

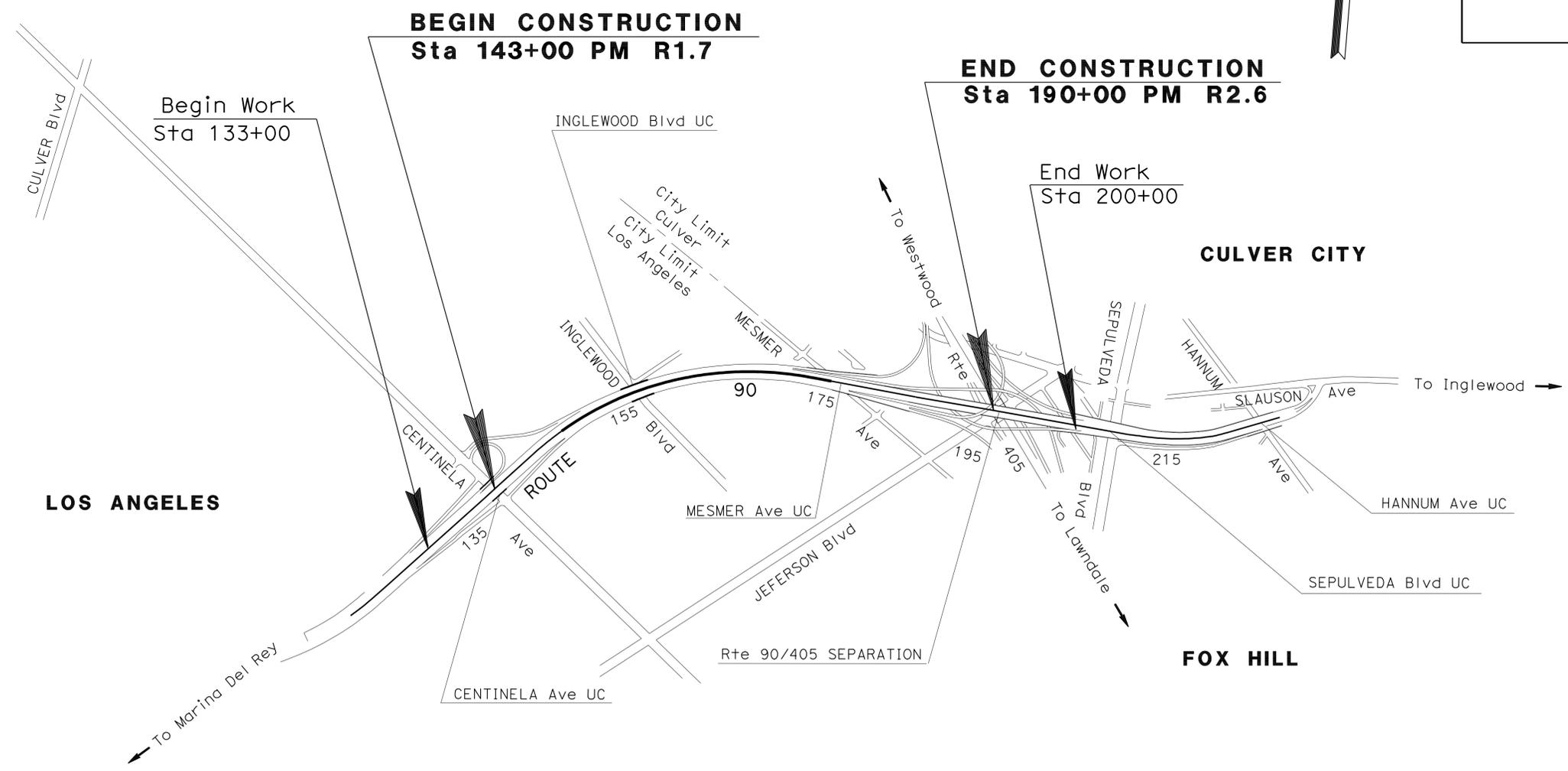
INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
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6	CONSTRUCTION DETAILS
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29	SUMMARY OF QUANTITIES
30-32	HIGHWAY PLANTING
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44C-44H	SPECIAL ELECTRICAL STRUCTURES
45-83	REVISED AND NEW STANDARD PLANS

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

STATE OF CALIFORNIA **ACHSSTPG-P090(013)E**
 DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY
IN LOS ANGELES COUNTY
IN LOS ANGELES
FROM CENTINELA AVENUE UNDERCROSSING TO ROUTE 405

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



PROJECT MANAGER
 AHMED ABOU-ABDOU
 DESIGN ENGINEER
 SAIED MEHRANFARD

2 REVISED PER ADDENDUM No. 2 DATED MAY 3, 2012

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

NO SCALE


 PROJECT ENGINEER REGISTERED CIVIL ENGINEER
 DATE 06-10-11
 August 22, 2011
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



CONTRACT No.	07-275804
PROJECT ID	070000523

DATE PLOTTED => 30-APR-2012
 TIME PLOTTED => 10:16
 LAST REVISION 05-10-11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	34	83

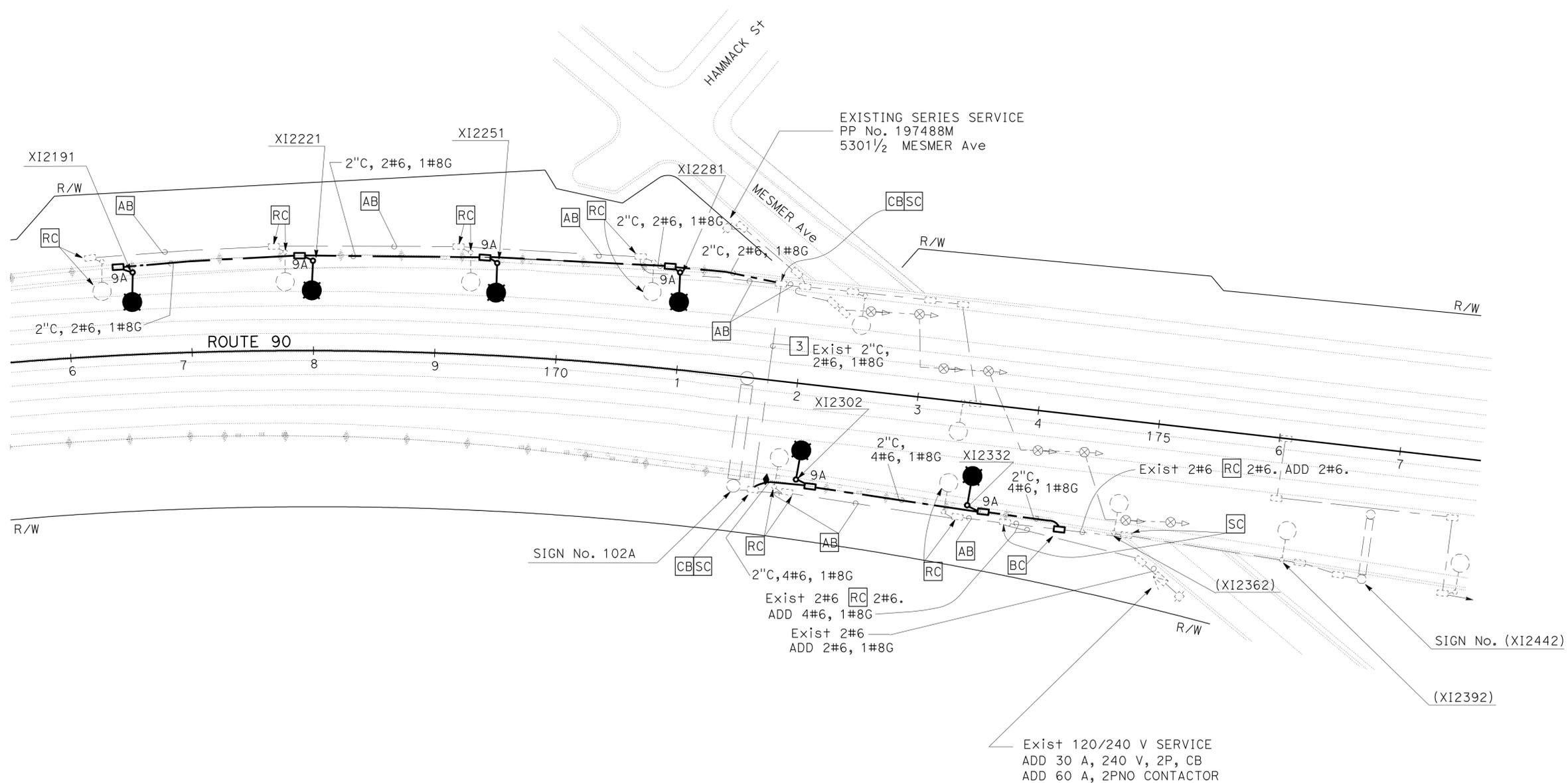
<i>Mina Zolfaghari</i>	04-16-12
REGISTERED ELECTRICAL ENGINEER	DATE
8-22-11	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
MINA ZOLFAGHARI
No. E 16816
Exp. 12/31/12
ELECT

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: (THIS SHEET)

- FOR COMPLETE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- FOR WIRING DIAGRAM, SEE SHEETS E-4.
- TO BE USED FOR TEMPORARY AND PERMANENT LIGHTING.



WARNING
 BEFORE STARTING WORK ON EXISTING SERIES STREET LIGHTING CIRCUITS, THE CONTRACTOR MUST OBTAIN DAILY CIRCUIT CLEARANCE FROM THE SERVICE COMPANY. CUT-OUT PLUGS MUST BE PULLED AND "MEN AT WORK" SIGN POSTED. BEFORE ANY WORK IS DONE OR CONNECTIONS MADE.

MODIFY LIGHTING AND SIGN ILLUMINATION

SCALE: 1" = 50'

2 REVISED PER ADDENDUM No. 2 DATED MAY 3, 2012
 APPROVED FOR ELECTRICAL WORK ONLY

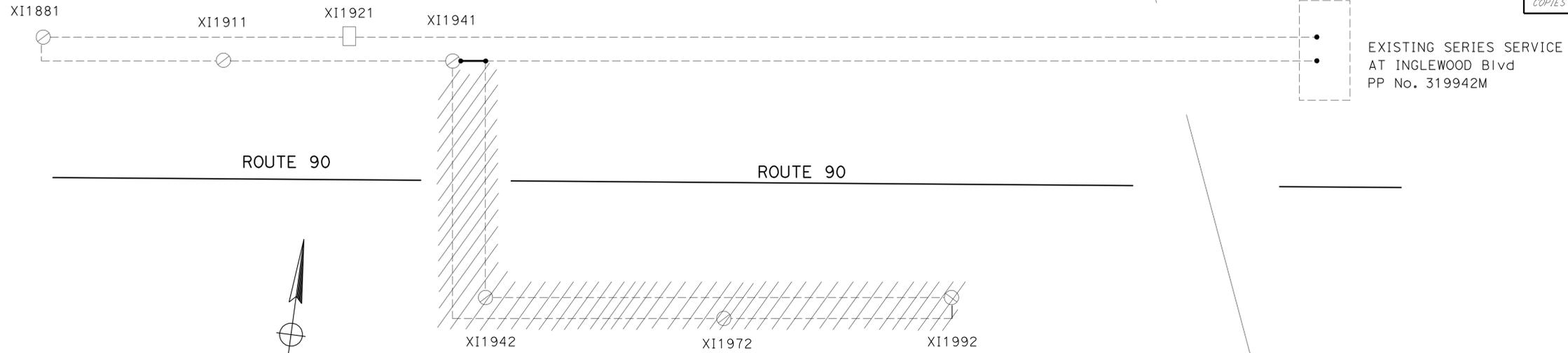
E-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: FEDRICO HORMOZI
 CHECKED BY: MANSOUR FEIZ
 REVISED BY: DATE REVISION
 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.

LAST REVISION: DATE PLOTTED => 30-APR-2012
 01-19-11 TIME PLOTTED => 13:27

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	35	83
Mina Zolfaghari			04-16-12		
REGISTERED ELECTRICAL ENGINEER			DATE		
8-22-11			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>					

WARNING
 BEFORE STARTING WORK ON EXISTING SERIES STREET LIGHTING CIRCUITS, THE CONTRACTOR MUST OBTAIN DAILY CIRCUIT CLEARANCE FROM THE SERVICE COMPANY. CUT-OUT PLUGS MUST BE PULLED AND "MEN AT WORK" SIGN POSTED. BEFORE ANY WORK IS DONE OR CONNECTIONS MADE.



EXISTING SERIES SERVICE
 AT INGLEWOOD Blvd
 PP No. 319942M

LEGEND:

- EXISTING 400 W MERCURY VAPOR LAMP AND BALLAST TO REMAIN
- EXISTING 400 W MERCURY VAPOR LAMP AND BALLAST TO BE REMOVED
- SPLICE CONDUCTOR
- EXISTING SIGN LIGHTING FIXTURE TO REMAIN
- NEW 310 W HIGH PRESSURE SODIUM LUMINAIRE AND INTEGRAL BALLAST TO BE INSTALLED
- EXISTING CONDUCTOR TO REMAIN
- EXISTING CONDUCTOR TO BE REMOVED
- NEW CONDUCTOR TO BE INSTALLED
- EXISTING SERVICE POINT TO REMAIN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	FEDRICO HORMOZI	
		MANSOUR FEIZ	
		CALCULATED/DESIGNED BY	CHECKED BY



REVISED PER ADDENDUM No. 2 DATED MAY 3, 2012

APPROVED FOR ELECTRICAL WORK ONLY

MODIFY LIGHTING AND SIGN ILLUMINATION (WIRING DIAGRAM)

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	37	83

Vanessa Van Eruong 04-16-12
 REGISTERED ELECTRICAL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

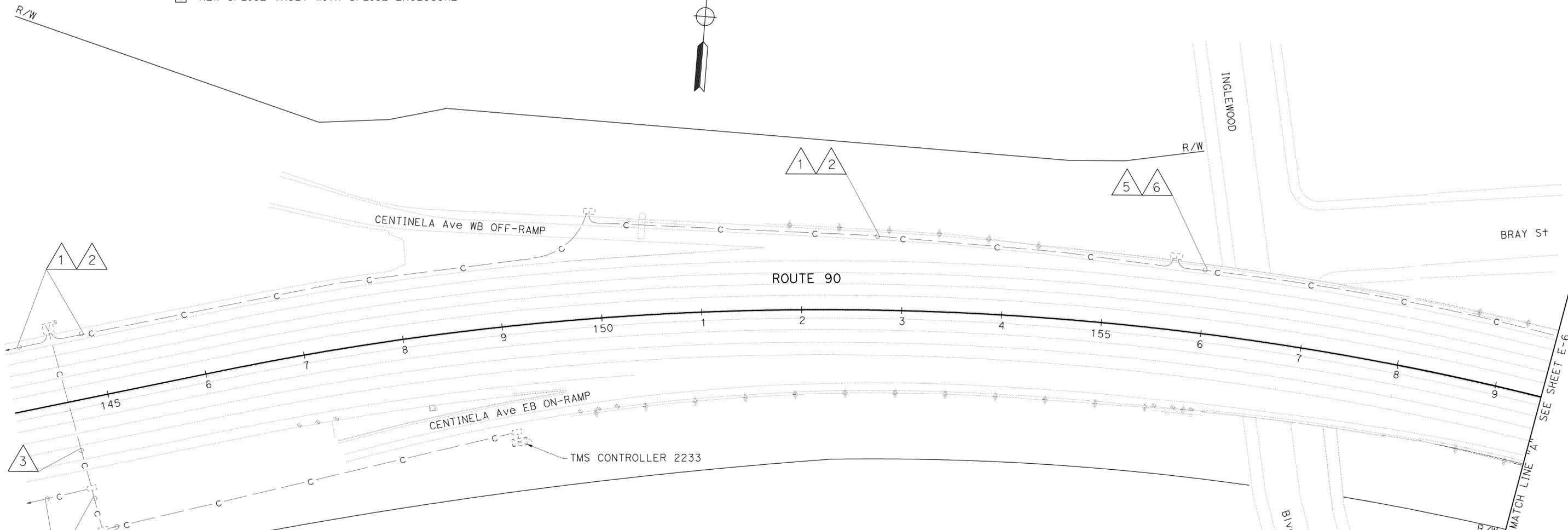
REGISTERED PROFESSIONAL ENGINEER
 V.V. TRUONG
 No. E 13983
 Exp 6/30/12
 ELECTRICAL
 STATE OF CALIFORNIA

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

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

LEGEND: (FOR SHEET E-5 AND E-6)

- COMMUNICATION PULL BOX
- EXISTING COMMUNICATION PULL BOX
- Ⓜ^s EXISTING SPLICE VAULT WITH SPLICE ENCLOSURE
- Ⓜ^s NEW SPLICE VAULT WITH SPLICE ENCLOSURE



EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6
50P22 CABLE	DATA/VOICE	1				1*	
24 SMFO CABLE	VIDEO/DATA	1				1*	
12 SMFO CABLE	VIDEO DISTRIBUTION		1				1*
6P22 CABLE	DATA/VOICE			2	1		
	INNERDUCT (1 1/4")	1	1			1*	1*
CONDUIT SIZE		4"	4"	3"	3"	4"	4"

- 6P22 - 6 PAIRS 22 AWG
- 50P22 - 50 PAIRS 22 AWG
- 24 SMFO - 24 SINGLEMODE FIBER OPTIC
- 12 SMFO - 12 SINGLEMODE FIBER OPTIC
- * - REMOVE AND REINSTALL EXISTING

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Electrans ELECTRICAL DESIGN

VANESSA TRUONG
 SHAHRAM SHAHRIARI
 REVISOR
 CHECKED BY
 FUNCTIONAL SUPERVISOR

REVISED PER ADDENDUM No. 2 DATED MAY 3, 2012
 APPROVED FOR ELECTRICAL WORK ONLY

MODIFY COMMUNICATION SYSTEM
 SCALE: 1" = 50'

E-5

LAST REVISION DATE PLOTTED => 30-APR-2012
 04-13-12 TIME PLOTTED => 10:23

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/2.6	38	83

Vanessa Van Eruong 04-16-12
 REGISTERED ELECTRICAL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 V.V. TRUONG
 No. E 13983
 Exp 6/30/12
 ELECTRICAL
 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.

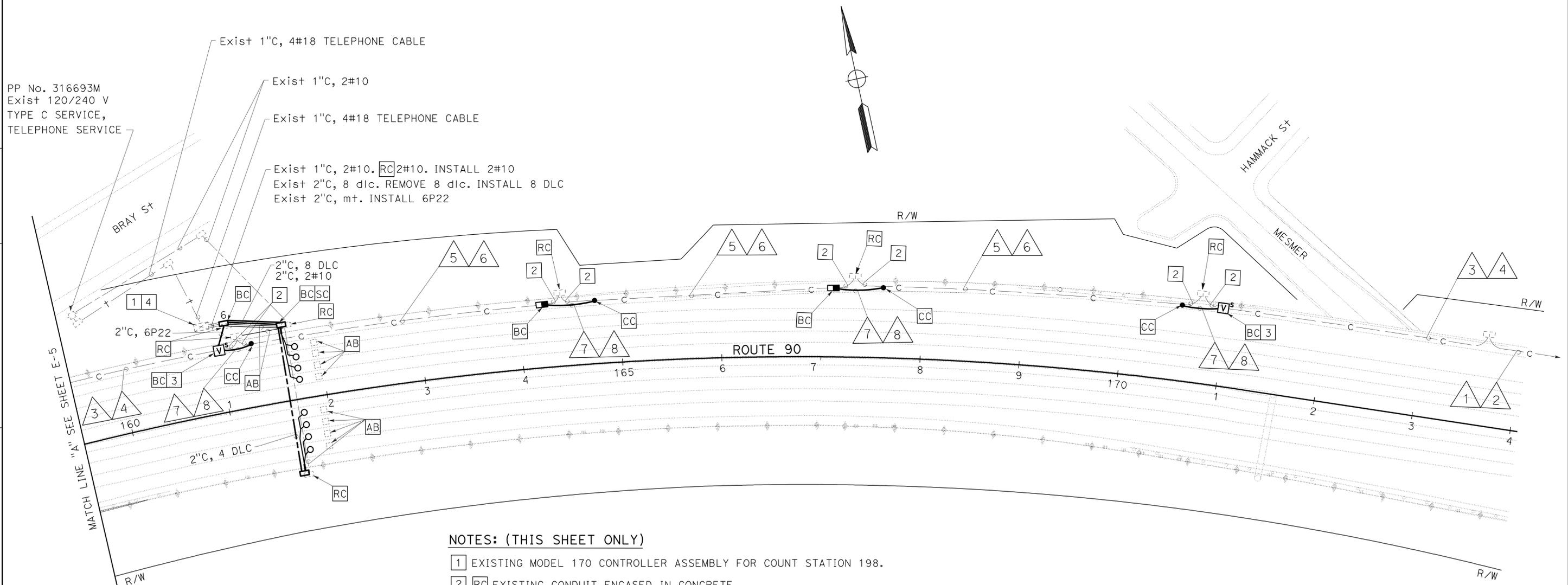
EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6	7	8
50P22 CABLE	DATA/VOICE	1				1*			
24 SMFO CABLE	VIDEO/DATA		1					1N	
12 SMFO CABLE	VIDEO DISTRIBUTION			1					1N
	INNERDUCT (1 1/4")	1	1			1**	1**		1N
	CONDUIT SIZE	4"	4"	4"	4"	4"	4"	4"N	4"N

50P22 - 50 PAIRS 22 AWG
 24 SMFO - 24 SINGLEMODE FIBER OPTIC
 12 SMFO - 12 SINGLEMODE FIBER OPTIC
 * - REMOVE AND REINSTALL EXISTING
 ** - RC EXISTING. INSTALL NEW
 N - NEW



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: SHAHRAM SHAHRIARI
 CHECKED BY: SHAHRAM SHAHRIARI
 REVISED BY: VANESSA TRUONG
 DATE REVISED:



NOTES: (THIS SHEET ONLY)

- 1 EXISTING MODEL 170 CONTROLLER ASSEMBLY FOR COUNT STATION 198.
- 2 RC EXISTING CONDUIT ENCASED IN CONCRETE.
- 3 SPLICE EXISTING 50P22, 24 SMFO, 12 SMFO TO NEW 50P22, 24 SMFO, 12 SMFO WITH NEW SPLICE ENCLOSURES.
- 4 COIL 5' OF 6P22 IN CABINET.
5. FOR COMPLETE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

FOR LEGEND SEE SHEET E-5

2 REVISED PER ADDENDUM No. 2 DATED MAY 3, 2012

APPROVED FOR ELECTRICAL WORK ONLY

**MODIFY COMMUNICATION SYSTEM AND
MODIFY TRAFFIC MONITORING STATION**

SCALE: 1" = 50'

E-6

LAST REVISION DATE PLOTTED => 30-APR-2012
 04-13-12 TIME PLOTTED => 14:23

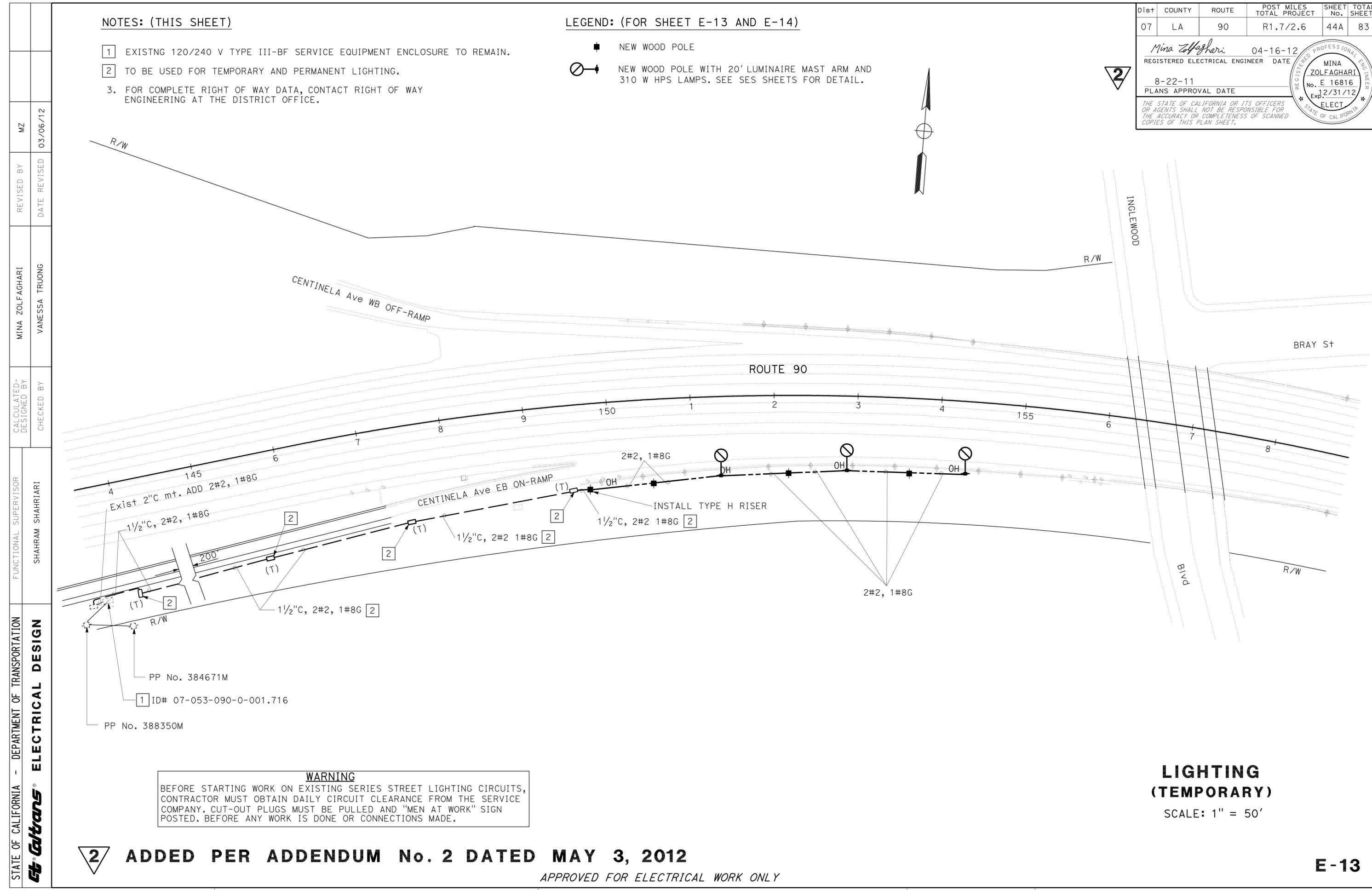
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/2.6	44A	83
Mina Zolfaghari		04-16-12		REGISTERED ELECTRICAL ENGINEER DATE	
8-22-11		PLANS APPROVAL DATE			
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

NOTES: (THIS SHEET)

- 1 EXISTNG 120/240 V TYPE III-BF SERVICE EQUIPMENT ENCLOSURE TO REMAIN.
- 2 TO BE USED FOR TEMPORARY AND PERMANENT LIGHTING.
3. FOR COMPLETE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

LEGEND: (FOR SHEET E-13 AND E-14)

- NEW WOOD POLE
- ⊙ NEW WOOD POLE WITH 20' LUMINAIRE MAST ARM AND 310 W HPS LAMPS. SEE SES SHEETS FOR DETAIL.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: VANESSA TRUONG
 CHECKED BY: MZ
 REVISOR: MZ
 DATE REVISED: 03/06/12

WARNING
 BEFORE STARTING WORK ON EXISTING SERIES STREET LIGHTING CIRCUITS, CONTRACTOR MUST OBTAIN DAILY CIRCUIT CLEARANCE FROM THE SERVICE COMPANY. CUT-OUT PLUGS MUST BE PULLED AND "MEN AT WORK" SIGN POSTED. BEFORE ANY WORK IS DONE OR CONNECTIONS MADE.

2 ADDED PER ADDENDUM No. 2 DATED MAY 3, 2012

APPROVED FOR ELECTRICAL WORK ONLY

LIGHTING (TEMPORARY)
 SCALE: 1" = 50'

E-13

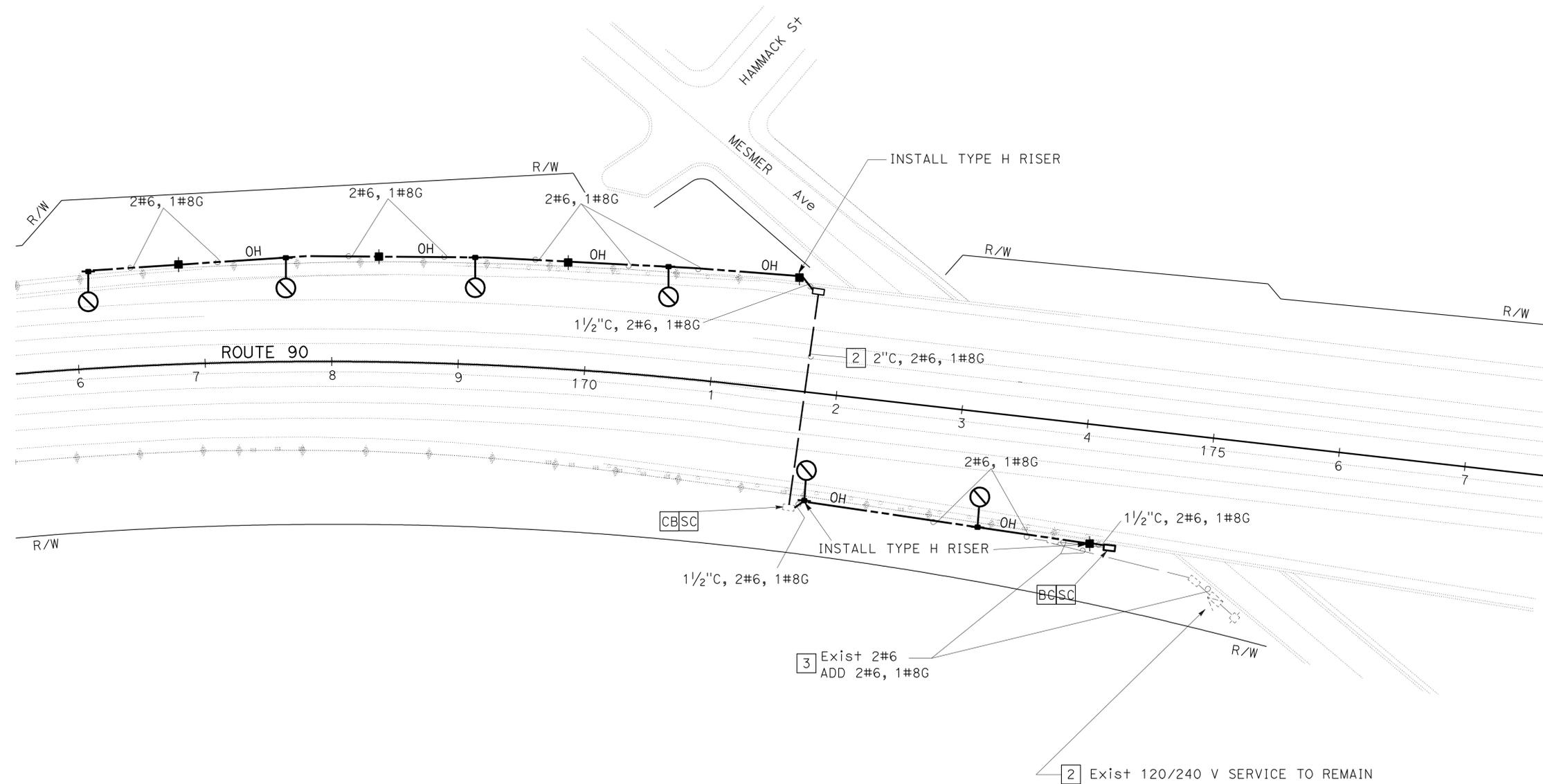
LAST REVISION: DATE PLOTTED => 30-APR-2012
 04-04-12 TIME PLOTTED => 1:3:27

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/2.6	44B	83
Mina Zolfaghari		04-16-12		REGISTERED ELECTRICAL ENGINEER DATE	
8-22-11		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>					

2

NOTES: (THIS SHEET)

- FOR COMPLETE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- FOR INSTALLATION SEE SHEET E-2.
- TO BE USED FOR TEMPORARY AND PERMANENT LIGHTING.
- SEE SHEET E-13 FOR LEGEND.



WARNING
 BEFORE STARTING WORK ON EXISTING SERIES STREET LIGHTING CIRCUITS, CONTRACTOR MUST OBTAIN DAILY CIRCUIT CLEARANCE FROM THE SERVICE COMPANY. CUT-OUT PLUGS MUST BE PULLED AND "MEN AT WORK" SIGN POSTED. BEFORE ANY WORK IS DONE OR CONNECTIONS MADE.

LIGHTING (TEMPORARY)
 SCALE: 1" = 50'

2 ADDED PER ADDENDUM No. 2 DATED MAY 3, 2012

APPROVED FOR ELECTRICAL WORK ONLY

E-14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: VANESSA TRUONG
 CHECKED BY: MZ
 REVISIONS: 03/06/12

LAST REVISION: DATE PLOTTED => 30-APR-2012 | TIME PLOTTED => 10:38

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	44C	83

Victor O. Lopez
 REGISTERED CIVIL ENGINEER DATE _____
 8-22-11
 PLANS APPROVAL DATE
 No. C61373
 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 electronic copies of this plan sheet.



POLE TABLE			
POLE IDENTIFICATION	POLE TYPE	CLASS	POLE EMBEDMENT
DEAD-END POLE	A	45' CLASS H1	10'
	B	45' CLASS H3	12'
TANGENT SPAN POLE	C	45' CLASS 1	10'

DESIGN NOTES:

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals dated 2001.

GROUP LOAD COMBINATIONS:

- I Dead Load
- II Dead Load + Wind Load
- III Dead Load + 0.5 (Wind Load) + Ice Load, Wind Load = 20 psf Max
- IV Fatigue: Not used

LOADING

Wind Loading: 100 mph (3-second gust)
 Wind Recurrence interval: 10 years
 Combined height, exposure, and elevated terrain factor = 1.05
 (Exposure C, structure is located on or over the top half of a 30' Maximum tall ridge, hill or escarpment)

BASIC DESIGN VALUES:

Southern Pine Timber Poles:
 Fb = 1850 psi Tapered treated round pole
 Fv = 110 psi ASTM D2899 Standard
 Fcp = 230 psi
 Fc = 950 psi
 E = 1500 x 10³ psi

TREATMENT

To conform with Section 86 of Standard Specifications

SPECIFICATIONS

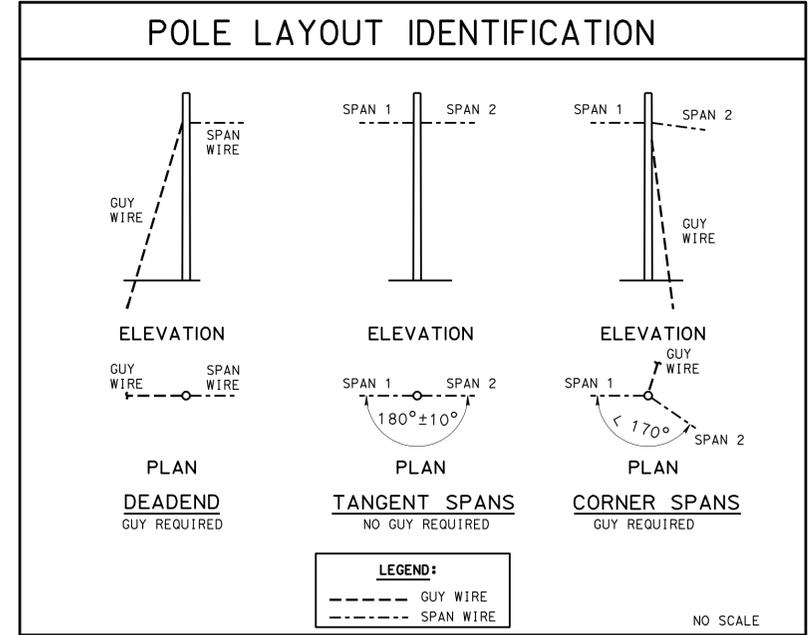
Caltrans Standard Specifications 2006
 ANSI Wood Poles
 ASTM A475, Utility Grade, 7-strand wires
 Termination efficiency factor 0.80

FOUNDATION DESIGN NOTES:

- Pole embedment depth design is based on Broms' approximate procedure as described in Article 13.6 of AASHTO LTS-5.
- Standard embedment depth is calculated based on level ground assumption (up to slope 1V:4H).
- Embedment depth is calculated based on Cohesionless Soil with the following properties: $\phi = 30$ deg, $\gamma = 120$ pcf. Soil is assumed to be unsaturated.
- An overload factor of 2.0 and an undercapacity factor of 0.7 were used for safety factor of 2.86.
- If pole is located on or near a steep slope (up to 1H:2V) add 2 feet extra embedment.
- Allowable vertical bearing pressure at the end bearing of poles is 3000 psf.
- The contractor is to field verify the soil conditions indicated on FOUNDATION DESIGN NOTES 3 and 6.

GENERAL NOTES:

- TYPE A poles shall be stabilized using guy wires, breast blocks or rakes at each dead end, corner, drop or line deviation more than 10° from straight line and shall be attached to pole as nearly as practical to the center of conductors load, 3'-0" maximum. The direction of the guy shall counteract the resultant of unbalanced force applied to pole. See POLE LAYOUT I.D., otherwise see note 2.
- Where space or conflict prevent guy installation, TYPE B poles may be used with specified embedment depth, (See "POLE TABLE" this sheet).
- Overhead line construction not specifically covered here shall conform to the provisions of General Order No. 95 Of Public Utilities Commission.
- All overhead cables shall be sagged with 20'+0.5% of span length minimum overhead clearance and sag of 5.0% ± 0.5%.
- Conductors shall be suspended from 3/8" Ø 7 strand messenger span-wire as follows: Continuous lashing wire, No spare wire conductors allowed except as noted. Bundled vertical dimension shall not exceed 1.5". Maximum OH span shall not exceed 150'.
- Install attachments shown if indicated on the Electrical Plans. When specific connection detail is not shown, mount attachments per manufacturer recommended methods that do not require loss of cross section.
- Attach luminaire arm and/or combination of attachments as specified at locations where indicated on Electrical Plans.
- All attachments shall be mounted with stainless steel straps or other manufacturers methods without drilling holes in pole, except as shown on this sheet. Any other drilling into pole will require Engineer's approval.
- Install tie rod 6" below specified "N Rise" dimension on the "Standard Plans".
- For additional details, see Sheets SES-2 thru SES-5.



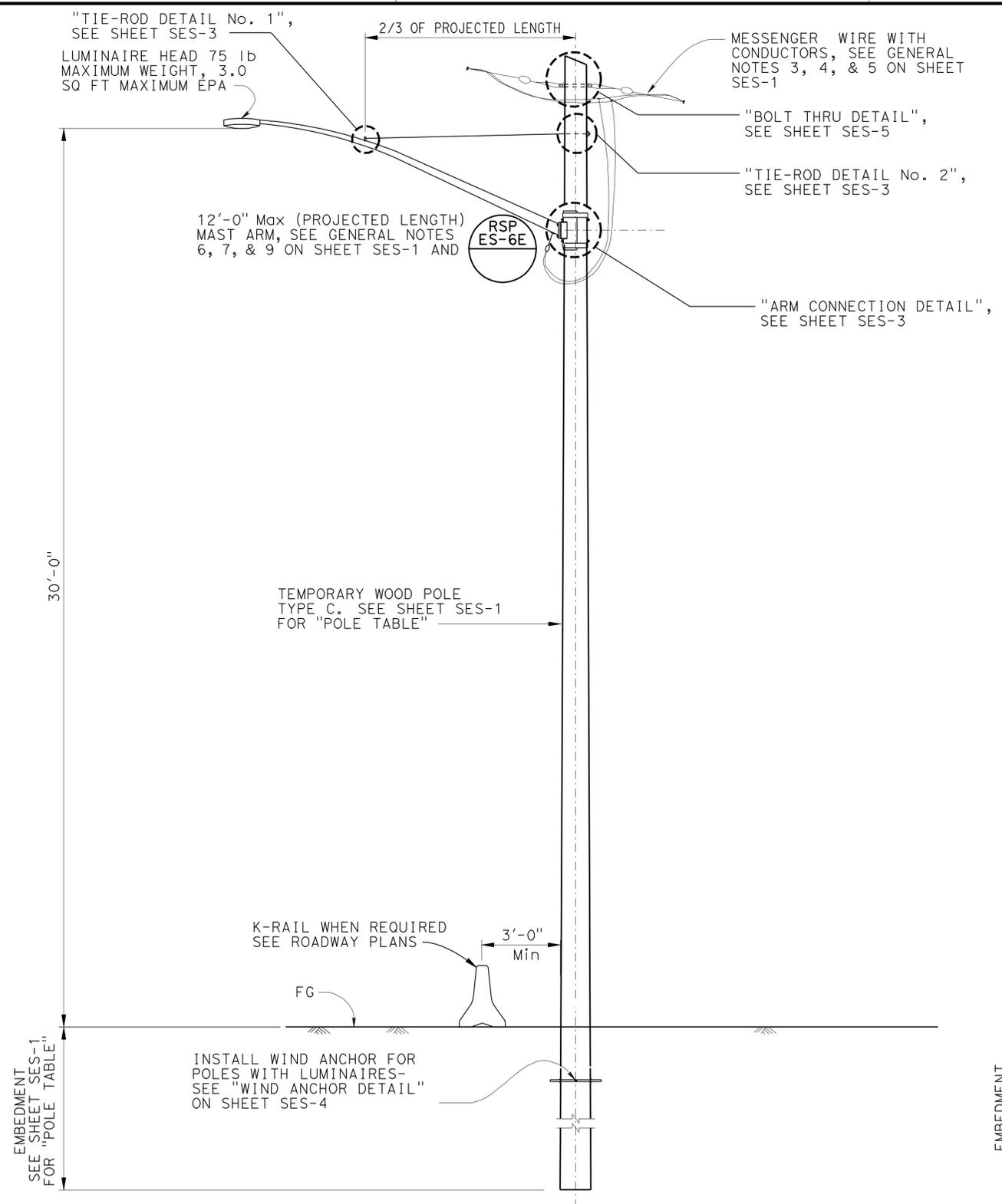
2 ADDED PER ADDENDUM No. 2 DATED MAY 3, 2012

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

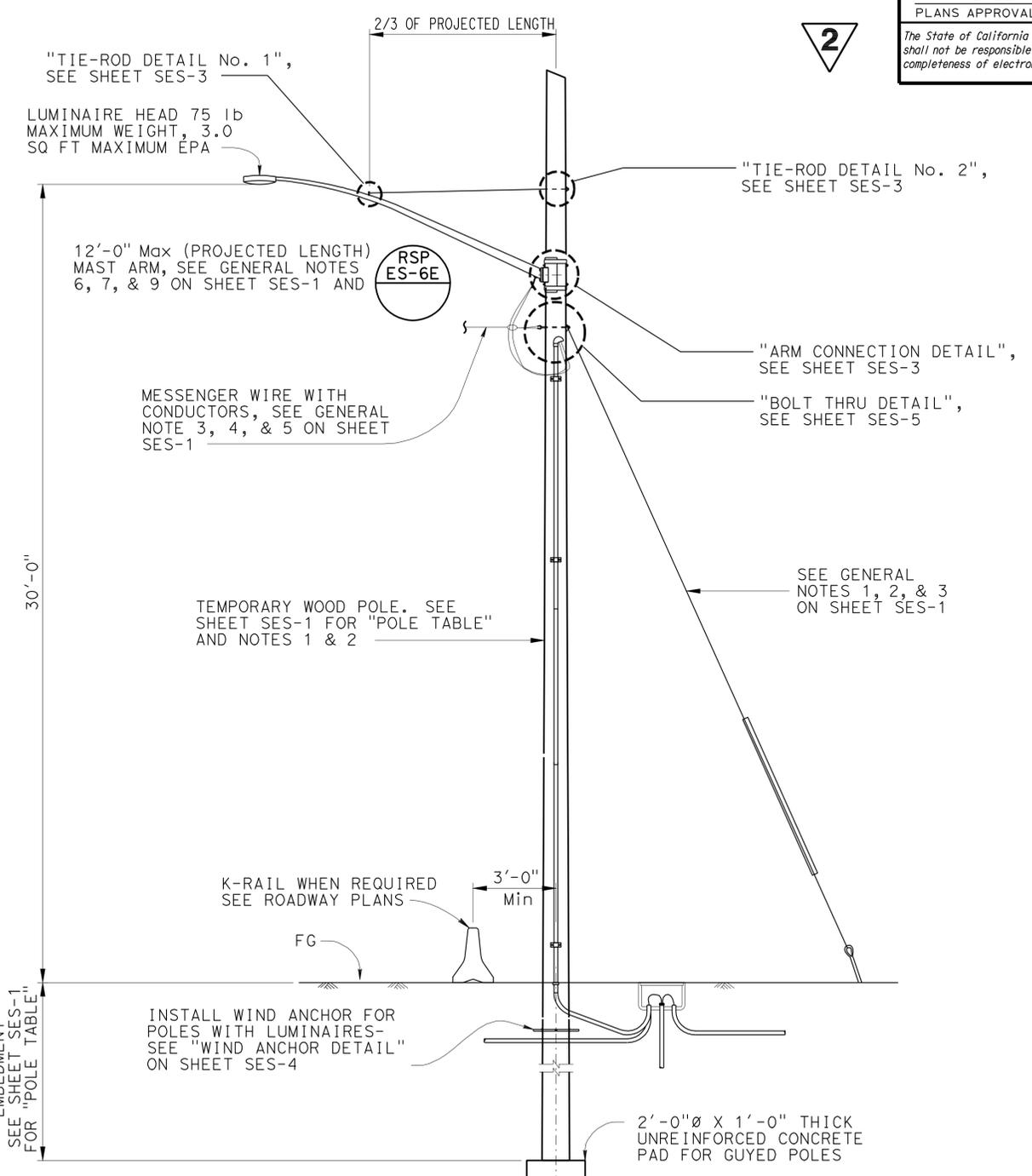
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QUANTITIES	BY	X	CHECKED	X	POST MILE	1.7/2.6	REVISION DATES	
STRUCTURES DESIGN SPECIAL DESIGN SHEET (ENGLISH) (REV. 09-01-10)					UNIT: 3619 PROJECT NUMBER & PHASE: 07000005231		CONTRACT NO.: 07-275801	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES	
0 1 2 3					3-5-12		SHEET 1 OF 5	

USERNAME => s114926 DATE PLOTTED => 30-APR-2012 TIME PLOTTED => 10:51

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	44D	83
REGISTERED CIVIL ENGINEER DATE					
8-22-11					
PLANS APPROVAL DATE					
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TEMPORARY WOOD POLE FOR TANGENT SPANS
NO SCALE



TEMPORARY WOOD POLE FOR DEAD-END
NO SCALE

NOTE:
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2 ADDED PER ADDENDUM No. 2 DATED MAY 3, 2012

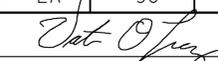
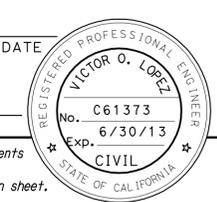
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DETAILS	BY BOB EDWARDS	CHECKED V LOPEZ
QUANTITIES	BY X	CHECKED X

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
SPECIAL DESIGN BRANCH

BRIDGE NO.	N/A
POST MILE	1.7/2.6

TEMPORARY WOOD POLE MISCELLANEOUS POLES

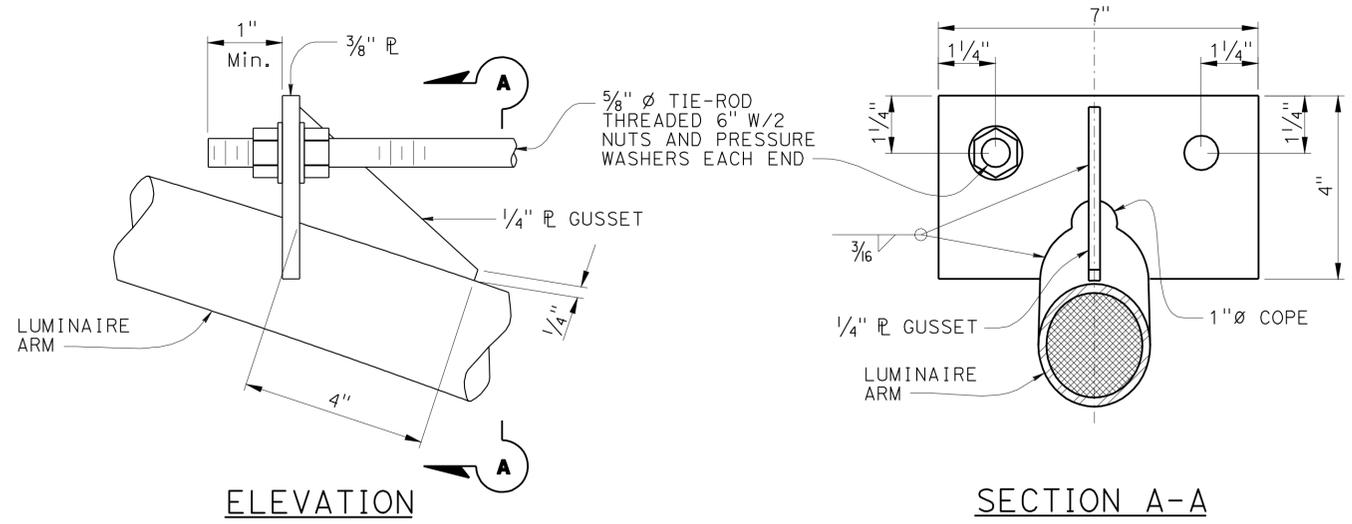
SES-2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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 REGISTERED CIVIL ENGINEER DATE					
PLANS APPROVAL DATE 8-22-11					
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- NOTES:**
- All hardware and steel shall be galvanized after fabrication.
 - Arm Base connection details shall be in compliance with Standard Plans Detail Sheet ES-6D with noted modifications.
 - 2000 lb Min capacity strap system shall be used for top and bottom of plate.
 - The Contractor to verify pole dimensions at Tie-Rod attachment height. Fabricate 8" flat bar with "L" Dimension to maintain an open gap between encasement in finished installation.



NOTE: Not all screw and bolt heads shown for clarity.

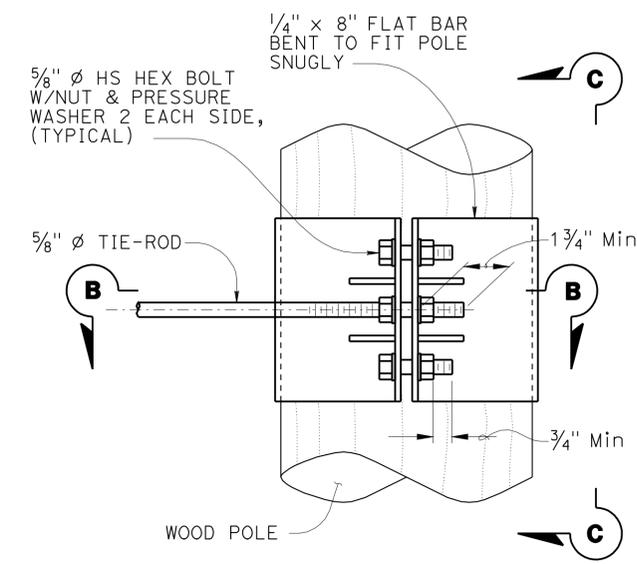


ELEVATION

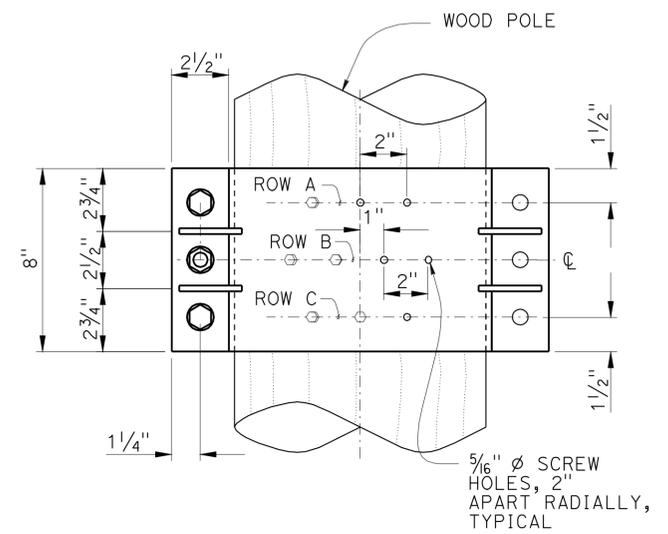
SECTION A-A

TIE-ROD DETAIL No. 1

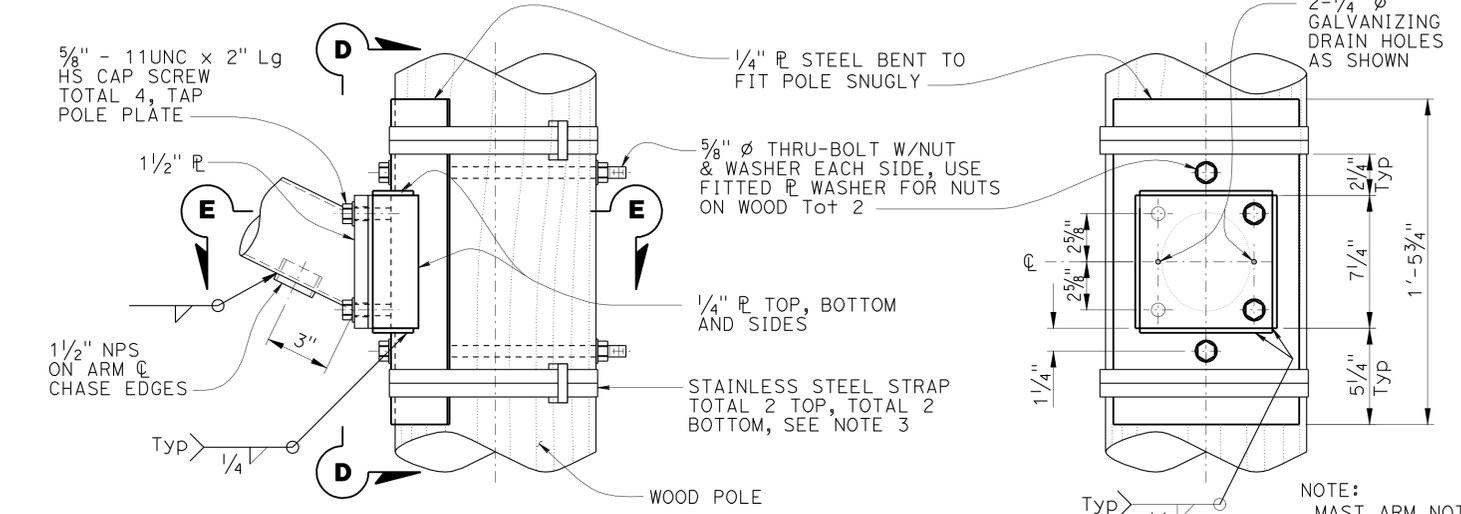
NO SCALE



ELEVATION



VIEW C-C

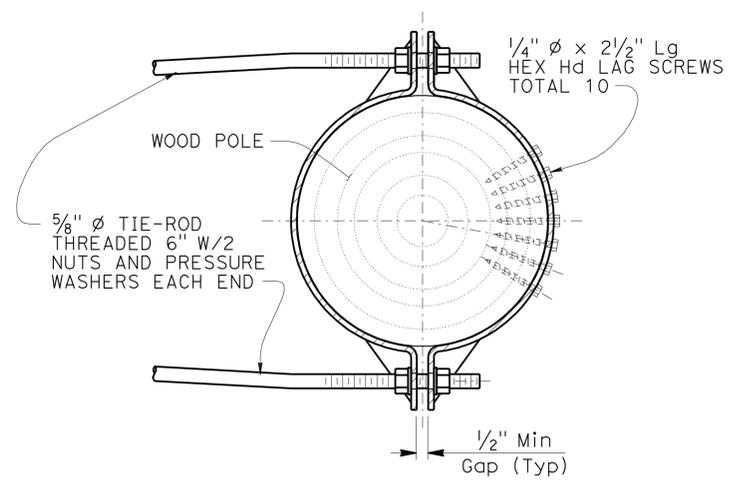


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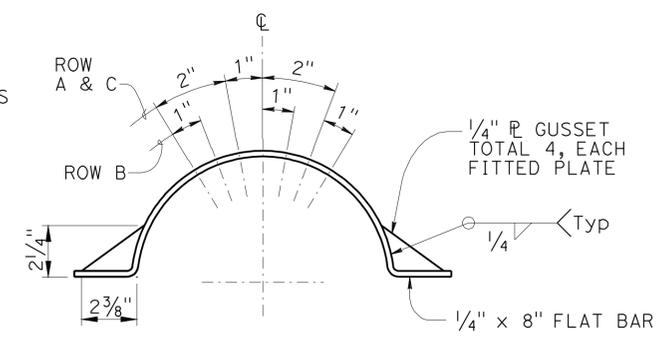
VIEW D-D

ARM CONNECTION DETAILS

NO SCALE



SECTION B-B



LAG SCREW AND GUSSET PLATE LAYOUT

TIE-ROD DETAILS No. 2

NO SCALE

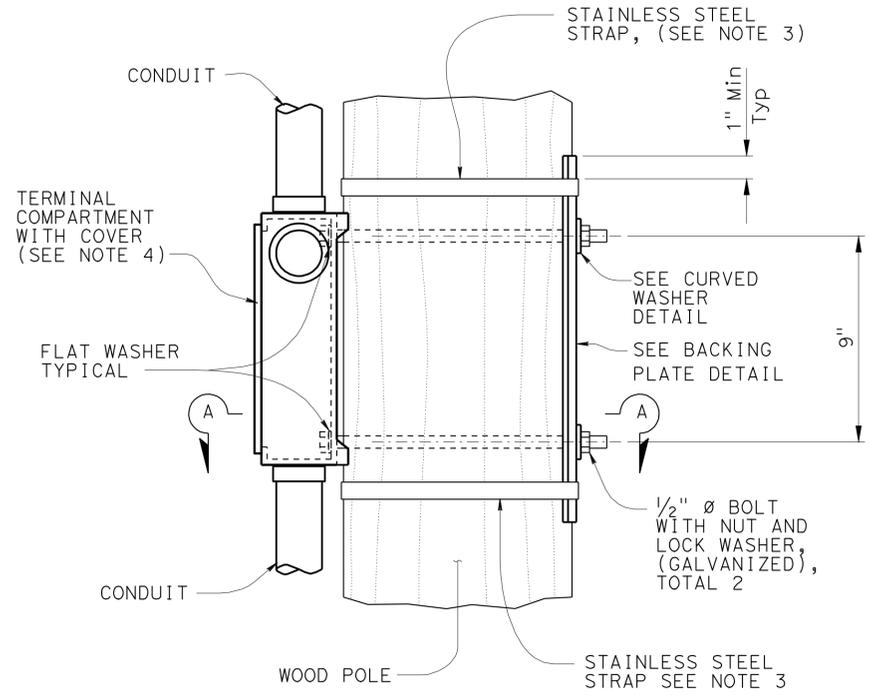
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NOTE: THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

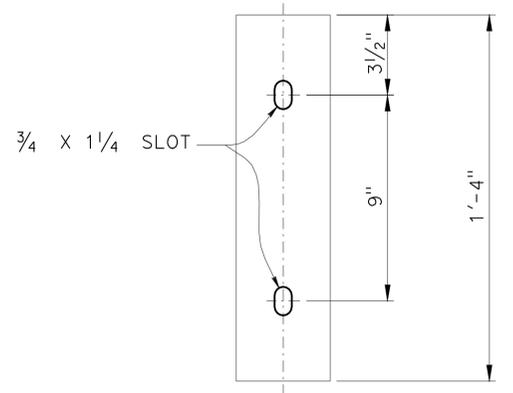
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DETAILS	BY BOB EDWARDS	CHECKED V LOPEZ			N/A		
QUANTITIES	BY X	CHECKED X			POST MILE 1.7/2.6		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	44F	83
<i>Victor Lopez</i> REGISTERED CIVIL ENGINEER DATE _____ 8-22-11 PLANS APPROVAL DATE _____ No. C61373 Exp. 6/30/13 CIVIL STATE OF CALIFORNIA					

2



ELEVATION
3" = 1'-0"

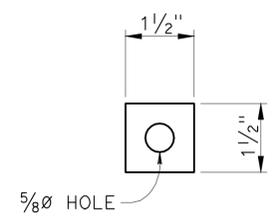


ELEVATION



PLAN

BACKING PLATE DETAIL
3" = 1'-0"



ELEVATION

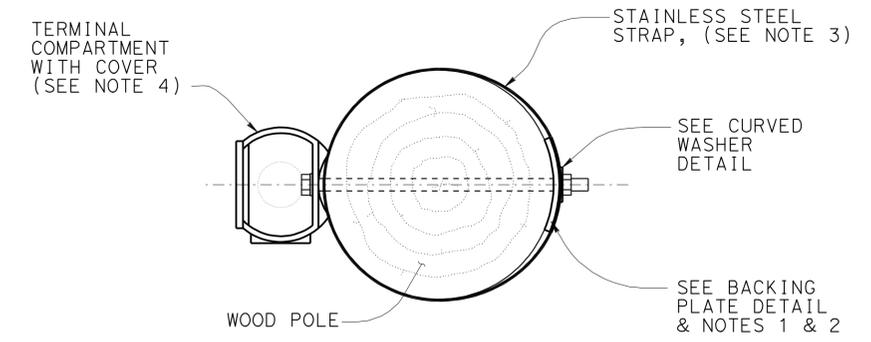


PLAN

CURVED WASHER DETAIL
6" = 1'-0"

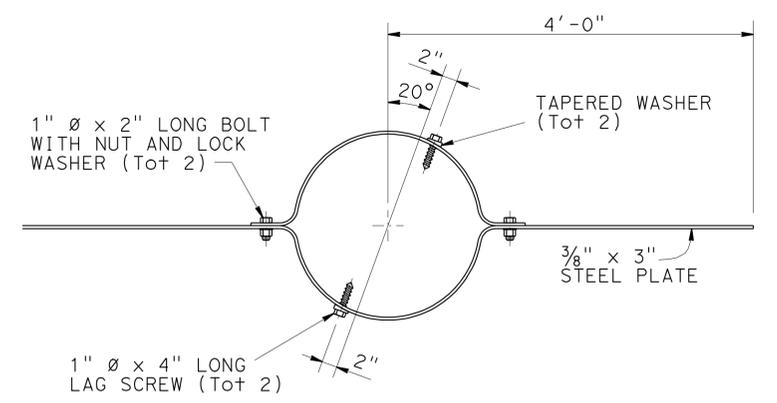
NOTES:

1. The contractor to verify pole dimensions at terminal compartment for fabrication of backing plate and curved washer.
2. Backing plate to be galvanized after fabrication.
3. 3/4" x 0.044" minimum, rounded edge stainless steel straps, double wrapped with 2" long bend under stainless steel strap buckle.
4. For details not shown see STANDARD PLAN RSP ES-4D



SECTION A-A
3" = 1'-0"

**SIDE MOUNTING
TERMINAL COMPARTMENT**
For Details Not Shown See RSP ES-4D Sheet



WIND ANCHOR

To be installed perpendicular to mast arms and 2'-0" Min below grade

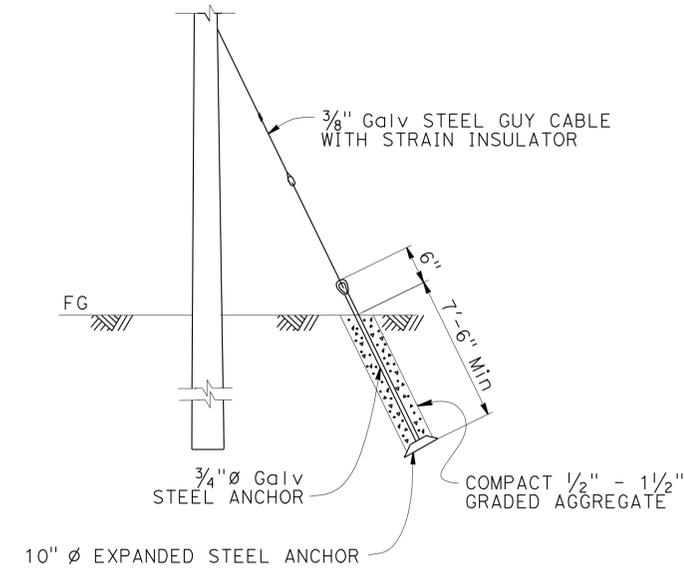
2 ADDED PER ADDENDUM No. 2 DATED MAY 3, 2012

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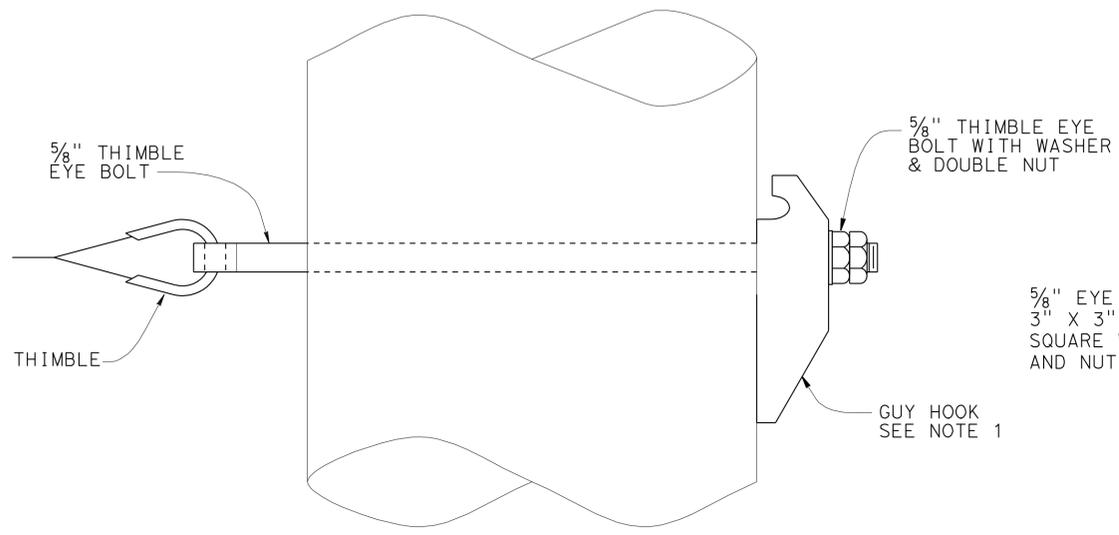
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DETAILS	BY BOB EDWARDS	CHECKED V LOPEZ			N/A		
QUANTITIES	BY X	CHECKED X			POST MILE 1.7/2.6		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/2.6	44G	83
REGISTERED CIVIL ENGINEER			DATE		
8-22-11			PLANS APPROVAL DATE		
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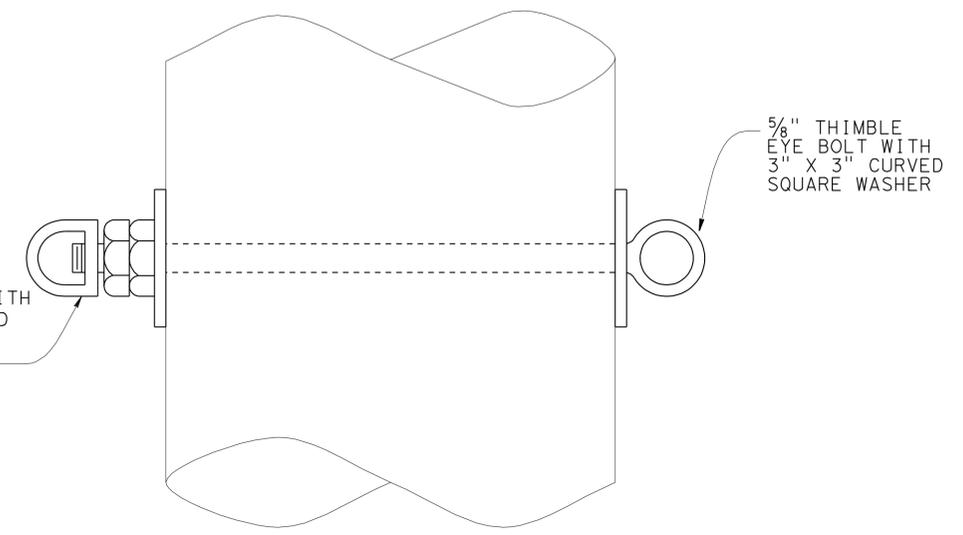
2



EXPANSION ANCHOR DETAIL
NO SCALE



DEAD-END POLE



TANGENT SPAN POLE

BOLT THRU DETAIL
NO SCALE

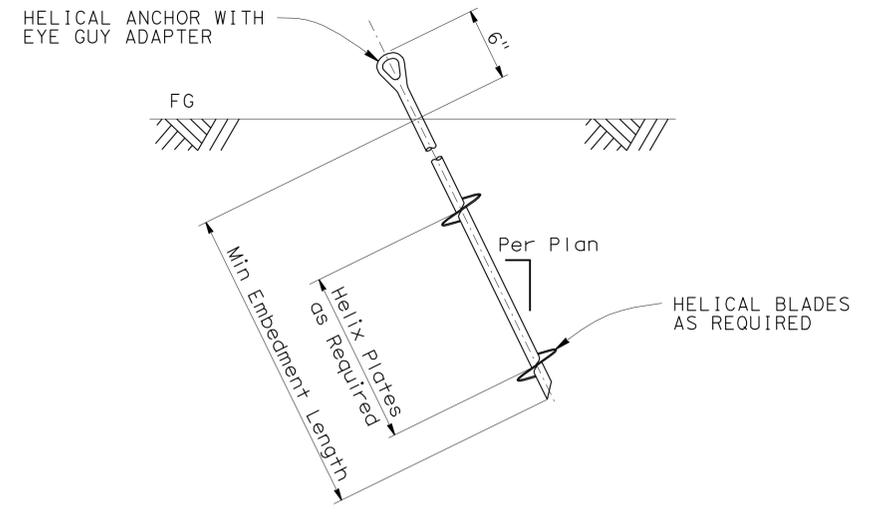
2 ADDED PER ADDENDUM No. 2
DATED MAY 3, 2012

HELICAL ANCHOR SPECIFICATIONS TABLE				
Type	Helix Plate Diameter*	Allowable Min Tension Cap, "Q _a "	Embedment (Minimum)	Installation Torque (Min)**, "T"
Tension	10"	2600 lb	7'-6"	775 ft-lb

SPECIFICATION NOTES:

- During installation the torque will be continuously monitored and recorded. If a drop in torque is recorded, the anchor must then continue to be inserted past the soft soil layer until Minimum Installation Torque is achieved.
- Anchors and Hardware to be installed per the manufacturers specifications.

* Number of helical plates is not specified; Contractors choice.
** Adjust accordingly if required, See Note 3.



ALTERNATIVE HELICAL ANCHOR INSTALLATION DETAIL
(See Helical Anchor Specifications Table)
NO SCALE

NOTES:

- If guy wire is not used, replace guy hook with a 3" x 3" curved square washer.
- Contractor to verify soil condition, slope, and adjust anchoring to satisfy basic design requirements per FOUNDATION DESIGN NOTES on SES-1 sheet.
- Use of alternative Guy Wire Installation Detail requires that the soil bearing capacity be verified by the installation Contractor.
- Installation Contractor shall determine the most appropriate value for k_t based on soil conditions and shall adjust the Min Installation Torque based on the revised k_t. A k_t value of 10 was assumed for the Min Installation Torque shown in the table.

The Helical Installation torque Formula is Q_u = k_t*T where,

Q_u = Q_a*FS = Ultimate Helical Anchor Capacity (lb)
FS = Factor of Safety = 3.0
Q_a = Allowable Helical Anchor Capacity (lb)
k_t = Empirical Torque Factor (ft⁻¹)
T = Min Installation Torque (ft-lb)
- Requests made by Helical Anchor Installation Contractor to reduce the minimum embedment length and/or Helix diameter require Engineer's approval.
- The Contractor shall locate and mark all of the substructures and utilities. Installation of anchors underneath utilities or subsurface structures is prohibited. Horizontal clearances of anchors shall be determined by Inspector during construction.

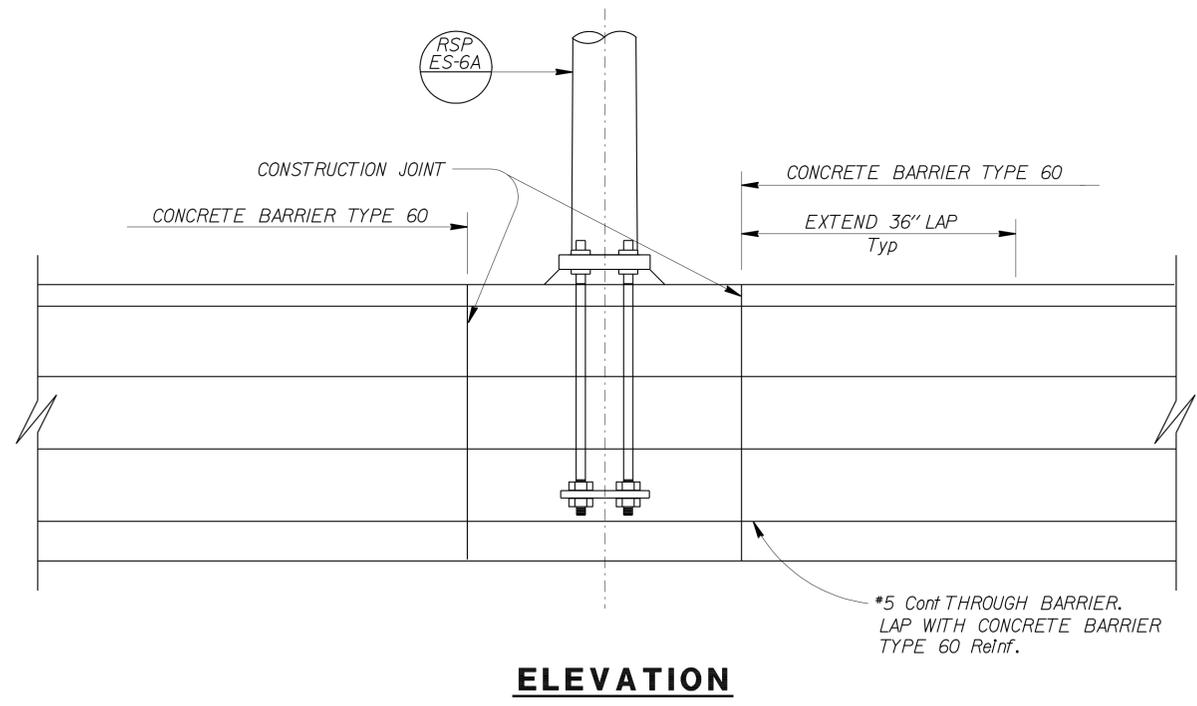
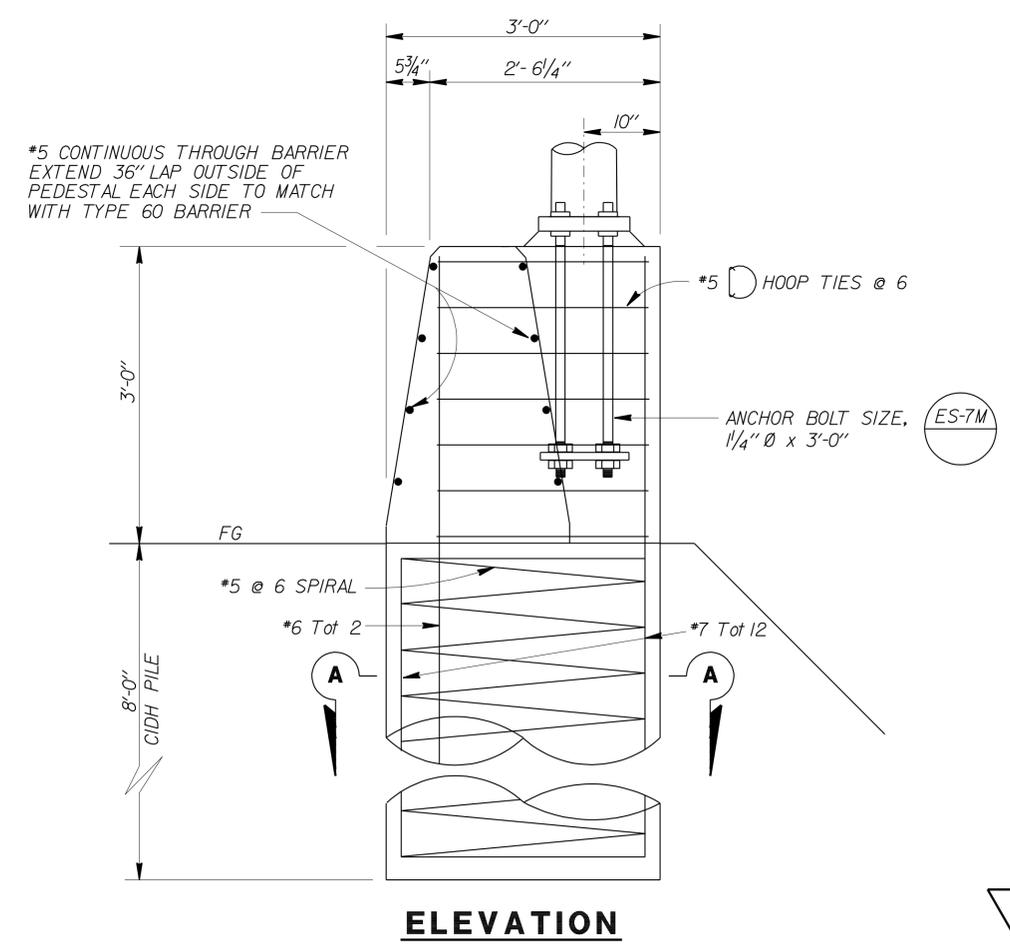
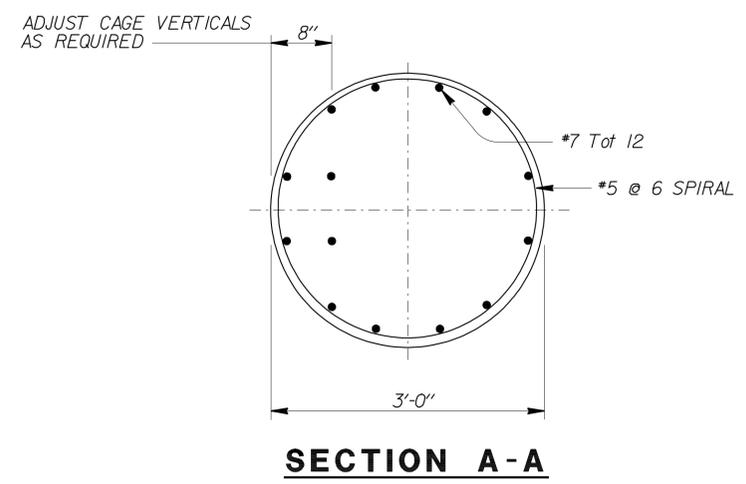
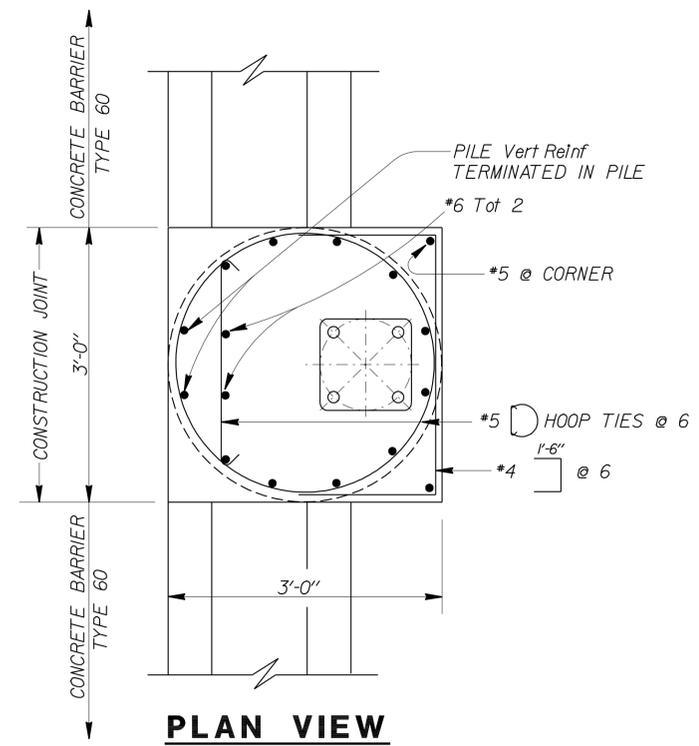
NOTE:
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DESIGN	BY L WARREN/V LOPEZ	CHECKED BRYAN NAGID	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO.	TEMPORARY WOOD POLE GUY WIRE DETAILS	SES-5
DETAILS	BY BOB EDWARDS	CHECKED V LOPEZ			N/A		
QUANTITIES	BY X	CHECKED X			POST MILE		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	90	R1.7/2.6	44H	83

Jeffrey B. Woody 4/5/12
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
JEFF WOODY
 No. C41260
 Exp. 3/31/13
 CIVIL
 STATE OF CALIFORNIA



DESIGN NOTES:

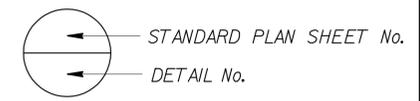
SPECIFICATIONS
 Design : AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals dated 2001.

LOADING
 Wind Loading: 100 mph

UNIT STRESSES
 Structural steel: $f_y = 48,000$ psi tapered steel pole
 $f_y = 36,000$ psi unless otherwise noted.

Anchor bolts = A307
 Reinforced concrete: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi

NOTE:
 For details not shown, see "STANDARD PLANS".



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2 ADDED PER ADDENDUM No. 2 DATED MAY 3, 2012

BRANCH CHIEF JEFF WOODY	DESIGN BY JEFF WOODY	CHECKED ANDREW BUI	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH A	BRIDGE NO.	TYPE 21 LIGHTING STANDARD	SES-6
	DETAILS BY R. YEE	CHECKED JEFF WOODY			POST MILE		
	QUANTITIES BY	CHECKED			R1.7/R2.6		

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