

INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2	TYPICAL CROSS SECTIONS
3	LAYOUTS
4-5	CONSTRUCTION DETAILS
6	CONSTRUCTION AREA SIGNS
7-8	MOTORIST INFORMATION PLANS AND QUANTITIES
9-11	STAGE CONSTRUCTION AND TRAFFIC HANDLING PLANS AND QUANTITIES
12-13	PAVEMENT DELINEATION AND SIGN PLANS AND QUANTITIES
14-15	SUMMARY OF QUANTITIES
16	LANDSCAPE PLANS
17	ELECTRICAL PLANS
18-54	REVISED STANDARD PLANS

STRUCTURE PLANS

55-62 SANTA FE UNDERCROSSING, Br No. 49-0115 L/R

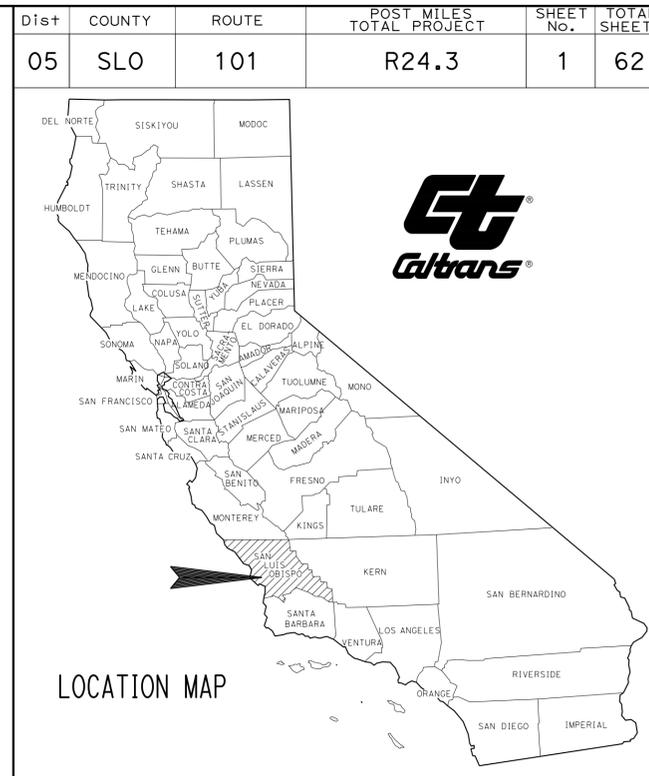
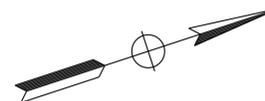
THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ACNHP-Q10(294)E

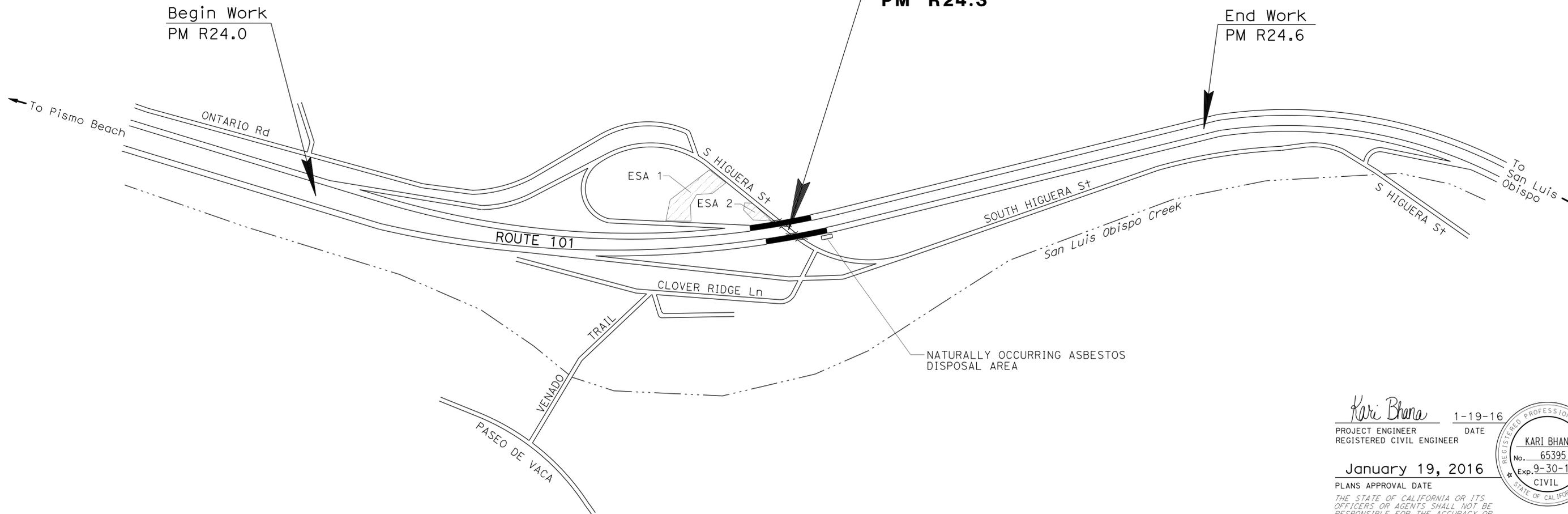
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN SAN LUIS OBISPO COUNTY
NEAR SAN LUIS OBISPO
AT SANTA FE UNDERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010



LOCATION OF CONSTRUCTION

SANTA FE UC
Br No. 49-0115 Lt & Rt
PM R24.3



PROJECT MANAGER
ROCHELLE VIERRA

DESIGN MANAGER
RON R. KRAEMER

Kari Bhana 1-19-16
PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER
No. 65395
Exp. 9-30-17
CIVIL
STATE OF CALIFORNIA

January 19, 2016
PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

NO SCALE

CONTRACT No. **05-1G4604**
PROJECT ID **0515000032**

DATE PLOTTED => 17-FEB-2016
TIME PLOTTED => 08:21
LAST REVISION 01-19-16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	2	62
Kari Bhana			1-19-16	REGISTERED CIVIL ENGINEER DATE	
KARI BHANA			1-19-16	PLANS APPROVAL DATE	
No. 65395			Exp. 9-30-17		
CIVIL			STATE OF CALIFORNIA		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					

NOTES:

- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO THE TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
- HOT MIX ASPHALT SHALL NOT BE APPLIED ON PORTLAND CEMENT CONCRETE STRUCTURES OR SURFACES.
- EXACT LOCATIONS AND TYPES OF DIKES, MIDWEST GUARDRAIL SYSTEM, AND DOUBLE THRIE BEAM ARE SHOWN ON THE LAYOUT AND SUMMARY OF QUANTITIES SHEETS.
- FOR LOCATIONS AND PLACEMENT OF SHOULDER RUMBLE STRIP, SEE SHEET C-1.

DESIGN DESIGNATION

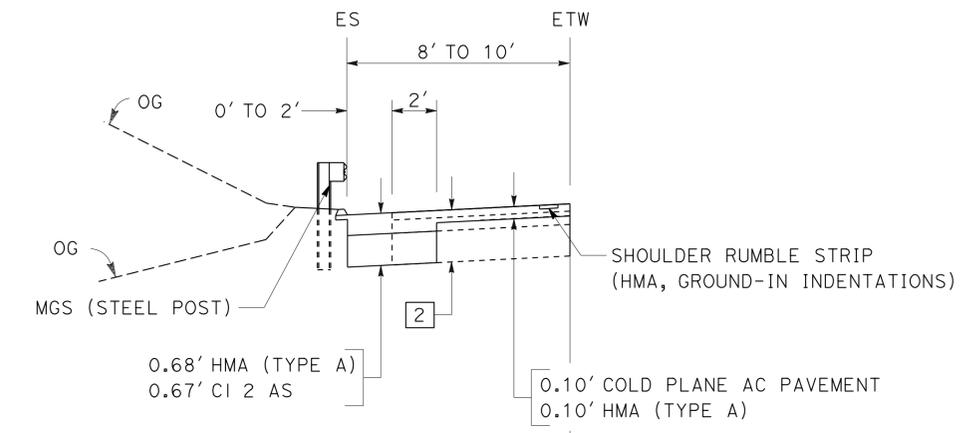
ADT (2016)	65,902	D	58.8%
ADT (2036)	75,913	T	9.0%
DHV	6,400	V	70 mph
ESAL	30,200,000	TI ₂₀	13.5

PAVEMENT CLIMATE REGION

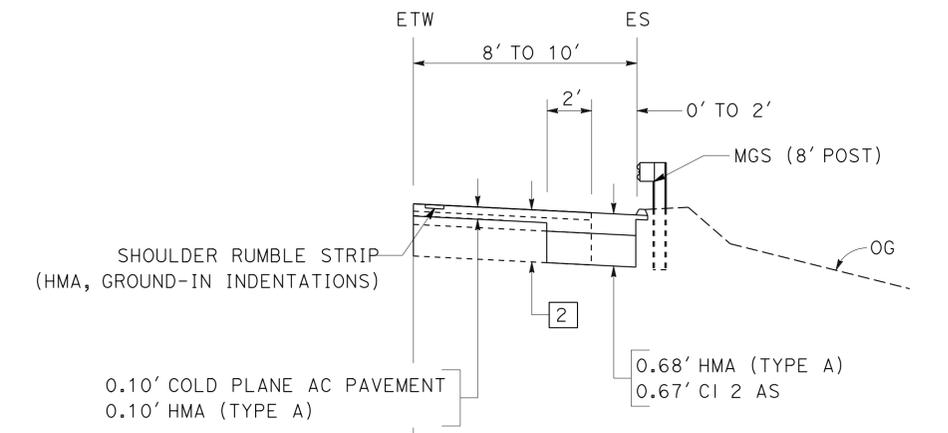
CENTRAL COAST

Exist STRUCTURAL SECTIONS

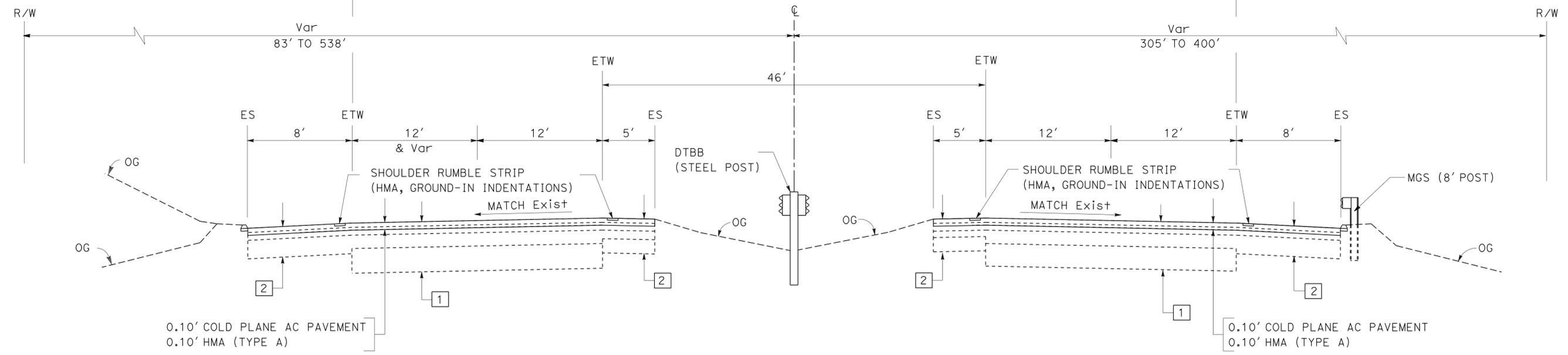
- 1. 0.06 RHMA
0.20' AC (TYPE A)
PRF
0.08' AC (TYPE A)
0.02' OGAC
0.42' AC
0.67' CTB
1.00' CI 2 AS
- 2. 0.06 RHMA
0.29' AC (TYPE A)
0.33' AC
0.67' CI 2 AS



PM R24.33 TO PM R24.35
PM R24.28 TO PM R24.30



PM R24.33 TO PM R24.35
PM R24.28 TO PM R24.30



0.10' COLD PLANE AC PAVEMENT
0.10' HMA (TYPE A)

0.10' COLD PLANE AC PAVEMENT
0.10' HMA (TYPE A)

SOUTHBOUND
PM R24.35 TO PM R24.38
PM R24.25 TO PM R24.28

PM R24.33 TO PM R24.38
PM R24.25 TO PM R24.30

NORTHBOUND
PM R24.35 TO PM R24.38
PM R24.25 TO PM R24.28

ROUTE 101

TYPICAL CROSS SECTIONS
NO SCALE

X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN
 KARI BHANA
 RON R. KRAEMER
 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, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR EXACT LOCATIONS OF COLD PLANING, PAVING, AND SHOULDER WORK SEE SHEET C-1.
3. LIMITS OF HMA PAVING SHOULD EQUAL OR EXCEED THE LIMITS OF TEMPORARY PAVEMENT DELINEATION FOR STAGE CONSTRUCTION.

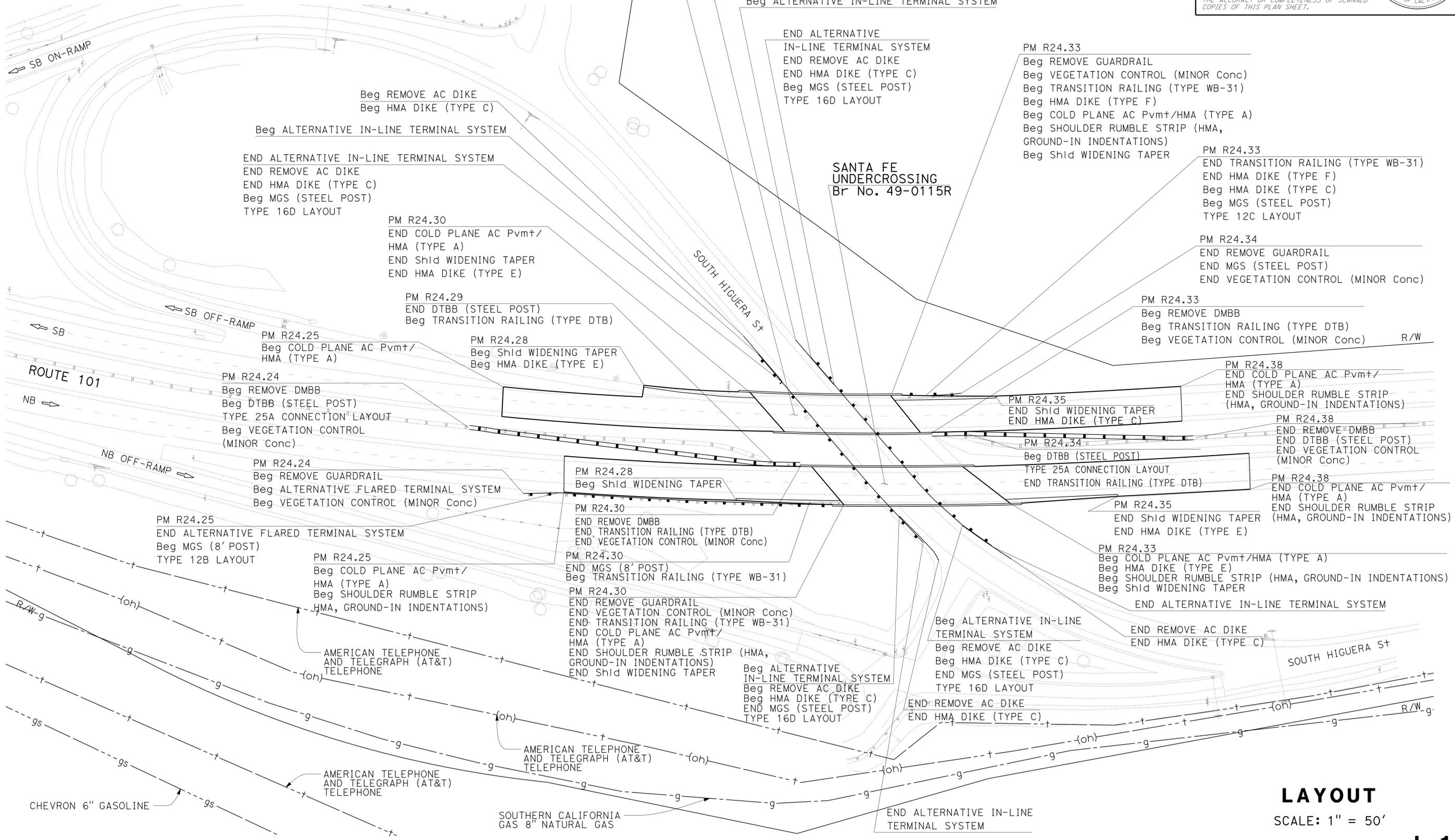
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	3	62

Kari Bhana
REGISTERED CIVIL ENGINEER
DATE 1-19-16

1-19-16
PLANS APPROVAL DATE

KARI BHANA
No. 65395
Exp. 9-30-17
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.

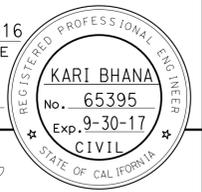


LAYOUT
SCALE: 1" = 50'

L-1

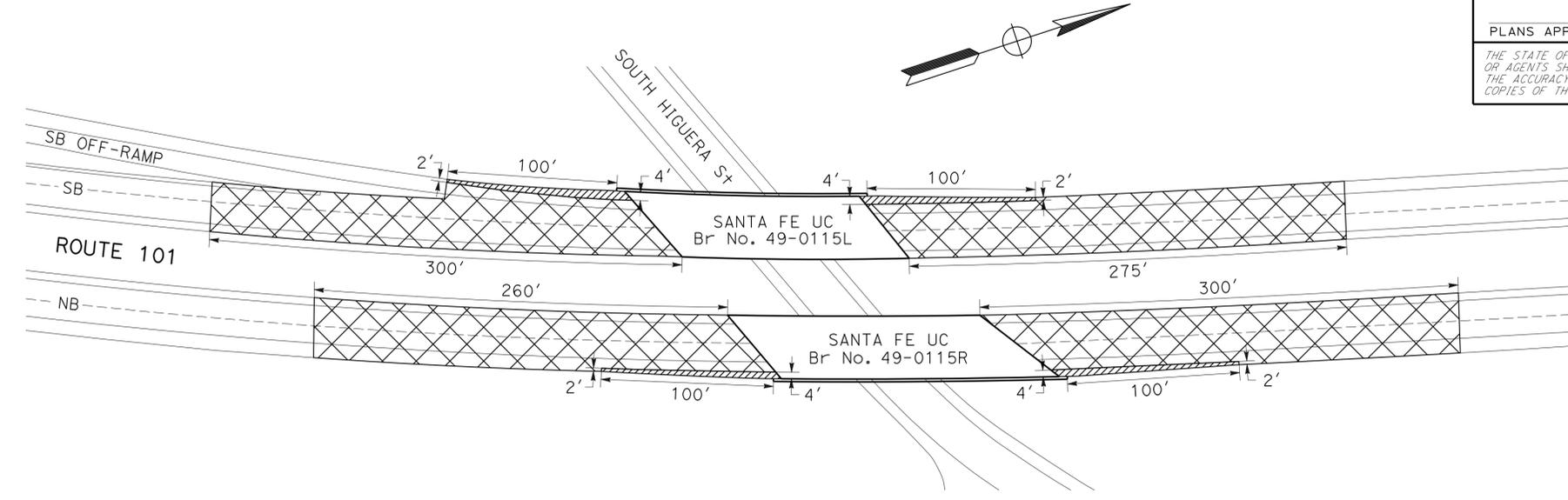
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 FUNCTIONAL SUPERVISOR: RON R. KRAEMER
 CALCULATED/DESIGNED BY: KARI BHANA
 CHECKED BY: RON R. KRAEMER
 REVISED BY: KARI BHANA
 DATE REVISED:

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	4	62
Kari Bhana			1-19-16	REGISTERED CIVIL ENGINEER DATE	
1-19-16			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>					

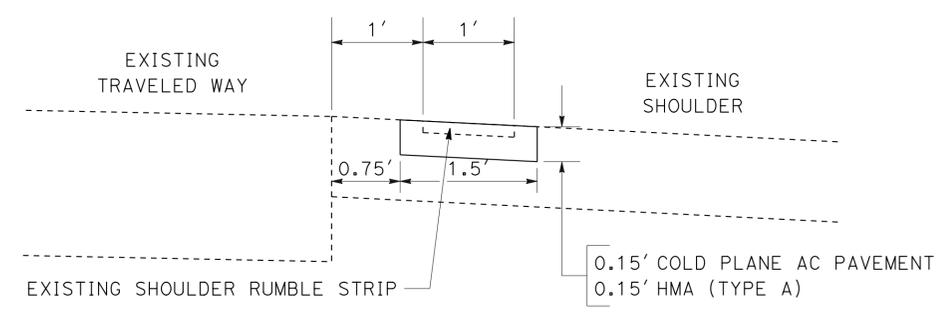


LEGEND:

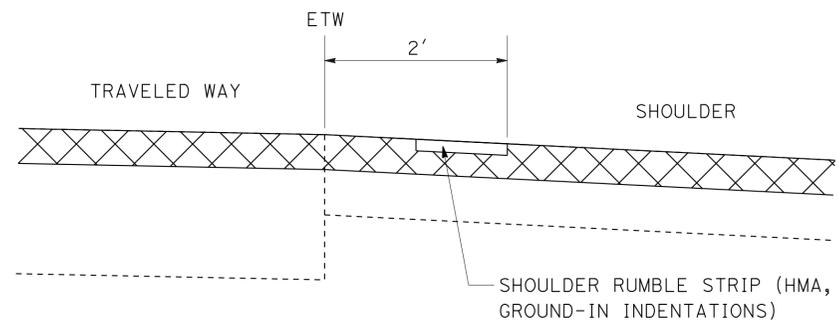
- SHOULDER WIDENING TAPER:
0.68' HMA (TYPE A)
0.67' CI 2 AS
- 0.10' COLD PLANE AC Pvm+
0.10' HMA (TYPE A)



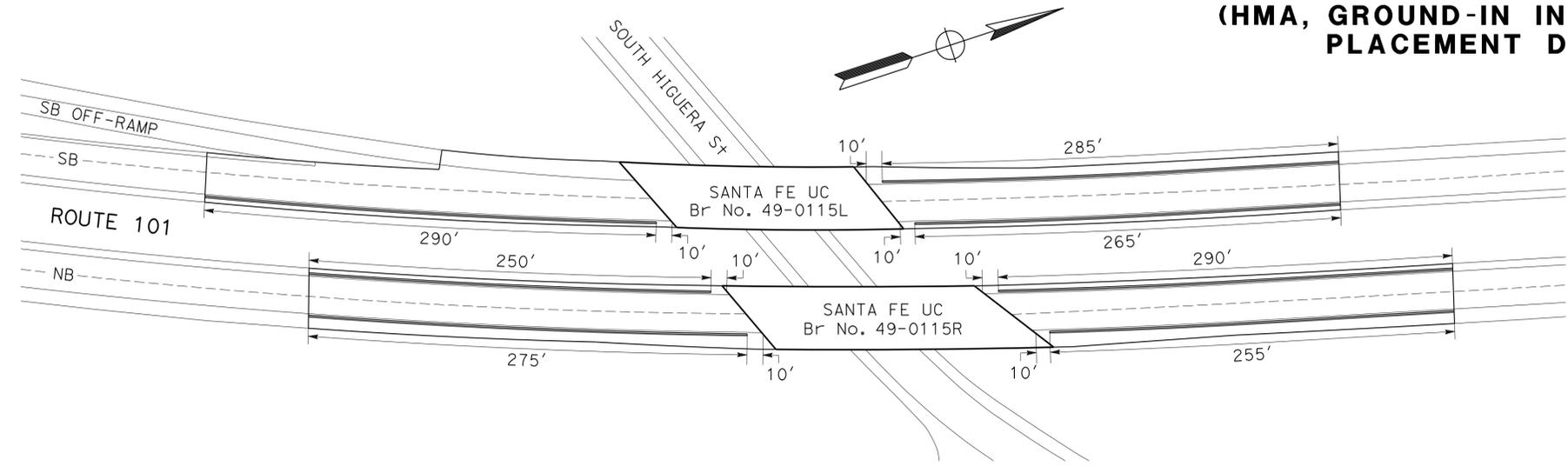
COLD PLANE, RESURFACE, AND SHOULDER WIDENING TAPER LIMITS



SHOULDER RUMBLE STRIP REMOVAL DETAIL



SHOULDER RUMBLE STRIP (HMA, GROUND-IN INDENTATIONS) PLACEMENT DETAILS



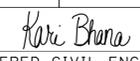
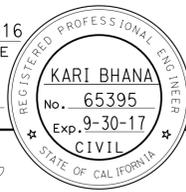
SHOULDER RUMBLE STRIP LIMITS

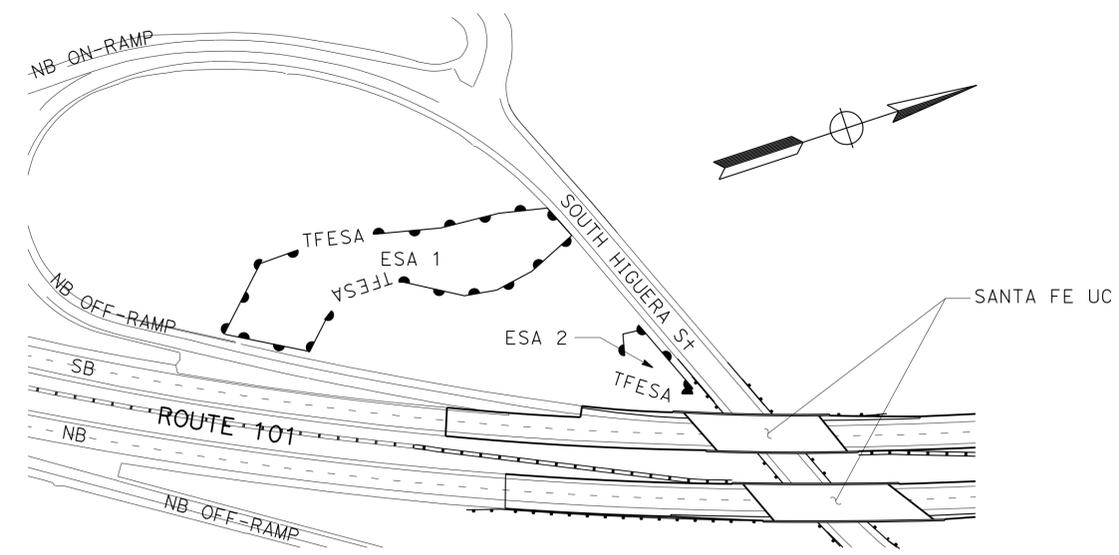
CONSTRUCTION DETAILS

NO SCALE

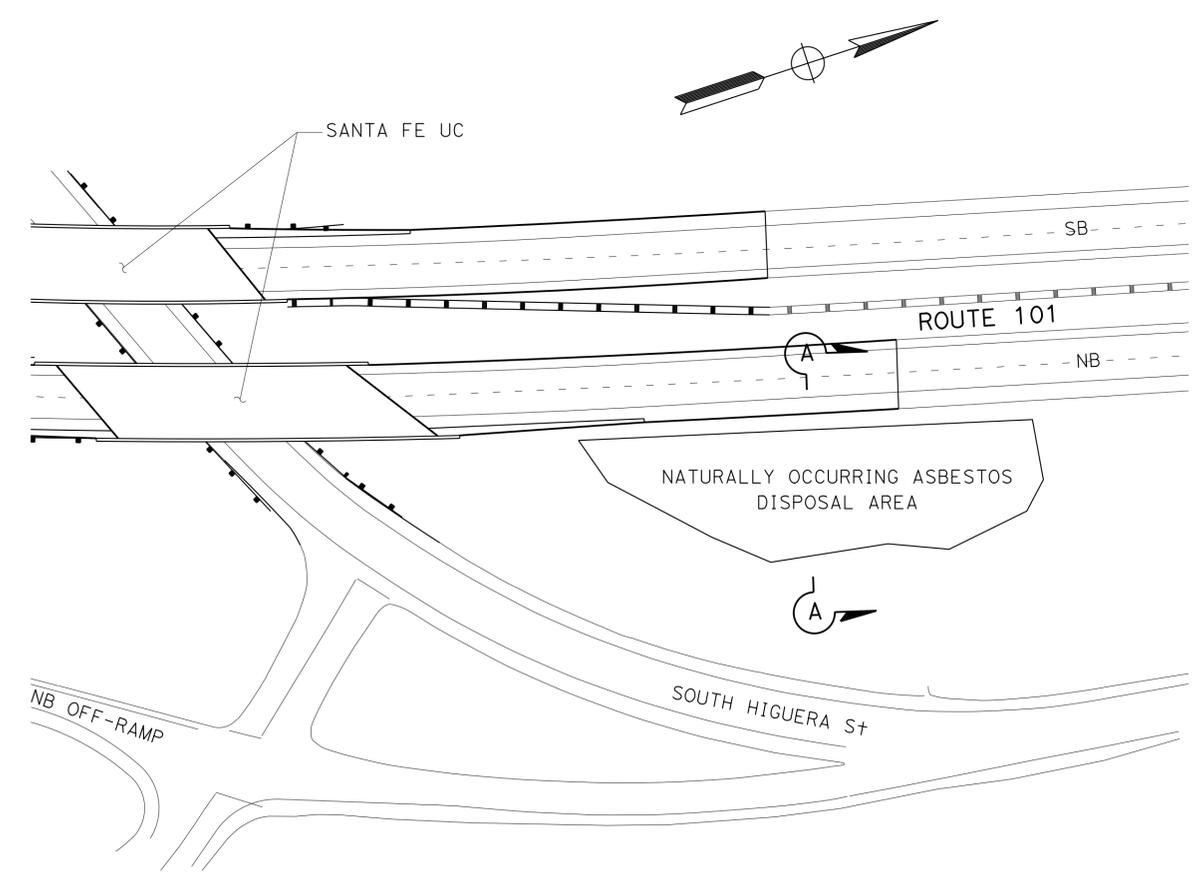
C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 KARI BHANA
 RON R. KRAEMER
 REVISIONS: 01-19-16
 01-19-16

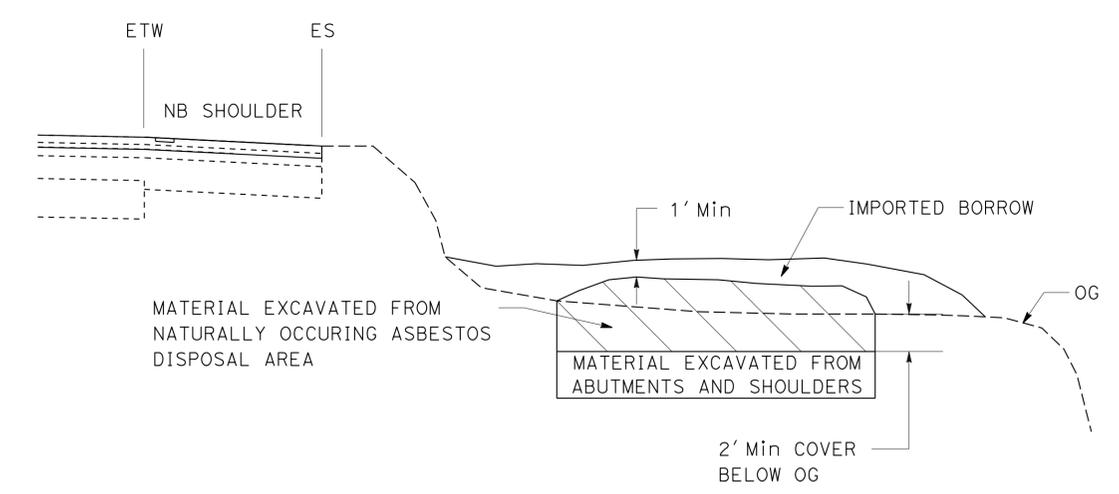
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	5	62
			1-19-16	DATE	
REGISTERED CIVIL ENGINEER					
1-19-16			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
					



TEMPORARY ESA FENCE LOCATIONS



NATURALLY OCCURRING ASBESTOS DISPOSAL AREA LOCATION



NATURALLY OCCURRING ASBESTOS DISPOSAL AREA DETAIL

CONSTRUCTION DETAILS

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: RON R. KRAEMER
 CALCULATED/DESIGNED BY: KARI BHANA
 CHECKED BY: RON R. KRAEMER
 REVISED BY: KARI BHANA
 DATE REVISED:



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	7	62

Kari Bhana		1-19-16
REGISTERED CIVIL ENGINEER	DATE	
1-19-16		
PLANS APPROVAL DATE		

REGISTERED PROFESSIONAL ENGINEER
KARI BHANA
No. 65395
Exp. 9-30-17
CIVIL
STATE OF CALIFORNIA

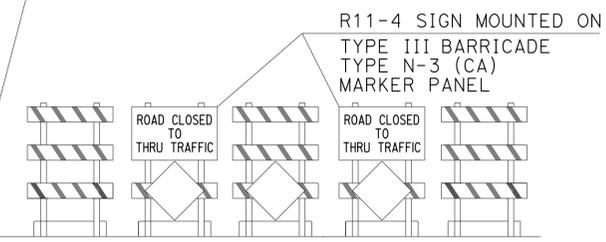
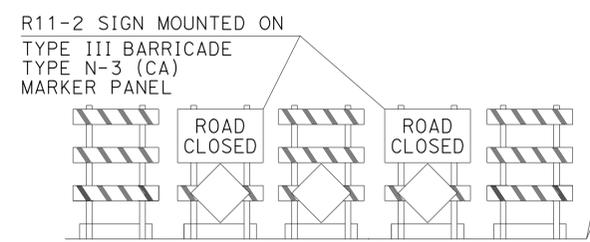
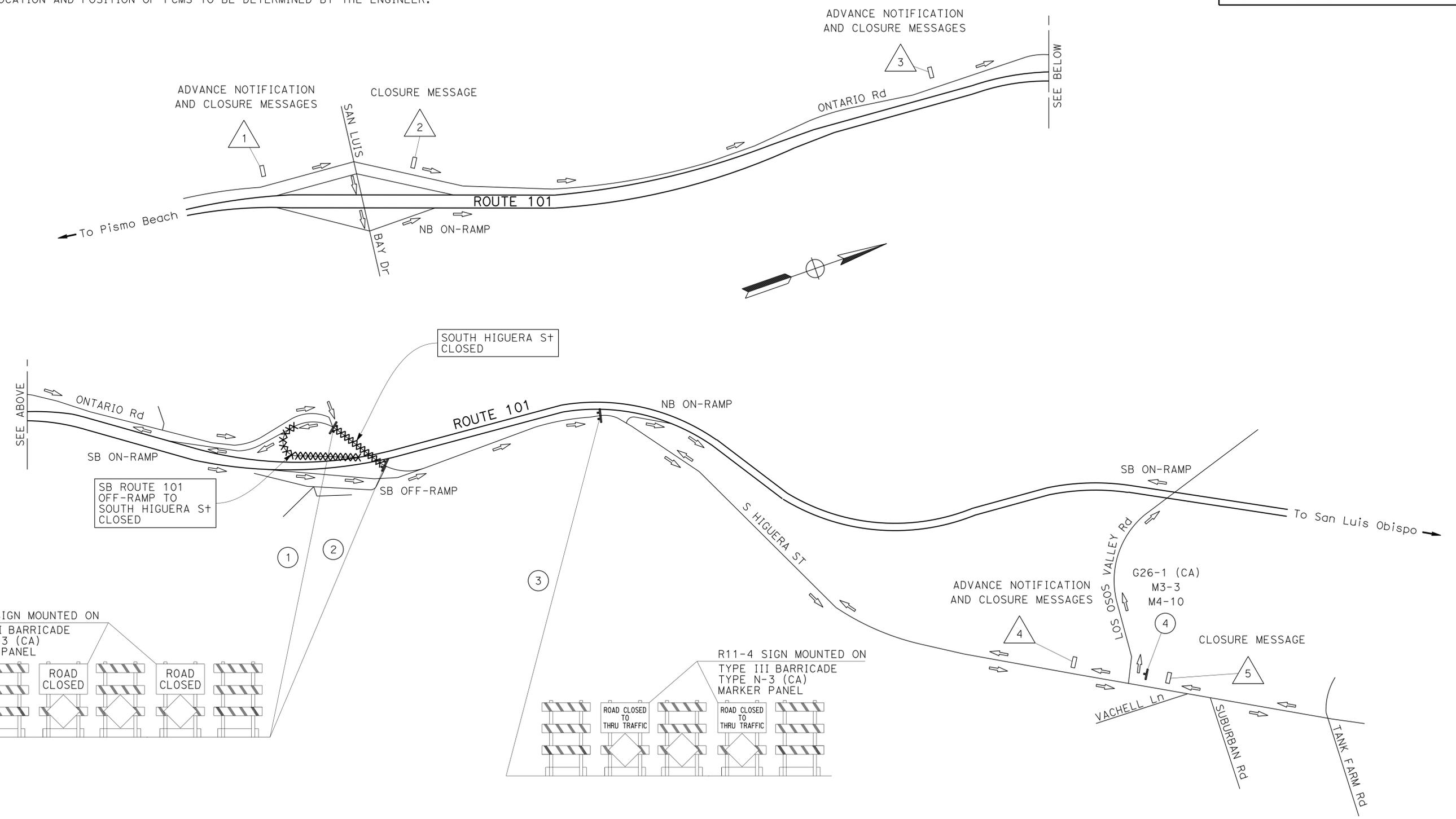
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

1. FOR FULL CLOSURE OF SOUTH HIGUERA ST UNDER SANTA FE UC AND SB 101 OFF RAMP DURING BRIDGE BARRIER, WINGWALL, AND OVERHANG REMOVAL AND BRIDGE OVERHANG BRACKET INSTALLATION AND REMOVAL ONLY.
2. PROVIDE ADVANCE NOTIFICATION FOR ONTARIO Rd AND NEAR LOS OSOS VALLEY Rd 7 DAYS IN ADVANCE OF CLOSURE.
3. EXACT LOCATION AND POSITION OF CONSTRUCTION AREA SIGNS TO BE DETERMINED BY THE ENGINEER.
4. EXACT LOCATION AND POSITION OF PCMS TO BE DETERMINED BY THE ENGINEER.

LEGEND:

- (X) CONSTRUCTION AREA SIGN No.
- DIRECTION OF TRAFFIC
- (X) PORTABLE CHANGEABLE MESSAGE SIGN No.



**MOTORIST INFORMATION PLAN
(SOUTH HIGUERA St CLOSURE)**

NO SCALE

MI-1

APPROVED FOR MOTORIST INFORMATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN

REVISOR: KARI BHANA
DATE: 1-19-16

DESIGNER: RON R. KRAEMER

CHECKED BY: RON R. KRAEMER

FUNCTIONAL SUPERVISOR: RON R. KRAEMER

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	8	62

Kari Bhana 1-19-16
 REGISTERED CIVIL ENGINEER DATE

1-19-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
KARI BHANA
 No. 65395
 Exp. 9-30-17
 CIVIL
 STATE OF CALIFORNIA

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

NOTE:

EXACT LOCATION AND POSITION OF CONSTRUCTION AREA SIGNS AND PCMS TO BE DETERMINED BY THE ENGINEER.

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No. (X)	SIGN CODE		PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	OBJECT MARKER (TYPE N) (N)	NUMBER OF SIGNS
	FEDERAL	CALIFORNIA				EA	
1	R11-2		48" x 30"	ROAD CLOSED	BARRICADE MOUNTED	3	2
		N-3	18" x 18"	MARKER PANEL			
2	R11-2		48" x 30"	ROAD CLOSED	BARRICADE MOUNTED	3	2
		N-3	18" x 18"	MARKER PANEL			
3	R11-4		48" x 30"	ROAD CLOSED TO THRU TRAFFIC	BARRICADE MOUNTED	3	2
		N-3	18" x 18"	MARKER PANEL			
4		G26-1	27" x 18"	101	1 - 4" x 6"		1
	M3-3		24" x 12"	SOUTH			
	M4-10		48" x 18"	DETOUR			

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

FOR ADDITIONAL CONSTRUCTION AREA SIGNS, SEE CONSTRUCTION AREA SIGNS SHEET AND STAGE CONSTRUCTION AND TRAFFIC HANDLING SHEETS.

PORTABLE CHANGEABLE MESSAGE SIGNS

PMCS No. (X)	ADVANCE NOTIFICATION MESSAGE			CLOSURE MESSAGE		NUMBER OF PORTABLE CHANGEABLE MESSAGE SIGNS
	PHASE 1	PHASE 2	PHASE 3	PHASE 1	PHASE 2	
1	S HIGUERA CLOSED AT 101	DATE-DATE 9PM-5AM	PLAN ALT ROUTE	S HIGUERA CLOSED 2 MILES	USE ALT ROUTE	1
2				S HIGUERA CLOSED 2 MILES		1
3	S HIGUERA CLOSED AHEAD	DATE-DATE 9PM-5AM	PLAN ALT ROUTE	S HIGUERA CLOSED AHEAD		1
4	S HIGUERA CLOSED 1.5 MILE	DATE-DATE 9PM-5AM	PLAN ALT ROUTE	S HIGUERA CLOSED 1.5 MILE		1
5				S HIGUERA CLOSED 2 MILES	USE ALT FOR 101 SB	1

BARRICADES

SIGN No. (X)	TYPE III BARRICADE
	EA
1	5
2	5
3	5
TOTAL	15

MOTORIST INFORMATION QUANTITIES

MIQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: RON R. KRAEMER
 CALCULATED/DESIGNED BY: KARI BHANA
 CHECKED BY: RON R. KRAEMER
 REVISED BY: KARI BHANA
 DATE REVISED:



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

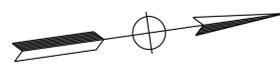
FUNCTIONAL SUPERVISOR: RON R. KRAEMER
 CHECKED BY: RON R. KRAEMER
 CALCULATED/DESIGNED BY: KARI BHANA
 REVISIONS: KARI BHANA, RON R. KRAEMER
 REVISED BY: DATE

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

STAGE 1 CONSTRUCTION NOTES:

1. REMOVE SHOULDER RUMBLE STRIPS.
2. SALVAGE DEPARTMENT-OWNED TEMPORARY RAILING (TYPE K).
3. PLACE TEMPORARY RAILING (TYPE K) AND SHIFT TRAFFIC 7.5' TO THE OUTSIDE OF EACH BRIDGE BY PLACING TEMPORARY TRAFFIC STRIPE AND CHANNELIZERS.
4. CONSTRUCT INSIDE BRIDGE RAILS.
5. CONSTRUCT DOUBLE THRIE BEAM BARRIER.
6. REMOVE STAGE 1 TEMPORARY PAVEMENT DELINEATION.

- LEGEND:**
- TEMPORARY TRAFFIC STRIPE (TAPE)
 - REMOVE TEMPORARY TRAFFIC STRIPE (PAINT)
 - CONSTRUCTION AREA SIGN No.
 - DIRECTION OF TRAFFIC
 - CHANNELIZER (SURFACE MOUNTED)
 - CHANGE TEMPORARY TRAFFIC STRIPE DETAIL



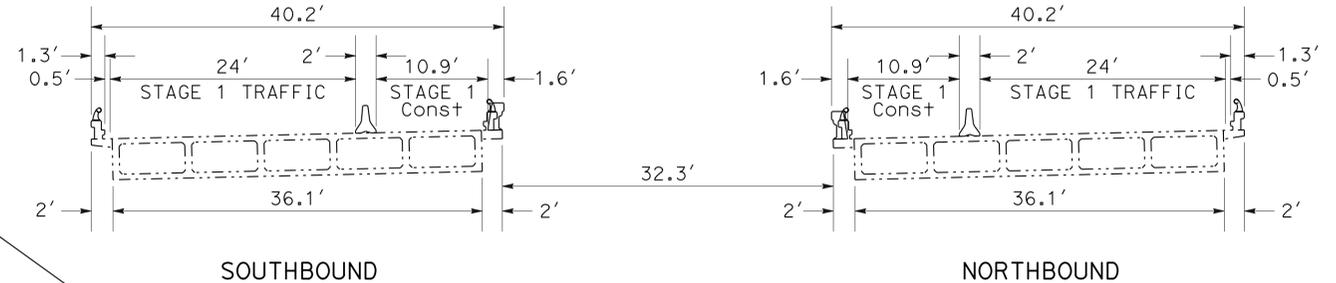
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	9	62

Kari Bhana 1-19-16
 REGISTERED CIVIL ENGINEER DATE

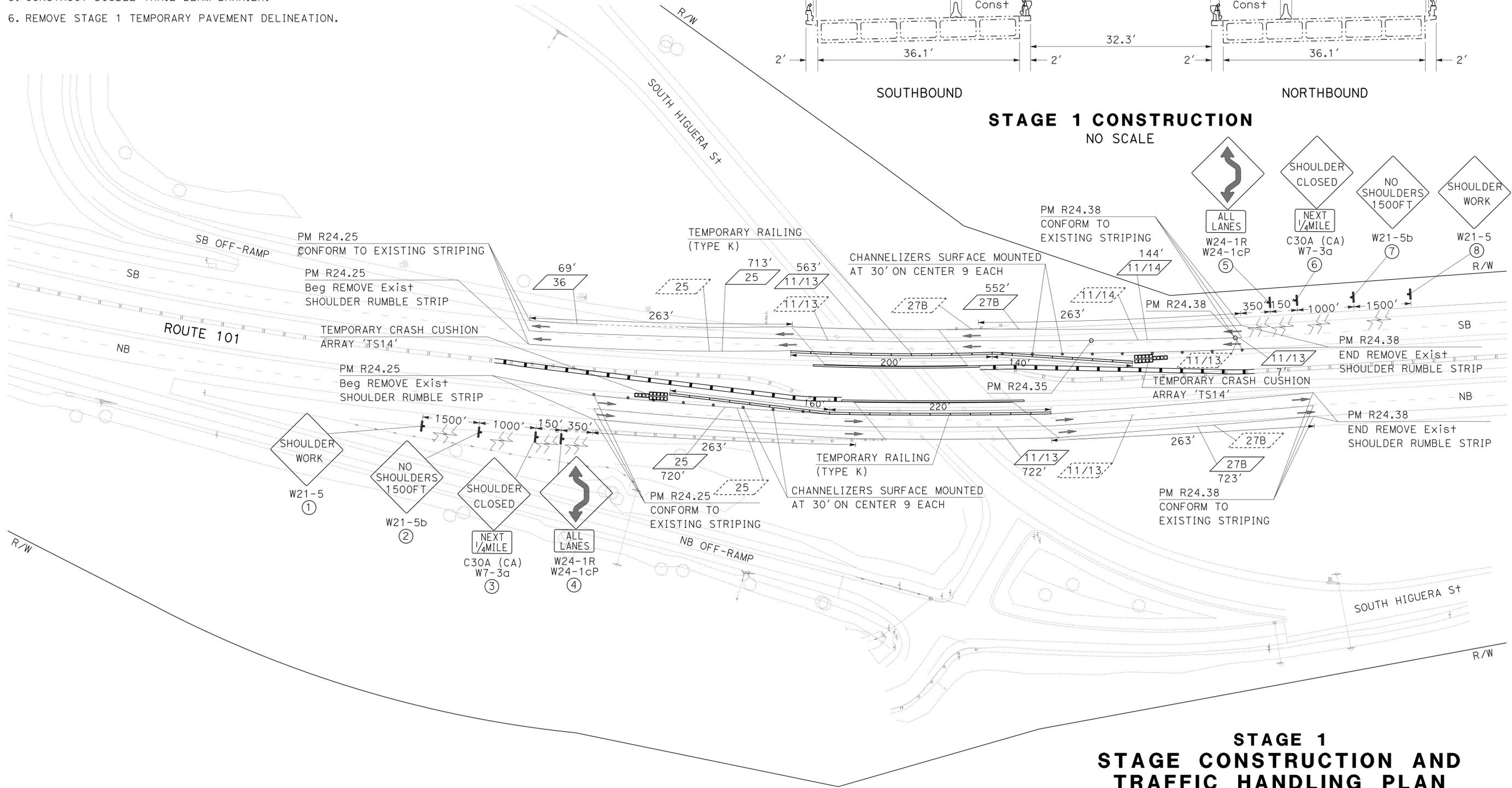
1-19-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
KARI BHANA
 No. 65395
 Exp. 9-30-17
 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.



STAGE 1 CONSTRUCTION
 NO SCALE



**STAGE 1
 STAGE CONSTRUCTION AND
 TRAFFIC HANDLING PLAN**
 SC-1

SCALE: 1" = 50'

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	10	62
Kari Bhana			1-19-16	REGISTERED CIVIL ENGINEER DATE	
1-19-16			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>					



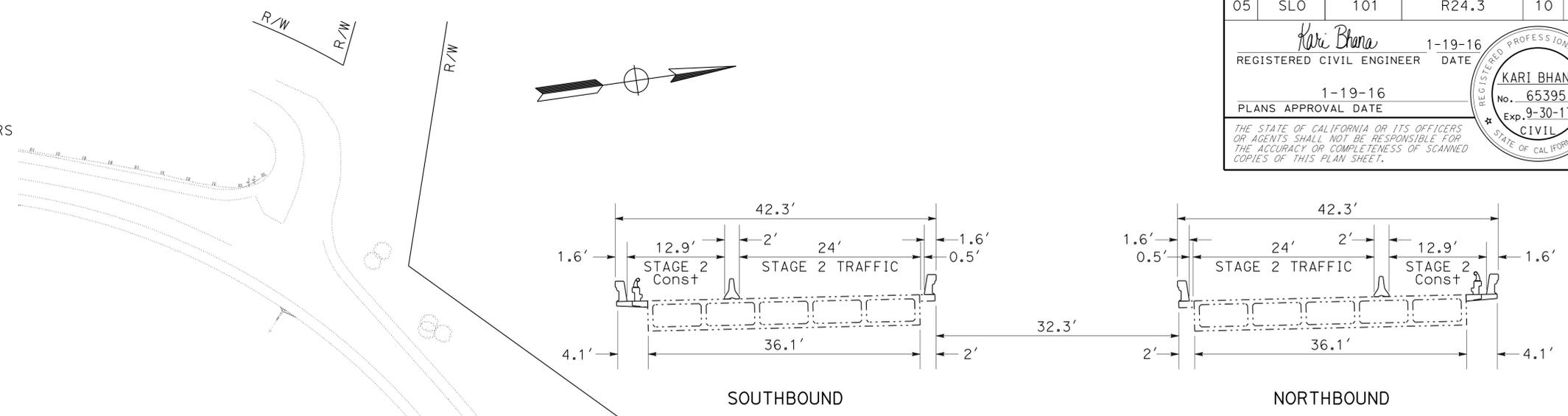
NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STAGE 2 CONSTRUCTION NOTES:

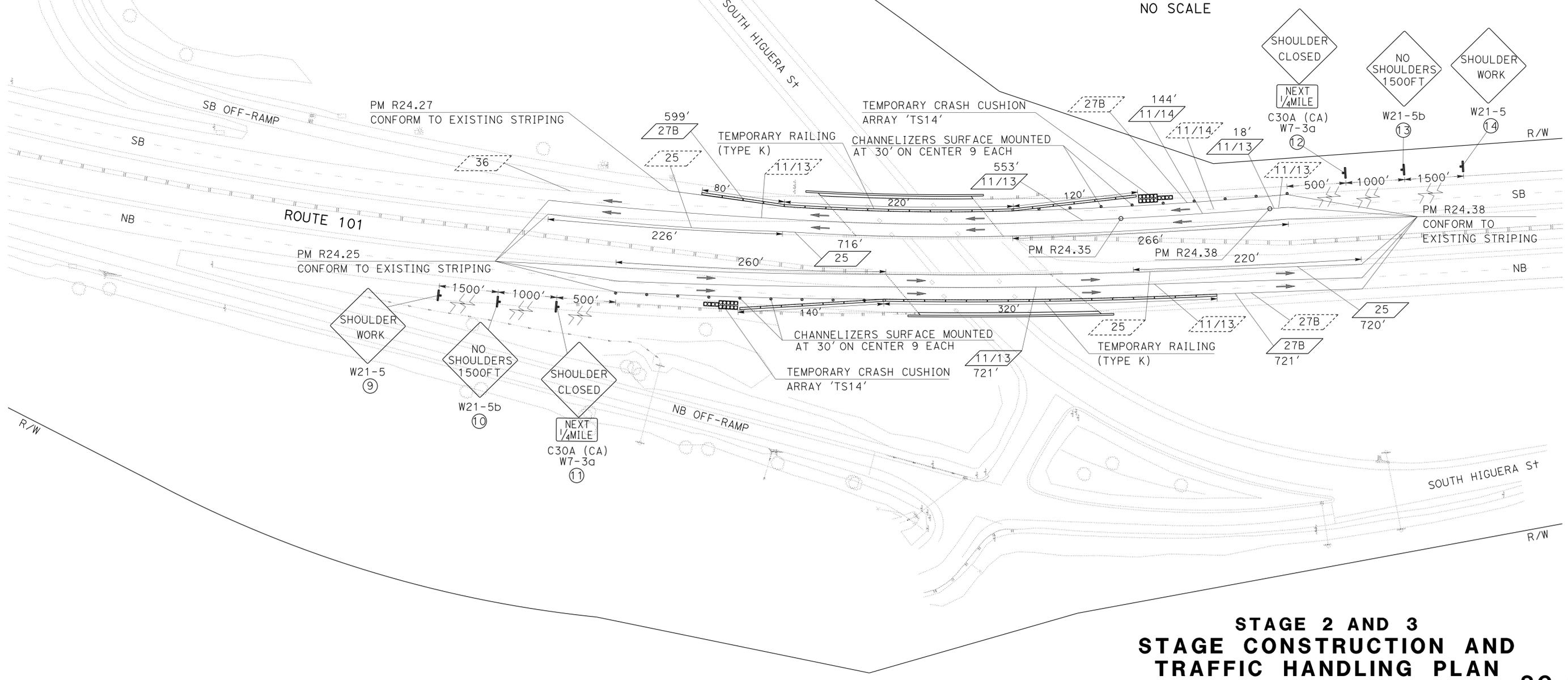
1. PLACE TEMPORARY RAILING (TYPE K) AND SHIFT TRAFFIC 5' TO THE INSIDE OF EACH BRIDGE BY PLACING TEMPORARY TRAFFIC STRIPE AND CHANNELIZERS
2. CONSTRUCT OUTSIDE BRIDGE RAILS.
3. CONSTRUCT SHOULDER WIDENING TAPERS AND MIDWEST GUARDRAIL SYSTEM.
4. REMOVE STAGE 2 TEMPORARY PAVEMENT DELINEATION AND RAILING.

STAGE 3 CONSTRUCTION NOTES:

COLD PLANE PAVEMENT AND PLACE HMA OVERLAY. INSTALL RUMBLE STRIPS.



STAGE 2 CONSTRUCTION
NO SCALE



**STAGE 2 AND 3
STAGE CONSTRUCTION AND
TRAFFIC HANDLING PLAN**
SC-2

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

REVISOR BY: KARI BHANA
 DATE: 1-19-16

REVISOR BY: RON R. KRAEMER
 DATE: 1-19-16

CALCULATED/DESIGNED BY: KARI BHANA
 CHECKED BY: RON R. KRAEMER

FUNCTIONAL SUPERVISOR: RON R. KRAEMER

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	11	62

Kari Bhana
1-19-16
REGISTERED CIVIL ENGINEER DATE

1-19-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
KARI BHANA
 No. 65395
 Exp. 9-30-17
 CIVIL
 STATE OF CALIFORNIA

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

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

STAGE No.	SIGN No. (X)	SIGN CODE		PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
		FEDERAL	CALIFORNIA				
1	1	W21-5		48" x 48"	SHOULDER WORK	1 - 4" x 6"	8
	2	W21-5b		48" x 48"	NO SHOULDERS 1500 FT	1 - 4" x 6"	
	3	W7-3a	C30A	48" x 48" 24" x 18"	SHOULDER CLOSED NEXT 1/4 MILE	1 - 4" x 6"	
	4	W24-1R W24-1cP		48" x 48" 24" x 18"	ALL LANES	1 - 4" x 6"	
	5	W24-1R W24-1cP		48" x 48" 24" x 18"	ALL LANES	1 - 4" x 6"	
	6	W7-3a	C30A	48" x 48" 24" x 18"	SHOULDER CLOSED NEXT 1/4 MILE	1 - 4" x 6"	
	7	W21-5b		48" x 48"	NO SHOULDERS 1500 FT	1 - 4" x 6"	
	8	W21-5		48" x 48"	SHOULDER WORK	1 - 4" x 6"	
2	9	W21-5		48" x 48"	SHOULDER WORK	1 - 4" x 6"	6
	10	W21-5b		48" x 48"	NO SHOULDERS 1500 FT	1 - 4" x 6"	
	11	W7-3a	C30A	48" x 48" 24" x 18"	SHOULDER CLOSED NEXT 1/4 MILE	1 - 4" x 6"	
	12	W7-3a	C30A	48" x 48" 24" x 18"	SHOULDER CLOSED NEXT 1/4 MILE	1 - 4" x 6"	
	13	W21-5b		48" x 48"	NO SHOULDERS 1500 FT	1 - 4" x 6"	
	14	W21-5		48" x 48"	SHOULDER WORK	1 - 4" x 6"	

TEMPORARY RAILING (TYPE K)

STAGE No.	DIRECTION	TEMPORARY RAILING (TYPE K)	TEMPORARY CRASH CUSHION MODULE	SALVAGE CONCRETE BARRIER (TYPE K)
		LF	EA	LF
1	NB	380	14	240
	SB	340	14	
2	NB	460	14	
	SB	420	14	
TOTAL		1,600	56	240

- EXACT LOCATION AND POSITION OF CONSTRUCTION AREA SIGNS TO BE DETERMINED BY THE ENGINEER.
- FOR ADDITIONAL CONSTRUCTION AREA SIGNS, SEE CONSTRUCTION AREA SIGNS SHEET AND MOTORIST INFORMATION SHEETS.

STAGE CONSTRUCTION PAVEMENT DELINEATION

STAGE No.	DETAIL No.	TEMPORARY TRAFFIC STRIPE (TAPE)			TEMPORARY PAVEMENT MARKER				CHANNELIZER (SURFACE MOUNTED)
		WHITE 4"	WHITE 8"	YELLOW 4"	TYPE A	TYPE C	TYPE G	TYPE H	
		LF			EA				
1	27B	1,275							18
	11/13	1,292			108		26		
	11/14	144			12	4			
	25			1,433				30	
	36		69				3		
2	27B	1,320							18
	11/13	1,292			108		26		
	11/14	144			12	4			
	25			1,436				30	
SUBTOTAL		5,467	69	2,869	240	8	55	60	36
TOTAL		8,405			363				36

RUMBLE STRIP REMOVAL

STAGE No.	DIRECTION	COLD PLANE ASPHALT CONCRETE PAVEMENT	HOT MIX ASPHALT (TYPE A)	TACK COAT
		SQYD	TON	TON
1	NB	176	17.8	0.04
	SB	132	13.4	0.03
TOTAL		308*	31.2*	0.07*

* QUANTITY INCLUDED IN PAVEMENT STRUCTURE TABLE, SEE SHEET Q-1

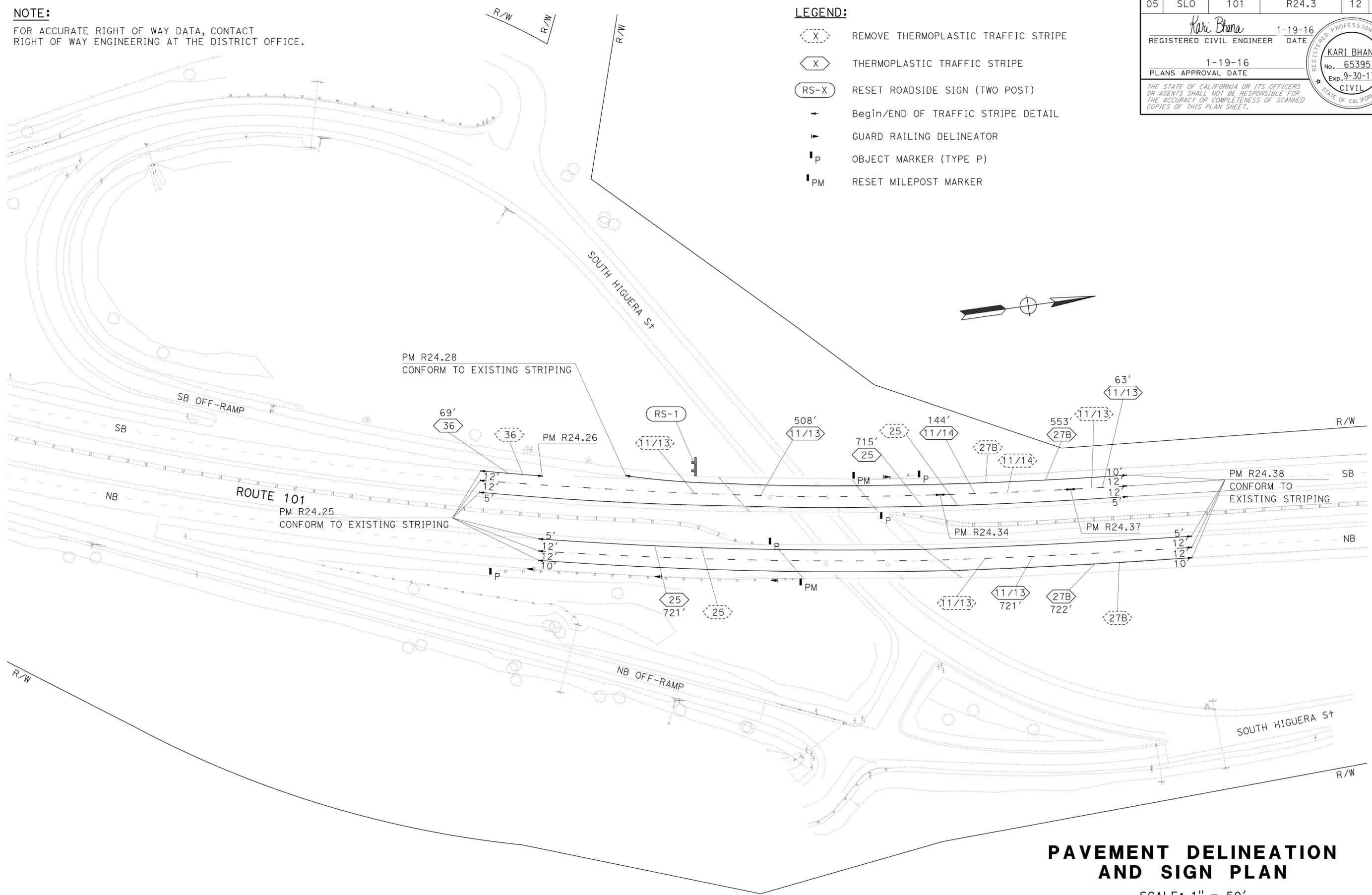
STAGE CONSTRUCTION AND TRAFFIC HANDLING QUANTITIES

SCQ-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	12	62
Kari Bhana			1-19-16		
REGISTERED CIVIL ENGINEER			DATE		
1-19-16					
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.					

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

- LEGEND:**
- REMOVE THERMOPLASTIC TRAFFIC STRIPE
 - THERMOPLASTIC TRAFFIC STRIPE
 - RESET ROADSIDE SIGN (TWO POST)
 - Begin/END OF TRAFFIC STRIPE DETAIL
 - GUARD RAILING DELINEATOR
 - OBJECT MARKER (TYPE P)
 - RESET MILEPOST MARKER



PAVEMENT DELINEATION AND SIGN PLAN
SCALE: 1" = 50'
PD-1

APPROVED FOR PAVEMENT DELINEATION AND SIGN WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: RON R. KRAEMER
 CALCULATED/DESIGNED BY: KARI BHANA
 CHECKED BY: RON R. KRAEMER
 REVISED BY: KARI BHANA
 DATE REVISED:

LAST REVISION | DATE PLOTTED => 25-JAN-2016
 01-19-16 | TIME PLOTTED => 09:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	13	62

Kari Bhana 1-19-16
 REGISTERED CIVIL ENGINEER DATE

1-19-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
KARI BHANA
 No. 65395
 Exp. 9-30-17
 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.

ROADSIDE SIGNS

DIRECTION	SIGN No.	SIGN CODE		SIGN MESSAGE	RESET ROADSIDE SIGN (TWO POST)
		FEDERAL	CALIFORNIA		EA
SB	RS-1		G85-11	HIGUERA S+	1
TOTAL					1

EXACT LOCATION AND POSITION OF ROADSIDE SIGNS TO BE DETERMINED BY THE ENGINEER.

PAVEMENT DELINEATION

DIRECTION	DETAIL No.	REMOVE THERMOPLASTIC TRAFFIC STRIPE		REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	REMOVE PAVEMENT MARKER	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)			PAVEMENT MARKER (NON-REFLECTIVE)	PAVEMENT MARKER (RETROREFLECTIVE)				OBJECT MARKER (TYPE P)	GUARD RAILING DELINEATOR	RESET MILEPOST MARKER		
		WHITE 4"	WHITE 8"			YELLOW 4"	REMOVE PAVEMENT MARKER	WHITE 4"		WHITE 8"	YELLOW 4"	TYPE A	TYPE C				TYPE G	TYPE H
		LF				LF	EA	LF			EA	EA					EA	EA
NB	27B	722				722												
	11/13	181			80	721			64			16		2	3	1		
	25			721	16			721					16					
SB	27B	553				553												
	11/13	143			59	571			48			11						
	11/14	36			16	144			12	4				2	1	1		
	25			715	15			715					15					
	36		138		3		69					3						
SUBTOTAL		1,635	138	1,436	189	2,711	69	1,436	124	4	30	31	4	4	4	2		
TOTAL		1,773		1,436	189	4,216			124	65				4	4	2		

PAVEMENT DELINEATION AND SIGN QUANTITIES

PDQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

FUNCTIONAL SUPERVISOR
RON R. KRAEMER

CALCULATED/DESIGNED BY
CHECKED BY

KARI BHANA
RON R. KRAEMER

REVISED BY
DATE REVISED



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	14	62

Kari Bhana 1-19-16
 REGISTERED CIVIL ENGINEER DATE

1-19-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
KARI BHANA
 No. 65395
 Exp. 9-30-17
 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.

PAVEMENT STRUCTURE

LOCATION/DESCRIPTION	DIRECTION	COLD PLANE ASPHALT CONCRETE PAVEMENT	HOT MIX ASPHALT (TYPE A)			CLASS 2 AGGREGATE SUBBASE	TACK COAT
			AGGREGATE SIZE				
			3/8"	1/2"	3/4"		
		SQYD	TON			CY	TON
PM R24.25 TO R24.30	NB	1,119	75.5				0.28
PM R24.33 TO R24.38	NB	1,127	75.9				0.28
PM R24.25 TO R24.30	SB	1,060	71.5				0.27
PM R24.33 TO R24.38	SB	1,147	77.4				0.29
SHOULDER WIDENING TAPERS	NB				38.7	18.8	0.02
SHOULDER WIDENING TAPERS	SB				44.3	21.6	0.02
RUMBLE STRIP REMOVAL	NB/SB	308		31.2			0.07
DIKE	NB/SB		8.2				0.01
SUBTOTAL		4,761	308.5	31.2	83.0	40.4	1.24
TOTAL		4,761	422.7			40.4	1.24

HOT MIX ASPHALT DIKE

LOCATION/DESCRIPTION	DIRECTION	REMOVE ASPHALT CONCRETE DIKE	PLACE HOT MIX ASPHALT DIKE			HOT MIX ASPHALT (TYPE A)
			TYPE C	TYPE E	TYPE F	
		LF	LF	LF	LF	TON
PM R24.33 TO R24.35	NB			100		2.6
PM R24.28 TO R24.30	SB			100		2.6
PM R24.33 TO R24.35	SB		75		25	1.0
SOUTH HIGUERA S+	WB	125	125			1.0
SOUTH HIGUERA S+	EB	125	125			1.0
TOTAL		250	325	200	25	8.2*

* QUANTITY INCLUDED IN PAVEMENT STRUCTURE TABLE

TEMPORARY FENCE (TYPE ESA)

ENVIRONMENTALLY SENSITIVE AREA No.	TEMPORARY FENCE (TYPE ESA)
	LF
1	893
2	230
TOTAL	1,123

EARTHWORK

LOCATION/DESCRIPTION	DIRECTION	STRUCTURE EXCAVATION (NATURALLY OCCURRING ASBESTOS)	ROADWAY EXCAVATION (NATURALLY OCCURRING ASBESTOS)	EMBANKMENT (N)	IMPORTED BORROW
		CY	CY		
SHOULDER WIDENING TAPERS	NB		38**		
SHOULDER WIDENING TAPERS	SB		44**		
ABUTMENTS	NB/SB	42*			
NATURALLY OCCURRING ASBESTOS DISPOSAL AREA	NB		372	372	124
TOTAL		42*	454	372	124

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY
 * QUANTITY INCLUDED IN STRUCTURE PLANS QUANTITY TABLE
 ** INCLUDES DIKE REMOVAL

RUMBLE STRIP

LOCATION/DESCRIPTION	DIRECTION	SHOULDER RUMBLE STRIP (HMA, GROUND-IN INDENTATIONS)
		S+a
OUTSIDE SHOULDER	NB	5.30
INSIDE SHOULDER	NB	5.40
OUTSIDE SHOULDER	SB	2.85
INSIDE SHOULDER	SB	5.55
TOTAL		19.10

SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR
 RON R. KRAEMER
 CALCULATED/DESIGNED BY
 KARI BHANA
 CHECKED BY
 RON R. KRAEMER
 REVISED BY
 DATE REVISED

LAST REVISION | DATE PLOTTED => 25-JAN-2016
 01-19-16 TIME PLOTTED => 09:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	15	62

Kari Bhana
 REGISTERED CIVIL ENGINEER DATE 1-19-16
 PLANS APPROVAL DATE 1-19-16

REGISTERED PROFESSIONAL ENGINEER
KARI BHANA
 No. 65395
 Exp. 9-30-17
 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.

DOUBLE THRIE BEAM BARRIER

LOCATION	REMOVE DOUBLE METAL BEAM BARRIER	TREATED WOOD WASTE	DOUBLE THRIE BEAM BARRIER (STEEL POST)	TRANSITION RAILING (TYPE DTB)	REMARKS
	LF	LB	LF	EA	
PM R24.24 TO R24.30	350	3,029	325	1	TYPE 25A CONNECTION LAYOUT
PM R24.33 TO R24.38	275	2,686	250	1	TYPE 25A CONNECTION LAYOUT
TOTAL	625	5,715*	575	2	

* QUANTITY INCLUDED IN GUARDRAIL TABLE

GUARDRAIL

LOCATION/ DESCRIPTION	DIRECTION	REMOVE GUARDRAIL	TREATED WOOD WASTE	TRANSITION RAILING (TYPE WB-31)	MIDWEST GUARDRAIL SYSTEM (STEEL POST)	MIDWEST GUARDRAIL SYSTEM (8' POST)	ALTERNATIVE FLARED TERMINAL SYSTEM	ALTERNATIVE IN-LINE TERMINAL SYSTEM	BURIED POST ANCHOR (N)	REMARKS
		LF	LB	EA	LF	LF	EA	EA	EA	
PM R24.24 TO R24.30	NB	341	800	1		262.5	1			TYPE 12B LAYOUT
PM R24.33 TO R24.34	SB	63	400	1	37.5				1	TYPE 12C LAYOUT
SOUTH HIGUERA St	WB				200.0			2		TYPE 16D LAYOUT, FOR SB BRIDGE COLUMNS USE STRENGTHENED MGS SECTIONS FOR FIXED OBJECTS
SOUTH HIGUERA St	EB				187.5			2		TYPE 16D LAYOUT
DOUBLE THRIE BEAM BARRIER			5,715							
TOTAL		404	6,915	2	425.0	262.5	1	4	1	

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

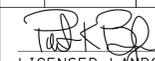
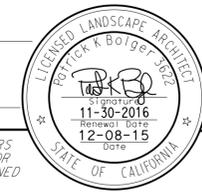
VEGETATION CONTROL

LOCATION	DIRECTION	DESCRIPTION	VEGETATION CONTROL (MINOR CONCRETE)
			SQYD
PM R24.24 TO R24.30	NB	MIDWEST GUARDRAIL SYSTEM	142.3
PM R24.33 TO R24.34	SB	MIDWEST GUARDRAIL SYSTEM	32.8
PM R24.24 TO R24.30	MEDIAN	DOUBLE THRIE BEAM BARRIER	328.2
PM R24.33 TO R24.38	MEDIAN	DOUBLE THRIE BEAM BARRIER	273.7
TOTAL			777.0

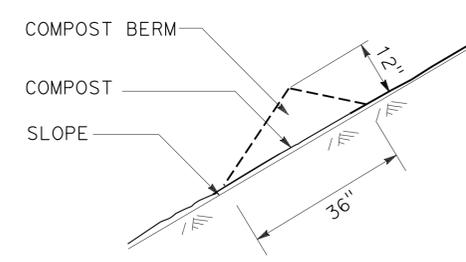
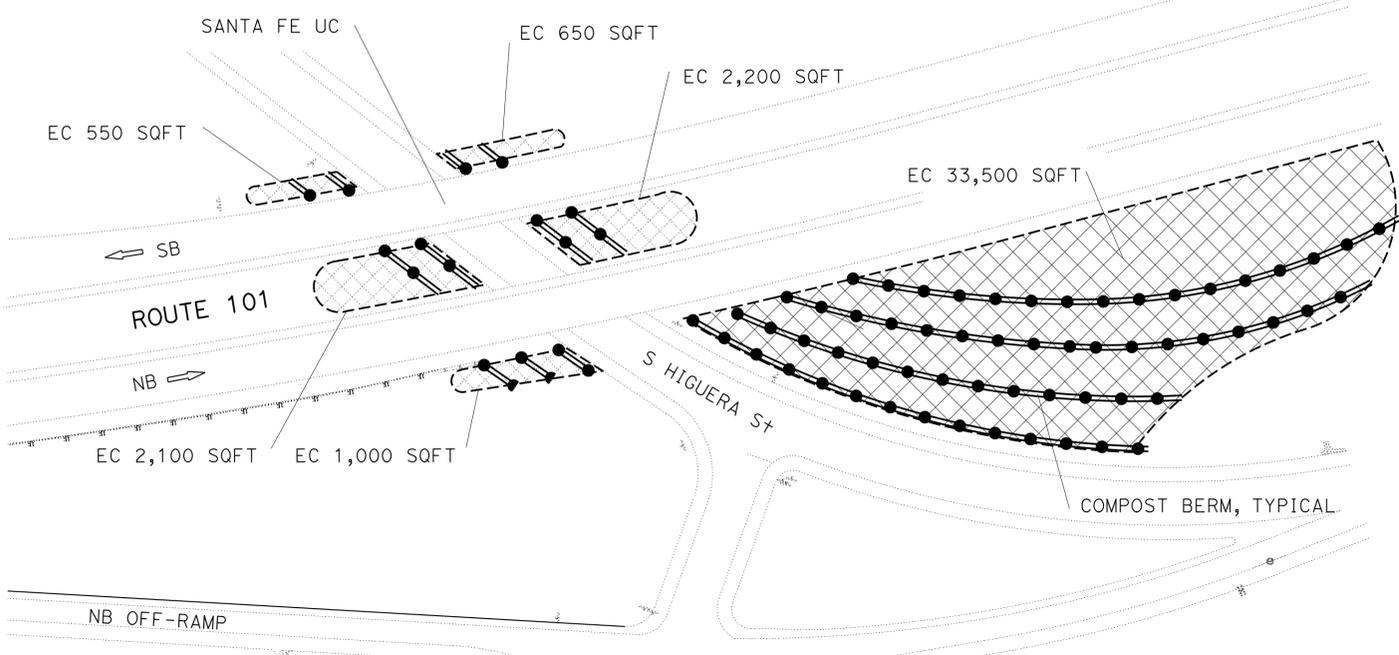
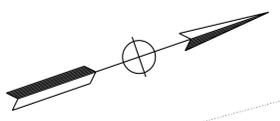
SUMMARY OF QUANTITIES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR
 RON R. KRAEMER
 CALCULATED/DESIGNED BY
 KARI BHANA
 CHECKED BY
 RON R. KRAEMER
 REVISED BY
 KARI BHANA
 DATE REVISED
 RON R. KRAEMER

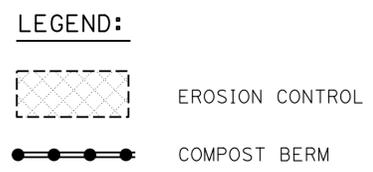
LAST REVISION | DATE PLOTTED => 25-JAN-2016
 01-19-16 | TIME PLOTTED => 09:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	16	62
 LICENSED LANDSCAPE ARCHITECT 1-19-16 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>					

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



SECTION COMPOST BERM
 NO SCALE



SCALE: 1" = 50'

EROSION CONTROL QUANTITIES

SHEET No.	DESCRIPTION	COMPOST	HYDROSEED	COMPOST BERM
		SQFT	SQFT	LF
ECL-1	EROSION CONTROL	40,000	40,000	
	COMPOST BERM			1,400
	TOTAL	40,000	40,000	1,400

EROSION CONTROL

SEQUENCE	ITEM	MATERIAL		APPLICATION RATE	REMARKS
		DESCRIPTION	TYPE		
STEP 1	COMPOST	COMPOST	MEDIUM	135 CY/ACRE	1" DEPTH
STEP 2	HYDROSEED	SEED	MIX	35 LB/ACRE	-
		FIBER	WOOD	1500 LB/ACRE	
		TACKIFIER	PSYLLIUM	200 LB/ACRE	

COMPOST BERM

SEQUENCE	ITEM	MATERIAL		REMARKS
		DESCRIPTION	TYPE	
IN EC AREAS COMPOST BERM MUST BE INSTALLED DURING COMPOST APPLICATION	COMPOST BERM	COMPOST	MEDIUM	PLACE COMPOST BERM PARALLEL TO SLOPE CONTOUR SHAPED INTO A TRIANGLE 36" WIDTH BY 12" HEIGHT

SEED MIX

BOTANICAL NAME (COMMON NAME)	PERCENT GERMINATION (MINIMUM)	POUNDS PURE LIVE SEED PER ACRE (SLOPE MEASUREMENT)
ACHILLEA MILLEFOLIUM (ACHILLEA)	80	0.5
ARTEMISIA CALIFORNICA (CALIFORNIA SAGEBRUSH)	50	0.5
BROMUS CARINATUS (CALIFORNIA BROME)	80	9.0
ERIOGONUM FASCICULATUM (CALIFORNIA BUCKWHEAT)	50	1.5
ESCHSCHOLZIA CALIFORNICA (CALIFORNIA POPPY)	80	1.5
MELICA CALIFORNICA (CALIFORNIA MELIC)	80	10.0
NASELLA PULCHRA (PURPLE NEEDLEGRASS)	80	9.5
VULPIA MICROSTACHYS (SMALL FESCUE)	80	2.5

ALL SEED TO BE PRODUCED IN CALIFORNIA ONLY.

**EROSION CONTROL LEGEND,
 PLAN AND DETAILS
 ECL-1**

APPROVED FOR EROSION CONTROL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 LANDSCAPE ARCHITECTURE
 SENIOR LANDSCAPE ARCHITECT
 DENNIS J. REEVES
 CALCULATED/DESIGNED BY
 CHECKED BY
 PATRICK BOLGER
 DAVID EMERSON
 REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	17	62

Paul Matos 12-22-15
 REGISTERED ELECTRICAL ENGINEER DATE
 1-19-16
 PLANS APPROVAL DATE

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

- NOTES:**
1. ALL PULL BOXES MUST BE No. 5 UNLESS OTHERWISE NOTED.
 2. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

ABBREVIATIONS:

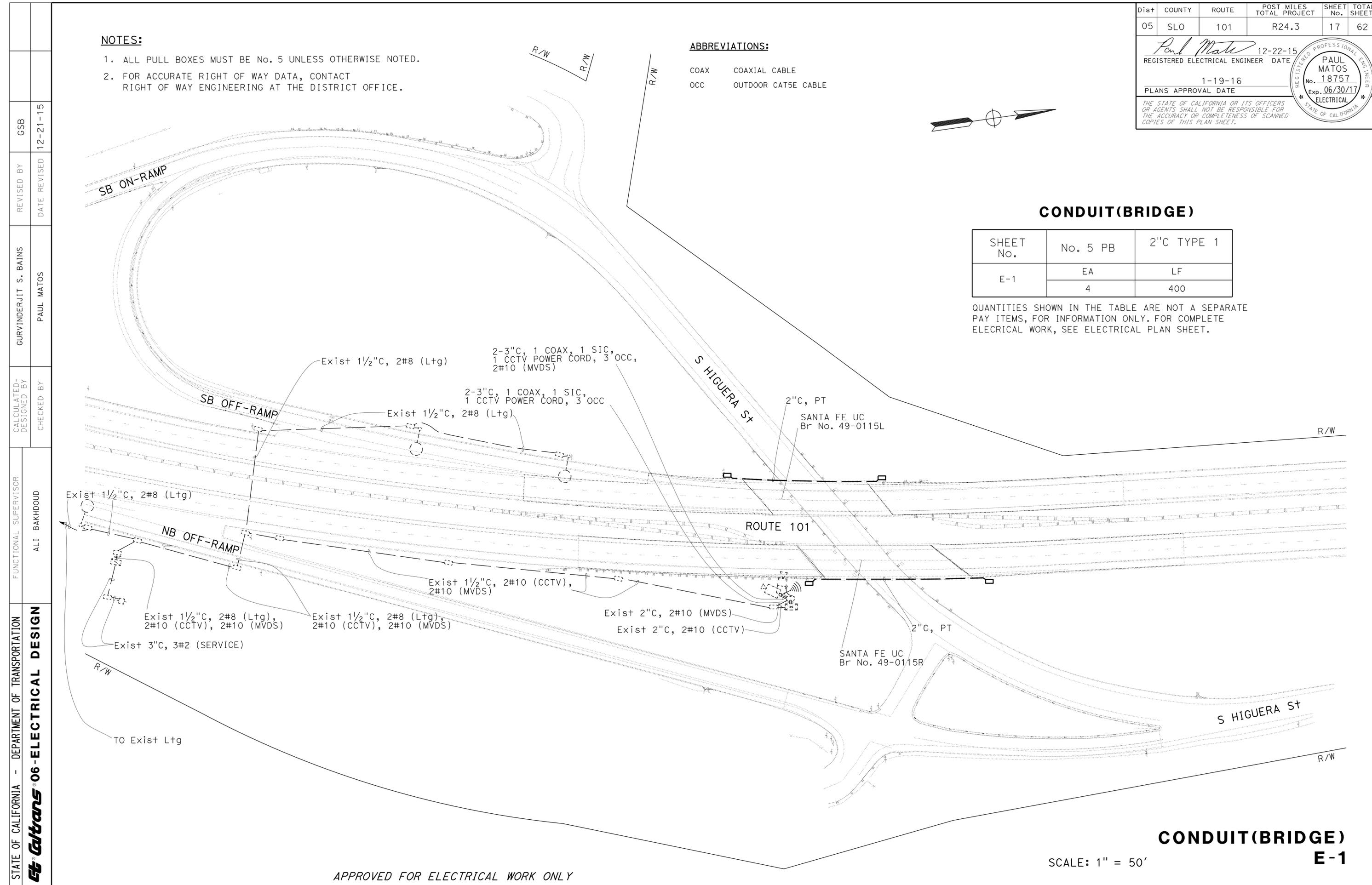
COAX COAXIAL CABLE
 OCC OUTDOOR CAT5E CABLE



CONDUIT(BRIDGE)

SHEET No.	No. 5 PB	2" C TYPE 1
E-1	EA 4	LF 400

QUANTITIES SHOWN IN THE TABLE ARE NOT A SEPARATE PAY ITEMS, FOR INFORMATION ONLY. FOR COMPLETE ELECTRICAL WORK, SEE ELECTRICAL PLAN SHEET.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-ELECTRICAL DESIGN
 GURVINDERJIT S. BAINS
 PAUL MATOS
 GSB
 12-21-15
 REVISOR BY DATE
 CALCULATED/DESIGNED BY
 CHECKED BY
 FUNCTIONAL SUPERVISOR
 ALI BAKHDOUD

APPROVED FOR ELECTRICAL WORK ONLY

CONDUIT(BRIDGE)
E-1

SCALE: 1" = 50'

LAST REVISION DATE PLOTTED => 25-JAN-2016
 12-21-15 TIME PLOTTED => 09:35

	M	
Maint	MAINTENANCE	
Max	MAXIMUM	
MB	METAL BEAM	
MBB	METAL BEAM BARRIER	
MBGR	METAL BEAM GUARD RAILING	
Med	MEDIAN	
MGS	MIDWEST GUARDRAIL SYSTEM	
MH	MANHOLE	
Min	MINIMUM	
Misc	MISCELLANEOUS	
Misc I & S	MISCELLANEOUS IRON AND STEEL	
Mkr	MARKER	
Mod	MODIFIED, MODIFY	
Mon	MONUMENT	
MP	METAL PLATE	
MPGR	METAL PLATE GUARD RAILING	
MR	MOVEMENT RATING	
MSE	MECHANICALLY STABILIZED EMBANKMENT	
Mt	MOUNTAIN, MOUNT	
MtI	MATERIAL	
MVP	MAINTENANCE VEHICLE PULLOUT	
	N	
N	NORTH	
NB	NORTHBOUND	
No.	NUMBER (MUST HAVE PERIOD)	
Nos.	NUMBERS (MUST HAVE PERIOD)	
NPS	NOMINAL PIPE SIZE	
NS	NEAR SIDE	
NSP	NEW STANDARD PLAN	
NTS	NOT TO SCALE	
	O	
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	
	P	
p	PAGE	
PAP	PERFORATED ALUMINUM PIPE	
PB	PULL BOX	
PC	POINT OF CURVATURE, PRECAST	
PCC	POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE	
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN	
PCP	PERFORATED CONCRETE PIPE, PRESTRESSED CONCRETE PIPE	
PCVC	POINT OF COMPOUND VERTICAL CURVE	
PEC	PERMIT TO ENTER AND CONSTRUCT	
Ped	PEDESTRIAN	
Ped OC	PEDESTRIAN OVERCROSSING	
Ped UC	PEDESTRIAN UNDERCROSSING	
Perm MtI	PERMEABLE MATERIAL	

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

	S	
S	SOUTH, SUPPLEMENT	
SAE	STRUCTURE APPROACH EMBANKMENT	
Salv	SALVAGE	
SAPP	STRUCTURAL ALUMINUM PLATE PIPE	
SB	SOUTHBOUND	
SC	SAND CUSHION	
SCSP	SLOTTED CORRUGATED STEEL PIPE	
SD	STORM DRAIN	
Sec	SECOND, SECTION	
Sep	SEPARATION	
SG	SUBGRADE	
Shld	SHOULDER	
Sht	SHEET	
Sim	SIMILAR	
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	
	T	
T	SEMI-TANGENT	
Tan	TANGENT	
TBB	THRIE BEAM BARRIER	
Tbr	TIMBER	
TC	TOP OF CURB	
TCB	TRAFFIC CONTROL BOX	
TCE	TEMPORARY CONSTRUCTION EASEMENT	
TeI	TELEPHONE	
Temp	TEMPORARY	
TG	TOP OF GRADE	
Tot	TOTAL	
TP	TELEPHONE POLE	
TPB	TREATED PERMEABLE BASE	
TPM	TREATED PERMEABLE MATERIAL	
Trans	TRANSITION	

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	18	62

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 1-19-16

UNIT OF MEASUREMENT SYMBOLS:

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

TABLE A

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

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

TABLE B

SYMBOL USED	DEFINITIONS
ksi	KIPS PER SQUARE INCH
ksf	KIPS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
psf	POUNDS PER SQUARE FOOT
lb/ft ³ , pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
ø	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
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.

2010 REVISED STANDARD PLAN RSP A10B

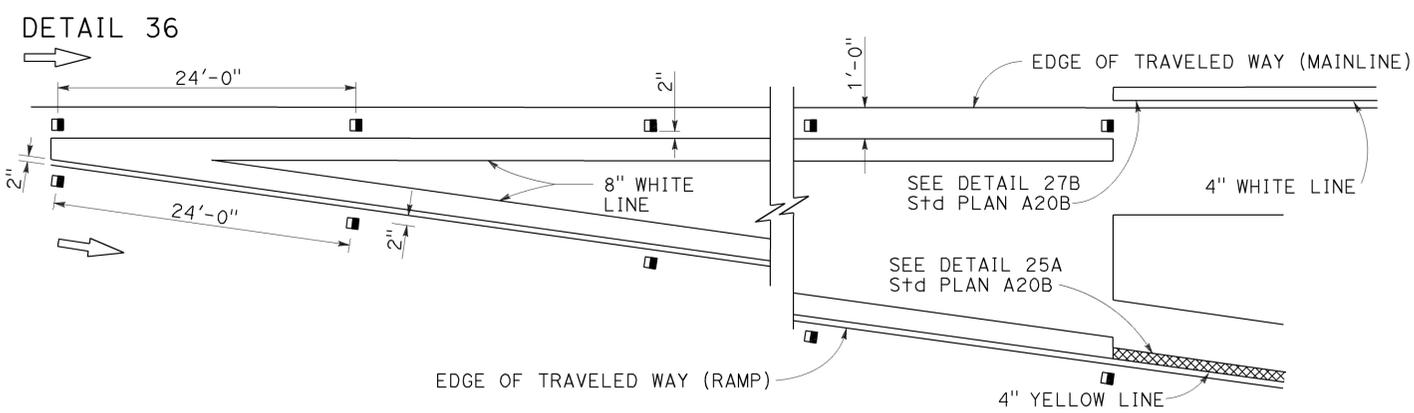
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	19	62

REGISTERED CIVIL ENGINEER
 Roberta L. McLaughlin
 No. C40375
 Exp. 3-31-15
 CIVIL
 STATE OF CALIFORNIA

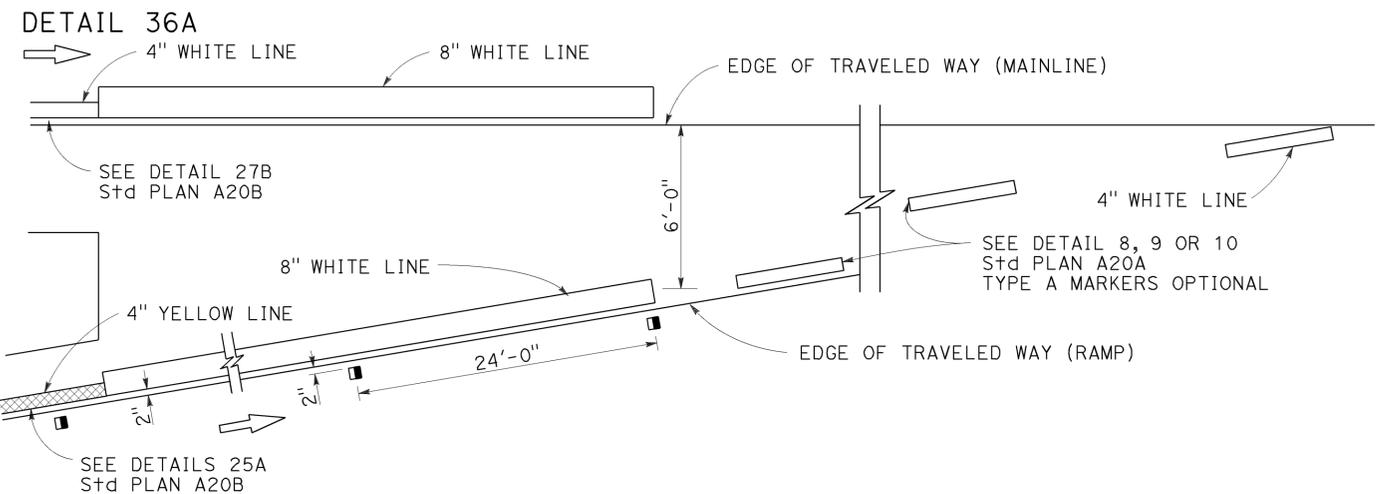
July 19, 2013
 PLANS APPROVAL DATE

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.

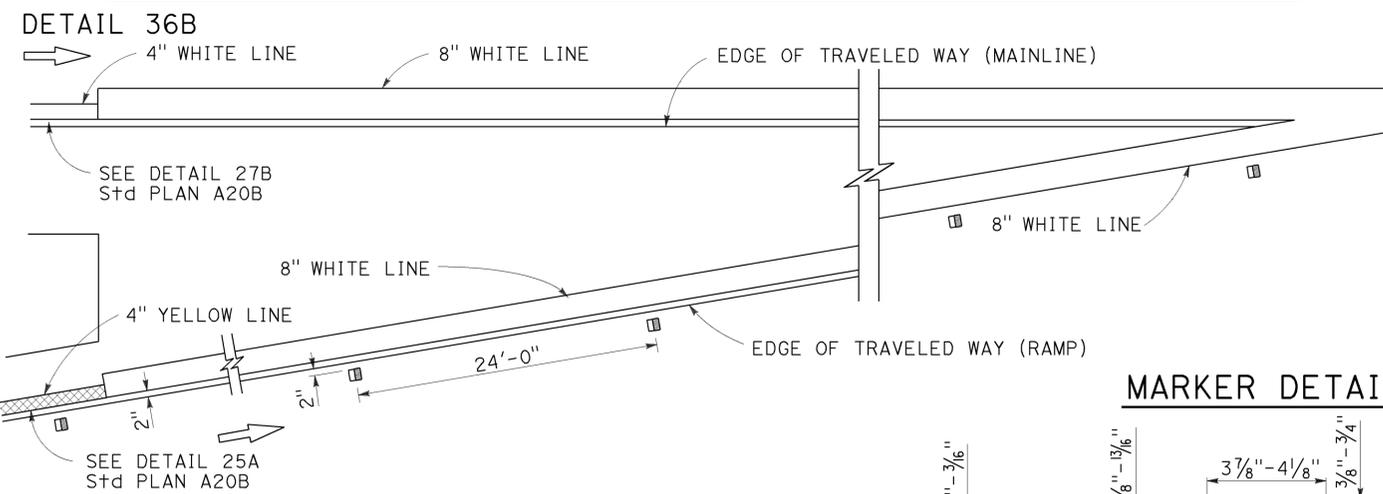
EXIT RAMP NEUTRAL AREA (GORE) TREATMENT



ENTRANCE RAMP NEUTRAL AREA (MERGE) TREATMENT



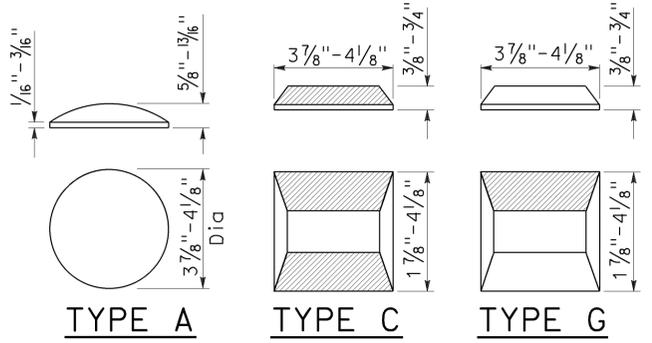
ENTRANCE RAMP NEUTRAL AREA (ACCELERATION LANE) TREATMENT



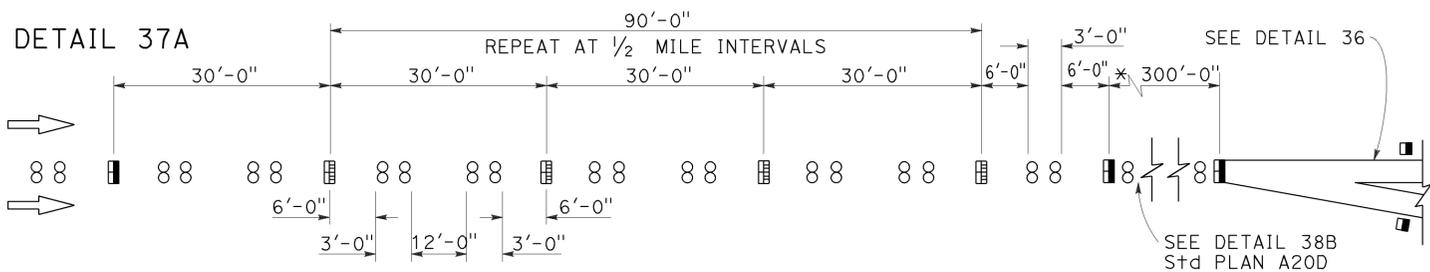
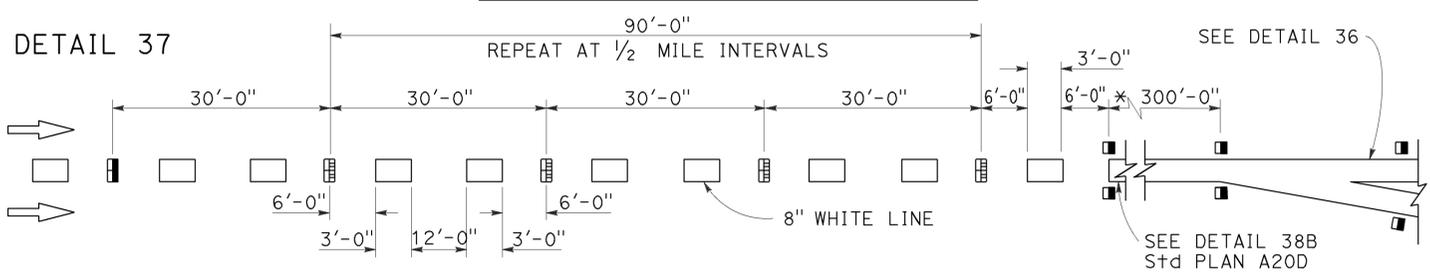
MARKER DETAILS

LEGEND:

- MARKERS
- TYPE A WHITE NON-REFLECTIVE
 - ◻ TYPE C RED-CLEAR RETROREFLECTIVE
 - TYPE G ONE-WAY CLEAR RETROREFLECTIVE

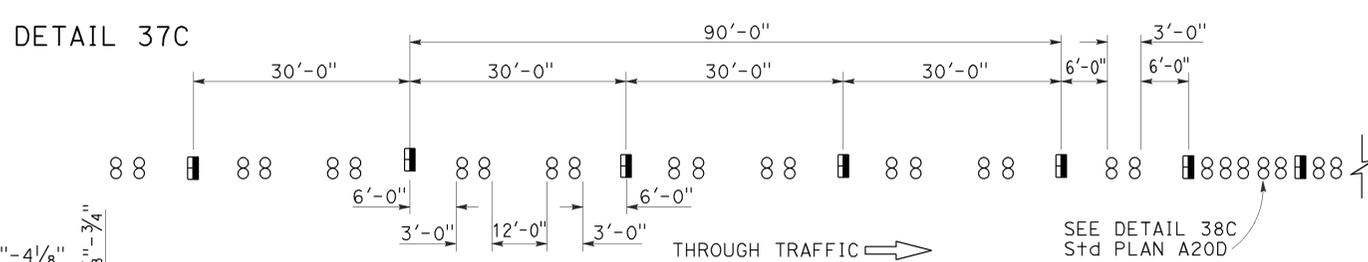
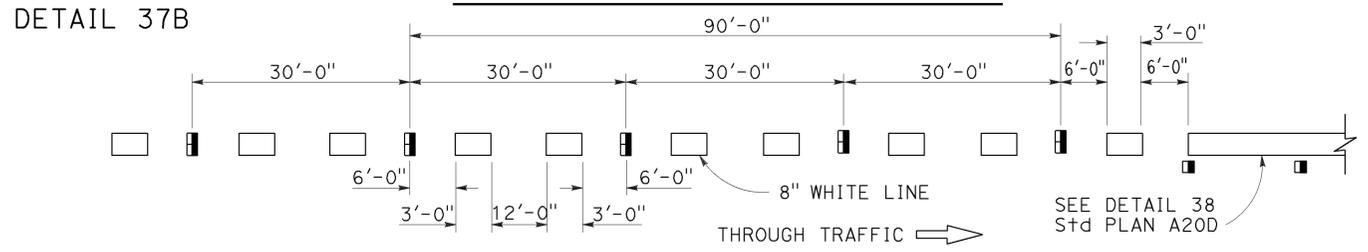


LANE DROP AT EXIT RAMP



* The solid channelizing line shown may be omitted on short auxiliary lanes where weaving length is critical.

LANE DROP AT INTERSECTIONS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKERS AND TRAFFIC LINE TYPICAL DETAILS

NO SCALE

RSP A20C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A20C DATED MAY 20, 2011 - PAGE 11 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A20C

2010 REVISED STANDARD PLAN RSP A20C

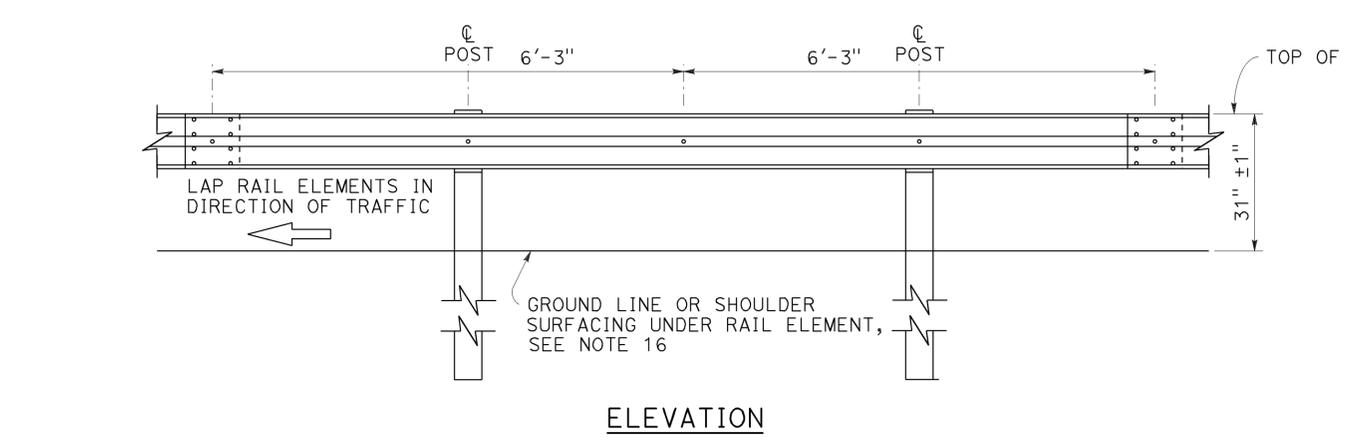
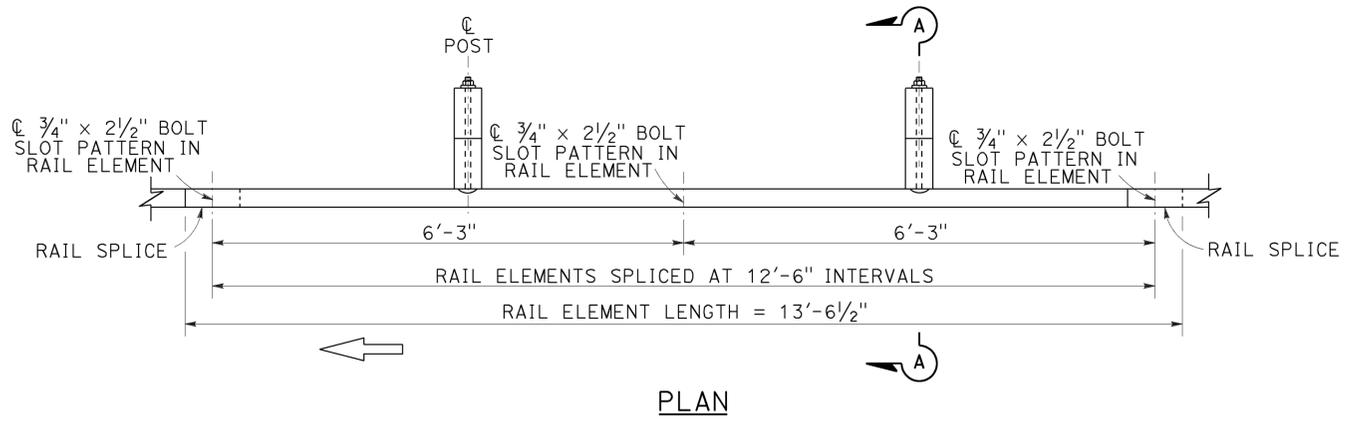
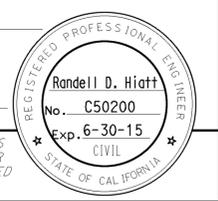
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	20	62

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

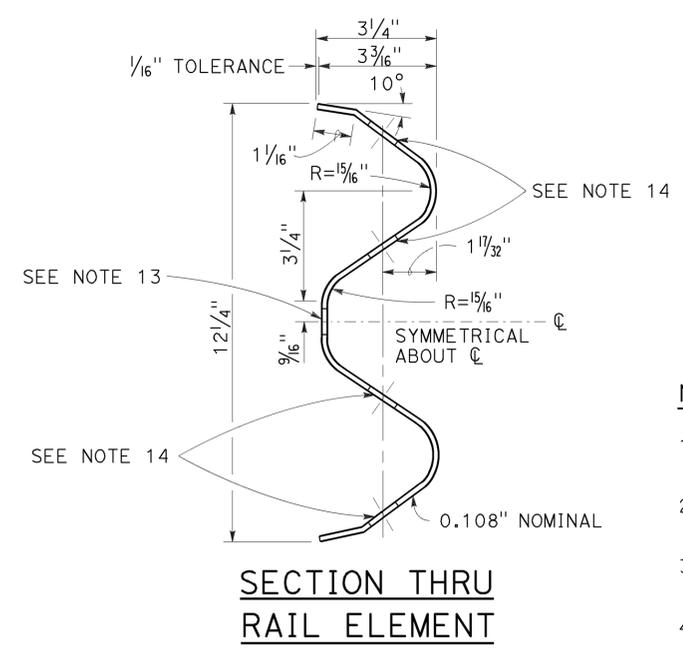
July 19, 2013
PLANS APPROVAL DATE

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.

1-19-16

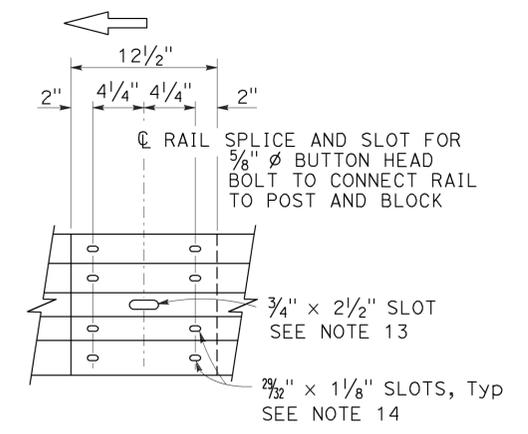


MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS



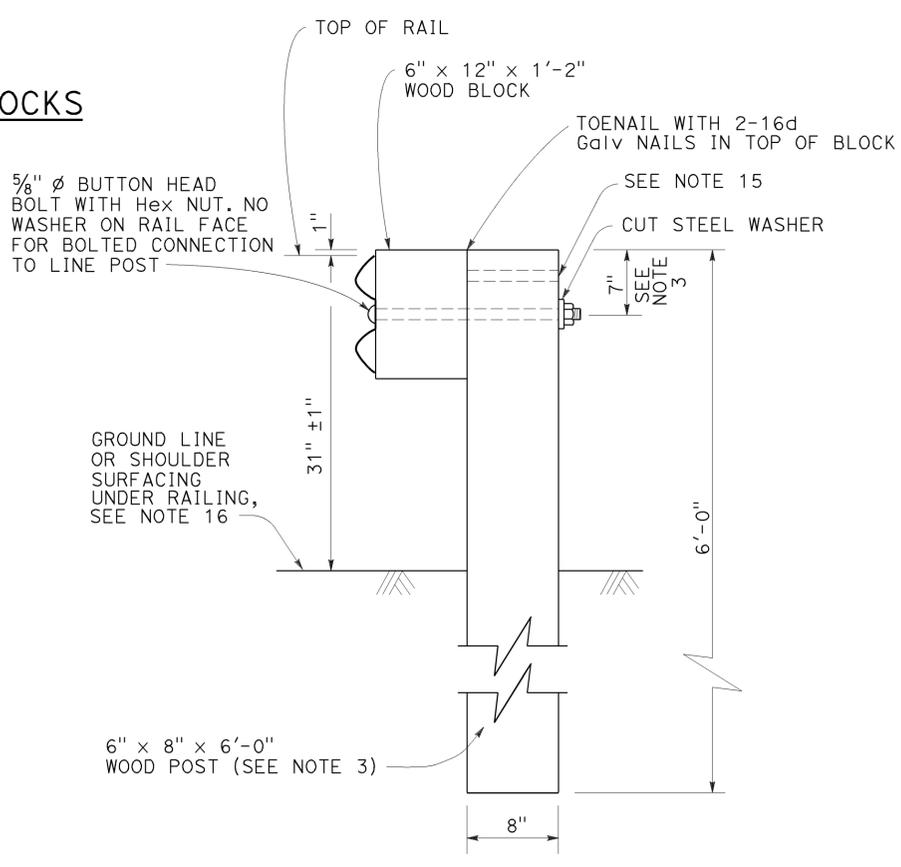
NOTES:

- For details of steel post installations, see Revised Standard Plan RSP A77L2.
- For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
- For details of wood posts and wood blocks used to construct MGS, see Revised Standard Plan RSP A77N1.
- For additional installation details, see Revised Standard Plan RSP A77N3.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- For MGS typical layouts, see the A77P, A77Q and A77R Series of Standard Plans.
- If railing is connected to terminal system end treatment, use 31" height terminal system end treatment.
- For MGS end anchor details, see Revised Standard Plans RSP A77S1 and RSP A77T2.
- For details of MGS transition to bridge railing, see Revised Standard Plan RSP A77U4.
- For additional details of MSG connection to bridge railing, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
- For MGS connection details to abutments and walls, see Revised Standard Plan RSP A77U3.
- For typical MGS delineation and dike positioning details, see Revised Standard Plan RSP A77N4.
- Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
- Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
- Additional hole in uppermost portion of line post is for potential future adjustments of railing height. See Revised Standard Plan RSP A77N1.
- Install posts in soil.



ELEVATION RAIL ELEMENT SPLICE DETAIL

- Connect the over lapped end of the rail elements with 5/8" ϕ x 1 3/8" button head oval shoulder splice bolts inserted into the 7/32" x 1 1/8" slots and bolted together with 5/8" ϕ recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
STANDARD RAILING SECTION
(WOOD POST WITH
WOOD BLOCK)**

NO SCALE

RSP A77L1 DATED JULY 19, 2013 SUPPLEMENTS STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77L1

2010 REVISED STANDARD PLAN RSP A77L1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	21	62

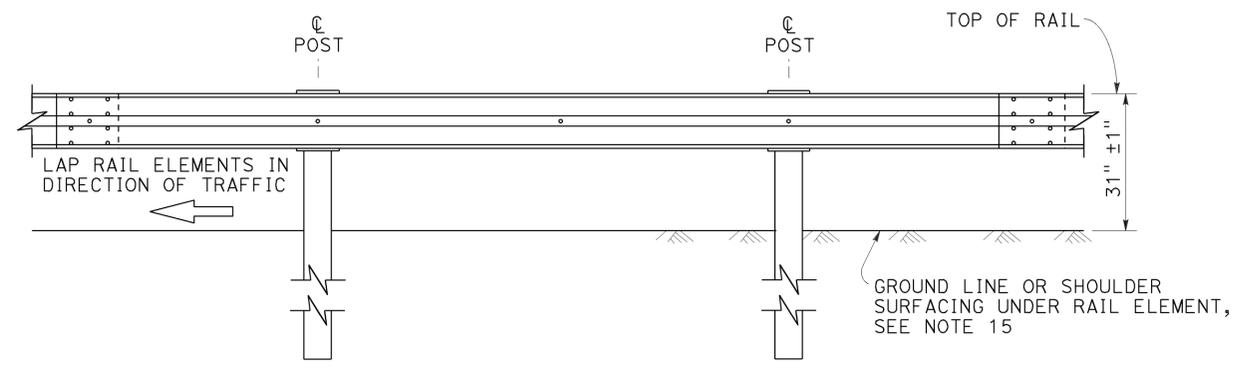
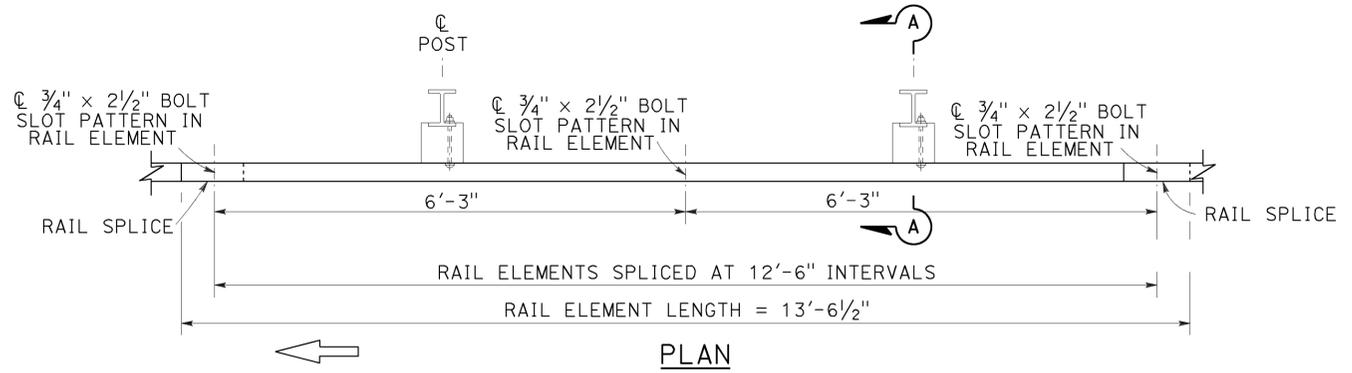
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

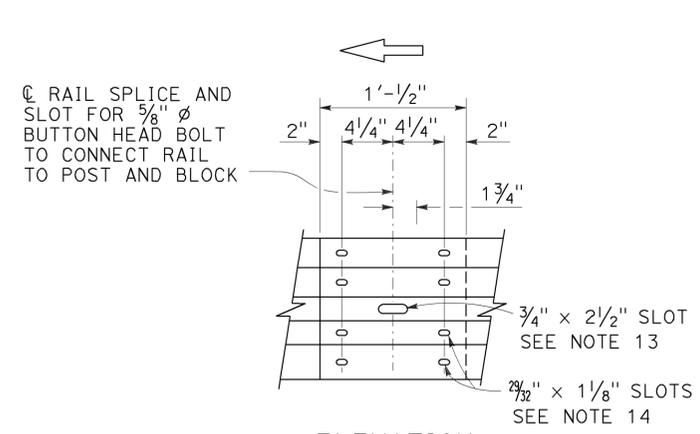
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 1-19-16

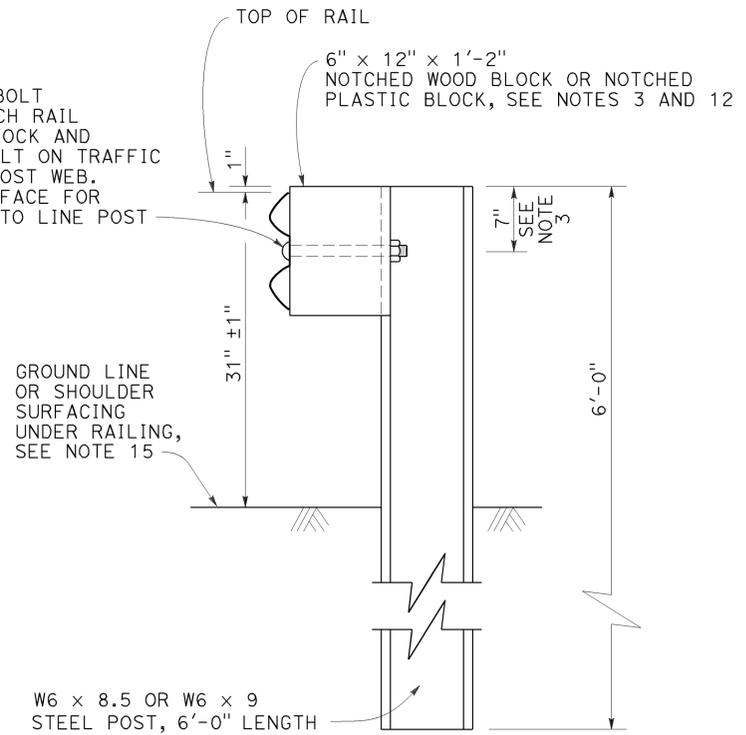
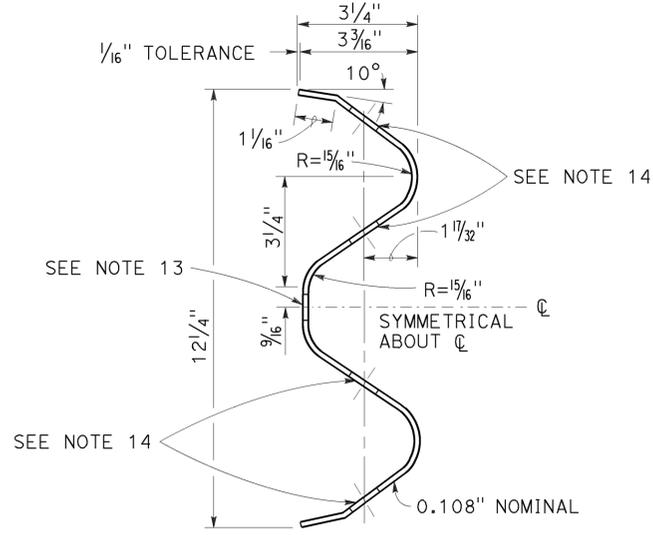
2010 REVISED STANDARD PLAN RSP A77L2



MIDWEST GUARDRAIL SYSTEM WITH STEEL POSTS AND NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCKS



- Connect the overlapped end of the rail elements with 5/8" ϕ x 1 3/8" button head oval shoulder splice bolts inserted into the 7/32" x 1 1/8" slots and bolted together with 5/8" ϕ recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



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

NOTES:

- For details of wood post installations, see Revised Standard Plan RSP A77L1.
- For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
- For details of steel posts and notched wood blocks used to construct MGS, see Revised Standard Plan RSP A77N2.
- For additional installation details, see Revised Standard Plan RSP A77N3.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- For MGS typical layouts, see the A77P, A77Q and A77R Series of Standard Plans.
- If railing is connected to terminal system end treatment, use 31" height terminal system end treatment.
- For MGS end anchor details, see Revised Standard Plans RSP A77S1 and RSP A77T2.
- For details of MGS transition to bridge railing, see Revised Standard Plan RSP A77U4.
- For additional details of MGS connection to bridge railings, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
- For dike positioning and MGS delineation details, see Revised Standard Plan RSP A77N4.
- Notched face of block faces steel post.
- Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
- Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
- Install posts in soil.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM STANDARD RAILING SECTION (STEEL POST WITH NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCK)

NO SCALE

RSP A77L2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77L2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	22	62

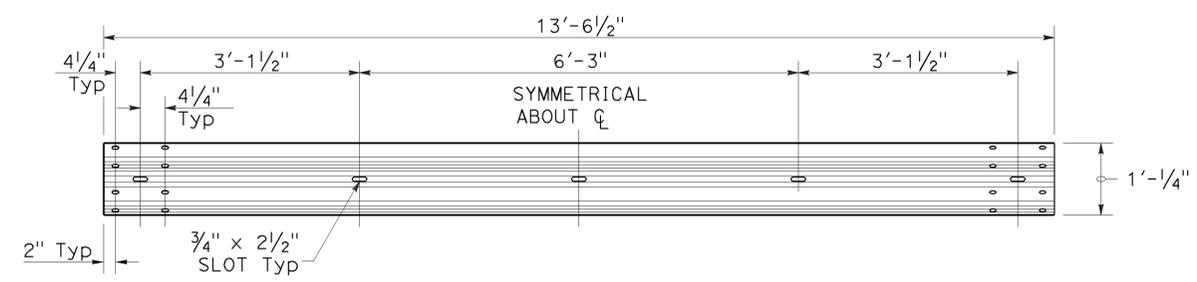
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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

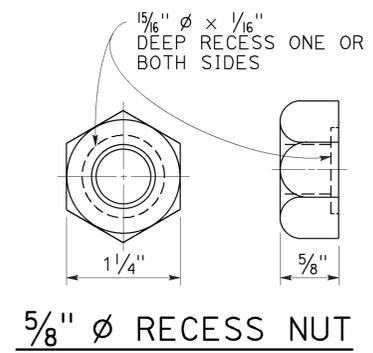
TO ACCOMPANY PLANS DATED 1-19-16



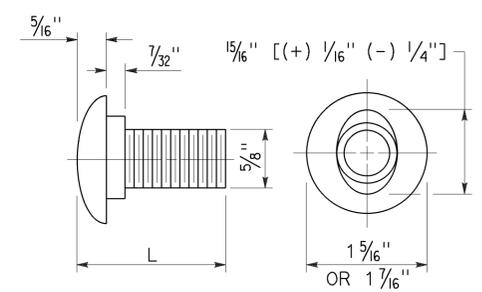
TYPICAL RAIL ELEMENT

NOTE:

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



5/8" Ø RECESS NUT

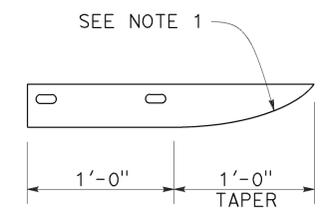


5/8" Ø BUTTON HEAD BOLT

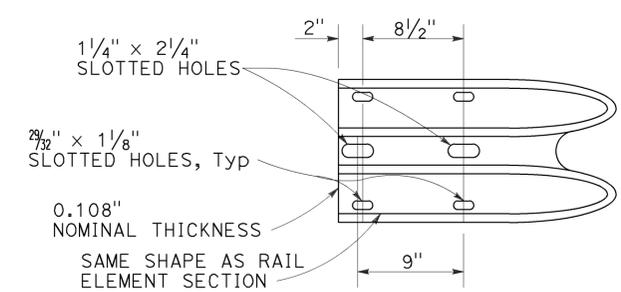
BUTTON HEAD BOLT

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

2010 REVISED STANDARD PLAN RSP A77M1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	23	62

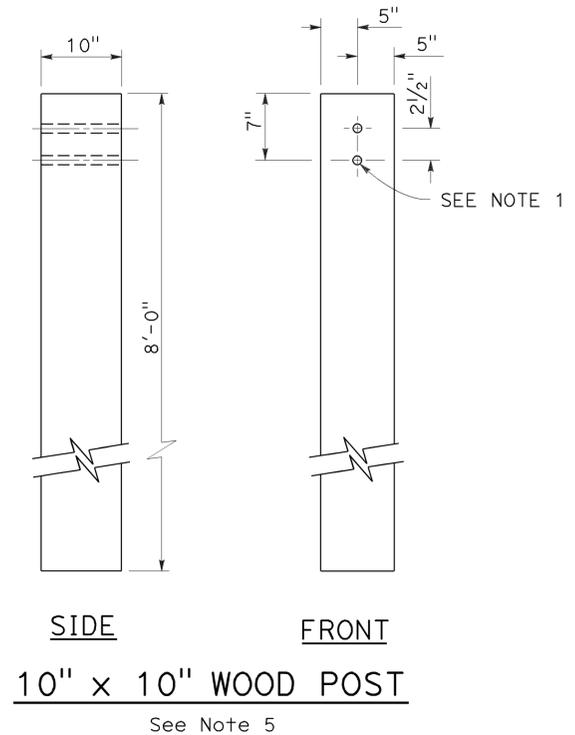
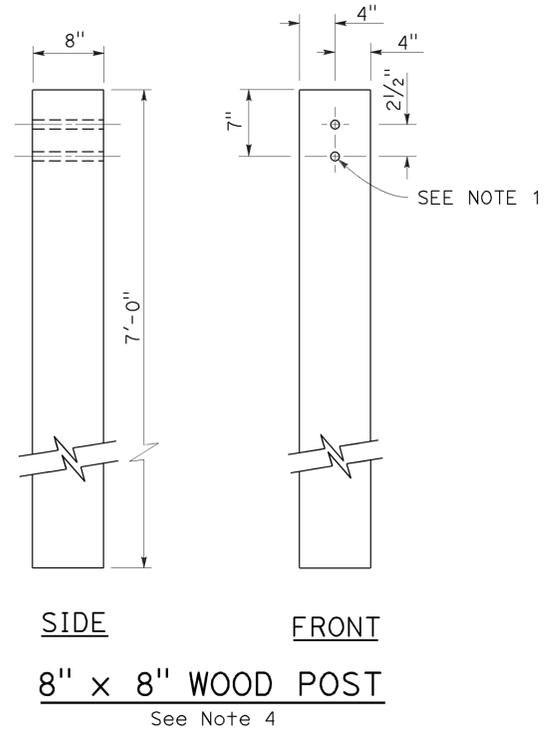
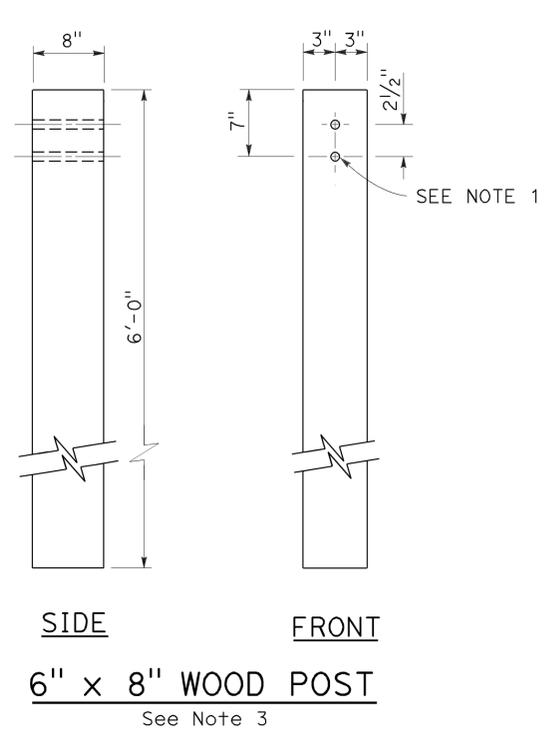
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

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.

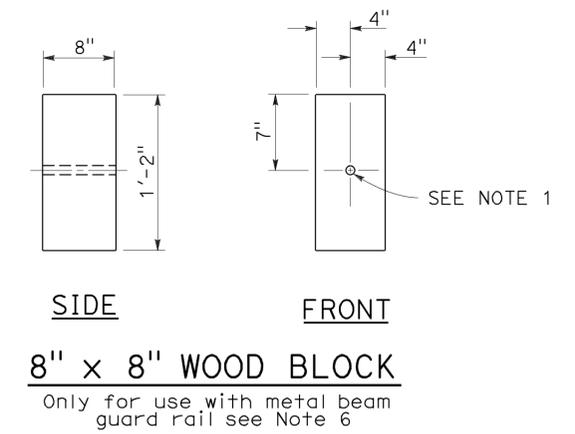
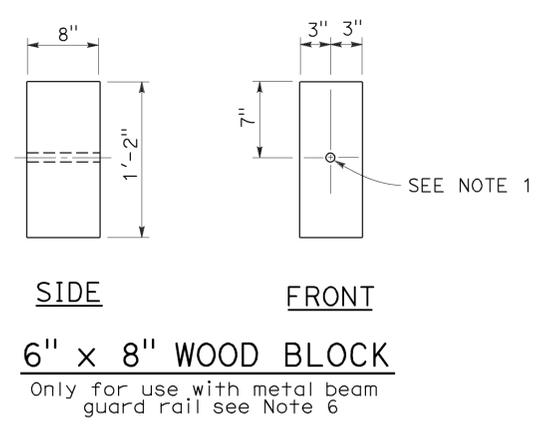
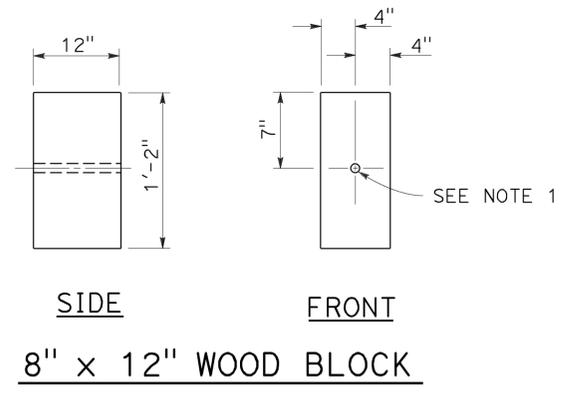
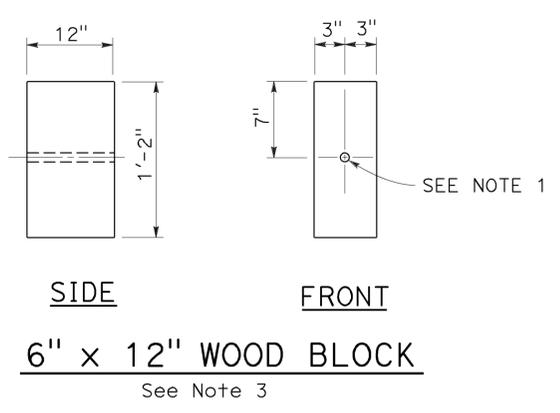
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 1-19-16



NOTES:

1. All holes in wood posts and blocks shall be 3/4" Dia ± 1/16".
2. Dimensions shown for wood post are nominal.
3. This post and block combination used for standard line post sections of MGS.
4. This post and 8" x 12" block combination used for line post sections of MGS on narrow roadways.
5. This post and 8" x 12" block combination is typically used where strengthened line post sections of MGS are warranted to shield fixed objects.
6. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" wood blocks.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP A77N1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N1

2010 REVISED STANDARD PLAN RSP A77N1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	24	62

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 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.

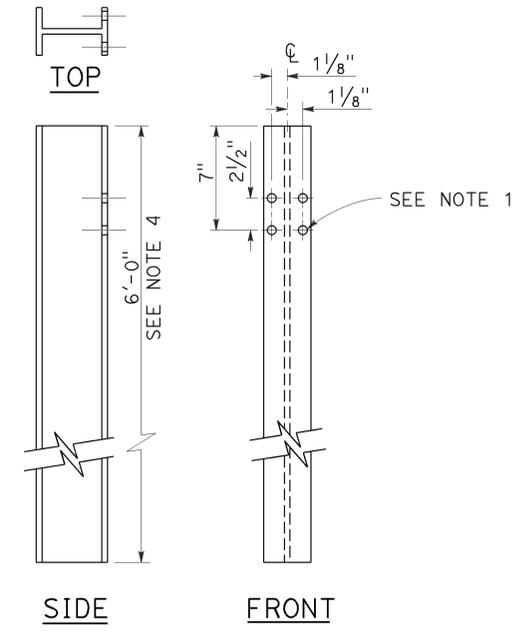
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 1-19-16

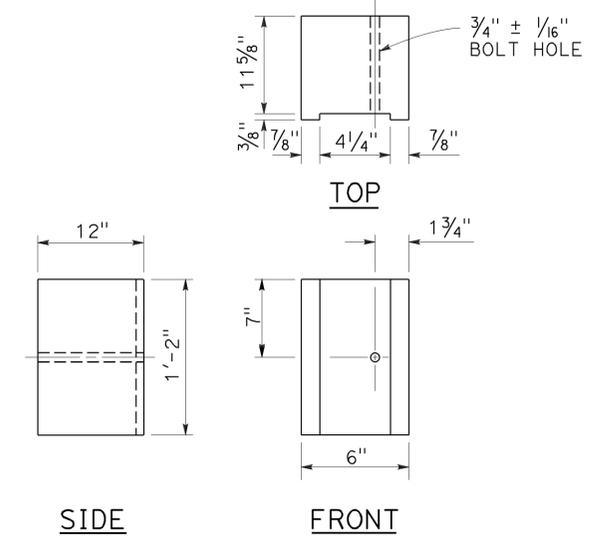
NOTES:

1. All holes in steel post shall be $\frac{13}{16}$ " Dia maximum.
2. Dimensions shown for wood block are nominal.
3. Notched face of block faces steel post.
4. 6'-0" length posts to be used for typical roadway installation. 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.

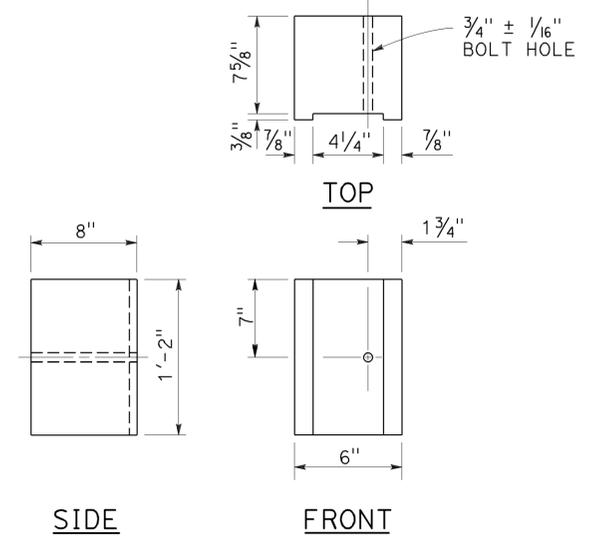
2010 REVISED STANDARD PLAN RSP A77N2



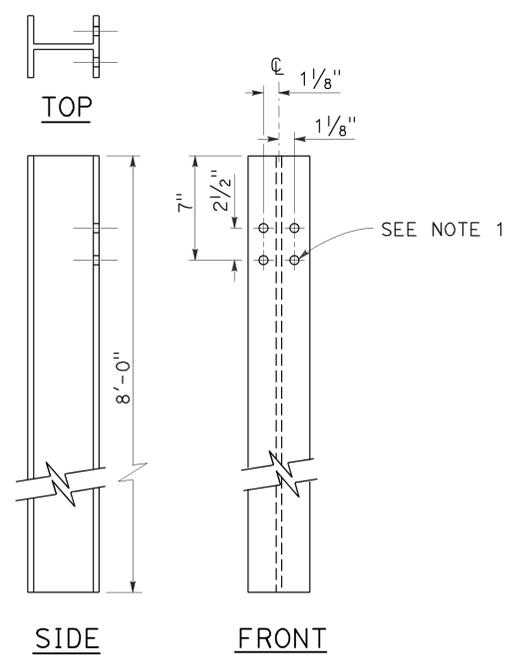
**W6 x 9 OR W6 x 8.5
STEEL POST**
See Note 4



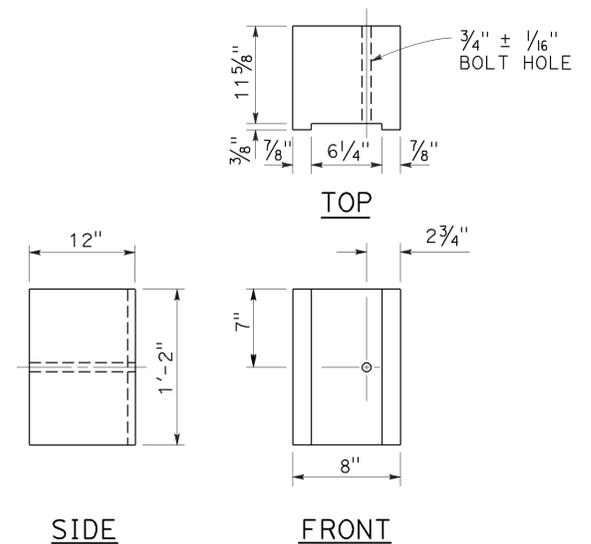
**6" x 12"
NOTCHED WOOD BLOCK**
See Notes 2 and 3



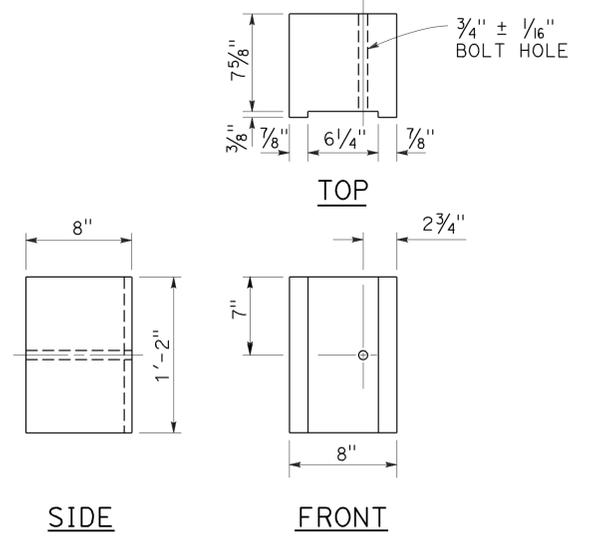
**6" x 8"
NOTCHED WOOD BLOCK**
Only for use with metal beam guard railing. See Note 5



**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

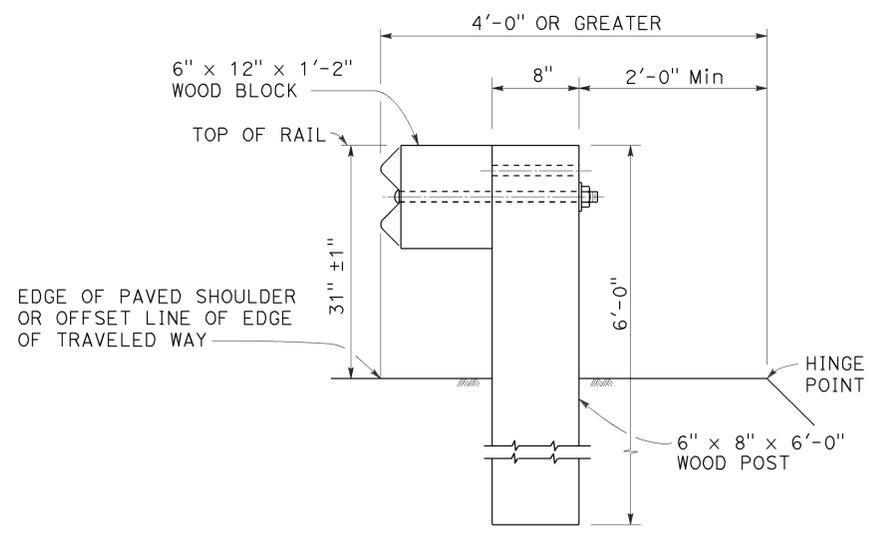
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	25	62

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

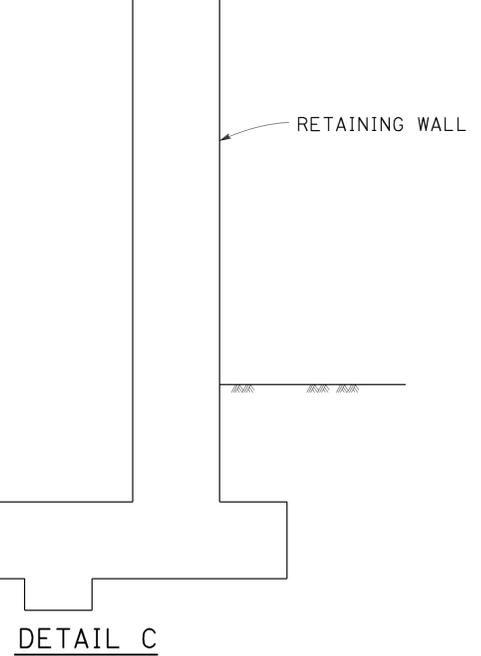
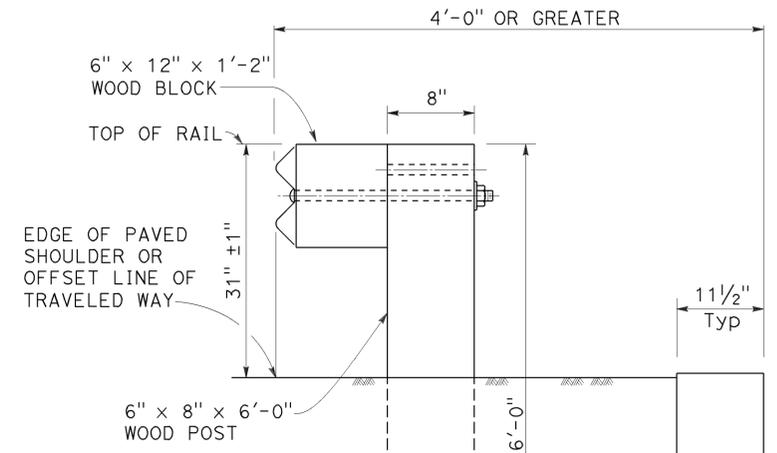
November 15, 2013
PLANS APPROVAL DATE

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.

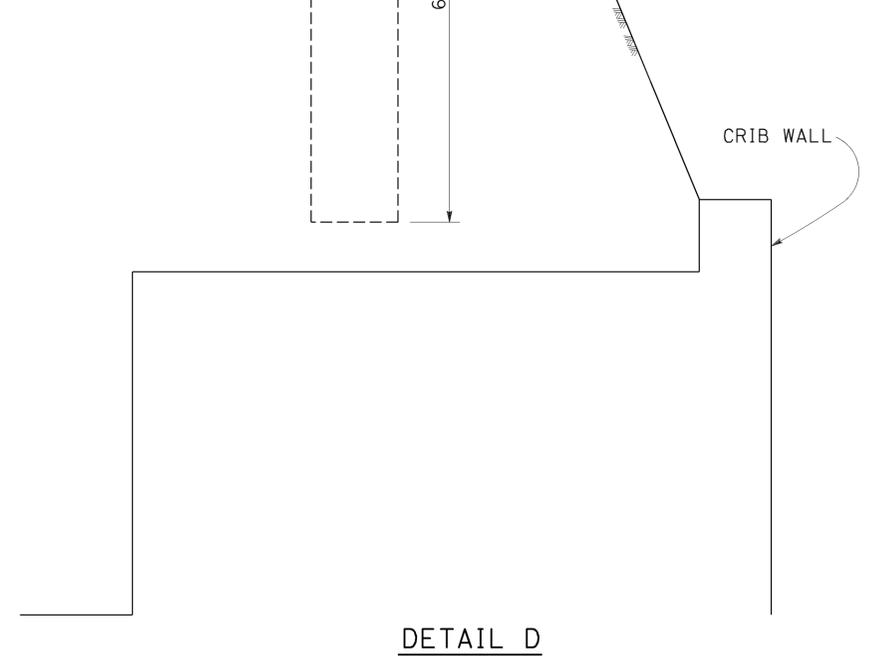
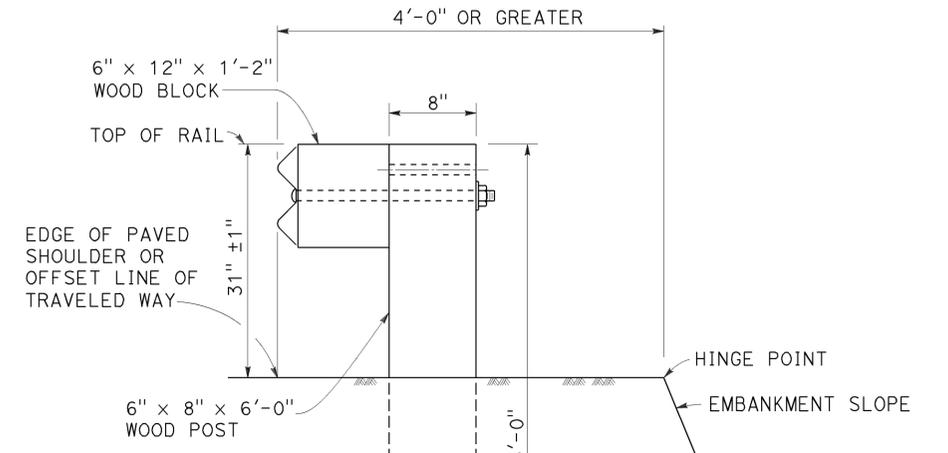
TO ACCOMPANY PLANS DATED 1-19-16



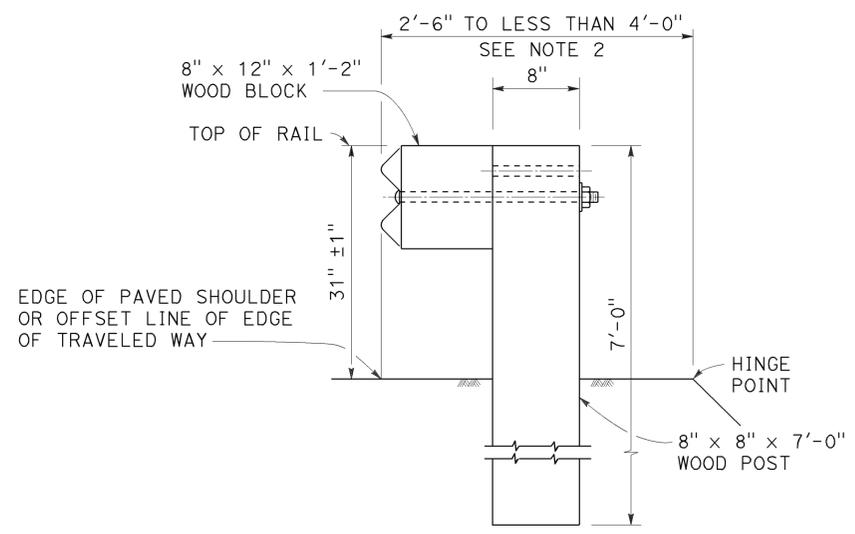
DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



DETAIL C
INSTALLATION AT EARTH RETAINING WALLS



DETAIL D



DETAIL B
NARROW ROADWAY
INSTALLATION
See Note 1

POST EMBEDMENT

NOTES:

1. These installation details also applicable to steel line post installations. For Detail A, C, and D, where steel line post installations are constructed, W6 x 8.5 or W6 x 9 steel post, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For Detail B, where steel line post installations are constructed, W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For additional installation details, see Revised Standard Plan RSP A77L1 and RSP A77L2.
2. Where the distance between the face of the rail and the hinge point is less than 2'-6", see the Project Plans for special details.
3. For dike positioning with MGS installations, see Revised Standard Plan RSP A77N4.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM
TYPICAL LINE POST
EMBEDMENT AND
HINGE POINT OFFSET DETAILS

NO SCALE

RSP A77N3 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N3
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N3

2010 REVISED STANDARD PLAN RSP A77N3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	26	62

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

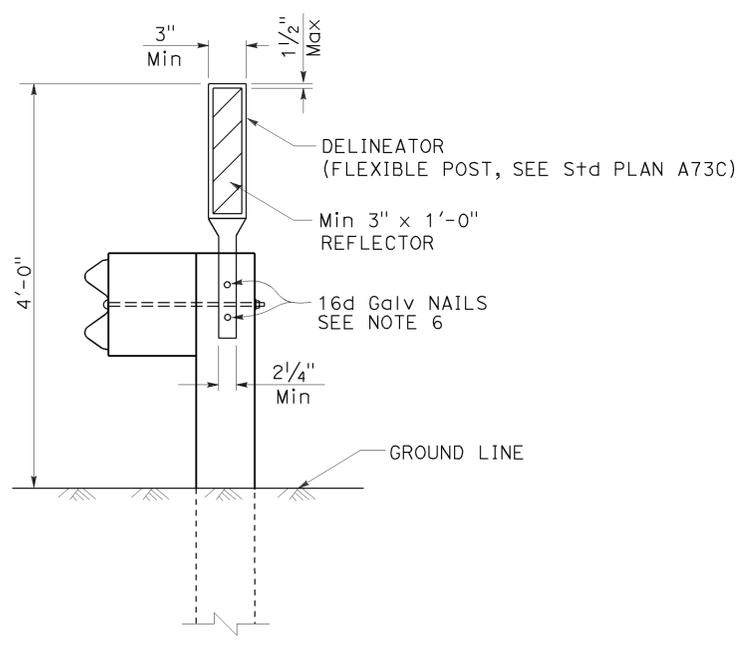
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

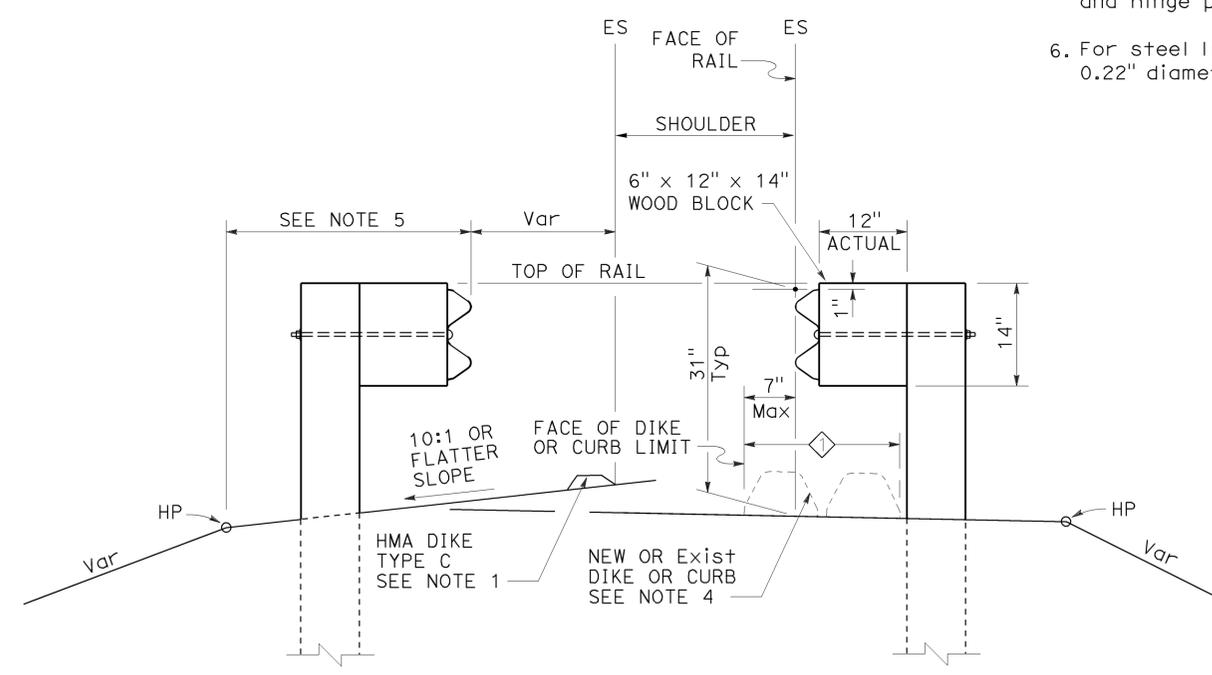
TO ACCOMPANY PLANS DATED 1-19-16

NOTES:

1. When necessary to place dike more than 7" in front of face of MGS, only Type C dike may be used. For dike details, see Revised Standard Plan RSP A87B.
2. For standard railing post embedment, see Revised Standard Plan RSP A77N3.
3. MGS delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under MGS, the maximum height of the dike or curb shall be 6". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and RSP A87B.
5. For details of typical distance between the face of rail and hinge point, see Revised Standard Plan RSP A77N3.
6. 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.



MGS DELINEATION
See Note 3



DIKE POSITIONING
See Note 1

◇ PERMISSIBLE DIKE OR CURB PLACEMENT AREA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL RAILING DELINEATION
AND DIKE POSITIONING DETAILS**
NO SCALE

RSP A77N4 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N4

2010 REVISED STANDARD PLAN RSP A77N4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	27	62

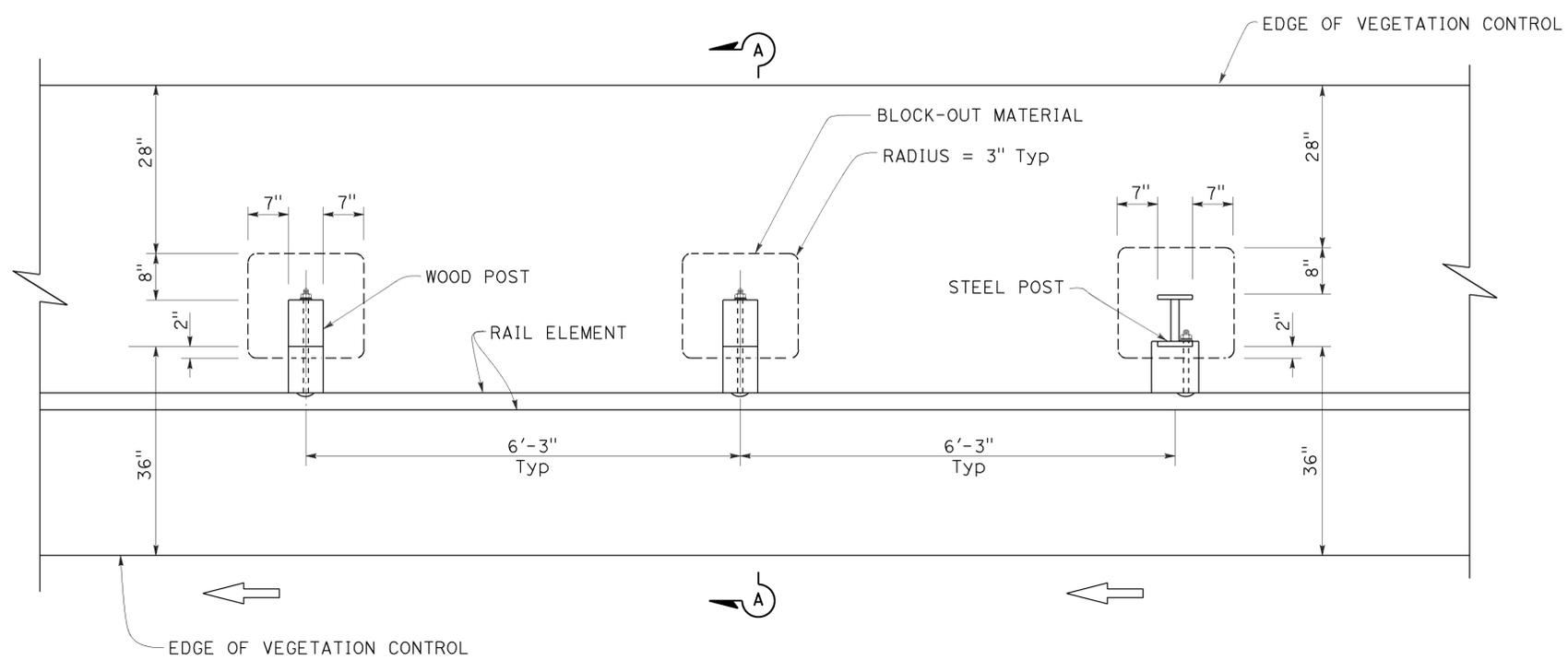
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

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.

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

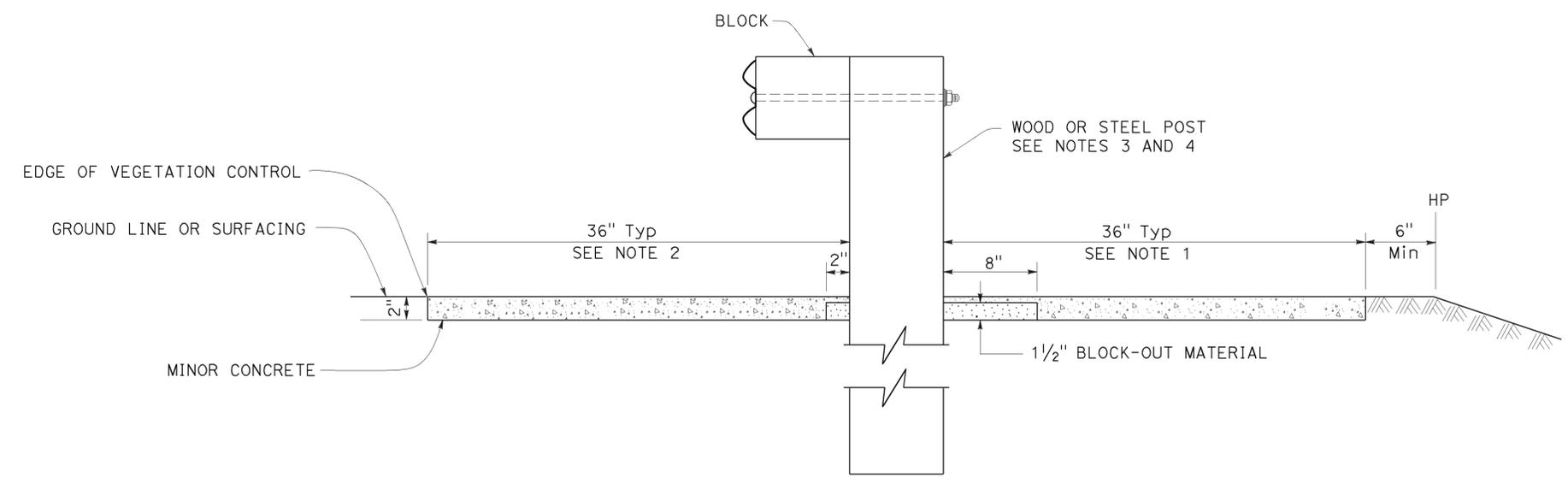
TO ACCOMPANY PLANS DATED 1-19-16



PLAN

NOTES:

1. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.
3. For wood post sizes, see Revised Standard Plan RSP A77N1.
4. For steel post sizes, see Revised Standard Plan RSP A77N2.
5. For details not shown, see Revised Standard Plans RSP A77L1 and RSP A77L2.



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL VEGETATION CONTROL
STANDARD RAILING SECTION**

NO SCALE

RSP A77N5 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

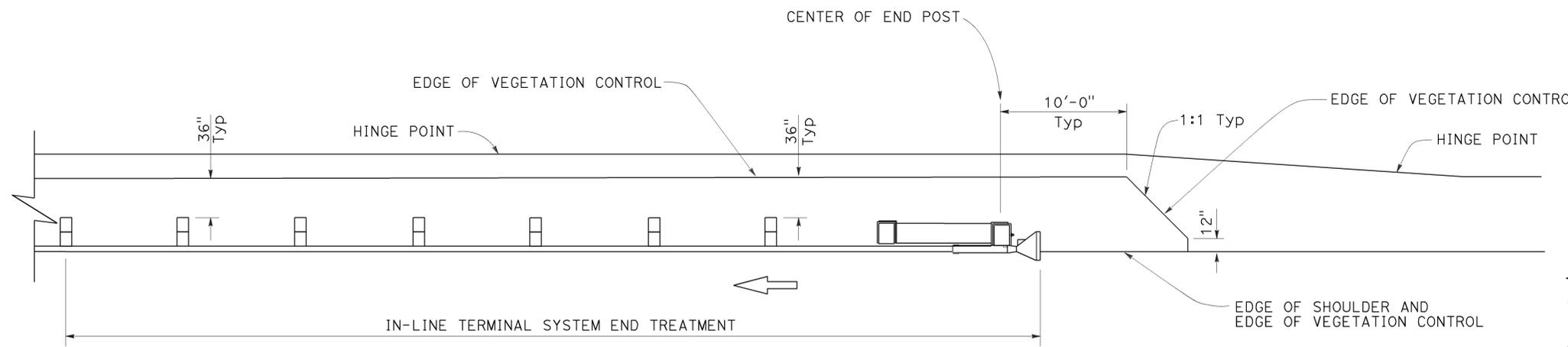
REVISED STANDARD PLAN RSP A77N5

2010 REVISED STANDARD PLAN RSP A77N5

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	28	62

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.

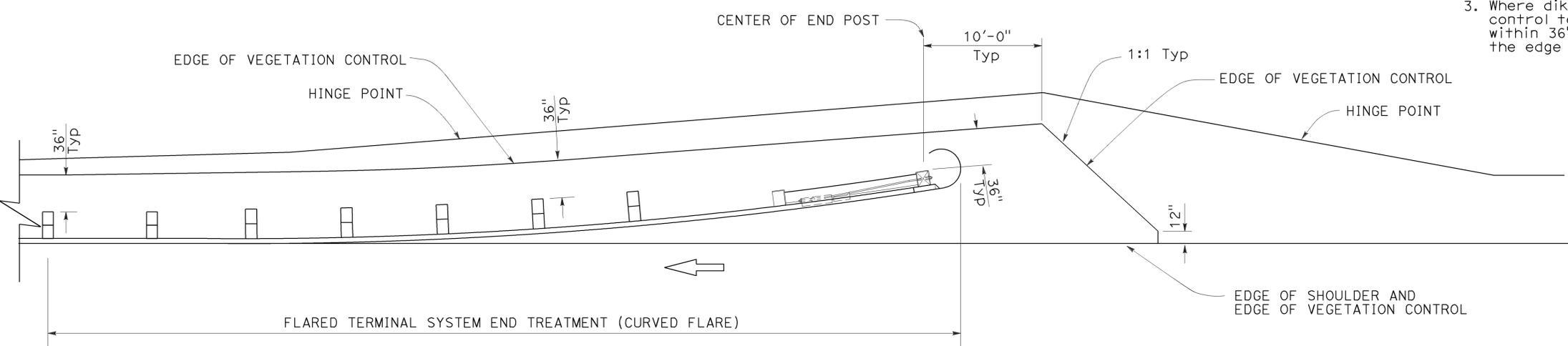
TO ACCOMPANY PLANS DATED 1-19-16



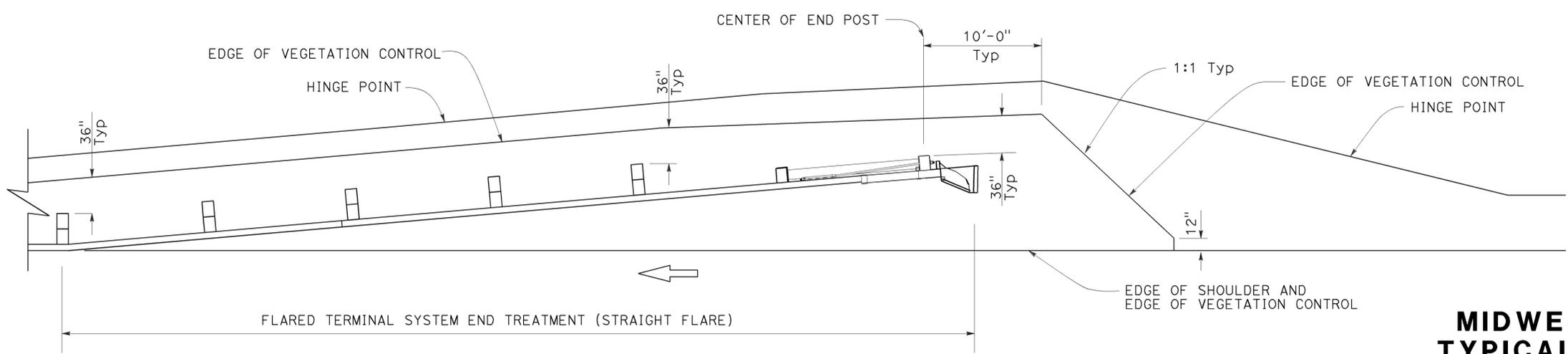
PLAN

NOTES:

1. See Revised Standard Plan RSP A77N5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.



PLAN



PLAN

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
 TYPICAL VEGETATION CONTROL
 FOR TERMINAL SYSTEM END TREATMENTS**
 NO SCALE

RSP A77N6 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N6

2010 REVISED STANDARD PLAN RSP A77N6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	29	62

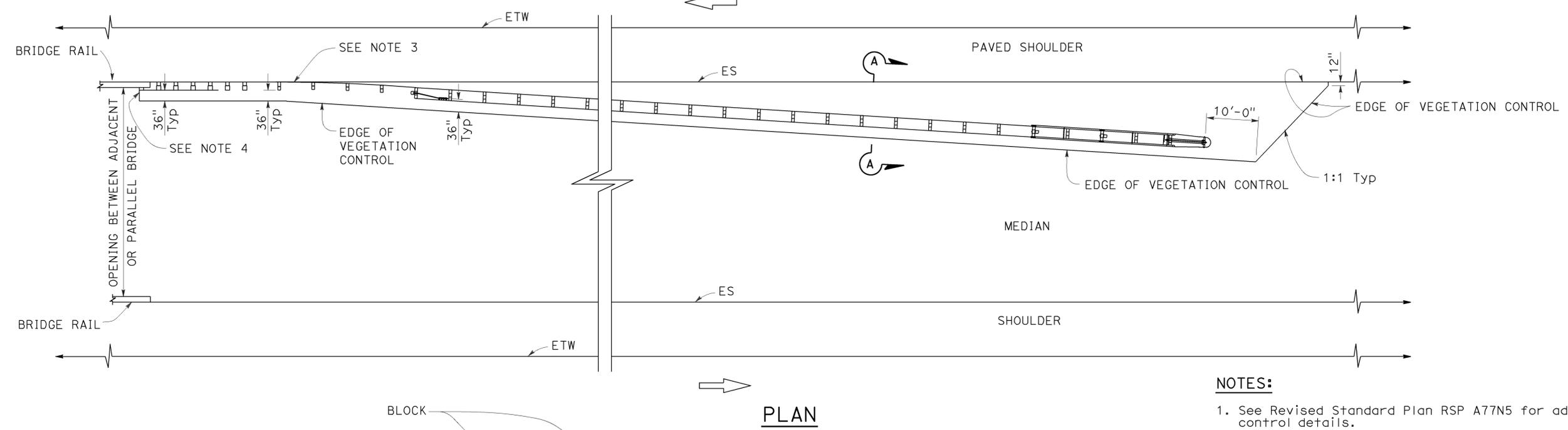
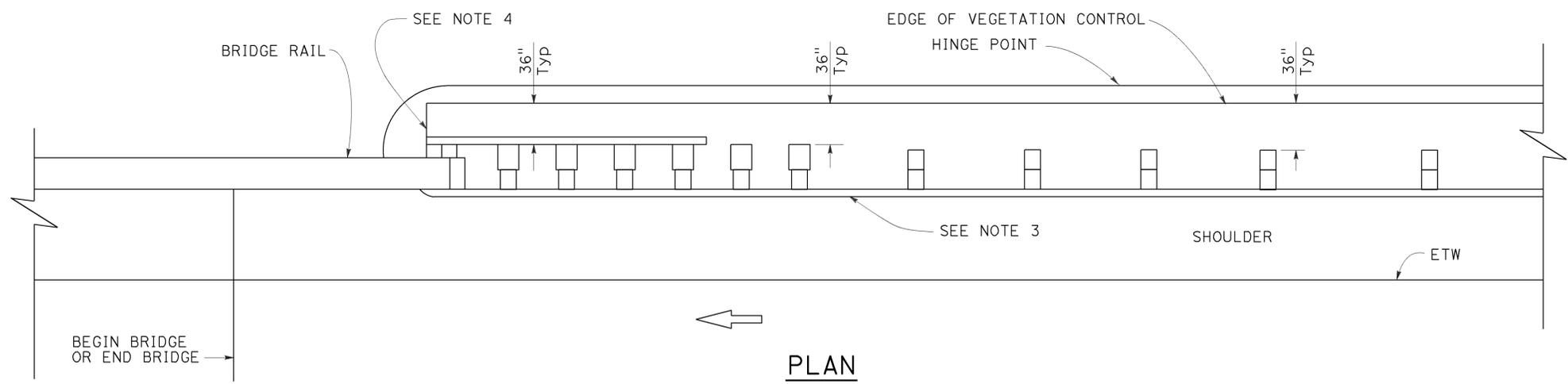
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

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.

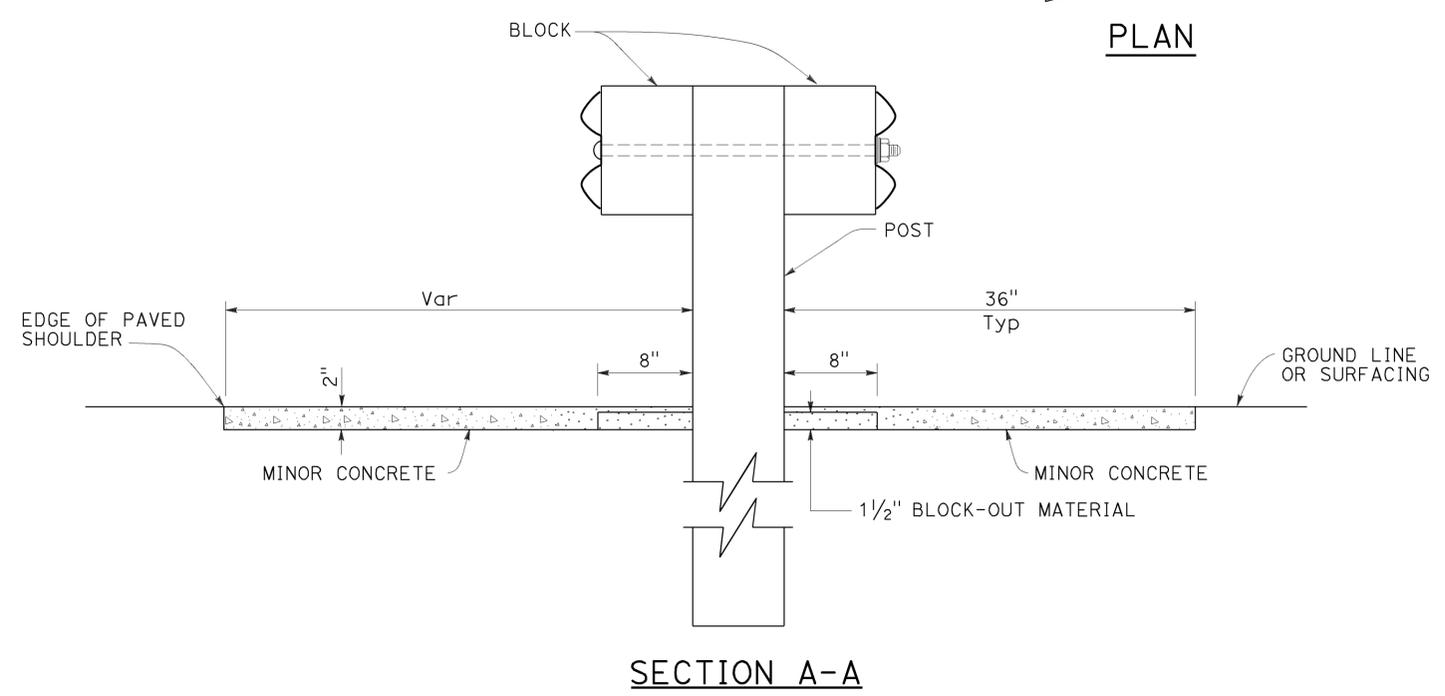
TO ACCOMPANY PLANS DATED 1-19-16

2010 REVISED STANDARD PLAN RSP A77N7



NOTES:

1. See Revised Standard Plan RSP A77N5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.
4. End vegetation control at end of backside rail element.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL VEGETATION CONTROL
AT STRUCTURE APPROACH**

NO SCALE

RSP A77N7 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N7

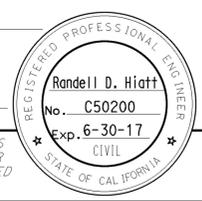
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	30	62

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

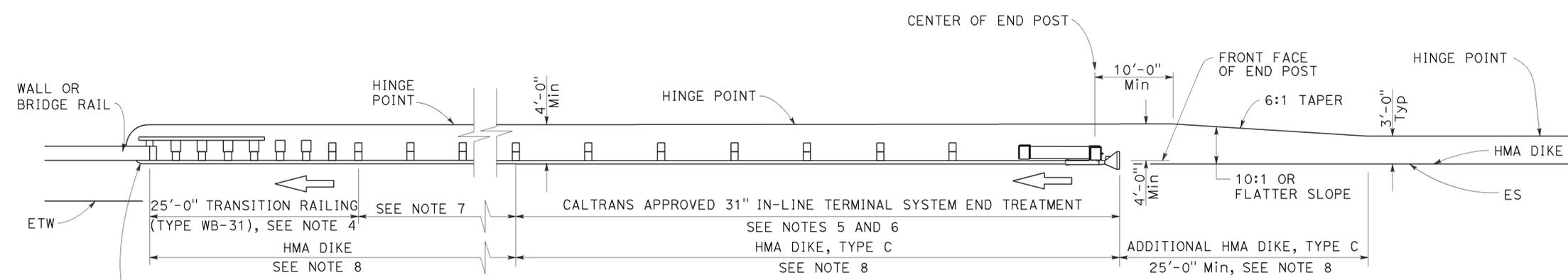
August 14, 2015
PLANS APPROVAL DATE

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 1-19-16

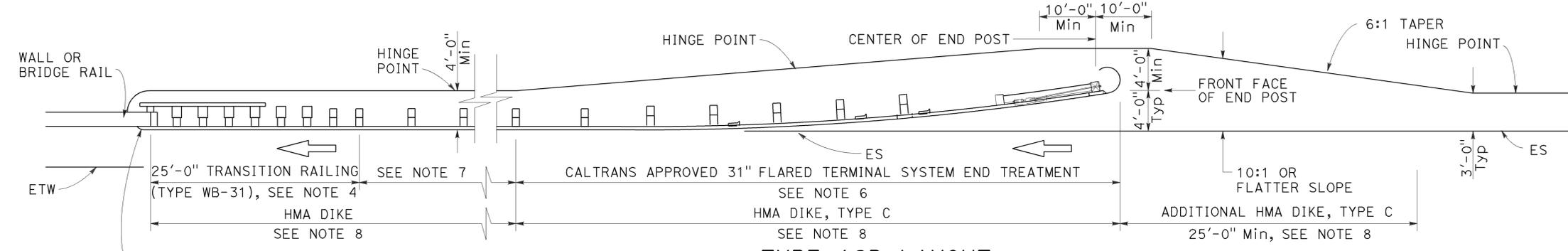


2010 REVISED STANDARD PLAN RSP A77Q1



TYPE 12A LAYOUT

(MGS installation at structure approach with 31" in-line end treatment at traffic approach end of railing)
See Note 9



TYPE 12B LAYOUT

(MGS installation at structure approach with 31" Flared end treatment at traffic approach end of railing)
See Note 9

NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- For Transition Railing (Type WB-31) details for Types 12A and 12B Layouts, see Revised Standard Plan RSP A77U4.
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
- The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatment. A 12.5 degree angle of departure can be drawn on the Project Plans from the edge of traveled way through the outer most point of the fixed object to determine the additional length of railing needed.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- Type 12A or Type 12B Layouts are typically used:
 - To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
 - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- See Revised Standard Plan RSP A77Q3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
- For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77U1 and RSP A77U2 and Connection Detail FF on Revised Standard Plans RSP A77V1 and RSP A77V2.
- For additional details of a typical connection to walls or abutments, see Revised Standard Plan RSP A77U3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
STRUCTURE APPROACH**

NO SCALE

RSP A77Q1 DATED AUGUST 14, 2015 SUPERSEDES RSP A77Q1 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77Q1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	31	62

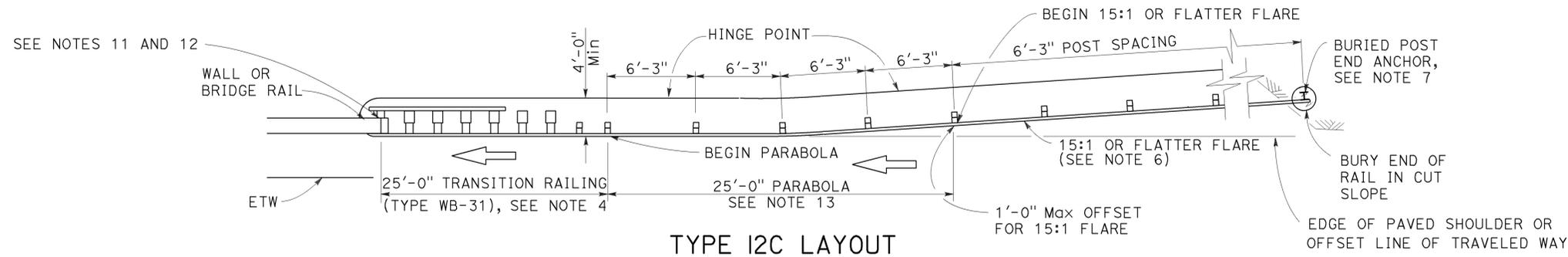
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

August 14, 2015
PLANS APPROVAL DATE

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

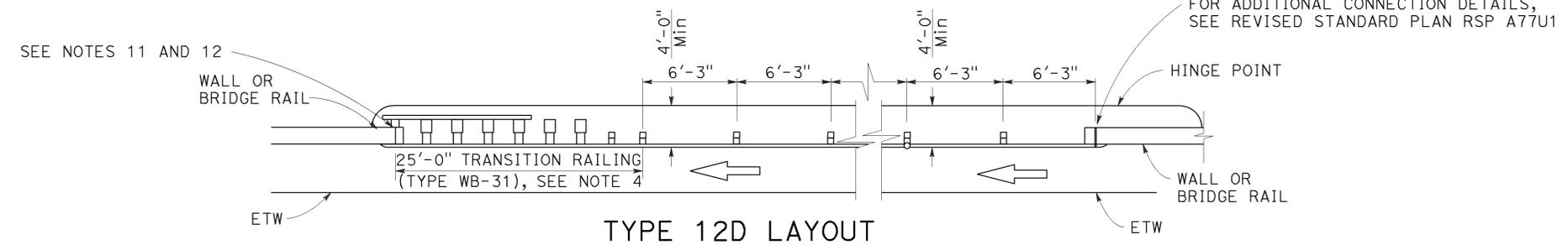
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-17
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 1-19-16



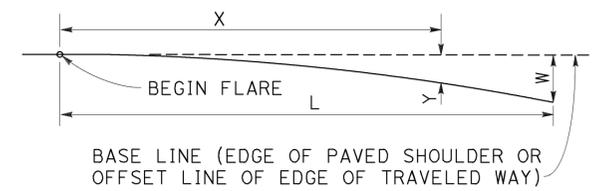
TYPE 12C LAYOUT

(MGS installation at structure approach with a Buried end anchor treatment at traffic approach end of railing)
See Notes 8 and 9



TYPE 12D LAYOUT

(Continuous MGS installation between structures)
See Notes 5 and 9

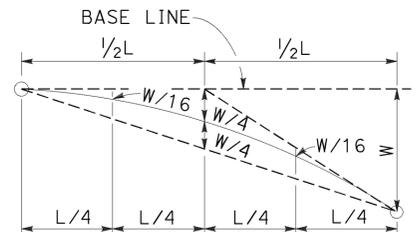


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

PARABOLIC FLARE OFFSETS



TYPICAL PARABOLIC LAYOUT

NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" m wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- For Transition Railing (Type WB-31) details for Types 12C and 12D Layouts, see Revised Standard Plan RSP A77U4.
- Type 12D layout is typically used where continuous MGS is recommended between structures.
- The 15:1 or flatter flare for Type 12C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS with the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 12C Layout, see Revised Standard Plan RSP A77T2.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- Type 12C Layout is typically used:
 - To the right of approaching traffic, at the end of the structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the left of approaching traffic, at each of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
 - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- See Revised Standard Plan RSP A77Q3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
- For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77U1 and RSP A77U2 and Connection Detail FF on Revised Standard Plans RSP A77V1 and RSP A77V2.
- For additional details of a typical connection to walls or abutments, see Revised Standard Plan RSP A77U3.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
STRUCTURE APPROACH
AND BETWEEN STRUCTURES**

NO SCALE

RSP A77Q2 DATED AUGUST 14, 2015 SUPERSEDES RSP A77Q2 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77Q2

2010 REVISED STANDARD PLAN RSP A77Q2

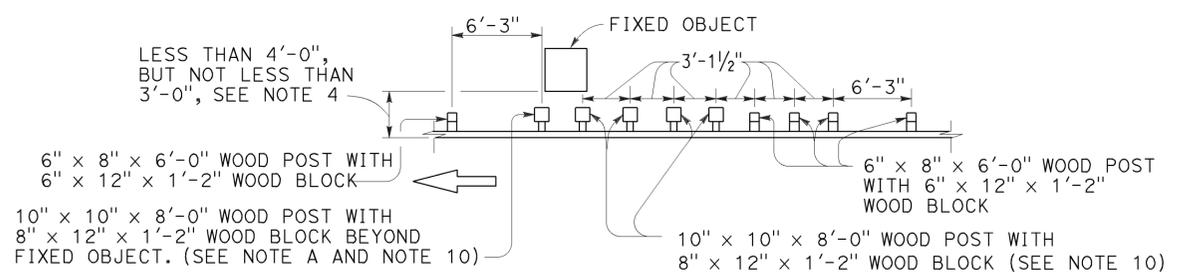
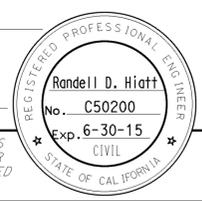
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	32	62

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.

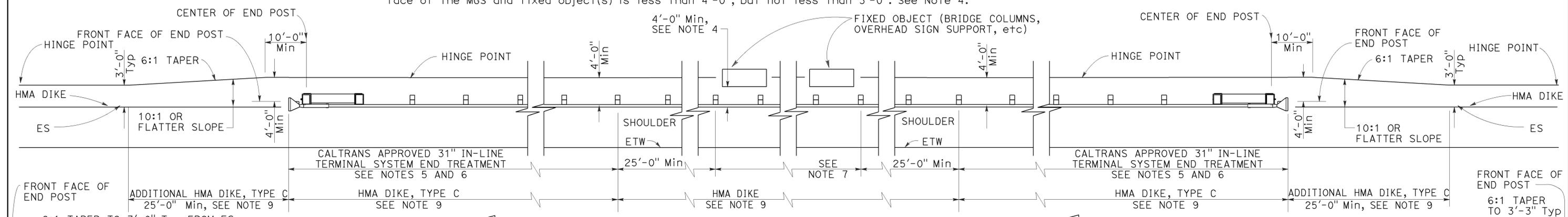
TO ACCOMPANY PLANS DATED 1-19-16



NOTE A: For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

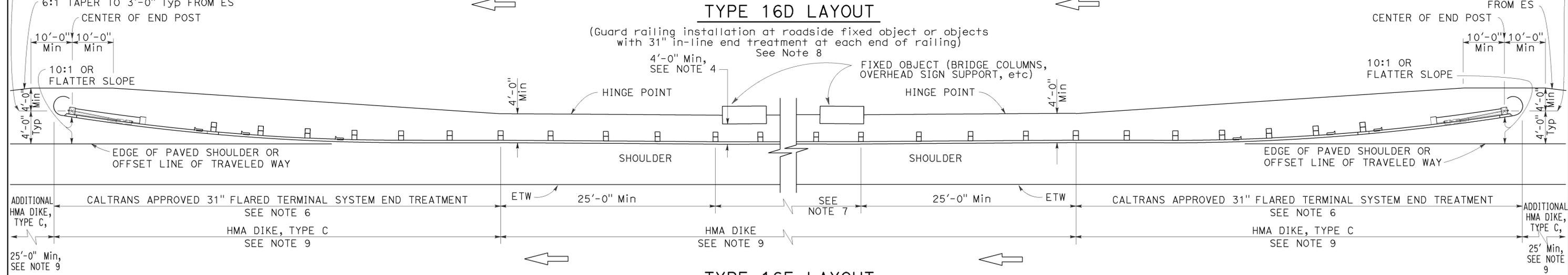
STRENGTHENED MIDWEST GUARDRAIL SYSTEM SECTIONS FOR FIXED OBJECT

Use strengthened MGS sections with layout Types 16D or 16E where minimum clearance between the face of the MGS and fixed object(s) is less than 4'-0", but not less than 3'-0". See Note 4.



TYPE 16D LAYOUT

(Guard railing installation at roadside fixed object or objects with 31" in-line end treatment at each end of railing) See Note 8



TYPE 16E LAYOUT

(MGS installation at roadside fixed object or objects with 31" flared end treatment at each end of railing) See Note 8

- NOTES:**
- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
 - MGS post spacing to be 6'-3" center to center, except as otherwise noted.
 - Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
 - A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind MGS sections with post spacing at 6'-3". Construct MGS as shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object", on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 3'-0". Where the clearance is less than 3'-0", a concrete wall or barrier should be constructed to shield the fixed object(s).
 - 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
 - The type of 31" terminal system to be used will be shown on the Project Plans.
 - As site conditions dictate, construct additional MGS to shield fixed object(s). Additional MGS length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
 - Layout Types 16D through 16L, shown on the A77R Series of Standard Plans, are typically used where MGS is recommended to shield roadside fixed object(s) and a crashworthy 31" end treatment is required for both directions of traffic.
 - Where placement of dike is required with MGS, see Revised Standard Plan RSP A77N4 for dike positioning details.
 - W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood block or notched recycled plastic block may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood block shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77R4 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77R4

2010 REVISED STANDARD PLAN RSP A77R4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	33	62

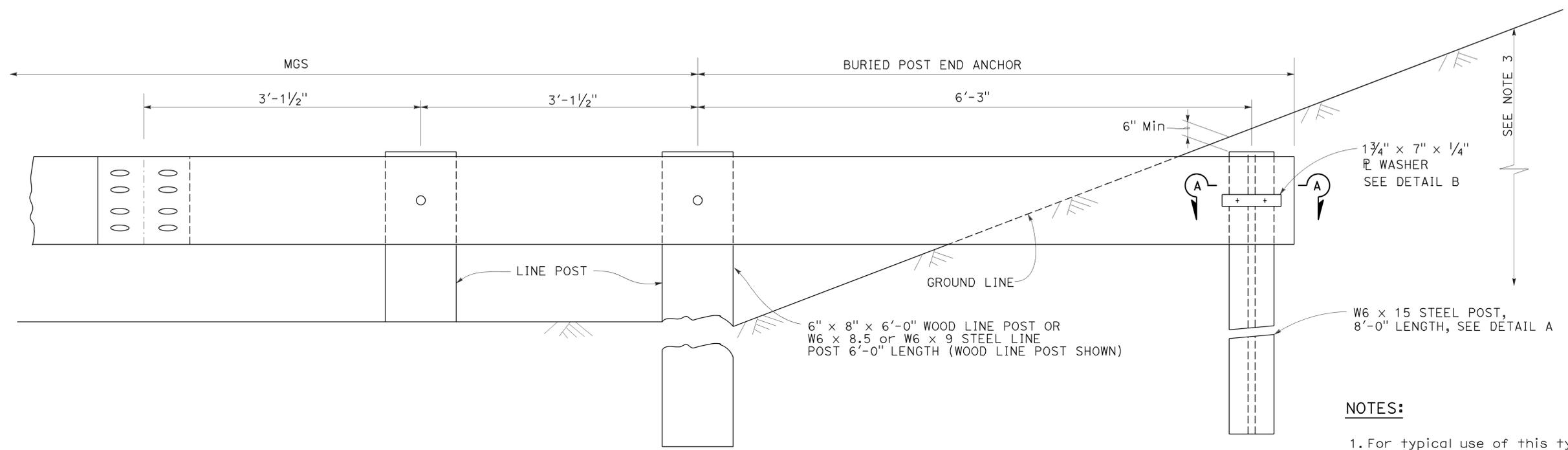
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 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.

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

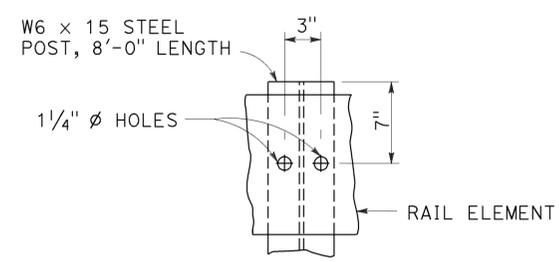
TO ACCOMPANY PLANS DATED 1-19-16



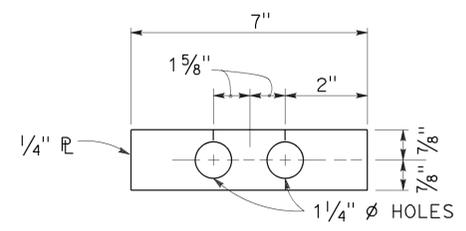
BURIED POST END ANCHOR
See Note 3

NOTES:

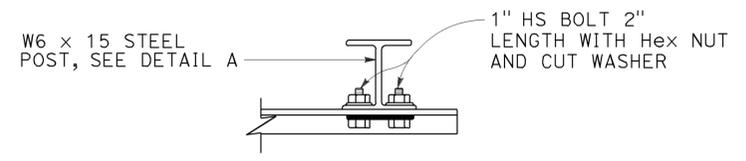
1. For typical use of this type of end anchor with MGS see the A77P, A77Q and A77R Series of the Standard Plans.
2. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened and thoroughly compacted.
3. The buried post end anchor shall only be constructed at those locations where the slope perpendicular to the roadway is non-traversable.



DETAIL A



DETAIL B



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
BURIED POST END ANCHOR**

NO SCALE

RSP A77T2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77T2
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77T2

2010 REVISED STANDARD PLAN RSP A77T2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	34	62

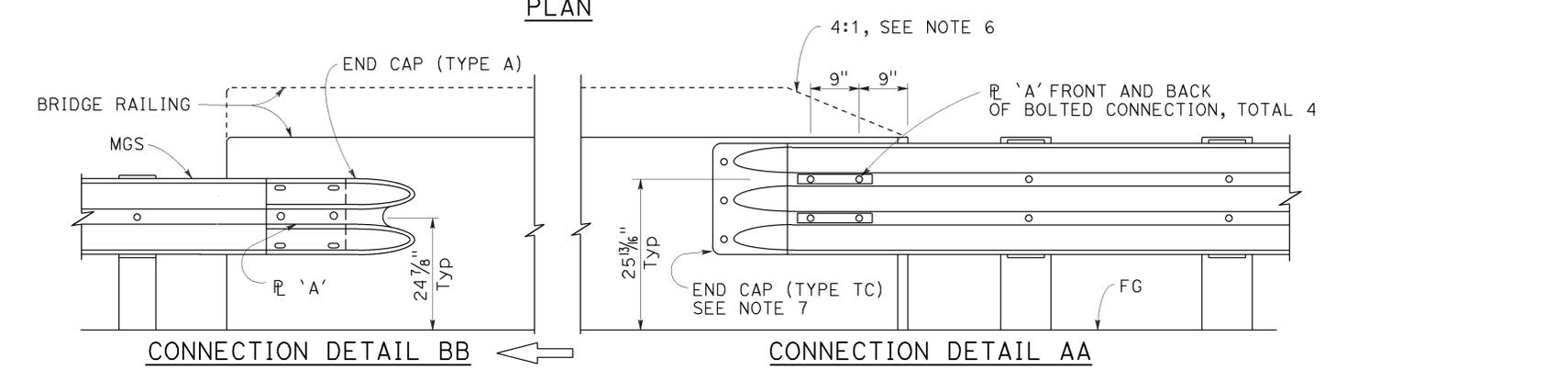
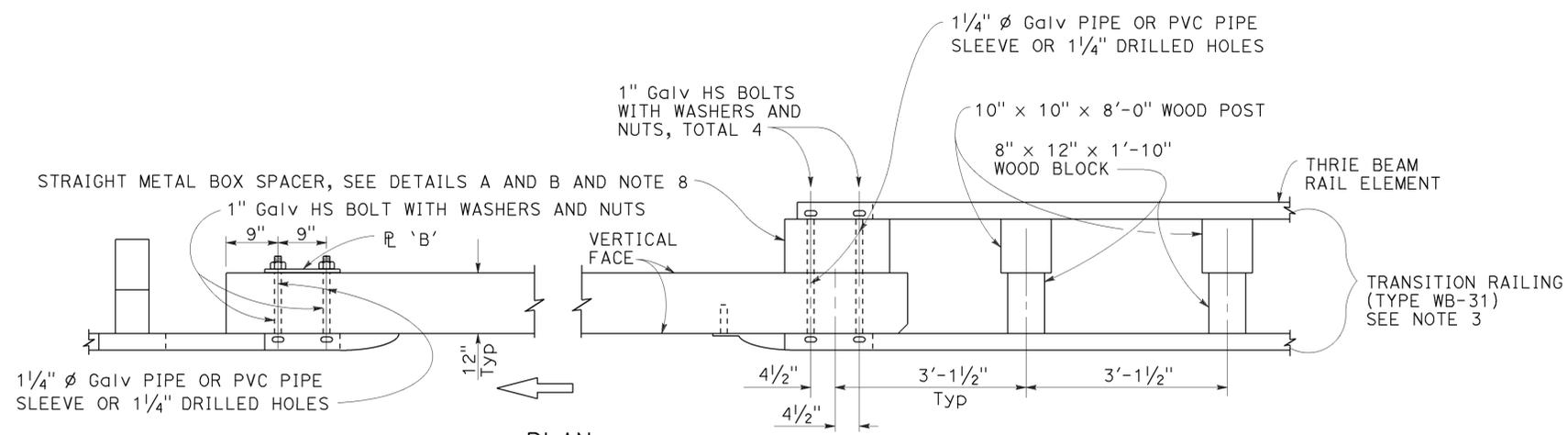
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

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.

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

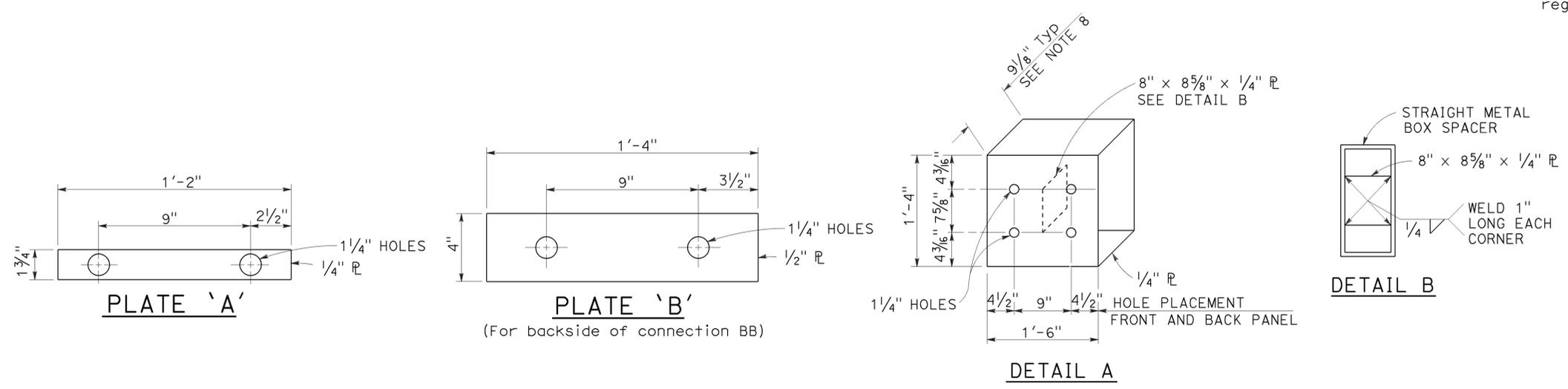
TO ACCOMPANY PLANS DATED 1-19-16



NOTES:

1. See Revised Standard Plan RSP A77U2 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Revised Standard Plans RSP A77M1, RSP A77N1 and RSP A77N2.
3. For additional details of Transition Railing (Type WB-31), see Revised Standard Plan RSP A77U4. Transition Railing (Type WB-31) transitions the 12 gauge MGS railing section to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
4. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77Q1, Layout Types 12C and 12D on Revised Standard Plan RSP A77Q2, and Layout Type 12E on Revised Standard Plan RSP A77Q3.
5. For typical use of Connection Detail BB, see Layout Type 12D (structure departure railing connection) on Revised Standard Plan RSP A77Q2 and Layout Type 12DD on Revised Standard Plan RSP A77Q5.
6. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail.
7. For details of End Cap (Type TC), see Revised Standard Plan RSP A77U4.
8. See Revised Standard Plan RSP A77U4 for additional details regarding depth dimension for straight metal box spacer.

MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
MIDWEST GUARDRAIL SYSTEM CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS
DETAILS No. 1

NO SCALE

RSP A77U1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77U1

2010 REVISED STANDARD PLAN RSP A77U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	35	62

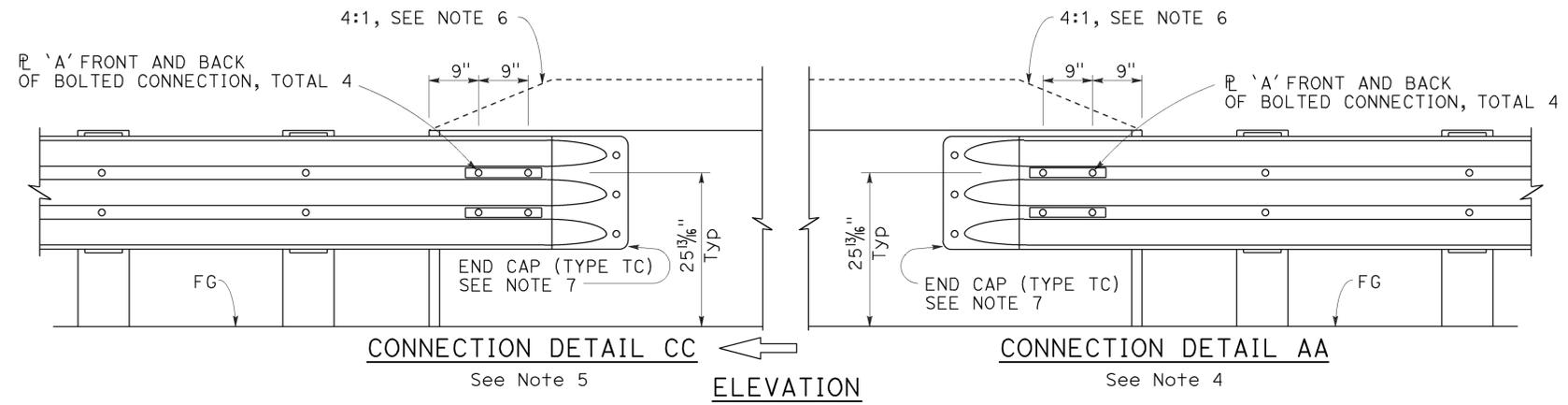
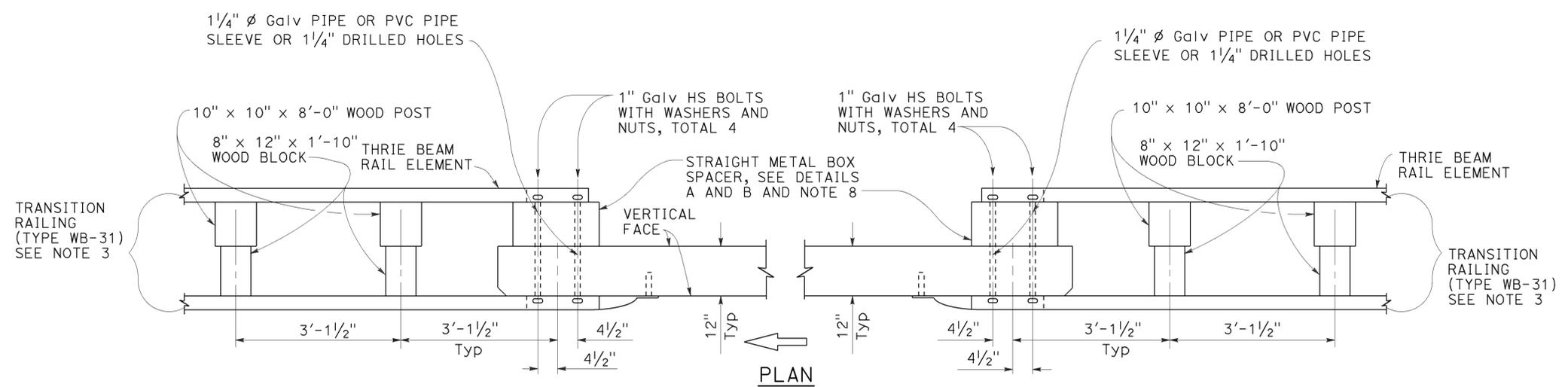
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

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.

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

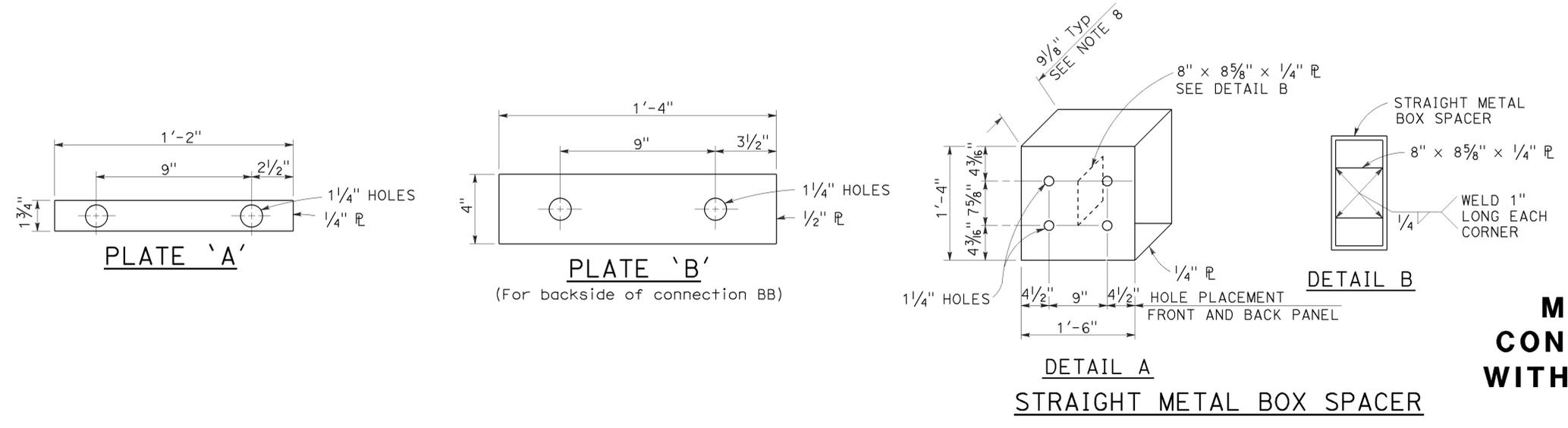
TO ACCOMPANY PLANS DATED 1-19-16



MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

1. See Revised Standard Plan RSP A77U1 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Revised Standard Plans RSP A77M1, RSP A77N1 and RSP A77N2.
3. For additional details of Transition Railing (Type WB-31), see Revised Standard Plan RSP A77U4. Transition Railing (Type WB-31) transitions the 12 gauge MGS railing section to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
4. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77Q1, Layout Types 12C and 12D on Revised Standard Plan RSP A77Q2, and Layout Type 12E on Revised Standard Plan RSP A77Q3.
5. For typical use of Connection Detail CC, see Layout Types 12AA and 12BB on Revised Standard Plan RSP A77Q4 and Layout Type 12CC on Revised Standard Plan RSP A77Q5.
6. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA and connection Detail CC, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
7. For details of End Cap (Type TC), see Revised Standard Plan RSP A77U4.
8. See Revised Standard Plan RSP A77U4 for additional details regarding depth dimension for straight metal box spacer.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
CONNECTIONS TO BRIDGE RAILINGS
WITHOUT SIDEWALKS DETAILS No. 2**

NO SCALE

RSP A77U2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77U2

2010 REVISED STANDARD PLAN RSP A77U2

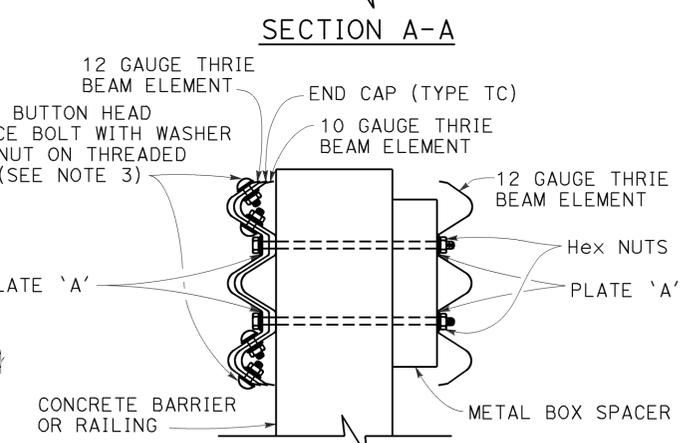
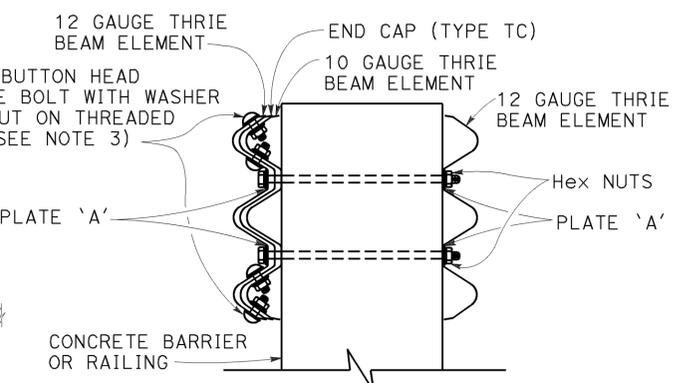
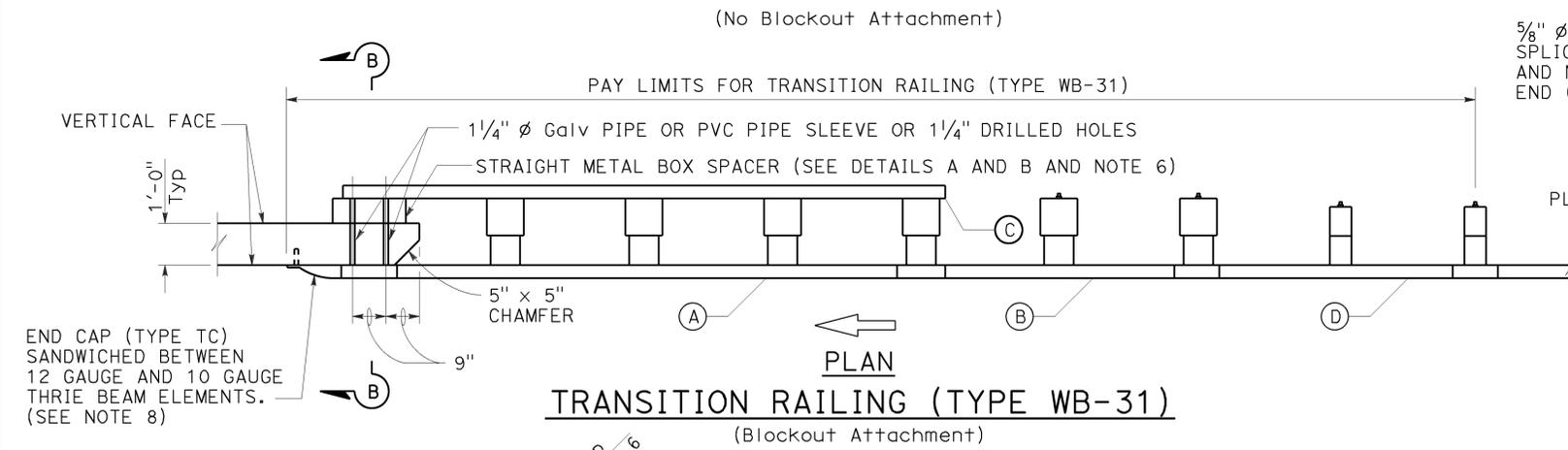
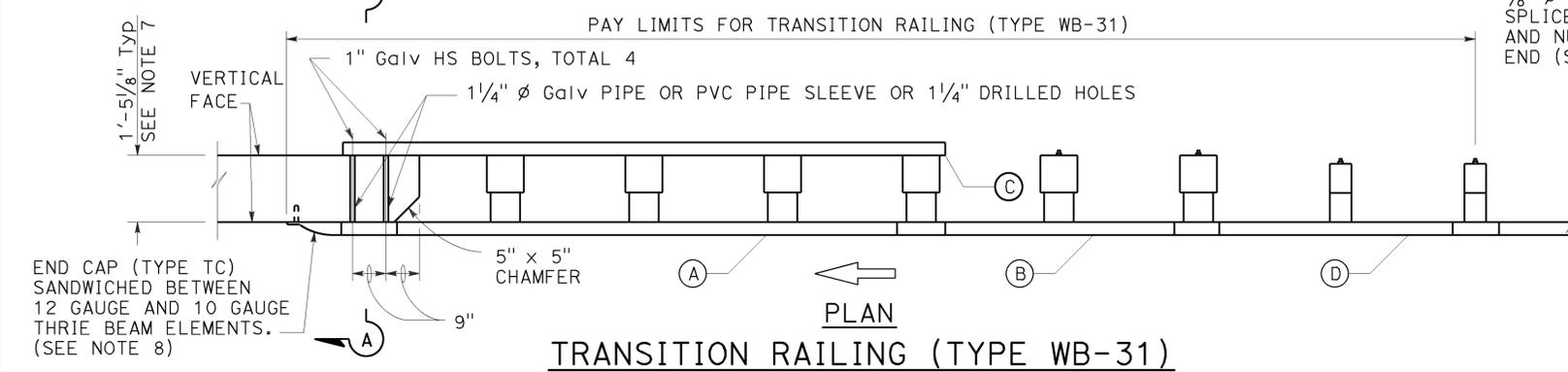
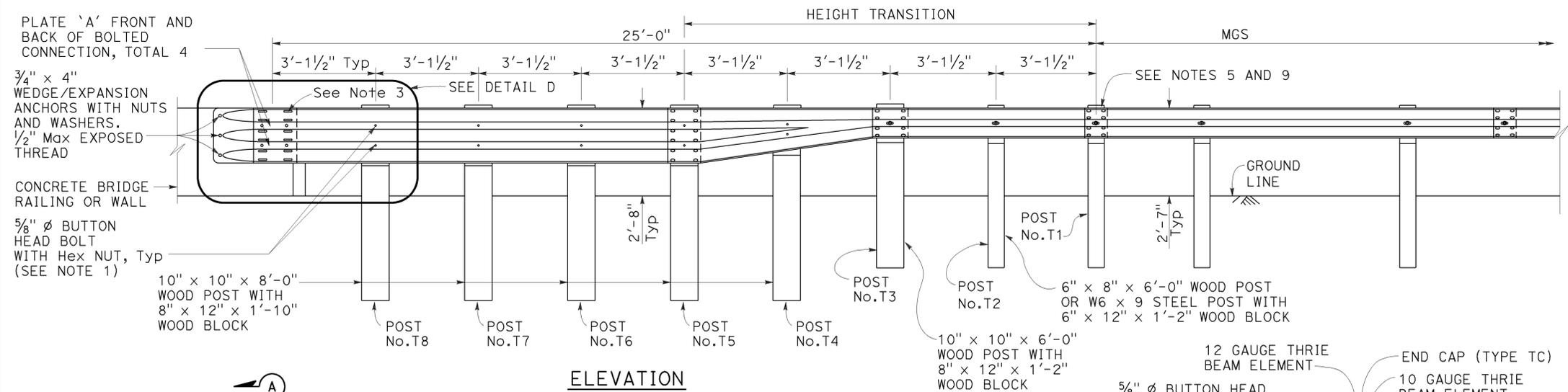
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	36	62

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

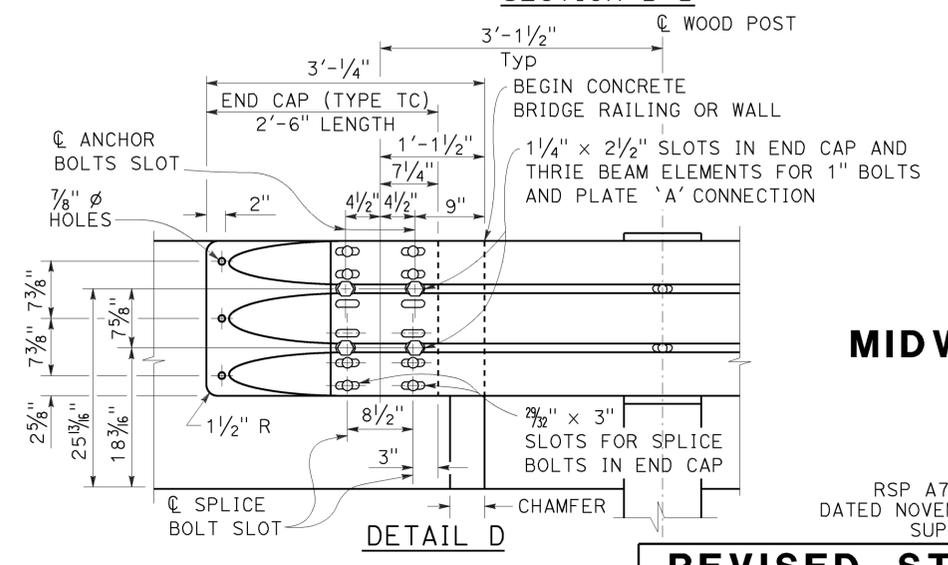
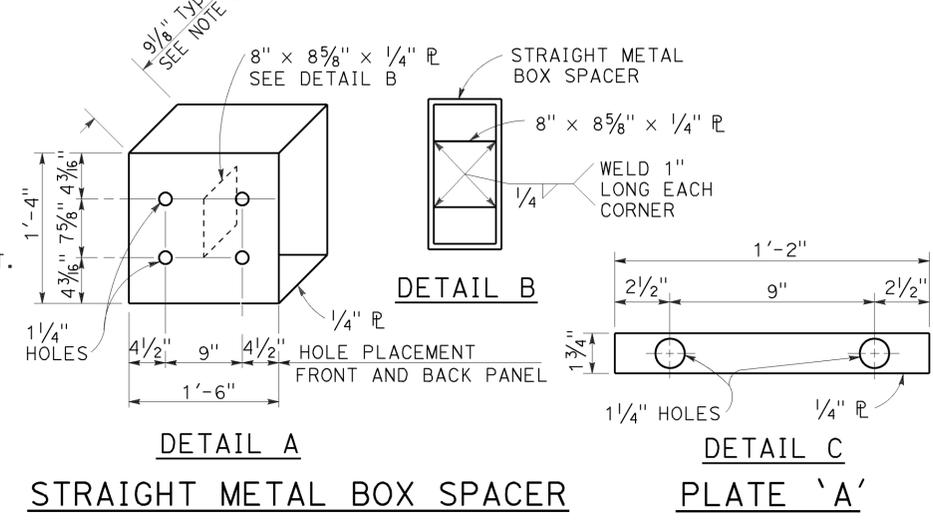
January 23, 2015
PLANS APPROVAL DATE

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

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



- LEGEND:**
- (A) NESTED THRIE BEAM ELEMENTS (ONE 12 GAUGE ELEMENT NESTED OVER ONE 10 GAUGE ELEMENT).
 - (B) ONE ASYMMETRICAL 10 GAUGE "W" BEAM TO THRIE BEAM ELEMENT.
 - (C) ONE 12 GAUGE THRIE BEAM ELEMENT.
 - (D) ONE 10 GAUGE "W" BEAM RAIL ELEMENT (7'-3/2" LENGTH)
- 10 GAUGE = 0.138" THICK
12 GAUGE = 0.108" THICK



- NOTES:** TO ACCOMPANY PLANS DATED 1-19-16
1. Use 5/8" ϕ 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. T5 and the connection to the concrete barrier or railing shall be the standard 29/32" x 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1/4" ϕ . Only the top 4 and the bottom 4 splice bolts with washers and nuts are required for rail splices at Post No. T5 and the connection to the concrete barrier or railing.
 4. The top elevation of Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
 5. Typically, the railing connected to Transition Railing (Type WB-31) will be either standard railing section of MGS with height transition ratio of 150:1 or a Caltrans approved 31" end treatment attached to Post No. T1.
 6. The depth of the metal box spacer varies from the 9/8" to 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 21 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1/2", metal plates similar to Plate 'A' are to be used as spacers.
 7. Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. T5 through No. T8 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
 8. End cap may be installed over 12 gauge and 10 gauge thrie beam elements where transition railing is installed on the departure end of bridge railing.
 9. Conform standard railing section height to 31" at Post No. T1 using height transition ratio of 150:1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TRANSITION RAILING
(TYPE WB-31)**

NO SCALE

RSP A77U4 DATED JANUARY 23, 2015 SUPERSEDES RSP A77U4 DATED NOVEMBER 15, 2013 AND RSP A77U4 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77U4

2010 REVISED STANDARD PLAN RSP A77U4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	37	62

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

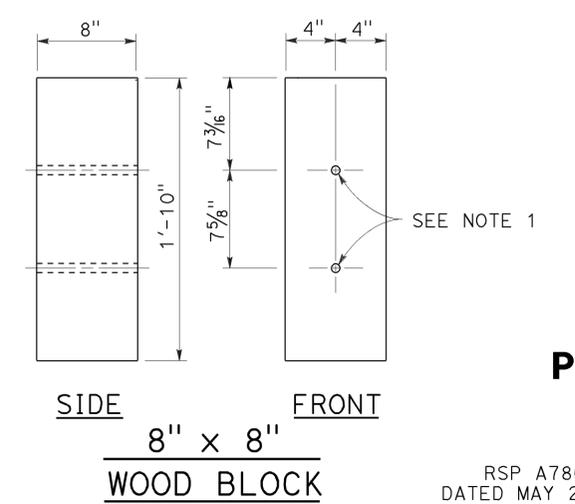
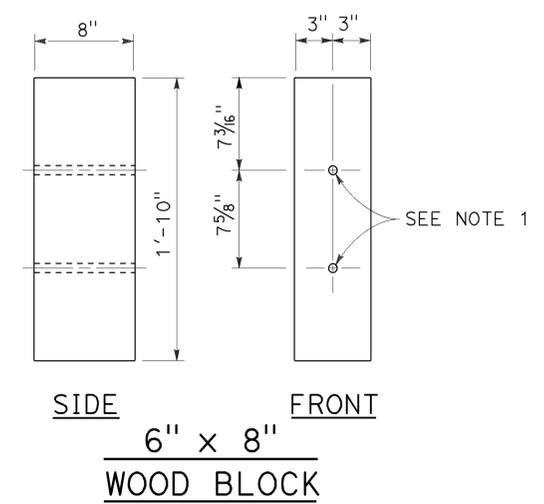
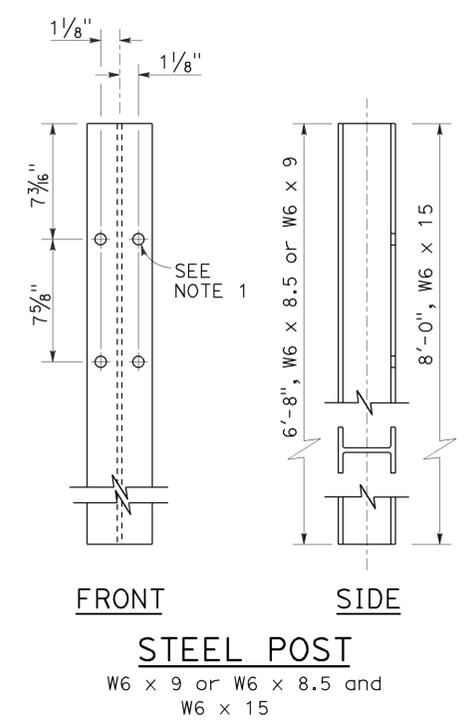
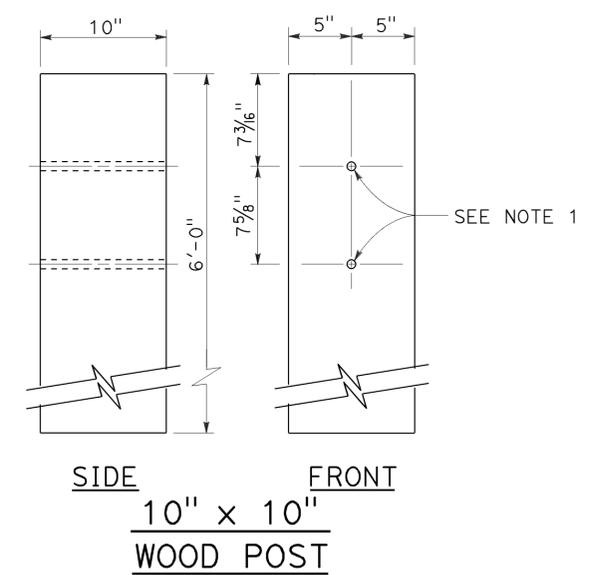
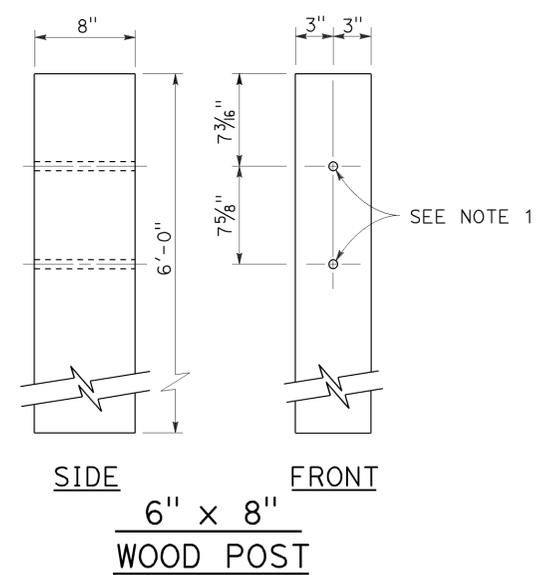
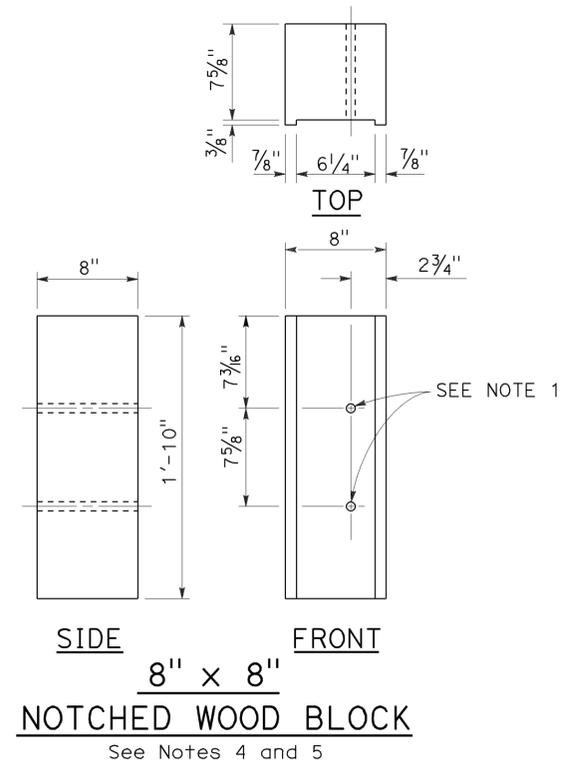
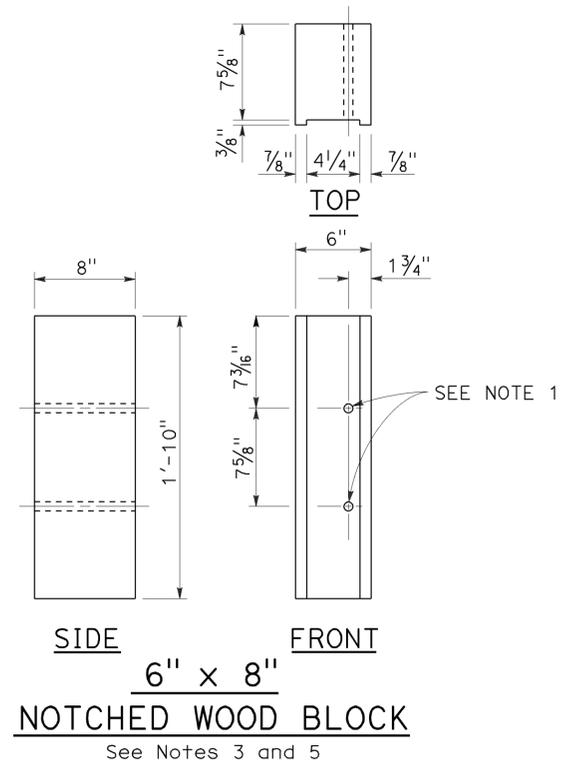
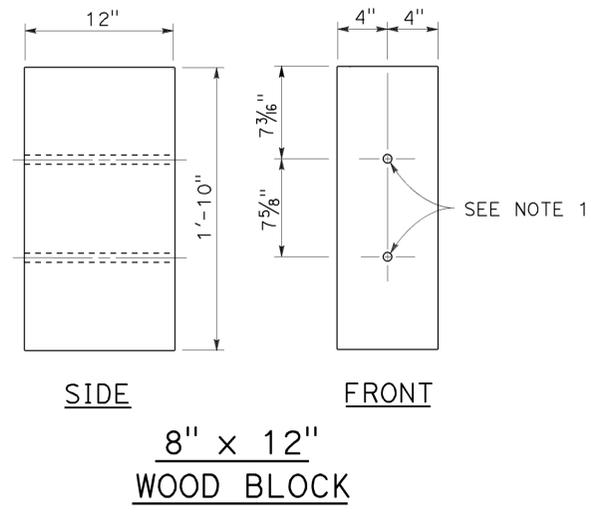
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

TO ACCOMPANY PLANS DATED 1-19-16

NOTES:

1. All holes in steel post to be $\frac{1}{8}$ " Dia maximum. Holes in wood posts and wood blocks to be $\frac{3}{4}$ " Dia $\pm \frac{1}{16}$ ".
2. Dimensions shown for wood post are nominal.
3. For use with W6 x 8.5 or W6 x 9 steel post.
4. For use with W6 x 15 steel post.
5. Notched face of block faces steel post.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**THRIE BEAM BARRIER
POST AND BLOCK DETAILS**

NO SCALE

RSP A78C2 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A78C2
DATED MAY 20, 2011 - PAGE 92 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A78C2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	38	62

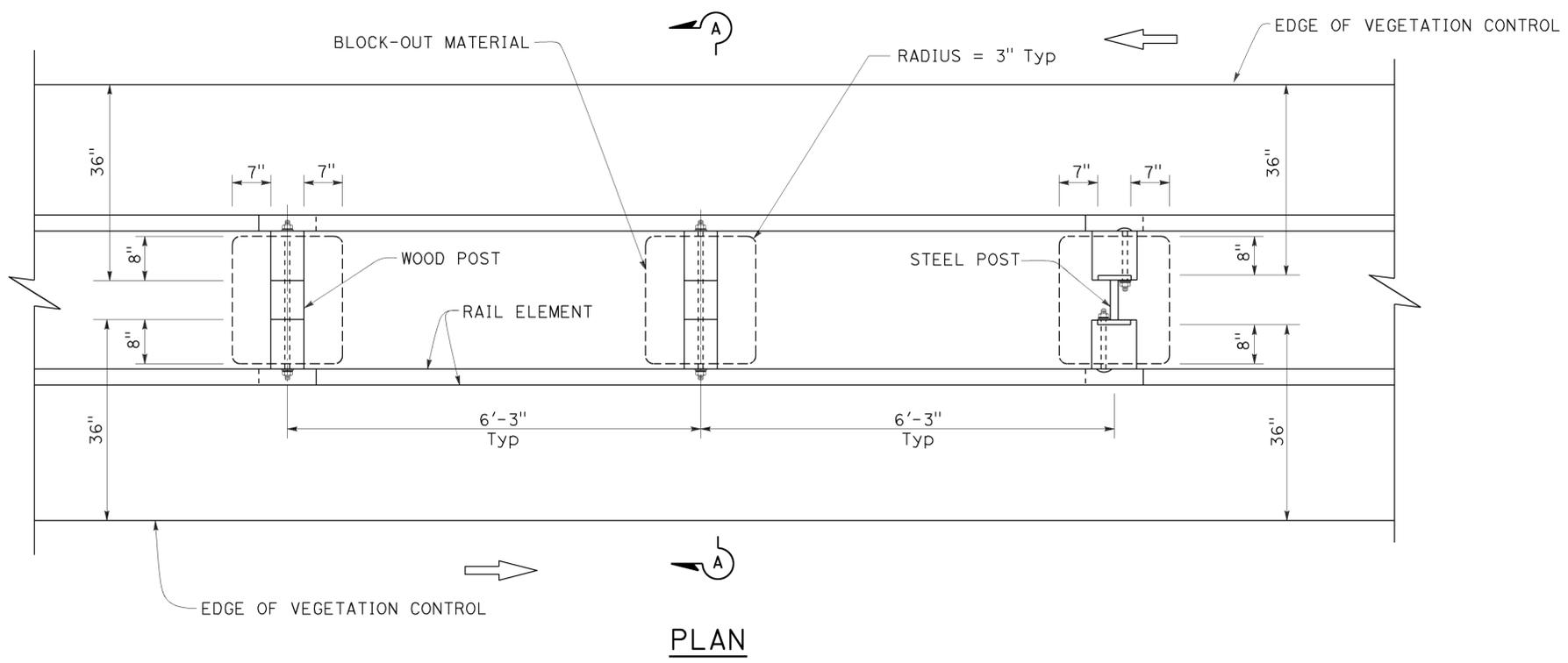
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

October 19, 2012
PLANS APPROVAL DATE

Randell D. Hiatt
No. C50200
Exp. 6-30-13
CIVIL
STATE OF CALIFORNIA

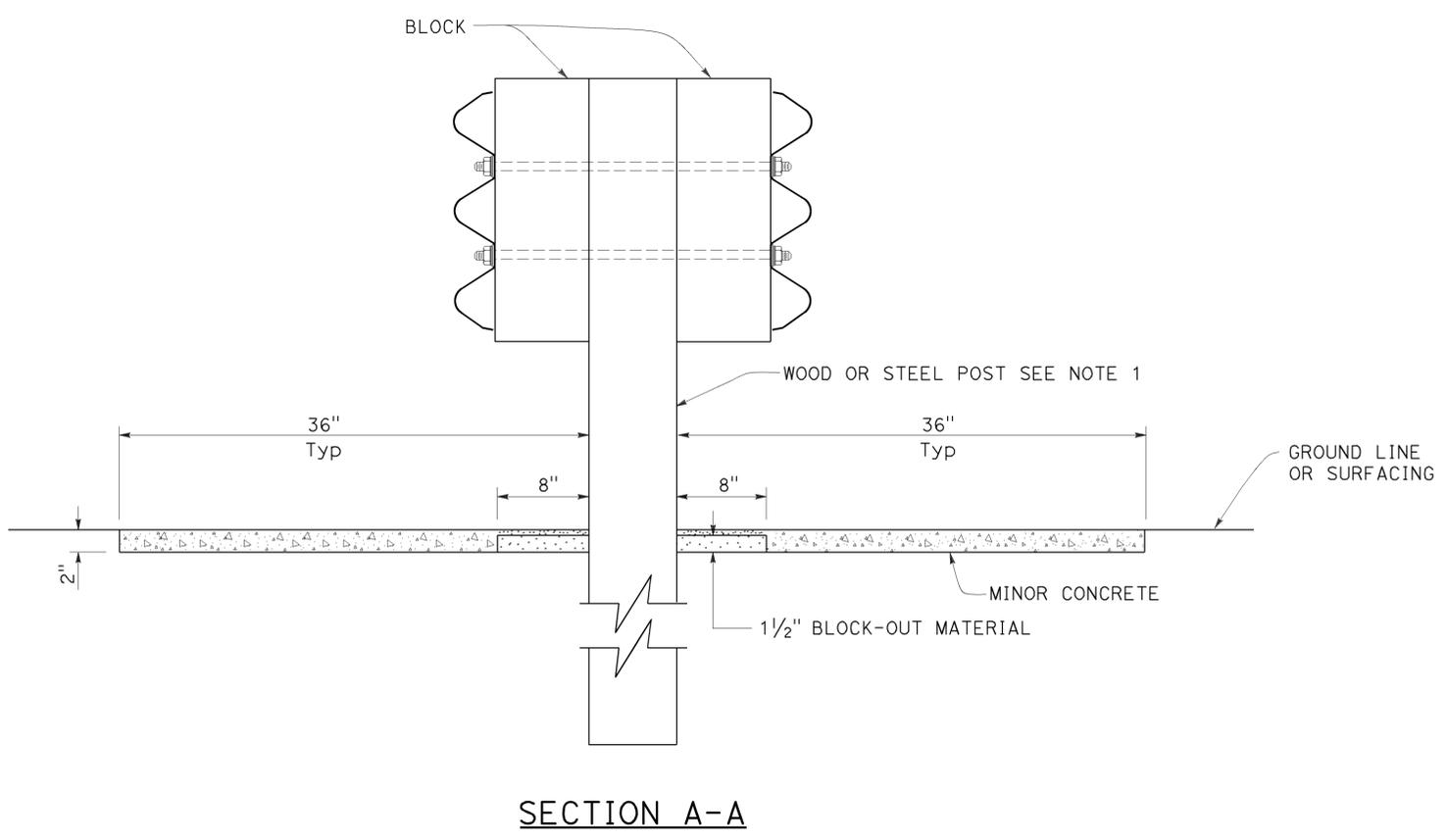
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 1-19-16



NOTES:

1. For wood and steel post sizes, see Standard Plan A78C2.
2. For details not shown, see Standard Plans A78A and A78B.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP A78C4 DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN A78C4
DATED MAY 20, 2011 - PAGE 94 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A78C4

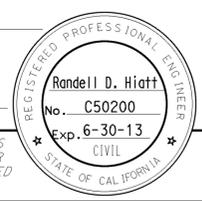
2010 REVISED STANDARD PLAN RSP A78C4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	39	62

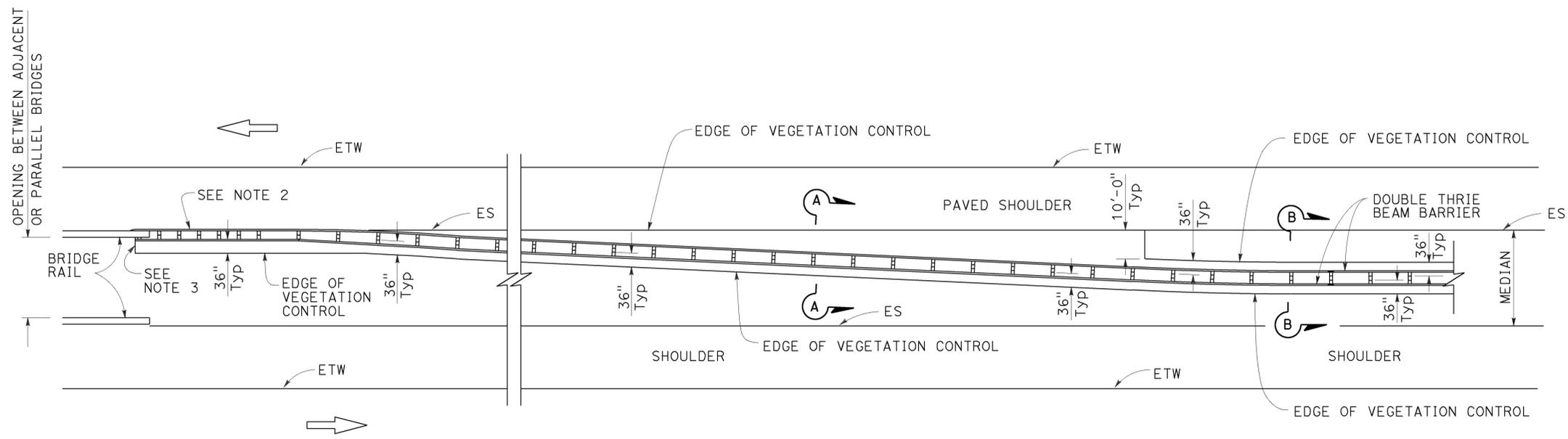
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

October 19, 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.



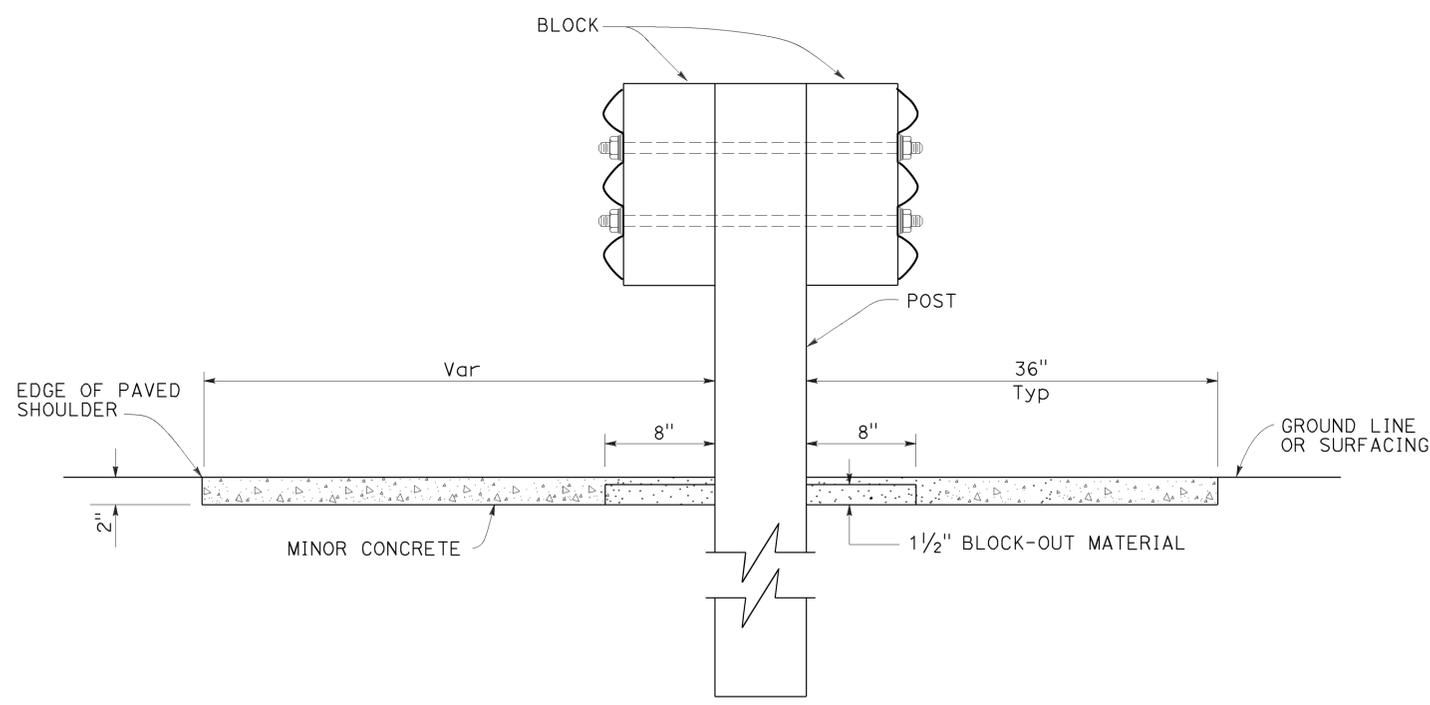
TO ACCOMPANY PLANS DATED 1-19-16



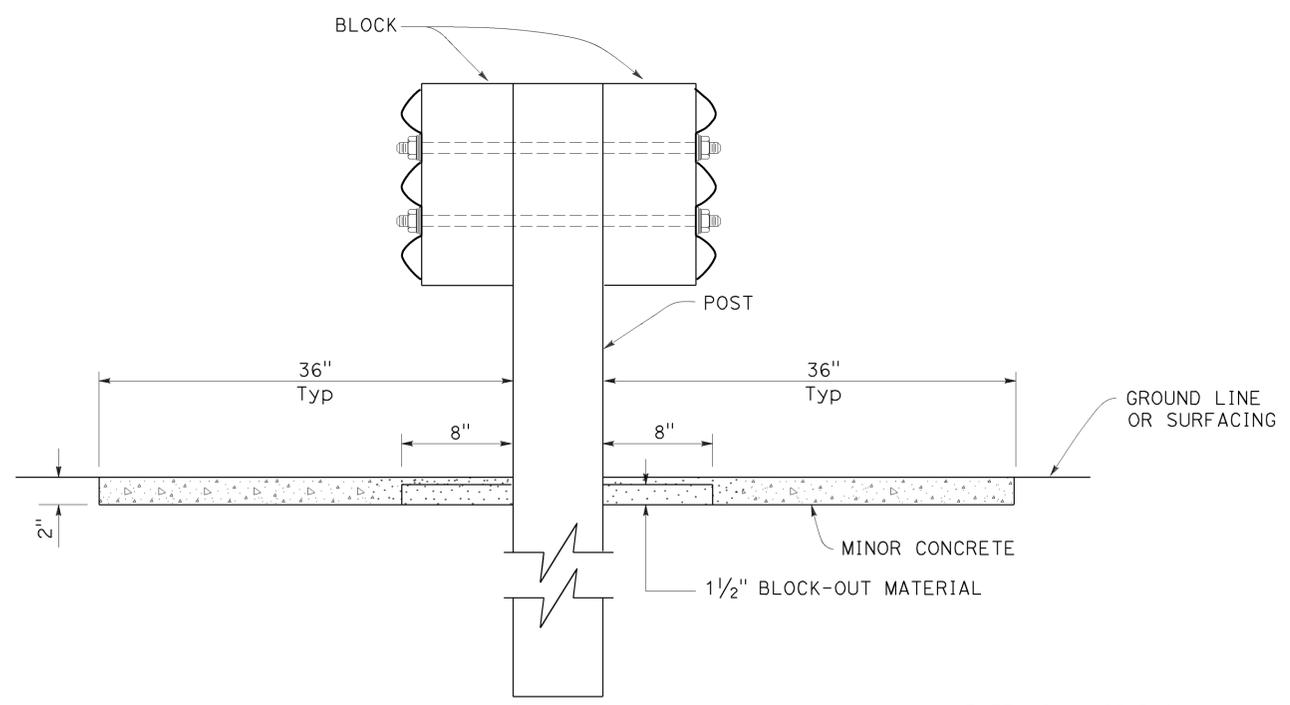
PLAN

NOTES:

1. See Revised Standard Plan RSP A78C4 for additional vegetation control details.
2. Where dike is constructed under barrier, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.
3. End vegetation control at end of backside rail element attached to bridge railing.



SECTION A-A



SECTION B-B

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**THRIE BEAM BARRIER
TYPICAL VEGETATION CONTROL
AT STRUCTURE APPROACH**

NO SCALE

RSP A78C6 DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN A78C6
DATED MAY 20, 2011 - PAGE 96 OF THE STANDARD PLANS BOOK DATED 2010.

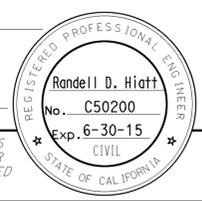
2010 REVISED STANDARD PLAN RSP A78C6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	40	62

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

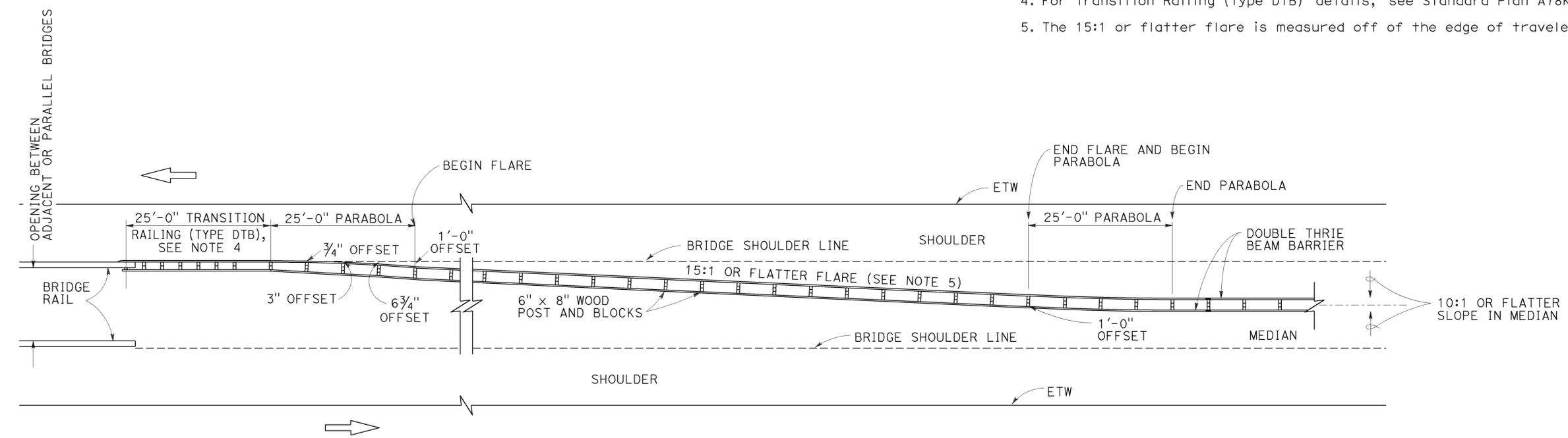
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



TO ACCOMPANY PLANS DATED 1-19-16

NOTES:

1. Line post, blocks and hardware to be used are shown on Standard Plans A78A, A78B and A78C1 and Revised Standard Plan RSP A78C2.
2. Post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-10" wood blocks. (W6 x 8.5 or W6 x 9) steel posts, 6'-8" in length, with 6" x 8" x 1'-10" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-10" wood blocks where applicable and when specified.
4. For Transition Railing (Type DTB) details, see Standard Plan A78K.
5. The 15:1 or flatter flare is measured off of the edge of traveled way.



TYPE 25A CONNECTION LAYOUT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**THRIE BEAM BARRIER
TYPICAL LAYOUT
FOR CONNECTION TO
BRIDGE RAILING**

NO SCALE

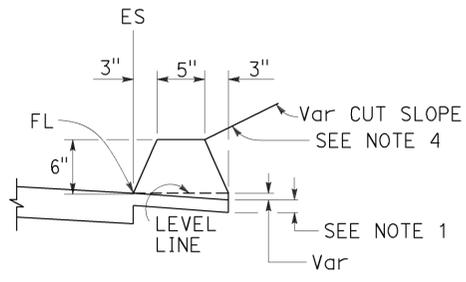
RSP A78H DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A78H DATED MAY 20, 2011 - PAGE 105 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A78H

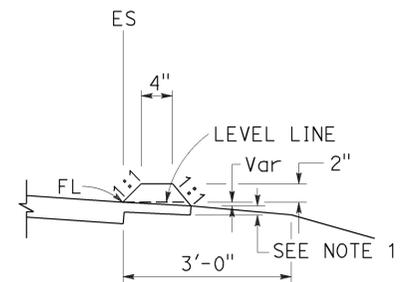
2010 REVISED STANDARD PLAN RSP A78H



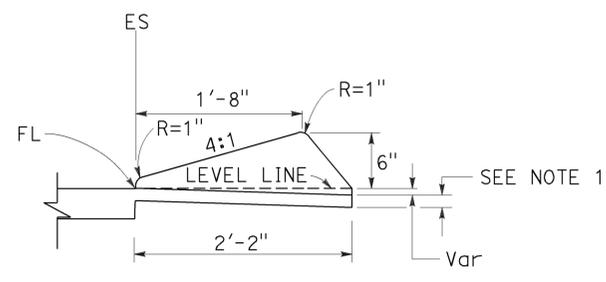
TO ACCOMPANY PLANS DATED 1-19-16



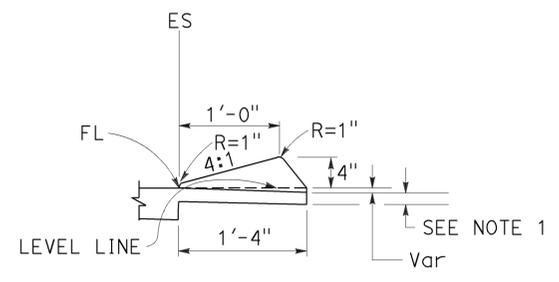
TYPE A
See Note 3



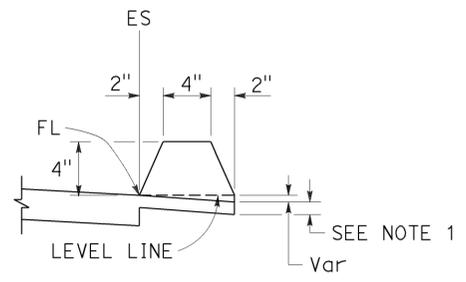
TYPE C



TYPE D

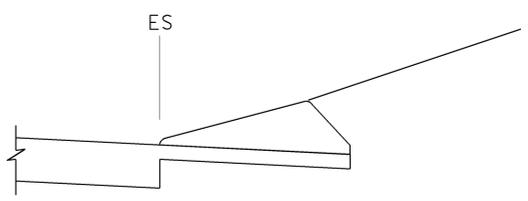


TYPE E

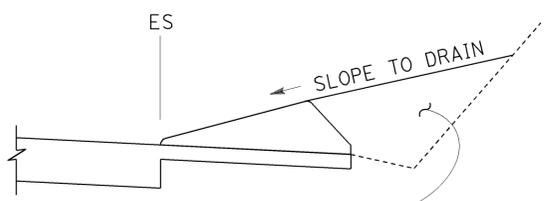


TYPE F
See Note 5

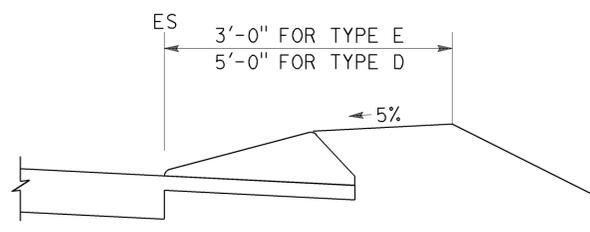
DIKES



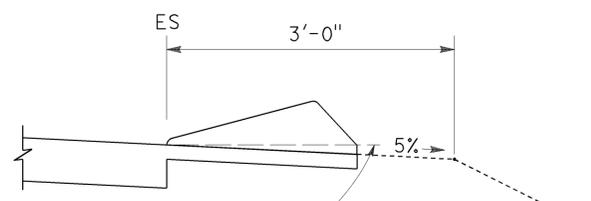
CASE C-1
Cut Slope



CASE C-2
Cut Slope



CASE F



CASE R
See Note 2

TYPE D AND E BACKFILL DETAILS

NOTES:

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

DIKE QUANTITIES

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

Quantities based on 5% cross slope.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

HOT MIX ASPHALT DIKES

NO SCALE

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

REVISED STANDARD PLAN RSP A87B

2010 REVISED STANDARD PLAN RSP A87B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	42	62

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT

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 1-19-16

2010 REVISED STANDARD PLAN RSP H1

A

AB AGGREGATE BASE
 ABS ACRYLONITRILE-BUTADIENE-STYRENE
 AC ASPHALT CONCRETE
 ACC ARMOR-CLAD CONDUCTORS
 Adj ADJACENT/ADJUSTABLE
 AIC AUXILIARY IRRIGATION CONTROLLER
 Alt ALTERNATIVE
 AMEND AMENDMENT
 ARV AIR RELEASE VALVE
 AUTO AUTOMATIC
 AUX AUXILIARY
 AVB ATMOSPHERIC VACUUM BREAKER

B

B&B BALLED AND BURLAPPED
 B/B BRASS/BRONZE
 B/B/PL BRASS/BRONZE/PLASTIC
 B/PL BRASS/PLASTIC
 BFM BONDED FIBER MATRIX
 Bit Ctd BITUMINOUS COATED
 BP BOOSTER PUMP
 BPA BACKFLOW PREVENTER ASSEMBLY
 BPE BACKFLOW PREVENTER ENCLOSURE
 BV BALL VALVE

C

C CONDUIT
 CAP CORRUGATED ALUMINUM PIPE
 CARV COMBINATION AIR RELEASE VALVE
 CB COUPLING BAND
 CCA CAM COUPLER ASSEMBLY
 CEC CONTROLLER ENCLOSURE CABINET
 CHDPE CORRUGATED HIGH DENSITY POLYETHYLENE
 CL CHAIN LINK
 CNC CONTROL AND NEUTRAL CONDUCTORS
 Conc CONCRETE
 CP COPPER PIPE
 CS COMPOST SOCK
 CSP CORRUGATED STEEL PIPE
 CST CENTER STRIP
 CV CHECK VALVE

D

Dia DIAMETER
 DIP DUCTILE IRON PIPE
 DIT DRIP IRRIGATION TUBING
 DG DECOMPOSED GRANITE
 DN DIAMETER NOMINAL
 DVA DRIP VALVE ASSEMBLY

E

EC EROSION CONTROL
 ECTC EROSION CONTROL TECHNOLOGY COUNCIL
 ElecT ELECTRIC/ELECTRICAL
 Elev ELEVATION
 ELL ELBOW
 ENCL ENCLOSURE
 EP EDGE OF PAVEMENT
 ES EDGE OF SHOULDER
 EST END STRIP
 ESTB ESTABLISHMENT
 ETW EDGE OF TRAVELED WAY

F

F FULL CIRCLE
 F/P FULL/PART CIRCLE
 FCV FLOW CONTROL VALVE
 FERT FERTILIZER
 FG FINISHED GRADE
 FH FLEXIBLE HOSE
 FIPT FEMALE IRON PIPE THREAD
 FIS FERTILIZER INJECTOR SYSTEM
 FL FLOW LINE
 FR FIBER ROLL
 FS FLOW SENSOR
 FSC FLOW SENSOR CABLE
 FV FLUSH VALVE

G

Galv GALVANIZED
 GARV GARDEN VALVE
 GARVA GARDEN VALVE ASSEMBLY
 GM GRAVEL MULCH
 GPH GALLONS PER HOUR
 GPM GALLONS PER MINUTE
 GSP GALVANIZED STEEL PIPE
 GV GATE VALVE

H

H HALF CIRCLE
 HDPE HIGH DENSITY POLYETHYLENE
 HP HORSEPOWER/HINGE POINT
 HPL HIGH PRESSURE LINE
 Hwy HIGHWAY

I

IC IRRIGATION CONTROLLER
 ICC IRRIGATION CONTROLLER(S) IN CONTROLLER ENCLOSURE CABINET
 ID INSIDE DIAMETER
 IFS IRRIGATION FILTRATION SYSTEM
 IPS IRON PIPE SIZE
 IPT IRON PIPE THREAD
 Irr IRRIGATION

L

L LENGTH

M

Max MAXIMUM
 MBGR METAL BEAM GUARD RAILING
 MCV MANUAL CONTROL VALVE
 MIC MASTER IRRIGATION CONTROLLER
 Min MINIMUM
 MIPT MALE IRON PIPE THREAD
 Misc MISCELLANEOUS
 MtI MATERIAL
 MVP MAINTENANCE VEHICLE PULLOUT

N

NCN NO COMMON NAME
 NL NOZZLE LINE
 No. NUMBER
 NPT NATIONAL PIPE THREAD

O

O/C ON CENTER
 OD OUTSIDE DIAMETER
 OL OVERLAP

P

P PART CIRCLE
 PB PULL BOX
 PCC PORTLAND CEMENT CONCRETE
 PE POLYETHYLENE
 Pkt+ PACKET
 PL PLASTIC
 PLS PURE LIVE SEED
 PLT PLANT/PLANTING
 PLT ESTB PLANT ESTABLISHMENT
 PM POST MILE
 PR PRESSURE RATED
 PRLV PRESSURE RELIEF VALVE
 PRV PRESSURE REGULATING VALVE
 PVC POLYVINYL CHLORIDE
 Pvm+ PAVEMENT

Q

Q QUARTER CIRCLE
 QCV QUICK COUPLING VALVE

NOTE:
 For additional abbreviations, see Standard Plans A10A and A10B.

R

R RADIUS
 RCP REINFORCED CONCRETE PIPE
 RCV REMOTE CONTROL VALVE
 RCVM REMOTE CONTROL VALVE (MASTER)
 RCVMF REMOTE CONTROL VALVE (MASTER) W/FLOW SENSOR
 RCVP REMOTE CONTROL VALVE W/PRESSURE REGULATOR
 RCW RECYCLED WATER
 RECP ROLLED EROSION CONTROL PRODUCT
 REQ REQUIRED
 RICS REMOTE IRRIGATION CONTROL SYSTEM
 R/W RIGHT OF WAY

S

S SLIP
 SCH SCHEDULE
 SF STATE-FURNISHED
 Shld SHOULDER
 Sq SQUARE
 SST SIDE STRIP
 Sta STATION
 Std STANDARD
 SW SIDEWALK/SOUND WALL

T

T THIRD CIRCLE/THREAD
 TLS TRUCK LOADING STANDPIPE
 TQ THREE QUARTER CIRCLE
 TRM TURF REINFORCEMENT MAT
 TT TWO-THIRDS CIRCLE
 TWSA TREE WELL SPRINKLER ASSEMBLY
 Typ TYPICAL

U

UG UNDERGROUND

W

W WIDTH
 W/ WITH
 WM WATER METER
 WS WYE STRAINER
 WSA WYE STRAINER ASSEMBLY
 WSP WELDED STEEL PIPE
 WWM WELDED WIRE MESH

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
LANDSCAPE AND EROSION CONTROL ABBREVIATIONS
 NO SCALE

RSP H1 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H1 DATED MAY 20, 2011 - PAGE 218 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H1

TO ACCOMPANY PLANS DATED 1-19-16

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.

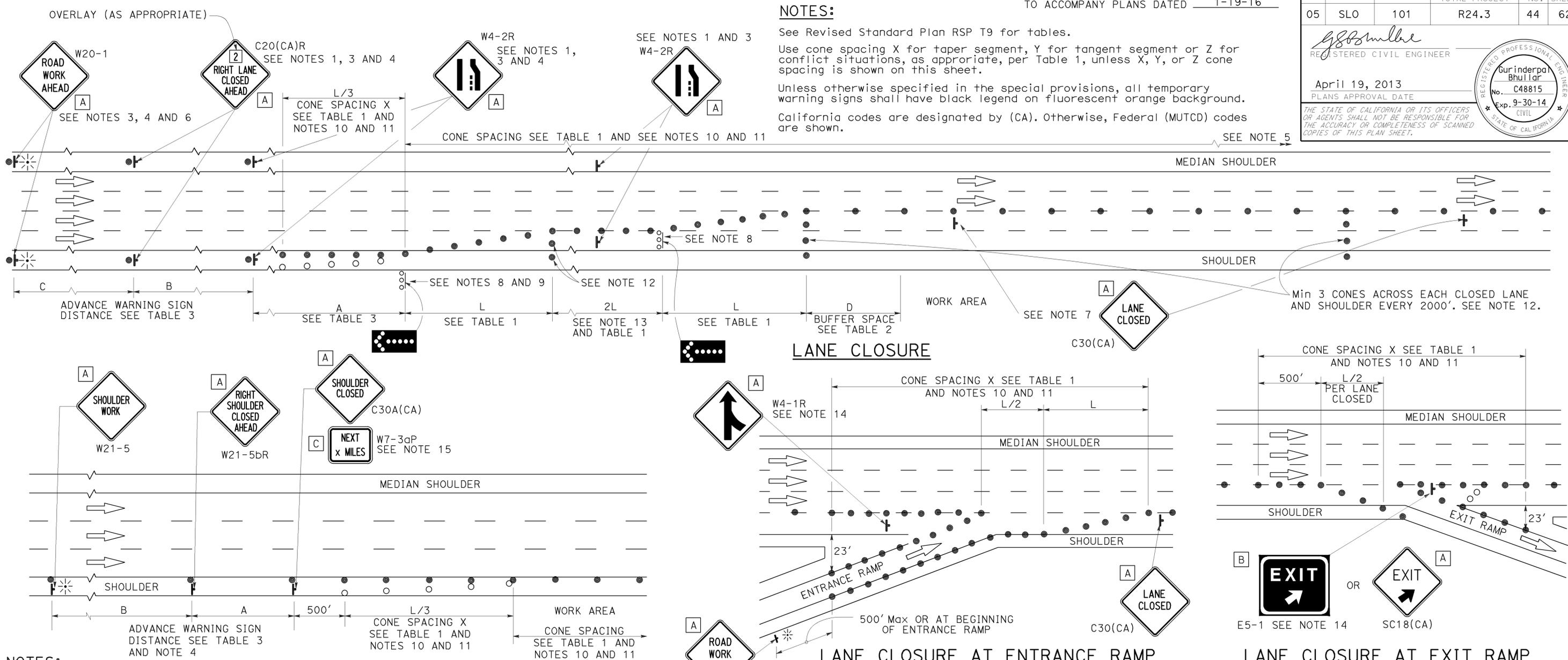
2010 REVISED STANDARD PLAN RSP T9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	44	62

REGISTERED CIVIL ENGINEER
 April 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.

2010 REVISED STANDARD PLAN RSP T10



- NOTES:**
1. Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
 2. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
 3. Duplicate sign installations are not required:
 - a) On opposite shoulder if at least one-half of the available lanes remain open to traffic.
 - b) In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
 4. Each advance warning sign on each side of the roadway 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.
 5. A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.

- SHOULDER CLOSURE**
6. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a C20(CA)L and W4-2L signs shall be used.
 7. Place a C30(CA) sign every 2000' throughout length of lane closure.
 8. One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
 9. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
 10. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
 11. Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.

12. Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
13. Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
14. Unless otherwise specified in the special provisions, the E5-1 or SC18(CA) and W4-1 signs shall be used as shown.
15. A W7-3aP "NEXT _____ MILES" plaque must be used if the shoulder closure extends beyond the distance that can be perceived by road users.

LEGEND

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- ▬ TEMPORARY TRAFFIC CONTROL SIGN
- [] FLASHING ARROW SIGN (FAS)
- [] FAS SUPPORT OR TRAILER
- * PORTABLE FLASHING BEACON

SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 72" x 60"
- C 36" x 30"

TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON FREEWAYS AND EXPRESSWAYS

NO SCALE

RSP T10 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10 DATED MAY 20, 2011 - PAGE 237 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	45	62

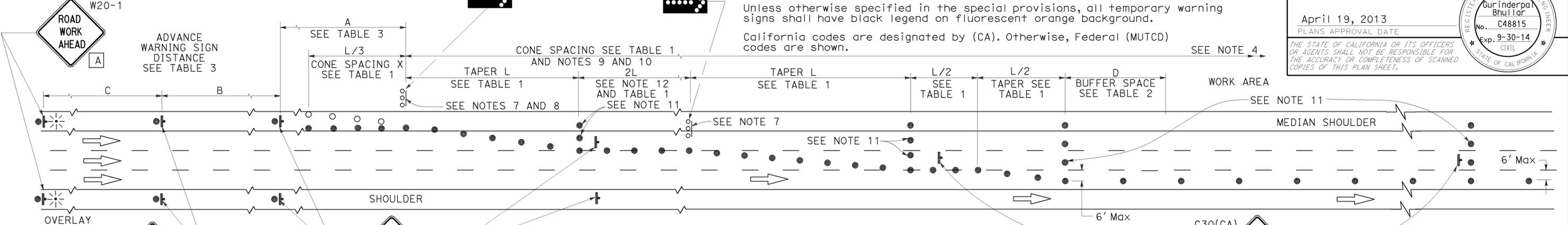
REGISTERED CIVIL ENGINEER
 Gurinderpal Bhullar
 No. C48815
 Exp. 9-30-14
 STATE OF CALIFORNIA

April 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.

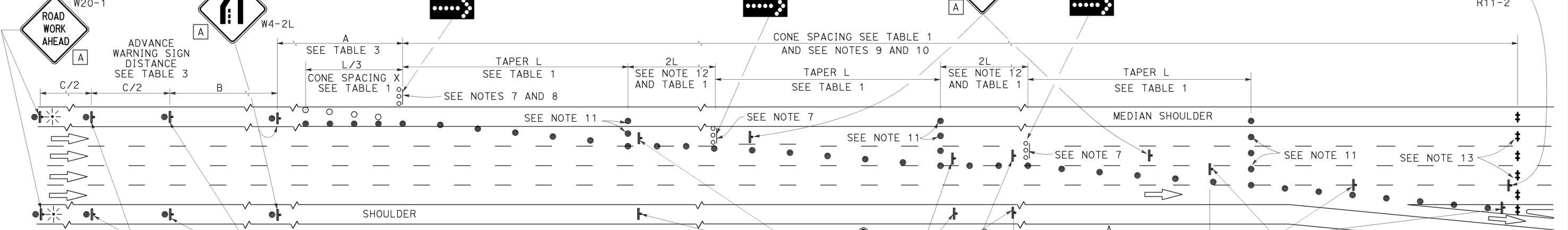
NOTES: See Revised Standard Plan RSP T9 for tables.
 Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.
 Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.
 California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

SEE NOTES 3 AND 5



LANE CLOSURE WITH PARTIAL SHOULDER USE

SEE NOTES 3 AND 5



COMPLETE CLOSURE

NOTES:

- Lane closures on the right side using partial median shoulder as a traffic lane shall conform to the details as shown except that C20(CA)R and W4-2R signs shall be used.
- At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
- Each advance warning sign on each side of the roadway 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, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure 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 C20(CA) sign for the first advance warning sign.
- Place a C30(CA) sign every 2000' throughout length of lane closure.
- One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
- A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.
- 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.
- Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure With Partial Shoulder Use" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.

- Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
- A minimum of Two Type II or III barricades shall be placed across each closed lane and shoulder at the location shown and every 2000' within the complete closure area. Within the complete closure area, the transverse alignment of the barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
- When specified in the special provisions, a W20-2 "DETOUR AHEAD" sign is to be used in place of the W20-3 "FREEWAY CLOSED AHEAD" sign.

SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 48" x 18"
- C 48" x 30"

LEGEND

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- † TEMPORARY TRAFFIC CONTROL SIGN
- FLASHING ARROW SIGN (FAS)
- FAS SUPPORT OR TRAILER
- ⊛ PORTABLE FLASHING BEACON

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
 FOR LANE CLOSURES ON
 FREEWAYS AND EXPRESSWAYS**
 NO SCALE

RSP T10A DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10A DATED MAY 20, 2011 - PAGE 238 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T10A

2010 REVISED STANDARD PLAN RSP T10A

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.

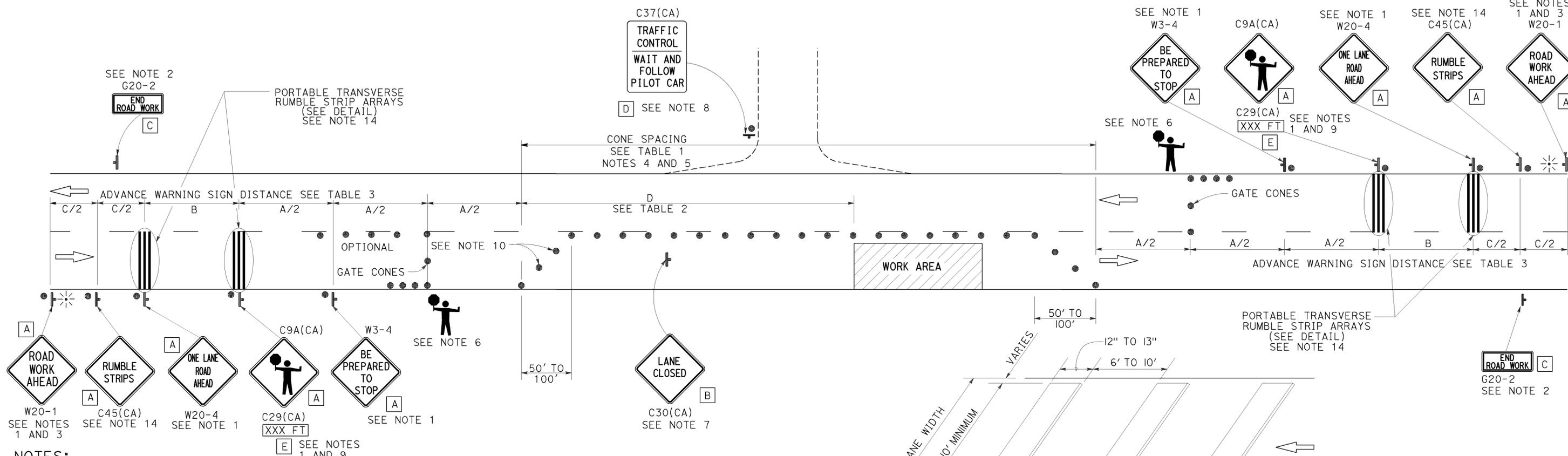
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	46	62

Devinder Singh
 REGISTERED CIVIL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 Devinder Singh
 No. C50470
 Exp. 6-30-17
 CIVIL
 STATE OF CALIFORNIA

TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL

TO ACCOMPANY PLANS DATED 1-19-16



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

PORTABLE TRANSVERSE RUMBLE STRIP ARRAY DETAIL

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 30, 2015 SUPERSEDES
 RSP T13 DATED OCTOBER 17, 2014, 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

2010 REVISED STANDARD PLAN RSP T13

TYPICAL RAMP CLOSURES

SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 48" x 30"
- C 36" x 36"
- D 48" x 36"

LEGEND

- TRAFFIC CONE
- † TEMPORARY TRAFFIC CONTROL SIGN
- ‡ BARRICADES
- ⚡ PORTABLE FLASHING BEACON

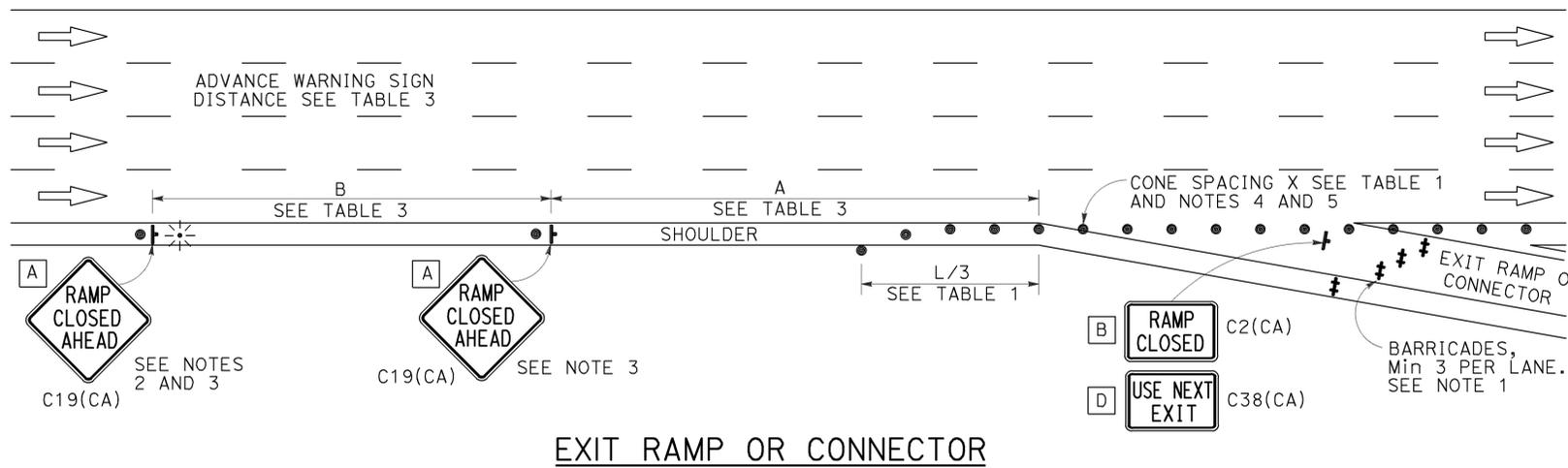
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	47	62

Gurinderpal Bhullar
 REGISTERED CIVIL ENGINEER
 April 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.

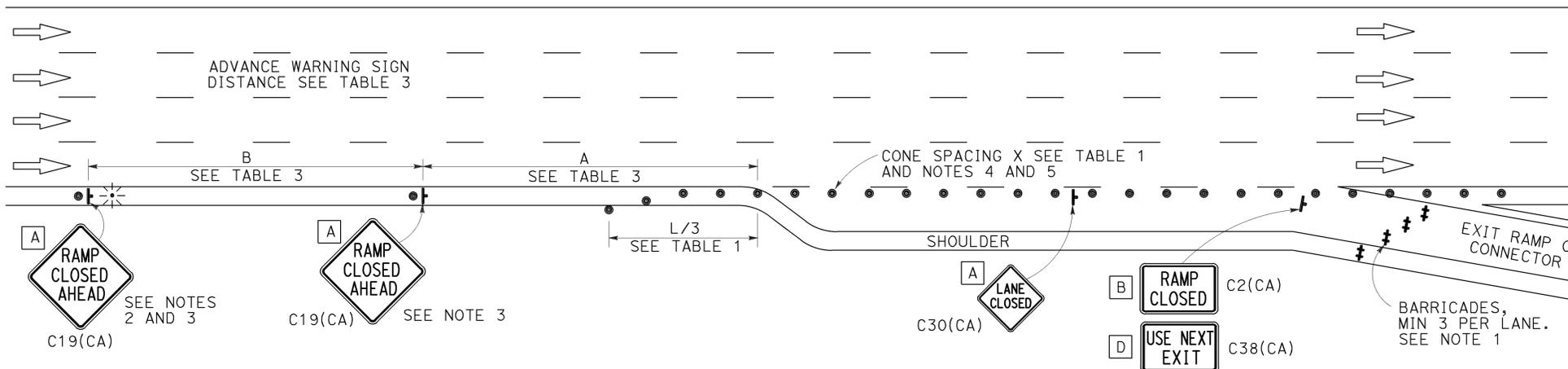
TO ACCOMPANY PLANS DATED 1-19-16

NOTES:

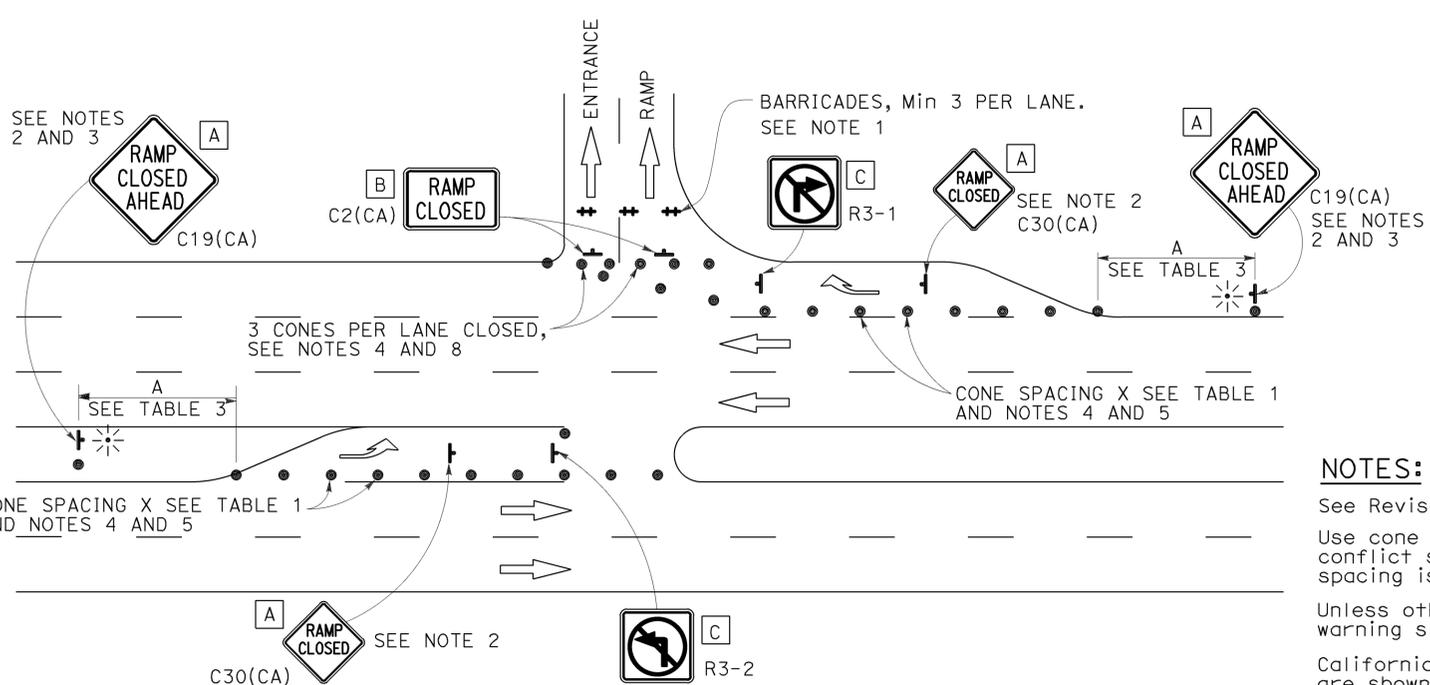
- Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
- In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed by the Engineer, on all guide signs that refer to the closed ramp. The letter size on the overlay shall be the same as the guide sign.
- Each advance C19(CA) "RAMP CLOSED AHEAD" sign 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. A flashing beacon shall be placed on top of the first C19(CA) sign during hours of darkness.
- All cones used for ramp 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 ramp closures only.
- At least one person shall be assigned to provide full time maintenance of traffic control devices, unless otherwise directed by the Engineer.
- The existing "EXIT" signs shall be covered during ramp closures.
- A minimum of 3 cones shall be placed transversely across each closed lane and shoulder.



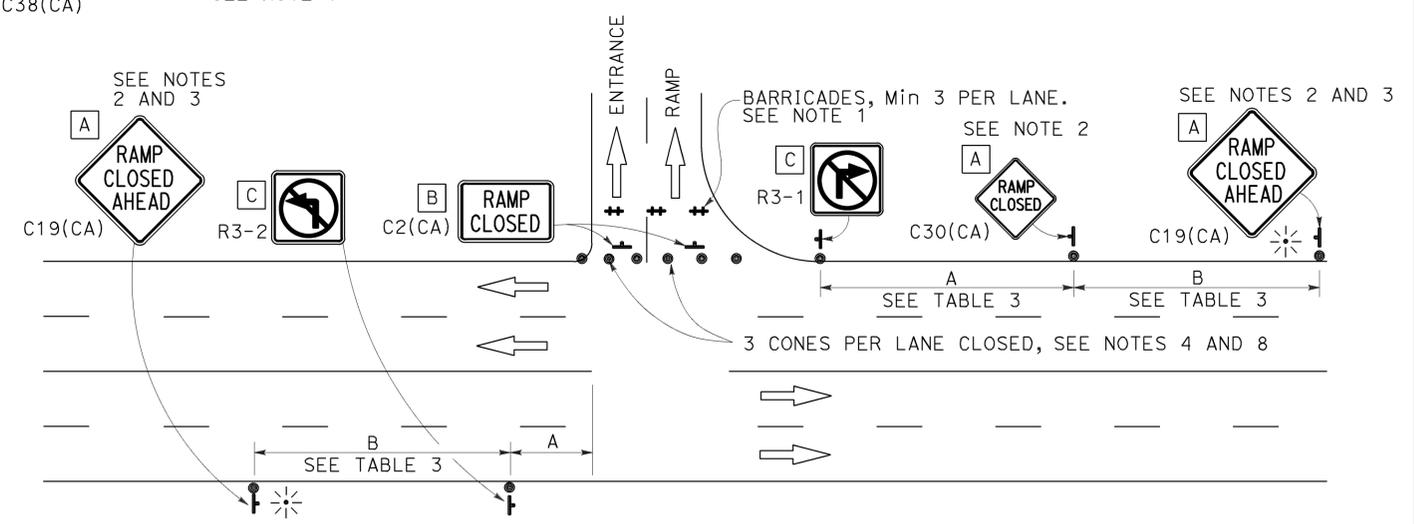
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

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.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
 FOR RAMP CLOSURE**
 NO SCALE

RSP T14 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T14
 DATED MAY 20, 2011 - PAGE 242 OF THE STANDARD PLANS BOOK DATED 2010.

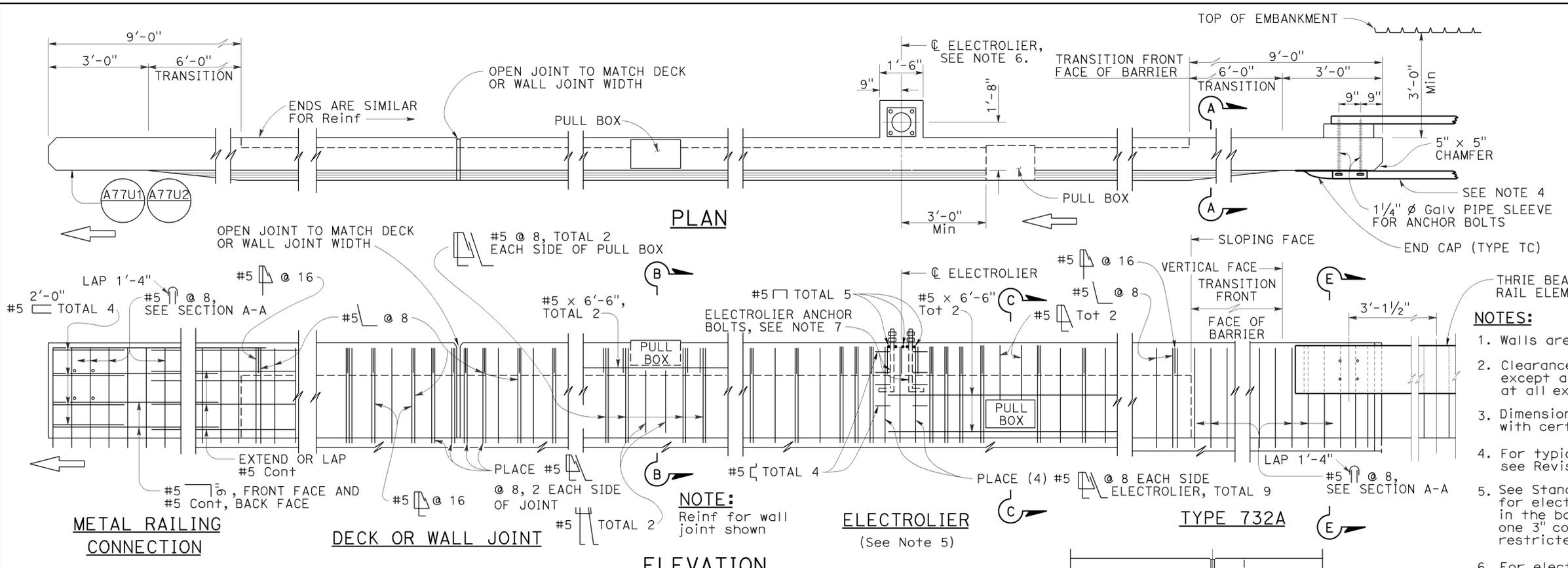
REVISED STANDARD PLAN RSP T14

2010 REVISED STANDARD PLAN RSP T14

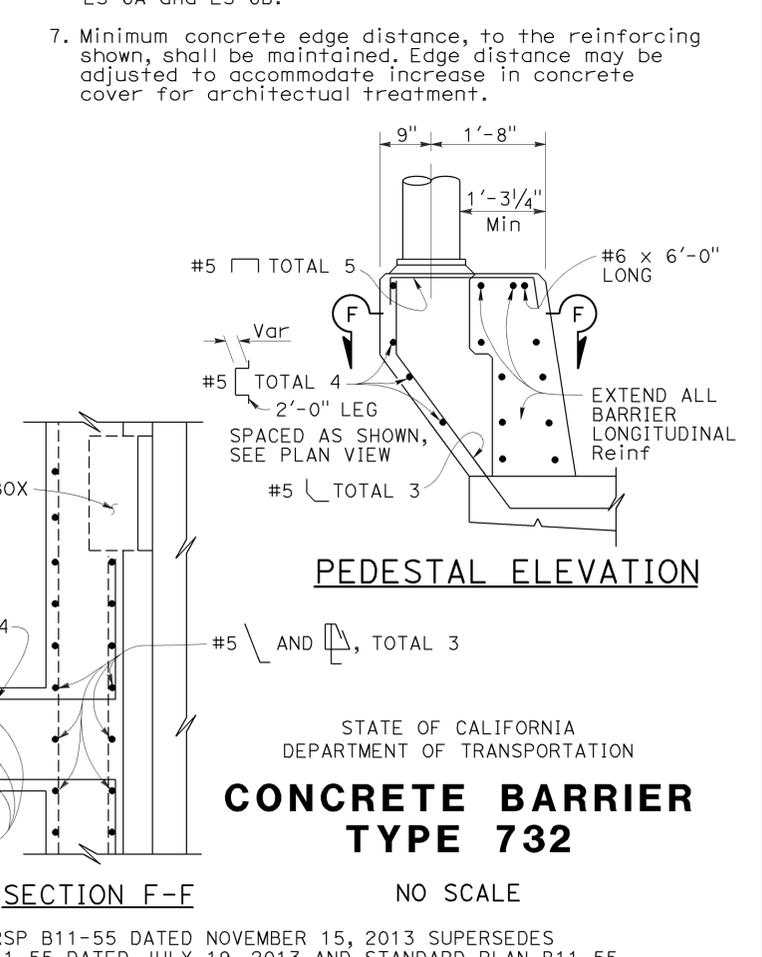
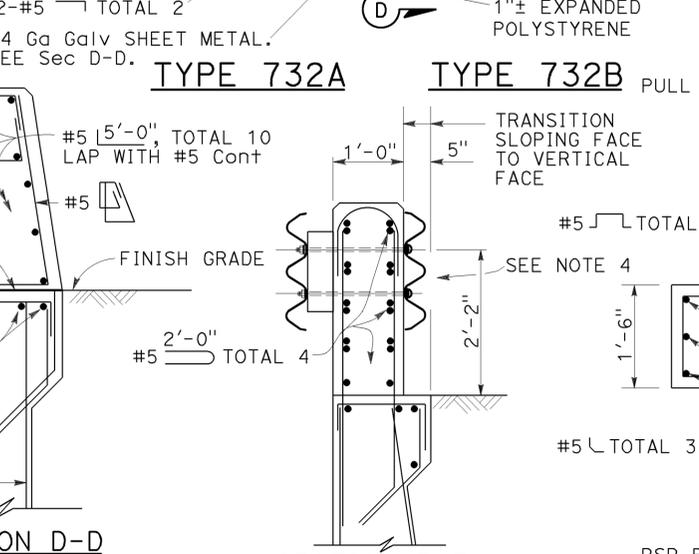
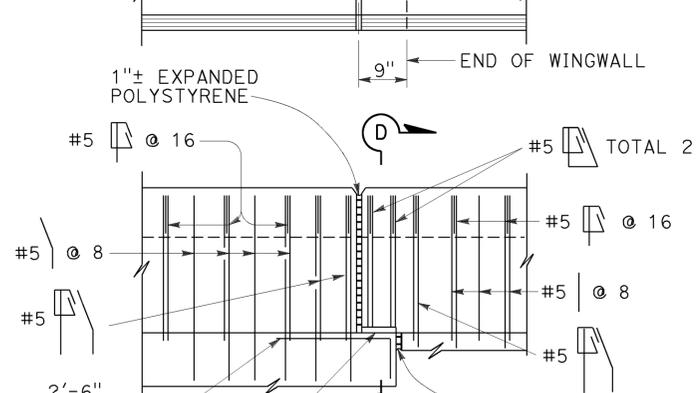
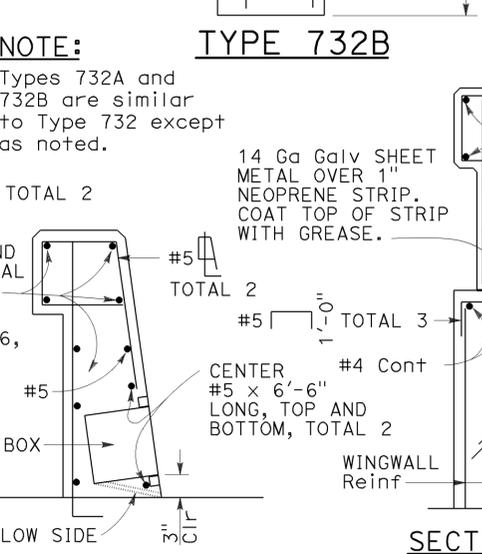
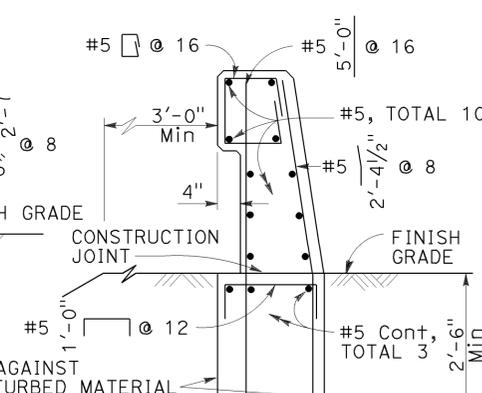
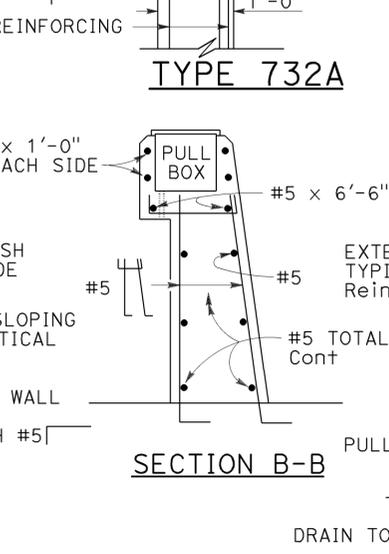
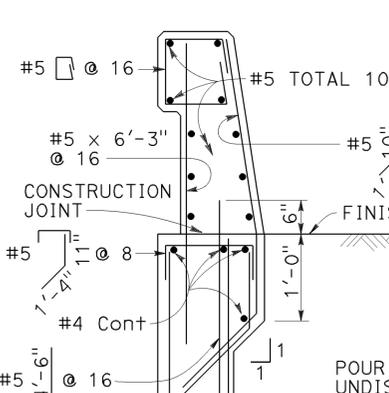
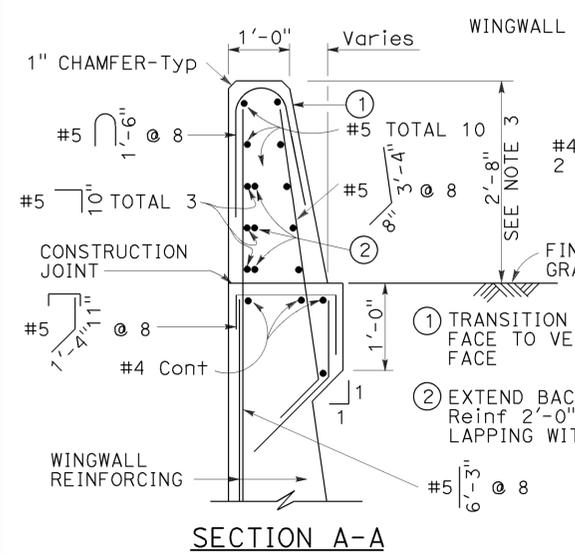
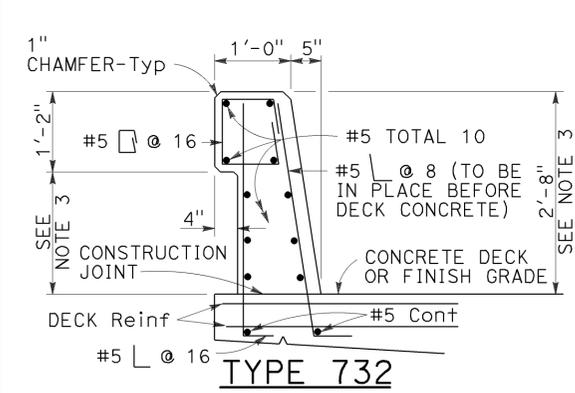
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	48	62

REGISTERED CIVIL ENGINEER
 November 15, 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 1-19-16

REGISTERED PROFESSIONAL ENGINEER
 Tillet Satter
 No. C42892
 Exp. 3-31-14
 CIVIL
 STATE OF CALIFORNIA



- NOTES:**
- Walls are to be backfilled before barrier is placed.
 - Clearance to reinforcing steel in barrier to be 1", except as noted. Longitudinal reinforcement to stop at all expansion joints.
 - Dimensions may vary with roadway cross slope and with certain thickness of surfacing. See Project Plans.
 - For typical metal railing connection details not shown, see Revised Standard Plans RSP A77U1 and RSP A77U2.
 - See Standard Plans ES-9A, ES-9B, ES-9C, ES-9D and ES-9E for electrical details. The maximum number of conduits in the barrier is limited to two 2" conduits along with one 3" conduit. When a 3" conduit is used, it is restricted to the base of the barrier.
 - For electrolier mounting details, See Standard Plans ES-6A and ES-6B.
 - Minimum concrete edge distance, to the reinforcing shown, shall be maintained. Edge distance may be adjusted to accommodate increase in concrete cover for architectural treatment.



Details shown for barrier anchorage to Type 732A. Anchorage for barrier Types 732 and 732A are similar to their respective details.

2010 REVISED STANDARD PLAN RSP B11-55

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

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	49	62

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

Theresa
Aziz Gabriel
No. E15129
Exp. 6-30-16
ELECTRICAL

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 1-19-16

SOFFIT AND WALL-MOUNTED LUMINAIRES

- PENDANT SOFFIT LUMINAIRE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- FLUSH-MOUNTED SOFFIT LUMINAIRE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- WALL-MOUNTED LUMINAIRE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- EXISTING SOFFIT OR WALL-MOUNTED LUMINAIRE TO REMAIN UNMODIFIED
- EXISTING SOFFIT OR WALL-MOUNTED LUMINAIRE TO BE MODIFIED AS SPECIFIED

NOTE:
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

SYMBOL	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 OCTOBER 30, 2015 SUPERSEDES RSP ES-1A DATED JULY 19, 2013 AND STANDARD PLAN ES-1A DATED MAY 20, 2011 - PAGE 425 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1A

MISCELLANEOUS ELECTROLIERS

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

NOTES:

- 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

2010 REVISED STANDARD PLAN RSP ES-1A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	50	62

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER
October 30, 2015
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 1-19-16

CONDUIT

SIGNAL EQUIPMENT

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

NEW	EXISTING	
		PEDESTRIAN SIGNAL 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)

SIGNAL EQUIPMENT Cont

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

SERVICE EQUIPMENT

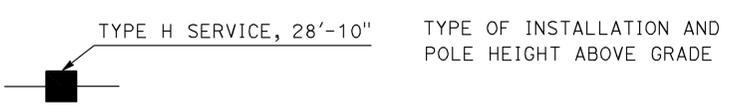
NEW	EXISTING	
---OH---	---oh---	OVERHEAD LINES
		WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
		SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
		TELEPHONE DEMARCATION CABINET

		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

NOTES:

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

POLE-MOUNTED SERVICE DESIGNATION



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

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 OCTOBER 30, 2015 SUPERSEDES RSP ES-1B DATED JULY 19, 2013 AND STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1B

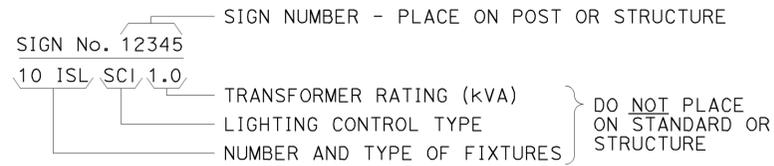
2010 REVISED STANDARD PLAN RSP ES-1B



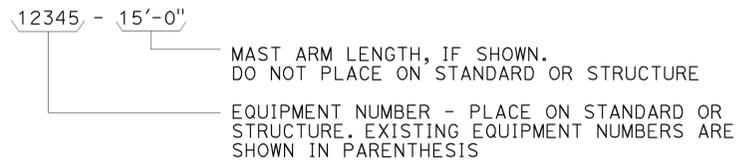
TO ACCOMPANY PLANS DATED 1-19-16

EQUIPMENT IDENTIFICATION

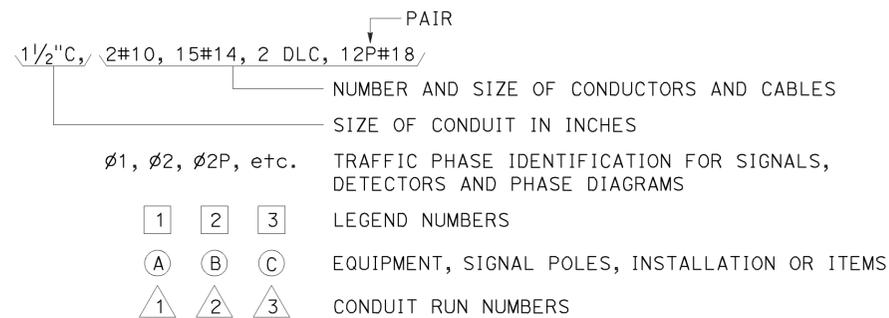
ILLUMINATED SIGN IDENTIFICATION NUMBER:



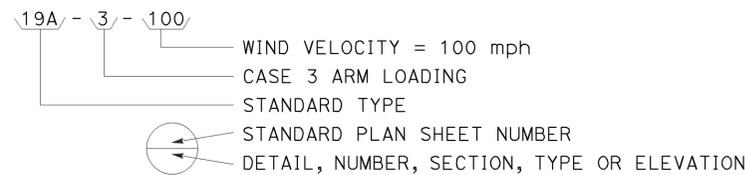
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



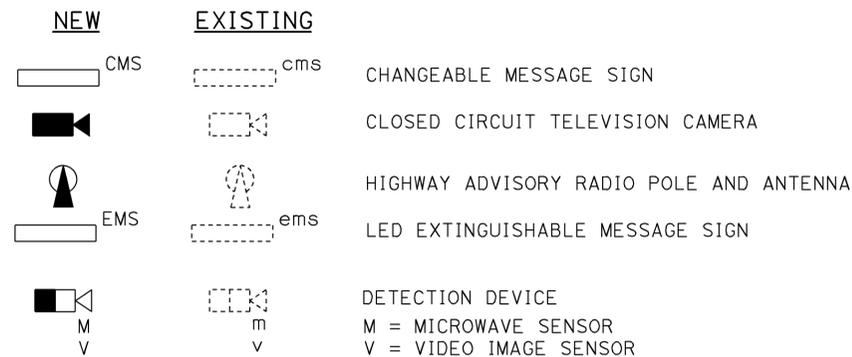
CONDUIT AND CONDUCTOR IDENTIFICATION:



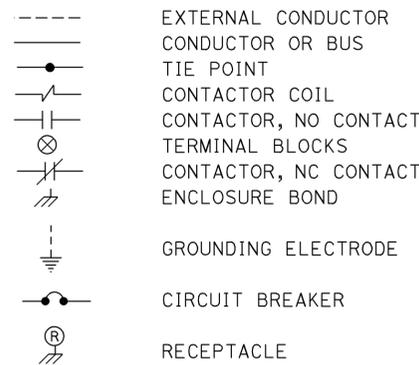
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



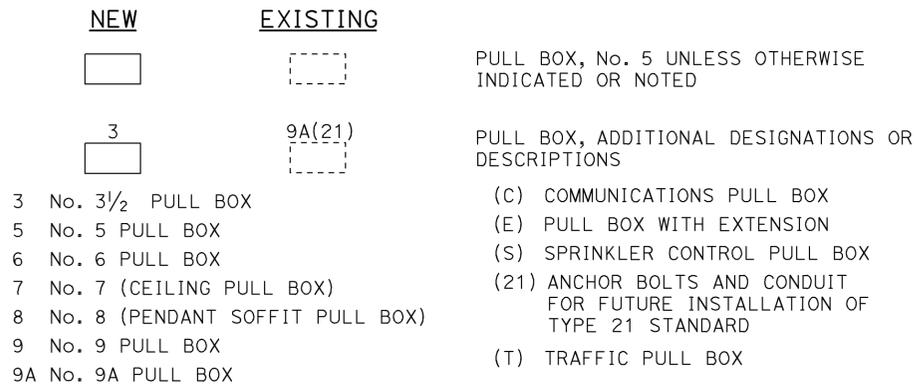
MISCELLANEOUS EQUIPMENT



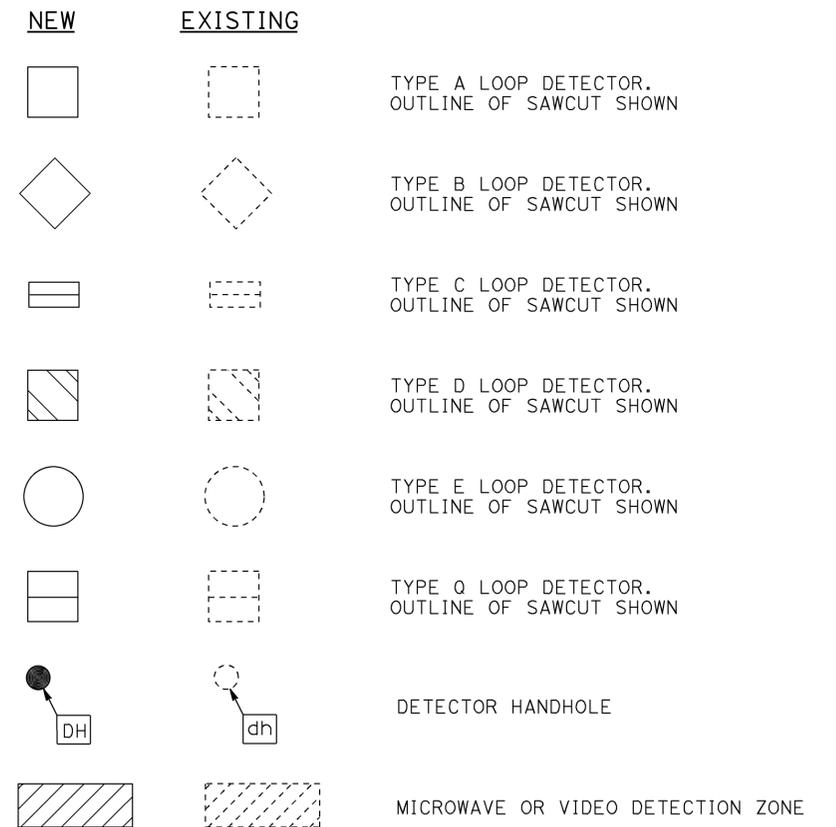
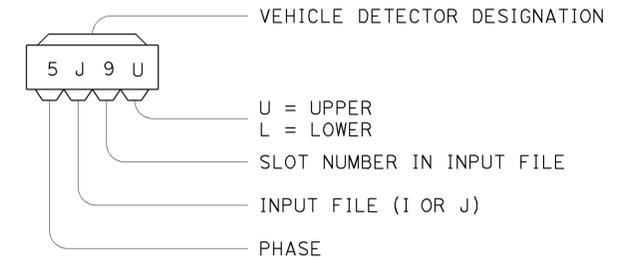
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-1C DATED JULY 19, 2013 AND STANDARD PLAN ES-1C DATED MAY 20, 2011 - PAGE 427 OF THE STANDARD PLANS BOOK DATED 2010.

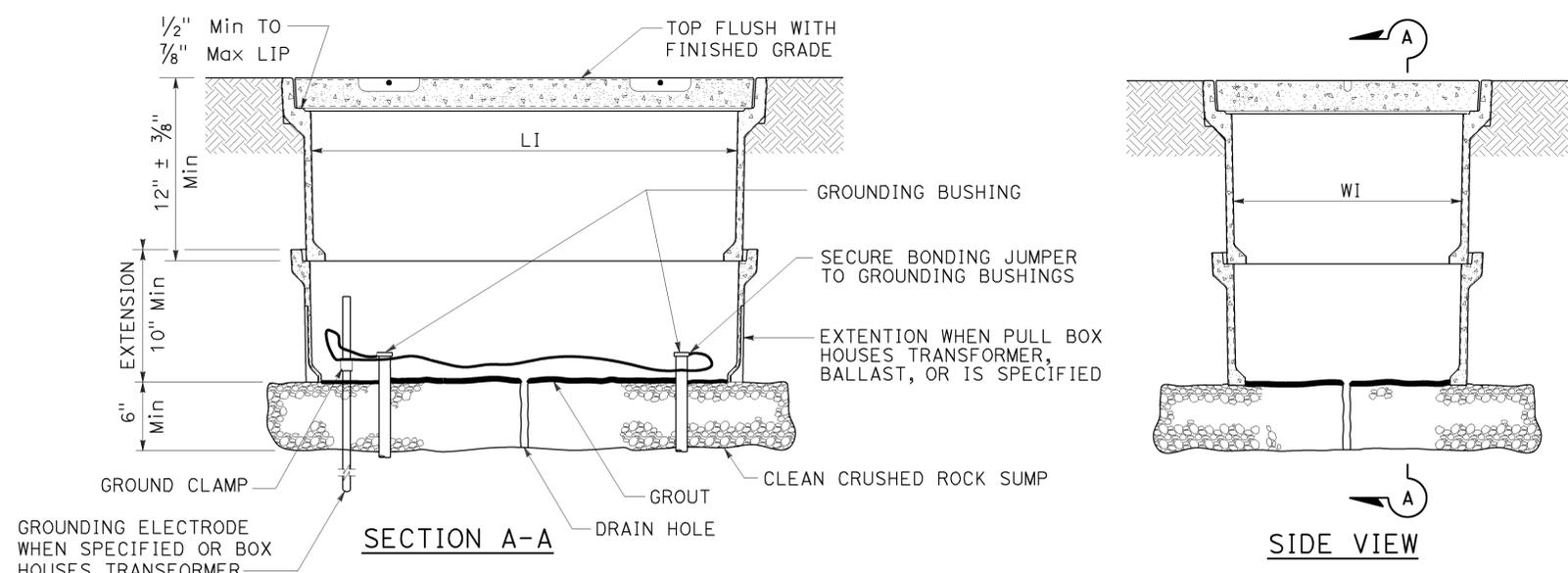
REVISED STANDARD PLAN RSP ES-1C

2010 REVISED STANDARD PLAN RSP ES-1C

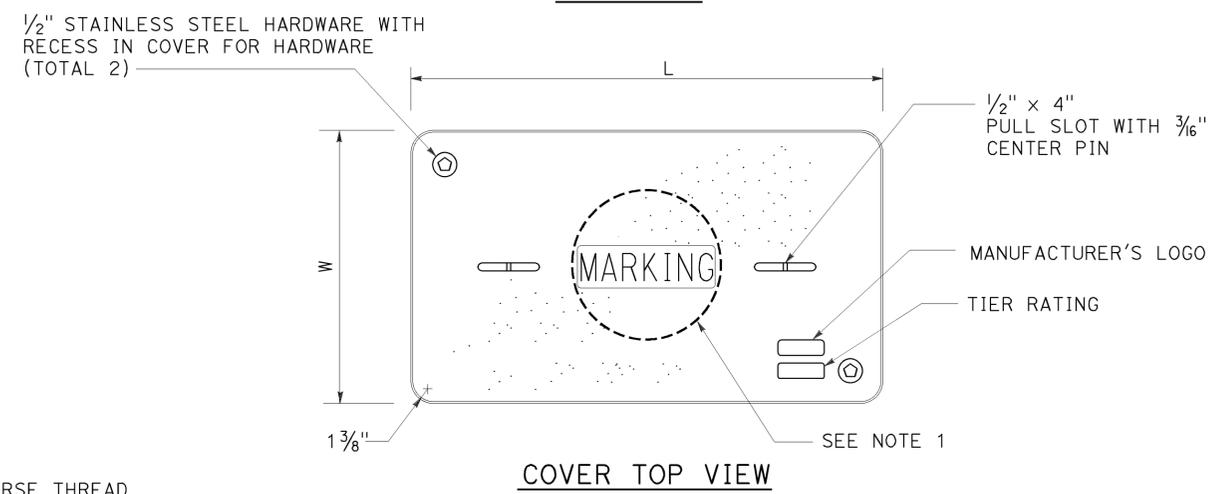
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	101	R24.3	52	62

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 October 30, 2015
 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.

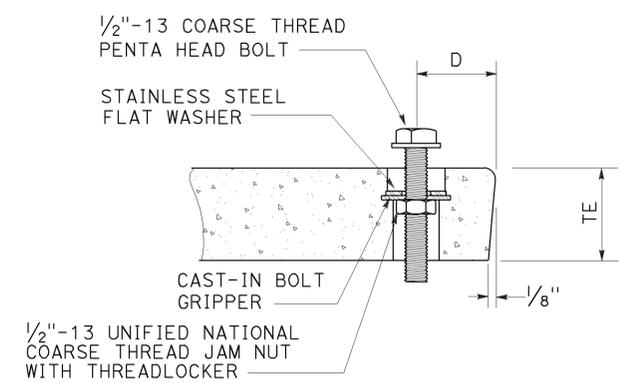
TO ACCOMPANY PLANS DATED 1-19-16



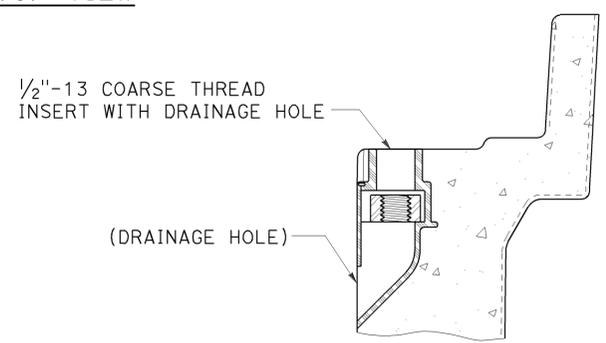
INSTALLATION DETAILS
DETAIL A



COVER TOP VIEW



TYPICAL COVER CAPTIVE BOLT
OR SIMILAR



TYPICAL THREADED INSERT
OR SIMILAR

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.
- 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	MINIMUM WEIGHT	LI Min	WI Min	TE	D	L	W	MINIMUM WEIGHT
No. 3 1/2	12"	N/A	40 lb	1' - 3"	9"	1 3/4"	1 3/4"	1'-3 1/4" - 1'-3 3/8"	10" - 10 1/8"	30 lb
No. 5	12"	10"	55 lb	1' - 8"	11"	2"	1 3/4"	1'-11 1/4"	1'-1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 4 1/4"	1' - 3 1/4"	2"	2"	2'-6 1/2"	1'-5 1/2"	85 lb

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

RSP ES-8A DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-8A DATED JULY 19, 2013 AND RSP ES-8A DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-8A

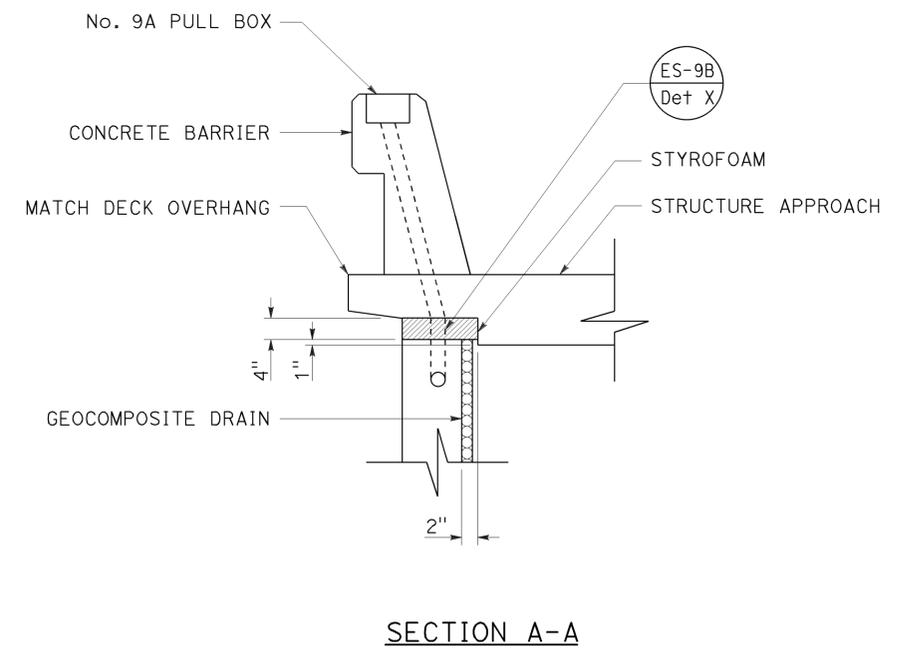
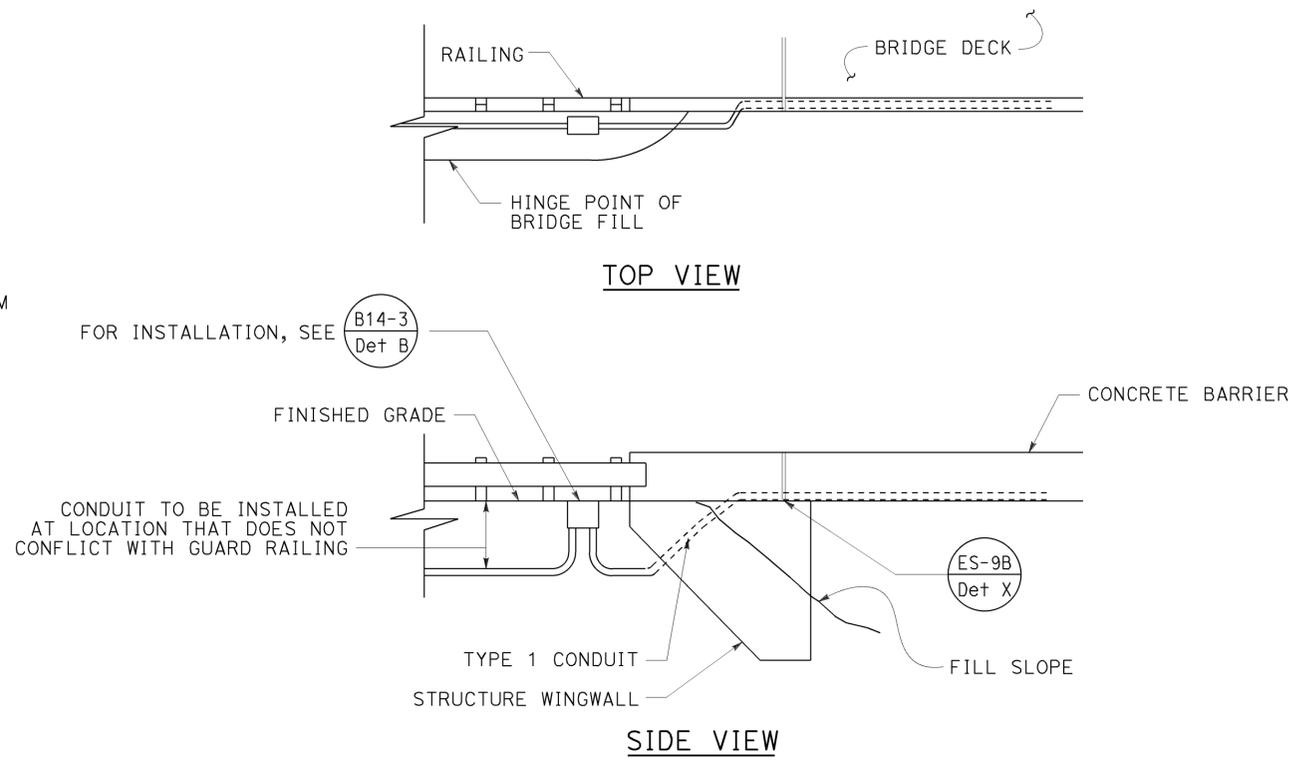
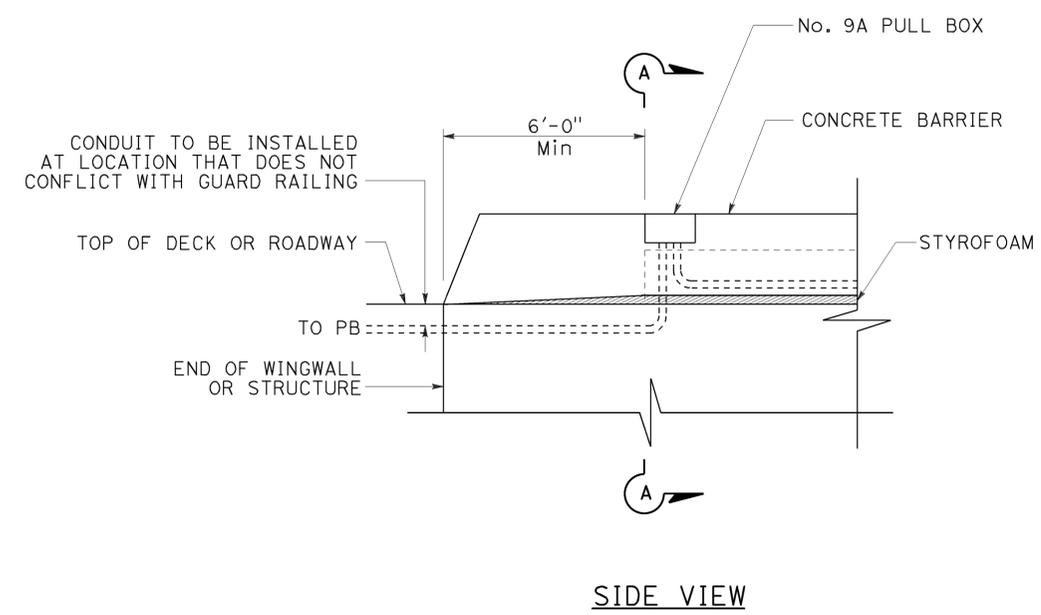
2010 REVISED STANDARD PLAN RSP ES-8A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	53	62

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 Theresa Aziz Gabriel
 No. E15129
 Exp. 6-30-16
 ELECTRICAL
 STATE OF CALIFORNIA

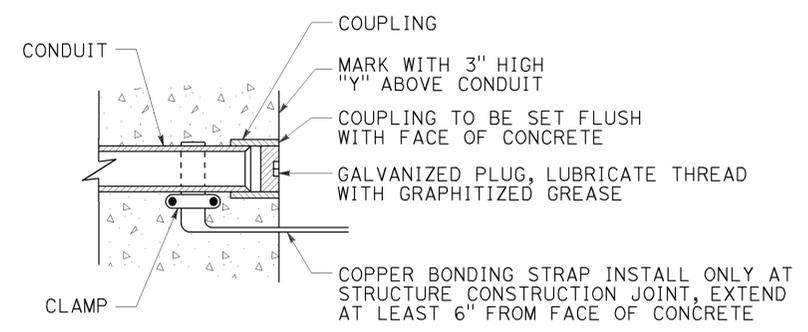
October 30, 2015
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 1-19-16



**CONDUIT TERMINATION
DETAIL A**

**CONDUIT TERMINATION
DETAIL I**



**CONDUIT TERMINATION
DETAIL C**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(STRUCTURE PULL BOX
INSTALLATIONS)**

NO SCALE

RSP ES-9A DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-9A DATED MAY 20, 2011 - PAGE 481 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-9A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	54	62

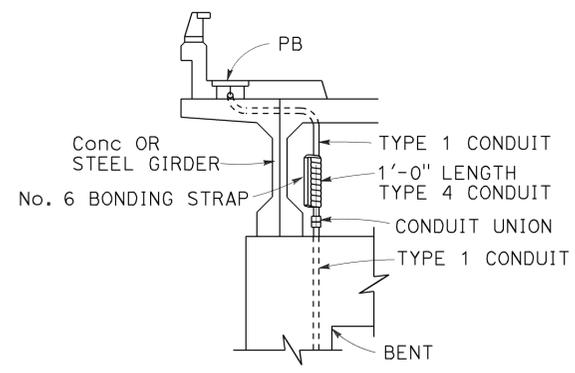
Jagwinder & Co
REGISTERED ELECTRICAL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

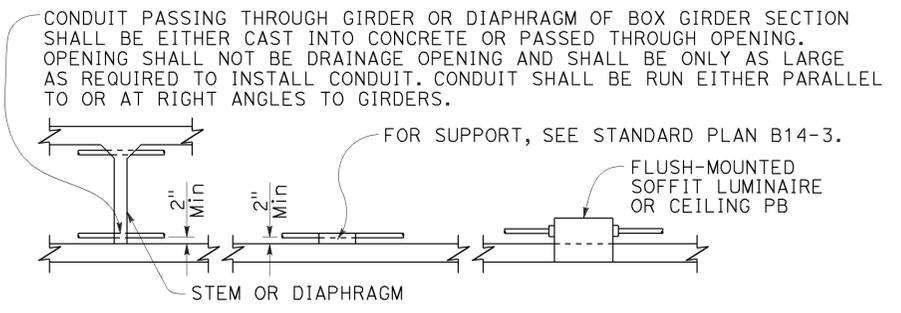
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
Jagwinder S. Gill
No. E18551
Exp. 12-31-16
ELECTRICAL
STATE OF CALIFORNIA

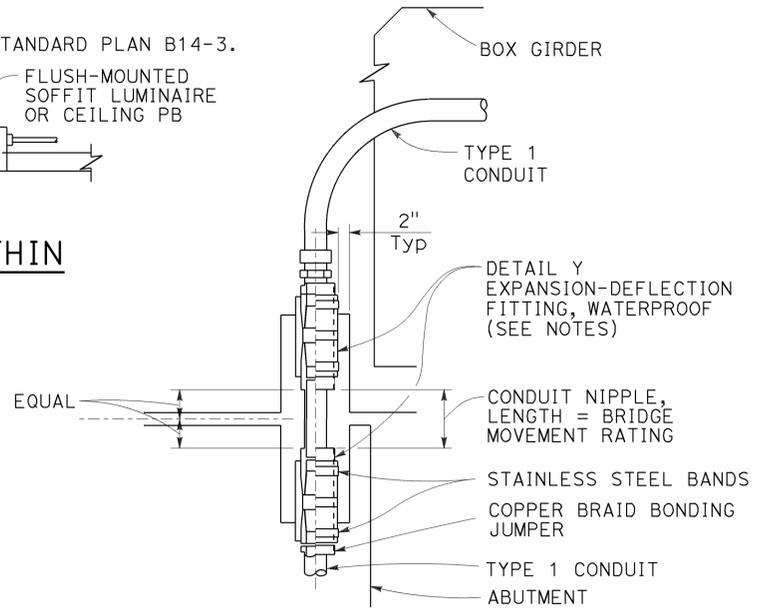
TO ACCOMPANY PLANS DATED 1-19-16



CONDUIT RISER CONNECTION
DETAIL R

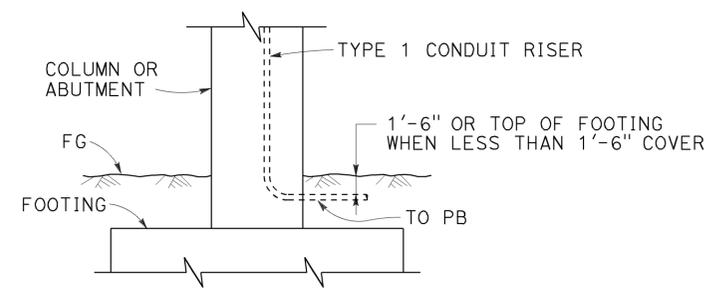


CONDUIT INSTALLATION WITHIN BOX GIRDER SECTIONS
DETAIL S

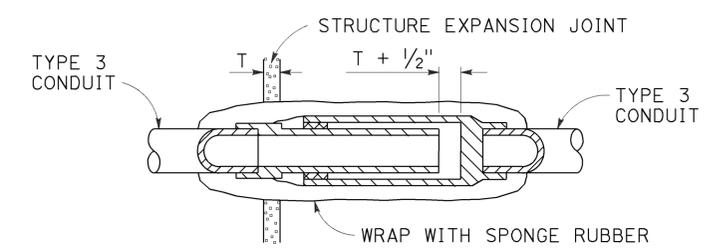


- NOTES:**
1. Fitting and pocket required only where movement can occur between girder and abutment.
 2. Fill pocket around fitting with resilient waterproof compound.

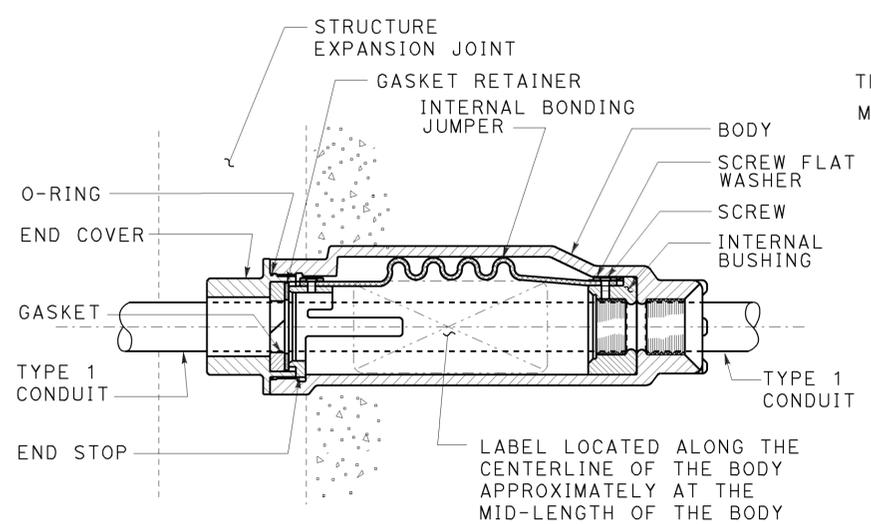
CONDUIT RISER CONNECTION AT COLUMN, ABUTMENT OR STRUCTURE WING WALL
DETAIL U



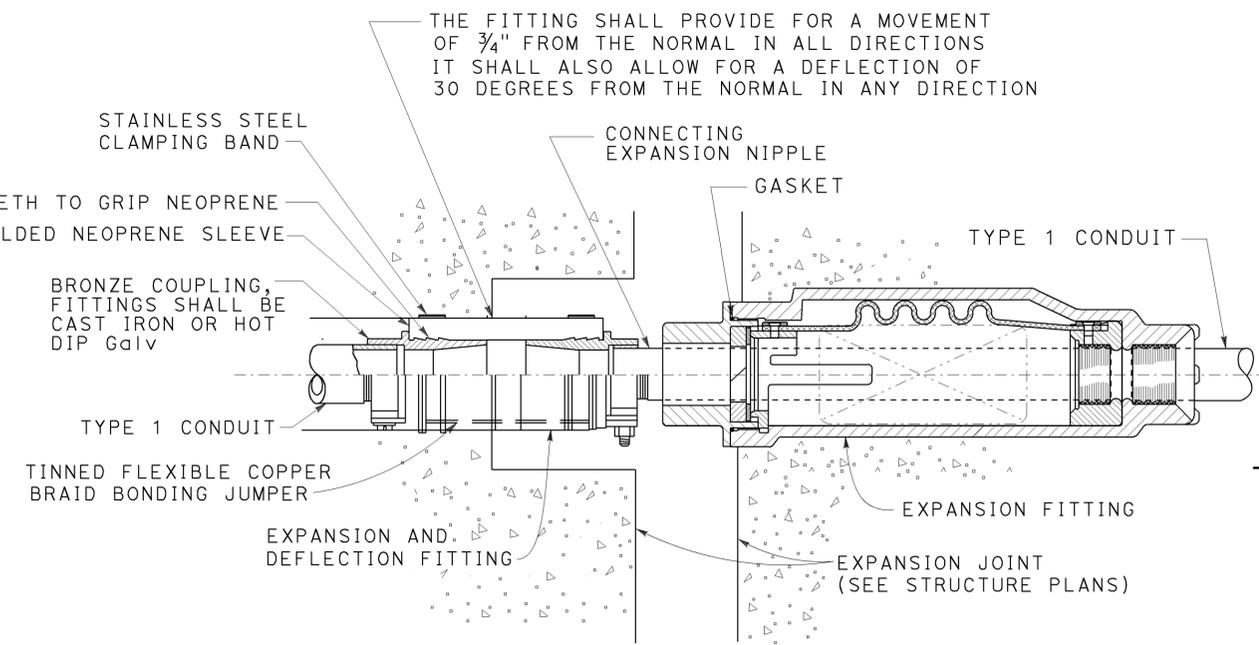
LOWER END OF CONDUIT RISER AT COLUMN OR ABUTMENT
DETAIL T



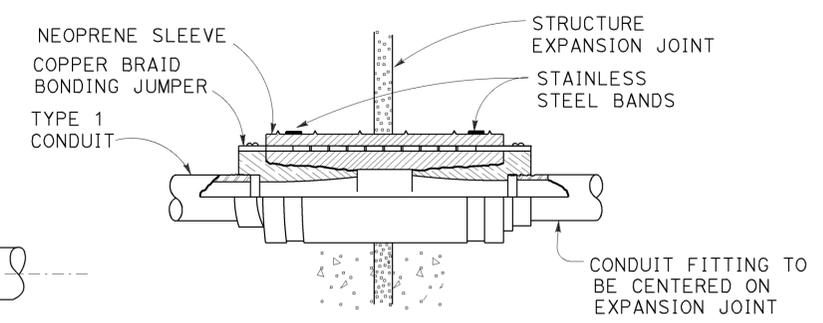
NON-METALLIC CONDUIT EXPANSION FITTING INSTALLATION DETAIL
DETAIL V



CONDUIT EXPANSION FITTING
DETAIL X



COMBINATION EXPANSION-DEFLECTION FITTINGS METALLIC CONDUIT INSTALLATION
DETAIL XY



CONDUIT EXPANSION-DEFLECTION FITTING
DETAIL Y

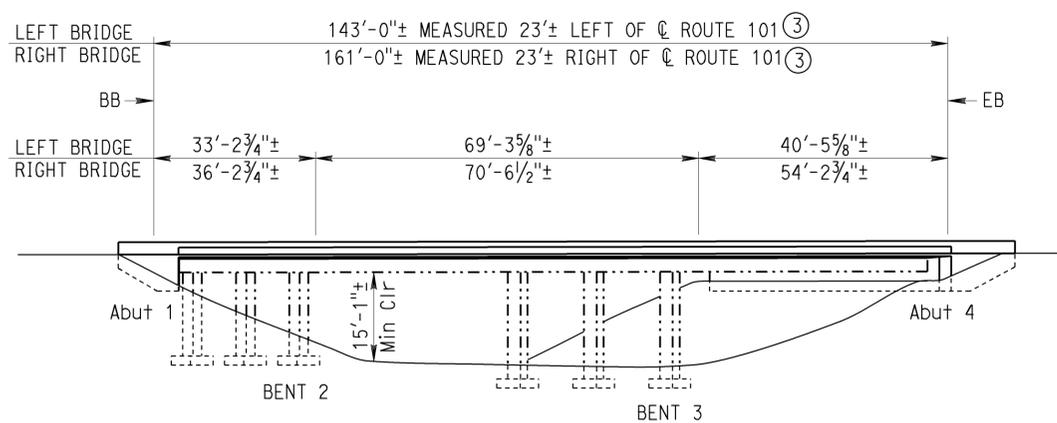
NOTES:

1. Except for sidewalk joints, a conduit expansion fitting or expansion-deflection fitting shall be installed at each 1/2" or greater structure joint, hinge or abutment.
2. Fittings or combination of fittings shall be installed to accommodate the movement rating as shown on the structure plans.
3. Fittings shall be installed parallel to superstructure girders.
4. Where lateral movement greater than 1/4" may occur, a neoprene sleeve expansion-deflection fitting shall be installed straddling the joint.

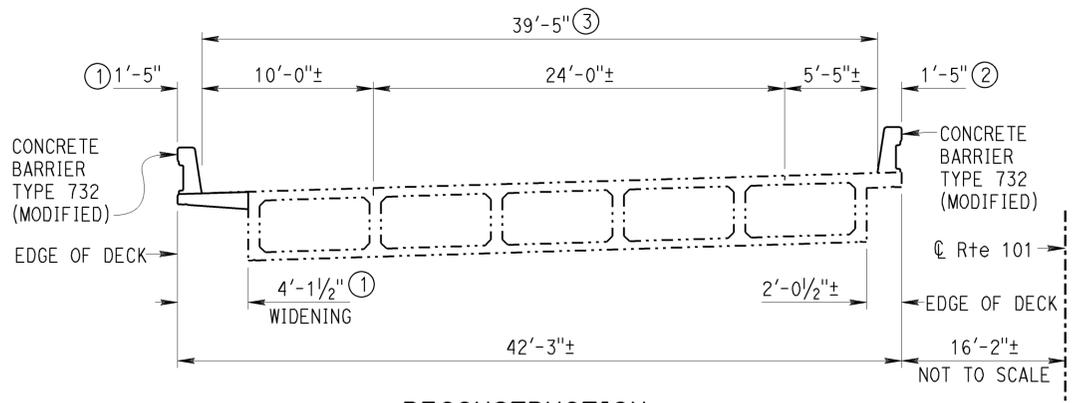
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS (CONDUIT RISER AND EXPANSION FITTING, STRUCTURE INSTALLATIONS)
NO SCALE

RSP ES-9B DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-9B DATED MAY 20, 2011 - PAGE 482 OF THE STANDARD PLANS BOOK DATED 2010.

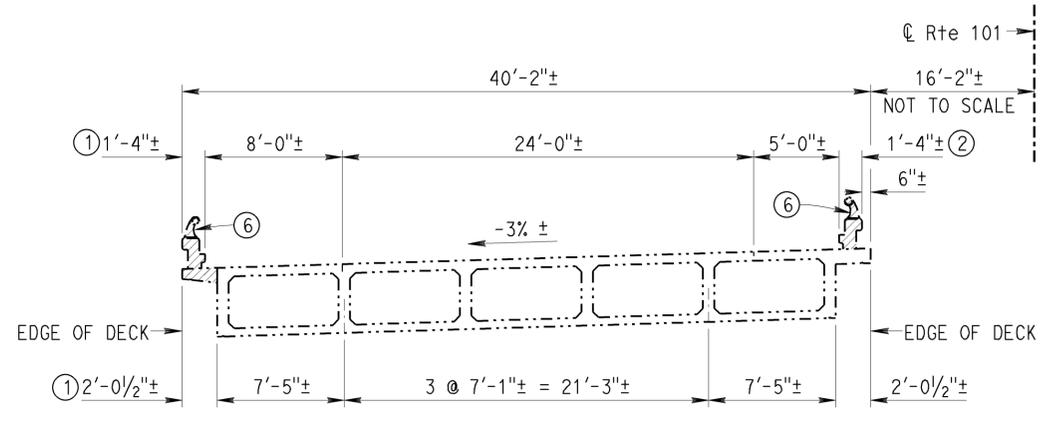
2010 REVISED STANDARD PLAN RSP ES-9B



ELEVATION
1" = 20'

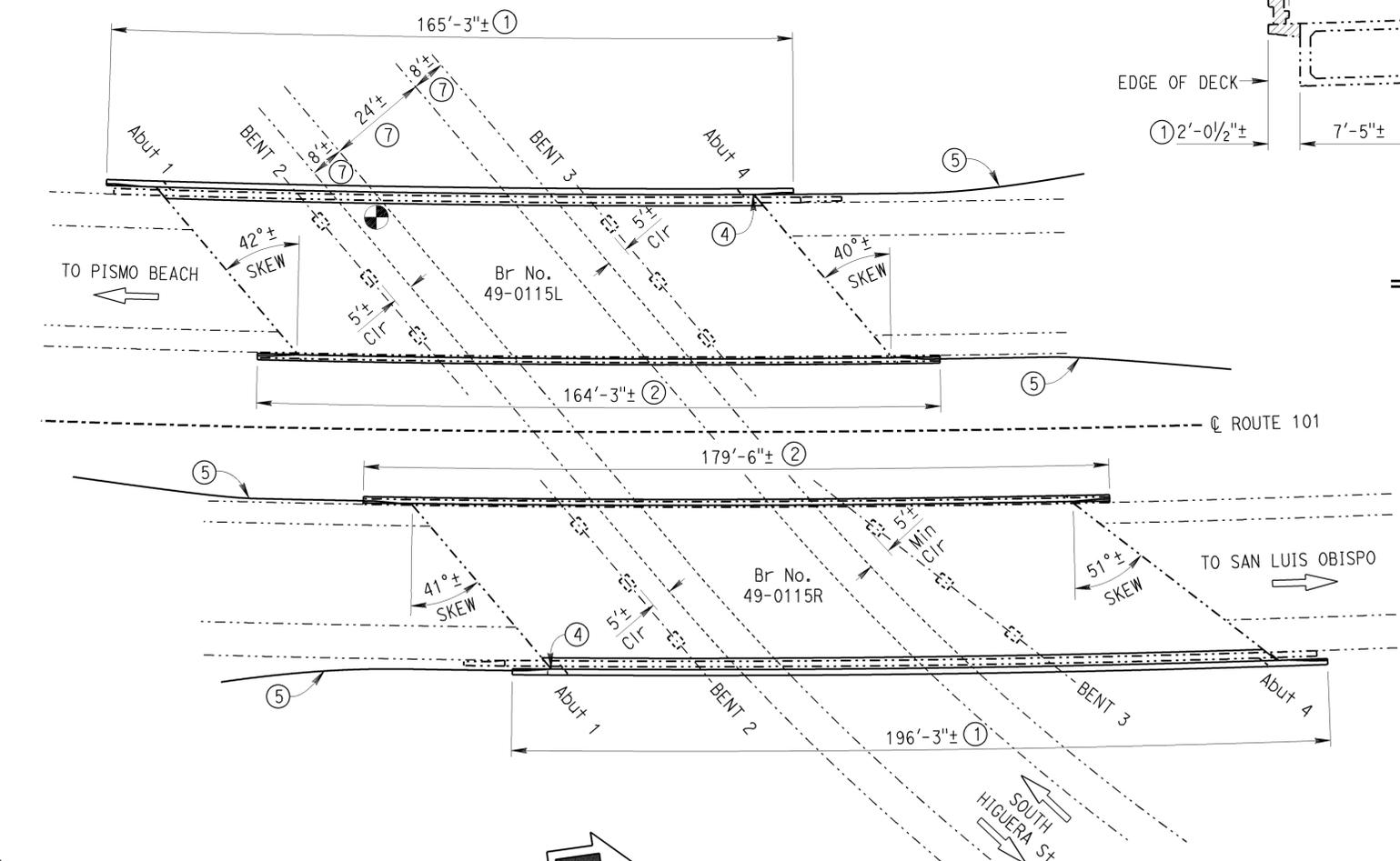


RECONSTRUCTION



EXISTING
TYPICAL SECTION

LEFT BRIDGE SHOWN;
RIGHT BRIDGE SIMILAR
3/16" = 1'



PLAN
1" = 20'

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

NOTES: (APPLY TO ALL SHEETS)
 - - - - - Indicates existing.
 (Circled number) STANDARD PLAN SHEET NUMBER
 (Circled number with arrow) DETAIL NUMBER

NOTES: (APPLY TO THIS SHEET ONLY)

- Indicates limits of Bridge Removal (Portion) and place Structure Concrete, Bridge and Concrete Barrier Type 732 (Modified).
- Indicates limits of remove existing concrete barrier and place Concrete Barrier Type 732 (Modified).
- For deck spall repair details, see "DECK REPAIR DETAILS" sheet.
- Paint bridge name and number.
- New Midwest Guardrail System, see Roadway Plans.
- Salvage existing metal barrier railing element.
- No falsework construction supports are allowed in the traveled way or shoulders.
- Indicates minimum vertical clearance.

See "ABUTMENT DETAILS No. 1" sheet for "GENERAL NOTES".

INDEX TO PLANS

SHEET No.	TITLE
1	GENERAL PLAN
2	ABUTMENT DETAILS No. 1
3	ABUTMENT DETAILS No. 2
4	ABUTMENT DETAILS No. 3
5	ABUTMENT DETAILS No. 4
6	TYPICAL SECTION
7	BARRIER ARCHITECTURAL DETAILS
8	DECK REPAIR DETAILS

STANDARD PLANS DATED 2010

SHEET No.	TITLE
A10A	ABBREVIATIONS (SHEET 1 OF 2)
RSP A10B	ABBREVIATIONS (SHEET 2 OF 2)
A10C	LINES AND SYMBOLS (SHEET 1 OF 3)
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
B0-1	BRIDGE DETAILS
B0-3	BRIDGE DETAILS
RSP B11-55	CONCRETE BARRIER TYPE 732

SANTA FE UNDERCROSSING (WIDEN)

QUANTITIES

RAPID SETTING CONCRETE (PATCH)	3	CF
SALVAGE METAL BRIDGE RAILING	465	LF
REMOVE UNSOUND CONCRETE	3	CF
BRIDGE REMOVAL (PORTION)	LUMP	SUM
STRUCTURE EXCAVATION (NATURALLY OCCURRING ASBESTOS)	42	CY
STRUCTURE BACKFILL (BRIDGE)	37	CY
STRUCTURAL CONCRETE, BRIDGE	66	CY
DRILL AND BOND DOWEL	273	LF
BAR REINFORCING STEEL (BRIDGE)	12,015	LB
CONCRETE BARRIER (TYPE 732 MODIFIED)	705	LF

DESIGN	BY FRANZ ESPINOZA	CHECKED TIM POWELL	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	BY G.F. BIDWELL	CHECKED TIM POWELL	LAYOUT	BY G.F. BIDWELL
QUANTITIES	BY FRANZ ESPINOZA	CHECKED TIM POWELL	SPECIFICATIONS	BY JENNIFER RAMIREZ

STATE OF CALIFORNIA	DIVISION OF MAINTENANCE	BRIDGE No. 49-0115L/R
DEPARTMENT OF TRANSPORTATION	STRUCTURE MAINTENANCE DESIGN	POST MILE R24.30

SANTA FE UNDERCROSSING (WIDEN)	
GENERAL PLAN	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	56	62

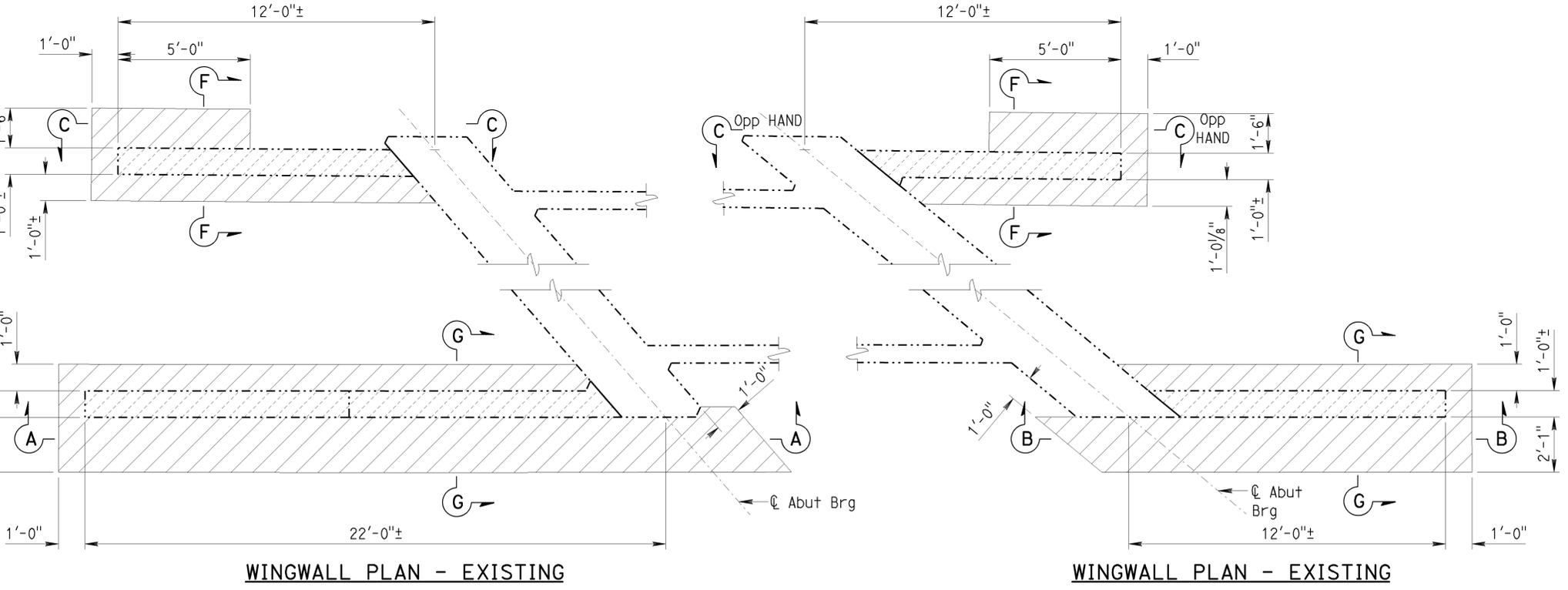
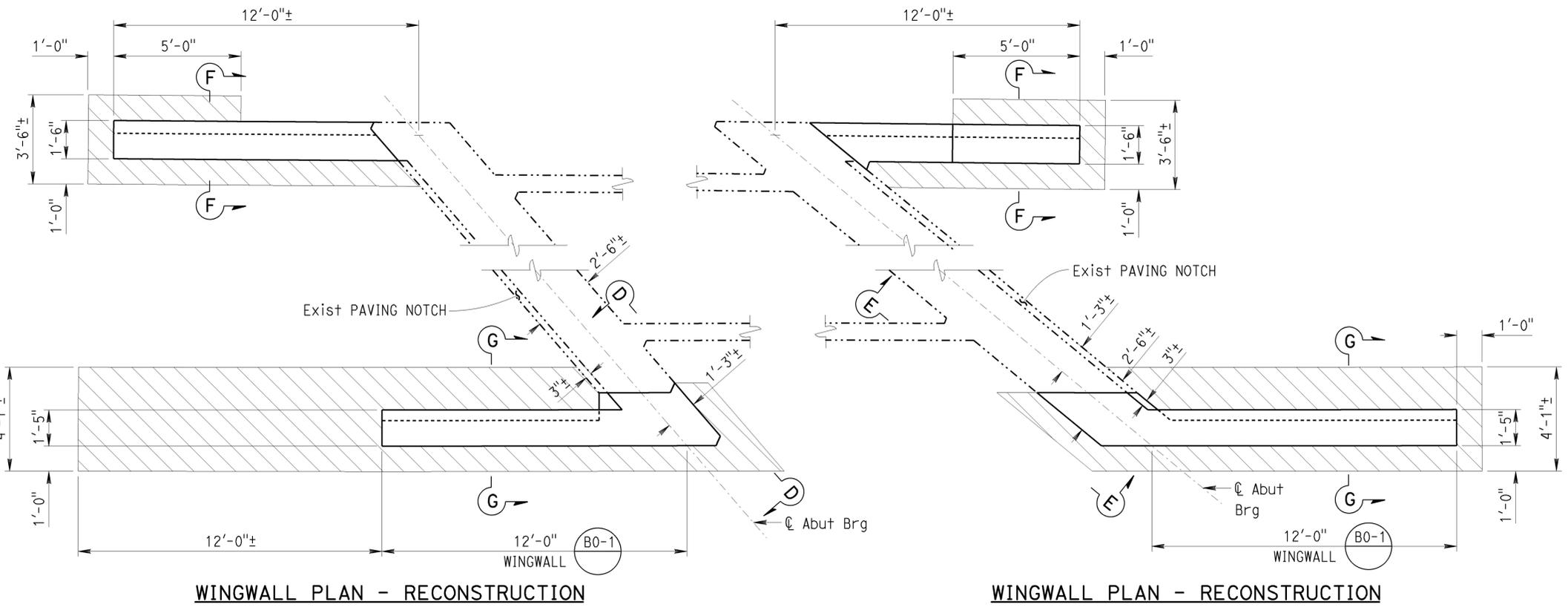
8-26-15
 REGISTERED CIVIL ENGINEER DATE
 1-19-16
 PLANS APPROVAL DATE
 No. C 61037
 Exp. 12-31-16
 CIVIL
 STATE OF CALIFORNIA

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

NOTES: (APPLY TO THIS SHEET ONLY)

Indicates limits of Bridge Removal (Portion).
 Indicates limits of structure excavation.
 Indicates limits of structure backfill.

See "ABUTMENT DETAILS No. 2" sheet for "ELEVATION A-A", "ELEVATION B-B", and "ELEVATION C-C".
 See "ABUTMENT DETAILS No. 3" sheet for "PARTIAL ELEVATION D-D" and "PARTIAL ELEVATION E-E".
 See "ABUTMENT DETAILS No. 4" sheet for "SECTION F-F" and "SECTION G-G".



WINGWALL PLAN - RECONSTRUCTION
ABUTMENT 1 RIGHT BRIDGE & ABUTMENT 4 LEFT BRIDGE

WINGWALL PLAN - RECONSTRUCTION
ABUTMENT 4 RIGHT BRIDGE & ABUTMENT 1 LEFT BRIDGE

3/8" = 1'

3/8" = 1'

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

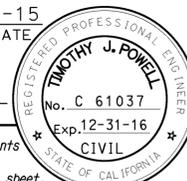
GENERAL NOTES
LOAD FACTOR DESIGN

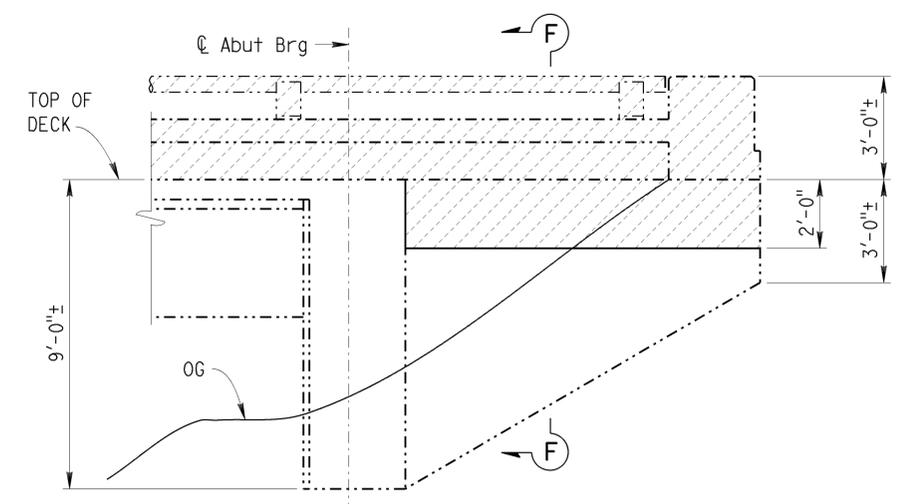
DESIGN: BRIDGE DESIGN SPECIFICATIONS (1996 AASHTO with Interims and Revisions by CALTRANS)
 DEAD LOAD: Includes 35 psf for future wearing surface.
 LIVE LOADING: HL93 and permit design load.
 REINFORCED CONCRETE: fy = 60 ksi, f'c = 3.6 ksi, n = 8

STRUCTURES MAINTENANCE GENERAL PLAN SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	DESIGN	BY FRANZ ESPINOZA	CHECKED TIM POWELL	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF MAINTENANCE STRUCTURE MAINTENANCE DESIGN	BRIDGE No.	49-0115L/R	SANTA FE UNDERCROSSING (WIDEN) ABUTMENT DETAILS No. 1
	DETAILS	BY G.F. BIDWELL	CHECKED TIM POWELL			POST MILE	R24.30	
	QUANTITIES	BY FRANZ ESPINOZA	CHECKED TIM POWELL			UNIT: 3488	PROJECT NUMBER & PHASE: 0515000032 1	

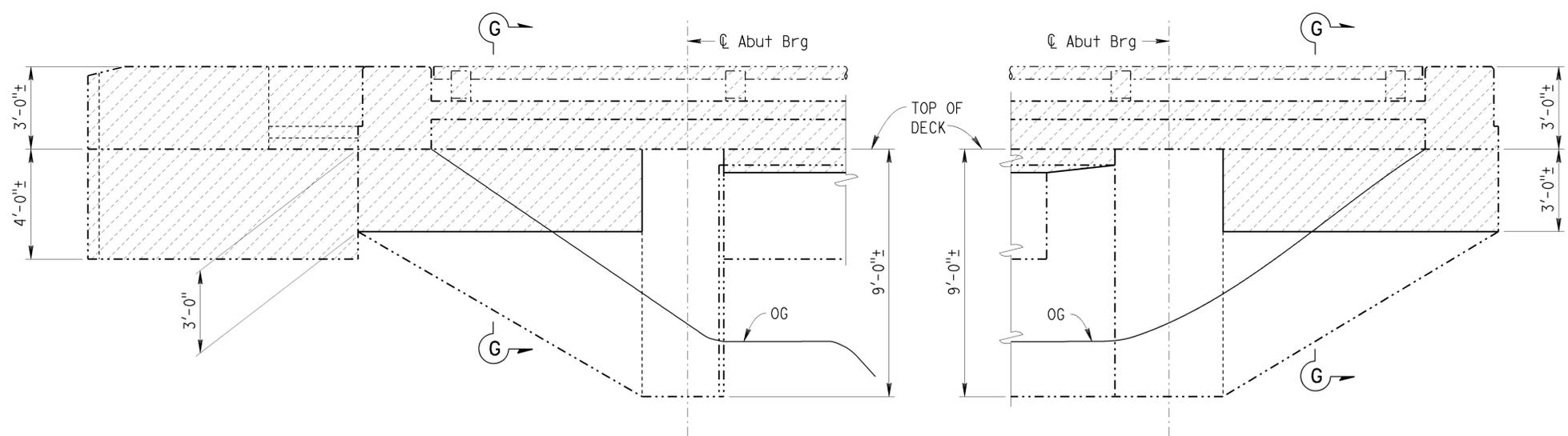
DISREGARD PRINTS BEARING EARLIER REVISION DATES
 REVISION DATES: 12-16-14, 3-1-15, 7-28-15, 8-26-15
 SHEET 2 OF 8

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	57	62


 8-26-15
 REGISTERED CIVIL ENGINEER DATE
 1-19-16
 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.



ELEVATION C-C
 $\frac{3}{8}'' = 1'$



ELEVATION A-A
 $\frac{3}{8}'' = 1'$

ELEVATION B-B
 $\frac{3}{8}'' = 1'$

NOTES: (APPLY TO THIS SHEET ONLY)
 Indicates limits of Bridge Removal (Portion).
 See "ABUTMENT DETAILS No. 4" sheet for "SECTION F-F" and "SECTION G-G" existing and reconstruction details.

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

STRUCTURES MAINTENANCE GENERAL PLAN SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY FRANZ ESPINOZA	CHECKED TIM POWELL	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE No. 49-0115L/R POST MILE R24.30	SANTA FE UNDERCROSSING (WIDEN) ABUTMENT DETAILS No. 2	
	DETAILS	BY G.F. BIDWELL	CHECKED TIM POWELL				
	QUANTITIES	BY FRANZ ESPINOZA	CHECKED TIM POWELL				
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				UNIT: 3488 PROJECT NUMBER & PHASE: 0515000032 1 CONTRACT No.: 05-1G4601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 12-16-14 3-4-15 7-28-15 8-26-15	SHEET 3 OF 8

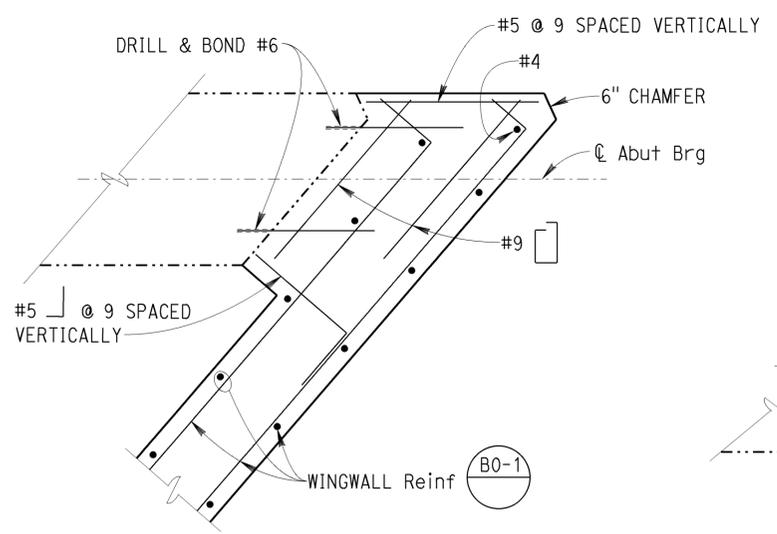
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	58	62


 8-26-15
 REGISTERED CIVIL ENGINEER DATE

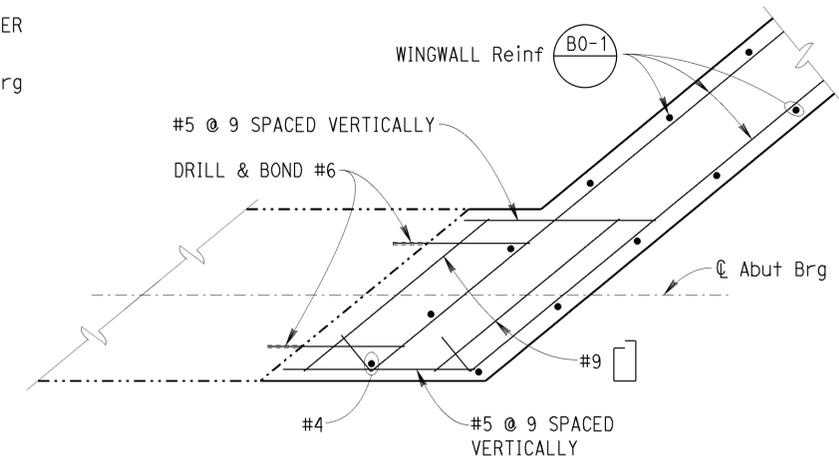
1-19-16
 PLANS APPROVAL DATE

No. C 61037
 Exp. 12-31-16
 CIVIL
 STATE OF CALIFORNIA

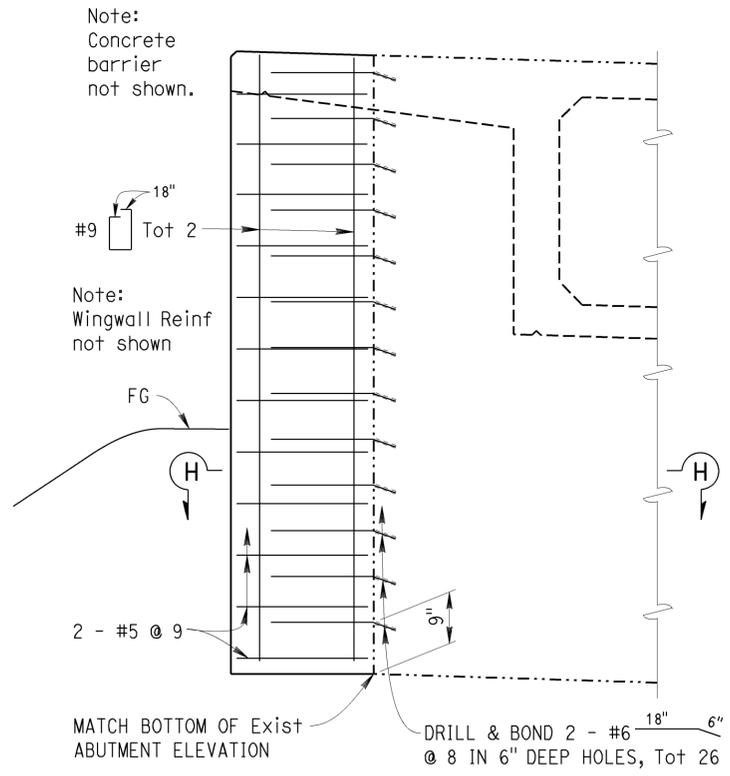
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



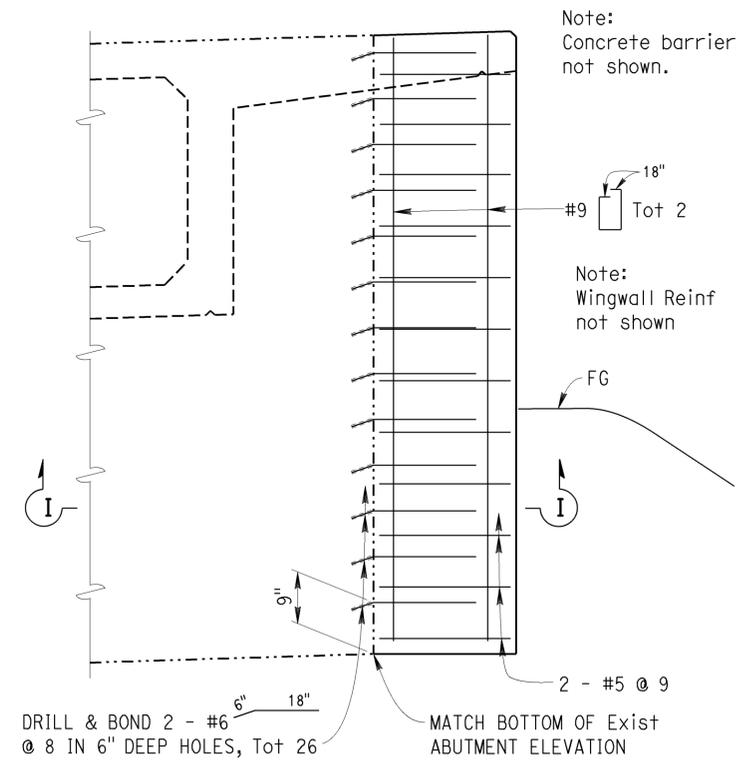
SECTION H-H
3/4" = 1'



SECTION I-I
3/4" = 1'



PARTIAL ELEVATION D-D
ABUTMENT 1 SHOWN; SIMILAR AT ABUTMENT 4
3/4" = 1'



PARTIAL ELEVATION E-E
ABUTMENT 4 SHOWN; SIMILAR AT ABUTMENT 1
3/4" = 1'

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

DESIGN	BY FRANZ ESPINOZA	CHECKED TIM POWELL
DETAILS	BY G.F. BIDWELL	CHECKED TIM POWELL
QUANTITIES	BY FRANZ ESPINOZA	CHECKED TIM POWELL

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE STRUCTURE MAINTENANCE DESIGN	BRIDGE No. 49-0115L/R
	POST MILE R24.30

SANTA FE UNDERCROSSING (WIDEN)
ABUTMENT DETAILS No. 3

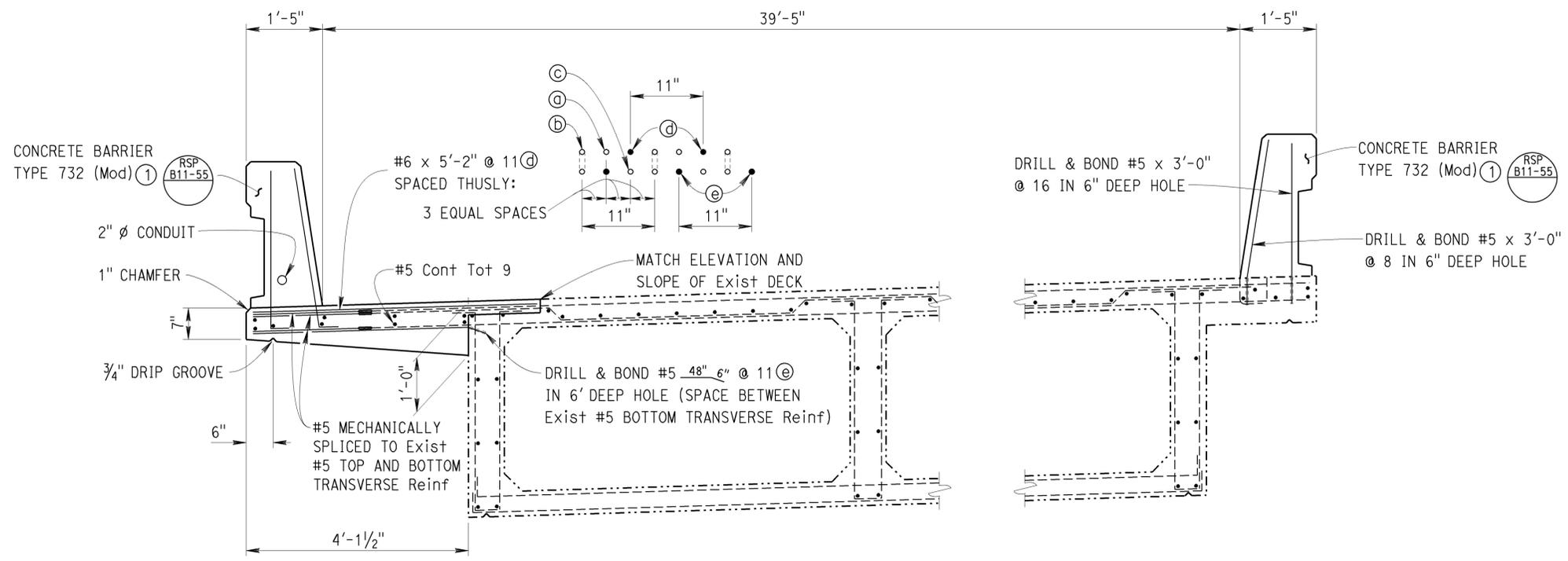
REVISION DATES	SHEET	OF
12-16-14 3-1-15 7-28-15 8-26-15	4	8

USERNAME => s115755 DATE PLOTTED => 15-JAN-2016 TIME PLOTTED => 13:16

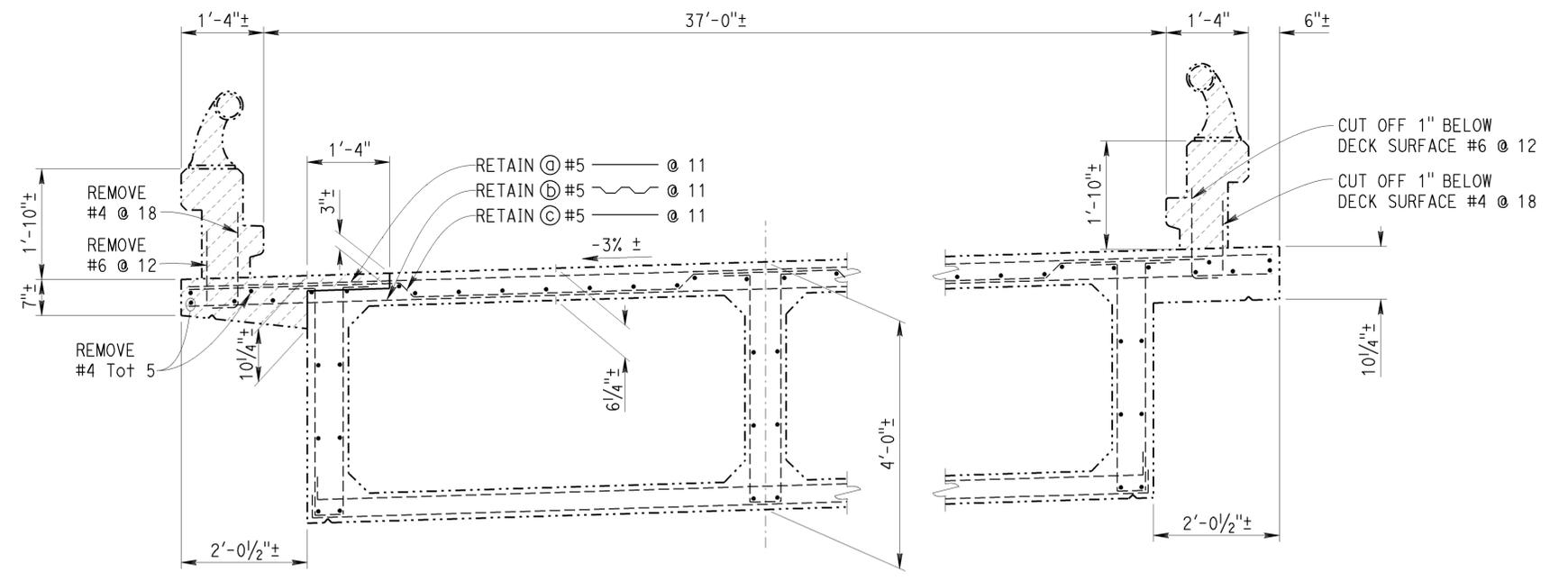
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	60	62

8-26-15
 REGISTERED CIVIL ENGINEER DATE
 1-19-16
 PLANS APPROVAL DATE
 No. C 61037
 Exp. 12-31-16
 CIVIL
 STATE OF CALIFORNIA
 REGISTERED PROFESSIONAL ENGINEER
 TIMOTHY J. POWELL

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.



RECONSTRUCTION



EXISTING

TYPICAL SECTION
 LEFT BRIDGE SHOW; RIGHT BRIDGE SIMILAR
 $\frac{3}{4}'' = 1'$

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

- NOTES: (APPLY TO THIS SHEET ONLY)
- ① For reinforcing and other details see RSP B11-55
 - Indicates limits of Bridge Removal (Portion).
 - For barrier architectural details see "BARRIER ARCHITECTURAL DETAILS" sheet.

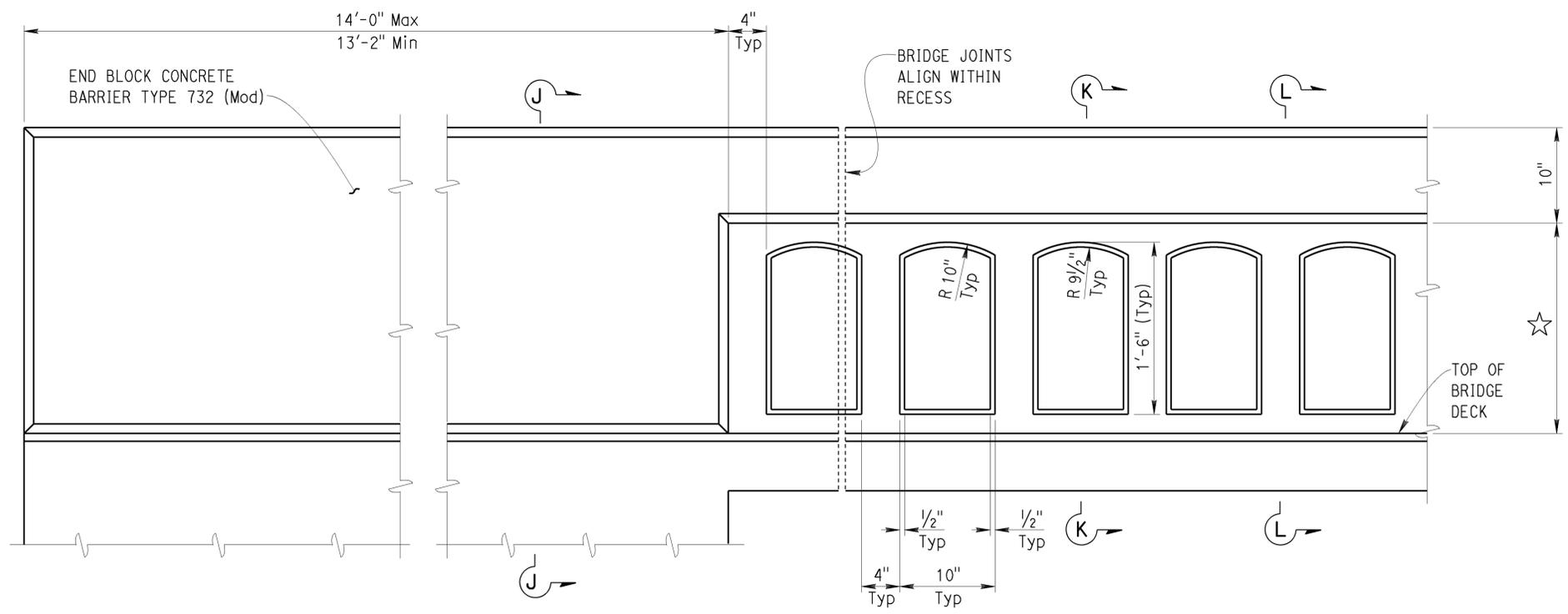
STRUCTURES MAINTENANCE GENERAL PLAN SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	DESIGN	BY FRANZ ESPINOZA	CHECKED TIM POWELL	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE No.	49-0115L/R	SANTA FE UNDERCROSSING (WIDEN) TYPICAL SECTION
	DETAILS	BY G.F. BIDWELL	CHECKED TIM POWELL		POST MILE	R24.30	
	QUANTITIES	BY FRANZ ESPINOZA	CHECKED TIM POWELL		UNIT: 3488	PROJECT NUMBER & PHASE: 051500032 1	
				DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES 12-16-14 3-4-15 7-28-15 8-26-15	SHEET 6 OF 8

FILE => 05-1g4601_06typsect.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	61	62


 8-26-15
 REGISTERED CIVIL ENGINEER DATE
 1-19-16
 PLANS APPROVAL DATE
 No. C 61037
 Exp. 12-31-16
 CIVIL
 STATE OF CALIFORNIA

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



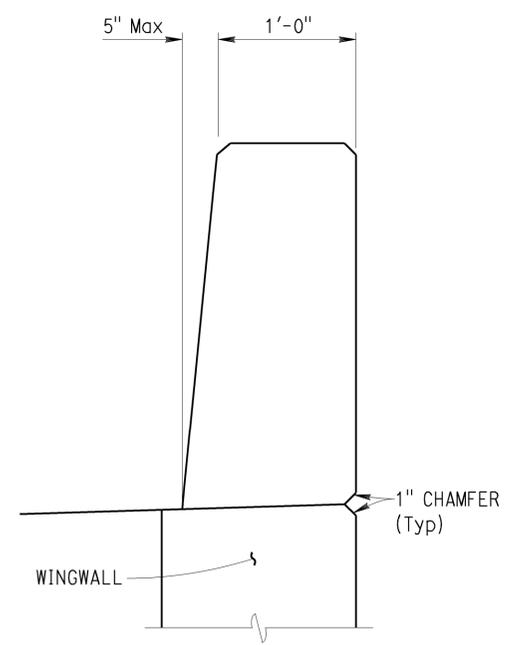
TYPICAL ELEVATION

1/2" = 1'

NOTES: (APPLY TO THIS SHEET ONLY)

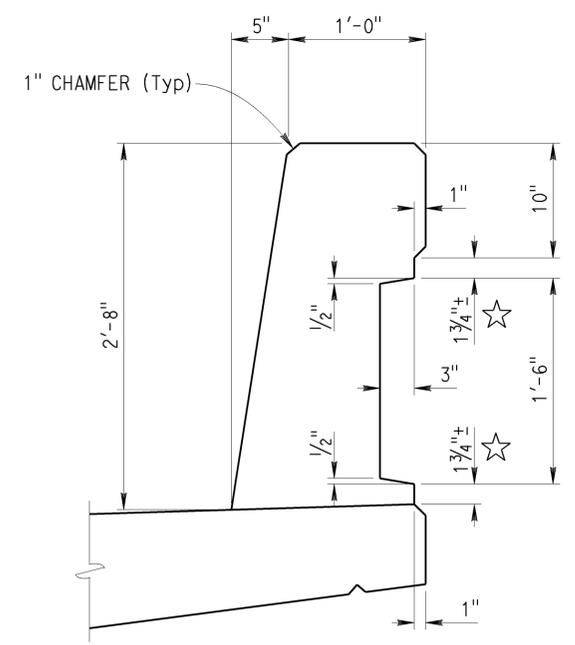
☆ Dimension varies due to cross slope of bridge deck.

For concrete barrier reinforcing steel and vertical transition for Midwest Guardrail System attachment see



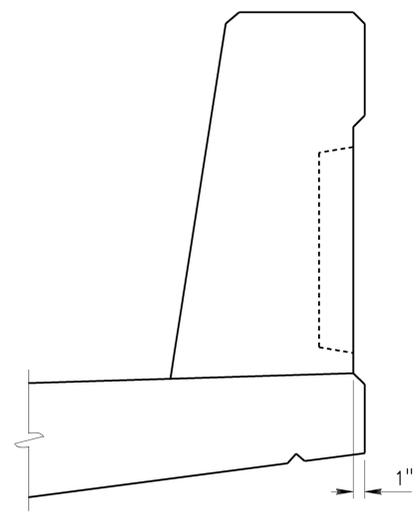
SECTION J-J

1/2" = 1'



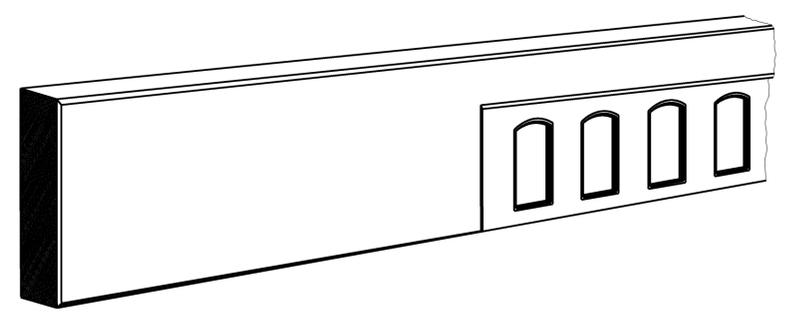
SECTION K-K

1/2" = 1'



SECTION L-L

1/2" = 1'



PERSPECTIVE VIEW

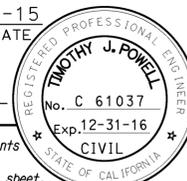
NO SCALE

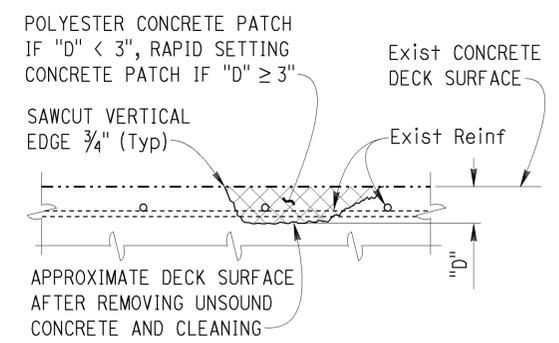
NOTE:
THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

STRUCTURES MAINTENANCE GENERAL PLAN SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY FRANZ ESPINOZA	CHECKED TIM POWELL	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE No. 49-0115L/R POST MILE R24.30	SANTA FE UNDERCROSSING (WIDEN) BARRIER ARCHITECTURAL DETAILS	
	DETAILS	BY G.F. BIDWELL	CHECKED TIM POWELL				
	QUANTITIES	BY FRANZ ESPINOZA	CHECKED TIM POWELL				
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				UNIT: 3488 PROJECT NUMBER & PHASE: 0515000032 1 CONTRACT No.: 05-1G4601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 12-16-14 3-1-15 7-28-15 8-26-15	SHEET 7 OF 8

USERNAME => s115755 DATE PLOTTED => 15-JAN-2016 TIME PLOTTED => 13:16

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R24.3	62	62

 8-26-15
 REGISTERED CIVIL ENGINEER DATE
 1-19-16
 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.



JOINT AND DECK REPAIR DETAIL

REINFORCEMENT MAY BE ENCOUNTERED DURING DECK CONCRETE REMOVAL.
NO SCALE

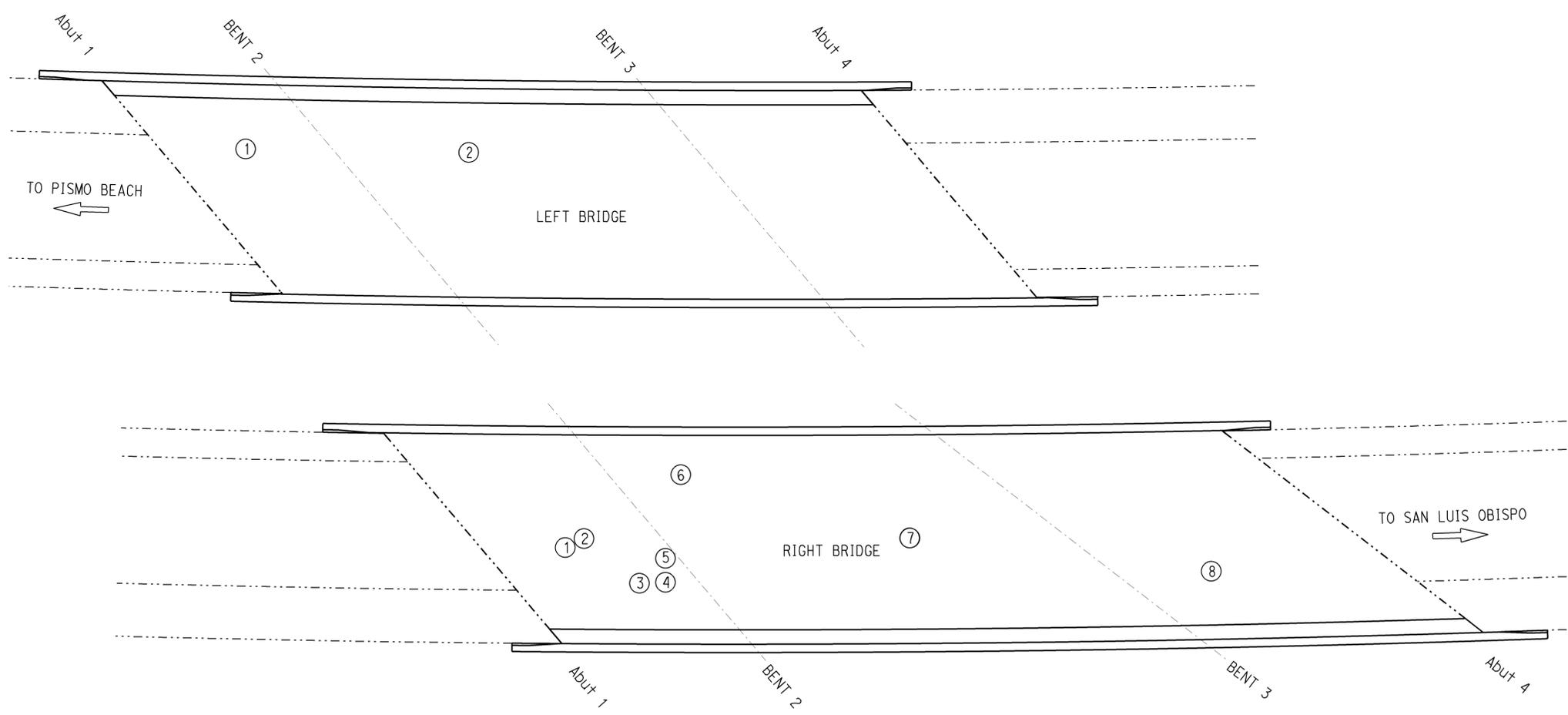
DECK SPALL LOCATIONS

RIGHT BRIDGE:

- ① 1'x1' incipient spall located Lane 2, 16' from Abutment 1 in the right wheel line.
- ② 1.5'x1.5' incipient spall located in Lane 2, 20' from Abutment 1.
- ③ 1'x1' incipient spall located in Lane 2, 28' from Abutment 1 in the right wheel line.
- ④ 8"x16" AC patch located in Lane 2, 30' from Abutment 1 in the right wheel line.
- ⑤ 2'x1' AC patch located in Lane 2, 30' from Abutment 1 in the right wheel line.
- ⑥ 1'x1' incipient spall located in Lane 1, 50' from Abutment 1 in the left wheel line.
- ⑦ 1'x1' incipient spall located in Lane 2, 83' from Abutment 1 in the left wheel line.
- ⑧ 1.5'x1' incipient spall located in Lane 2, 32' from Abutment 4 in the right wheel line.

LEFT BRIDGE:

- ① 6"x6" incipient spall located in Lane 2, 17' from Abutment 1 to the left of the fog line.
- ② 1'x1' incipient spall located in Lane 2, 59' from Abutment 1 in the right wheel line.



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

 **PLAN**
NO SCALE

STRUCTURES MAINTENANCE GENERAL PLAN SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY FRANZ ESPINOZA	CHECKED TIM POWELL	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF MAINTENANCE STRUCTURE MAINTENANCE DESIGN	BRIDGE No.	SANTA FE UNDERCROSSING (WIDEN) DECK REPAIR DETAILS												
	DETAILS	BY G.F. BIDWELL	CHECKED TIM POWELL			49-0115L/R													
	QUANTITIES	BY FRANZ ESPINOZA	CHECKED TIM POWELL			POST MILE R24.30													
UNIT: 3488 PROJECT NUMBER & PHASE: 0515000032 1					CONTRACT No.: 05-1G4601		DISREGARD PRINTS BEARING EARLIER REVISION DATES												
<table border="1"> <tr> <th colspan="4">REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>12-16-14</td> <td>3-1-15</td> <td>7-28-15</td> <td>8-26-15</td> <td>8</td> <td>8</td> </tr> </table>							REVISION DATES				SHEET	OF	12-16-14	3-1-15	7-28-15	8-26-15	8	8	FILE => 05-1g4601_08deckdets.dgn
REVISION DATES				SHEET	OF														
12-16-14	3-1-15	7-28-15	8-26-15	8	8														

USERNAME => s115755 DATE PLOTTED => 15-JAN-2016 TIME PLOTTED => 13:16