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STATE OF CALIFORNIA  
**DEPARTMENT OF TRANSPORTATION**

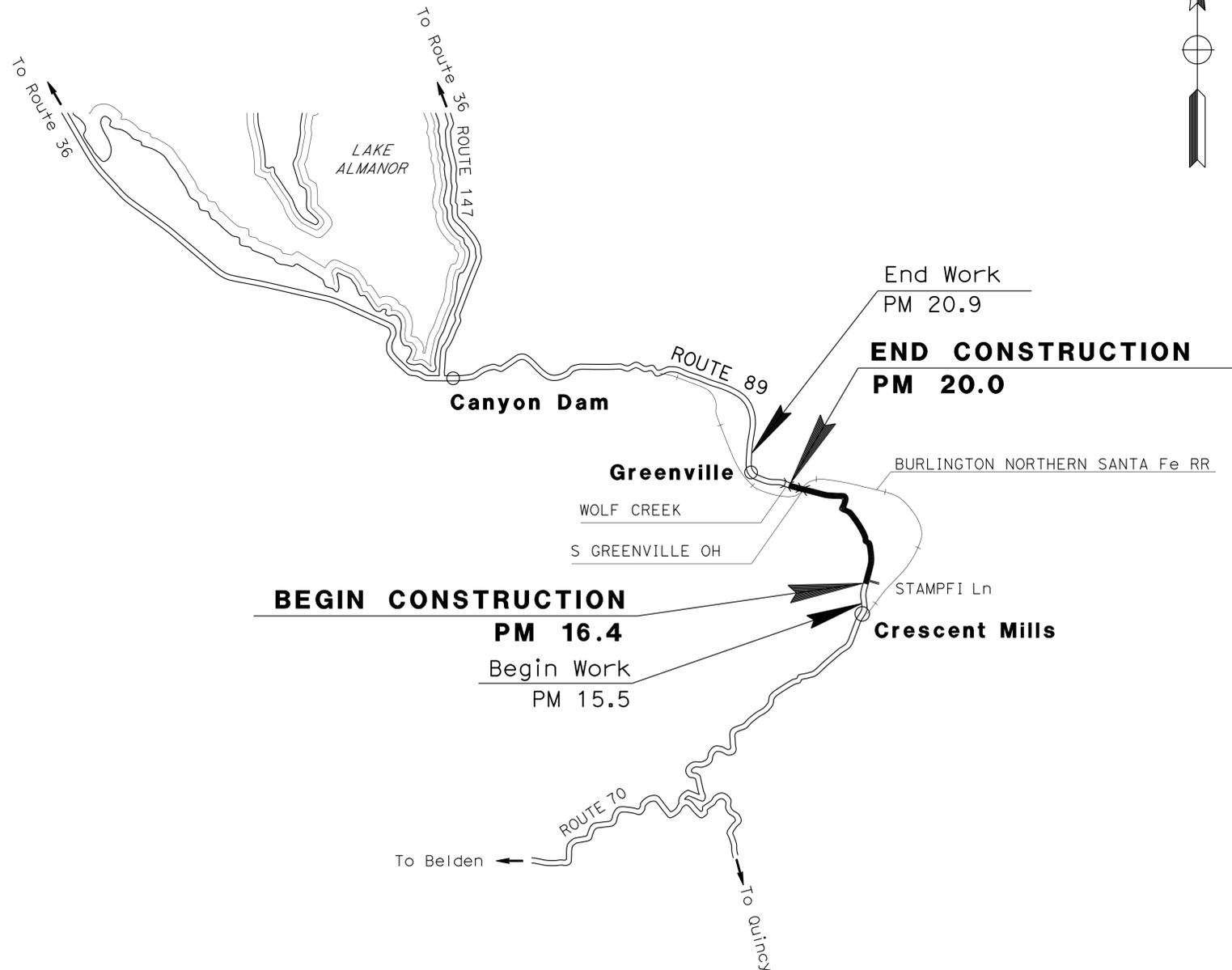
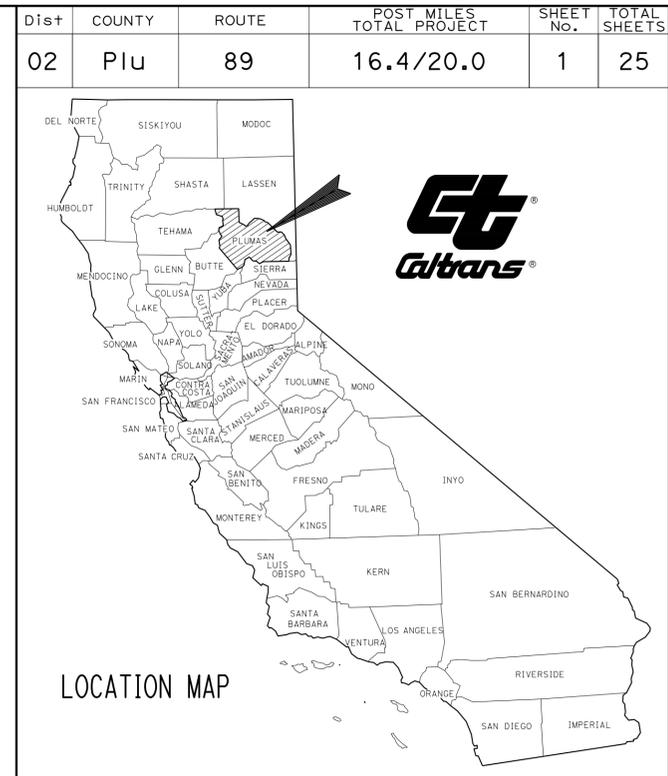
ACSTP-P089(116)E

**PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY**

**IN PLUMAS COUNTY NEAR CRESCENT MILLS FROM 0.2 MILE SOUTH OF STAMPFI LANE TO 0.1 MILE NORTH OF SOUTH GREENVILLE OVERHEAD**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

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



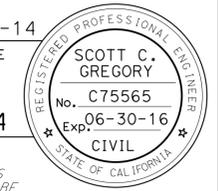
PROJECT MANAGER  
**LANCE BROWN**

DESIGN ENGINEER  
**LANCE BROWN**

*Scott C. Gregory* 11-11-14  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER

**November 12, 2014**  
 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.



CONTRACT No. **02-4G9604**  
 PROJECT ID **0214000094**

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

NO SCALE

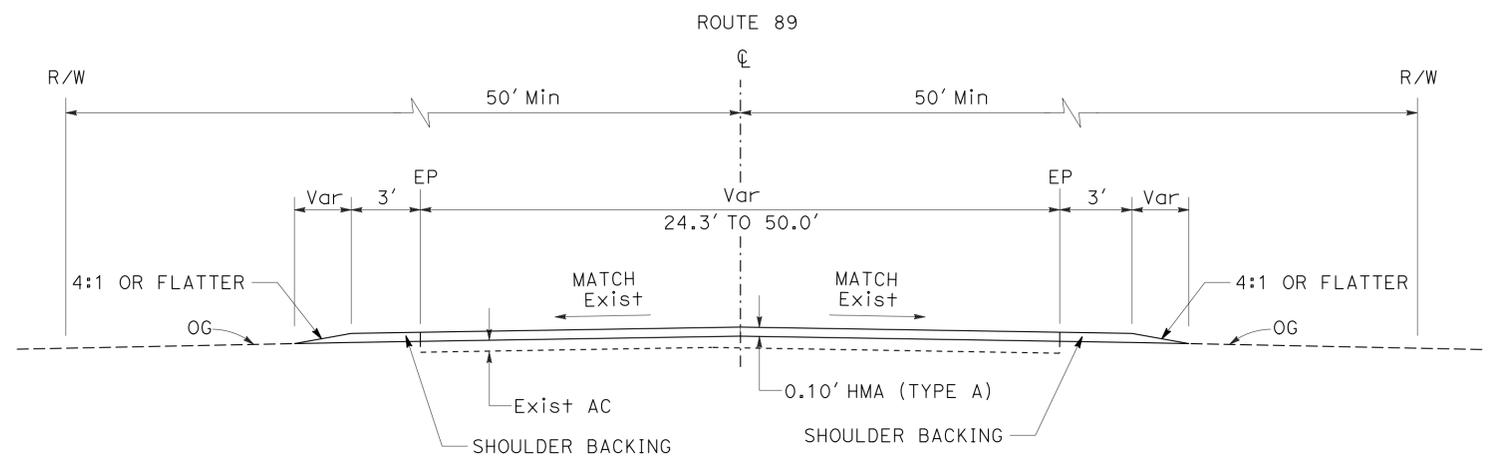
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	PIU	89	16.4/20.0	2	25
<i>Scott C. Gregory</i> 11-12-14 REGISTERED CIVIL ENGINEER DATE					
11-12-14 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**NOTES:**

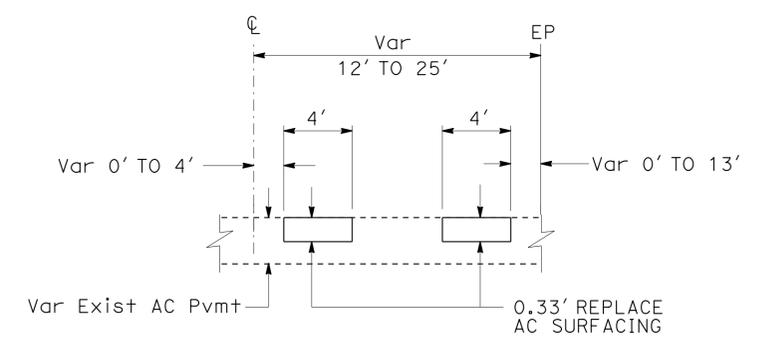
- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT R/W ENGINEERING AT THE DISTRICT OFFICE.

**PAVEMENT CLIMATE ZONE:**

HIGH MOUNTAIN



**TYPICAL CROSS SECTION**  
PM 16.4 TO PM 20.0



**REPLACE AC SURFACING**  
(TYPICAL BOTH DIRECTIONS)  
PM 16.4 TO 20.0

P:\proj\1\02\40960\plans\pse\24g960ca001.dgn  
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE  
 FUNCTIONAL SUPERVISOR LANCE BROWN  
 SCOTT GREGORY  
 KARLIE SMITH  
 REVISOR BY DATE  
 REVISOR BY DATE  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 REVISIONS: 11-12-14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Plu	89	16.4/20.0	3	25

11-12-14  
REGISTERED CIVIL ENGINEER DATE

11-12-14  
PLANS APPROVAL DATE

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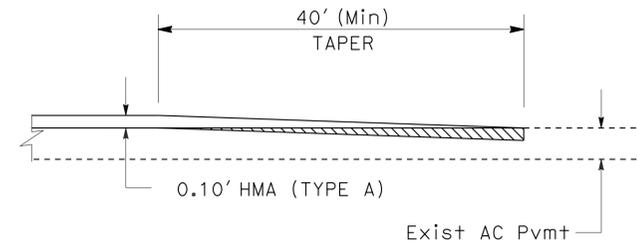
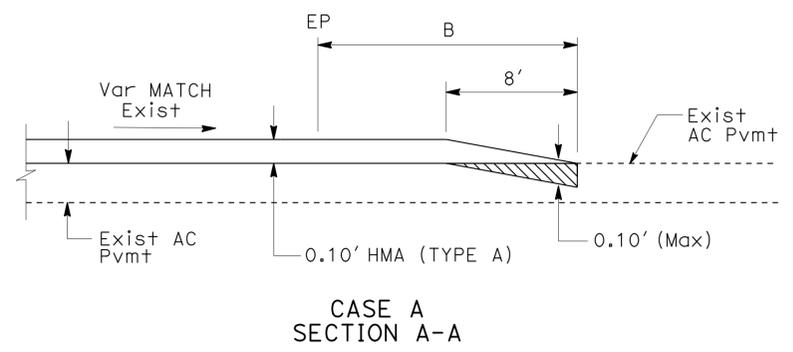


- NOTES:**
- FOR TEMPORARY CONSTRUCTION TAPERS, GRIND EXISTING SURFACES TO ACCOMMODATE A MINIMUM TAPER THICKNESS OF 0.10' WHEN EITHER:
    - HMA MATERIAL SUCH AS RUBBERIZED, POLYMER MODIFIED OR OPEN GRADED IS UNSUITABLE FOR RAKING TO A MAXIMUM 0.02' THICKNESS AT THE CONFORM.
    - TEMPORARY TAPER WILL BE IN PLACE FOR MORE THAN 14 DAYS.
  - PERMANENT SURFACE MAY BE EXISTING OR NEW PAVEMENT.
  - ROADWAY SURFACE IS THE TOP OF EXISTING SURFACE OR THE TOP OF THE PLANED SURFACE.
  - EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS

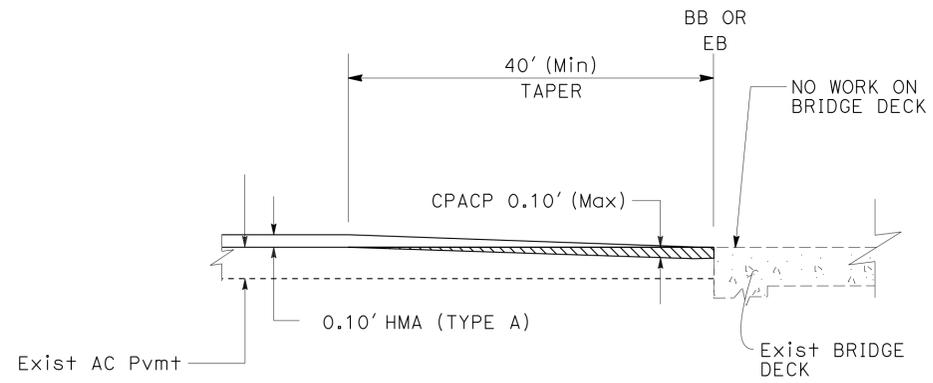
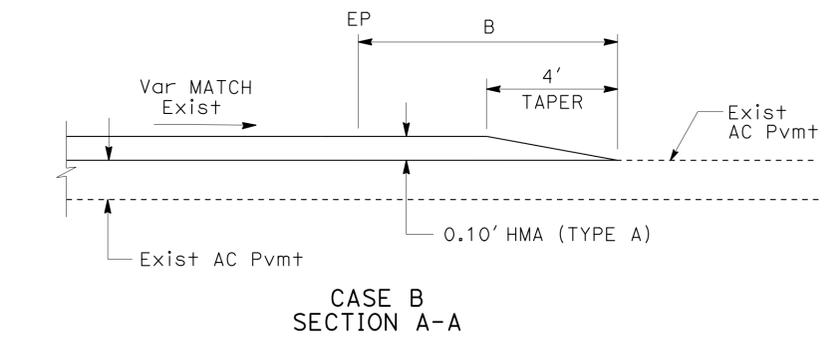
- LEGEND:**
- COLD PLANE ASPHALT CONCRETE PAVEMENT (0.00' TO 0.10')
  - HMA MATERIAL (TEMPORARY TAPER)
  - IF NECESSARY, COLD PLANE ASPHALT CONCRETE PAVEMENT AND PLACE HMA MATERIAL (SEE NOTE 1)
- ABBREVIATIONS:**
- CPACP COLD PLANE ASPHALT CONCRETE PAVEMENT
  - Cir CIRCLE

**ROAD CONNECTIONS**

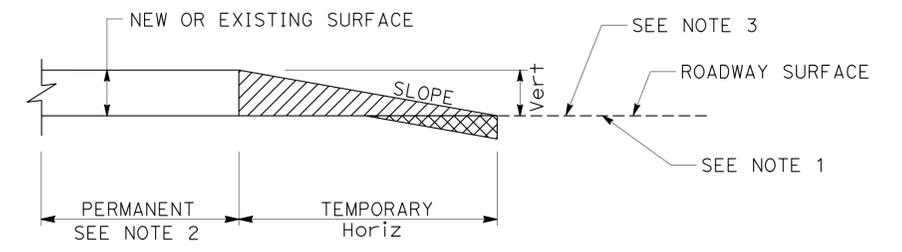
ROAD CONNECTION	SIDE	POST MILE	DIMENSIONS (LF)			CASE
			A	B	C	
DRIVEWAY	L+	16.41	55	15	20	B
DRIVEWAY	L+	16.54	43	15	14	B
STAMPFI Ln	R+	16.56	305	25	45	A
DRIVEWAY	L+	16.60	64	15	26	B
DRIVEWAY	L+	16.68	65	15	16	B
DRIVEWAY	L+	16.74	58	15	14	B
PIONEER Rd	R+	17.14	104	20	40	A
DRIVEWAY	L+	17.18	90	10	24	B
DRIVEWAY	R+	17.97	102	20	52	B
FORGAY Rd	R+	18.80	100	10	80	A
DRIVEWAY	L+	18.97	40	5	24	B
HUMPHREY Cir	L+	19.03	110	15	100	A
HUMPHREY Cir	L+	19.16	55	32	30	A
HUMPHREY Cir	L+	19.19	108	8	66	A
DRIVEWAY	L+	19.41	110	15	64	A
STANDARD MINE Rd	L+	19.60	108	15	38	A
CHENEY St	L+	19.68	115	20	52	A
HIDEAWAY Rd	L+	19.81	150	20	62	A



**MAINLINE CONFORM TAPER**  
PM 16.40  
PM 20.00

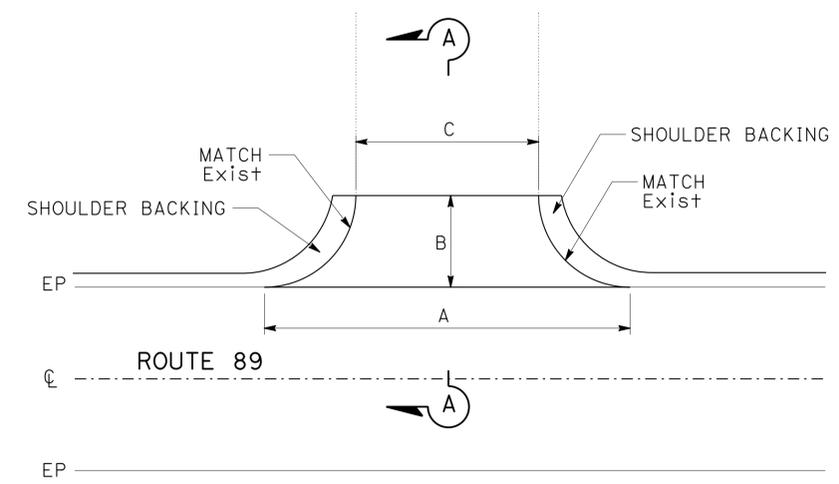


**SOUTH GREENVILLE OH CONFORM TAPER**  
PM 19.90  
PM 19.94

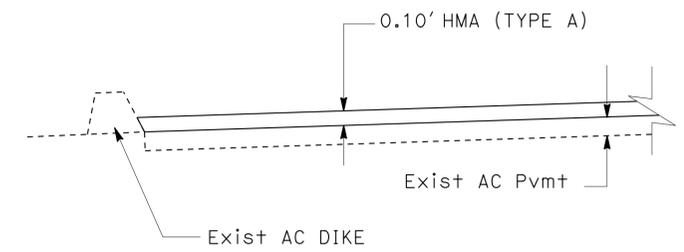


Vert	SLOPE RATIO Horiz/Vert
0-0.10'	70:1
GREATER THAN 0.10'	160:1

**TYPICAL PAVING CONFORM FOR TEMPORARY CONSTRUCTION TAPERS**



**PAVED ROAD CONNECTIONS**



**DIKE LOCATION**

**CONSTRUCTION DETAILS**

NO SCALE

**C-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - MAINTENANCE  
 SCOTT GREGORY  
 KARLIE SMITH  
 LANCE BROWN  
 USERNAME => s115152  
 DGN FILE => 24g960ga001.dgn

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	PIU	89	16.4/20.0	4	25

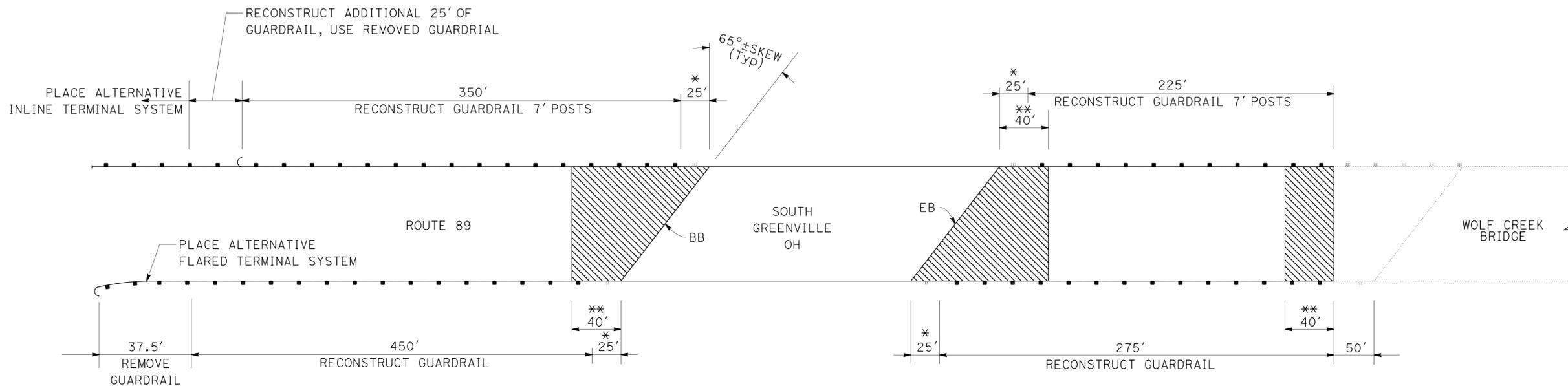
REGISTERED CIVIL ENGINEER	DATE
SCOTT C. GREGORY	11-12-14
PLANS APPROVAL DATE	
	11-12-14

REGISTERED PROFESSIONAL ENGINEER
SCOTT C. GREGORY
No. C75565
Exp. 06-30-16
CIVIL

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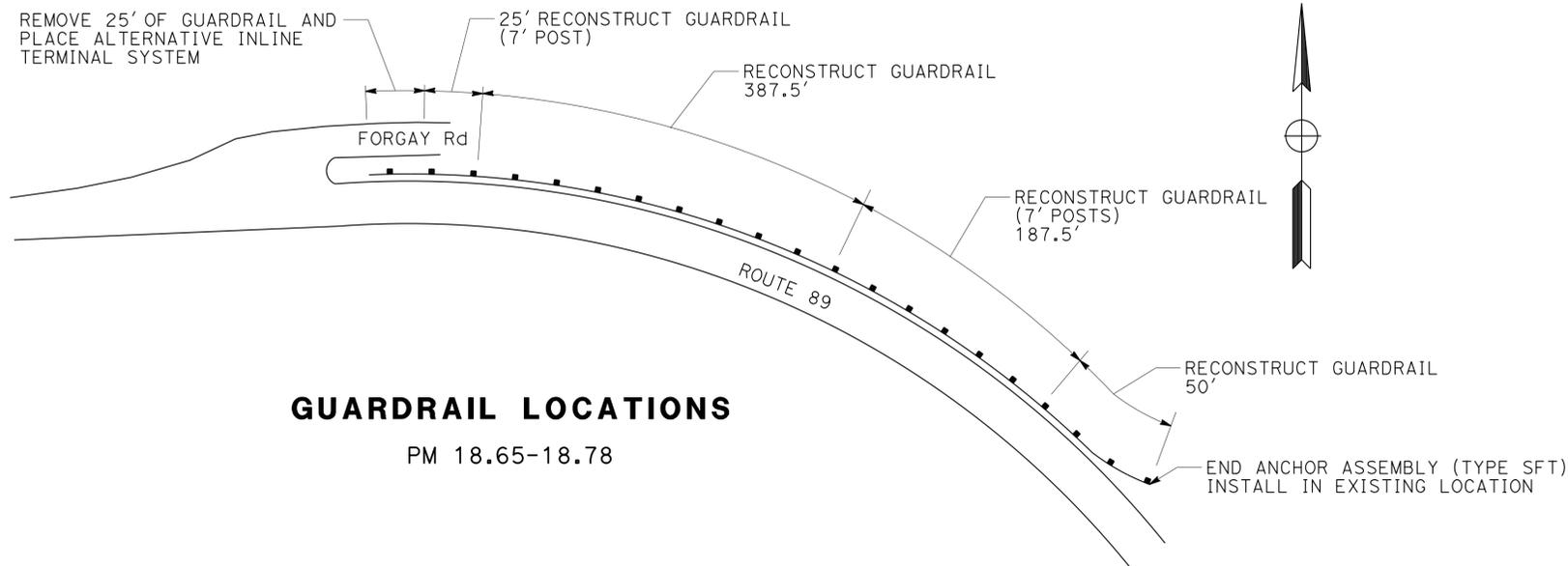
**NOTE:**  
1. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.



**BRIDGE CONFORM/GUARDRAIL LOCATIONS**

PM 19.80-19.90  
PM 19.84-19.91  
PM 19.93-20.00  
PM 19.95-20.00

\* EXISTING WB TRANSITION RAILING TO REMAIN IN PLACE  
\*\* Min CONFORM TAPER



**GUARDRAIL LOCATIONS**

PM 18.65-18.78

**CONSTRUCTION DETAILS**

NO SCALE

**C-2**

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

FUNCTIONAL SUPERVISOR  
LANCE BROWN

CALCULATED/DESIGNED BY  
CHECKED BY

SCOTT GREGORY  
KARLIE SMITH

REVISED BY  
DATE REVISED

LAST REVISION DATE PLOTTED => 14-NOV-2014  
11-12-14 TIME PLOTTED => 08:14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Plu	89	16.4/20.0	5	25

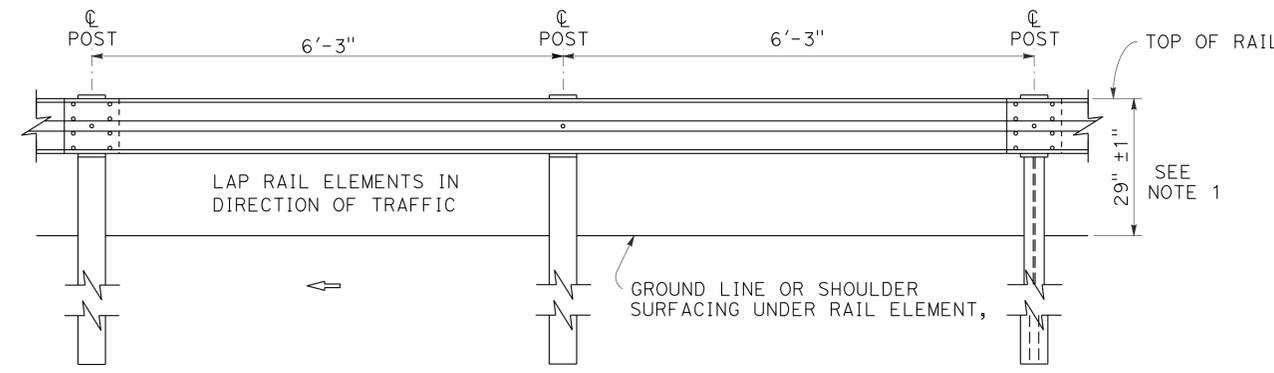
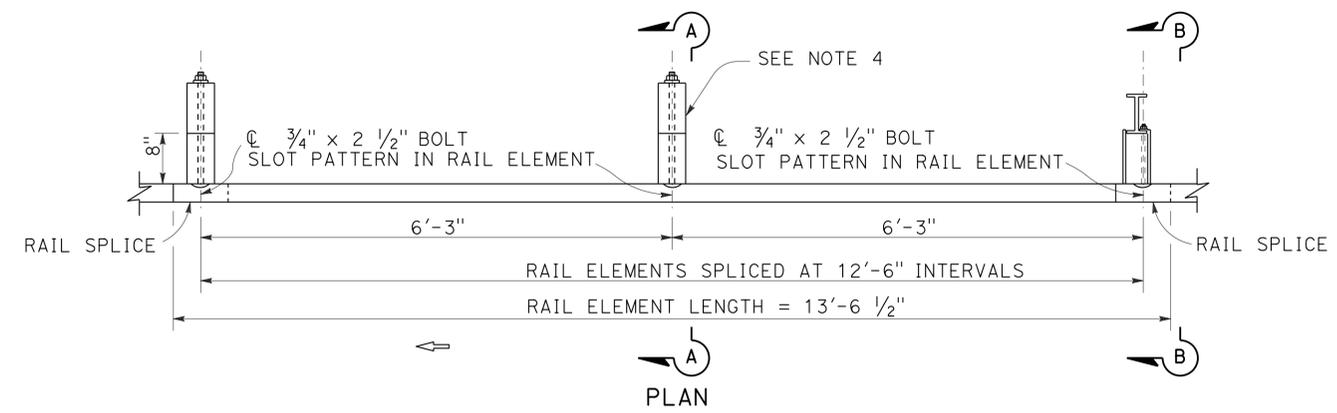
11-12-14  
 REGISTERED CIVIL ENGINEER DATE  
 11-12-14  
 PLANS APPROVAL DATE

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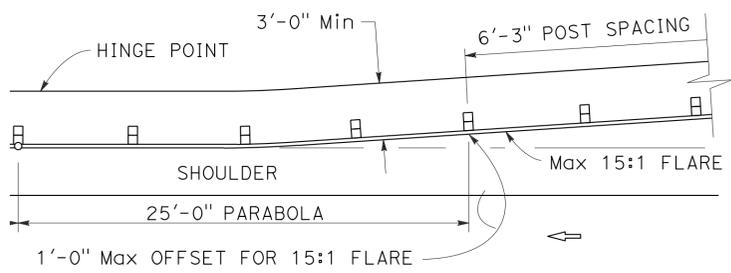
REGISTERED PROFESSIONAL ENGINEER  
 SCOTT C. GREGORY  
 No. C75565  
 Exp. 06-30-16  
 CIVIL  
 STATE OF CALIFORNIA

**NOTES:**

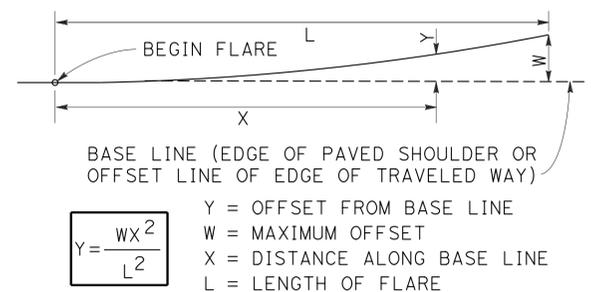
- DIMENSIONS FOR POST AND BLOCKS ARE NOMINAL.
- FOR DETAILS OF STANDARD HARDWARE USED TO CONSTRUCT GUARDRAIL, SEE STANDARD PLAN A77M1.
- FOR DETAILS OF POSTS AND BLOCKS USED TO CONSTRUCT GUARDRAIL SEE STANDARD PLAN A77N2.
- A SINGLE LINE POST MAY BE OFFSET UP TO 12" IN LINE WITH THE GUARDRAIL.
- TO CONNECT RAILING TO TERMINAL SYSTEM END TREATMENT, TRANSITION THE TOP OF RAILING HEIGHT AT A RATIO OF 120:1 TO TERMINAL SYSTEM END TREATMENT HEIGHT PLUS ONE 12'-6" STANDARD RAILING SECTION AT THE TRANSITION HEIGHT FOR A HORIZONTAL CONNECTION TO THE END TREATMENT.
- ADDITIONAL HOLE IN UPPERMOST PORTION OF LINE POST IS FOR POTENTIAL FUTURE ADJUSTMENTS OF RAILING HEIGHT. SEE STANDARD PLAN A77N1 OR A77N2.
- EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.
- FOR STEEL LINE POSTS, USE 1/4-20 SELF-TAPPING SCREWS IN 0.22" DIAMETER HOLES OR 1/4" BOLTS IN 3/32" DIAMETER HOLES.
- HARDWARE, POSTS, AND BLOCKS SHOWN FOR MIDWEST GUARDRAIL ARE VALID FOR METAL BEAM GUARDRAIL.



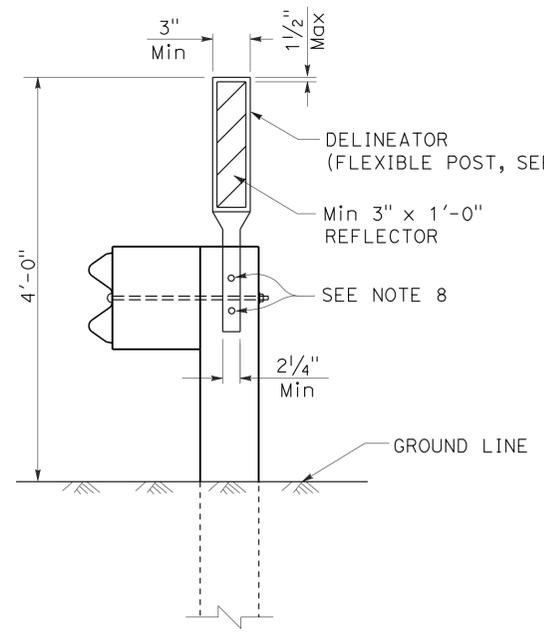
**ELEVATION GUARDRAIL**



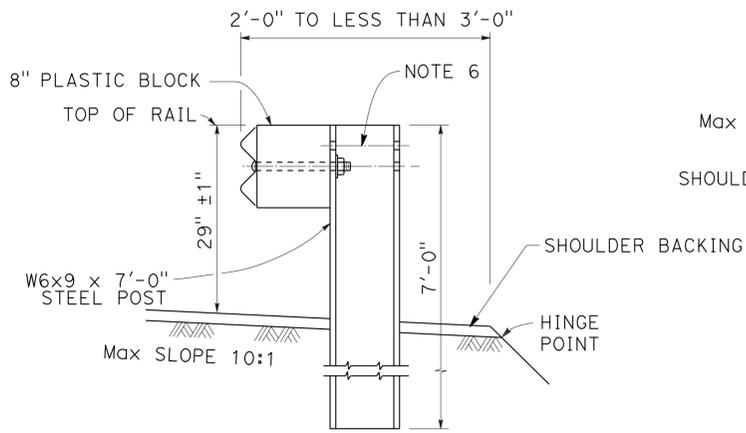
**GUARDRAIL WITH FLARED ALIGNMENT**



**PARABOLIC FLARE OFFSETS**

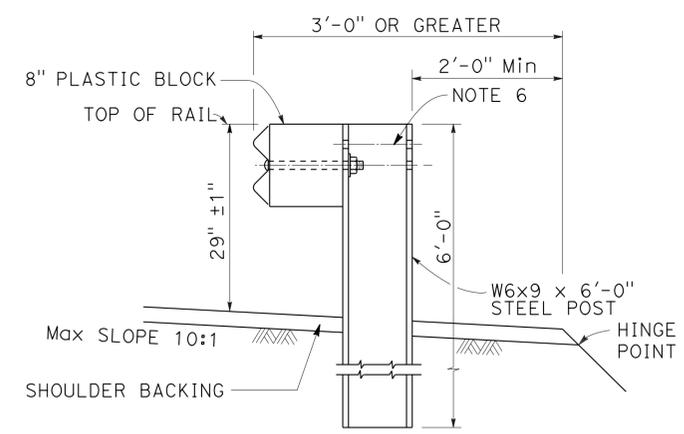


**DELINEATION**



**DETAIL B NARROW ROADWAY INSTALLATION**

SEE NOTE 3



**DETAIL A TYPICAL ROADWAY INSTALLATION**

SEE NOTE 3

**CONSTRUCTION DETAILS**

NO SCALE

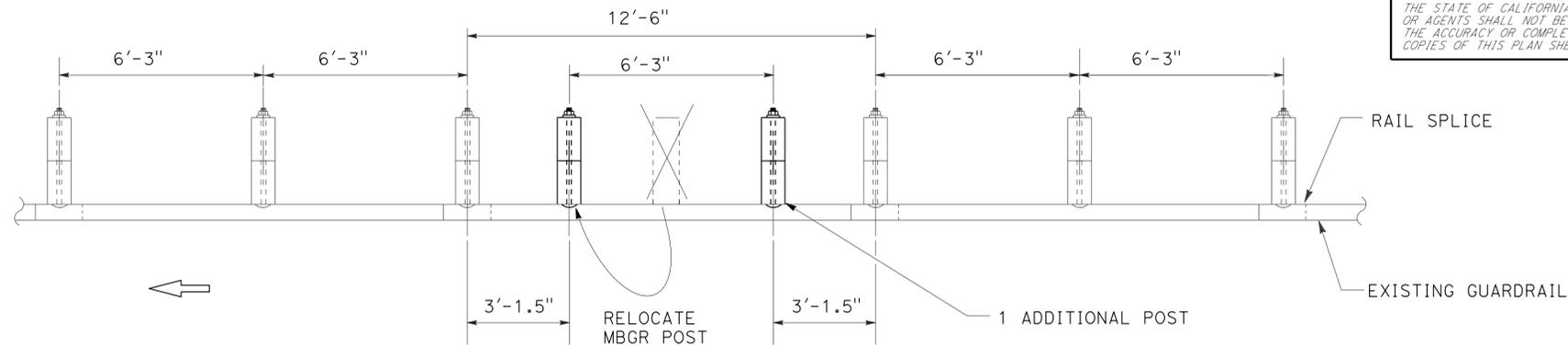
**C-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - MAINTENANCE  
 SCOTT GREGORY  
 KARLIE SMITH  
 LANCE BROWN  
 11-12-14 11-12-14 08:14

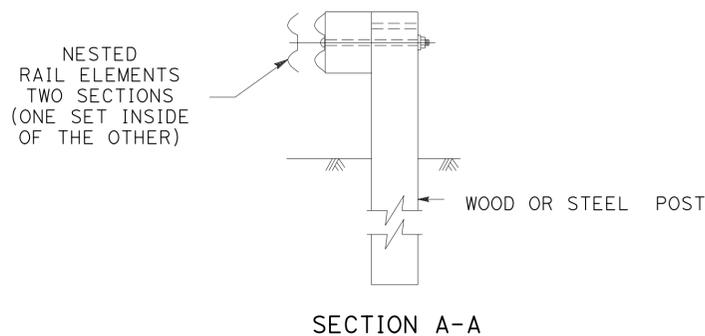
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	PIU	89	16.4/20.0	6	25
<i>Scott C. Gregory</i> 11-12-14 REGISTERED CIVIL ENGINEER DATE					
11-12-14 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**NOTES:**

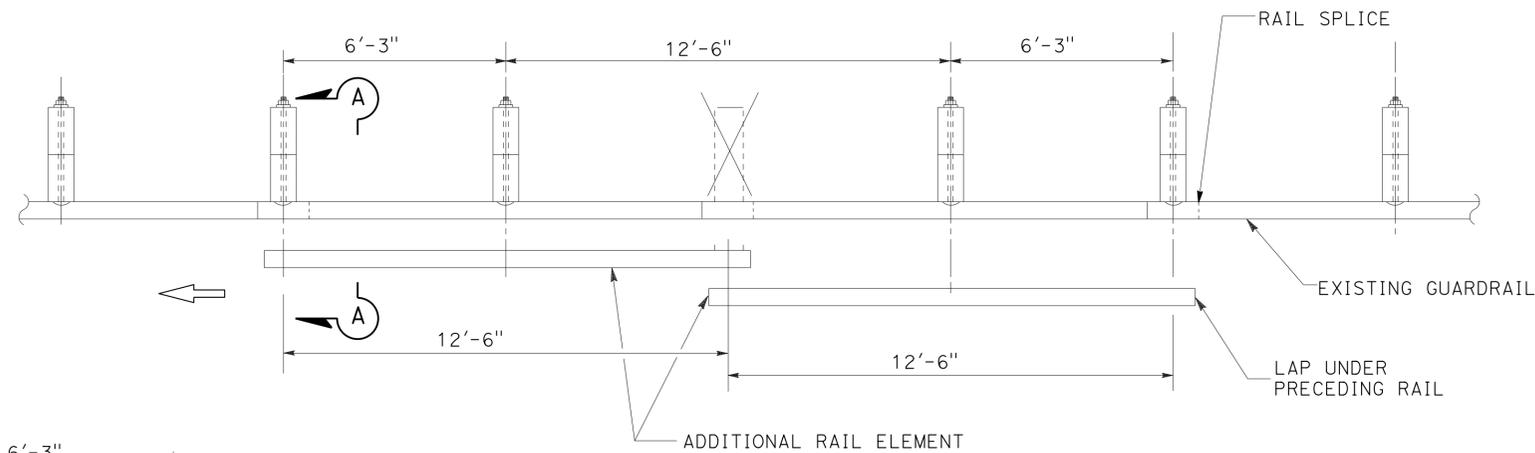
1. NEST ALL RAILS AT EXISTING RAIL LAPS
2. WHEN A POST IS REMOVED AND THE RAIL ELEMENTS ARE NESTED, THE NESTED ELEMENTS MUST BE SUPPORTED BY A MIN OF 2 POST EACH SIDE OF THE MISSING POST OR ADD ADDITIONAL LENGTH OF NESTED ELEMENTS.
3. USING CASE 3, A SECOND ADJACENT POST CAN BE REMOVED IF THE NESTED RAIL ELEMENTS ARE SUPPORTED BY A MIN OF 2 POSTS EACH SIDE OF THE MISSING POSTS. THE 2-POST OPTION USES CASE 3 BUT NOT SHOWN.
4. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.



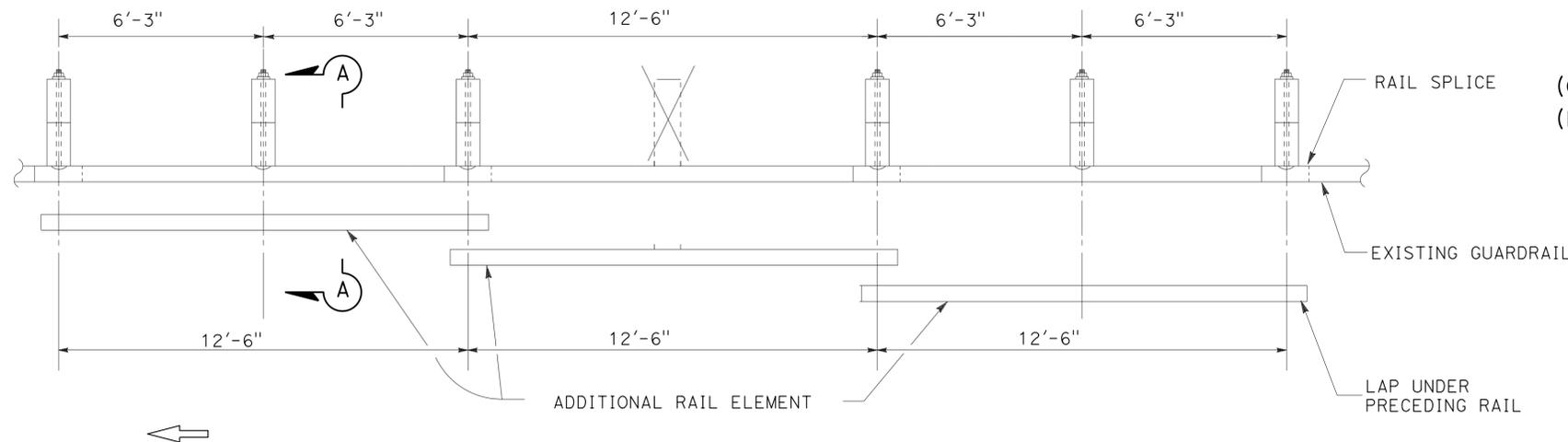
**CASE 1**  
 (ONE POST CONFLICT, MOVE THE POST and ADD ONE POST)  
 (NO NESTED RAIL REQUIRED)



**TYPICAL RAILING OVERLAP INSTALLATION AT POST**



**CASE 2**  
 (ONE POST OMITTED AT JUNCTION OF TWO ELEMENTS)  
 (NEST TWO LENGTHS OF RAIL REQUIRED)



**CASE 3**  
 (ONE POST OMITTED AT CENTER OF OF ELEMENT)  
 (NEST THREE LENGTHS OF RAIL REQUIRED)  
 (ONE ADDITIONAL POST MAY BE OMITTED SEE NOTE 3)

**LONG SPAN NESTED GUARD RAILING**

**CONSTRUCTION DETAILS**  
 NO SCALE

**C-4**

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

FUNCTIONAL SUPERVISOR  
 LANCE BROWN

CALCULATED-DESIGNED BY  
 CHECKED BY

SCOTT GREGORY  
 KARLIE SMITH

REVISED BY  
 DATE REVISED

REVISIONS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	PIU	89	16.4/20.0	7	25

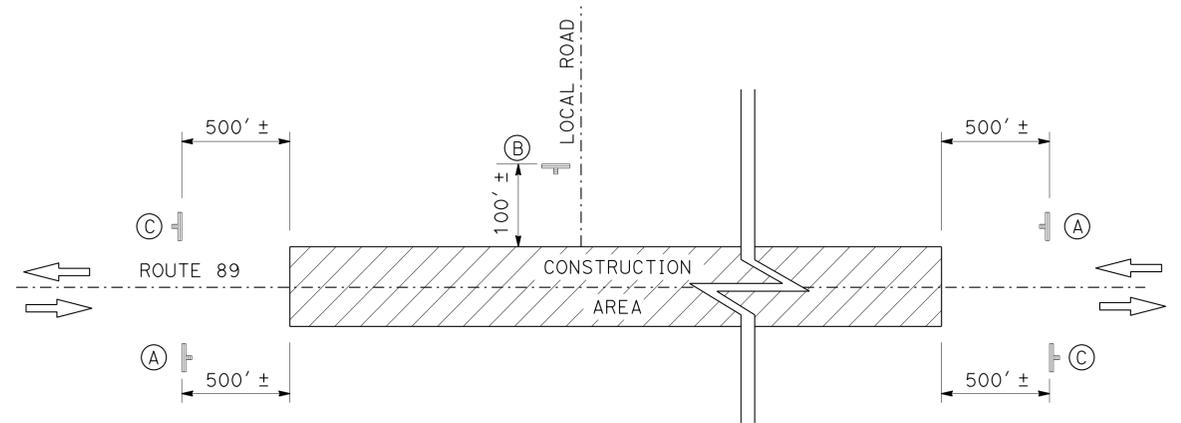
*Scott C. Gregory* 11-12-14  
 REGISTERED CIVIL ENGINEER DATE

11-12-14  
 PLANS APPROVAL DATE

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**NOTES:**

1. EXACT LOCATION OF ALL SIGNS TO BE DETERMINED BY THE ENGINEER.
2. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.
3. CALIFORNIA CODES ARE DESIGNATED BY (CA), OTHERWISE FEDERAL CODES ARE SHOWN.



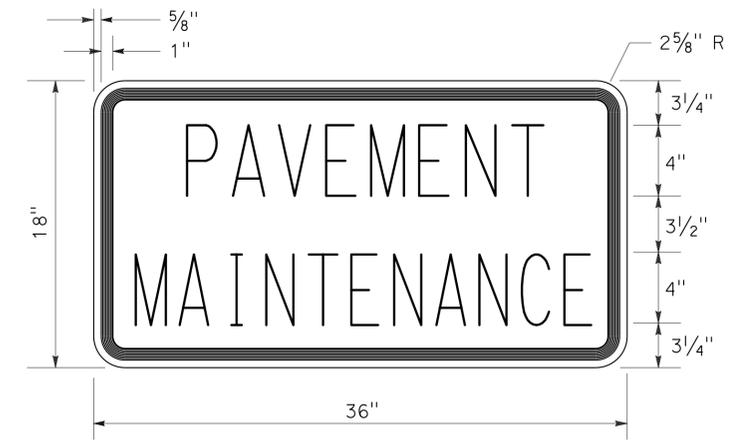
**CONSTRUCTION AREA SIGNS  
(STATIONARY MOUNTED)**

**CONSTRUCTION AREA SIGNS  
(STATIONARY MOUNTED)**

TYPE	CODE	PANEL SIZE	SIGN MESSAGE	NUMBER AND SIZE OF POST	No. OF SIGNS
(A)	G20-1 C23B(CA)	36" x 18"	ROAD WORK NEXT XX MILES PAVEMENT MAINTENANCE	1-4" x 6"	2
(B)	W20-1	48" x 48"	ROAD WORK AHEAD	1-4" x 6"	9
(C)	G20-2	36" x 18"	END ROAD WORK	1-4" x 4"	2

**ROAD CONNECTIONS**

PM	DESCRIPTION	SIDE	(B)
16.56	STAMPFLI Ln	R+	1
17.14	PIONEER Rd	R+	1
18.80	FORGAY Rd	R+	1
19.03	HUMPHREY CIRCLE	L+	1
19.16	HUMPHREY CIRCLE	L+	1
19.19	HUMPHREY CIRCLE	L+	1
19.60	STANDARD MINE Rd	L+	1
19.68	CHENEY St	L+	1
19.81	HIDEAWAY Rd	L+	1



**C23B(CA) SIGN PANEL DETAIL**

**CONSTRUCTION AREA SIGNS  
NO SCALE CS-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 MAINTENANCE  
 SCOTT GREGORY  
 KARLIE SMITH  
 LANCE BROWN

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	PIU	89	16.4/20.0	8	25

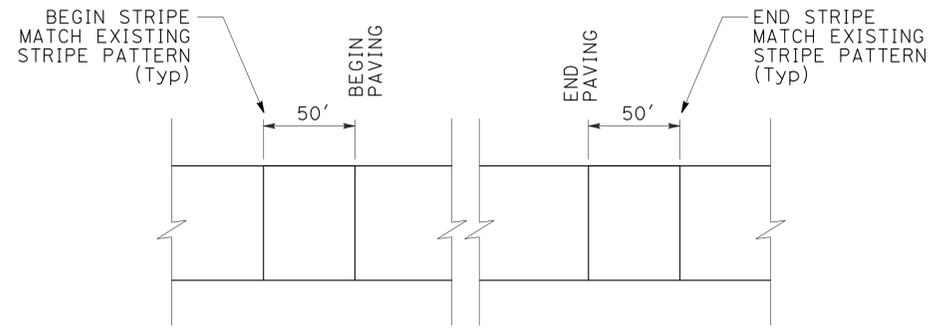
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SCOTT C. GREGORY  
 No. C75565  
 Exp. 06-30-16  
 CIVIL

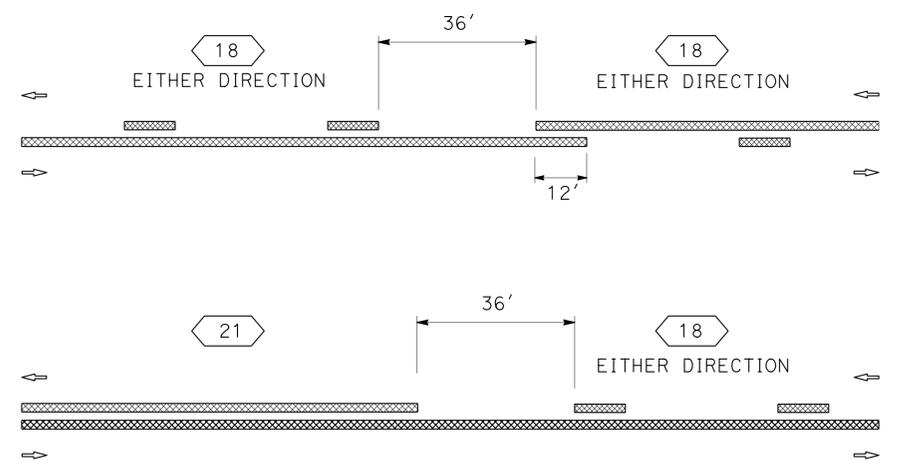
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**ABBREVIATIONS:**

Mid MIDDLE



**TRAFFIC STRIPE MATCH DETAIL**



**TYPICAL STRIPE TRANSITION DETAILS**

**PAVEMENT DELINEATION DETAILS AND QUANTITIES**

NO SCALE

**PDQ-1**

**NOTE:**

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

**REMOVE THERMOPLASTIC PAVEMENT MARKING**

PM	Lt	Mid	Rt	(N) EA	SQFT	REMARKS
16.55		X		1	42	TYPE VI ARROW
16.56			X	1	22	STOP
16.56			X	1	38	ROAD CONNECTION LIMIT LINE
16.58		X		1	42	TYPE III (L) ARROW
16.63		X		1	42	TYPE III (L) ARROW
17.14			X	1	22	STOP
17.14			X	1	26	ROAD CONNECTION LIMIT LINE
17.16		X		1	42	TYPE III (L) ARROW
17.17		X		1	42	TYPE III (L) ARROW
17.81	X			1	42	TYPE VI ARROW
17.84	X			1	42	TYPE VI ARROW
17.88	X			1	42	TYPE VI ARROW
18.21			X	1	42	TYPE VI ARROW
18.25			X	1	42	TYPE VI ARROW
18.28			X	1	42	TYPE VI ARROW
18.80			X	1	20	ROAD CONNECTION LIMIT LINE
19.03	X			1	22	STOP
19.03	X			1	25	ROAD CONNECTION LIMIT LINE
19.19	X			1	22	STOP
19.19	X			1	27	ROAD CONNECTION LIMIT LINE
19.61	X			1	22	STOP
19.61	X			1	18	ROAD CONNECTION LIMIT LINE
19.68	X			1	22	STOP
19.68	X			1	38	ROAD CONNECTION LIMIT LINE
19.81	X			1	22	STOP
19.81	X			1	44	ROAD CONNECTION LIMIT LINE
TOTAL					852	

**REMOVE THERMOPLASTIC PAVEMENT MARKING**

PM	Lt	Mid	Rt	(N) EA	SQFT	REMARKS
16.55		X		1	42	TYPE VI ARROW
16.56			X	1	22	STOP
16.56			X	1	38	ROAD CONNECTION LIMIT LINE
16.58		X		1	42	TYPE III (L) ARROW
16.63		X		1	42	TYPE III (L) ARROW
17.14			X	1	22	STOP
17.14			X	1	26	ROAD CONNECTION LIMIT LINE
17.16		X		1	42	TYPE III (L) ARROW
17.17		X		1	42	TYPE III (L) ARROW
17.81	X			1	42	TYPE VI ARROW
17.84	X			1	42	TYPE VI ARROW
17.88	X			1	42	TYPE VI ARROW
18.21			X	1	42	TYPE VI ARROW
18.25			X	1	42	TYPE VI ARROW
18.28			X	1	42	TYPE VI ARROW
18.80			X	1	20	ROAD CONNECTION LIMIT LINE
19.03	X			1	22	STOP
19.03	X			1	25	ROAD CONNECTION LIMIT LINE
19.19	X			1	22	STOP
19.19	X			1	27	ROAD CONNECTION LIMIT LINE
19.61	X			1	22	STOP
19.61	X			1	18	ROAD CONNECTION LIMIT LINE
19.68	X			1	22	STOP
19.68	X			1	38	ROAD CONNECTION LIMIT LINE
19.81	X			1	22	STOP
19.81	X			1	44	ROAD CONNECTION LIMIT LINE
TOTAL					852	

**REMOVE THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)**

POSTMILE LIMITS	DETAIL 11	DETAIL 18	DETAIL 21	DETAIL 27B	DETAIL 27C	DETAIL 28	DETAIL 38A
	LF	LF	LF	LF	LF	LF	LF
16.4-20.0	7926	169	18,248	36,654	1363	761	676
TOTAL	65,797						

**REMOVE PAVEMENT MARKER**

POST MILE LIMITS	EA
16.4-20.0	1798
TOTAL	1798

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 MAINTENANCE  
 SCOTT GREGORY  
 KARLIE SMITH  
 LANCE BROWN  
 11-12-14

P:\proj\1102\40960\plans\pse\24g960pa001.dgn  
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE  
 FUNCTIONAL SUPERVISOR LANCE BROWN  
 CALCULATED/DESIGNED BY SCOTT GREGORY  
 CHECKED BY KARLIE SMITH  
 REVISED BY DATE  
 REVISIONS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

**NOTES:**

1. (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY
2. EXACT LOCATIONS OF REPLACE AC SURFACING TO BE DETERMINED BY THE ENGINEER.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	PIU	89	16.4/20.0	9	25

11-12-14  
 REGISTERED CIVIL ENGINEER DATE  
 11-12-14  
 PLANS APPROVAL DATE

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

**ROADWAY QUANTITIES**

POST MILE LIMITS	(N) WIDTH	(N) LENGTH	HOT MIX ASPHALT (TYPE A)	TACK COAT	SHOULDER BACKING
	LF	LF			
PM - PM					
16.40-16.52	32.0-37.6	654.7			
16.52-16.67	37.6-44.1	786.7			
16.67-16.74	44.1-40.6	353.8			
16.74-16.82	40.6-32.1	411.8			
16.82-16.83	32.1-24.3	37.0			
16.83-16.88	24.3	264.0			
16.88-16.98	35.0	528.0			
16.98-17.13	25.0-28.0	770.9			
17.13-17.15	28.0-50.0	126.7			
17.15-17.18	50.0-45.0	158.4			
17.18-17.35	45.0-37.0	897.6			
17.35-17.77	37.0-39.0	2185.9			
17.77-17.81	39.0-47.7	200.6			
17.81-17.87	47.7-48.8	316.8			
17.87-18.00	48.8-49.7	691.1			
18.00-18.09	49.7-41.0	480.5	5143	22.2	1261
18.09-18.28	41.0-36.8	1003.2			
18.28-18.50	36.8-36.7	1172.2			
18.50-18.58	36.7-30.9	369.0			
18.58-18.62	30.9-28.2	232.3			
18.62-18.81	28.2-32.0	1019.0			
18.81-18.89	32.0	401.3			
18.89-18.93	32.0-32.5	221.8			
18.93-18.94	32.5-47.5	52.8			
18.94-18.97	47.5	158.4			
18.97-18.98	47.5-38.0	52.8			
18.98-18.99	38.0-33.0	52.8			
18.99-19.21	33.0-32.5	1161.6			
19.21-19.46	32.5-32.0	1357.0			
19.46-19.56	32.0	512.2			
19.56-19.90	32.0-40.0	1795.2			
19.94-20.00	40.0	316.8			
ROAD CONNECTIONS/DRIVEWAYS			163	2.0	20
TOTAL			5306	24.2	1281

**COLD PLANE ASPHALT CONCRETE PAVEMENT**

POST MILE	(N) LENGTH	(N) WIDTH	AREA	REMARKS
	LF	LF	SQYD	
16.40	40	32	142	MAINLINE CONFORM TAPER
16.56	8	45	40	STAMPFI Ln CONFORM TAPER
17.14	8	40	36	PIONEER Rd CONFORM TAPER
18.80	8	80	71	FORGAY Rd CONFORM TAPER
19.03	8	100	89	HUMPHREY CIRCLE CONFORM TAPER
19.16	8	30	27	HUMPHREY CIRCLE CONFORM TAPER
19.19	8	66	59	HUMPHREY CIRCLE CONFORM TAPER
19.41	8	64	57	STORAGE UNIT DRIVEWAY CONFORM TAPER
19.60	8	38	34	STANDARD MINE Rd CONFORM TAPER
19.68	8	52	46	CHENEY St CONFORM TAPER
19.81	8	62	55	HIDEWAY Rd CONFORM TAPER
19.90	40	40	368	BRIDGE CONFORM TAPER
19.94	40	40	368	BRIDGE CONFORM TAPER
20.00	40	40	178	MAINLINE CONFORM TAPER
TOTAL			1570	

**REPLACE ASPHALT CONCRETE SURFACING**

POST MILE LIMITS	(N) Approx No. OF DIGOUTS	(N) LENGTH Avg	(N) WIDTH	(N) DEPTH	REPLACE ASPHALT CONCRETE SURFACING
PM - PM		LF	LF	LF	CY
16.4-17.0	25	50	4	0.33	61
17.0-17.5	25	50	4	0.33	61
17.5-18.0	25	50	4	0.33	61
18.0-18.5	25	50	4	0.33	61
18.5-19.0	23	50	4	0.33	56
19.0-19.5	21	50	4	0.33	51
19.5-20.0	20	50	4	0.33	49
TOTAL					400

**GUARDRAIL**

POST MILE LIMITS	SIDE R+/L+	RECONSTRUCT GUARDRAIL	RECONSTRUCT GUARDRAIL (7' POST)*	REMOVE GUARDRAIL	FURNISH RAIL ELEMENT	END ANCHOR ASSEMBLY (TYPE SFT)	ALTERNATIVE IN-LINE TERMINAL SYSTEM	ALTERNATIVE FLARED TERMINAL SYSTEM	REMOVE MARKER	OBJECT MARKER (TYPE L-1)	DELINEATOR (CLASS 1)	TREATED WOOD WASTE
		LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	LB
18.65-18.78	R+	437.5	212.5	25.0	75.0	1	1		5	1	5	8650
19.80-19.90	R+	450.0		37.5	50.0			1	1	1		5990
19.84-19.91	L+		375.0		37.5		1					5300
19.93-20.00	R+	275.0			37.5							3340
19.95-20.00	L+		225.0		37.5							3190
TOTAL		1162.5	812.5	62.5	237.5	1	2	1	6	2	5	26,470

\* USE STEEL POSTS FOR RECONSTRUCT GUARDRAIL

**SUMMARY OF QUANTITIES**  
**Q-1**

LAST REVISION DATE PLOTTED => 14-NOV-2014  
 11-12-14 TIME PLOTTED => 08:14

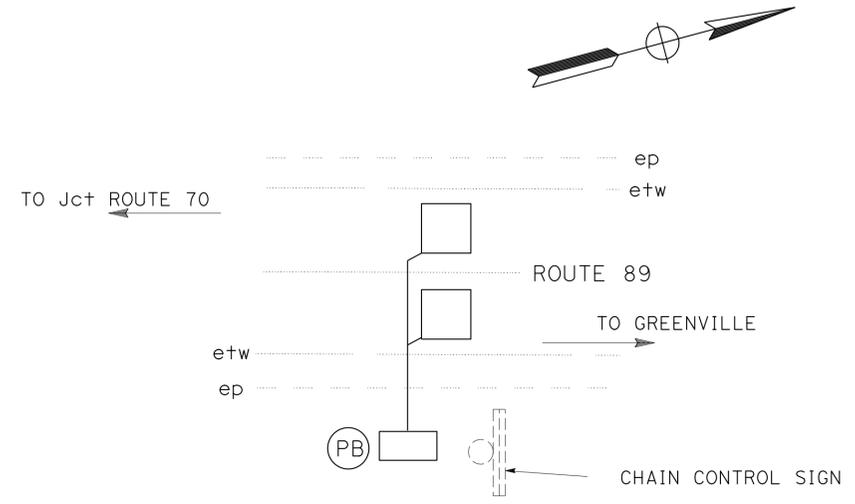
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Plu	89	16.4/20.0	10	25
ART		11-12-14		REGISTERED ELECTRICAL ENGINEER DATE	
11-12-14		PLANS APPROVAL DATE			
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**NOTES:**

- EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.
- COIL 10' OF CONDUCTORS IN PULL BOX.

**LEGEND:**

- (PB) OBJECT MARKER (TYPE PB) AND PULL BOX PAVING
- TCS TRAFFIC COUNT STATION

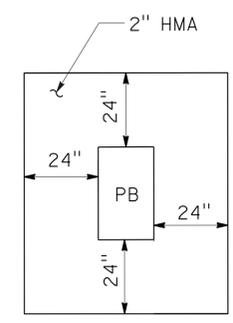


TCS No. 260  
P.M. 16.56

**TRAFFIC COUNT STATION**

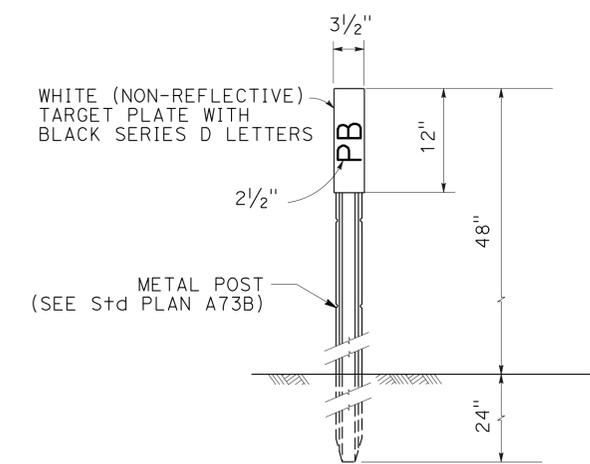
SHEET No.	TYPE A LOOP	SHOULDER TERMINATION	PULL BOX PAVING AND MARKER	TYPE 3 CONDUIT
	EA	EA	EA	FT
E - 1	2	1	1	10

ITEMS SHOWN IN THIS TABLE ARE NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY



(PB) TARGET PLATE FACING TRAFFIC

**PULL BOX PAVING**



WHITE (NON-REFLECTIVE) TARGET PLATE WITH BLACK SERIES D LETTERS  
METAL POST (SEE Std PLAN A73B)

NOTE: PLACE MARKER 2" OUTSIDE PULL BOX PAVING ON SIDE AWAY FROM TRAFFIC. SEE PULL BOX PAVING DETAIL. INSTALL SNOW POLE BRACKET.

**OBJECT MARKER (TYPE PB)**

**TRAFFIC COUNT STATION**

NO SCALE

**E-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - ELECTRICAL DESIGN  
 P:\proj\1\02\40960\plans\pse\24g960ua001.dgn  
 PRAJAKTI ERANDE  
 ARTURO ROBLES  
 ROB STINGER  
 REVISIONS: 11-12-14

	<b>M</b>
Maint	MAINTENANCE
Max	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAILING
Med	MEDIAN
MGS	MIDWEST GUARDRAIL SYSTEM
MH	MANHOLE
Min	MINIMUM
Misc	MISCELLANEOUS
Misc I & S	MISCELLANEOUS IRON AND STEEL
Mkr	MARKER
Mod	MODIFIED, MODIFY
Mon	MONUMENT
MP	METAL PLATE
MPGR	METAL PLATE GUARD RAILING
MR	MOVEMENT RATING
MSE	MECHANICALLY STABILIZED EMBANKMENT
Mt	MOUNTAIN, MOUNT
M+I	MATERIAL
MVP	MAINTENANCE VEHICLE PULLOUT
	<b>N</b>
N	NORTH
NB	NORTHBOUND
No.	NUMBER (MUST HAVE PERIOD)
Nos.	NUMBERS (MUST HAVE PERIOD)
NPS	NOMINAL PIPE SIZE
NS	NEAR SIDE
NSP	NEW STANDARD PLAN
NTS	NOT TO SCALE
	<b>O</b>
Obir	OBLITERATE
OC	OVERCROSSING
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OG	ORIGINAL GROUND
OGAC	OPEN GRADED ASPHALT CONCRETE
OGFC	OPEN GRADED FRICTION COURSE
OH	OVERHEAD
OHWM	ORDINARY HIGH WATER MARK
O-O	OUT TO OUT
Opp	OPPOSITE
OSD	OVERSIDE DRAIN
	<b>P</b>
p	PAGE
PAP	PERFORATED ALUMINUM PIPE
PB	PULL BOX
PC	POINT OF CURVATURE, PRECAST
PCC	POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
PCP	PERFORATED CONCRETE PIPE, PRESTRESSED CONCRETE PIPE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PEC	PERMIT TO ENTER AND CONSTRUCT
Ped	PEDESTRIAN
Ped OC	PEDESTRIAN OVERCROSSING
Ped UC	PEDESTRIAN UNDERCROSSING
Perm M+I	PERMEABLE MATERIAL

	<b>P continued</b>
PG	PROFILE GRADE
PI	POINT OF INTERSECTION
PJP	PARTIAL JOINT PENETRATION
Pkwy	PARKWAY
PL, PL	PLATE
P/L	PROPERTY LINE
PM	POST MILE, TIME FROM NOON TO MIDNIGHT
PN	PAVING NOTCH
POC	POINT OF HORIZONTAL CURVE
POT	POINT OF TANGENT
POVC	POINT OF VERTICAL CURVE
PP	PIPE PILE, PLASTIC PIPE, POWER POLE
PPL	PREFORMED PERMEABLE LINER
PPP	PERFORATED PLASTIC PIPE
PRC	POINT OF REVERSE CURVE
PRF	PAVEMENT REINFORCING FABRIC
PRVC	POINT OF REVERSE VERTICAL CURVE
PS&E	PLANS, SPECIFICATIONS AND ESTIMATES
PS, P/S	PRESTRESSED
PSP	PERFORATED STEEL PIPE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
Pvmt	PAVEMENT
	<b>Q</b>
Qty	QUANTITY
	<b>R</b>
R	RADIUS
R & D	REMOVE AND DISPOSE
R & S	REMOVE AND SALVAGE
R/C	RATE OF CHANGE
RCA	REINFORCED CONCRETE ARCH
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
Rd	ROAD
Reinf	REINFORCED, REINFORCEMENT, REINFORCING
Rel	RELOCATE
Repl	REPLACEMENT
Ret	RETAINING
Rev	REVISED, REVISION
Rdwy	ROADWAY
RHMA	RUBBERIZED HOT MIX ASPHALT
Riv	RIVER
RM	ROAD-MIXED
RP	RADIUS POINT, REFERENCE POINT
RR	RAILROAD
RSP	ROCK SLOPE PROTECTION, REVISED STANDARD PLAN
Rt	RIGHT
Rte	ROUTE
RW	REDWOOD, RETAINING WALL
R/W	RIGHT OF WAY
Rwy	RAILWAY

	<b>S</b>
S	SOUTH, SUPPLEMENT
SAE	STRUCTURE APPROACH EMBANKMENT
Salv	SALVAGE
SAPP	STRUCTURAL ALUMINUM PLATE PIPE
SB	SOUTHBOUND
SC	SAND CUSHION
SCSP	SLOTTED CORRUGATED STEEL PIPE
SD	STORM DRAIN
Sec	SECOND, SECTION
Sep	SEPARATION
SG	SUBGRADE
Shld	SHOULDER
Sht	SHEET
Sim	SIMILAR
SL	STATION LINE
SM	SELECTED MATERIAL
Spec	SPECIAL, SPECIFICATIONS
SPP	SLOTTED PLASTIC PIPE
SS	SLOPE STAKE
SSBM	STRAP AND SADDLE BRACKET METHOD
SSD	STRUCTURAL SECTION DRAIN
SSPA	STRUCTURAL STEEL PLATE ARCH
SSPP	STRUCTURAL STEEL PLATE PIPE
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH
SSRP	STEEL SPIRAL RIB PIPE
St	STREET
Sta	STATION
STBB	SINGLE THRIE BEAM BARRIER
Std	STANDARD
Str	STRUCTURE
Surf	SURFACING
SW	SIDEWALK, SOUND WALL
Swr	SEWER
Sym	SYMMETRICAL
S4S	SURFACE 4 SIDES
	<b>T</b>
T	SEMI-TANGENT
Tan	TANGENT
TBB	THRIE BEAM BARRIER
Tbr	TIMBER
TC	TOP OF CURB
TCB	TRAFFIC CONTROL BOX
TCE	TEMPORARY CONSTRUCTION EASEMENT
Tel	TELEPHONE
Temp	TEMPORARY
TG	TOP OF GRADE
Tot	TOTAL
TP	TELEPHONE POLE
TPB	TREATED PERMEABLE BASE
TPM	TREATED PERMEABLE MATERIAL
Trans	TRANSITION

	<b>T continued</b>
TS	TRANSVERSE, TRAFFIC SIGNAL, TUBULAR STEEL
Typ	TYPICAL
	<b>U</b>
UC	UNDERCROSSING
UD	UNDERDRAIN
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UP	UNDERPASS
	<b>V</b>
V	VALVE, DESIGN SPEED
Var	VARIABLE, VARIES
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
Vert	VERTICAL
Via	VIADUCT
Vol	VOLUME
	<b>W</b>
W	WEST, WIDTH
WB	WESTBOUND
WH	WEEP HOLE
WM	WIRE MESH
WS	WATER SURFACE
WSP	WELDED STEEL PIPE
Wt	WEIGHT
WV	WATER VALVE
WW	WINGWALL
WWL	WINGWALL LAYOUT LINE
	<b>X</b>
X Sec	CROSS SECTION
Xing	CROSSING
	<b>Y</b>
Yr	YEAR
Yrs	YEARS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Piu	89	16.4/20.0	11	25

*Grace M. Tsushima*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
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.



TO ACCOMPANY PLANS DATED 11-12-14

**UNIT OF MEASUREMENT SYMBOLS:**

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

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

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

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

\* For use on a sign panel only

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ABBREVIATIONS  
(SHEET 2 OF 2)**

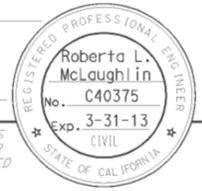
NO SCALE

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

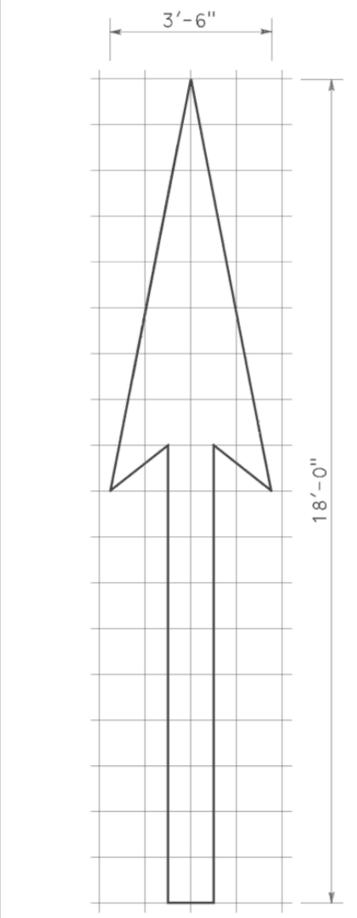
**REVISED STANDARD PLAN RSP A10B**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Piu	89	16.4/20.0	12	25

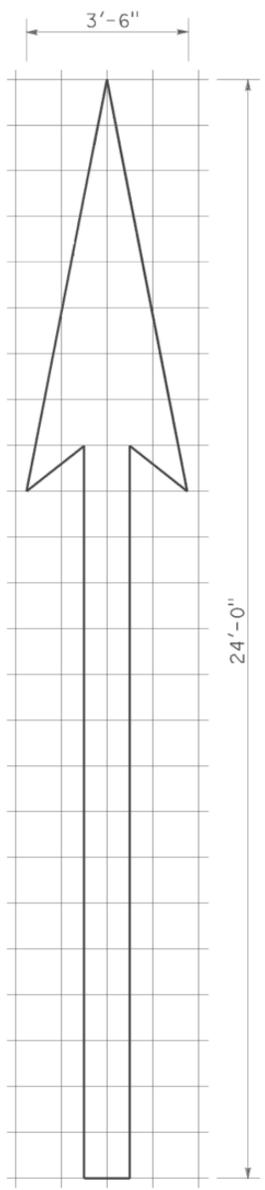
Roberto L. McLaughlin  
 REGISTERED CIVIL ENGINEER  
 April 20, 2012  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



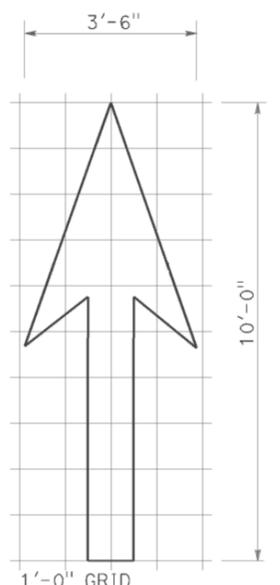
TO ACCOMPANY PLANS DATED 11-12-14



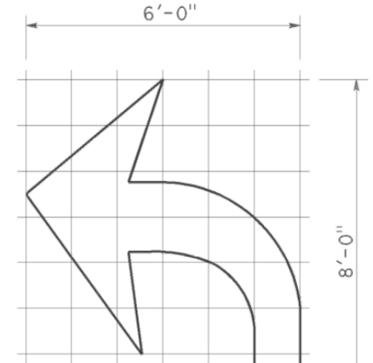
A=25 ft<sup>2</sup>  
**TYPE I 18'-0" ARROW**



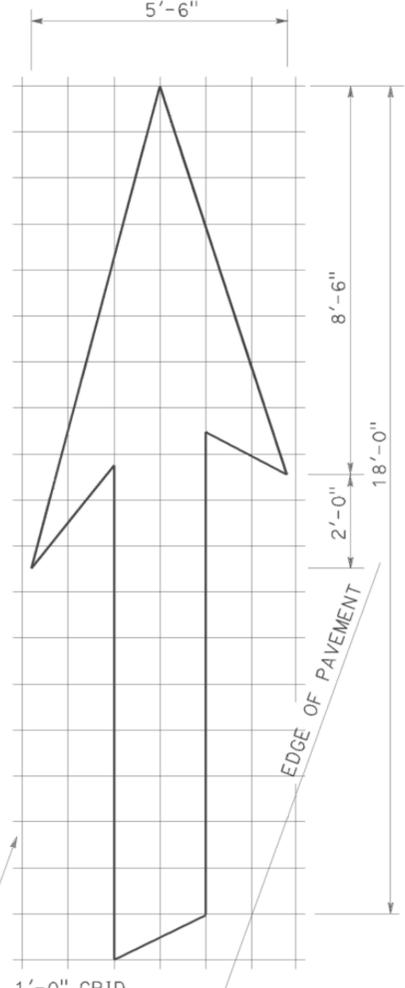
A=31 ft<sup>2</sup>  
**TYPE I 24'-0" ARROW**



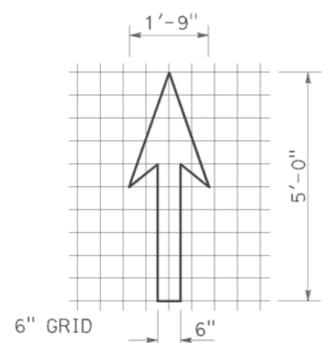
A=14 ft<sup>2</sup>  
**TYPE I 10'-0" ARROW**



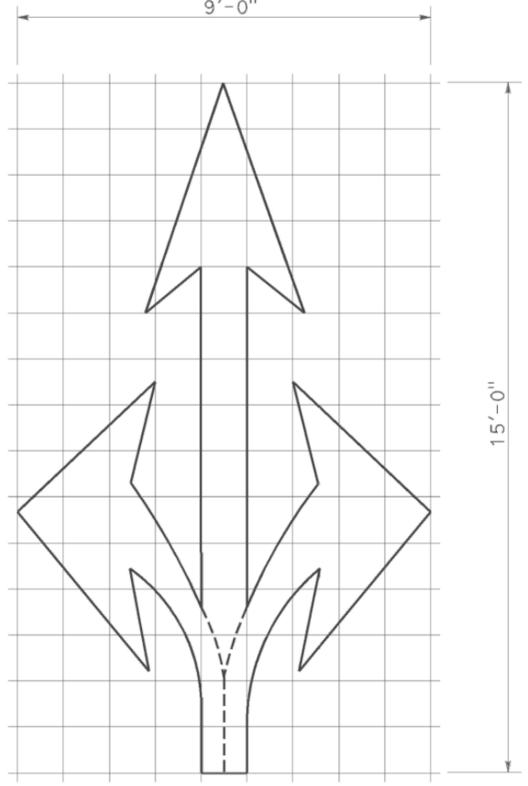
A=15 ft<sup>2</sup>  
**TYPE IV (L) ARROW**  
(For Type IV (R) arrow, use mirror image)



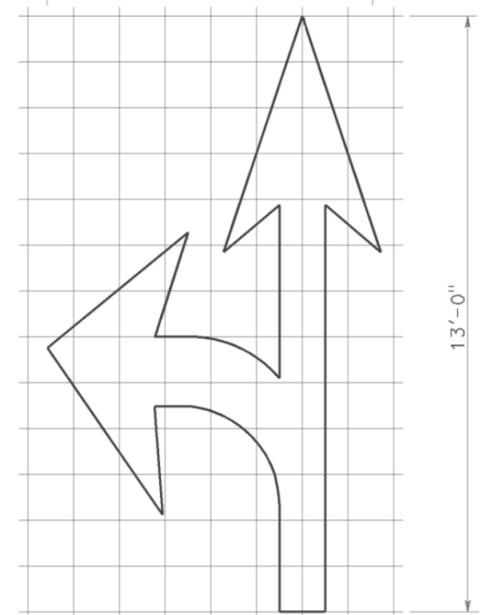
A=42 ft<sup>2</sup>  
**TYPE VI ARROW**  
Right lane drop arrow  
(For left lane, use mirror image)



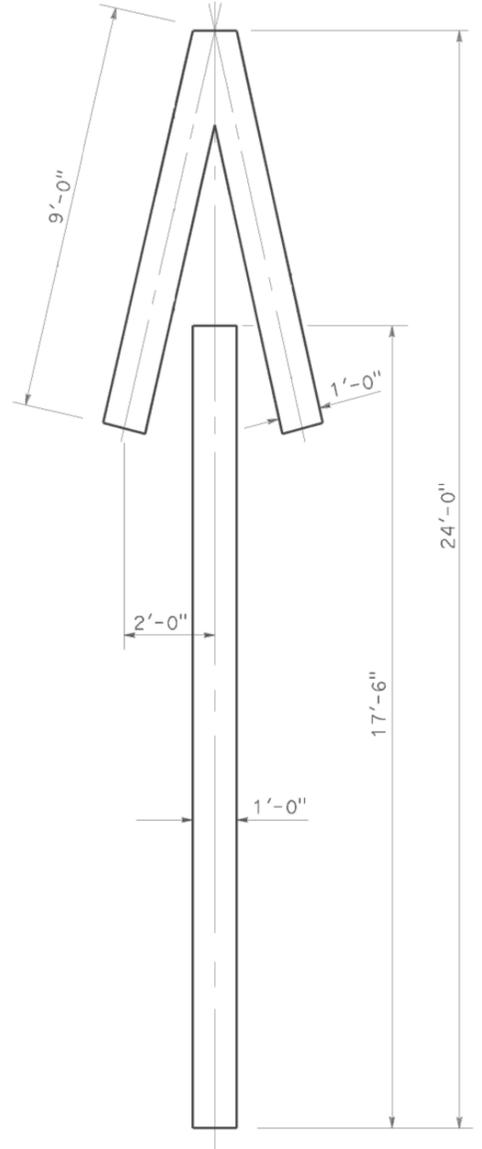
A=3.5 ft<sup>2</sup>  
**BIKE LANE ARROW**



A=36 ft<sup>2</sup>  
**TYPE VIII ARROW**



A=27 ft<sup>2</sup>  
**TYPE VII (L) ARROW**  
(For Type VII (R) arrow, use mirror image)



A=33 ft<sup>2</sup>  
**TYPE V ARROW**

**NOTE:**  
Minor variations in dimensions may be accepted by the Engineer.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS  
ARROWS**  
NO SCALE

RSP A24A DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN A24A DATED MAY 20, 2011 - PAGE 13 OF THE STANDARD PLANS BOOK DATED 2010.

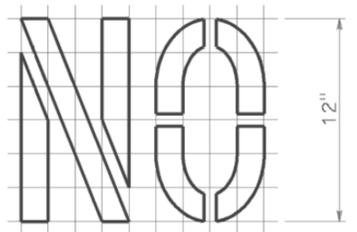
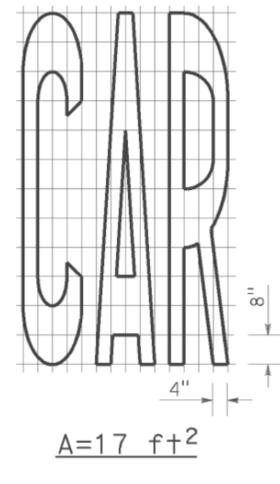
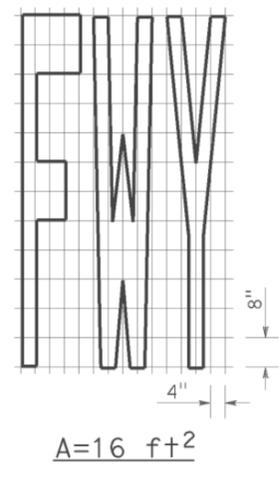
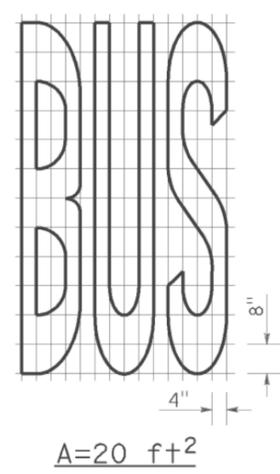
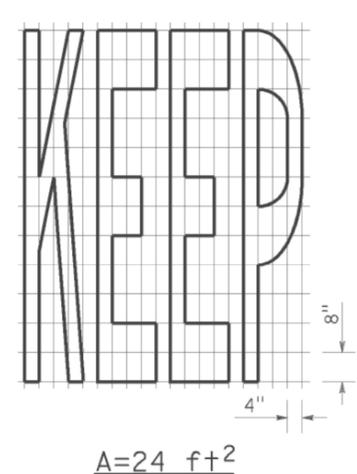
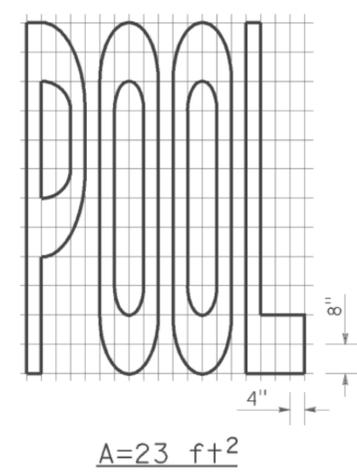
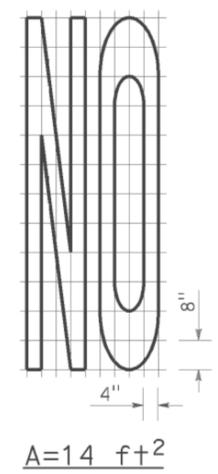
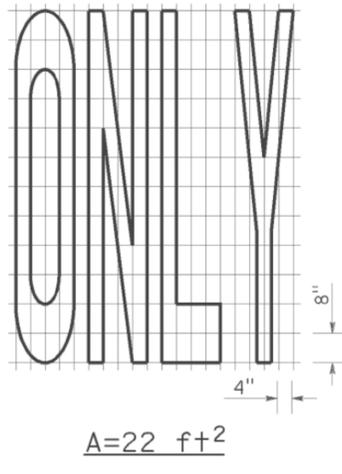
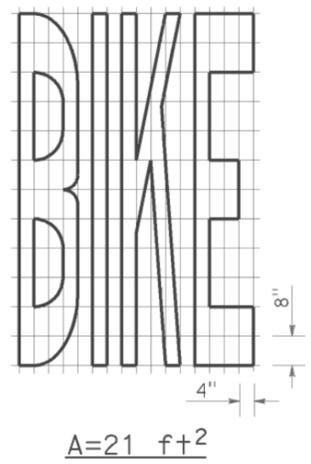
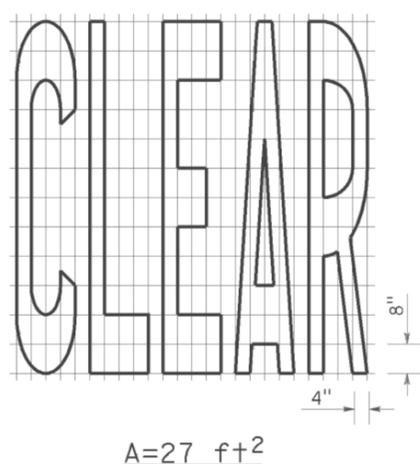
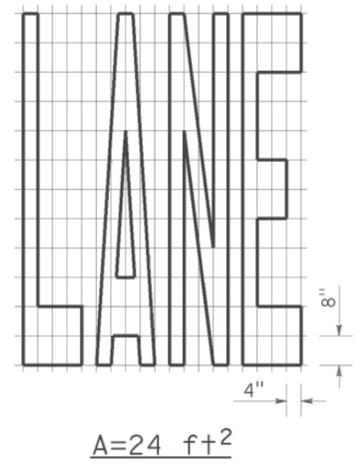
**REVISED STANDARD PLAN RSP A24A**

2010 REVISED STANDARD PLAN RSP A24A

DATE PLOTTED => 14-NOV-2014  
TIME PLOTTED => 08:14

TO ACCOMPANY PLANS DATED 11-12-14

WORD MARKINGS			
ITEM	f+2	ITEM	f+2
LANE	24	NO	14
POOL	23	BIKE	21
CAR	17	BUS	20
CLEAR	27	ONLY	22
KEEP	24	FWY	16

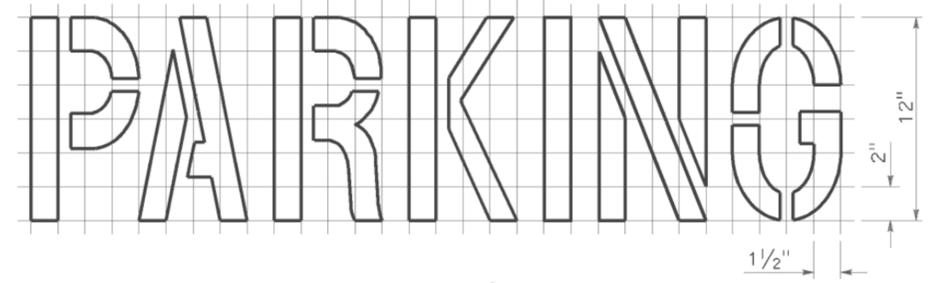


LIMIT LINE (STOP LINE)



DIRECTION OF TRAVEL

YIELD LINE



A=2 ft<sup>2</sup>  
See Notes 6 and 7

**NOTES:**

- If a message consists of more than one word, it should read "UP", i.e., the first word should be nearest the driver.
- The space between words should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
- Minor variations in dimensions may be accepted by the Engineer.
- Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.
- The words "NO PARKING" pavement marking is to be used for parking facilities. For typical locations of markings, see Standard Plans A90A and A90B.
- The words "NO PARKING", shall be painted in white letters no less than 1'-0" high on a contrasting background and located so that it is visible to traffic enforcement officials.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**PAVEMENT MARKINGS  
WORDS, LIMIT AND YIELD LINES**

NO SCALE

RSP A24E DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN A24E  
DATED MAY 20, 2011 - PAGE 17 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A24E**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Piu	89	16.4/20.0	14	25

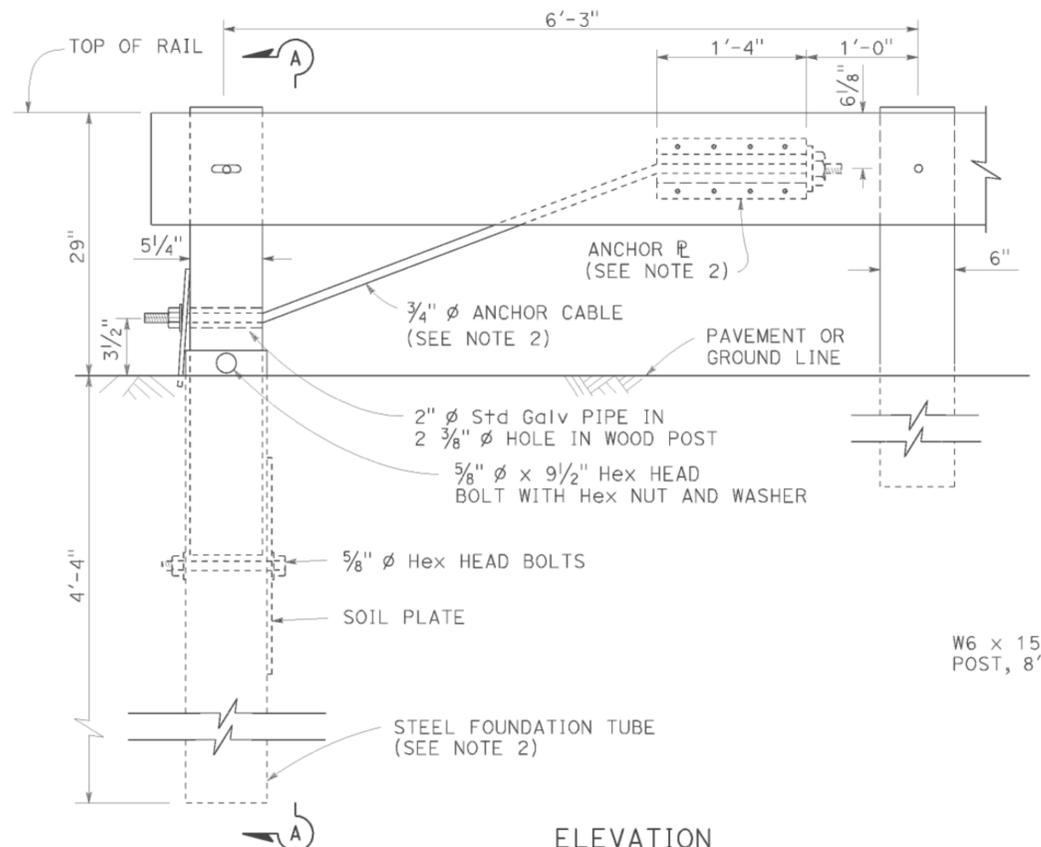
**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

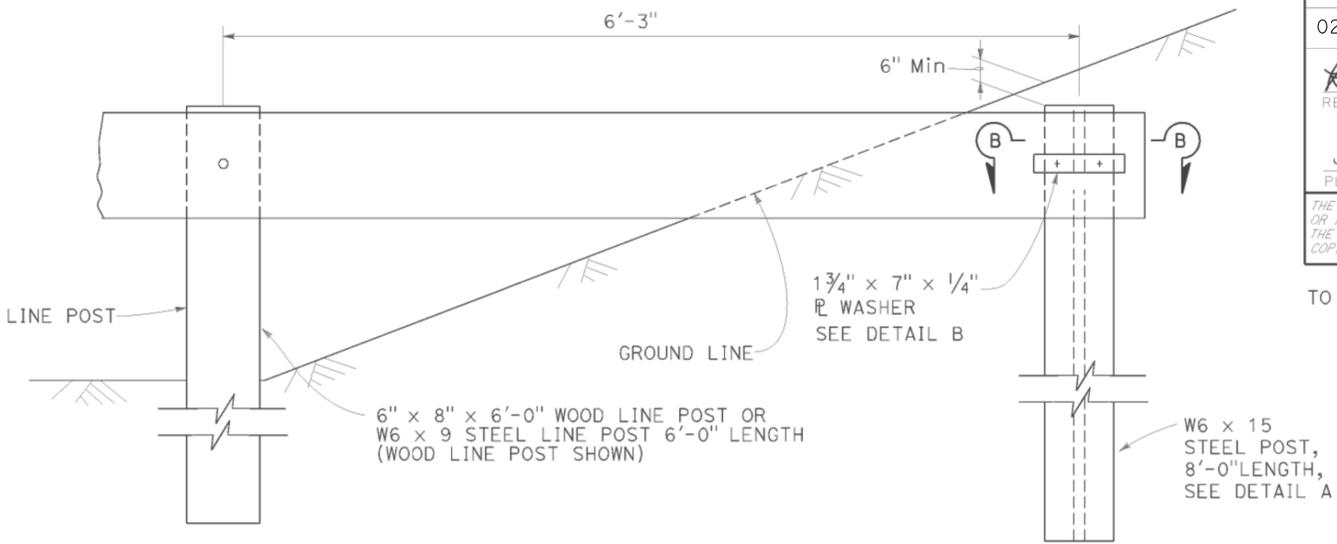
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 11-12-14

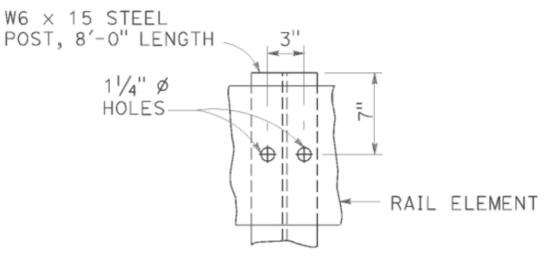
REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA



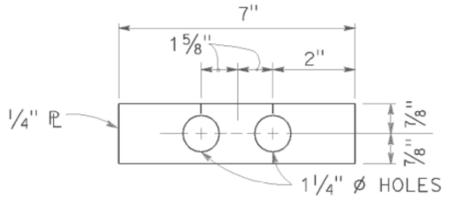
**ELEVATION  
END ANCHOR  
ASSEMBLY (TYPE SFT)**



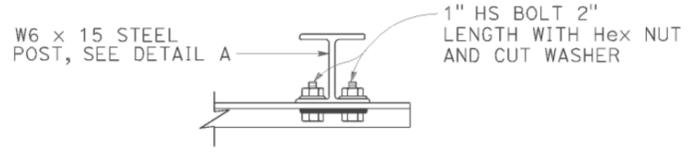
**BURIED POST END ANCHOR**



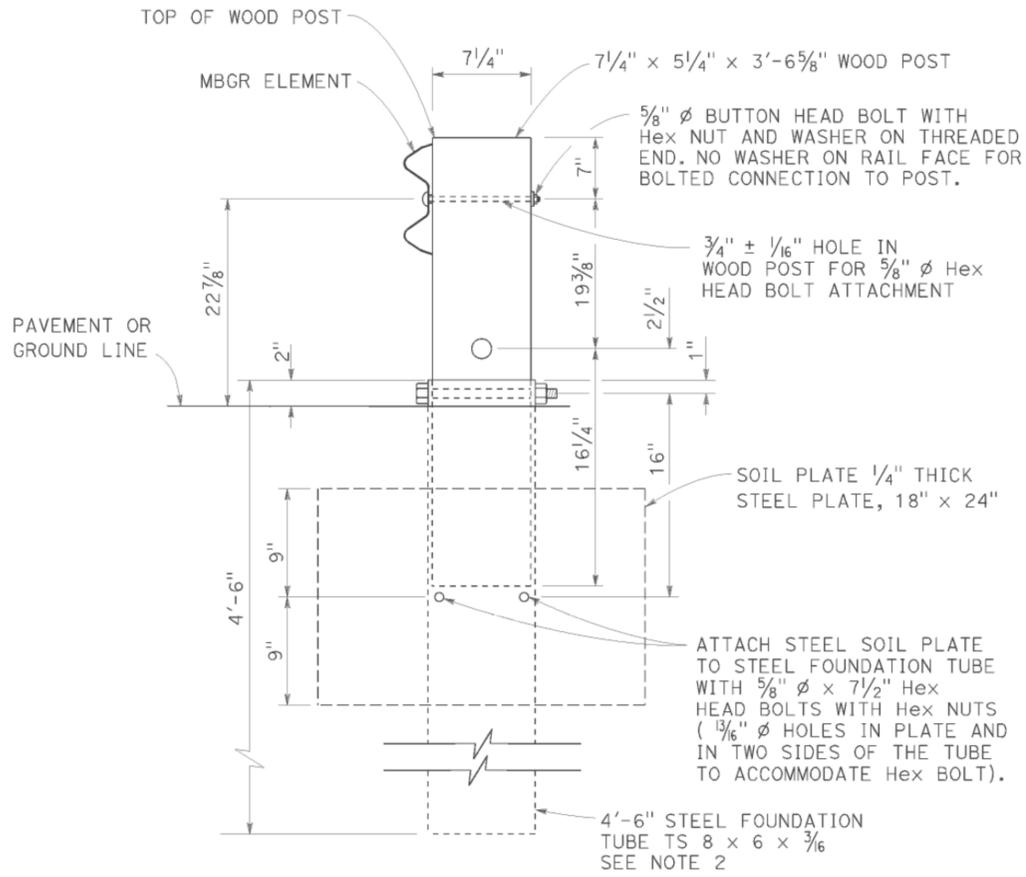
**DETAIL A**



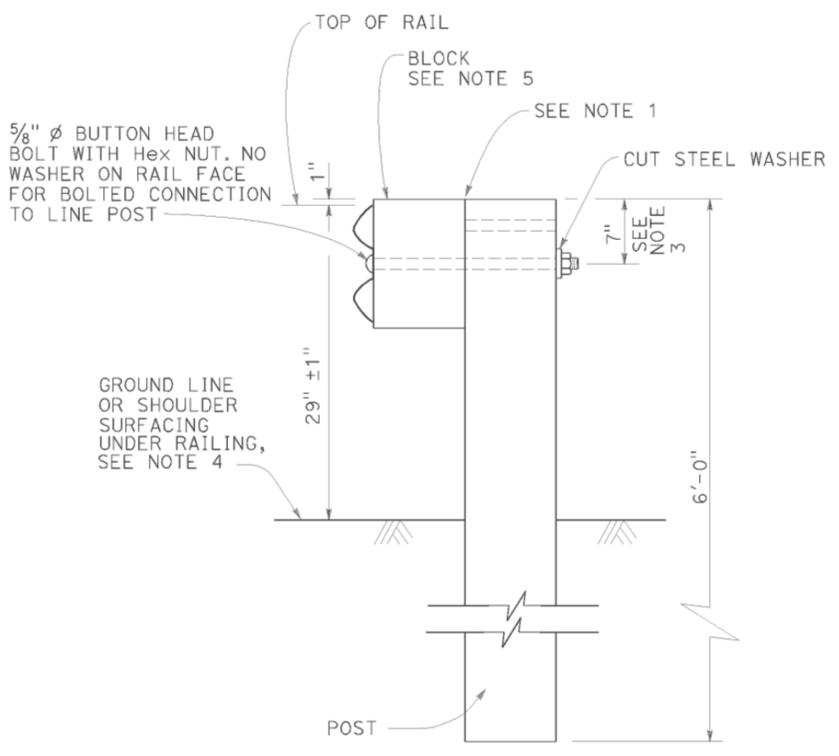
**DETAIL B**



**SECTION B-B**



**SECTION A-A**



**TYPICAL LINE  
POST INSTALLATION**

**NOTES:**

1. For wood post and wood block, toenail with 2-16d Galv nails in top of block. For steel post and notched wood or plastic block, notched face of block faces steel post.
2. A 6'-0" Length steel foundation tube, TS 8 x 6 x 3/16, without a soil plate, may be furnished and installed in place of the 4'-6" length steel foundation tube and soil plate shown. Minimum embedment of the 6'-0" length tube shall be 5'-9". A 5/8" diameter hex head bolt and nut shall be installed in the hole in the 6'-0" length tube to keep the wood post from dropping into the tube.
3. To connect railing to 27" terminal system end treatment, transition the top of railing height at a ratio of 120:1 to terminal system end treatment height plus one 12'-6" standard railing section at the transitioned height for a horizontal connection to the end treatment.
4. Install posts in soil.
5. See Revised Standard Plans RSP A77N1 and RSP A77N2 for details.
6. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened and thoroughly compacted.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

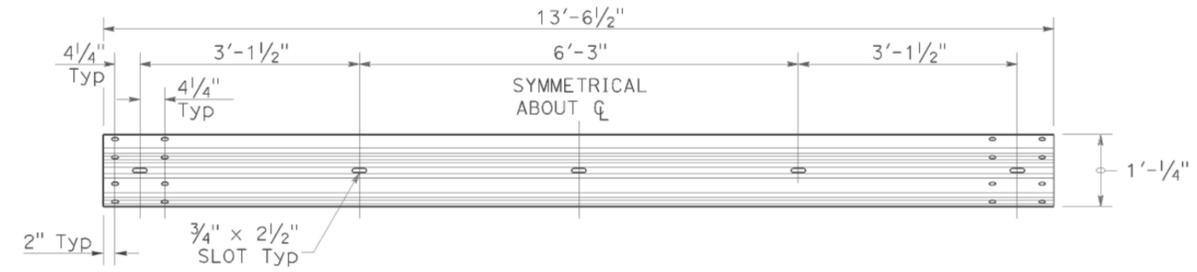
**METAL BEAM GUARD RAILING  
RECONSTRUCT INSTALLATION**

NO SCALE

RSP A77L3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77L3**

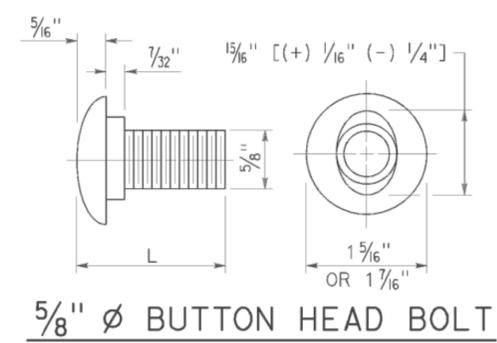
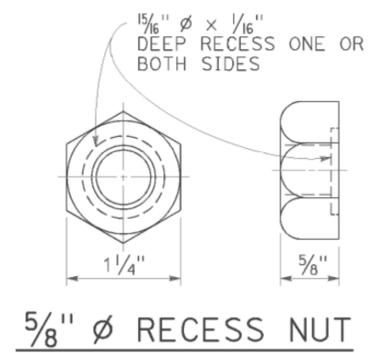
TO ACCOMPANY PLANS DATED 11-12-14



TYPICAL RAIL ELEMENT

NOTE:

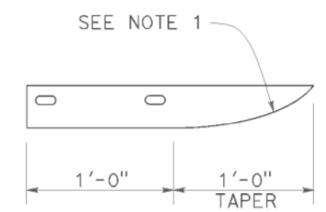
1. Slotted holes for splice bolts to overlap ends of rail element.



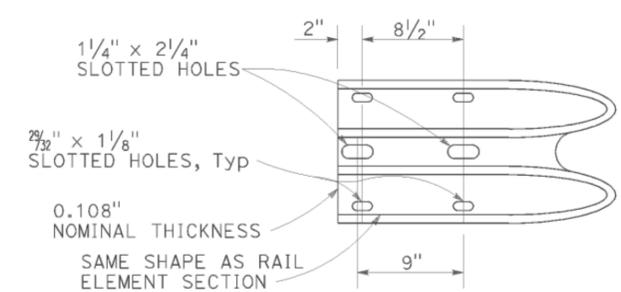
BUTTON HEAD BOLT

L	THREAD LENGTH
1 3/8"	FULL THREAD LENGTH
2"	FULL THREAD LENGTH
10"	4" Min THREAD LENGTH
18"	4" Min THREAD LENGTH
20"	4" Min THREAD LENGTH
22"	4" Min THREAD LENGTH
26"	4" Min THREAD LENGTH
36"	4" Min THREAD LENGTH
** 2 3/4"	2" Min THREAD LENGTH
** 19"	4" Min THREAD LENGTH

\*\* For nested rail applications.



PLAN



ELEVATION  
END CAP  
(TYPE A)

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM  
STANDARD HARDWARE

NO SCALE

RSP A77M1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77M1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Plu	89	16.4/20.0	16	25

Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

November 15, 2013  
PLANS APPROVAL DATE

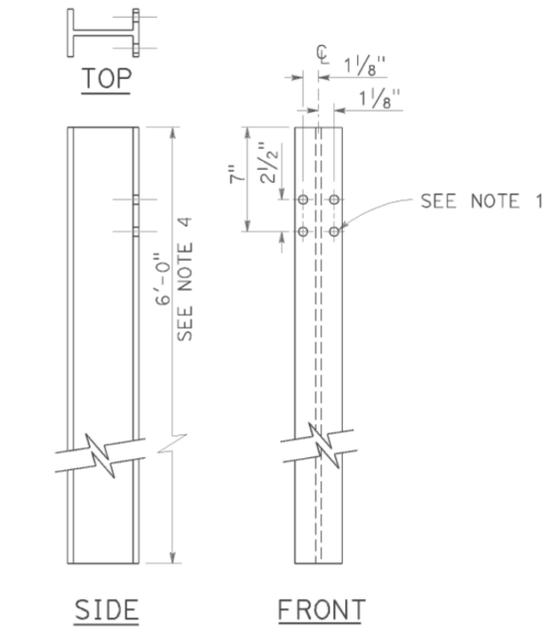
REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

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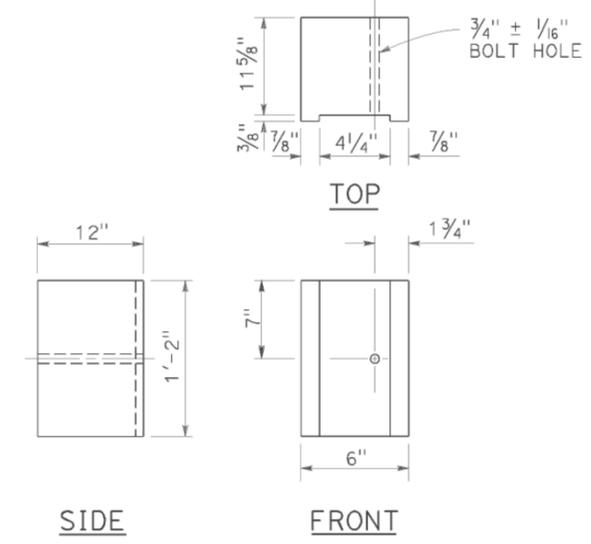
TO ACCOMPANY PLANS DATED 11-12-14

**NOTES:**

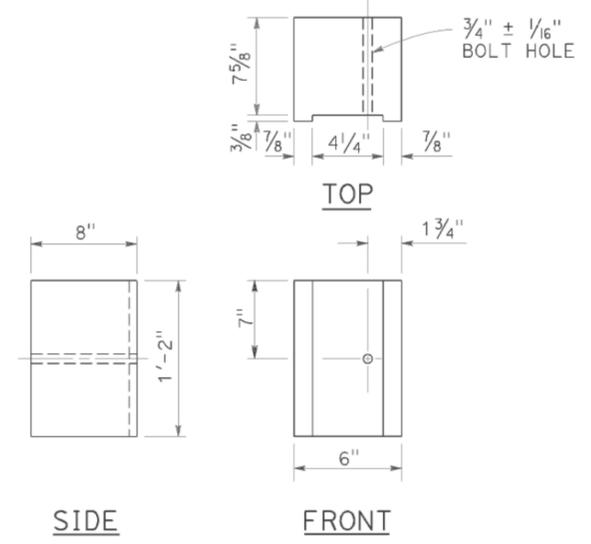
1. All holes in steel post shall be 3/8" Dia maximum.
2. Dimensions shown for wood block are nominal.
3. Notched face of block faces steel post.
4. 6'-0" length posts to be used for typical roadway installation. See Revised Standard Plan RSP A77N3.
5. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" notched wood blocks.
6. This post and 8" x 12" block combination to be used for line post sections of MGS on narrow roadways and where strengthened line post sections of MGS are warranted to shield fixed objects.



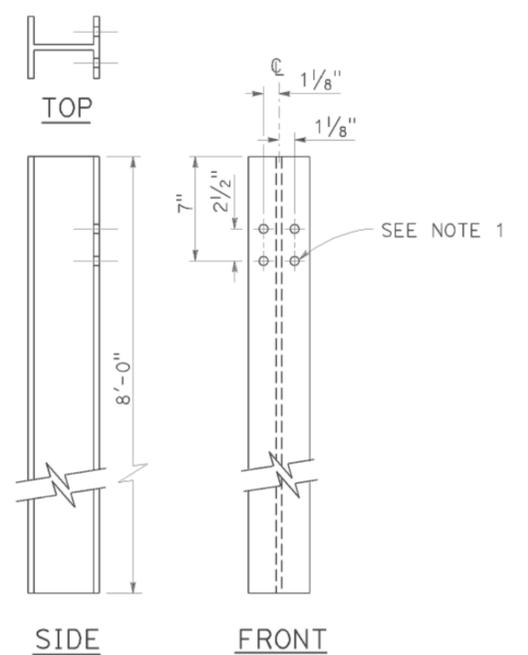
**W6 x 9 OR W6 x 8.5  
STEEL POST**  
See Note 4



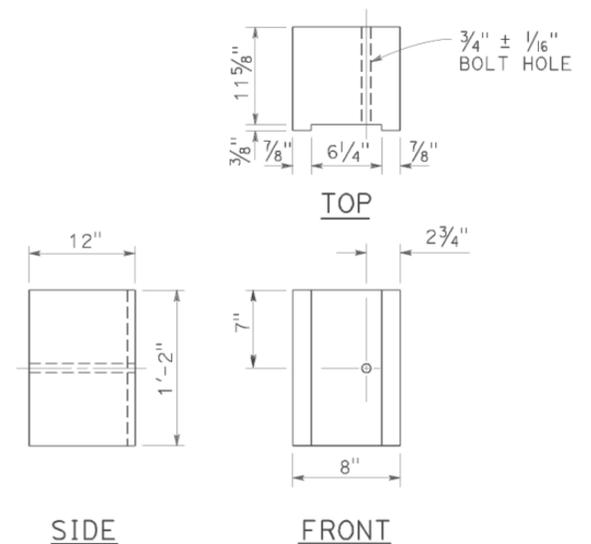
**6" x 12"  
NOTCHED WOOD BLOCK**  
See Notes 2 and 3



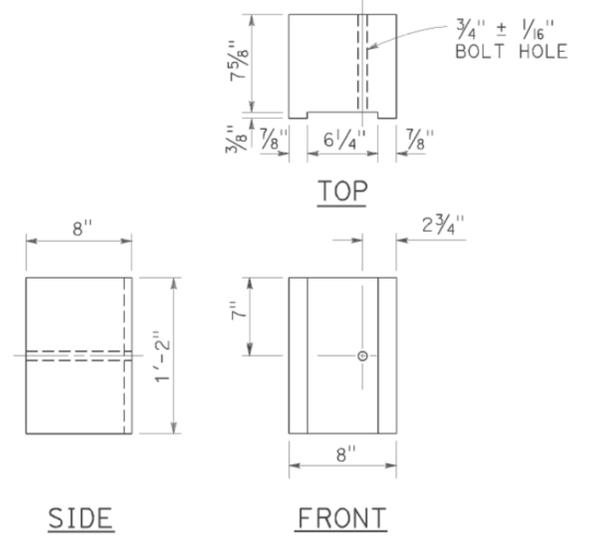
**6" x 8"  
NOTCHED WOOD BLOCK**  
Only for use with metal beam guard railing. See Note 5



**W6 x 15  
STEEL POST**  
See Note 6



**8" x 12"  
NOTCHED WOOD BLOCK**  
See Notes 2 and 3



**8" x 8"  
NOTCHED WOOD BLOCK**  
Only for use with metal beam guard railing. See Note 5

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
STEEL POST AND  
NOTCHED WOOD BLOCK DETAILS**

NO SCALE

RSP A77N2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N2  
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N2**

TO ACCOMPANY PLANS DATED 11-12-14

TABLE 1

TAPER LENGTH CRITERIA AND CHANNELIZING DEVICE SPACING							
SPEED (S)	MINIMUM TAPER LENGTH * FOR WIDTH OF OFFSET 12 FEET (W)				MAXIMUM CHANNELIZING DEVICE SPACING		
	TANGENT 2L	MERGING L	SHIFTING L/2	SHOULDER L/3	X	Y	Z **
					TAPER	TANGENT	CONFLICT
mph	ft	ft	ft	ft	ft	ft	ft
20	160	80	40	27	20	40	10
25	250	125	63	42	25	50	12
30	360	180	90	60	30	60	15
35	490	245	123	82	35	70	17
40	640	320	160	107	40	80	20
45	1080	540	270	180	45	90	22
50	1200	600	300	200	50	100	25
55	1320	660	330	220	55	110	27
60	1440	720	360	240	60	120	30
65	1560	780	390	260	65	130	32
70	1680	840	420	280	70	140	35

\* - For other offsets, use the following merging taper length formula for L:  
 For speed of 40 mph or less,  $L = WS^2/60$   
 For speed of 45 mph or more,  $L = WS$

Where: L = Taper length in feet  
 W = Width of offset in feet  
 S = Posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

\*\* - Use for taper and tangent sections where there are no pavement markings or where there is a conflict between existing pavement markings and channelizers (CA).

TABLE 2

LONGITUDINAL BUFFER SPACE AND FLAGGER STATION SPACING				
SPEED *	Min D **	DOWNGRADE Min D ***		
		-3%	-6%	-9%
		ft	ft	ft
mph	ft	ft	ft	ft
20	115	116	120	126
25	155	158	165	173
30	200	205	215	227
35	250	257	271	287
40	305	315	333	354
45	360	378	400	427
50	425	446	474	507
55	495	520	553	593
60	570	598	638	686
65	645	682	728	785
70	730	771	825	891

\* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph  
 \*\* - Longitudinal buffer space or flagger station spacing  
 \*\*\* - Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

TABLE 3

ADVANCE WARNING SIGN SPACING			
ROAD TYPE	DISTANCE BETWEEN SIGNS *		
	A	B	C
	ft	ft	ft
URBAN - 25 mph OR LESS	100	100	100
URBAN - MORE THAN 25 mph TO 40 mph	250	250	250
URBAN - MORE THAN 40 mph	350	350	350
RURAL	500	500	500
EXPRESSWAY / FREEWAY	1000	1500	2640

\* - The distances are approximate, are intended for guidance purposes only, and should be applied with engineering judgment. These distances should be adjusted by the Engineer for field conditions, if necessary, by increasing or decreasing the recommended distances.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM TABLES  
 FOR LANE AND RAMP CLOSURES**  
 NO SCALE

RSP T9 DATED JULY 19, 2013 SUPERSEDES RSP T9 DATED APRIL 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T9**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Plu	89	16.4/20.0	18	25

Devinder Singh  
 REGISTERED CIVIL ENGINEER  
 No. C50470  
 Exp. 6-30-15  
 CIVIL  
 STATE OF CALIFORNIA

October 17, 2014  
 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:**

See Revised Standard Plan RSP T9 for tables.

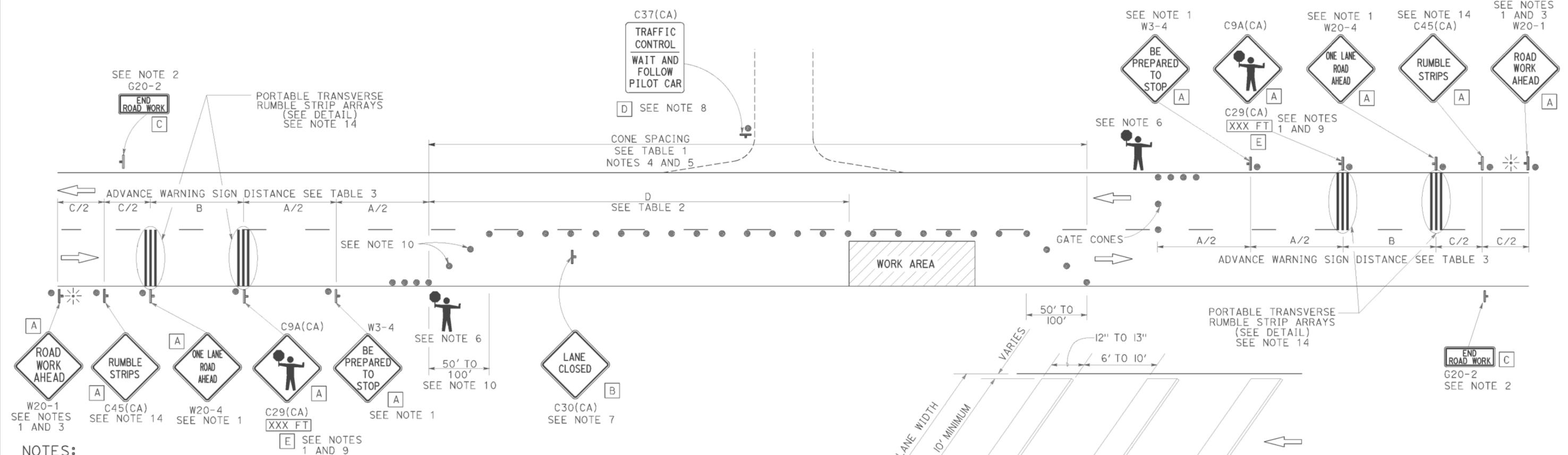
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

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

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

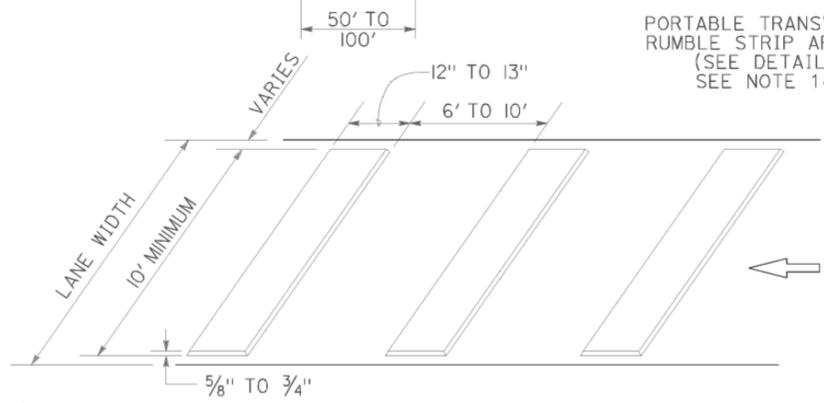
**TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL**

TO ACCOMPANY PLANS DATED 11-12-14



- NOTES:**
- Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
  - A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane control unless the end of work area is obvious, or ends within a larger project's limits.
  - If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT \_\_\_\_\_ MILES", use a W20-4 sign for the first advance warning sign.
  - All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
  - Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
  - Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging-station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.

- Place C30(CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
- When a pilot car is used, place a C37(CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign with black legend on white background at all intersections, driveways and alleys without a flagger within traffic control area. Signs shall be clean and visible at all times. Where traffic can not be effectively self-regulated, at least one flagger shall be used at each intersection within traffic control area.
- An optional C29(CA) sign may be placed below the C9A(CA) sign.
- Either traffic cones or barricades shall be placed on the taper. Barricades shall be Type I, II, or III.
- The color of the portable transverse rumble strips shall be black or orange. Use 2 arrays, each array shall consist of 3 rumble strips.
- Portable transverse rumble strips shall not be placed on sharp horizontal or vertical curves nor shall they be placed through pedestrian crossings.
- If the portable transverse rumble strips become out of alignment (skewed) by more than 6 inches, measured from one end to the other, they shall be readjusted to bring the placement back to the original location.
- Portable transverse rumble strips are not required if any one of the following conditions is satisfied:
  - Work duration occupies a location for four hours or less
  - Posted speed limit is below 45 MPH
  - Work is of emergency nature
  - Work zone is in snow or icy weather conditions



**SIGN PANEL SIZE (Min)**

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

**LEGEND**

- TRAFFIC CONE
- † TEMPORARY TRAFFIC CONTROL SIGN
- ☼ PORTABLE FLASHING BEACON
- 👤 FLAGGER

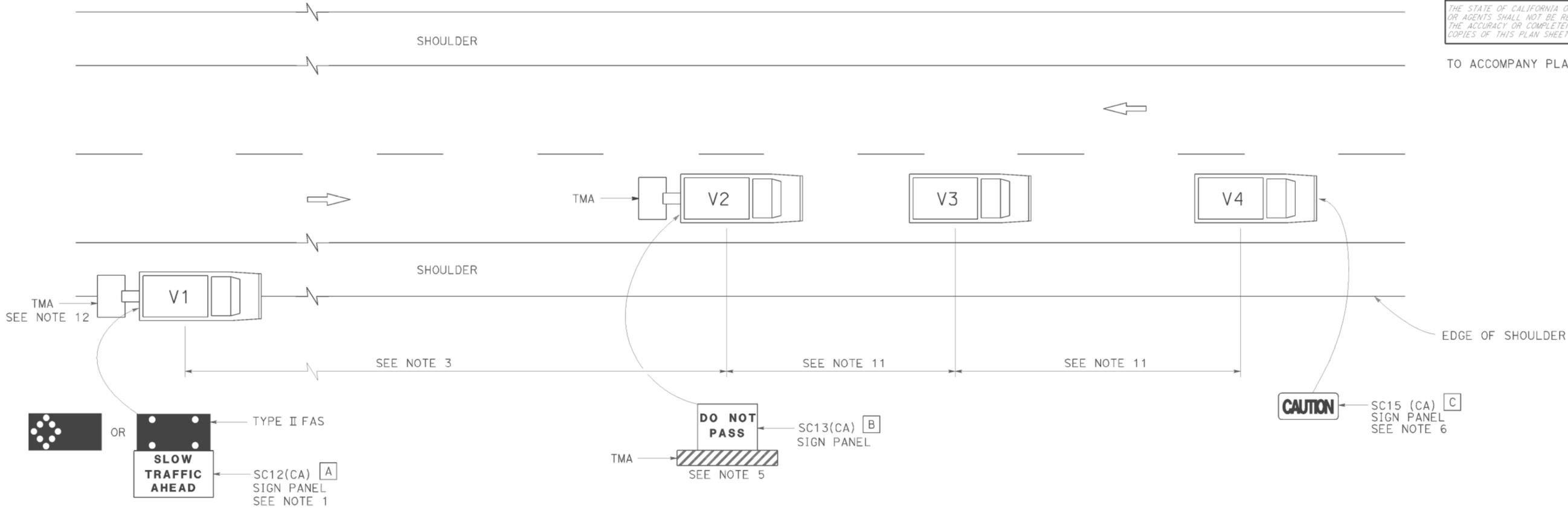
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM  
FOR LANE CLOSURE ON  
TWO LANE CONVENTIONAL  
HIGHWAYS**

NO SCALE

RSP T13 DATED OCTOBER 17, 2014 SUPERSEDES RSP T13 DATED JULY 18, 2014  
AND RSP T13 DATED APRIL 19, 2013 AND STANDARD PLAN T13 DATED  
MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T13**



**NOTES:**

1. Either a changeable message sign or a SC12(CA) "SLOW TRAFFIC AHEAD" sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "CAUTION" message first, follow by the "SLOW TRAFFIC AHEAD" message. A Type II flashing arrow sign may be used with the SC12(CA) sign panel.
2. Sign vehicle V1 should be positioned where highly visible when shoulders are not available.
3. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue.
4. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
5. Shadow vehicle shall be equipped with a truck-mounted attenuator. The sign panel shown shall be mounted on the rear of shadow vehicle V2. The message "LANE CLOSED" may be used in place of the "DO NOT PASS" message.
6. The sign panel shown shall be mounted on the front of sign vehicle V4, facing opposing traffic.

7. All vehicles shall be equipped with flashing or rotating amber lights.
8. Sign vehicle V4 will not be required when the work and vehicles V2 and V3 are 2' or more from the centerline of the highway during the work or application operations.
9. All vehicles used for lane closures shall be equipped with two-way radios and the vehicle operators shall maintain communication during the work or application operation.
10. This plan shall not be used where workers would be on foot in the work area. Use a stationary type lane closure (Revised Standard Plan T13) for this condition.
11. Minimize spacing between vehicles V2 and V3 and vehicles V3 and V4 to deter road users from driving in between them.
12. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.

**LEGEND**

- V1 SIGN VEHICLE
- V2 SHADOW VEHICLE
- V3 WORK/APPLICATION VEHICLE
- V4 SIGN VEHICLE
- TMA TRUCK-MOUNTED ATTENUATOR
- FLASHING ARROW SIGN (FAS) IN FLASHING CAUTION MODE
- FLASHING ARROW SIGN (FAS) IN ALTERNATING DIAMOND CAUTION

**SIGN PANEL SIZE (Min)**

- A** 72" x 42"
- B** 54" x 42"
- C** 54" x 24"

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR MOVING LANE CLOSURE  
 ON TWO LANE HIGHWAYS**  
 NO SCALE

RSP T17 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T17  
 DATED MAY 20, 2011 - PAGE 245 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T17**

**LEGEND:**

- 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 TAPE
- 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
- TSP** TELEPHONE SERVICE POINT

**ABBREVIATIONS**

- |       |   |       |                                      |
|-------|---|-------|--------------------------------------|
| APS   | ACCESSIBLE PEDESTRIAN SIGNAL            | M/M   | MULTIPLE TO MULTIPLE TRANSFORMER     |
| BBS   | BATTERY BACKUP SYSTEM                   | Mtg   | MOUNTING                             |
| BC    | BOLT CIRCLE                             | MV    | MERCURY VAPOR LIGHTING FIXTURE       |
| BPB   | BICYCLE PUSH BUTTON                     | MVDS  | MICROWAVE VEHICLE DETECTION SYSTEM   |
| C     | CONDUIT                                 | N     | NEUTRAL (GROUNDED CONDUCTOR)         |
| CB    | CIRCUIT BREAKER                         | NB    | NEUTRAL BUS                          |
| CCTV  | CLOSED CIRCUIT TELEVISION               | NC    | NORMALLY CLOSE                       |
| Ck+   | CIRCUIT                                 | NO    | NORMALLY OPEN                        |
| CMS   | CHANGEABLE MESSAGE SIGN                 | P     | CIRCUIT BREAKER'S POLE               |
| Ctid  | CALTRANS IDENTIFICATION                 | PB    | PULL BOX                             |
| Comm  | COMMUNICATION                           | PBA   | PUSH BUTTON ASSEMBLY                 |
| DLC   | LOOP DETECTOR LEAD-IN CABLE             | PEC   | PHOTOELECTRIC CONTROL                |
| EMS   | EXTINGUISHABLE MESSAGE SIGN             | Ped   | PEDESTRIAN                           |
| EVUC  | EMERGENCY VEHICLE UNIT CABLE            | PEU   | PHOTOELECTRIC UNIT                   |
| EVUD  | EMERGENCY VEHICLE UNIT DETECTOR         | PT    | CONDUIT WITH PULL TAPE               |
| FB    | FLASHING BEACON                         | RE    | RELOCATED EQUIPMENT                  |
| FBCA  | FLASHING BEACON CONTROL ASSEMBLY        | RM    | RAMP METERING                        |
| FBS   | FLASHING BEACON WITH SLIP BASE          | RWIS  | ROADSIDE WEATHER INFORMATION SYSTEM  |
| FO    | FIBER OPTIC                             | SB    | SLIP BASE                            |
| G     | EQUIPMENT GROUNDING CONDUCTOR           | SIC   | SIGNAL INTERCONNECT CABLE            |
| GB    | GROUND BUS                              | Sig   | SIGNAL                               |
| GFCI  | GROUND FAULT CIRCUIT INTERRUPTER        | SMA   | SIGNAL MAST ARM                      |
| HAR   | HIGHWAY ADVISORY RADIO                  | SNS   | STREET NAME SIGN                     |
| Hex   | HEXAGONAL                               | SP    | SERVICE POINT                        |
| HPS   | HIGH PRESSURE SODIUM                    | TDC   | TELEPHONE DEMARCATION CABINET        |
| IISNS | INTERNALLY ILLUMINATED STREET NAME SIGN | TMS   | TRAFFIC MONITORING STATION           |
| ISL   | INDUCTION SIGN LIGHTING                 | TOS   | TRAFFIC OPERATIONS SYSTEM            |
| LED   | LIGHT EMITTING DIODE                    | Veh   | VEHICLE                              |
| LMA   | LUMINAIRE MAST ARM                      | VIVDS | VIDEO IMAGE VEHICLE DETECTION SYSTEM |
| LPS   | LOW PRESSURE SODIUM                     | WIM   | WEIGH-IN-MOTION                      |
| Ltg   | LIGHTING                                | Xfmr  | TRANSFORMER                          |
| Lum   | LUMINAIRE                               |       |                                      |
| M     | METERED                                 |       |                                      |
| MAT   | MAST ARM MOUNTING TOP ATTACHMENT        |       |                                      |
| MAS   | MAST ARM MOUNTING SIDE ATTACHMENT       |       |                                      |

**MISCELLANEOUS ELECTROLIERS**

NEW	EXISTING	
		LUMINAIRE ON WOOD POLE
		NON-STANDARD ELECTROLIER (SEE PROJECT NOTES OR PROJECT PLANS)
		CITY ELECTROLIER
		ELECTROLIER FOUNDATION (FUTURE INSTALLATION)

**NOTES:**

- HPS luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. HPS luminaires shall be 200 W when installed on other type standards or poles, unless otherwise specified.
- LED luminaires shall be 235 W when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. LED luminaires shall be 165 W 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.

**STANDARD ELECTROLIER**

NEW	EXISTING	STANDARD TYPE
		15
		15D
		15 STRUCTURE
		15D STRUCTURE
		21
		21D
		21 STRUCTURE
		21D STRUCTURE
		30
		31
		32

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Piu	89	16.4/20.0	20	25

*Theresa Gabriel*  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

Theresa  
Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
ELECTRICAL  
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 11-12-14

**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.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

SYMBOL USED	DEFINITIONS
Ω	OHMS
min	MINUTE
s	SECOND
bps	BITS PER SECOND
Bps	BYTES PER SECOND
A	AMPERE
V	VOLT
V(dc)	VOLT (DIRECT CURRENT)
V(ac)	VOLT (ALTERNATING CURRENT)
FC	FOOT - CANDLE
W	WATTS
VA	VOLT-AMPERE
M	MEGA
k	KILO
m	MILLI
μ	MICRO
P	PICO
Hz	HERTZ

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
(LEGEND AND ABBREVIATIONS)**

NO SCALE

RSP ES-1A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1A  
DATED MAY 20, 2011 - PAGE 425 OF THE STANDARD PLANS BOOK DATED 2010.

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Piu	89	16.4/20.0	21	25

*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
 Theresa Aziz Gabriel  
 No. E15129  
 Exp. 6-30-14  
 ELECTRICAL  
 STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 11-12-14

### CONDUIT

NEW	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 ATTACHED TO THE STRUCTURE OR SERVICE POLE

### SIGNAL EQUIPMENT

NEW	EXISTING	
		PEDESTRIAN SIGNAL HEAD "C" INDICATES COUNTDOWN PEDESTRIAN HEAD
		PUSH BUTTON ASSEMBLY POST
		PEDESTRIAN BARRICADE
		VEHICLE SIGNAL HEAD (WITH BACKPLATE AND 3-SECTIONS: RED, YELLOW AND GREEN)
		VEHICLE SIGNAL HEAD WITH ANGLE VISOR
		MODIFICATIONS OF BASIC SYMBOL: "L" INDICATES ALL NON-ARROW SECTIONS LOUVERED "LG" INDICATES LOUVERED GREEN SECTION ONLY "PV" INDICATES ALL 12" SECTIONS PROGRAMMED VISIBILITY "8" INDICATES ALL 8" SECTIONS (ONLY WHEN SPECIFIED)
		VEHICLE SIGNAL HEAD CONSISTING OF RED, YELLOW AND GREEN LEFT ARROW SECTIONS
		VEHICLE SIGNAL HEAD CONSISTING OF RED AND YELLOW SECTIONS WITH AN UP GREEN ARROW SECTION
		VEHICLE SIGNAL HEAD (5 SECTION) CONSISTING OF RED, YELLOW AND GREEN SECTIONS WITH YELLOW AND GREEN RIGHT ARROW SECTIONS
		TYPE 15TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		TYPE 21TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		STANDARD WITH LUMINAIRE AND SIGNAL MAST ARMS AND ATTACHED VEHICLE SIGNAL HEADS
		TYPE 1 STANDARD WITH ATTACHED VEHICLE SIGNAL HEADS
		STANDARD WITH A SIGNAL MAST ARM, ATTACHED VEHICLE SIGNAL HEADS AND INTERNALLY ILLUMINATED STREET NAME SIGN
		CONTROLLER ASSEMBLY. DOOR INDICATES FRONT OF CABINET

### SERVICE EQUIPMENT

NEW	EXISTING	
---OH---	---oh---	OVERHEAD LINES
		WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
		SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
		TELEPHONE DEMARCATION CABINET

### POLE-MOUNTED SERVICE DESIGNATION

	TYPE H SERVICE, 28'-10"	TYPE OF INSTALLATION AND POLE HEIGHT ABOVE GRADE
--	-------------------------	--

### FLASHING BEACON

NEW	EXISTING	
		FLASHING BEACON (ONE VEHICLE SIGNAL HEAD WITH BACKPLATE AND VISOR) "R" INDICATES RED INDICATION, "Y" INDICATES YELLOW INDICATION
		FLASHING BEACON WITH TYPE 15-FBS STANDARD AND A SIGN.
		FLASHING BEACON WITH TYPES 9, 9A OR 9B SIGN UNLESS OTHERWISE SPECIFIED OR INDICATED

### SIGNAL EQUIPMENT Cont

NEW	EXISTING	
		GUARD POST
		TYPE 1 STANDARD WITH RAMP METERING SIGN
		OPTICAL DETECTOR FOR THE EMERGENCY VEHICLE DETECTION SYSTEM

### NOTES:

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

### ILLUMINATED OVERHEAD SIGN

NEW	EXISTING	
		SINGLE POST, SINGLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, DOUBLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, SINGLE ILLUMINATED SIGN, FULL CANTILEVER
		DOUBLE POST, SINGLE ILLUMINATED SIGN
		SINGLE ILLUMINATED SIGN MOUNTED ON STRUCTURE
		DOUBLE POST, SINGLE ILLUMINATED SIGN WITH ELECTROLIER

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

NO SCALE

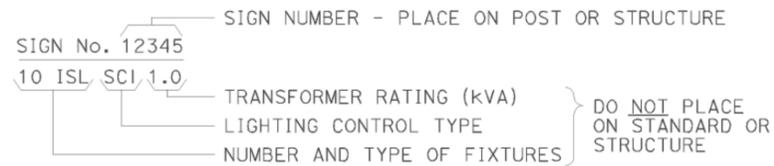
RSP ES-1B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

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

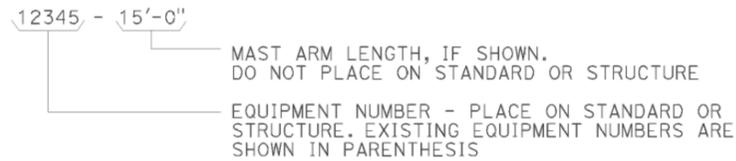
TO ACCOMPANY PLANS DATED 11-12-14

### EQUIPMENT IDENTIFICATION

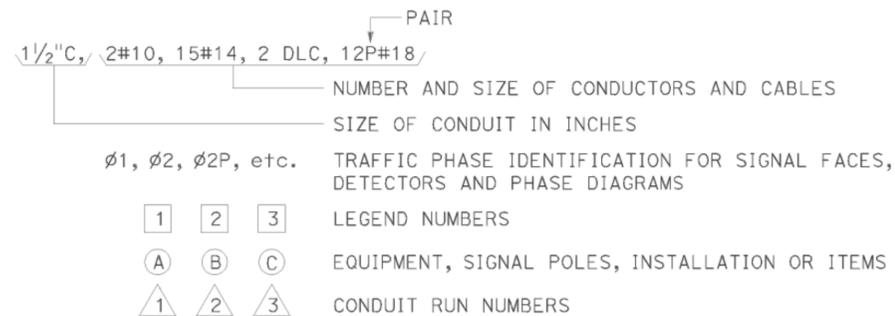
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



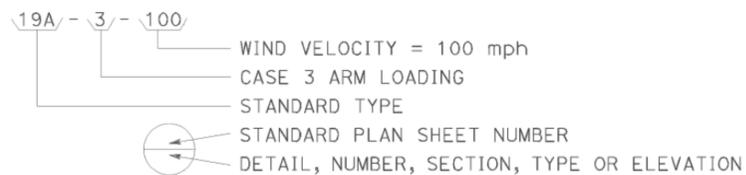
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



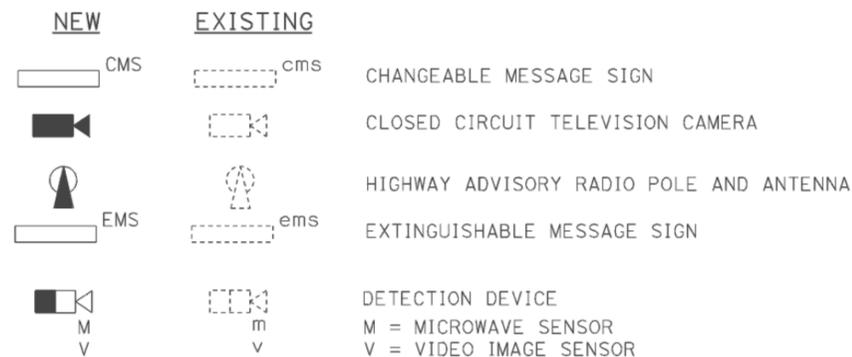
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



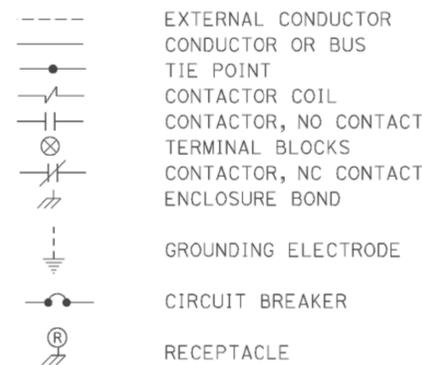
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



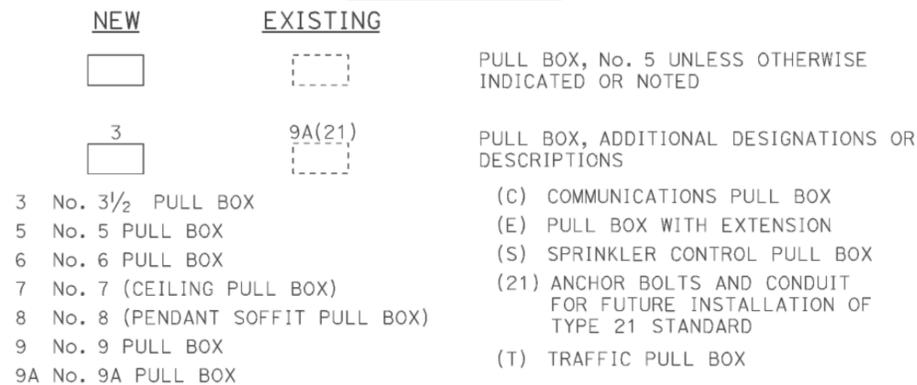
### MISCELLANEOUS EQUIPMENT



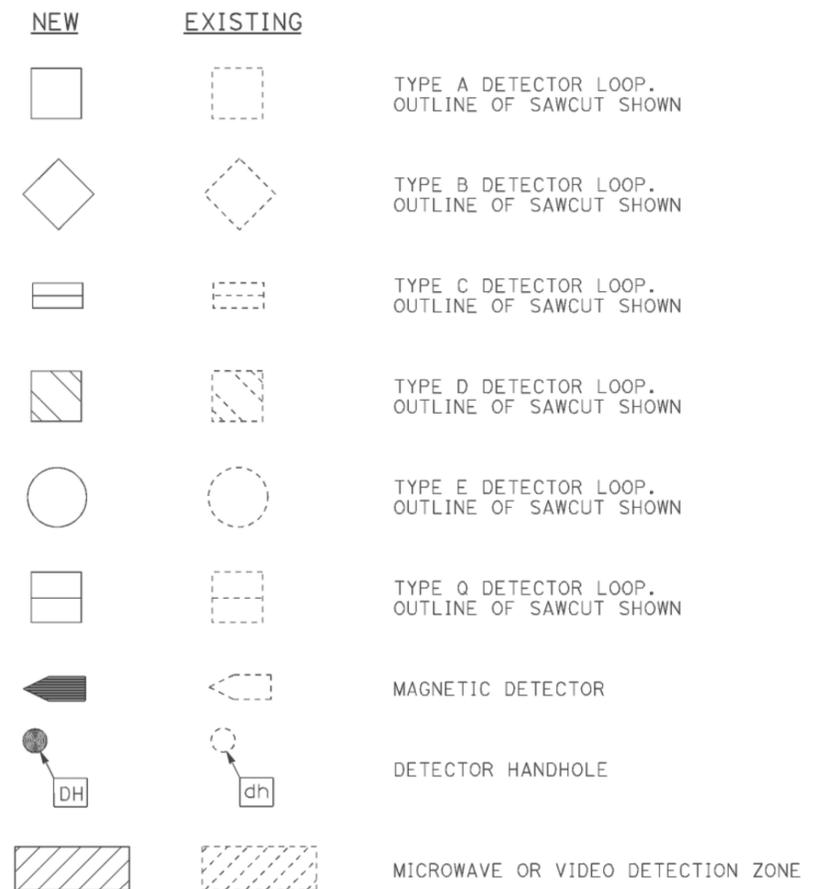
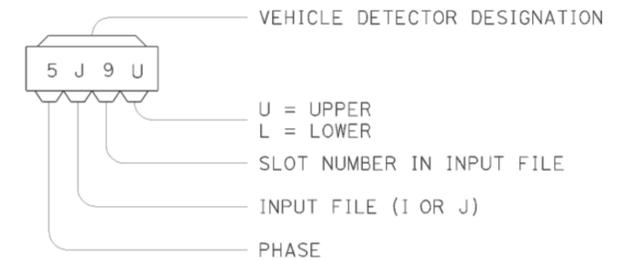
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

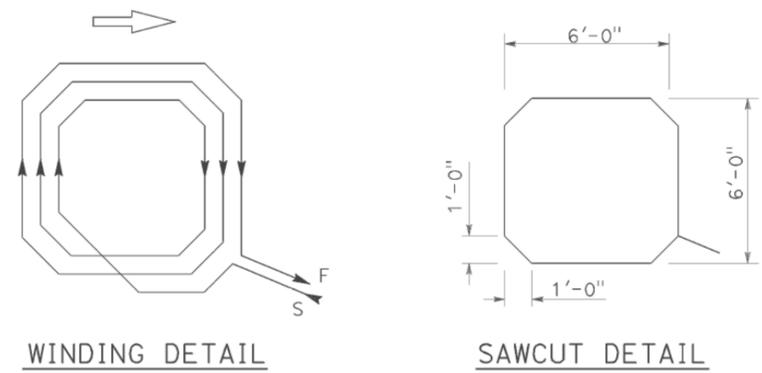
RSP ES-1C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1C  
DATED MAY 20, 2011 - PAGE 427 OF THE STANDARD PLANS BOOK DATED 2010.

## REVISED STANDARD PLAN RSP ES-1C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Piu	89	16.4/20.0	23	25

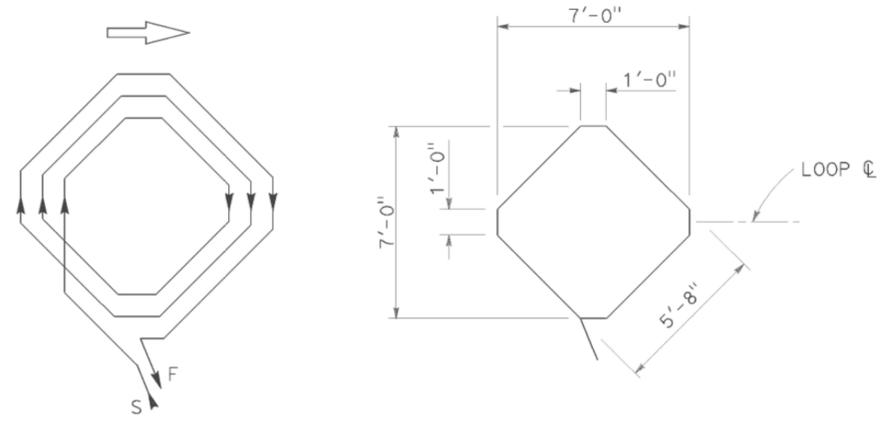
*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
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TO ACCOMPANY PLANS DATED 11-12-14



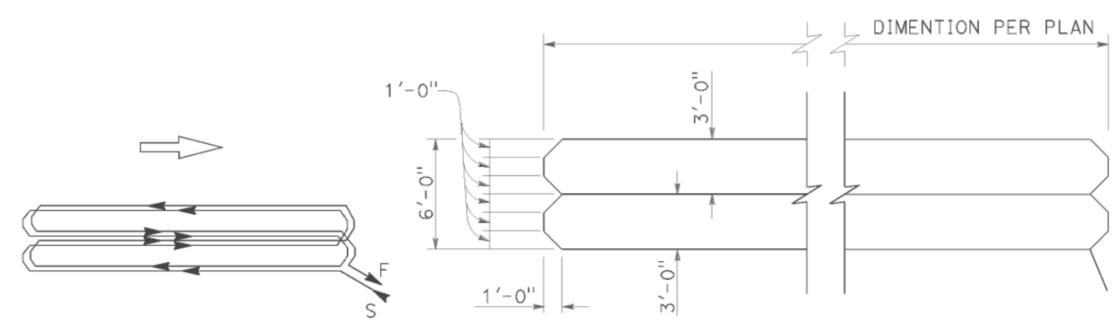
WINDING DETAIL SAWCUT DETAIL

TYPE A LOOP DETECTOR CONFIGURATION



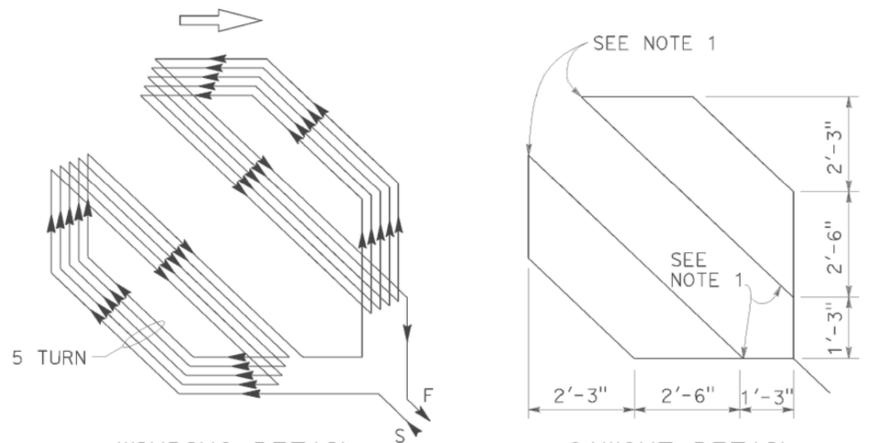
WINDING DETAIL SAWCUT DETAIL

TYPE B LOOP DETECTOR CONFIGURATION



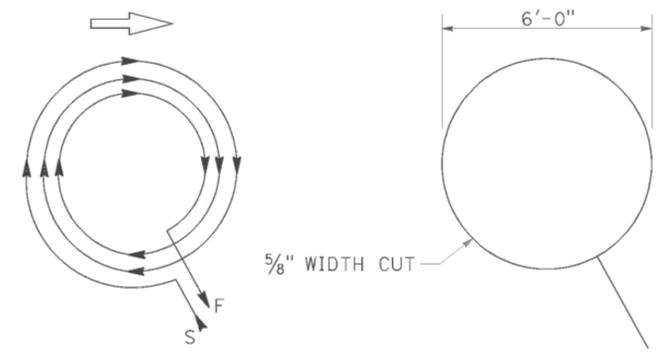
WINDING DETAIL SAWCUT DETAIL

TYPE C LOOP DETECTOR CONFIGURATION



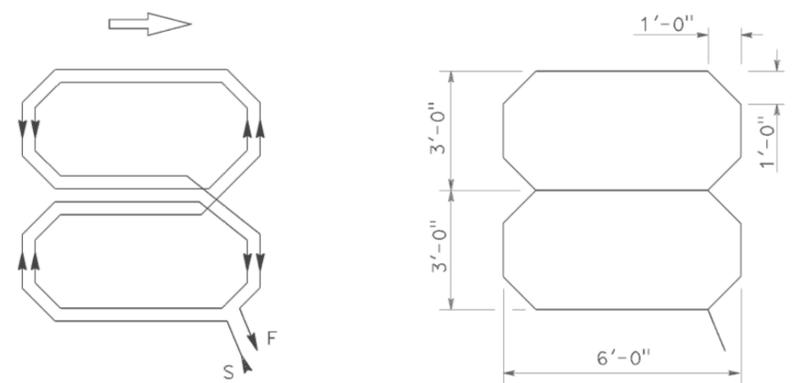
WINDING DETAIL SAWCUT DETAIL

TYPE D LOOP DETECTOR CONFIGURATION



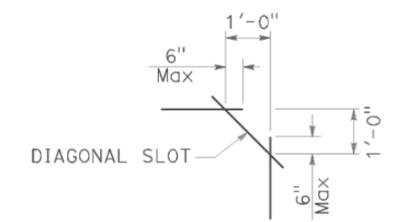
WINDING DETAIL SAWCUT DETAIL

TYPE E LOOP DETECTOR CONFIGURATION



WINDING DETAIL SAWCUT DETAIL

TYPE Q LOOP DETECTOR CONFIGURATION



PLAN VIEW OF  
DIAGONAL SLOT  
AT CORNERS

- NOTES:**
1. Round corners of acute angle sawcuts to prevent damage to conductors.
  2. Typical distance separating loops from edge to edge is 10' for Type A, B, D and E installation in single lane.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(DETECTORS)**  
NO SCALE

RSP ES-5B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5B  
DATED MAY 20, 2011 - PAGE 449 OF THE STANDARD PLANS BOOK DATED 2010.

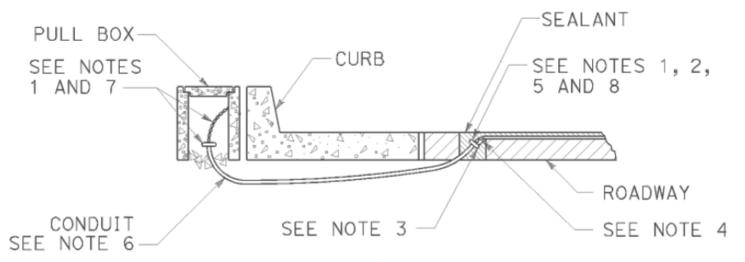
**REVISED STANDARD PLAN RSP ES-5B**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Piu	89	16.4/20.0	24	25

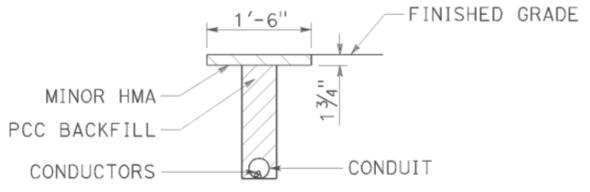
Theresa Gabriel  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
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REGISTERED PROFESSIONAL ENGINEER  
 Theresa Aziz Gabriel  
 No. E15129  
 Exp. 6-30-14  
 ELECTRICAL  
 STATE OF CALIFORNIA

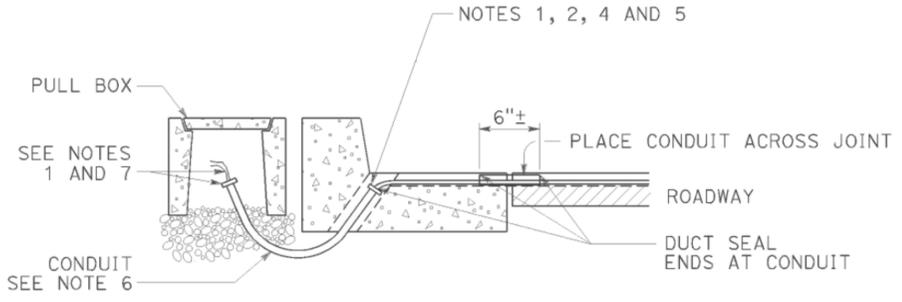
TO ACCOMPANY PLANS DATED 11-12-14



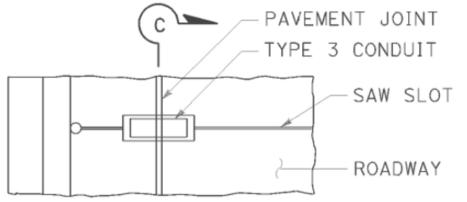
**TYPE A  
CURB TERMINATION DETAIL**



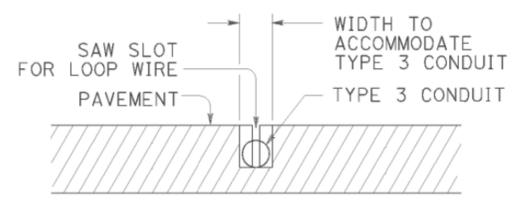
**'T' TRENCH  
DETAIL T**



**CROSS SECTION**

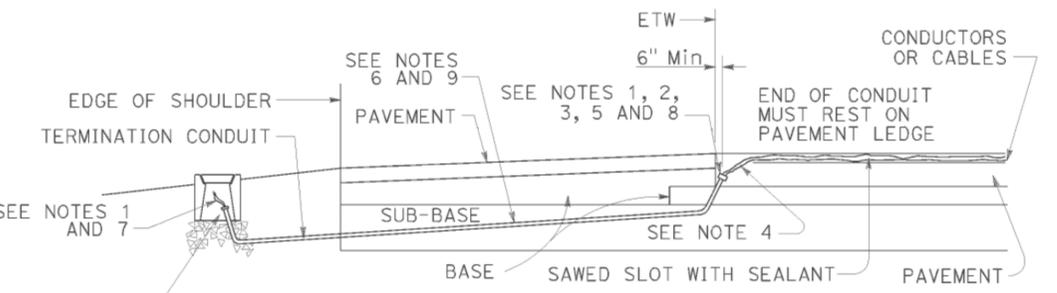


**PLAN VIEW**



**SECTION C-C**

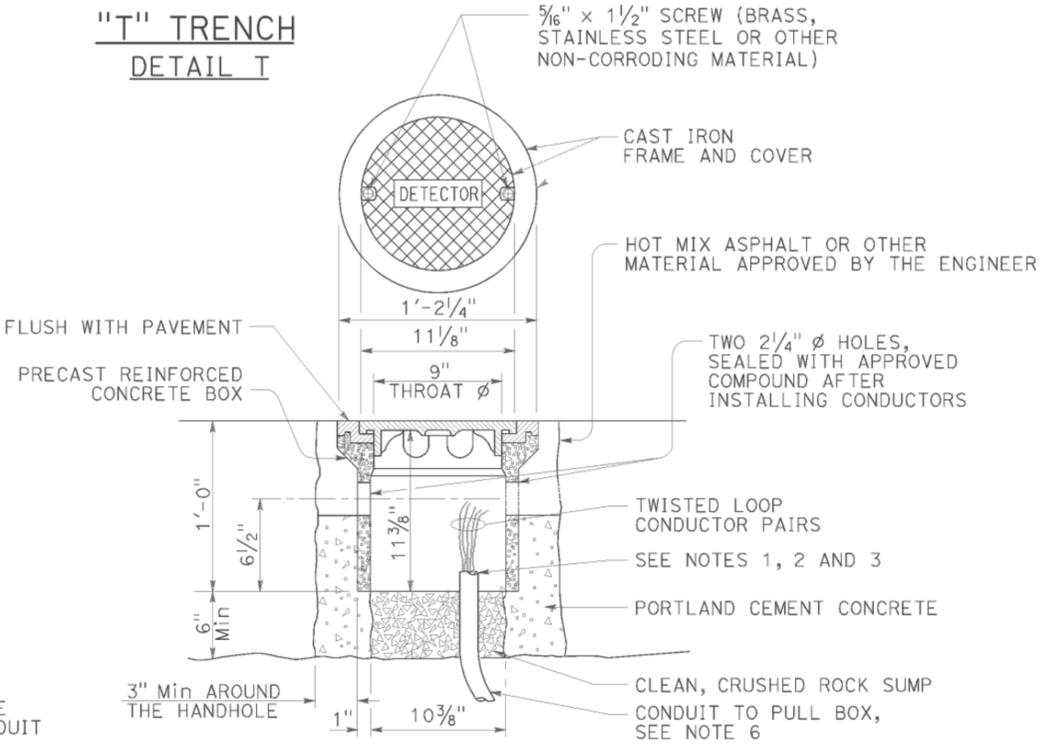
**TYPE B  
CURB TERMINATION DETAIL**



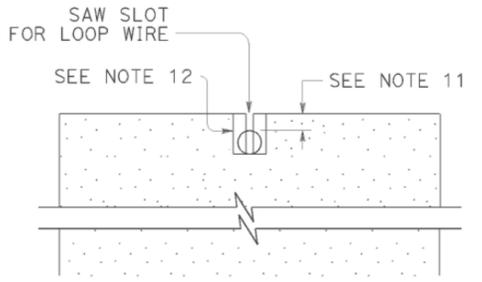
**CROSS SECTION**



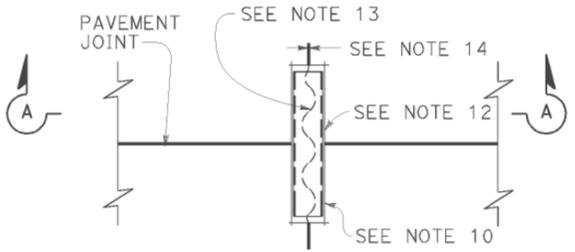
**PLAN VIEW  
SHOULDER TERMINATION DETAILS**



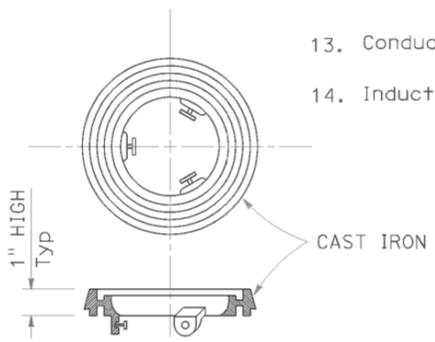
**DETECTOR HANDHOLE DETAIL**



**SECTION A-A**



**PLAN VIEW  
TYPICAL LOOP LEAD-IN DETAIL  
AT PAVEMENT JOINT**



**LOCKING GRADE RING**

**NOTES:**

- Bushing shall be used at end of conduit.
- Tape detector conductors or cables 3" each side of bushings.
- Install duct seal compound to each end of termination conduit before installing sealant.
- Round all sharp edges where detector conductors or cables have to pass.
- End of conduit shall be 3/8" below roadway surface.
- Conduit size      Loop conductors  
 1"C minimum      1 to 2 pairs  
 1 1/2"C minimum    3 to 4 pairs  
 2"C minimum      5 or more pairs
- Splice detector conductors or cables to detector lead-in-cable.
- Location of detector handhole when shown on plans.
- When the shoulder and traveled way are paved with the same material and there is no joint between them, the conduit shall extend only 2'-0" into the shoulder pavement.
- 3/4"C, Type 3 conduit 6" long minimum, plug both ends with duct compound to keep out sealant.
- 1/2" Minimum between top of conduit and pavement surface.
- Sawcut shall not exceed 1" in width and 1/8" longer than conduit to be installed.
- Conductors with 1/2" minimum slack inside conduit.
- Inductive loop detector saw slot.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (CURB TERMINATION  
 AND HANDHOLE)**  
 NO SCALE

RSP ES-5D DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5D  
 DATED MAY 20, 2011 - PAGE 451 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-5D**

2010 REVISED STANDARD PLAN RSP ES-5D

DATE PLOTTED => 14-NOV-2014  
 TIME PLOTTED => 08:15

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Plu	89	16.4/20.0	25	25

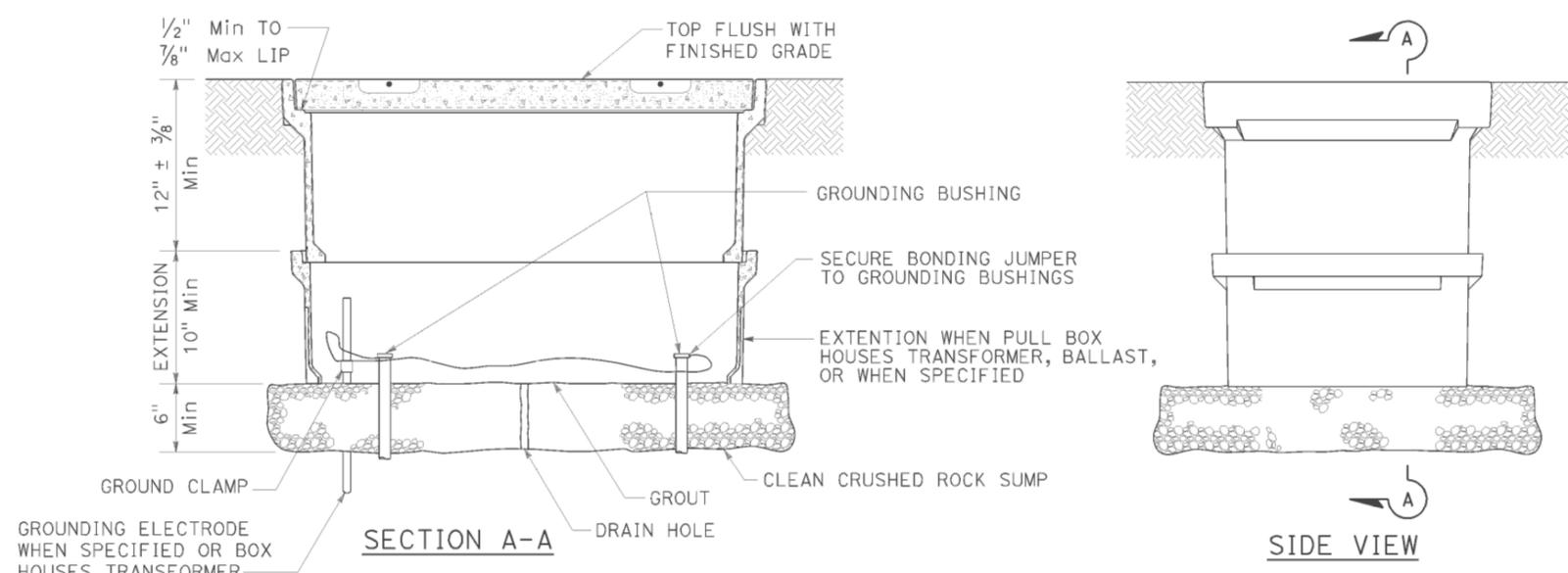
Theresa Gabriel  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

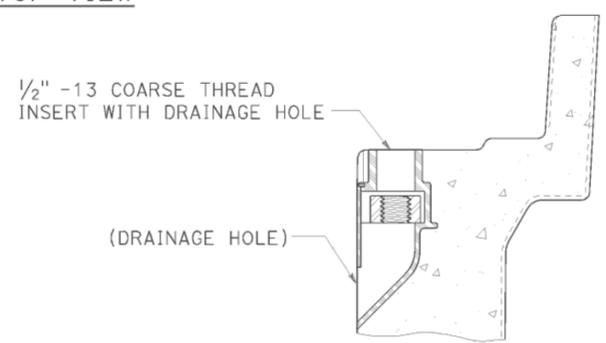
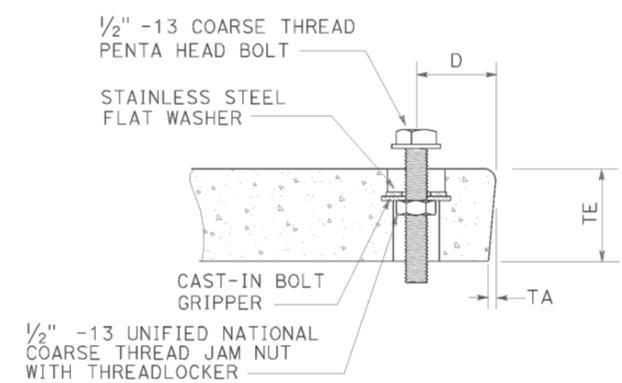
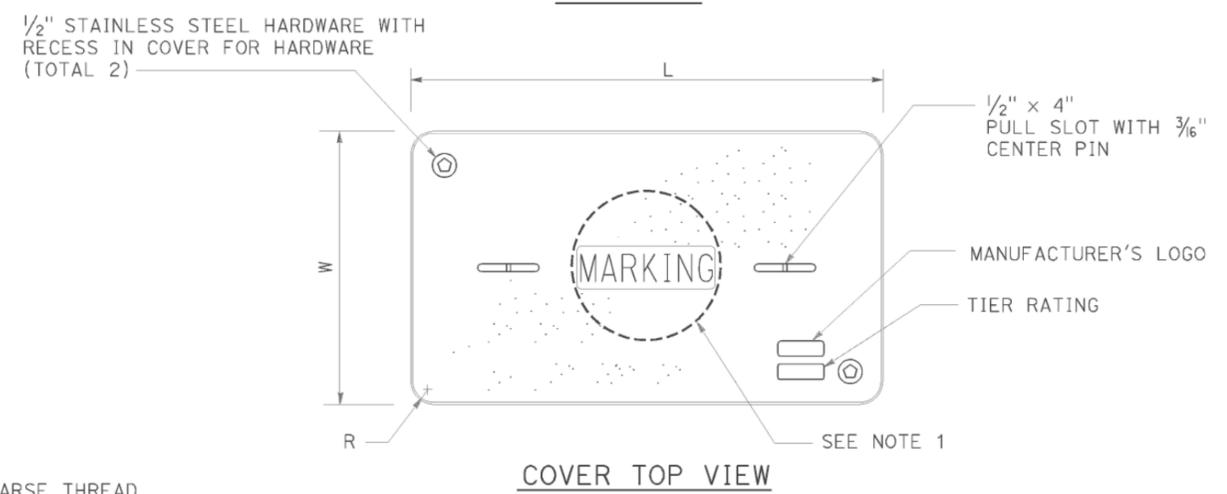
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TO ACCOMPANY PLANS DATED 11-12-14



**INSTALLATION DETAILS**  
**DETAIL A**



**NOTES:**

- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" sprinkler control circuits, 50 V or less; "CALTRANS" on all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service;
  - No. 3 1/2 pull box.
    - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
  - No. 5, 6, 9 or 9A pull box.
    - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
    - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
    - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
    - "RAMP METER" - Ramp meter circuits.
    - "COUNT STATION" - Count or speed monitor circuits.
    - "COMMUNICATIONS" - Communication circuits.
    - "TOS COMMUNICATIONS" - TOS communication line.
    - "TOS POWER" - TOS power.
    - "TDC POWER" - Telephone demarcation cabinet power.
    - "CCTV" - Closed circuit television circuits.
    - "TMS" - Traffic monitoring station circuits.
    - "CMS" - Changeable message sign circuits.
    - "HAR" - Highway advisory radio circuits.
    - "BOOSTER PUMP" - Booster pump circuit.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8". Top outside radius of covers and pull boxes shall have a 1/8" radius.
- Pull box extension may be another pull box as long as the bottom edge of the pull box can fit into the cover opening.
- All dimensions for the cover for non-traffic pull box are nominal values.

DIMENSION TABLE										
PULL BOX	PULL BOX			COVER						
	MINIMUM DEPTH BOX	MINIMUM DEPTH EXTENSION	MAXIMUM WEIGHT	L	W	R	TE	TA	D	MAXIMUM WEIGHT
No. 3 1/2	12"	N/A	40 lb	1' - 3 3/8"	10 1/8"	1 3/8"	2"	1/8"	1 3/4"	30 lb
No. 5	12"	10"	55 lb	1' - 11 1/4"	1' - 1 3/4"	1 3/8"	2"	1/8"	1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 6 1/2"	1' - 5 1/2"	1 3/8"	2"	1/8"	2"	85 lb

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(NON-TRAFFIC PULL BOX)**  
NO SCALE

RSP ES-8A DATED JULY 19, 2013 SUPERSEDES RSP ES-8A DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-8A**