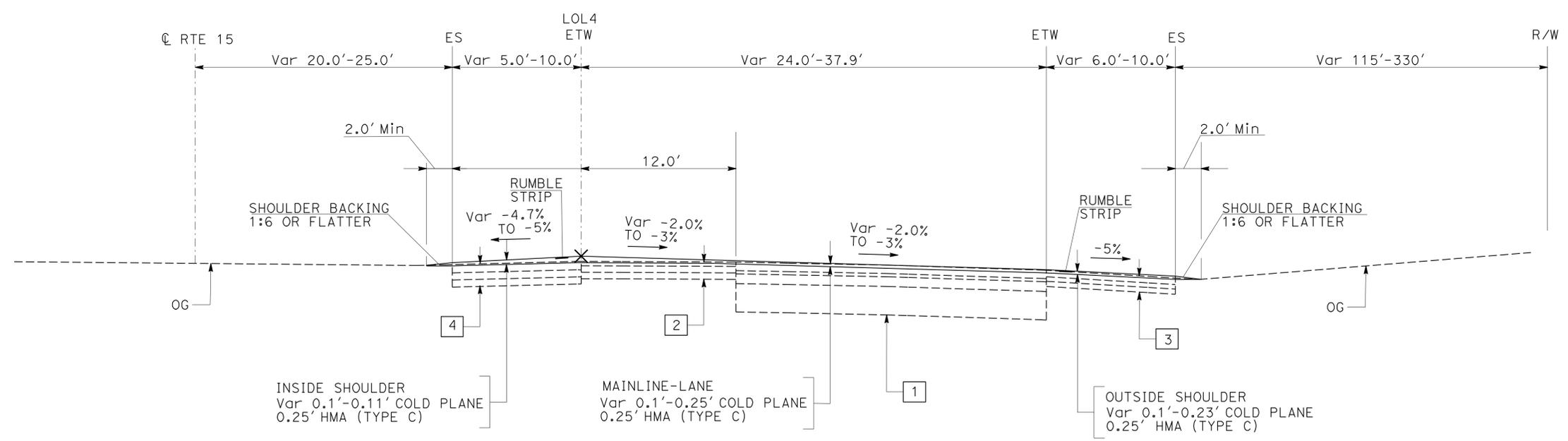


**MAIN LINE**

\* EXCEPT IN SUPERELEVATION



**OUTSIDE SHOULDER**



**ROUTE 15 NORTHBOUND**

STA 1743+75 TO STA 1744+75 LOL4 = STA 1743+91.27 TO STA 1744+91.27 @ RTE 15  
 STA 1747+25 TO STA 1748+25 LOL4 = STA 1747+41.27 TO STA 1748+41.27 @ RTE 15  
 STA 1811+50 TO STA 1816+69.20 LOL4 = STA 1811+44.19 TO STA 1816+63.39 @ RTE 15

**TYPICAL CROSS SECTIONS**  
 NO SCALE  
**X-7**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN

REVISOR BY  
 DATE

DAI HOANG  
 HANNAH NGUYEN

CALCULATED/DESIGNED BY  
 CHECKED BY

FUNCTIONAL SUPERVISOR  
 SERGIO E. AVILA

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	9	42

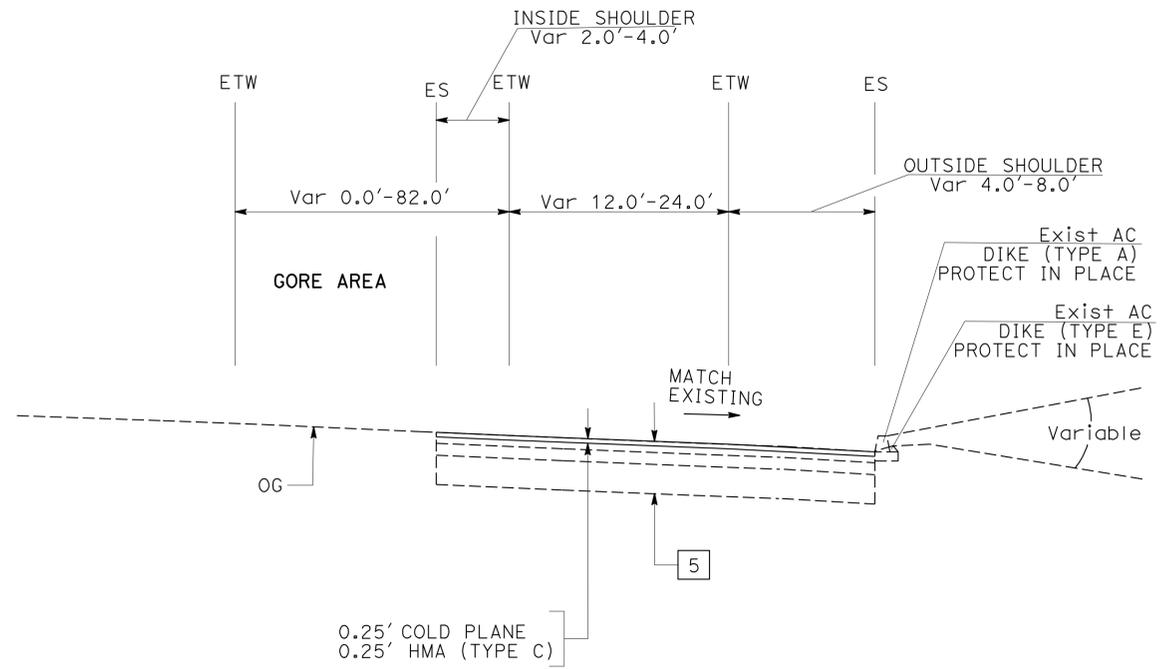
  

<i>[Signature]</i>	1-31-11
REGISTERED CIVIL ENGINEER	DATE
5-16-11	
PLANS APPROVAL DATE	

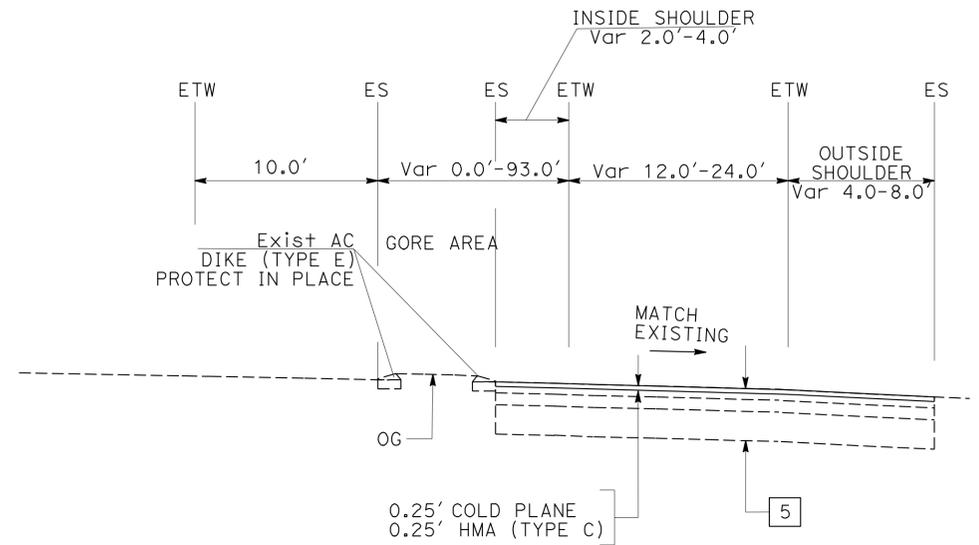
  

REGISTERED PROFESSIONAL ENGINEER	No. C64203
DAI HOANG	
Exp. 6-30-11	
CIVIL	

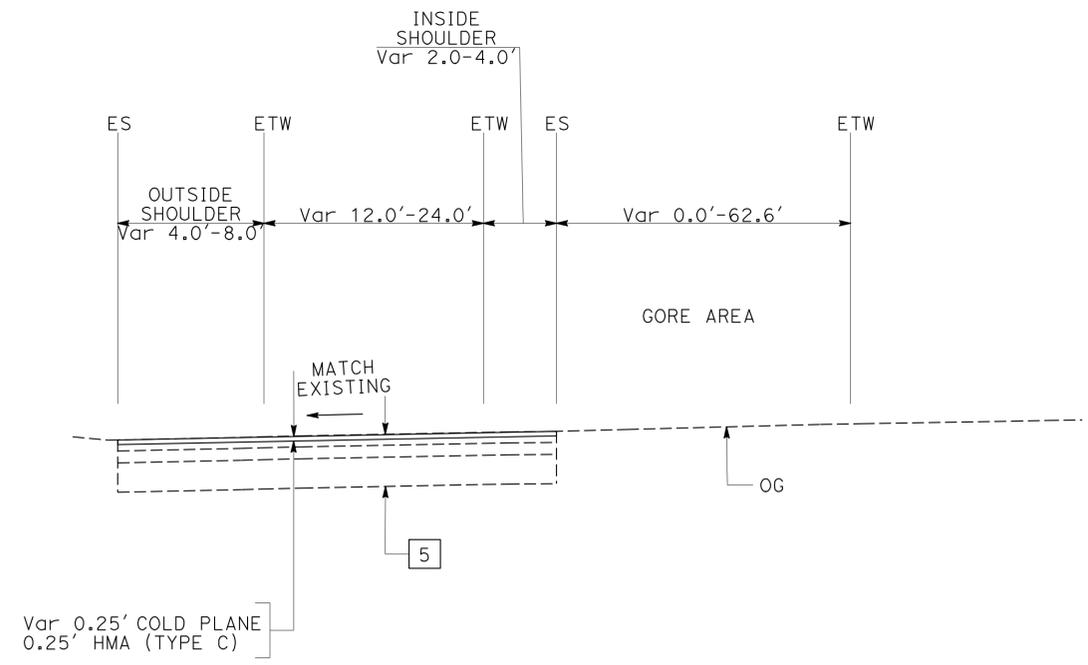
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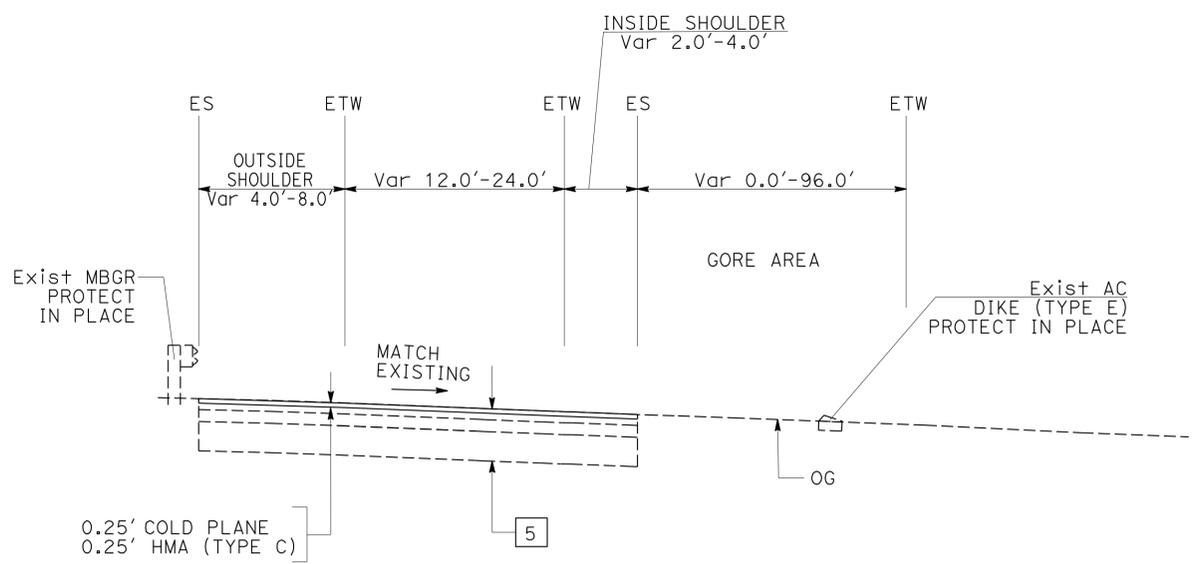
**(\*) NB EXIT RAMP "L STREET"**



**(\*) NB ENTRANCE RAMP "L STREET"**



**(\*) SB EXIT RAMP "L STREET"**



**(\*) SB ENTRANCE RAMP "L STREET"**

(\*) SEE NOTE 8

**TYPICAL CROSS SECTIONS**  
NO SCALE  
**X-8**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
 CALCULATED/DESIGNED BY: HANNAH NGUYEN  
 CHECKED BY: DAI HOANG  
 REVISED BY: DATE REVISION  
 x  
 x  
 x  
 x  
 x

LAST REVISION: DATE PLOTTED => 17-MAY-2011  
 TIME PLOTTED => 07:19

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	10	42

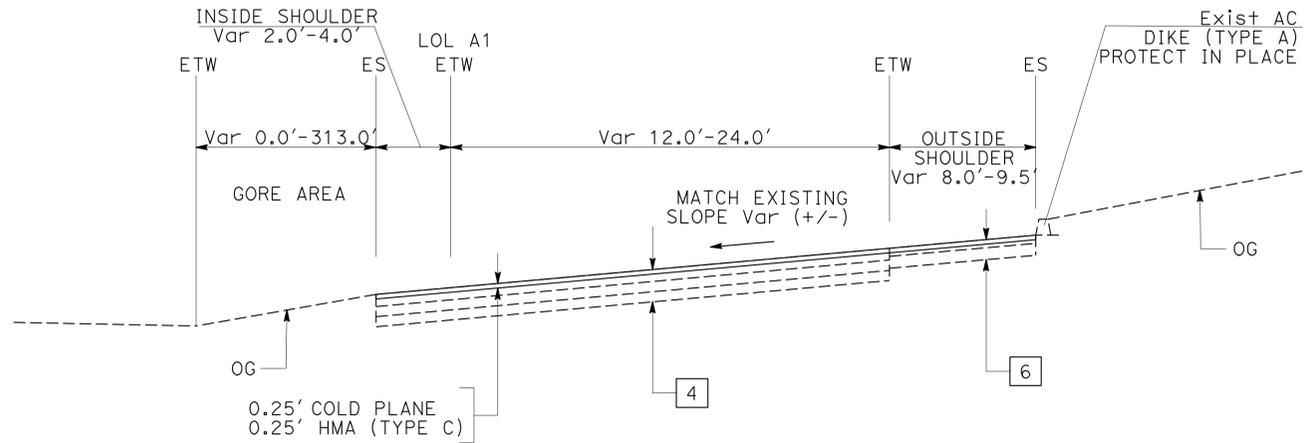
  

<i>[Signature]</i>	1-31-11
REGISTERED CIVIL ENGINEER	DATE
5-16-11	
PLANS APPROVAL DATE	

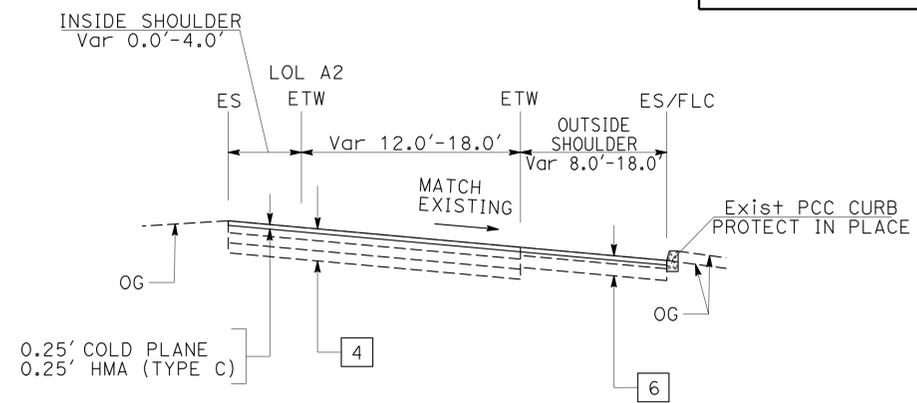
  

REGISTERED PROFESSIONAL ENGINEER
<b>DAI HOANG</b>
No. C64203
Exp. 6-30-11
CIVIL

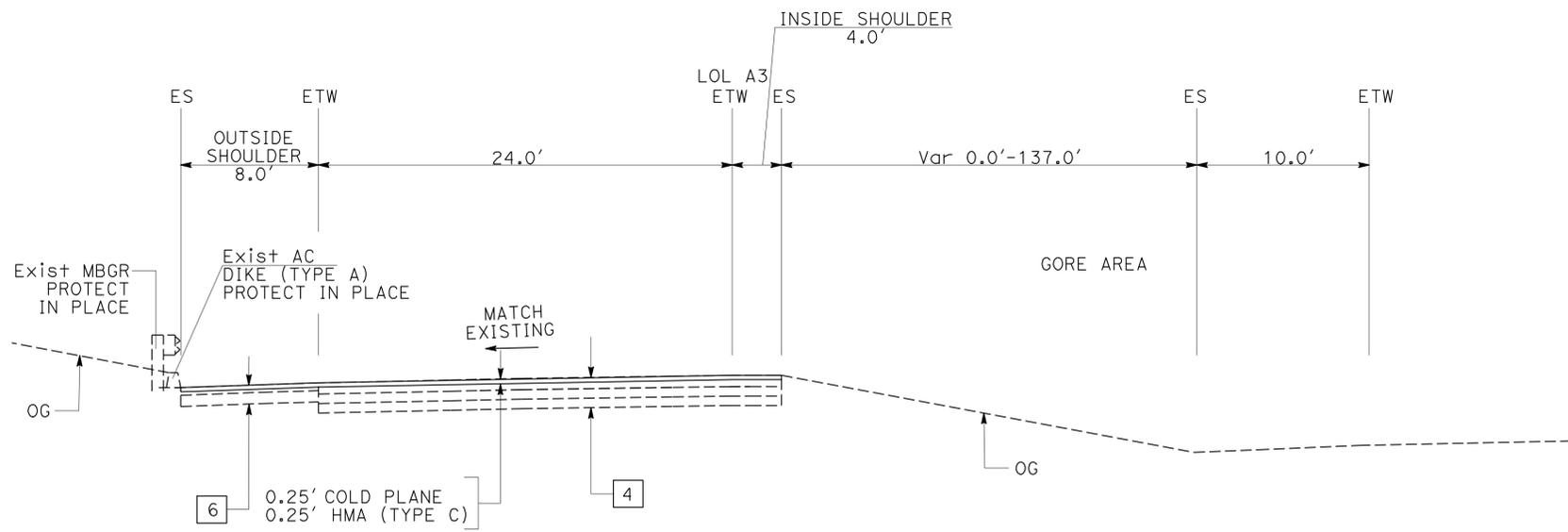
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



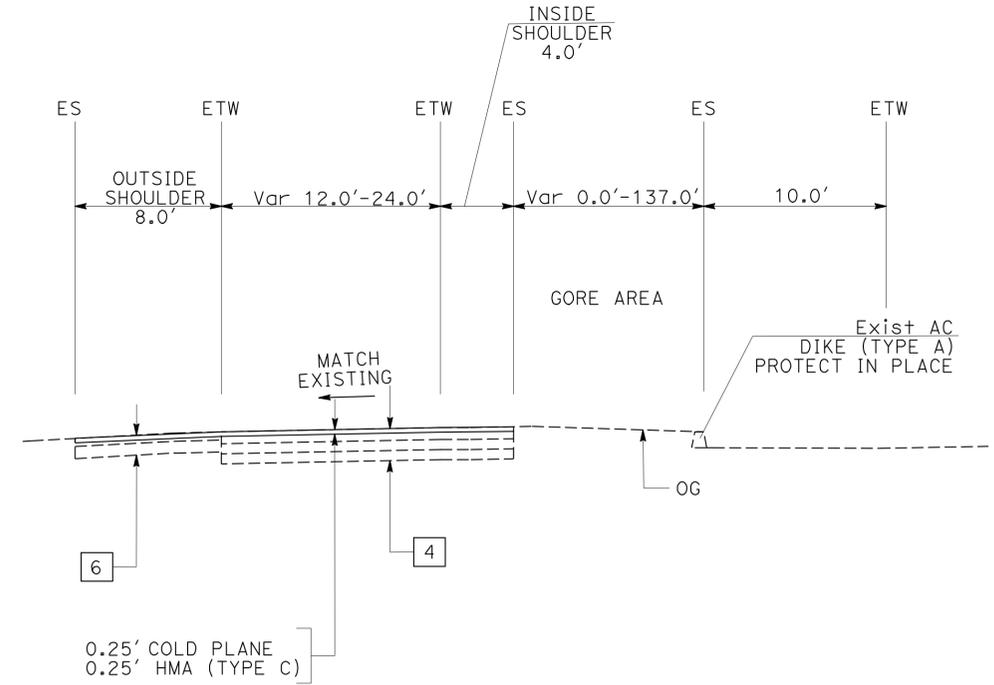
**NB EXIT RAMP "BARSTOW ROAD"**  
STA 1737+40 TO STA 1751+65.94 LOL A1



**NB ENTRANCE RAMP "BARSTOW ROAD"**  
STA 1752+91 TO STA 1764+58.64 LOL A2



**SB EXIT RAMP "BARSTOW ROAD"**  
STA 1755+60 TO STA 1763+81.21 LOL A3



**(\*) SB ENTRANCE RAMP "BARSTOW ROAD"**

(\* SEE NOTE 8

**TYPICAL CROSS SECTIONS**  
NO SCALE  
**X-9**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
DESIGN  
FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
REVISOR: DAI HOANG  
CHECKER: HANNAH NGUYEN

USERNAME => trmnguye  
DGN FILE => 80k150ca009.dgn

RELATIVE BORDER SCALE IS IN INCHES  
0 1 2 3

UNIT 2237

PROJECT NUMBER & PHASE

0800003331

LAST REVISION: DATE PLOTTED => 17-MAY-2011  
TIME PLOTTED => 07:19

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	11	42

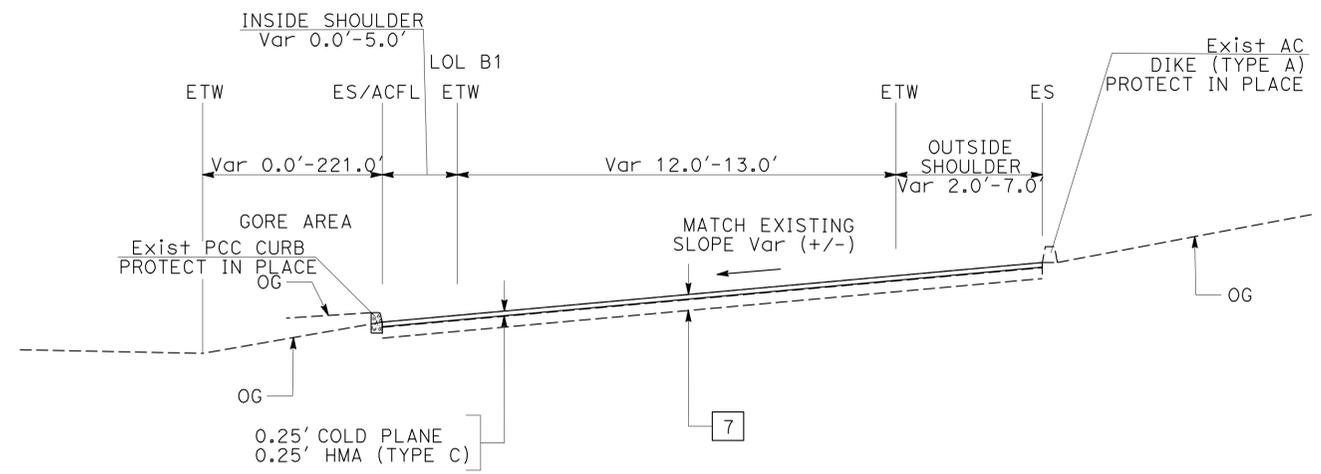
  

REGISTERED CIVIL ENGINEER	DATE
5-16-11	1-31-11
PLANS APPROVAL DATE	

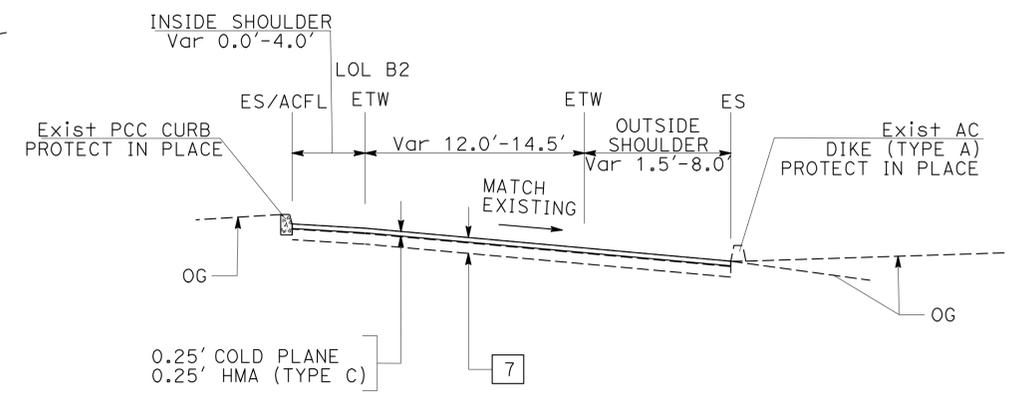
  

REGISTERED PROFESSIONAL ENGINEER
DAI HOANG
No. C64203
Exp. 6-30-11
CIVIL

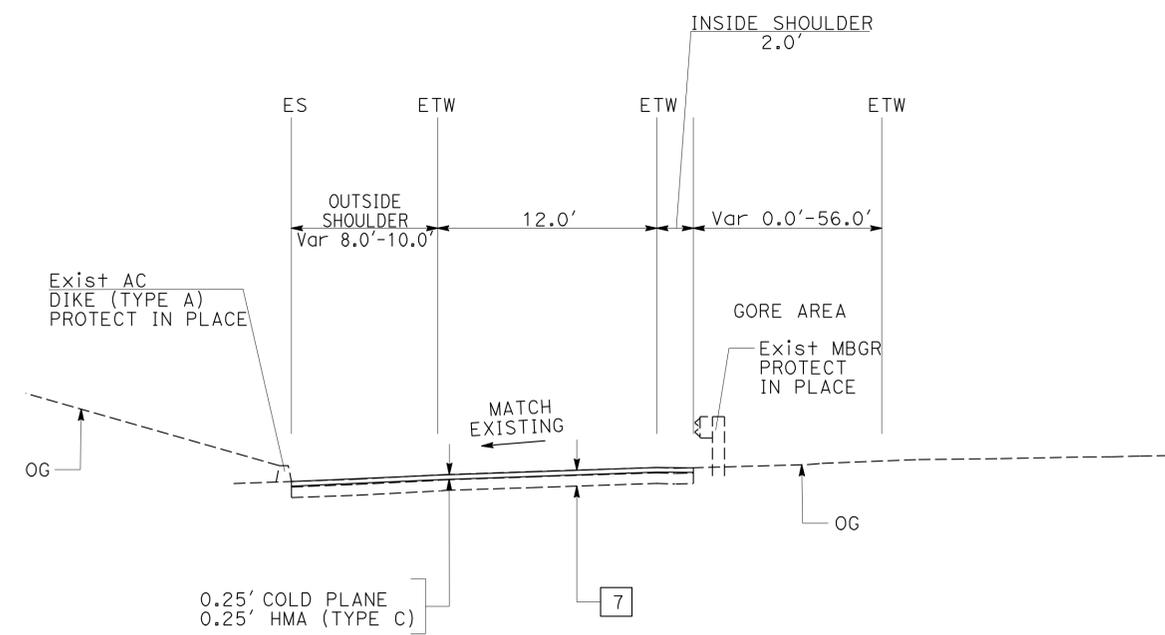
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



**NB EXIT RAMP "E. MAIN STREET"**  
STA 1816+64 TO STA 1825+27.21 LOL B1



**NB ENTRANCE RAMP "E. MAIN STREET"**  
STA 1827+57 TO STA 1837+14.76 LOL B2



**(\*) SB ENTRANCE RAMP "E. MAIN STREET"**

(\*) SEE NOTE 8

**TYPICAL CROSS SECTIONS**  
NO SCALE  
**X-10**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
DESIGN  
REVISOR: DAI HOANG, HANNAH NGUYEN  
DATE: 5-16-11

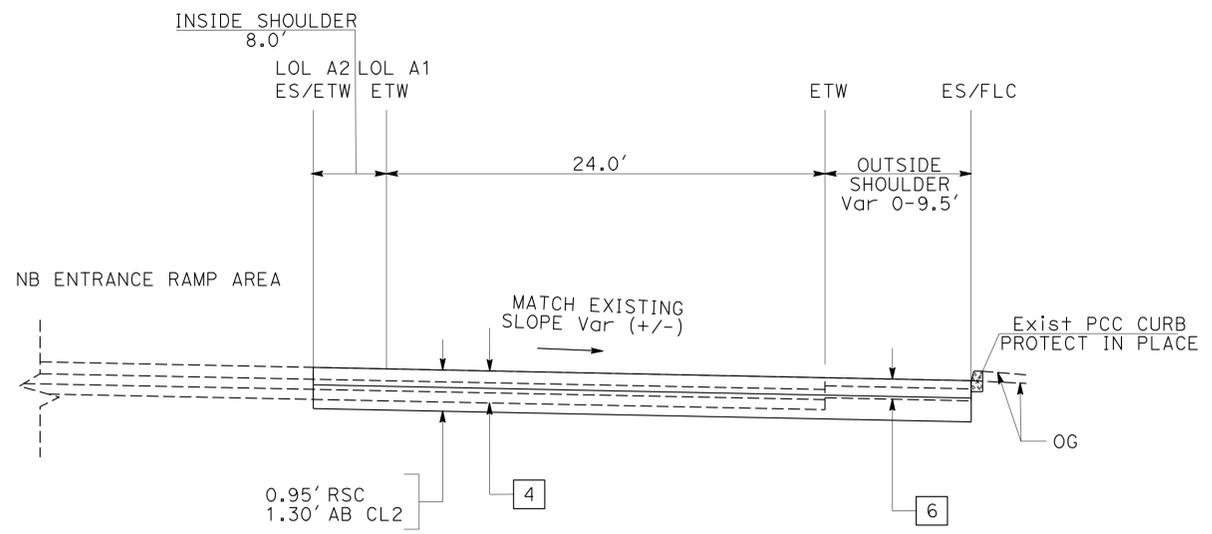
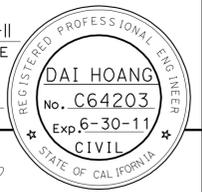
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	12	42

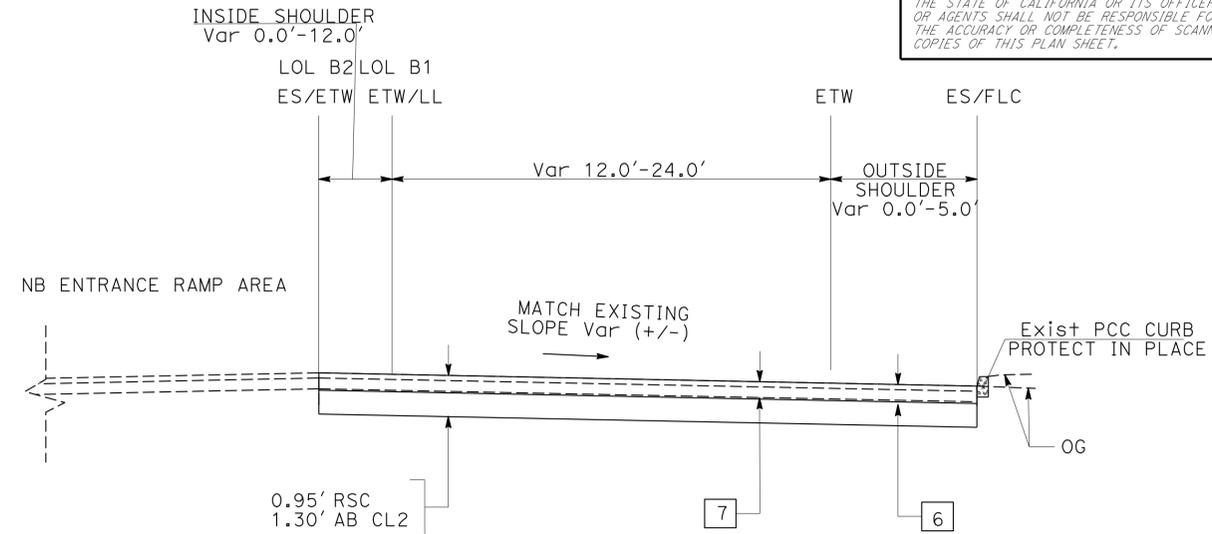
REGISTERED CIVIL ENGINEER	DATE
5-16-11	1-31-11
PLANS APPROVAL DATE	

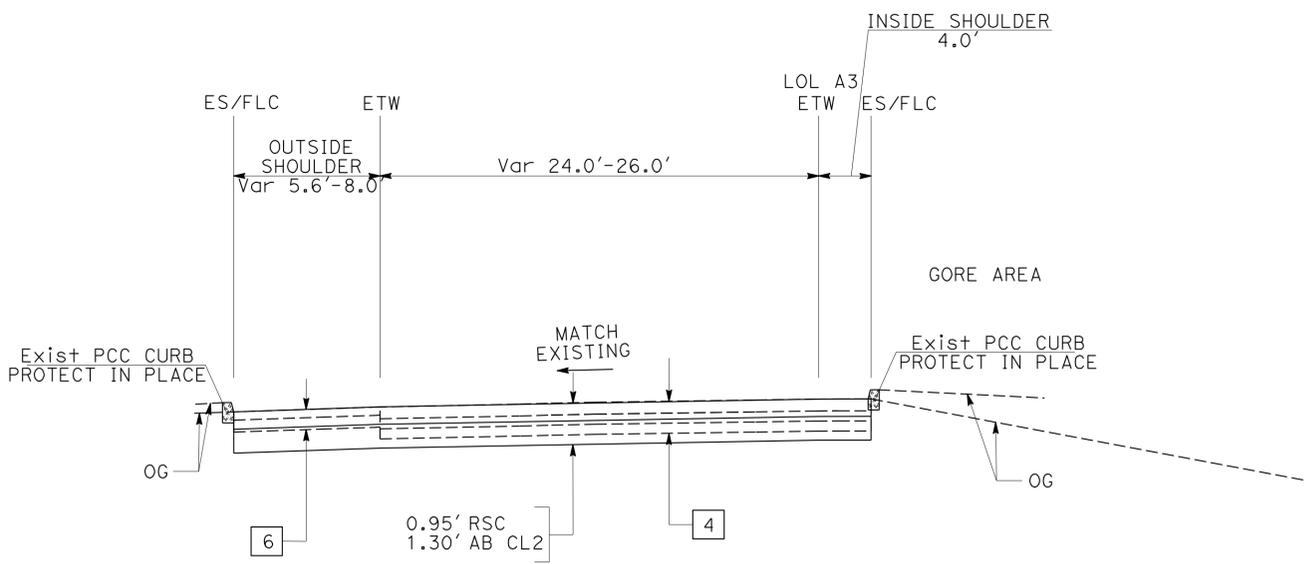
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



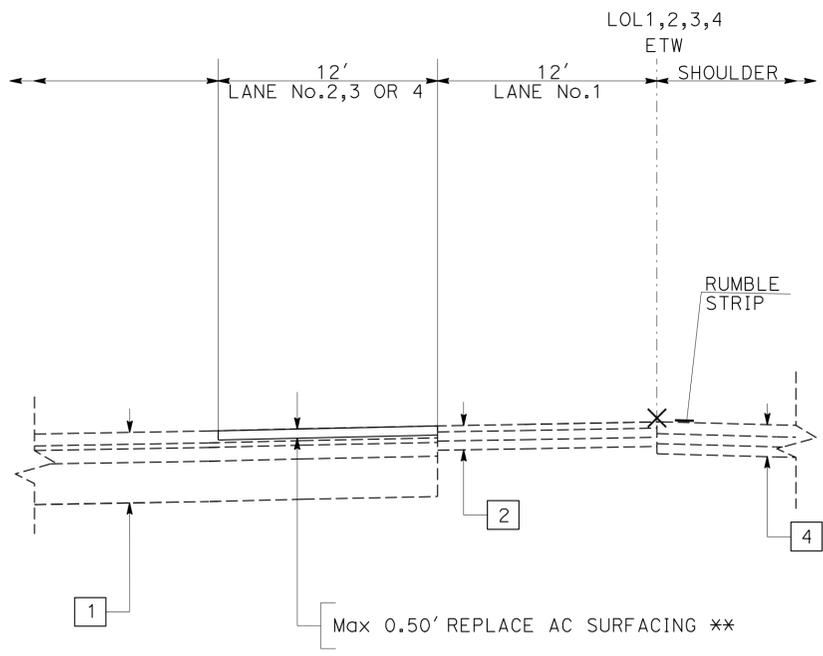
**NB EXIT RAMP "BARSTOW ROAD"**  
**RAMP TERMINI**  
 STA 1751+65.94 TO STA 1753+45.94 LOL A1



**NB EXIT RAMP "E. MAIN STREET"**  
**RAMP TERMINI**  
 STA 1825+27.21 TO STA 1828+07.21 LOL B1



**SB EXIT RAMP "BARSTOW ROAD"**  
**RAMP TERMINI**  
 STA 1754+01 TO STA 1755+60 LOL A3



**SEE Q SHEET FOR LOCATIONS**  
 REPLACE HMA SURFACING (DIGOUTS) DETAILS  
 \*\* EXACT DEPTH TO BE DETERMINED BY THE ENGINEER

**TYPICAL CROSS SECTIONS**  
 NO SCALE  
**X-11**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN

FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
 CALCULATED/DESIGNED BY: [blank]  
 CHECKED BY: [blank]

REVISOR: DAI HOANG  
 DATE: [blank]  
 REVISOR: HANNAH NGUYEN  
 DATE: [blank]

LAST REVISION: 01-31-11  
 DATE PLOTTED => 17-MAY-2011  
 TIME PLOTTED => 07:36

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	13	42

REGISTERED CIVIL ENGINEER	DATE
<i>[Signature]</i>	1-31-11
PLANS APPROVAL DATE	
5-16-11	

REGISTERED PROFESSIONAL ENGINEER
<b>DAI HOANG</b>
No. C64203
Exp. 6-30-11
CIVIL

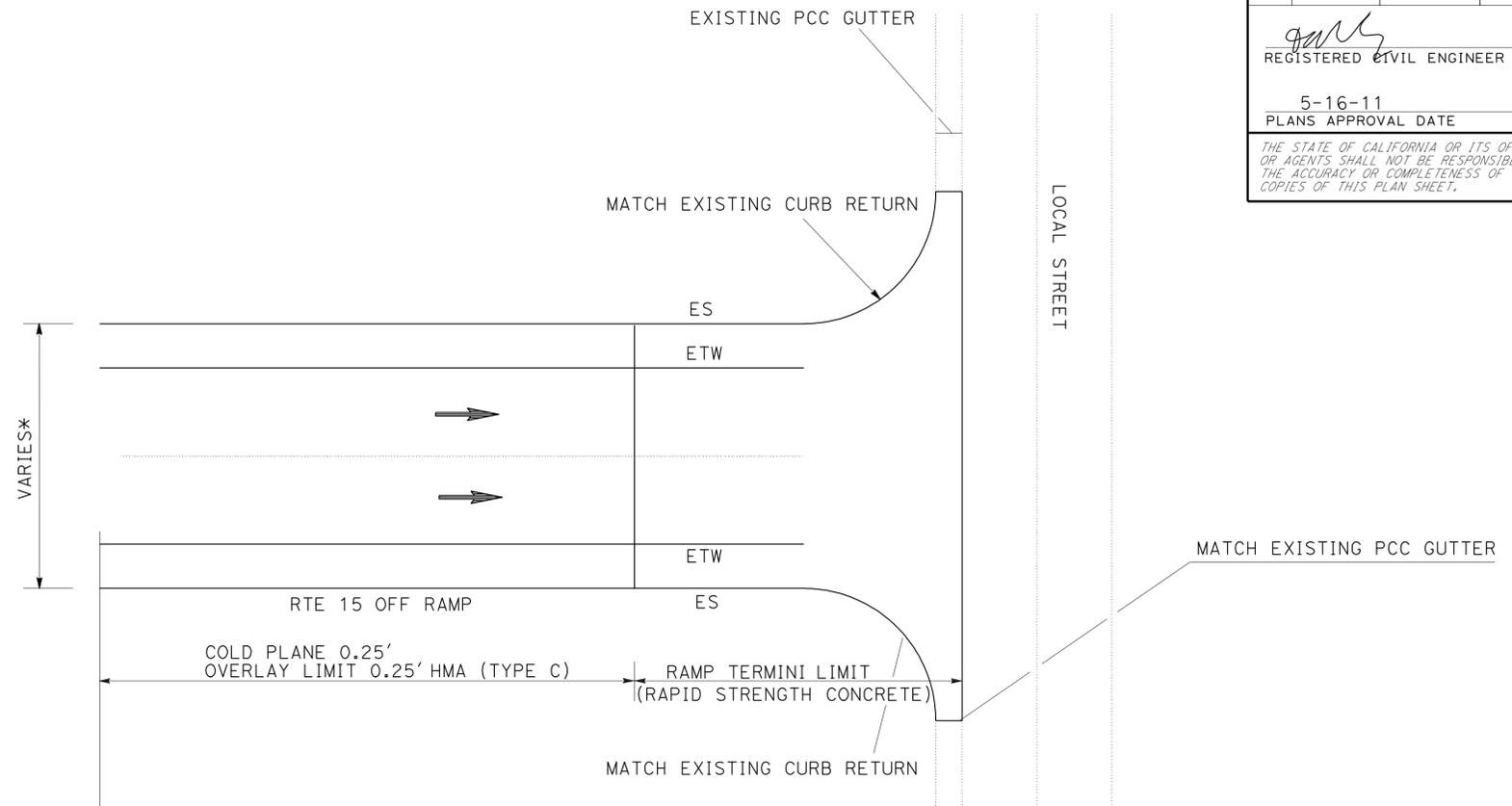
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES:**

1. RAMP TERMINI LIMIT SEE Q-SHEET.
2. FOR LOCATION MBGR QUANTITIES AND TERMINAL SYSTEM TYPES, SEE SHEET Q-1.
3. FOR DETAILS NOT SHOWN, SEE STANDARD PLANS.
4. FOR PCC ANCHOR BLOCK ALTERNATIVES, SEE SHEET Q-1.
5. FOR STEEL AND JOINTS WITHIN THE RAMP TERMINI, SEE CALTRANS STD PLANS P1-P46 FOR DETAILS ON RIGID PAVEMENT CONSTRUCTION, INCLUDING FOR DOWELS, TIE BARS, AND JONTS.

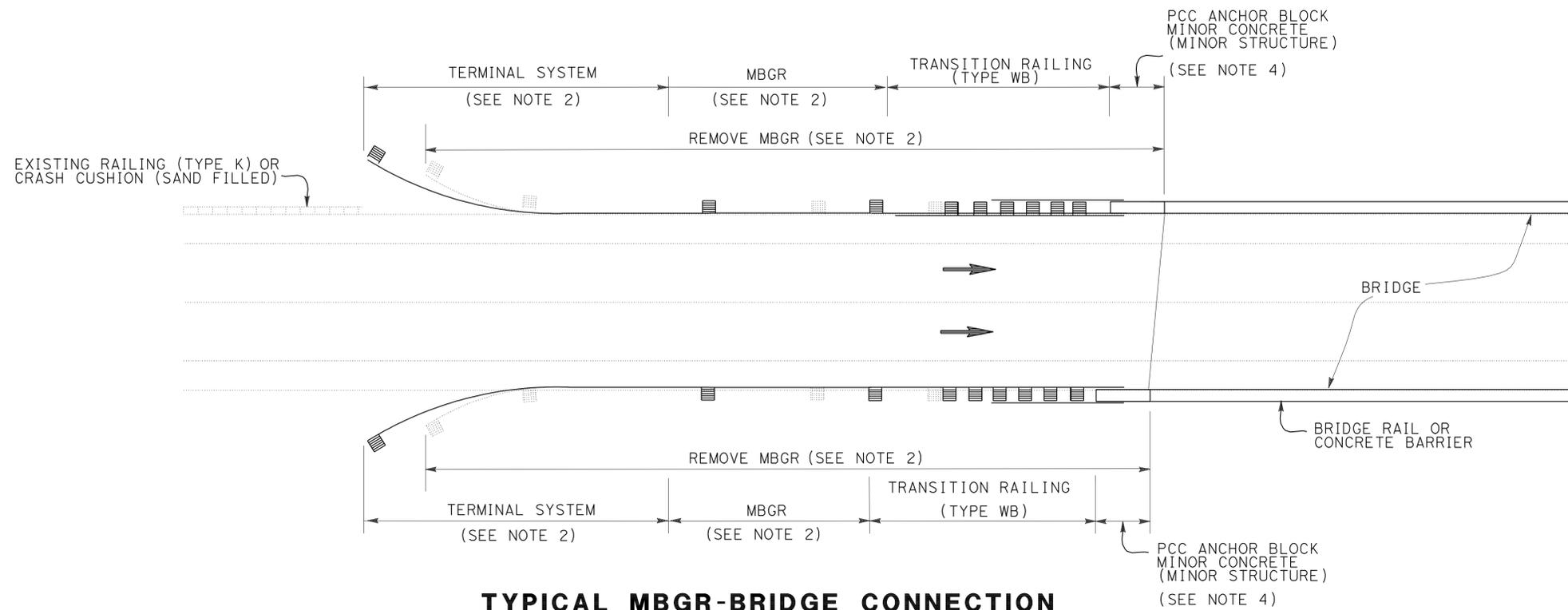
**LEGEND:**

➔ DIRECTION OF TRAFFIC



\* FOR LOCATION, NO. OF LANES, WIDTH & LENGTH OF THE OFF RAMPS SEE Q-SHEET

**RAMP TERMINI DETAIL**



**TYPICAL MBGR-BRIDGE CONNECTION**

**CONSTRUCTION DETAILS**

NO SCALE

**C-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	SERGIO E. AVILA
CALCULATED, DESIGNED BY	CHECKED BY
HANNAH NGUYEN	DAI HOANG
REVISOR BY	DATE REVISED



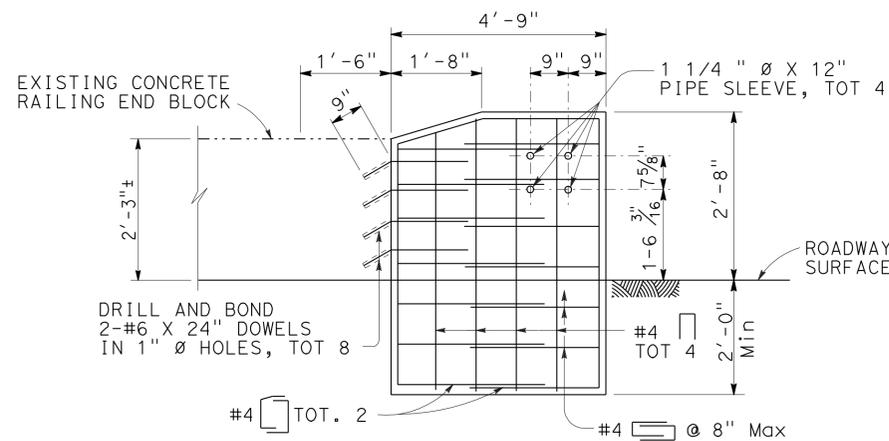
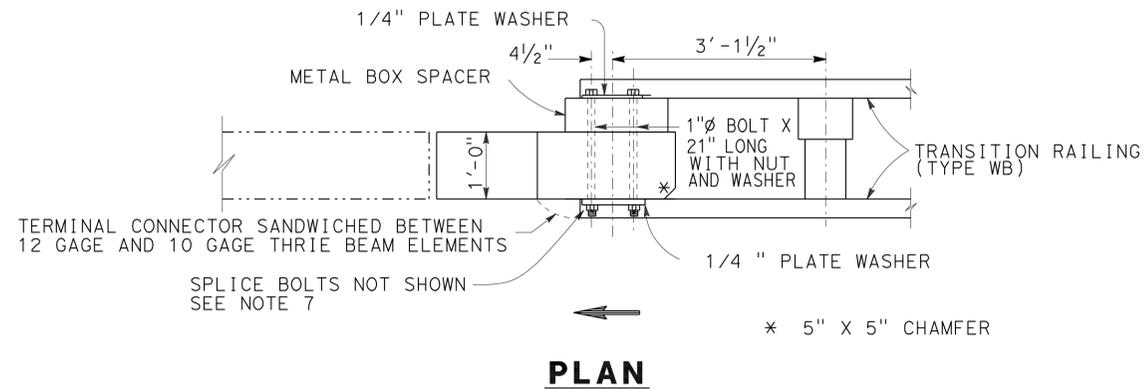
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	14	42
 REGISTERED CIVIL ENGINEER			1-31-11	DATE	
5-16-11			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					
					

**NOTES:**

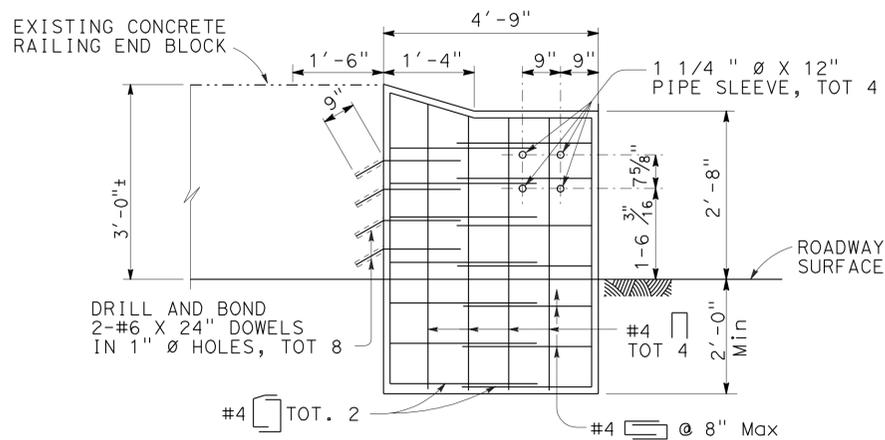
- FOR DETAILS NOT SHOWN, SEE STANDARD PLANS.
- DEPENDENT DIMENSIONS WILL BE VERIFIED IN THE FIELD BEFORE FABRICATING ANY END CONNECTION TO CONFORM WITH EXISTING PAVED CONDITIONS.
- FOR TRANSITION RAILING, SEE STANDARD PLAN A77J4.
- ALL PLATES AND BOLTS ARE GALVANIZED.
- CUT AND REMOVE THAT PORTION OF TYPE 9, AND BAGR AS REQUIRED.
- IF RAIL IS NOT CONTINUOUS OVER 2 POSTS, USE SPLICE AT EXPANSION JOINT.
- EXTERIOR SPLICE BOLT HOLES SHALL BE THE STANDARD 7/8" x 1 1/8" SLOT SIZE FOR RAIL SPLICES AT POST # T4 AND THE CONNECTION TO THE CONCRETE BARRIER OR RAILING. INTERIOR SPLICE BOLT HOLES MAY BE INCREASED UP TO 1 1/8" DIA. WASHERS SHALL BE USED WITH SPLICE BOLTS ON BACK SIDE OF RAIL ELEMENT AT POST # T4 AND CONNECTION TO THE CONCRETE BARRIER OR RAILING.
- TAPER THE TOP OF THE END OF THE CONCRETE BLOCK AT 4:1 TO MATCH THE TOP ELEVATION OF THE THRIE BEAM RAIL ELEMENT.
- MINIMUM CONCRETE COVER SHALL BE 3".

**LEGEND:**

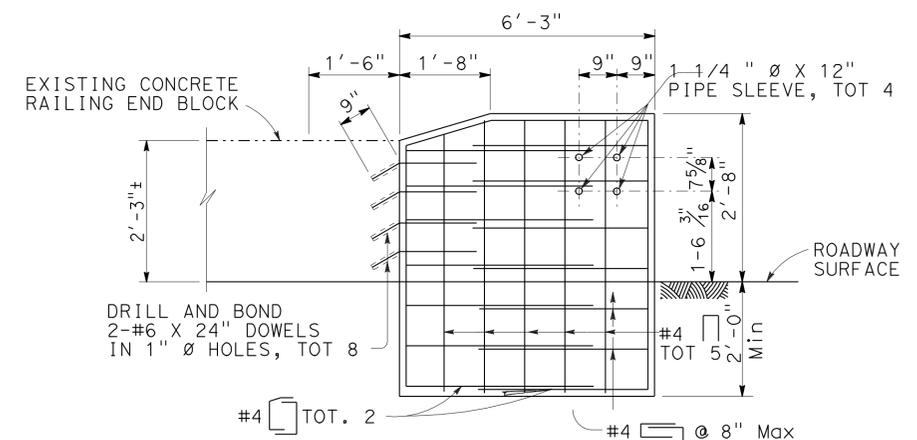
← DIRECTION OF TRAFFIC



**ELEVATION ALTERNATIVE 1**



**ELEVATION ALTERNATIVE 2**



**ELEVATION ALTERNATIVE 3**

**TYPICAL MBGR-BRIDGE CONNECTION**  
MINOR CONCRETE (MINOR STRUCTURE)

**CONSTRUCTION DETAILS**  
NO SCALE  
**C-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 Caltrans®  
 FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
 CALCULATED/DESIGNED BY: HANNAH NGUYEN  
 CHECKED BY: DAI HOANG  
 REVISED BY: HANNAH NGUYEN  
 DATE REVISED: DAI HOANG

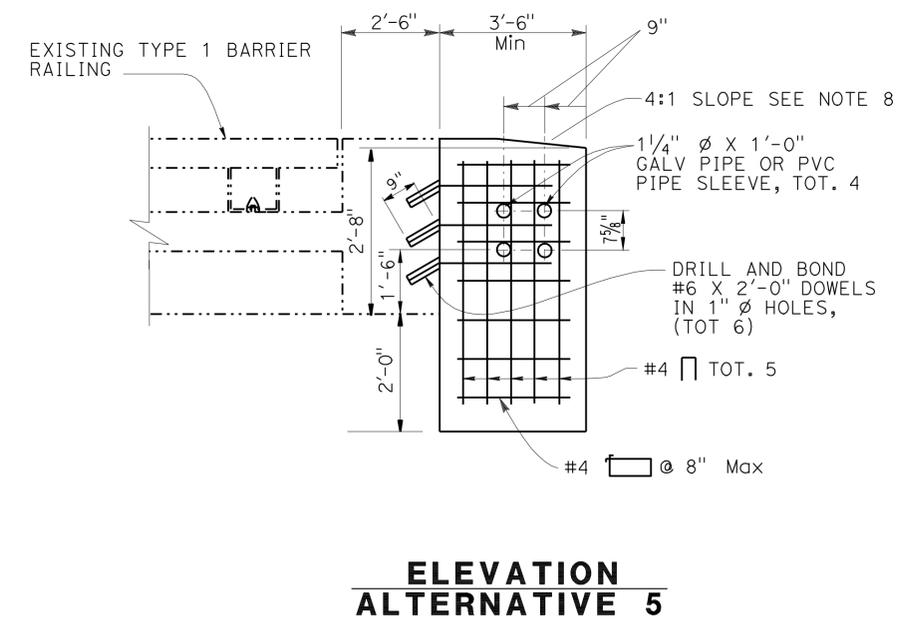
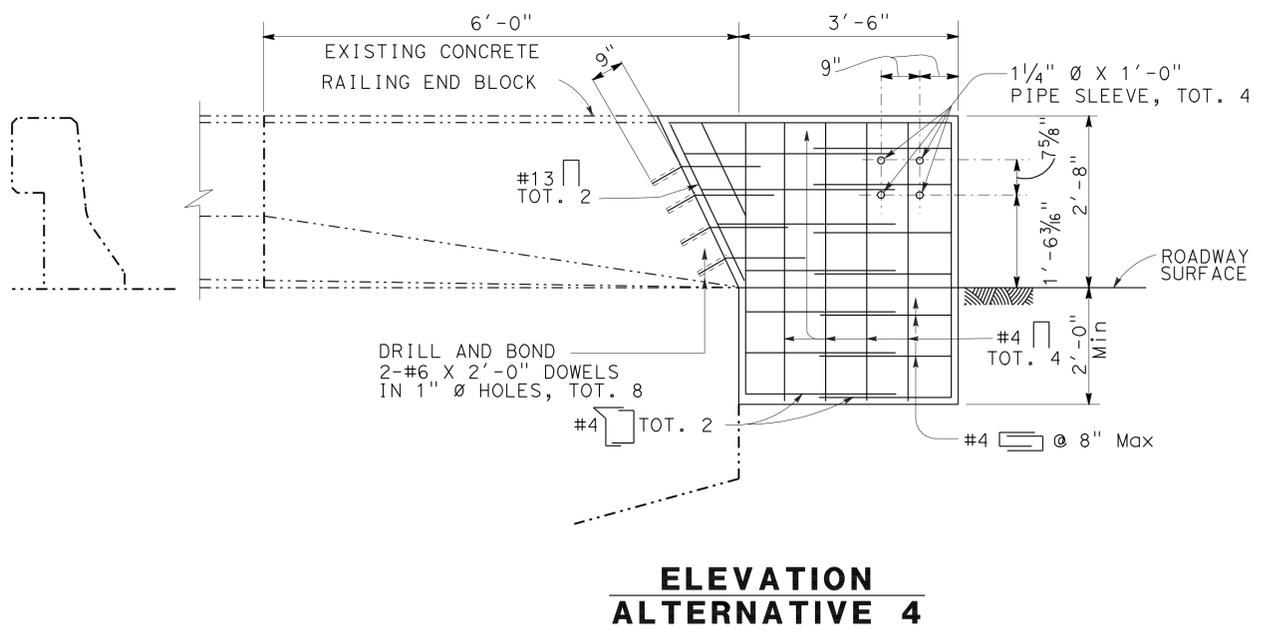
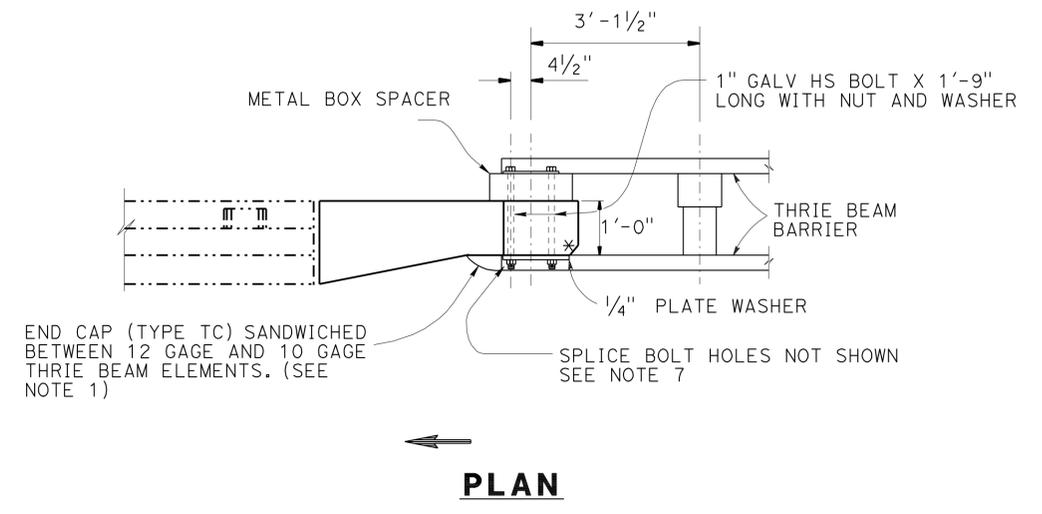
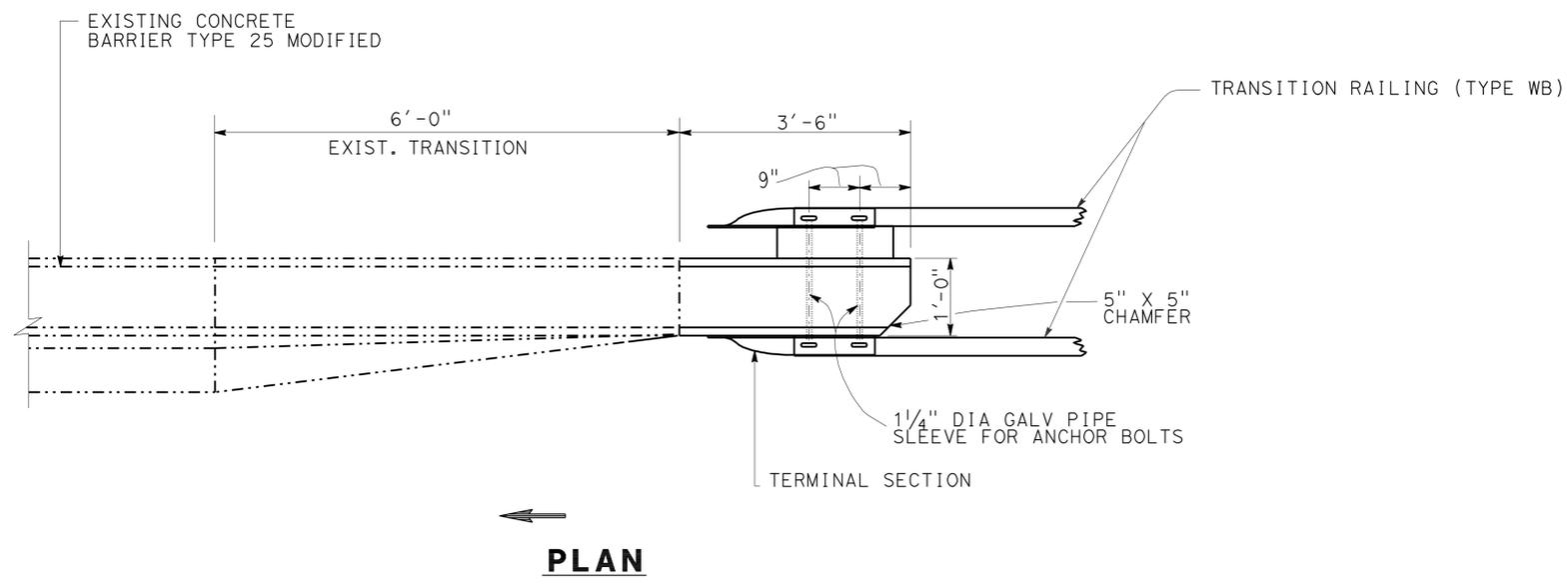
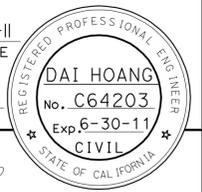
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	15	42

REGISTERED CIVIL ENGINEER	DATE
5-16-11	1-31-11
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.



**TYPICAL MBGR-BRIDGE CONNECTION**  
MINOR CONCRETE (MINOR STRUCTURE)

**CONSTRUCTION DETAILS**  
NO SCALE  
**C-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
DESIGN  
Caltrans

FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
CALCULATED/DESIGNED BY: HANNAH NGUYEN  
CHECKED BY: DAI HOANG  
REVISED BY: HANNAH NGUYEN  
DATE REVISED: DAI HOANG

USERNAME => rrmorlak  
DGN FILE => 80k150ga003.dgn



UNIT 2237

PROJECT NUMBER & PHASE

0800003331

LAST REVISION: 01-31-11  
DATE PLOTTED => 17-MAY-2011  
TIME PLOTTED => 07:36

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	16	42

<i>[Signature]</i>	1-31-11
REGISTERED CIVIL ENGINEER	DATE
5-16-11	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
DAI HOANG
No. C64203
Exp. 6-30-11
CIVIL

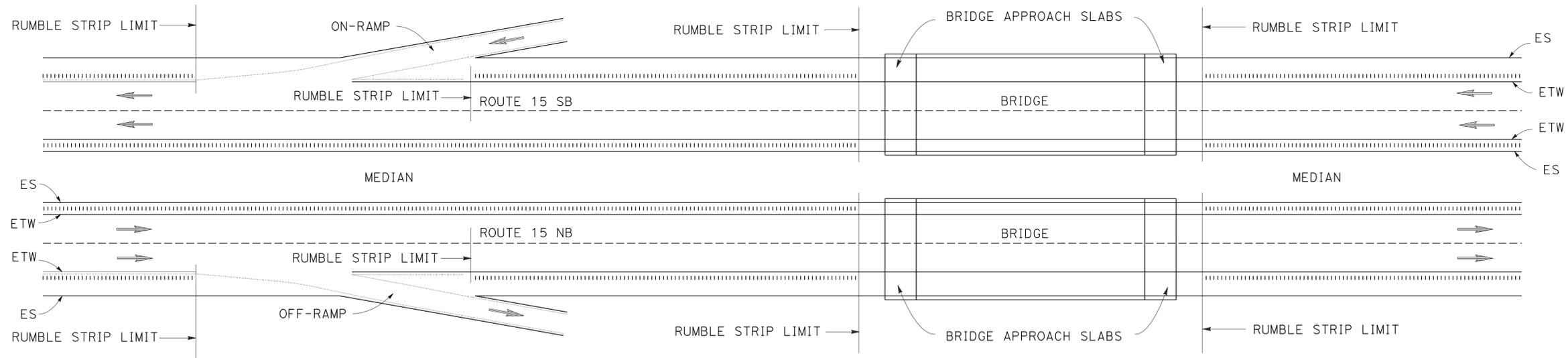
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES:**

1. THE PLACEMENT OF RUMBLE STRIP DETAILS SHOWN IN THIS DRAWING. FOR BRIDGES AND RAMPS SHOW THE RELATIVE LIMITS OF RUMBLE STRIP AND ARE INFORMATIVE ONLY. IT DOES NOT SHOW ANY SPECIFIC SITE PERSPECTIVE.
2. THE EXACT LOCATION OF THE RUMBLE STRIPS WILL BE DETERMINED BY THE ENGINEER.

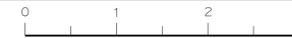
**LEGEND:**

..... RUMBLE STRIP



**RUMBLE STRIP PLACEMENT**  
(AT RAMPS AND BRIDGES)

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
<i>Caltrans</i>	
FUNCTIONAL SUPERVISOR	SERGIO E. AVILA
CALCULATED/DESIGNED BY	CHECKED BY
HANNAH NGUYEN	DAI HOANG
REVISED BY	DATE



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	17	42

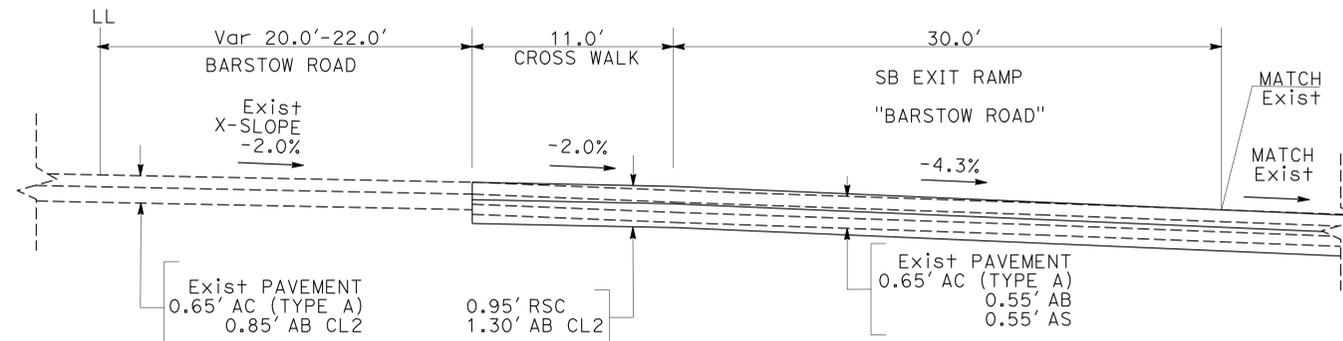
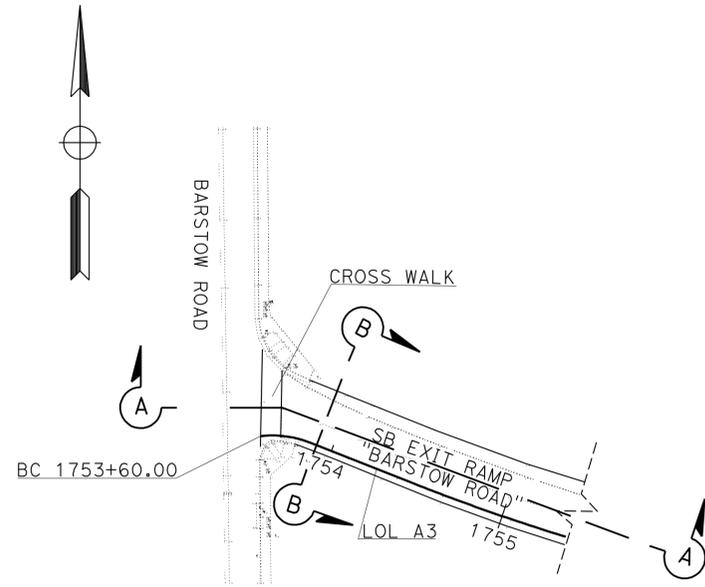
  

REGISTERED CIVIL ENGINEER	DATE
5-16-11	1-31-11
PLANS APPROVAL DATE	

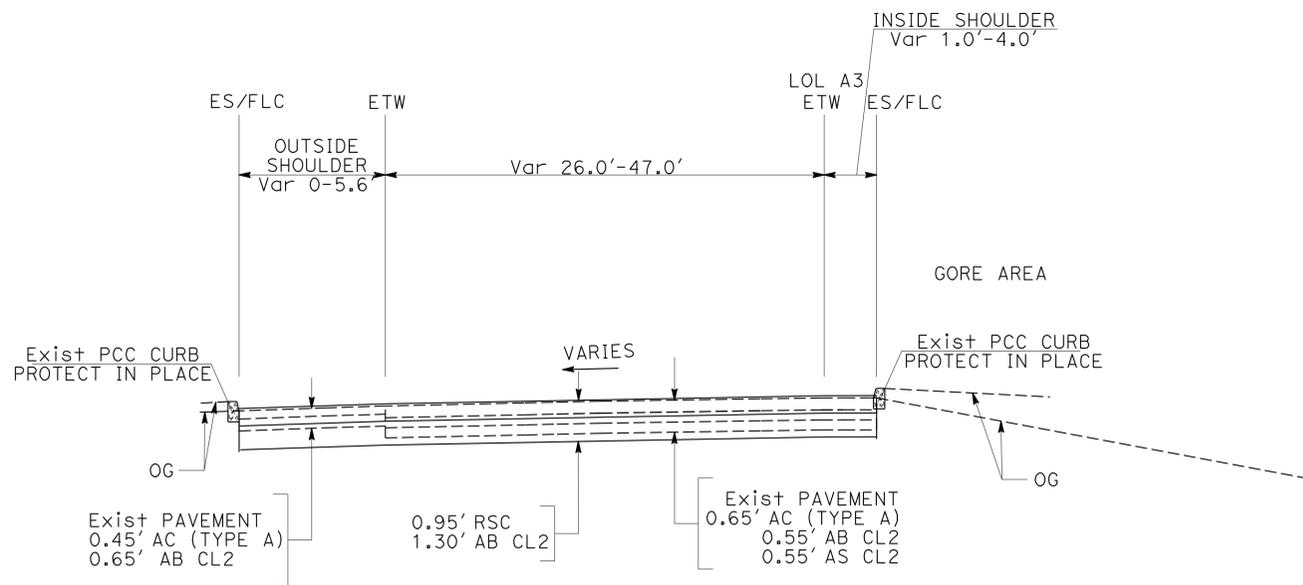
  

REGISTERED PROFESSIONAL ENGINEER
DAI HOANG
No. C64203
Exp. 6-30-11
CIVIL

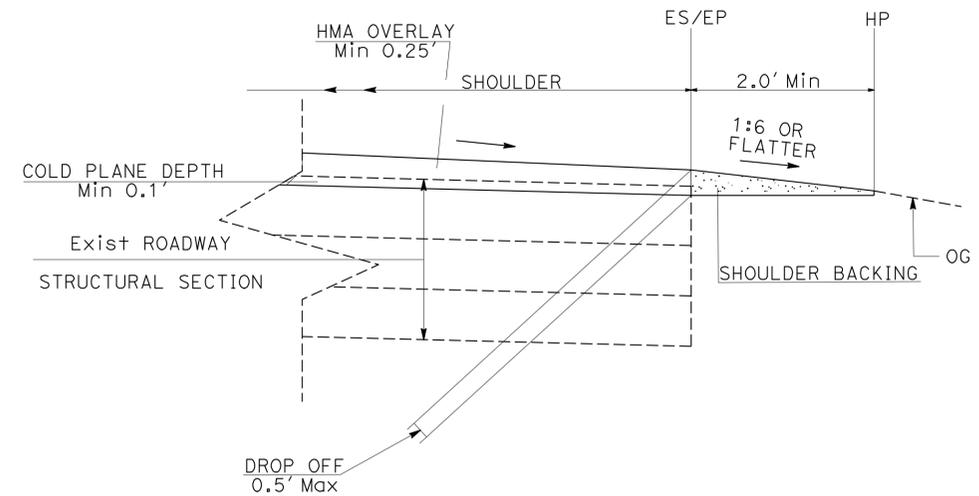
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



**SECTION A-A**  
CROSS WALK X-SLOPE CORRECTION  
SB EXIT RAMP "BARSTOW ROAD"



**SECTION B-B**  
STA 1753+60 TO STA 1754+01 LOL A3  
SB EXIT RAMP "BARSTOW ROAD"  
RAMP TERMINI



**SHOULDER BACKING**  
**TYPICAL APPLICATION**

**CONSTRUCTION DETAILS**  
NO SCALE  
**C-5**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
DESIGN

FUNCTIONAL SUPERVISOR  
SERGIO E. AVILA

REVISOR  
DAI HOANG  
HANNAH NGUYEN

CALCULATED/DESIGNED BY  
CHECKED BY



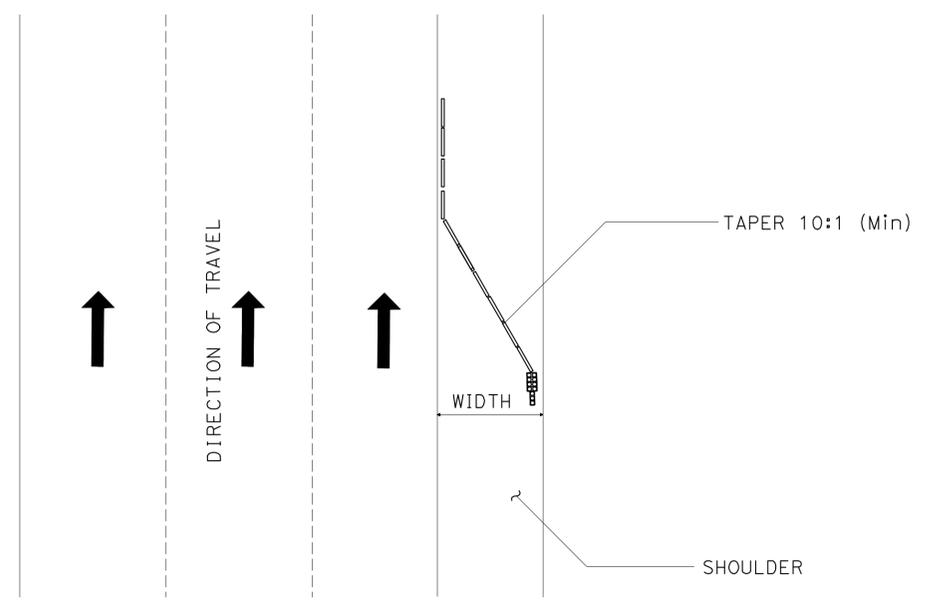
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	19	42

*Sidhartha Chowdhury* 1-31-11  
 REGISTERED CIVIL ENGINEER DATE

5-16-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 S. CHOWDHURY  
 No. 55418  
 Exp. 12-31-12  
 CIVIL  
 STATE OF CALIFORNIA

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



**PLAN**

K-RAIL INSTALLATION DURING MBGR REPLACEMENT (TYPICAL)

**TEMPORARY K-RAIL AND CRASH CUSHION QUANTITIES**

DIRECTION	LOCATION (PM)	TEMP RAILING (TYPE K) (LF)	Temp CRASH CUSHION MODULE
NB	70.8/(RT)	120	1
NB	71.62/(RT)	120	1
NB	72.13/(RT)	120	1
NB	72.13/(LT)	120	1
NB	74.9/(LT)	120	1
SB	71.62/(RT)	120	1
SB	71.62/(LT)	120	1
TOTAL		840	7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** **TRAFFIC DESIGN**  
 FUNCTIONAL SUPERVISOR: LARRY SARTORI  
 CALCULATED/DESIGNED BY: SIDHARTHA CHOWDHURY  
 CHECKED BY: LARRY SARTORI  
 REVISED BY: LARRY SARTORI  
 DATE REVISED:

**TRAFFIC HANDLING PLAN**  
NO SCALE  
**TH-1**

THIS PLAN ACCURATE FOR TRAFFIC HANDLING ONLY



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	21	42

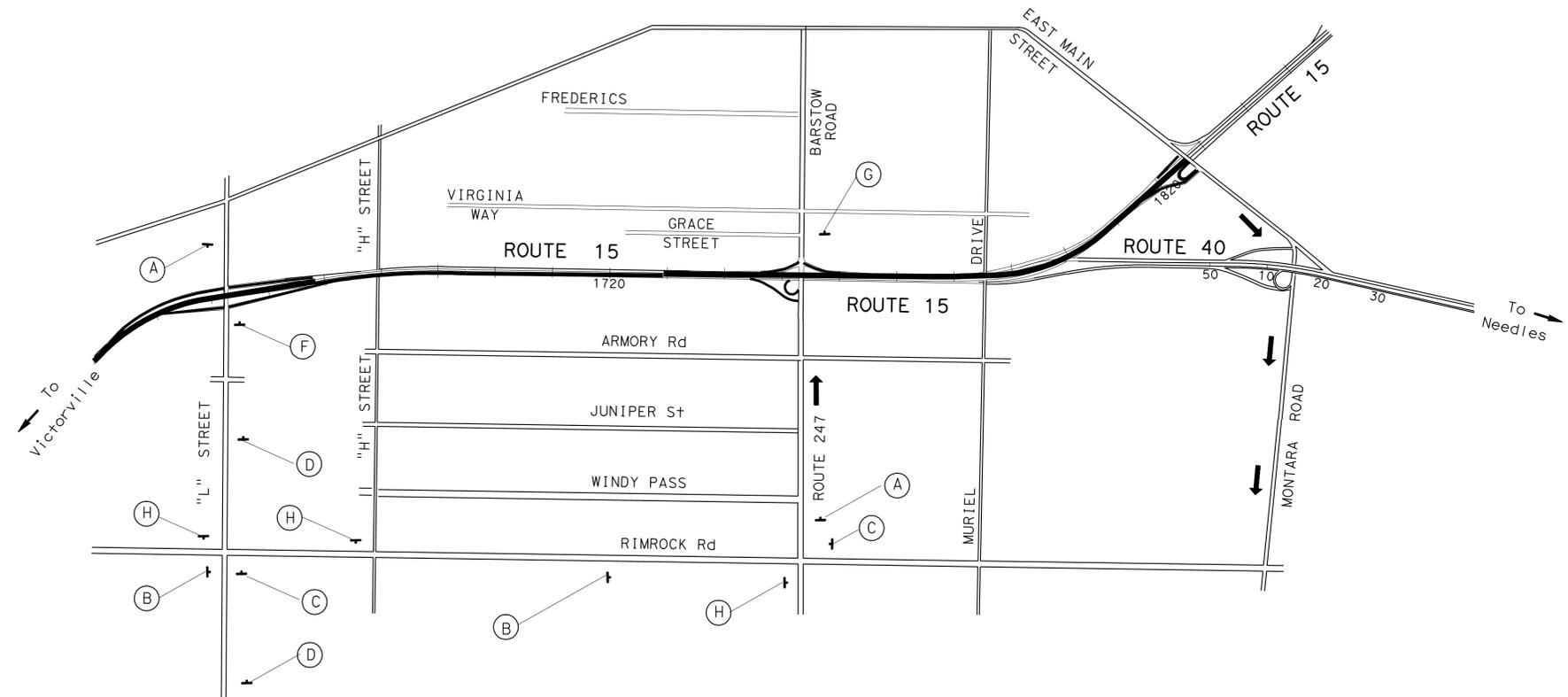
  

<i>Sidhartha Chowdhury</i> REGISTERED CIVIL ENGINEER	1-31-11 DATE
5-16-11 PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER S. CHOWDHURY No. 55418 Exp. 12-31-12 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.



**DETOUR PLAN - CASE 3**  
ENTRANCE RAMP CLOSED AT "L" STREET

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR  
LARRY SARTORI

CALCULATED, DESIGNED BY  
CHECKED BY

SIDHARTHA CHOWDHURY  
LARRY SARTORI

REVISED BY  
DATE REVISED

THIS PLAN ACCURATE FOR DETOUR PLAN ONLY



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	22	42

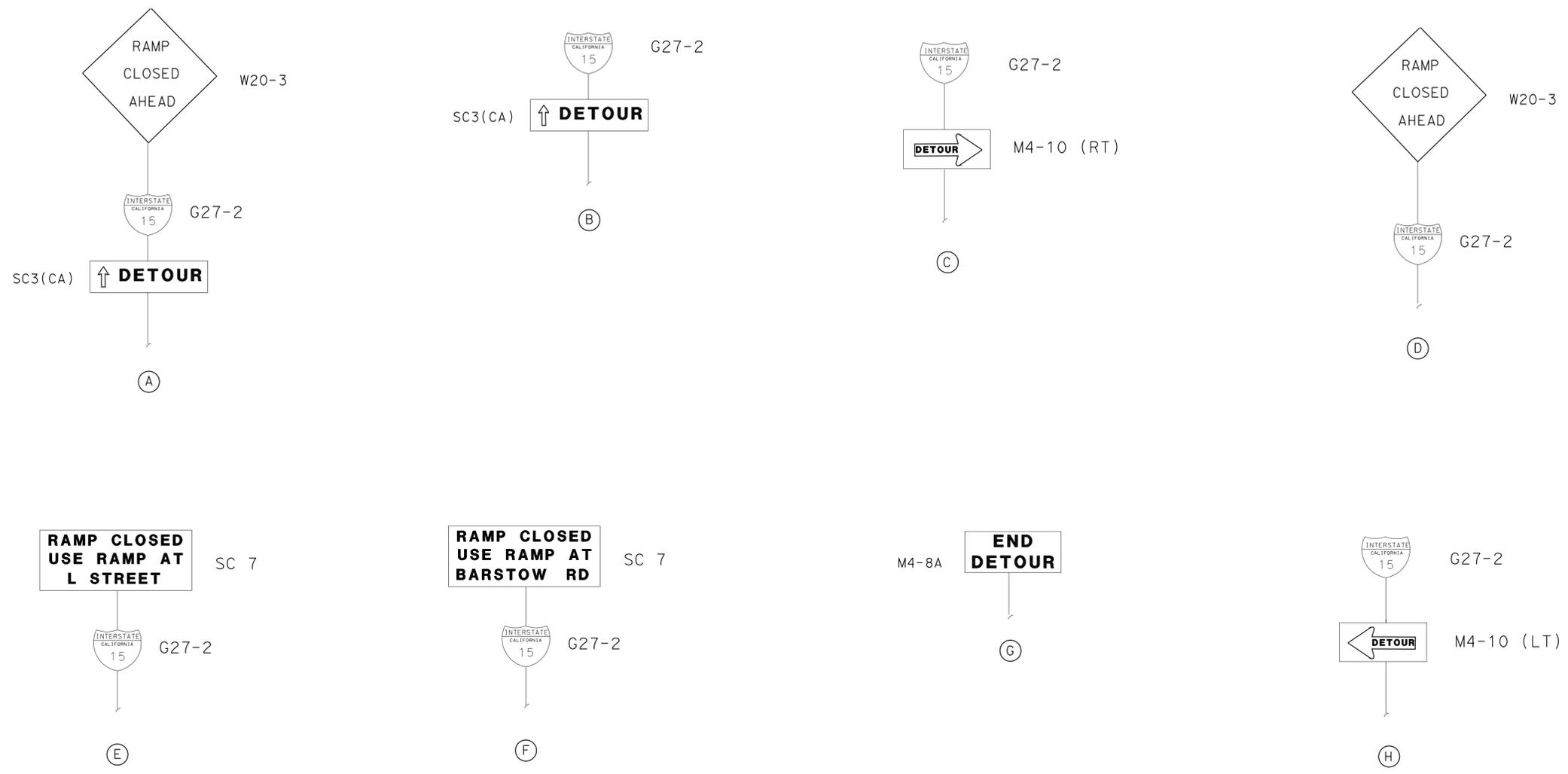
  

<i>Sidhartha Chowdhury</i> REGISTERED CIVIL ENGINEER	1-31-11 DATE
5-16-11 PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
S. CHOWDHURY
No. 55418
Exp. 12-31-12
CIVIL
STATE OF CALIFORNIA

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: LARRY SARTORI  
 CALCULATED/DESIGNED BY: LARRY SARTORI  
 CHECKED BY:  
 SIDHARTHA CHOWDHURY  
 LARRY SARTORI  
 REVISED BY: LARRY SARTORI  
 DATE REVISED:

## DETOUR PLAN

NO SCALE  
**DE-3**

THIS PLAN ACCURATE FOR DETOUR PLAN ONLY

**PAVEMENT DELINEATION QUANTITIES (TABLE 1)**

LOCATION	PM	DIRECTION	STRIPING DETAIL NO.	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)			RECESSED PAVEMENT MARKER				
				4-IN. WHITE (ft.)	4-IN. YELLOW (ft.)	8-IN. WHITE (ft.)	RETRO REFLECTIVE				
							TYPE C ea	TYPE G ea	TYPE H ea	TYPE D	
1	70.6/71.94	NORTHBOUND	12	14362				417			
			25		7076				148		
			27B	7076							
			36			528		22			
			37			2852	190	4			
2	71.94/74.90	NORTHBOUND	12	24287				507			
			25		15628				327		
			27B	15310							
			36			608		26			
			37			3168	212	4			
3	70.6/71.94	SOUTHBOUND	8	317				14			
			12	17956				376			
			25		7076				131		
			27B	7076							
			36			264		11			
4	71.94/74.90	SOUTHBOUND	8	317				14			
			12	42670				895			
			25		15682				332		
			27B	15682							
			36			440		19			
5	73.20/73.50	NB ENTRANCE RAMP @ BARSTOW Rd	25A		640			27			
			27B	1100							
			29		300				13		
		NB EXIT RAMP @ BARSTOW Rd	27B	1684							
			29		300				13		
			38B		285		24				
		SB EXIT RAMP @ BARSTOW Rd	9	900			20				
			25A		775			33			
			27B	1050							
			36		241		10				
		SB ENTRANCE RAMP @ BARSTOW Rd	38B		110		10				
			9	295			7				
			25A		775			33			
27B	985										
6	74.75/74.90	NB ENTRANCE RAMP @ E. MAIN St	22		270				12		
			25A		390		17				
			27B	750							
		NB ENTRANCE RAMP @ E. MAIN St	9	30			1				
			22		290			13			
			25A		400			18			
			27B	1150							
			36		320		14				
		SB EXIT RAMP @ E. MAIN St	38A		50						
			8	720							
			25A		810			34			
			27B	1330							
SB ENTRANCE RAMP @ E. MAIN St	36		320		14						
	38A		320								
	25A		510			22					
	27B	705									
SUB-TOTAL			155752	50922	15109	732	2465	1122	51		
TOTAL			221783			4370					

**NOTES:**

- PAVEMENT MARKERS SHALL BE PLACED BEFORE SPRAYABLE THERMOPLASTIC STRIPE IS APPLIED.
- CONTRACTOR SHALL MAINTAIN THE EXISTING STRIPING PATTERN DURING RE-STRIPING.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	23	42

*Sidhartha Chowdhury*  
REGISTERED CIVIL ENGINEER  
DATE 1-31-11

5-16-11  
PLANS APPROVAL DATE

S. CHOWDHURY  
No. 55418  
Exp. 12-31-12  
CIVIL

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

**PAVEMENT DELINEATION QUANTITIES (TABLE 2)**

LOCATION	PM	DIRECTION	STRIPING DETAIL NO.	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)			PAVEMENT MARKER (REFLECTIVE-RECESSED)			
				4-IN. WHITE (ft.)	4-IN. YELLOW (ft.)	8-IN. WHITE (ft.)	TYPE C ea	TYPE G ea	TYPE H ea	
7	71.24/ 72.02	NB EXIT RAMP @ "L" STREET	9	840				18		
			25		1200			25		
			27B	2000						
			36			800		70		
			37			180	12	2		
			38B			50		6		
		SB EXIT RAMP @ "L" STREET	9	880				20		
			25		1200			25		
			27B	2000						
			36			750		64		
			37			180	12	2		
			38B			50		6		
		SB ENTRANCE RAMP @ "L" STREET	8	200						
			9	235				6		
			25		1500				32	
			27B	1500						
			36A			230		10		
			38B			50		6		
		NB ENTRANCE RAMP @ "L" STREET	9	210				5		
			25		1150				24	
			27B	1720						
			36A			235		10		
		SUB-TOTAL			9585	5050	2575	24	231	106
		TOTAL			17210			361		
TOTAL FROM TABLE 1			221783			4370				
GRAND TOTAL			238993			4731				

**PAVEMENT DELINEATION QUANTITIES PDQ-1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	24	42

*Sidhartha Chowdhury* 1-31-11  
 REGISTERED CIVIL ENGINEER DATE

5-16-11  
 PLANS APPROVAL DATE

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

### PAVEMENT DELINEATION QUANTITIES

LOCATION	DESCRIPTION	THERMOPLASTIC PAVEMENT MARKING		
		EACH (N)	LENGTH (LF) (N)	AREA (SQFT)
NB ENTRANCE RAMP @ BARSTOW Rd	TYPE I (24) ARROW	2		62
NB EXIT RAMP @ BARSTOW Rd	TYPE III (R) ARROW	4		168
	TYPE III (L) ARROW	4		168
	TYPE V ARROW	2		66
	12"-YELLOW LINE		395	395
SB EXIT RAMP @ BARSTOW Rd	12"- CROSSWALK (WHITE)		85	85
	TYPE III (R) ARROW	2		84
	TYPE II (L) ARROW	2		90
	TYPE V ARROW	2		66
	SIGNAL AHEAD	1		63
SB ENTRANCE RAMP @ BARSTOW Rd	12"-WHITE LINE		20	20
	TYPE III (L) ARROW	2		84
	TYPE I (24') ARROW	2		62
NB ENTRANCE RAMP @ E. MAIN St	TYPE I (24') ARROW	3		93
NB EXIT RAMP @ E. MAIN St	12"- CROSSWALK (WHITE)		130	130
	TYPE I (24') ARROW	3		93
	SIGNAL AHEAD	1		63
SB EXIT RAMP @ E. MAIN St	12"- CROSSWALK (WHITE)		40	40
	TYPE III (L) ARROW	4		168
	TYPE I (24') ARROW	3		93
	TYPE IV (L) ARROW	1		15
	TYPE VII (L) ARROW	1		27
SB ENTRANCE RAMP @ E. MAIN St	TYPE I (24') ARROW	1		31
NB ENTRANCE RAMP @ "L" St	TYPE I (24') ARROW	1		31
	TYPE IV ARROW	2		84
	12"- CROSSWALK (WHITE)		120	120
NB EXIT RAMP @ "L" St	SIGNAL AHEAD	2		126
	12"- CROSSWALK (WHITE)		120	120
	TYPE III (R) ARROW	2		84
SB ENTRANCE RAMP @ "L" St	TYPE II (L) ARROW	2		84
	TYPE IV ARROW	2		84
	TYPE I (24') ARROW	1		31
SB EXIT RAMP @ "L" St	12"- CROSSWALK (WHITE)		120	120
	SIGNAL AHEAD	2		126
	12"- CROSSWALK (WHITE)		120	120
	TYPE IV ARROW	2		84
	TYPE III (R) ARROW	2		84
TOTAL				3464

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

### PAVEMENT DELINEATION QUANTITIES PDQ-2

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: LARRY SARTORI  
 CALCULATED/DESIGNED BY: SIDHARTHA CHOWDHURY  
 CHECKED BY: LARRY SARTORI  
 REVISED BY: LARRY SARTORI  
 DATE REVISED:



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	25	42

REGISTERED CIVIL ENGINEER DATE 1-31-11  
 5-16-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 DAI HOANG  
 No. C64203  
 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 SCANNED COPIES OF THIS PLAN SHEET.

### ROADWAY QUANTITIES (MAINLINE)

STATION	WORK AREA DESCRIPTION	DIRECTION	COLD PLANE AC PAVEMENT	HOT MIX ASPHALT (TYPE C)	HOT MIX ASPHALT (LEVELING)	TACK COAT	RUMBLE STRIP
STA 1597+72 TO 1604+16.25	LOL3 BEGIN CONSTRUCTION TO ENTRANCE RAMP FROM NB 58 CONNECTOR	NB	3989	651.5	130.3	1.7	10.9
STA 1604+16.25 TO 1607+33	LOL3 CONTINUE CONSTRUCTION TO 300' NORTH	NB	2923	477.4	95.5	1.2	6.3
STA 1607+33 TO 1636+00	LOL3 CONTINUE CONSTRUCTION TO EXIT RAMP AT L STREET	NB	22020	3596.6	719.3	9.2	56.4
STA 1636+00 TO 1651+20.4	LOL3 * CONTINUE CONSTRUCTION TO Br No. 54-1115R "L STREET UC"	NB	9129	1491.1	298.2	3.8	27.9
* STA 1653+63 TO 1678+10.34	LOL4 CONTINUE CONSTRUCTION TO Br No. 54-0551R "H STREET UC"	NB	15401	2515.5	503.1	6.4	43.5
* STA 1680+10.12 TO 1784+54.5	LOL4 CONTINUE CONSTRUCTION TO JCT 40/15 SEPARATION	NB	68157	11132.3	2226.5	28.4	197.4
STA 1784+54.5 TO 1789+07	LOL4 CONTINUE CONSTRUCTION TO EXIT RAMP AT NB 40 CONNECTOR	NB	1464	239.1	47.8	0.6	4.5
STA 1789+07 TO 1827+55.81	LOL4 CONTINUE CONSTRUCTION TO E. MAIN St OC Br (END CONSTRUCTION)	NB	16661	2721.3	544.3	6.9	71.0
STA 1597+72 TO 1651+56	LOL1 * BEGIN CONSTRUCTION TO Br No. 54-1115L "L STREET UC"	SB	41460	6771.8	1354.4	17.3	102.7
* STA 1653+89 TO 1668+14	LOL1 CONTINUE CONSTRUCTION TO EXIT RAMP AT L STREET	SB	10638	1737.5	347.5	4.4	25.0
STA 1729+50 TO 1763+68	LOL2 1000' FROM ENTRANCE RAMP AT BARSTOW Rd TO EXIT RAMP AT BARSTOW Rd	SB	25690	4196.0	839.2	10.7	61.4
STA 1763+68 TO 1782+62.9	LOL2 CONTINUE CONSTRUCTION TO MURIEL Dr UC BRIDGE	SB	16002	2613.7	522.7	6.7	35.9
STA 1782+62.9 TO 1817+93.4	LOL2 CONTINUE CONSTRUCTION TO ENTRANCE RAMP FROM E. MAIN STREET	SB	21708	3545.6	709.1	9.0	66.6
STA 1817+93.4 TO 1827+27.9	LOL2 CONTINUE CONSTRUCTION TO E. MAIN St OC Br (END CONSTRUCTION)	SB	4235	691.7	138.3	1.8	15.2
TOTAL			259477 *	42381.1 *	8476.2	108.1 *	724.7

\* SEE Q-2 FOR TOTAL

### METAL BEAM GUARD RAIL

STATION	WORK AREA DESCRIPTION	DIRECTION	INSIDE SHLD (1) OUTSIDE SHLD (0)	REMOVE MBGR	MBGR (WOOD POST)	TRANSITION RAILING (TYPE WB)	ALTERNATIVE FLARED TERMINAL SYSTEM	ALTERNATIVE IN-LINE TERMINAL SYSTEM	REMOVE CRASH CUSHION (SAND FILLED)	MINOR CONCRETE (MINOR STRUCTURE)	REMARK		
												NB/SB	LT/RT
70.0 RT	STA 1608+28	LOL3	75' NORTH OF CALL BOX No. 15 708	NB	0	87.5	12.5	1		1	0.82	SEE SHEET C-2, ALTERNATIVE 1	
10.0 LT	STA 1651+20.4	LOL3	L STREET UC Br No. 54-1115R	NB	I	75.0	50.0	1			0.74	SEE SHEET C-3, ALTERNATIVE 4; CONNECT MBGR TO EXIST K-RAIL	
46.0 RT	STA 1678+10.34	LOL4	AVENUE H UC Br No. 54-0551R	NB	0	62.5	37.5	1			0.65	SEE SHEET C-3, ALTERNATIVE 5; CONNECT MBGR TO SOUND WALL	
20.0 LT	STA 1678+10.34	LOL4	AVENUE H UC Br No. 54-0551R	NB	I	62.5		1	1		0.65	SEE SHEET C-3, ALTERNATIVE 5	
28.0 RT	STA 1827+55.81	LOL4	E. MAIN STREET OC	NB	0	62.5		1	1		0.82	SEE SHEET C-2, ALTERNATIVE 2	
10.0 RT	STA 1651+56	LOL1	L STREET UC Br No. 54-1115L	SB	I	150.0	150.0	1	1	1	0.74	SEE SHEET C-3, ALTERNATIVE 4; FLARED MBGR 15:1 FROM ES SIMILAR TO STANDARD PLANS A773	
58.0 LT	STA 1651+56	LOL1	L STREET UC Br No. 54-1115L	SB	0	25.0		1			1.08	SEE SHEET C-2, ALTERNATIVE 3; DO NOT INSTALL LAST SECTION (6.25') OF TRANSITION RAILING WB	
TOTAL						525.0	250.0	7	3	1	1	5.50	

### SUMMARY OF QUANTITIES Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
 REVISIONS: DAI HOANG, HANNAH NGUYEN  
 CALCULATED/DESIGNED BY: CHECKED BY:



**ROADWAY QUANTITIES (RAMPS) HMA**

STATION	WORK AREA DESCRIPTION	(N)	(N)	(N)	(N)	(N)	COLD PLANE AC PAVEMENT	HOT MIX ASPHALT (TYPE C)	TACK COAT
		DIRECTION	LENGTH	NO. OF LANES (12' LANE)	INSIDE SHOULDER WIDTH	OUTSIDE SHOULDER WIDTH			
		NB/SB	FT		FT	FT			
36.0 RT STA 1636+40 TO 123.4 RT 1651+90.6 LOL 3	NB EXIT RAMP TO L STREET	NB	600	1	4	8	1600	261.3	0.7
			750	2	4	4	2667	435.6	1.1
118.3 RT STA 1652+75.3 LOL 3 TO 36.0 RT 1672+50.8 LOL 4	NB ENTRANCE RAMP FROM L STREET	NB	680	2	4	4	2418	394.9	1.0
			1270	1	4	8	3387	553.2	1.4
129.4 LT STA 1653+65.8 LOL 1 TO 48.0 LT 1667+85.2 LOL 1	SB EXIT RAMP TO L STREET	SB	550	1	4	8	1467	239.6	0.6
			700	2	4	4	2489	406.5	1.0
48.0 LT STA 1636+66.3 LOL 1 TO 128.7 LT 1652+54.1 LOL 1	SB ENTRANCE RAMP FROM L STREET	SB	480	2	4	4	1707	278.8	0.7
			1100	1	4	4 TO 8	2689	439.2	1.1
STA 1737+40 TO 1751+65.94 LOL A1	NB EXIT RAMP TO BARSTOW ROAD	NB	-	1	4	8	2011	328.5	0.8
			-	2	4	8	3481	568.6	1.5
STA 1752+91 TO 1764+58.64 LOL A2	NB ENTRANCE RAMP FROM BARSTOW ROAD	NB	-	1(17)	4	8	2308	377.0	1.0
			-	1	4	8	1604	262.0	0.7
STA 1755+60 TO 1763+81.21 LOL A3	SB EXIT RAMP TO BARSTOW ROAD	SB	-	2	4	8	3747	612.0	1.6
48.0 LT STA 1739+77.9 LOL 2 TO 205.4 LT 1752+97.5 LOL 2	SB ENTRANCE RAMP FROM BARSTOW ROAD	SB	450	2	4	8	1800	294.0	0.8
			870	1	4	8	2320	378.9	1.0
STA 1816+64 TO 1825+27.21 LOL B1	NB EXIT RAMP TO E. MAIN STREET	NB	-	1	4	4 TO 10	2216	361.9	0.9
STA 1827+57 TO 1837+14.76 LOL B2	NB ENTRANCE RAMP FROM E. MAIN STREET	NB	-	1	2	4 TO 10	2353	384.3	1.0
24.0 LT STA 1817+93.4 LOL 2 TO 97.0 LT 1826+84.9 LOL 2	SB ENTRANCE RAMP FROM E. MAIN STREET	SB	885	1	2	8	2163	353.3	0.9
TOTAL							42427	6929.6	17.8
TOTAL FROM Q-1							259477	42381.1	108.1
GRAND TOTAL							301904	49310.7	125.9

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

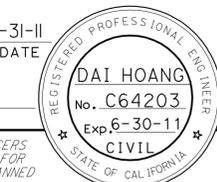
**ROADWAY QUANTITIES (RAMPS TERMINI)**

STATION	WORK AREA DESCRIPTION	DIRECTION	(N)	(N)	(N)	(N)	PLACING CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE)	TIE BAR	DOWEL BAR	CLASS 2 AB	ROADWAY EXCAVATION	LIQUID ASPHALT (PRIME COAT)
			LENGTH	NO. OF LANES (12' LANE)	INSIDE SHOULDER WIDTH	OUTSIDE SHOULDER WIDTH						
		NB/SB	FT		FT	FT						
STA 1751+65.94 TO 1753+45.94 LOL A1	NB EXIT RAMP TO BARSTOW ROAD	NB	180	2	4	8	259.70	223	468	355.38	615.1	0.85
STA 1753+60 TO 1755+60 LOL A3	SB EXIT RAMP TO BARSTOW ROAD	SB	200	2	4	8	266.45	247	504	364.63	631.1	0.88
STA 1825+27.21 TO 1828+07.21 LOL B1	NB EXIT RAMP TO E. MAIN STREET	NB	155	1	4	7	125.44	129	253	171.65	297.1	0.41
			125	2	4	4	150.87	154	320	206.46	357.3	0.50
TOTAL							802.46	753	1545	1098.12	1900.6	2.64

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	26	42


 REGISTERED CIVIL ENGINEER DATE 1-31-11  
 5-16-11  
 PLANS APPROVAL DATE



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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
 CALCULATED/DESIGNED BY: HANNAH NGUYEN  
 CHECKED BY: HANNAH NGUYEN  
 REVISIONS: DAI HOANG  
 REVISED BY: HANNAH NGUYEN  
 DATE REVISED:

**SUMMARY OF QUANTITIES Q-2**

LAST REVISION: DATE PLOTTED => 17-MAY-2011 | TIME PLOTTED => 07:53

NOTE: THE EXACT LOCATIONS AND LENGTH OF DIGOUTS WILL BE DETERMINED BY THE ENGINEER.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	27	42


 REGISTERED CIVIL ENGINEER DATE 1-31-11  
 5-16-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**DAI HOANG**  
 No. C64203  
 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 SCANNED COPIES OF THIS PLAN SHEET.

**IMPORT MATERIAL (SHOULDER BACKING)**

LOCATION (STATION)	DIRECTION NB/SB	LT/RT	IMPORTED MATERIAL (SHOULDER BACKING) (TON)
1721+75 TO 1722+75 LOL 4	NB	LT	3.2
1816+69 TO 1827+56 LOL 4	NB	LT	34.3
1743+75 TO 1744+75 LOL 4	NB	LT & RT	6.3
1747+25 TO 1748+25 LOL 4	NB	LT & RT	6.3
1811+50 TO 1816+69 LOL 4	NB	LT & RT	32.8
1606+75 TO 1608+25 LOL 1	SB	RT	4.7
1666+75 TO 1667+25 LOL 1	SB	RT	1.6
1823+75 TO 1825+25 LOL 2	SB	RT	4.7
TOTAL			93.9

**REPLACE ASPHALT CONCRTE SURFACING (DIGOUT)**

LOCATION (STATION)	WORK AREA DESCRIPTION	DIRECTION NB/SB	LENGTH FOR			WIDTH (LF)	REPLACE AC SURFACING (CY)
			LANE No. 2 (LF)(N)	LANE No. 3 (LF)(N)	LANE No. 4 (LF)(N)		
1601+89 LOL3	SPOT	NB	10			4	0.7
1612+50 LOL3	LANE	NB	210			12	46.7
1618+89 LOL3	LANE	NB	210			12	46.7
1620+47 LOL3	LANE	NB		50		12	11.1
1626+86 LOL3	LANE	NB	100			6	11.1
1633+78 LOL3	LANE	NB		260		12	57.8
1641+70 LOL3	SPOT	NB			6	12	1.3
1737+85 LOL4	LANE	NB			370	12	82.2
1790+43 LOL4	LANE	NB	528			12	117.3
1798+41 LOL4	LANE	NB	260			12	57.8
1603+26 LOL1	SPOT	SB		12		12	2.7
1606+95 LOL1	SPOT	SB		4		12	0.9
1615+93 LOL1	SPOT	SB		12		12	2.7
1629+66 LOL1	SPOT	SB		12		12	2.7
1631+77 LOL1	SPOT	SB		12		6	1.3
1634+41 LOL1	LANE	SB			105	4	7.8
1635+47 LOL1	LANE	SB		370		12	82.2
1640+75 LOL1	SPOT	SB		20		12	4.4
1644+97 LOL1	LANE	SB		211		12	46.9
1650+25 LOL1	SPOT	SB		12		12	2.7
1818+15 LOL2	LANE	SB	158			12	35.1
TOTAL							622.1

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

**TEMPORARY WATER POLLUTION CONTROL QUANTITY**

ITEM DESCRIPTION	QUANTITY	QUANTITY
	LF	EA
TEMPORARY FIBER ROLL	1000	
TEMPORARY CONCRETE WASHOUT BIN		3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
 CALCULATED/DESIGNED BY: DAI HOANG  
 CHECKED BY: HANNAH NGUYEN  
 REVISED BY: [ ] DATE: [ ]  
 REVISIONS: [ ]

**SUMMARY OF QUANTITIES Q-3**





Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	29	42

<i>Katherine Dinh</i>	1-31-11
REGISTERED ELECTRICAL ENGINEER	DATE
5-16-11	
PLANS APPROVAL DATE	

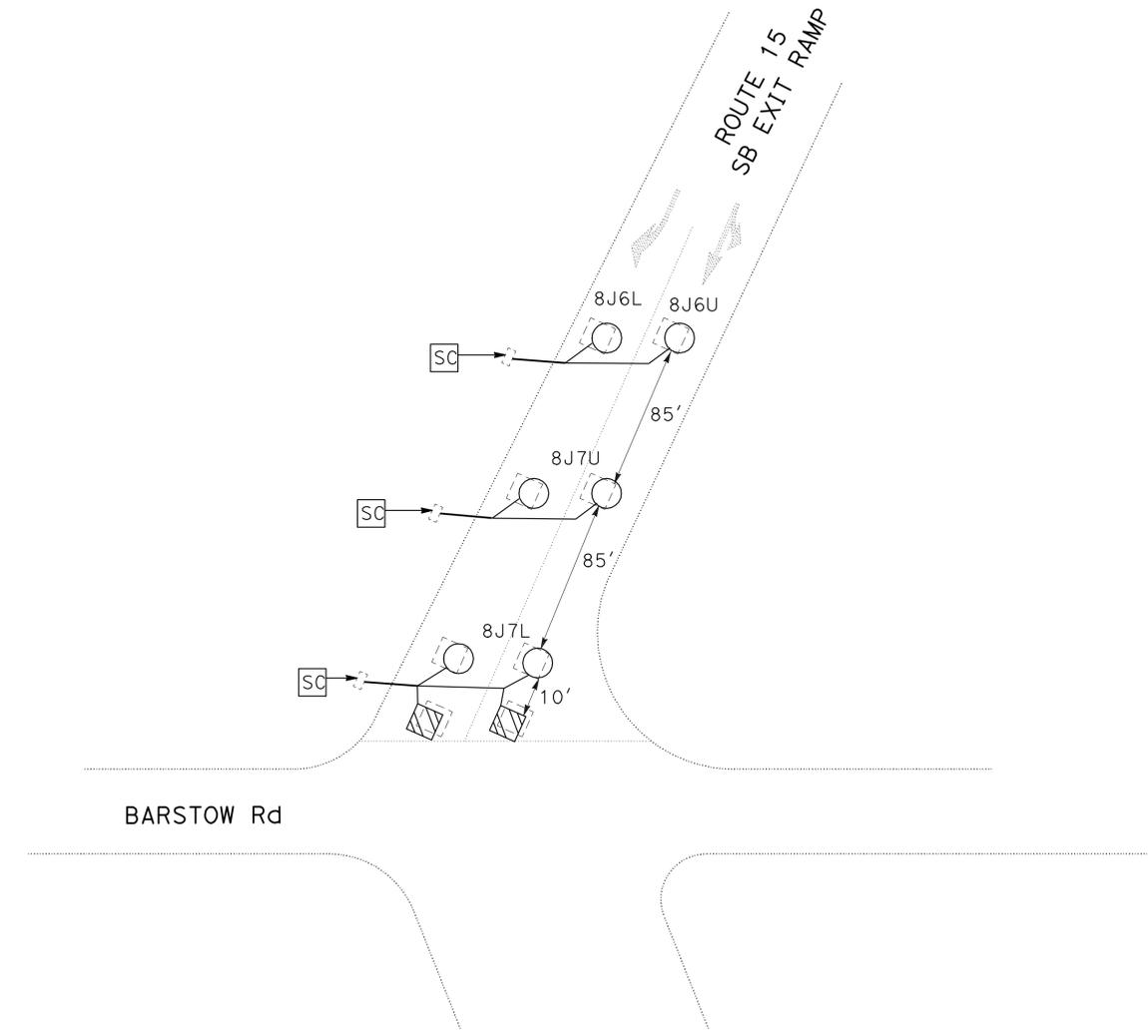
  

REGISTERED PROFESSIONAL ENGINEER
KATHERINE DINH
No. E17157
Exp. 9/30/11
ELECTRICAL
STATE OF CALIFORNIA

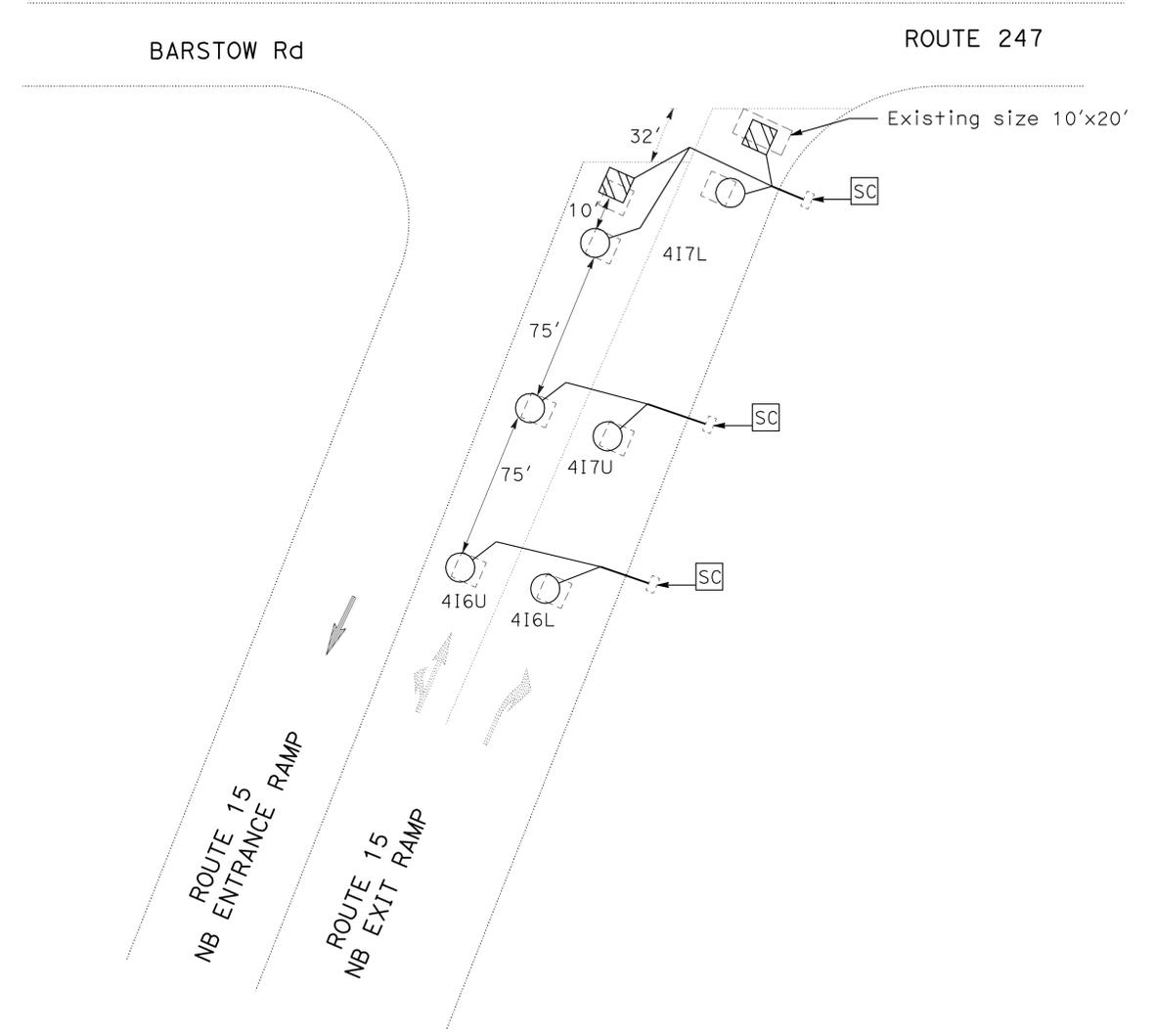
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
<b>Caltrans</b> ELECTRICAL DESIGN B
FUNCTIONAL SUPERVISOR FERDINAND DE LA CRUZ
CALCULATED/DESIGNED BY CHECKED BY
KATHERINE DINH FERDINAND DE LA CRUZ
REVISED BY DATE
REVISED BY DATE



**TRAFFIC SIGNAL ON  
ROUTE 15 SB EXIT RAMP AND BARSTOW ROAD**



**TRAFFIC SIGNAL ON  
ROUTE 15 NB EXIT RAMP AND BARSTOW ROAD**

**INDUCTIVE LOOP DETECTOR  
(ROUTE 15 AND BARSTOW ROAD)**

NO SCALE

**E-2**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

USERNAME => trrichf  
DGN FILE => 80k150ua002.dgn



UNIT 2292

PROJECT NUMBER & PHASE

0800003331

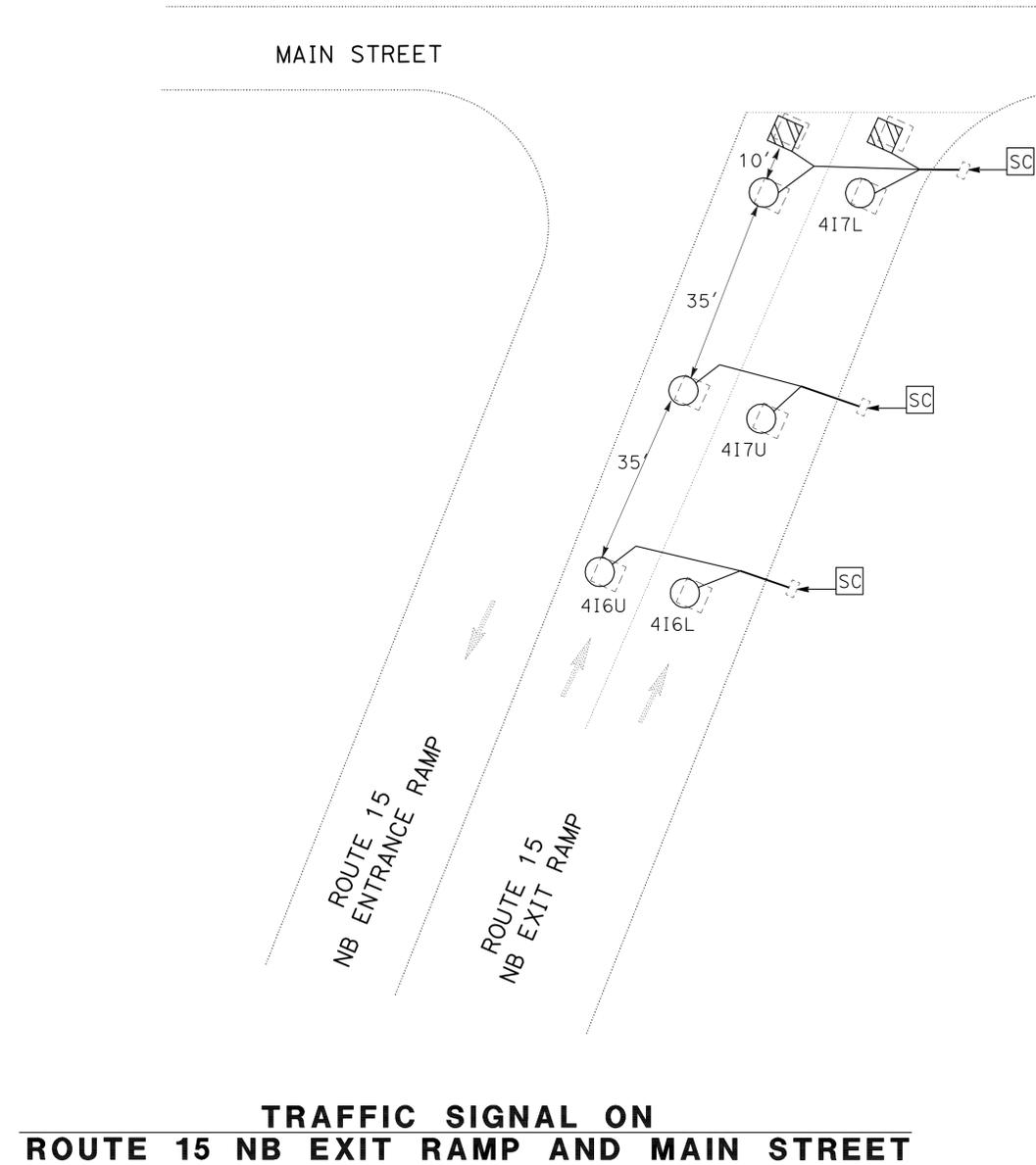
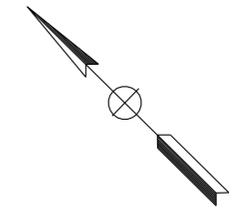
BORDER LAST REVISED 7/2/2010

LAST REVISION DATE PLOTTED => 17-MAY-2011  
01-31-11 TIME PLOTTED => 07:46

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	15	70.6/74.9	30	42

Katherine Dinh  
 REGISTERED ELECTRICAL ENGINEER DATE 1-31-11  
 5-16-11  
 PLANS APPROVAL DATE

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 OR AGENTS SHALL NOT BE RESPONSIBLE FOR  
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 COPIES OF THIS PLAN SHEET.



**TRAFFIC SIGNAL ON  
ROUTE 15 NB EXIT RAMP AND MAIN STREET**

**INDUCTIVE LOOP DETECTOR  
(ROUTE 15 AND MAIN STREET)  
NO SCALE  
E-3**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	KATHERINE DINH	REVISED BY
<b>Caltrans</b> ELECTRICAL DESIGN B	Ferdinand de la Cruz	CHECKED BY	Ferdinand de la Cruz	DATE REVISED

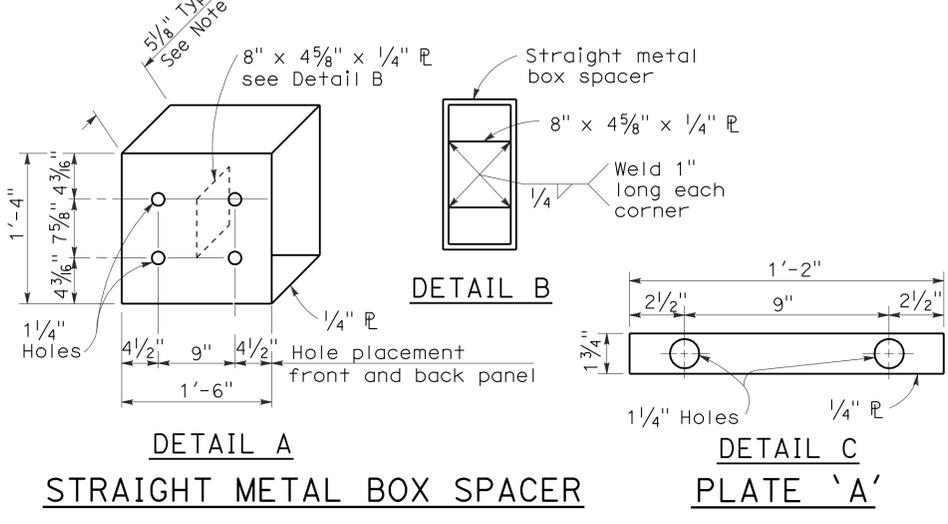
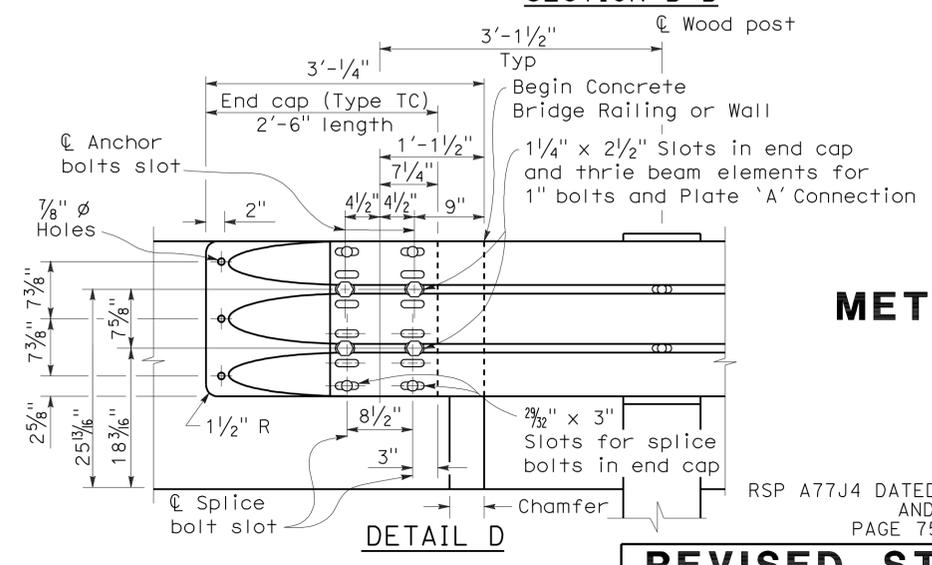
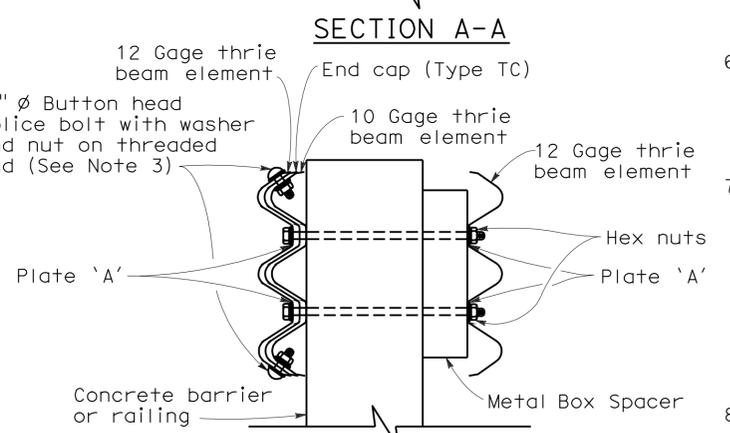
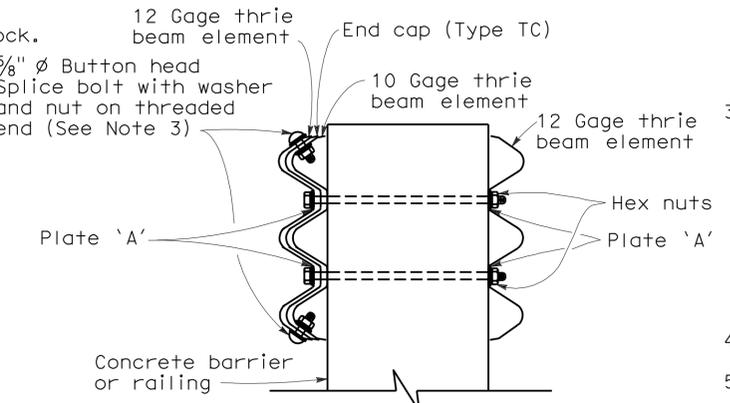
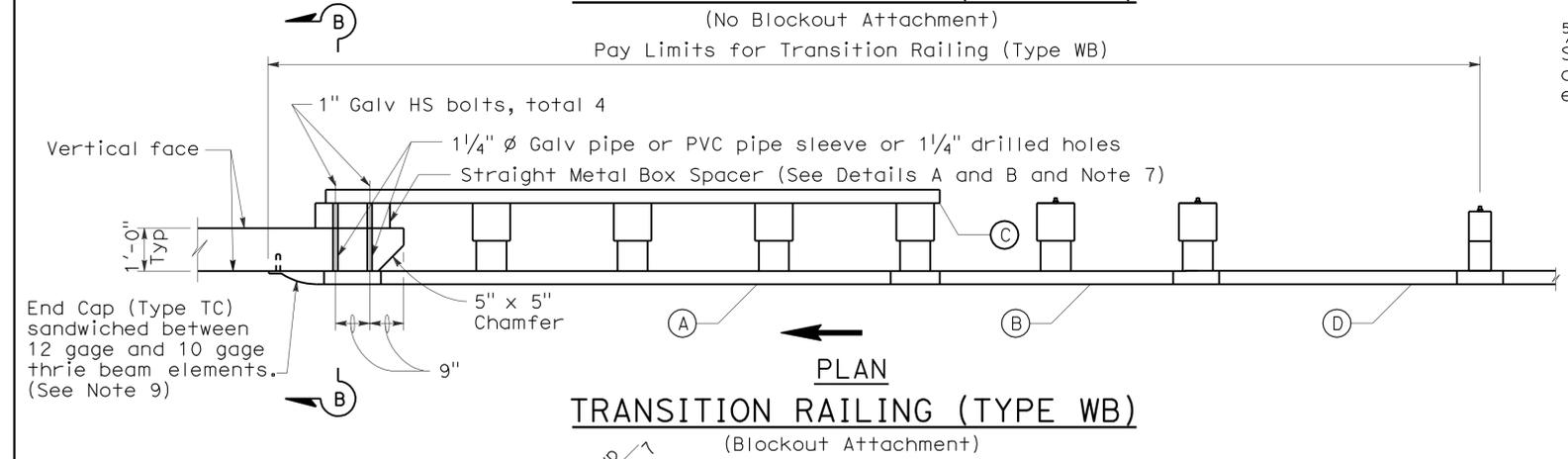
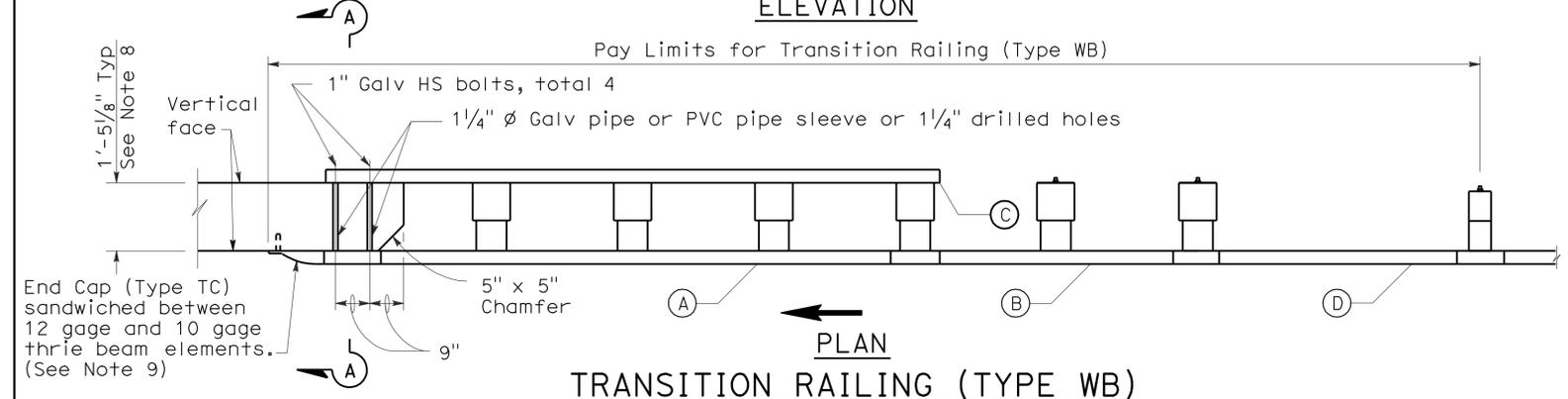
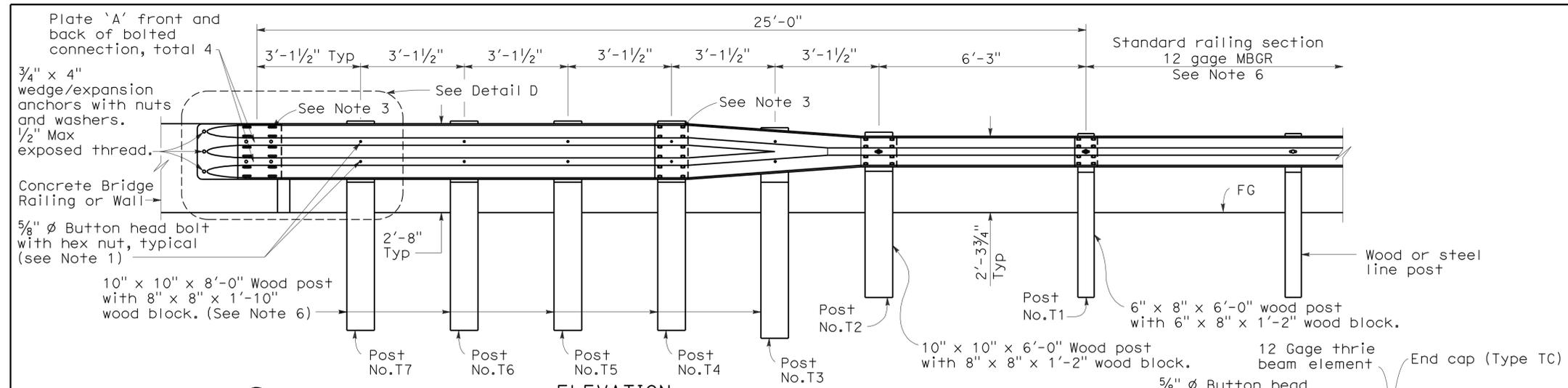
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Sbd	15	70.6/74.9	31	42

**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

June 5, 2009  
PLANS APPROVAL DATE

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



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

- NOTES:** To accompany plans dated 5-16-11
1. Use 5/8" 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 1 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1 1/4" ø. Only the top 2 and the bottom 2 splice bolts with washers and nuts are required for rail splices at Post No. T4 and the connection to the concrete barrier or railing.
  4. Direction of adjacent traffic indicated by →.
  5. The top elevation of Post Nos. T2 through T7 shall not project more than 1" above the top elevation of the rail element.
  6. Typically, the railing connected to Transition Railing (Type WB) will be either standard railing section of metal beam guard railing or an approved Caltrans end treatment attached to Post No. T1.
  7. The depth of the metal box spacer varies from the 5 1/8" to 1 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 17 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
  8. Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. 4 through No. 7 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
  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.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TRANSITION RAILING  
(TYPE WB)**

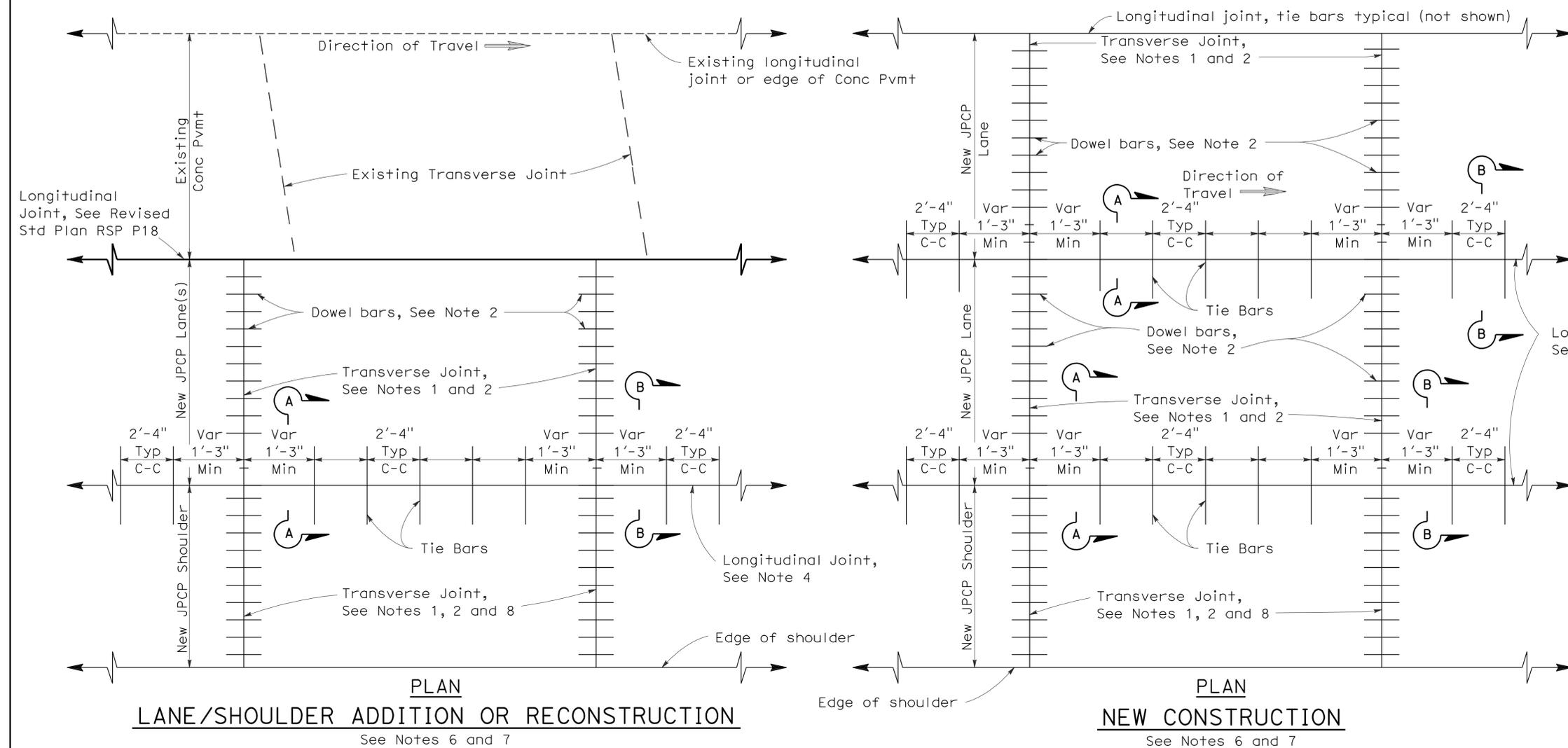
NO SCALE

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

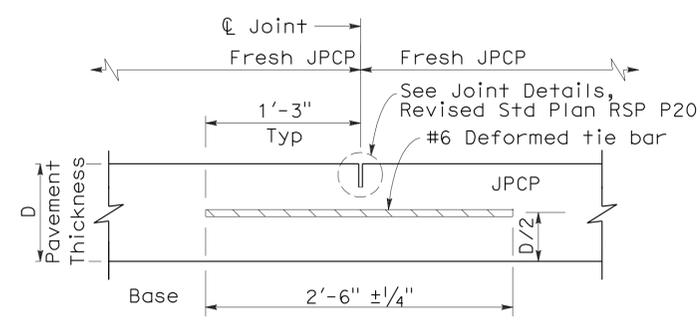
**REVISED STANDARD PLAN RSP A77J4**

2006 REVISED STANDARD PLAN RSP A77J4

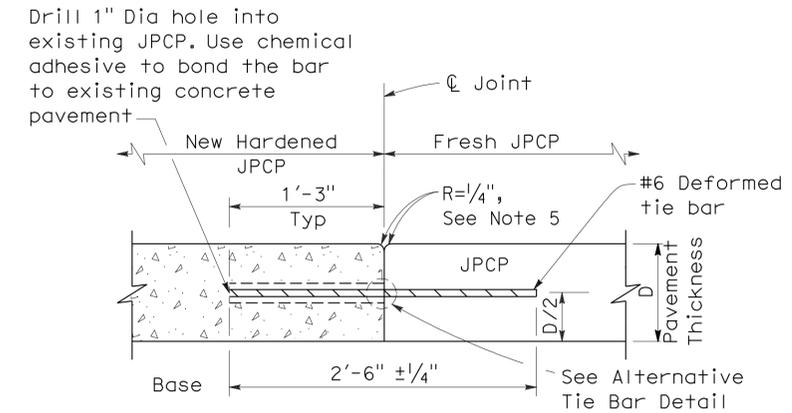
To accompany plans dated 5-16-11



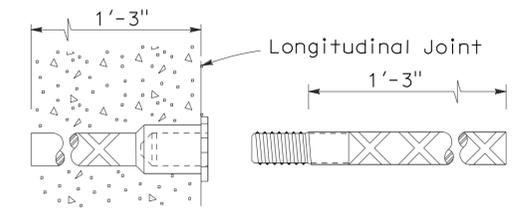
- NOTES:**
1. Transverse joints shall be constructed at right angles to the longitudinal pavement joints in new jointed plain concrete pavement and spaced at successive repeated intervals of 12', 15', 13' and 14'.
  2. For transverse joint and dowel bar details not shown, See Revised Standard Plan RSP P10.
  3. Construct longitudinal contraction joints as shown in Section A-A when more than one lane or shoulder widths are placed at one time. If constructing one lane at a time, use longitudinal construction joint, as shown in Section B-B.
  4. For additional longitudinal joint details, see Revised Standard Plan RSP P18.
  5. If fresh concrete is placed adjacent to existing concrete, the top corner of the new hardened concrete does not need to be rounded to the 1/4" radius as shown.
  6. Joint spacing patterns do not apply to intersections.
  7. Details can also apply to inside widening.
  8. Dowel bars may be omitted from shoulders when the shoulder cross slope is not the same as the adjacent traffic lane.



**SECTION A-A**  
**LONGITUDINAL CONTRACTION JOINT**



**SECTION B-B**  
**LONGITUDINAL CONSTRUCTION JOINT**



**ALTERNATIVE TIE BAR SPLICE DETAIL**  
(Splice Coupler)

**TIE BAR DETAILS**

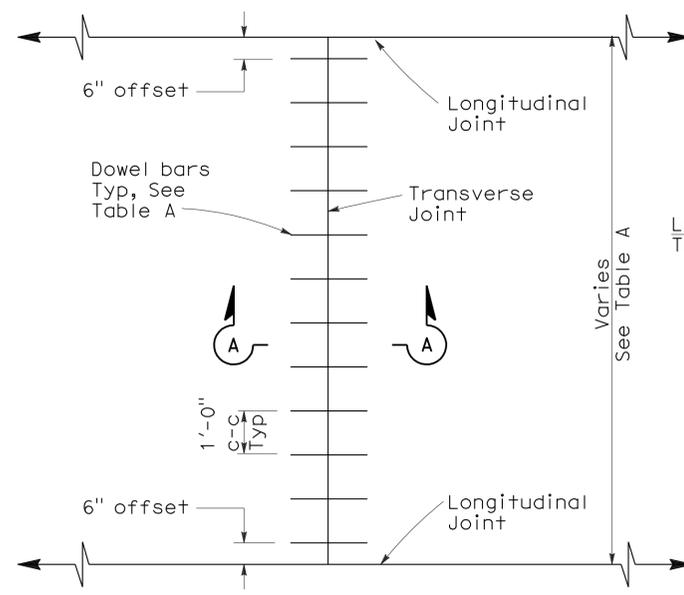
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**JOINTED PLAIN CONCRETE PAVEMENT**

NO SCALE

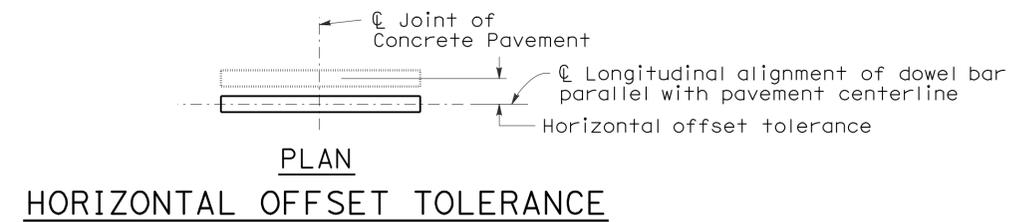
RSP P1 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P1  
DATED MAY 1, 2006 - PAGE 119 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP P1**

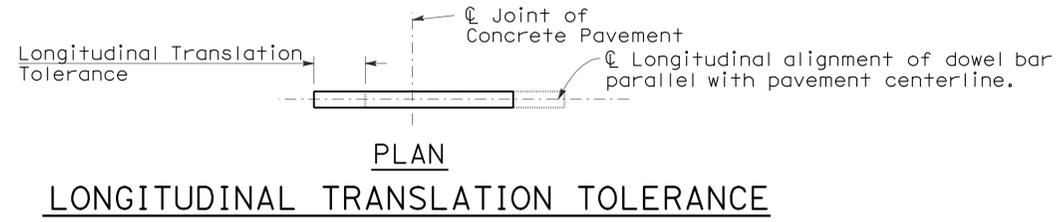
2006 REVISED STANDARD PLAN RSP P1



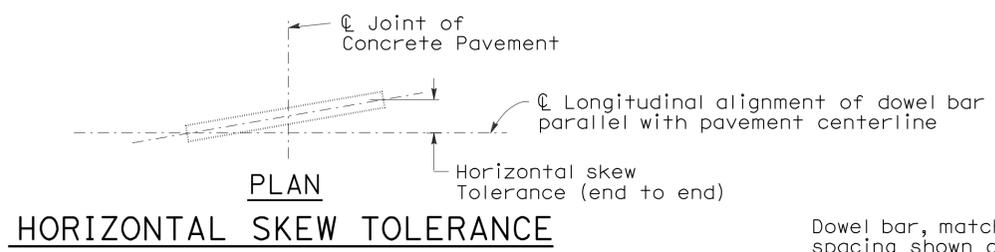
**TRANSVERSE JOINT DOWEL BAR LAYOUT**



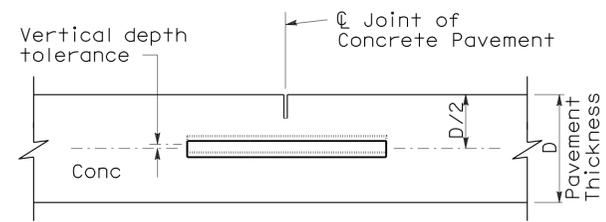
**HORIZONTAL OFFSET TOLERANCE**



**LONGITUDINAL TRANSLATION TOLERANCE**

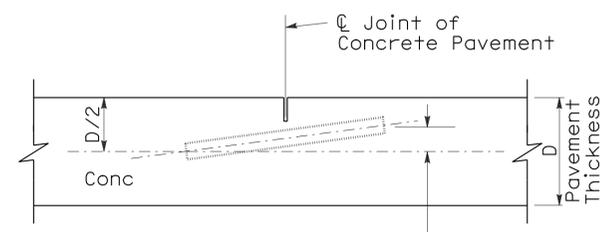


**HORIZONTAL SKEW TOLERANCE**



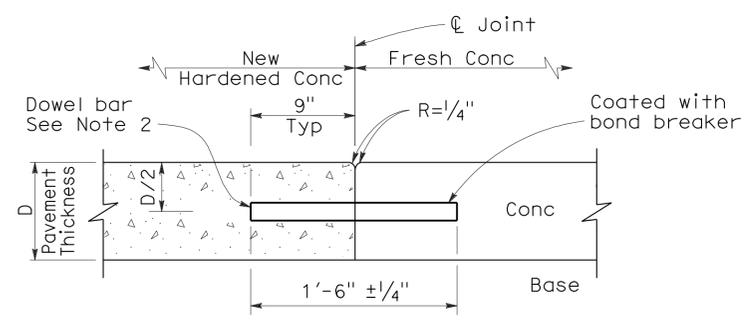
**ELEVATION**

**VERTICAL DEPTH TOLERANCE**

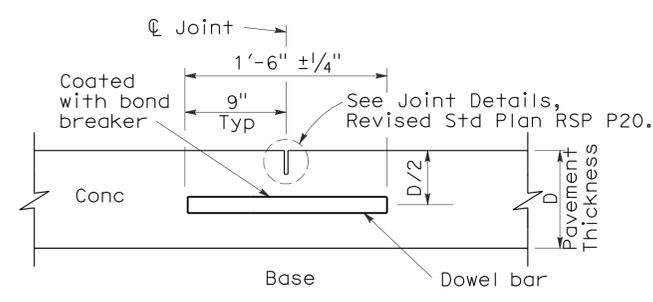


**ELEVATION**

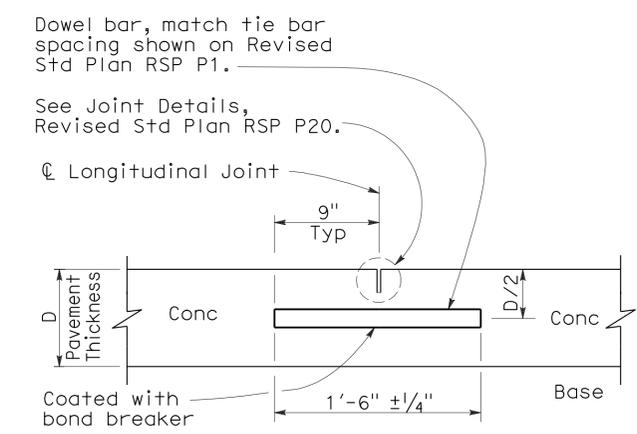
**VERTICAL SKEW TOLERANCE**



**SECTION A-A TRANSVERSE CONSTRUCTION JOINT DETAIL**

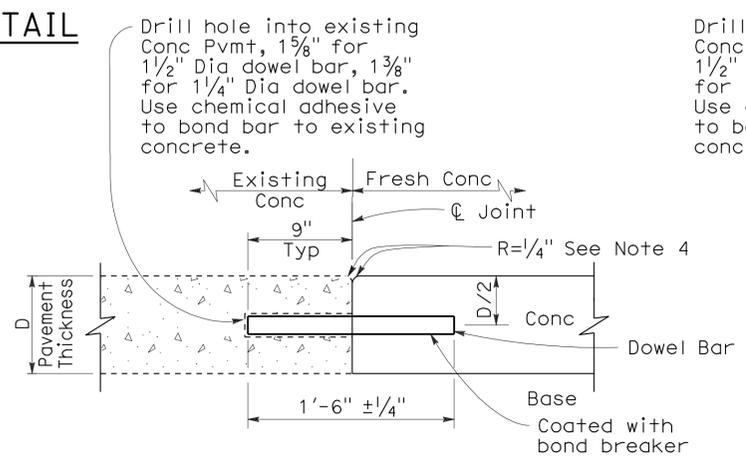


**TRANSVERSE CONTRACTION JOINT**



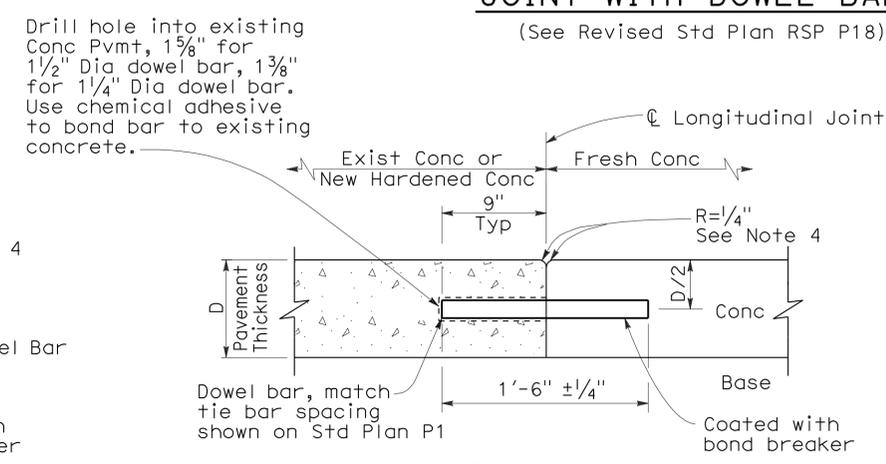
**LONGITUDINAL CONTRACTION JOINT WITH DOWEL BARS**

(See Revised Std Plan RSP P18)



**TRANSVERSE CONSTRUCTION JOINT FOR EXISTING CONCRETE PAVEMENT**

(Drill and bond locations)



**LONGITUDINAL CONSTRUCTION JOINT WITH DOWEL BARS**

(See Revised Std Plan RSP P18)

**TABLE A (See Note 3)**

Dowel Bar Transverse Spacing Table

Width between Longitudinal Joints	Number of Dowels between Longitudinal Joints
14'-0"	14
13'-0"	13
12'-0"	12
11'-0"	11
10'-0"	10
8'-0"	8
5'-0"	5
4'-0"	4

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**CONCRETE PAVEMENT-DOWEL BAR DETAILS**

NO SCALE

RSP P10 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P10  
DATED MAY 1, 2006 - PAGE 124 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP P10

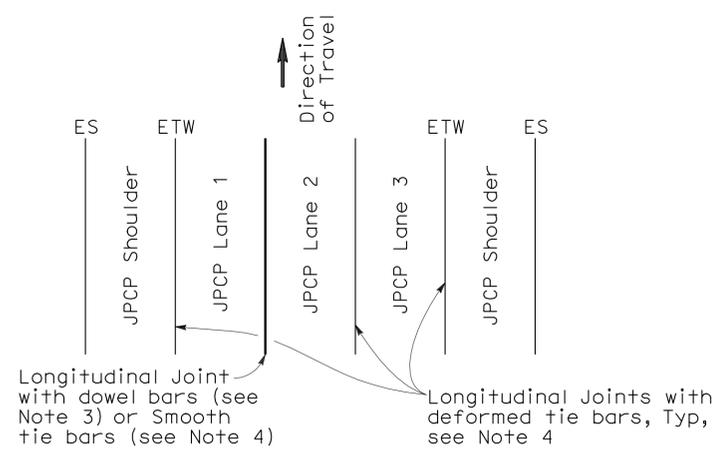
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	15	70.6/74.9	34	42

William K. Farnbach  
 REGISTERED CIVIL ENGINEER  
 June 5, 2009  
 PLANS APPROVAL DATE

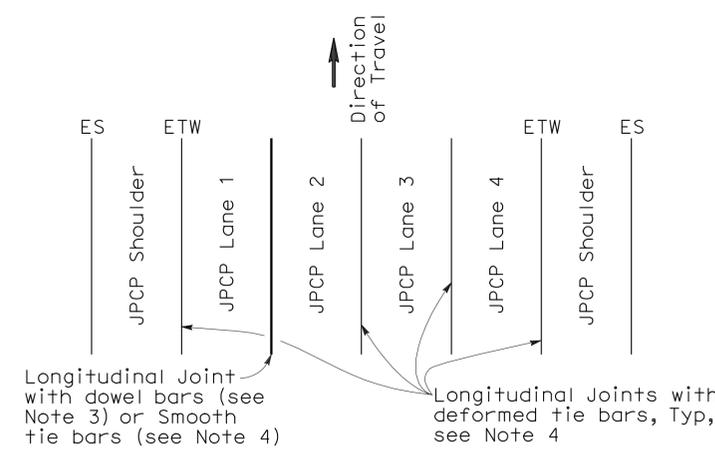
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REGISTERED PROFESSIONAL ENGINEER  
 William K. Farnbach  
 No. C49042  
 Exp. 9-30-10  
 CIVIL  
 STATE OF CALIFORNIA

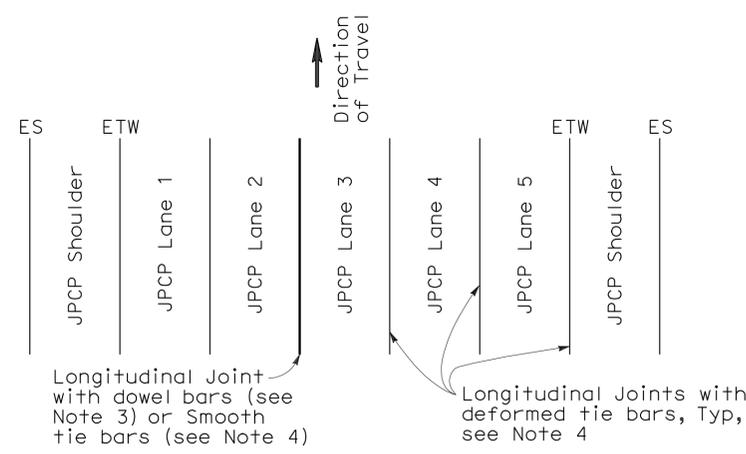
To accompany plans dated 5-16-11



**3 LANES WITH TIED CONCRETE SHOULDERS**  
PLAN

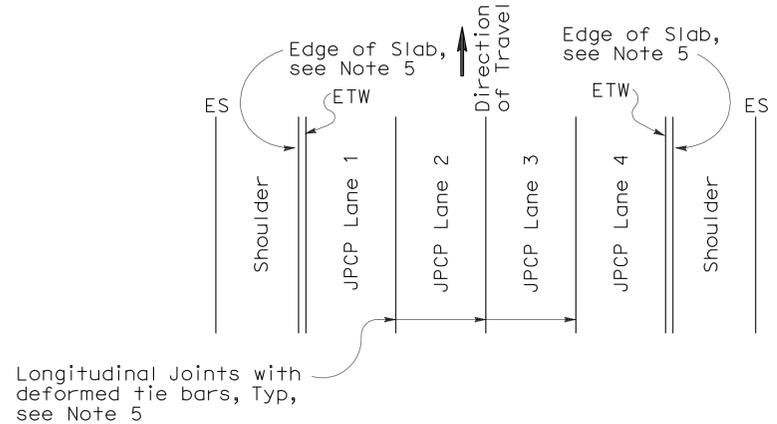


**4 LANES WITH TIED CONCRETE SHOULDERS**  
PLAN

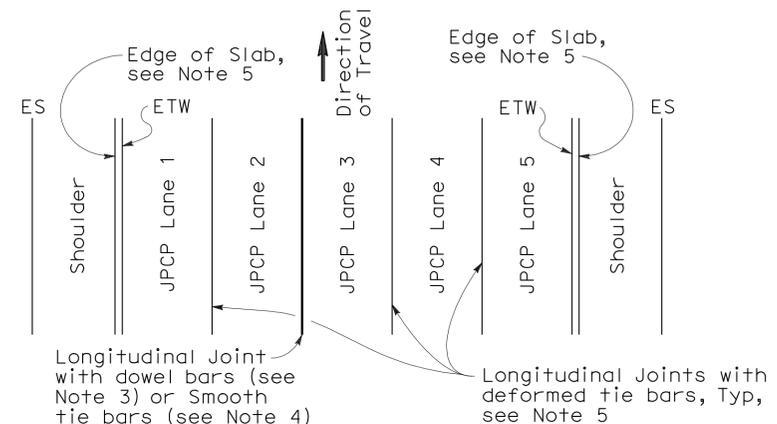


**5 LANES WITH TIED CONCRETE SHOULDERS**  
PLAN

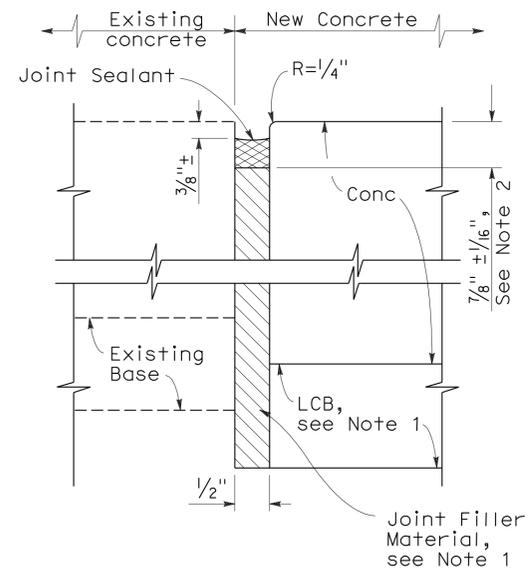
- NOTES:**
- Where Lean Concrete Base is not used as base material, the joint filler material used for the longitudinal isolation joint shall only extend to the bottom of the new concrete slab. See Detail A.
  - Use 5/8" ± 1/16" dimension for silicone sealant.
  - See Revised Standard Plan RSP P10 for longitudinal joint with dowel bars.
  - See Revised Standard Plan RSP P1.
  - See Revised Standard Plan RSP P2.



**4 LANES OR LESS WITH WIDENED SLAB**  
PLAN

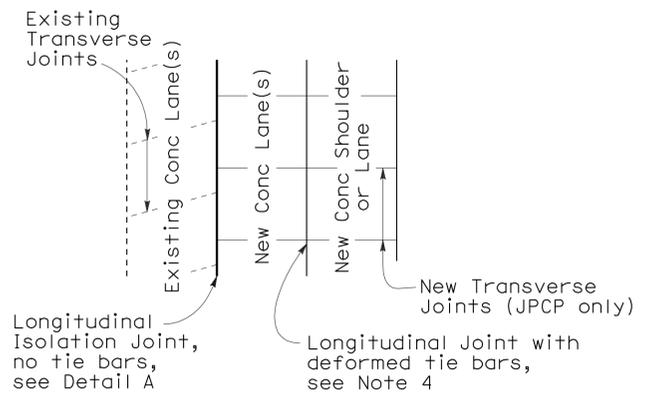


**5 LANES WITH WIDENED SLAB**  
PLAN



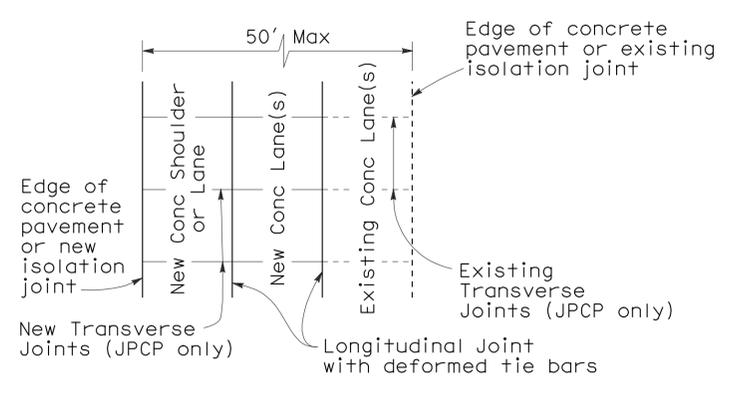
**DETAIL A**  
**ISOLATION JOINT**

**NEW CONSTRUCTION**  
Location of Longitudinal Joints  
(For JPCP)



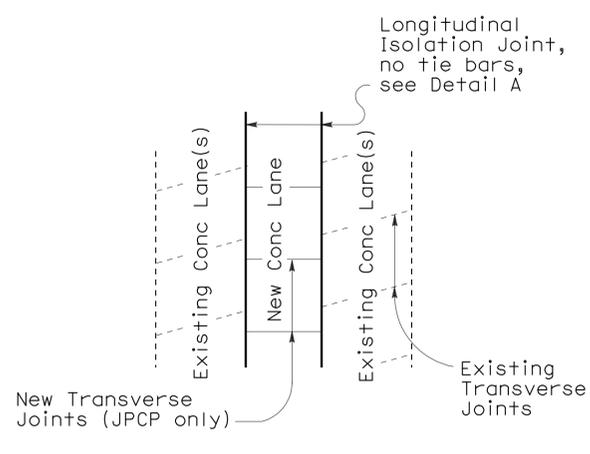
**CASE 1**  
**PLAN**

Transverse Joints do not align between new and existing



**CASE 2**  
**PLAN**

Transverse Joints align between new and existing



**CASE 3 (INTERIOR LANE REPLACEMENT)**  
**PLAN**

Transverse Joints do not align between new and existing

**LANE/SHOULDER ADDITION OR RECONSTRUCTION**  
(For JPCP and CRCP)

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CONCRETE PAVEMENT-  
LANE SCHEMATICS  
AND ISOLATION JOINT DETAIL**  
NO SCALE

RSP P18 DATED JUNE 5, 2009 SUPERSEDES RSP P18 DATED MAY 15, 2009, RSP P18 DATED NOVEMBER 17, 2006 AND STANDARD PLAN P18 DATED MAY 1, 2006 - PAGE 127 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP P18**

2006 REVISED STANDARD PLAN RSP P18

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	15	70.6/74.9	35	42

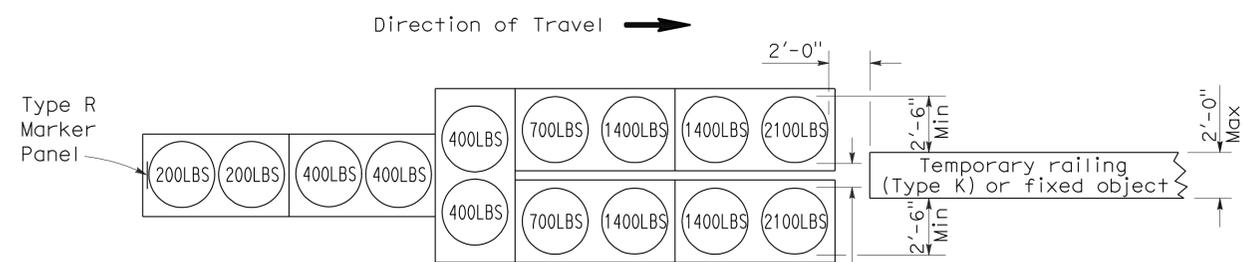
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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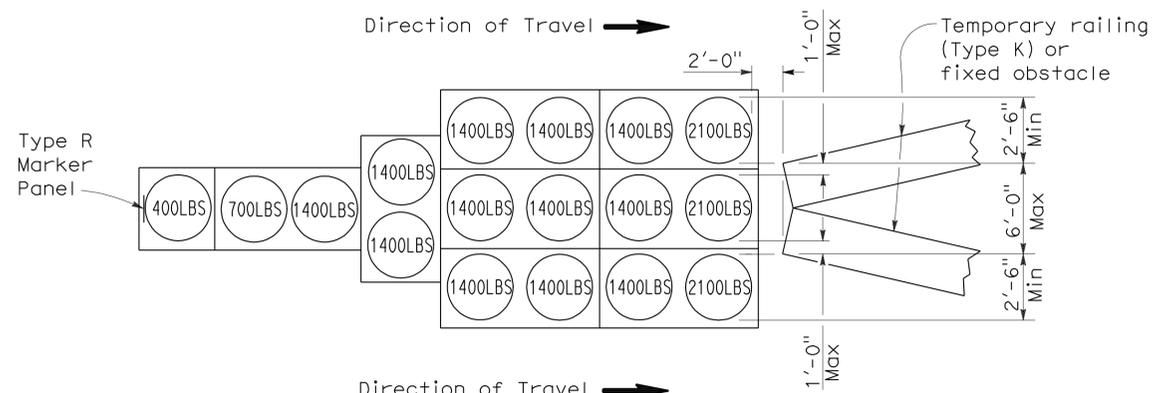
REGISTERED PROFESSIONAL ENGINEER  
*Randell D. Hiatt*  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

To accompany plans dated 5-16-11



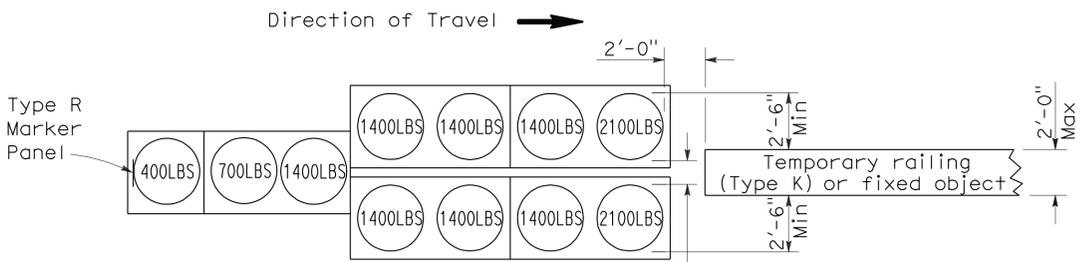
**ARRAY 'TU14'**

Approach speed 45 mph or more



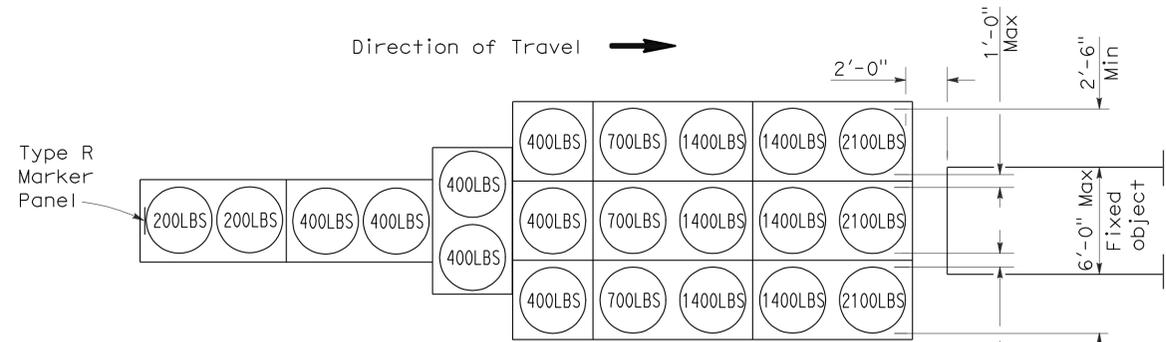
**ARRAY 'TU17'**

Approach speed less than 45 mph



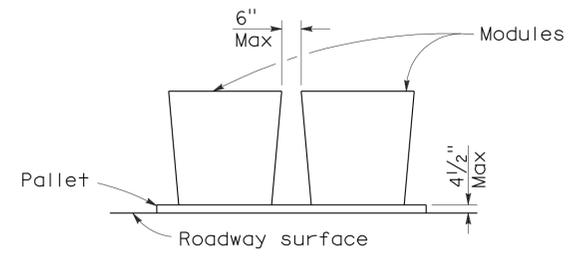
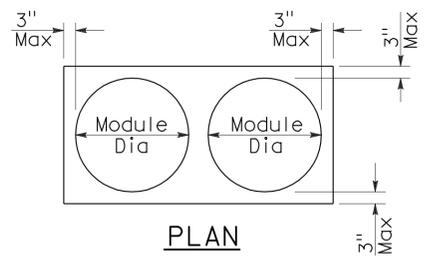
**ARRAY 'TU11'**

Approach speed less than 45 mph



**ARRAY 'TU21'**

Approach speed 45 mph or more



**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

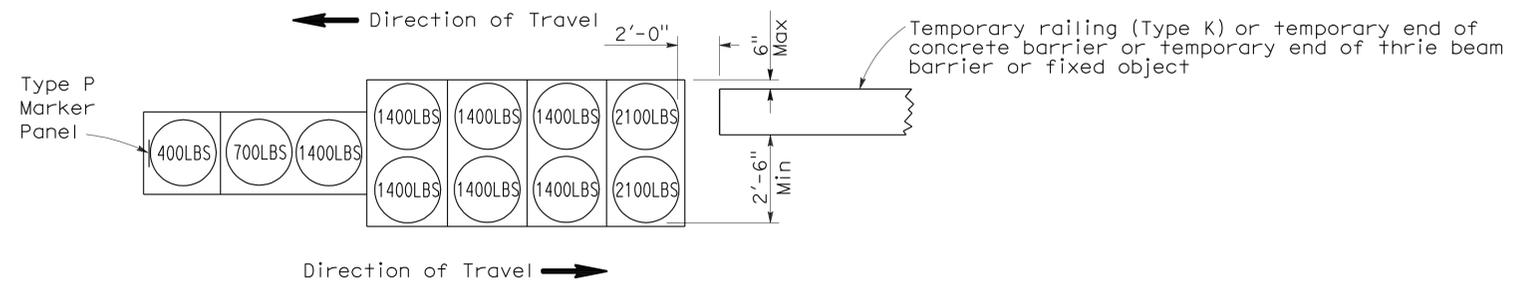
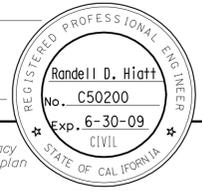
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	15	70.6/74.9	36	42

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

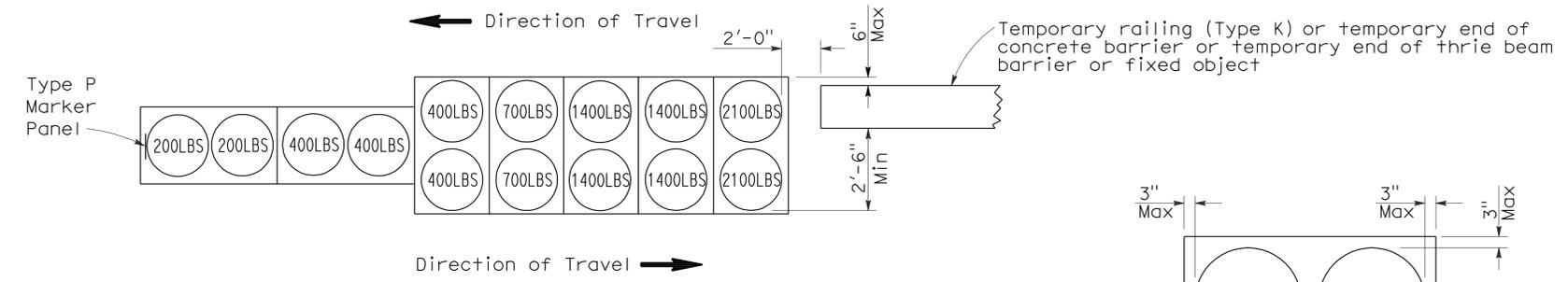
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 5-16-11



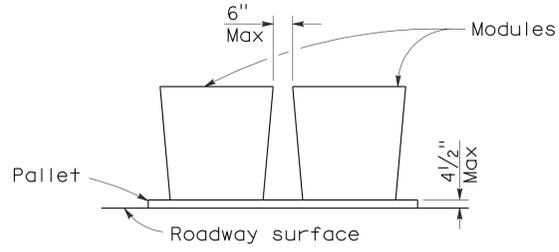
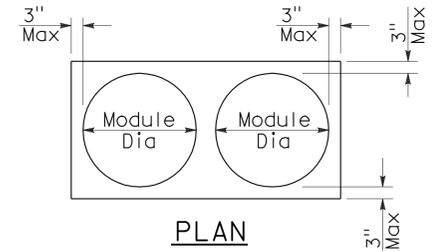
**ARRAY 'TB11'**

Approach speed less than 45 mph



**ARRAY 'TB14'**

Approach speed 45 mph or more



**CRASH CUSHION PALLET DETAIL**  
See Note 7

**NOTES:**

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

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

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

**REVISED STANDARD PLAN RSP T1B**

2006 REVISED STANDARD PLAN RSP T1B

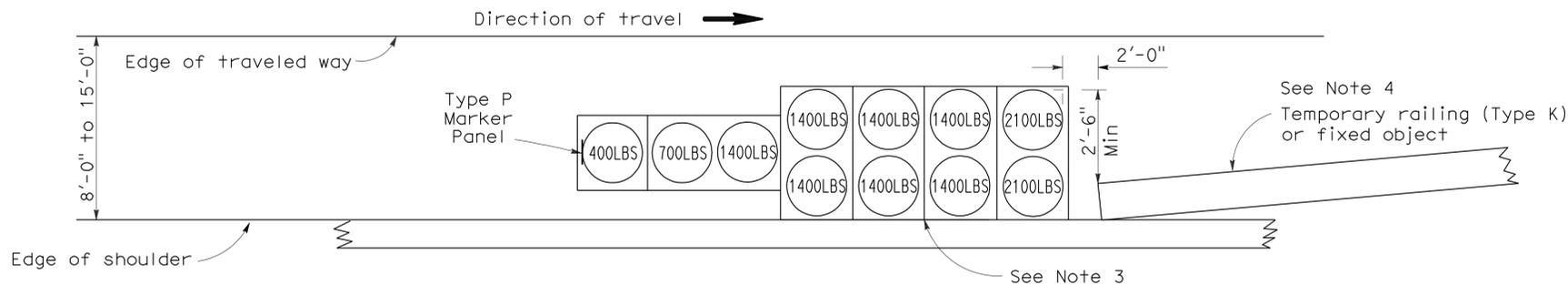
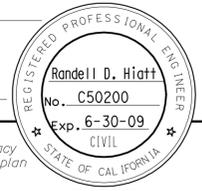
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	15	70.6/74.9	37	42

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

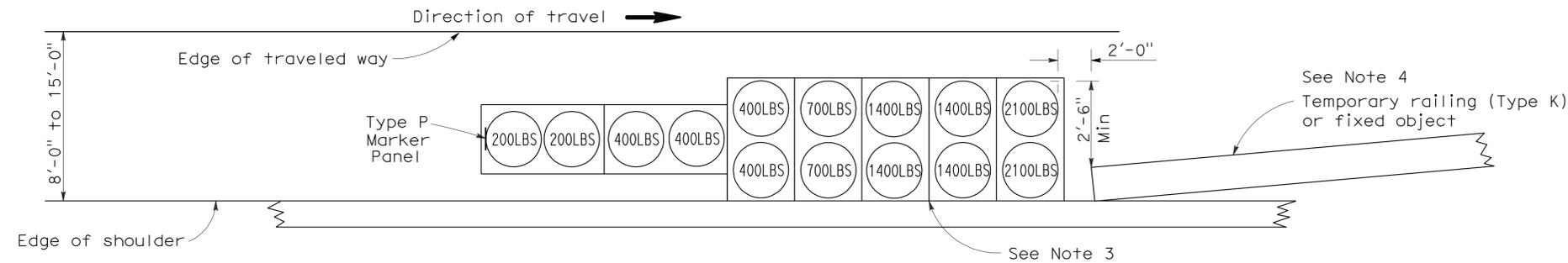
June 6, 2008  
PLANS APPROVAL DATE

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To accompany plans dated 5-16-11



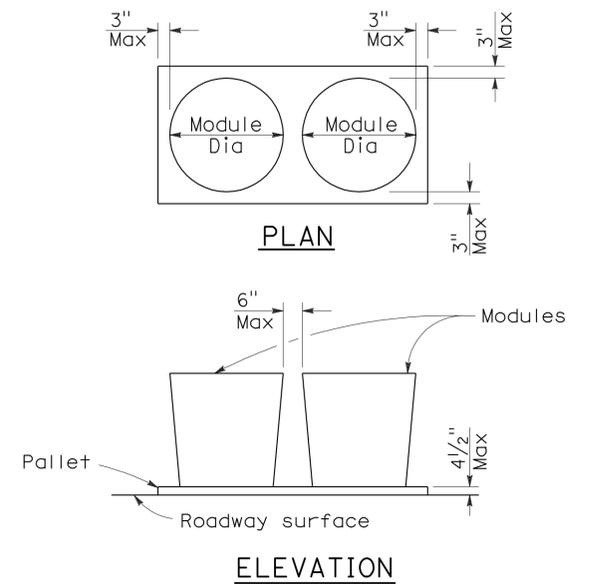
**ARRAY 'TS11'**  
Approach speed less than 45 mph  
See Note 9



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

**NOTES:**

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



**CRASH CUSHION PALLET DETAIL**  
See Note 11

STATE OF CALIFORNIA  
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**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



# ELECTROLIERS

STANDARD TYPES		
15, 15D		High mast light pole
15 STRUCTURE		Double Arm lighting standard
21, 21D STRUCTURE		Existing electrolier
30		Electrolier foundation (Future installation)
31		
32		
35		
36-20A		

**NOTES:**

- Luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31, 32, 35 and 36-20A Standards, unless otherwise specified. Luminaires shall be 200 W HPS when installed on other type standards or poles, unless otherwise specified.
- Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.
- Variations noted adjacent to symbol on project plans.

- Electrolier (see project notes or project plans)
- Luminaire on wood pole

## STANDARD NOTES:

- AB** Abandon. If applied to conduit, remove conductors.
- BC** Install pull box in existing conduit run.
- BP** Pedestrian barricade, type as indicated on plan.
- CB** Install conduit into existing pull box.
- CC** Connect new and existing conduit. Remove existing conductors and install conductors as indicated.
- CF** Conduit to remain for future use. Remove conductors. Install pull wire or rope.
- DH** Detector handhole.
- FA** Foundation to be abandoned.
- IS** Install sign on signal mast arm.
- NS** No slip base on standard.
- PEC** Photoelectric control.
- PEU** Photoelectric unit.
- RC** Equipment or material to be removed and become the property of the Contractor.
- RE** Remove electrolier, fuses and ballast. Tape ends of conductors.
- RL** Relocate equipment.
- RR** Remove and reuse equipment.
- RS** Remove and salvage equipment.
- SC** Splice new to existing conductors.
- SD** Service disconnect.
- SF** Standard to remain for future use. Remove luminaire, pole conductors, fuses and ballast.
- TSP** Telephone service point.

# ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

## PROPOSED EXISTING

BBS	bbs	Battery backup system
BC	bc	Bolt circle
C	C	Conduit
CCTV	cctv	Closed circuit television
CKT	ckt	Circuit
CMS	cms	Changeable message sign
DLC	dlc	Loop detector lead-in cable
EMS	ems	Extinguishable message sign
EVC	evc	Emergency vehicle cable
EVD	evd	Emergency vehicle detector
FB	fb	Flashing beacon
FBCA	fbca	Flashing beacon control assembly
FBS	fbs	Flashing beacon with slip base
FO	fo	Fiber optic
G	G	Ground (Equipment Grounding Conductor)
GFCI	GFCI	Ground fault circuit interrupt
HAR	har	Highway advisory radio
HEX	hex	Hexagonal
HPS	hps	High pressure sodium
IISNS	iisns	Internally illuminated street name sign
ISL	isl	Induction sign lighting
LED	led	Light emitting diode
LMA	lma	Luminaire mast arm
LPS	lps	Low pressure sodium
LTG	ltg	Lighting
LUM	lum	Luminaire
MAT	mat	Mast arm mounting vehicle signal faces, top attachment
MAS	mas	Mast arm mounting vehicle signal faces, side attachment
MAS-4A	mas-4A	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-4B	mas-4B	
MAS-4C	mas-4C	
MAS-5A	mas-5A	Mast arm mounting vehicle signal faces, side attachment - 5 signal section
MAS-5B	mas-5B	
MC	mc	Mercury contactor
M/M	m/m	Multiple to multiple transformer
MT	mt	Conduit with pull wire or rope only
MTG	mtg	Mounting
	mv	Mercury vapor lighting fixture
N	N	Neutral (Grounded Conductor)
NC	NC	Normally closed
NO	NO	Normally open
PB	pb	Pull box
PEC	pec	Photoelectric control (Type I, II, III, IV or V as shown)
PED	ped	Pedestrian
PEU	peu	Photoelectric unit
PPB	ppb	Pedestrian push button
RL		Relocated equipment
RM	rm	Ramp metering
SB	sb	Slip base
SIC	sic	Signal interconnect cable
SIG	sig	Signal
SMA	sma	Signal mast arm
SNS	sns	Street name sign
SP	sp	Service point
TDC	tdc	Telephone demarcation cabinet
TMS	tms	Traffic monitoring station
TOS	tos	Traffic Operations System
VEH	veh	Vehicle
XFMR	xfmr	Transformer
COMM	comm	Communication
RWIS	rwis	Roadway weather information system

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	15	70.6/74.9	39	42

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

October 5, 2007  
PLANS APPROVAL DATE

Jeffery G. McRae  
No. E14512  
Exp. 6-30-08  
ELECTRICAL  
STATE OF CALIFORNIA

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To accompany plans dated 5-16-11

## SOFFIT AND WALL MOUNTED LUMINAIRES

- Pendant, 70 W HPS unless otherwise specified.
- Flush, 70 W HPS unless otherwise specified.
- Wall surface, 70 W HPS unless otherwise specified.
- Existing soffit or wall luminaire to remain unmodified.
- Existing soffit or wall luminaire to be modified as specified.

### NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

RSP ES-1A DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN ES-1A DATED MAY 1, 2006 - PAGE 400 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-1A**

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	15	70.6/74.9	40	42

*Jeffrey G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
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REGISTERED PROFESSIONAL ENGINEER  
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 STATE OF CALIFORNIA

### CONDUIT

PROPOSED	EXISTING	
---	---	Lighting Conduit, unless otherwise indicated or noted
---	---	Traffic signal conduit
-C-	-c-	Communication conduit
-T-	-t-	Telephone conduit
-F-	-f-	Fire alarm conduit
-FO-	-fo-	Fiber optic conduit
---	---	Conduit termination
		Conduit riser in/on structure or service pole

### SIGNAL EQUIPMENT

PROPOSED	EXISTING	
		Pedestrian signal face
		Pedestrian push button post
		Pedestrian barricade
		Vehicle signal face (with backplate, 3-Section: red, yellow and green)
		Vehicle signal face with angle visors
		Modifications of basic symbols: "L" indicates all non-arrow sections louvered "LG" indicates louvered green section only "PV" indicates 12" programmed visibility sections "8" indicates all 8" sections (only when specified)
		Type 15TS and Vehicle signal face
		Vehicle signal face with red, yellow and green left arrow sections
		Vehicle signal face with red and yellow sections and up green arrow
		Vehicle signal face (5 Section) with red, yellow and green sections and yellow and green right arrows
		Type 1 Standard and attached vehicle signal faces
		Standard with signal mast arm only and attached vehicle signal faces and internally illuminated street name sign
		Type 33 Standard, Left-turn vehicle signal face and sign
		Standard with luminaire and signal mast arms and attached vehicle signal faces
		Cantilever flashing beacon Type 9 Frame, with a sign unless otherwise specified or indicated
		Type 15-FBS Standard with two vehicle signal face sections with lens, backplate and visor with a sign
		Flashing beacon. One vehicle signal face section with lens, backplate and visor. "R" indicates red indication, "Y" indicates yellow indication
		Controller assembly. Door indicates front of cabinet

### SERVICE EQUIPMENT

PROPOSED	EXISTING	
---OH---	---oh---	Overhead lines
		Wood pole "U" indicates utility owned
		Pole guy with anchor
		Utility transformer - ground mounted
		Service equipment enclosure type
		Service equipment enclosure door indicates front of enclosure
		Telephone demarcation cabinet

### POLE-MOUNTED SERVICE DESIGNATION



### ILLUMINATED OVERHEAD SIGN

PROPOSED	EXISTING	
		Overhead sign - Single post
		Overhead sign - Two post
		Overhead sign - Mounted on structure
		Overhead sign with electrolier

### SIGNAL EQUIPMENT Cont

PROPOSED	EXISTING	
		Guard post
		Type 1 Standard with "Meter On" sign
		Emergency Vehicle detector

### NOTES:

- All signal sections shall be 12" unless shown otherwise.
- Signal heads shall be provided with backplates unless shown otherwise.
- Signal indication shall be LED.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (SYMBOLS AND ABBREVIATIONS)**  
 NO SCALE

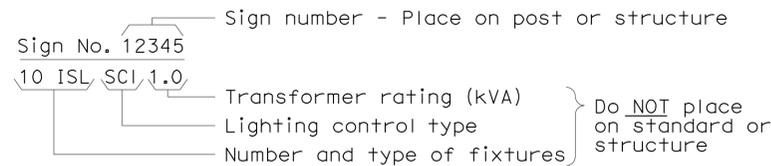
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-1B**

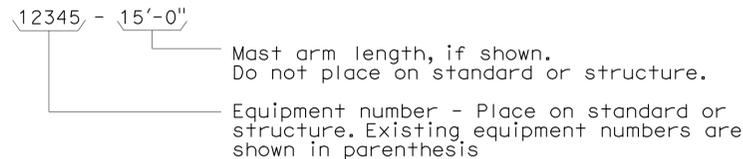
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

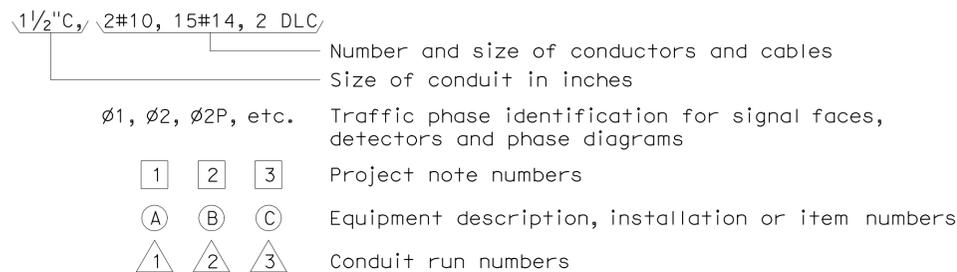
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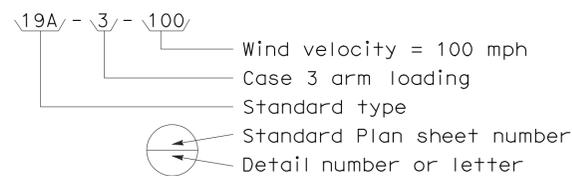
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



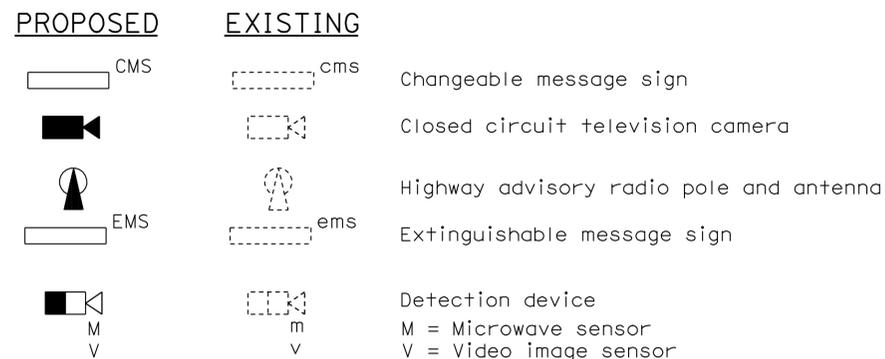
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



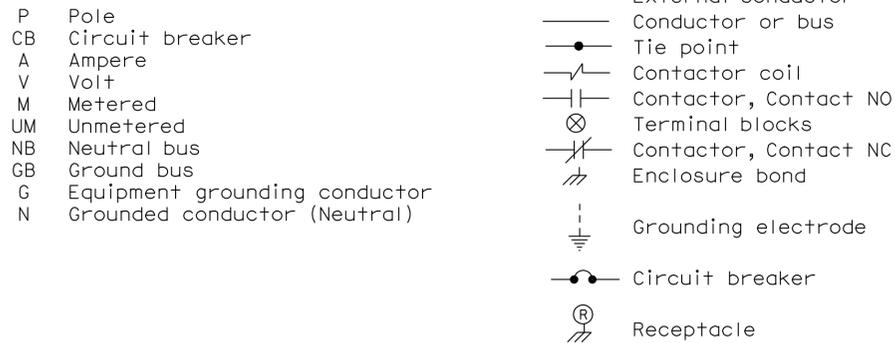
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



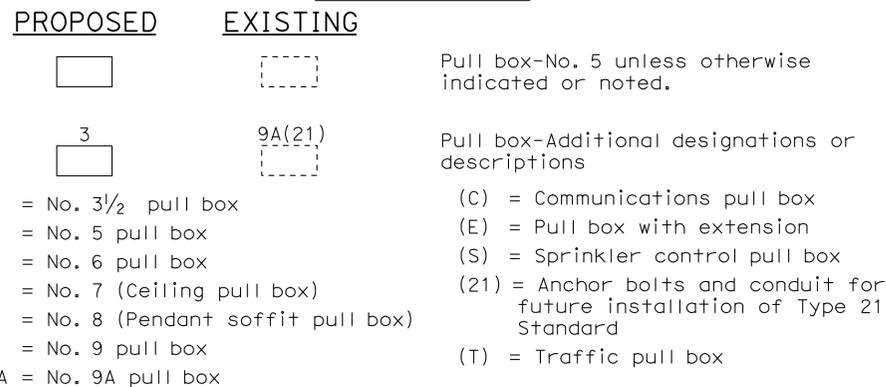
### MISCELLANEOUS EQUIPMENT



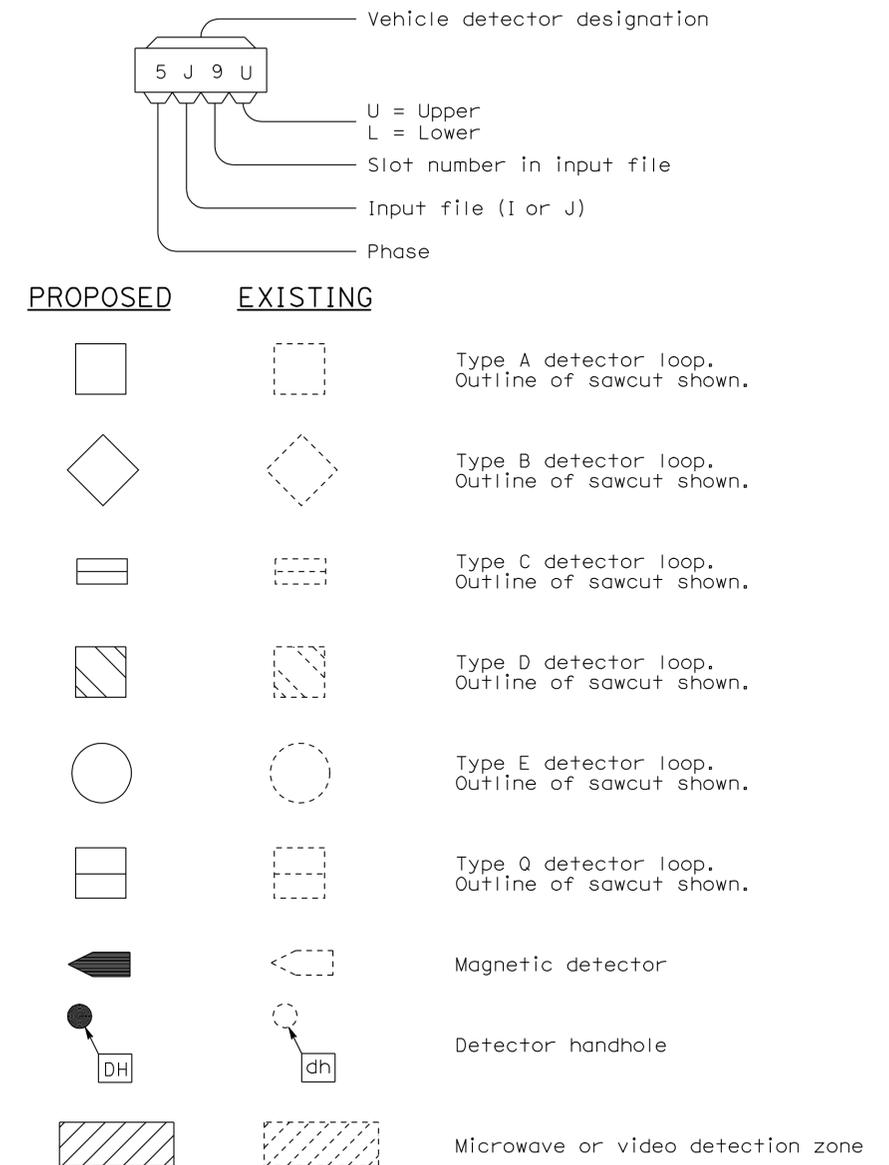
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (SYMBOLS AND ABBREVIATIONS)**

NO SCALE

RSP ES-1C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1C  
 DATED MAY 1, 2006 - PAGE 402 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-1C**

2006 REVISED STANDARD PLAN RSP ES-1C

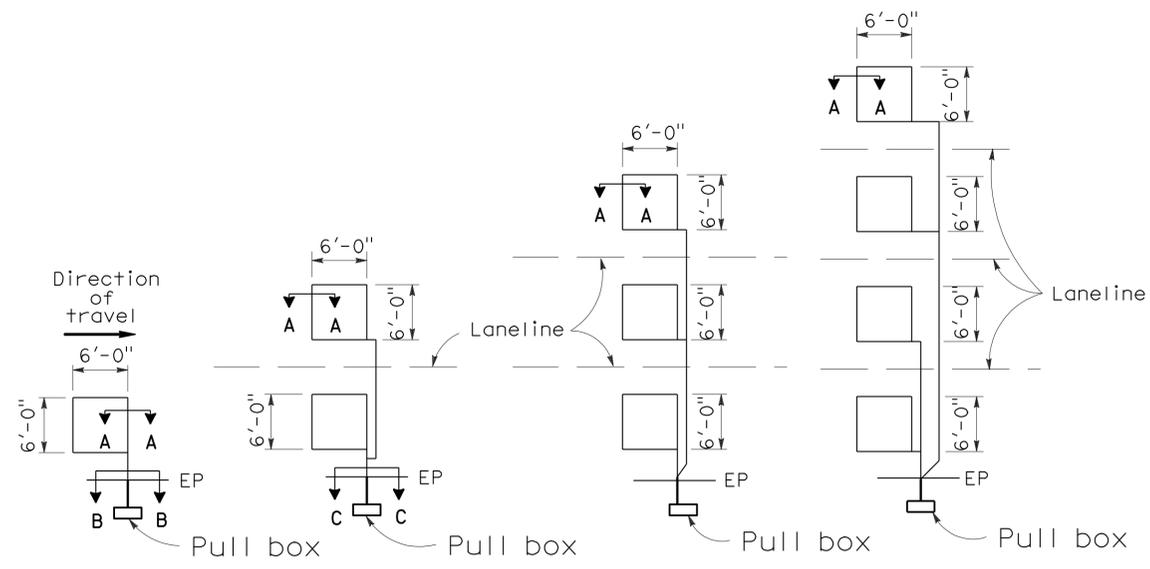
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	15	70.6/74.9	42	42

*Jeffery G. McRae*  
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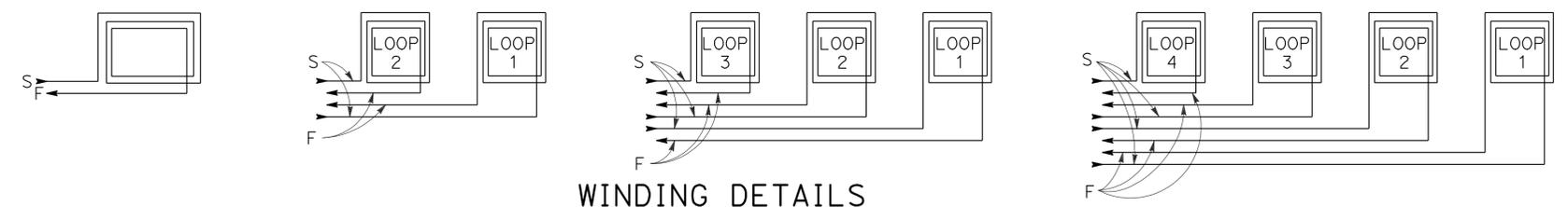
## LOOP INSTALLATION PROCEDURE

- Loops shall be centered in lanes.
- Saw slots in pavement for loop conductors as shown in details.
- Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
- Bottom of saw slot shall be smooth with no sharp edges.
- Slots shall be washed until clean, blown out and thoroughly dried before installing loop conductors.
- Adjacent loops on the same sensor unit channel shall be wound in opposite directions.
- Identify and tag loop circuit pairs in the pull box with loop number, start (S) and finish (F) of conductor. Identify and tag lead-in-cable with sensor number and phase.
- Install loop conductor in slot using a 3/16" to 1/4" thick wood paddle. Hold loop conductors with wood paddles (at the bottom of the sawed slot) during sealant placement.
- No more than 2 twisted pairs shall be installed in one sawed slot.
- Allow additional 5'-0" of slack length of conductor for the lead-in run to pull box.
- The additional length of each conductor for each loop shall be twisted together into a pair (6 turns per 3'-4" minimum) before being placed in the slot and conduit leading to pull box.
- Test each loop circuit for continuity, circuit resistance and insulation resistance at the pull box before filling slots.
- Fill slots as shown in details.
- Splice loop conductors to lead-in-cable. Splices shall be soldered.
- End of lead-in-cable and Type 2 loop conductor shall be waterproofed prior to installing in conduit to prevent moisture from entering the cable.
- Lead-in-cable shall not be spliced between the pull box and the controller cabinet terminals.
- Test each loop circuit for continuity, circuit resistance and insulation resistance at the controller cabinet location.
- Where loop conductors are not to be spliced to a lead-in-cable, the ends of the conductors shall be taped and waterproofed with electrical insulating coating.



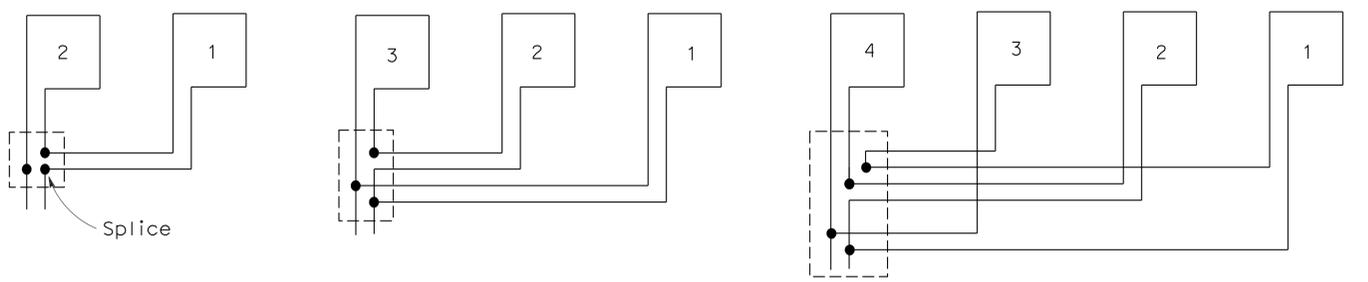
TYPE 1A INSTALLATION    TYPE 2A INSTALLATION    TYPE 3A INSTALLATION    TYPE 4A INSTALLATION  
**SAWCUT DETAILS**

- (Type A loop detector configurations illustrated)
- 1A thru 4A = 1 Type A loop configuration in each lane.
  - 1B thru 4B = 1 Type B loop configuration in each lane.
  - 1C = 1 Type C loop configuration entering lanes as required.
  - 1D thru 4D = 1 Type D loop configuration in each lane.
  - 1E thru 4E = 1 Type E loop configuration in each lane.
  - 1Q thru 4Q = 1 Type Q loop configuration in each lane.
- (Use Type A, B, C, D, E or Q loop detector configurations only when specified or shown on plans)



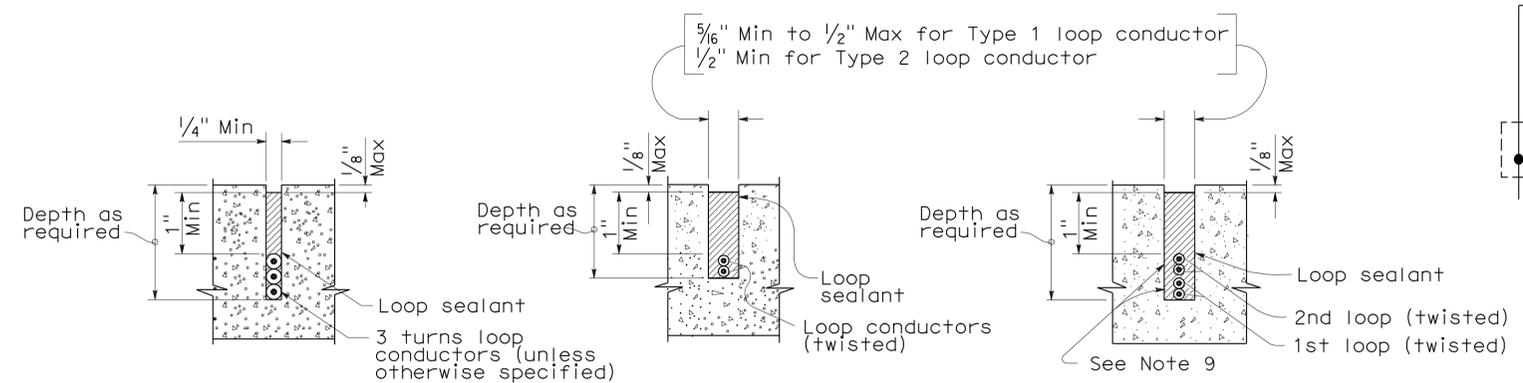
**WINDING DETAILS**

See Notes 6 and 7



**TYPICAL LOOP CONNECTIONS**

(Dashed lines represent the pull box)



SECTION A-A    SECTION B-B    SECTION C-C  
**SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR**

## ELECTRICAL SYSTEMS (DETECTORS)

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

NO SCALE

RSP ES-5A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-5A  
DATED MAY 1, 2006 - PAGE 423 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-5A