

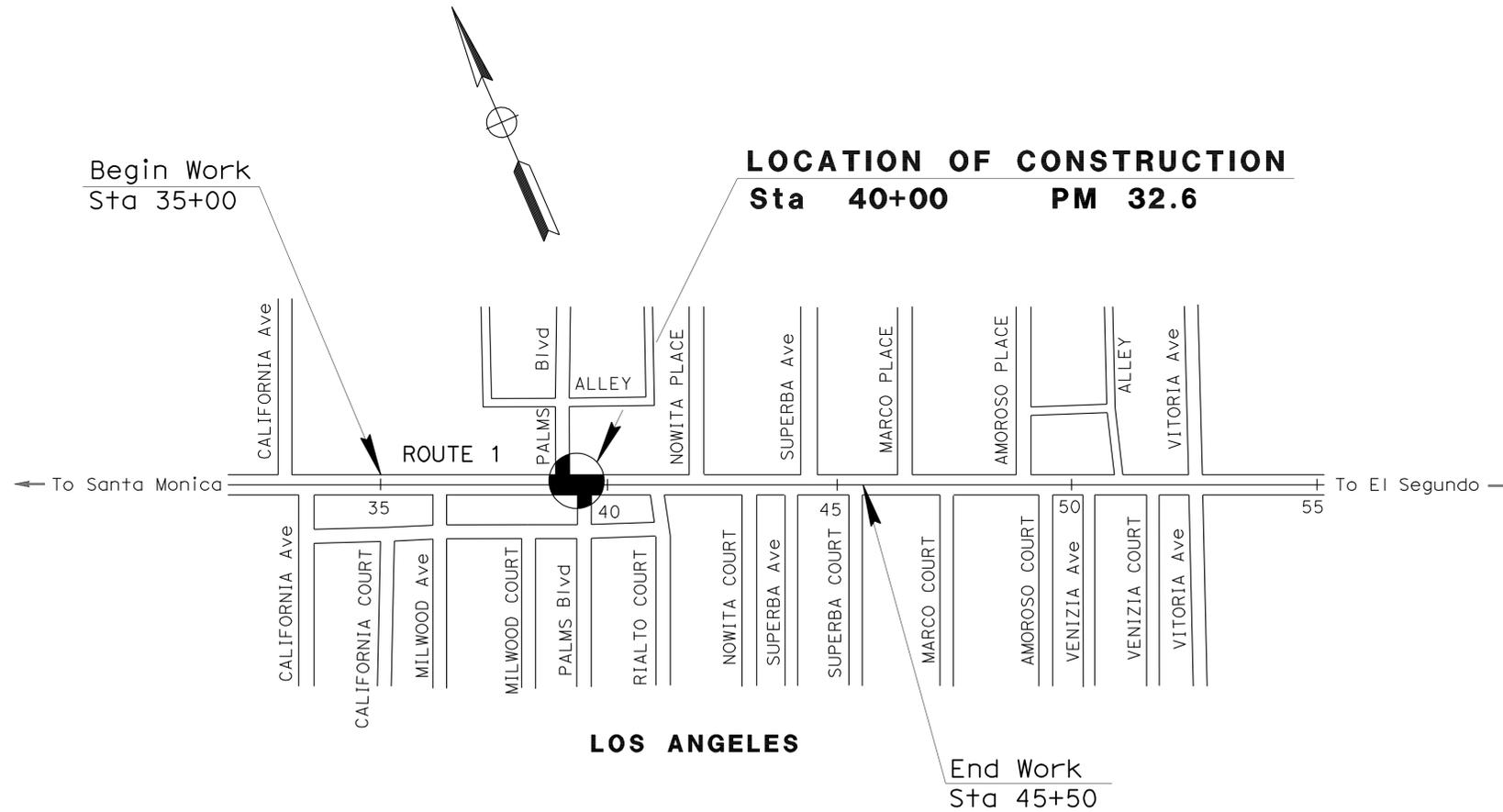
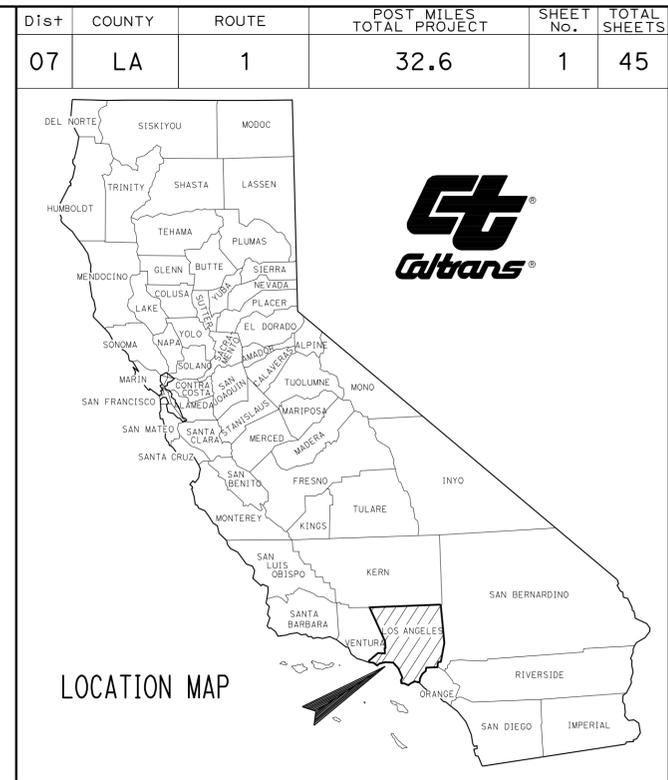
INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2	LAYOUTS
3	CONSTRUCTION DETAILS
4	UTILITY PLANS AND DETAILS
5	CONSTRUCTION AREA SIGNS
6	PEDESTRIAN HANDLING DETAILS
7	PAVEMENT DELINEATION AND SIGN PLAN
8	SUMMARY OF QUANTITIES
9-24	ELECTRICAL PLANS
25-26	SES POLE DETAILS
27-45	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
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN LOS ANGELES COUNTY
IN LOS ANGELES
AT PALMS BOULEVARD

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



PROJECT MANAGER ERIC WANG	DESIGN ENGINEER KENNY NGUYEN
-------------------------------------	--

Kenny Nguyen 11/22/11
 PROJECT ENGINEER DATE
 REGISTERED ELEC. ENGINEER
January 23, 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.

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

NO SCALE

CONTRACT No.	07-4T4201
PROJECT ID	0700021016

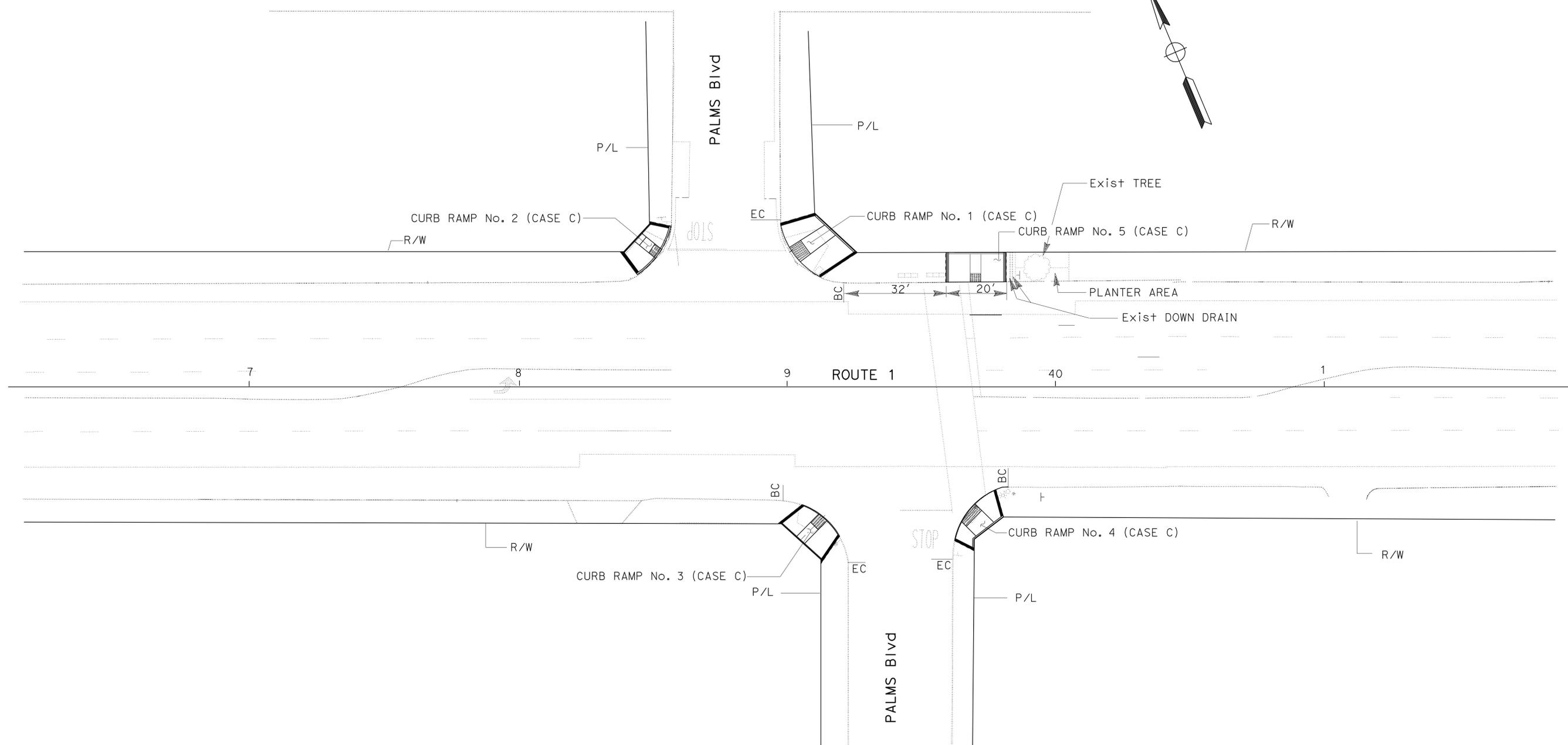
FOR ACCURATE RIGHT OF WAY DATA,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	2	45

Zhaib 11-22-11
 REGISTERED CIVIL ENGINEER DATE
 1-23-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 MOHAMMED HAIDER
 No. 61335
 Exp. 6-30-13
 CIVIL
 STATE OF CALIFORNIA

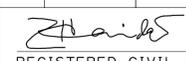
THE STATE OF CALIFORNIA OR ITS OFFICERS
OR AGENTS SHALL NOT BE RESPONSIBLE FOR
THE ACCURACY OR COMPLETENESS OF SCANNED
COPIES OF THIS PLAN SHEET.

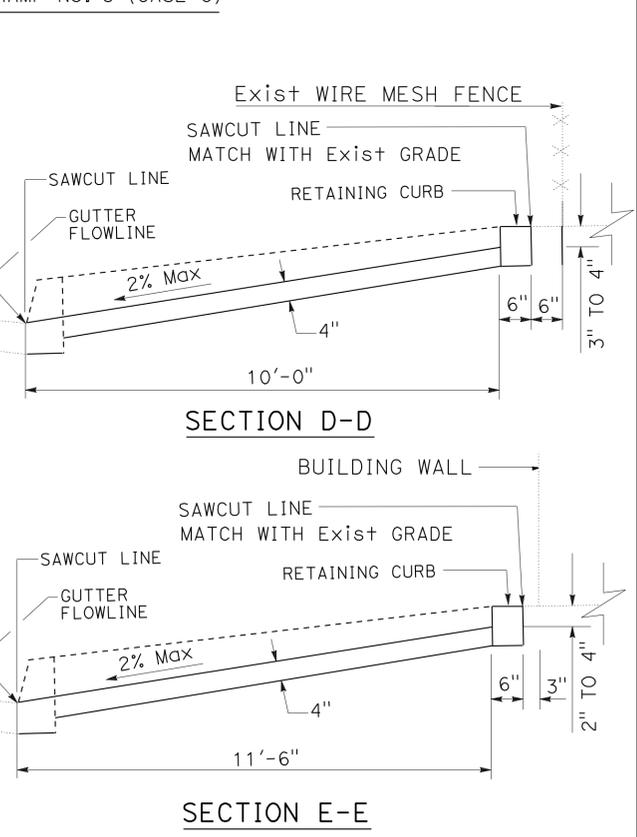
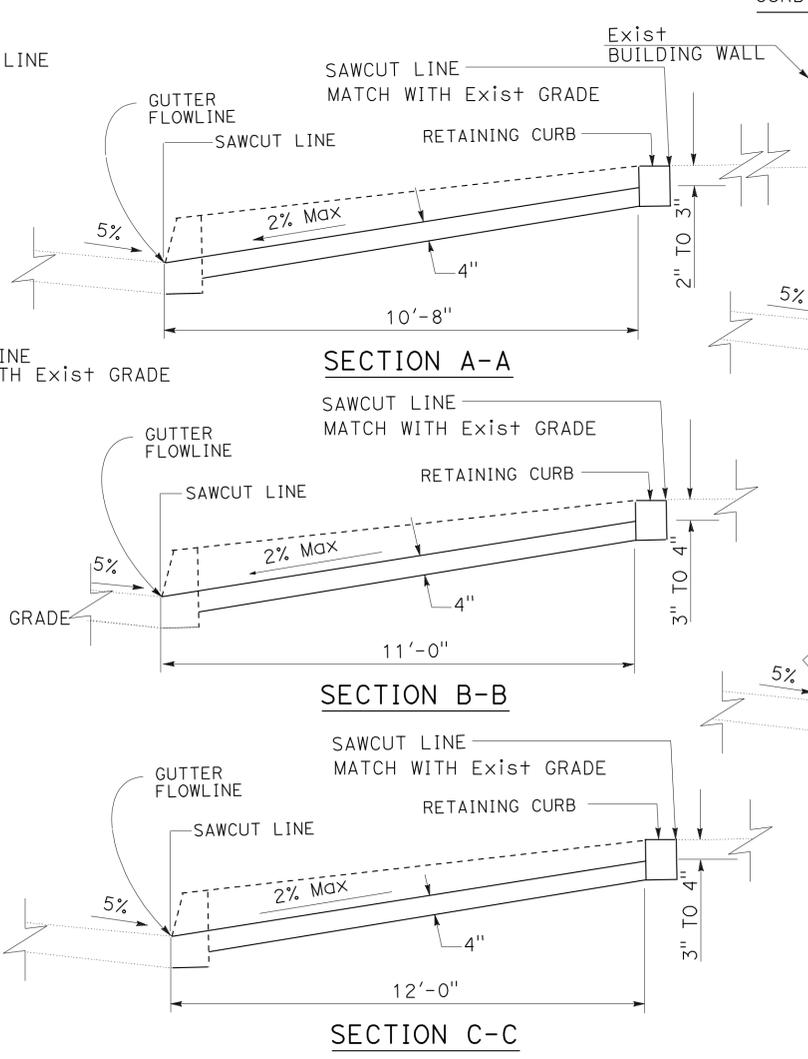
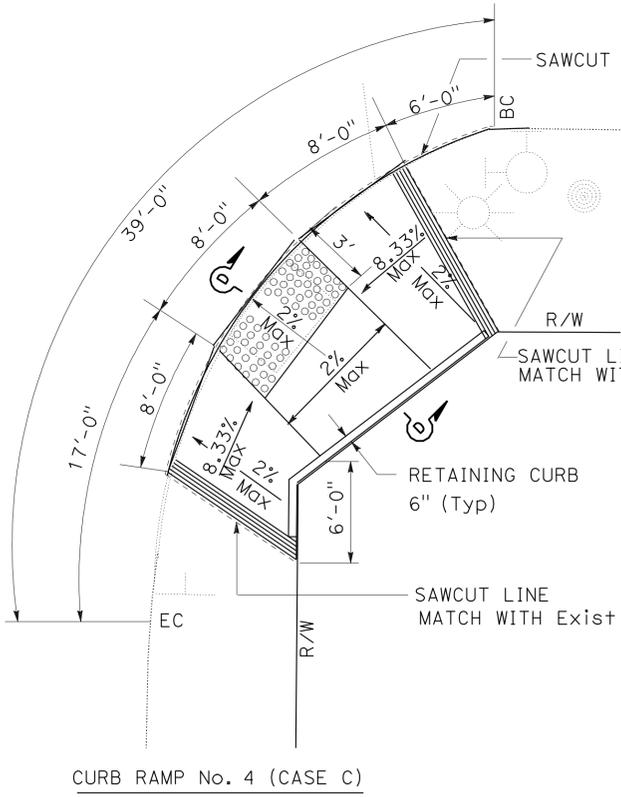
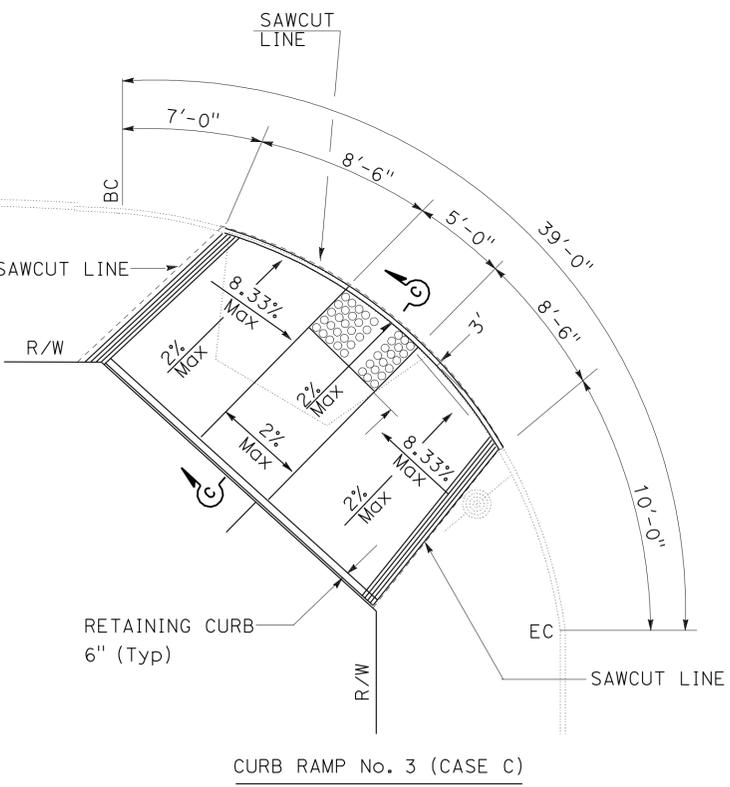
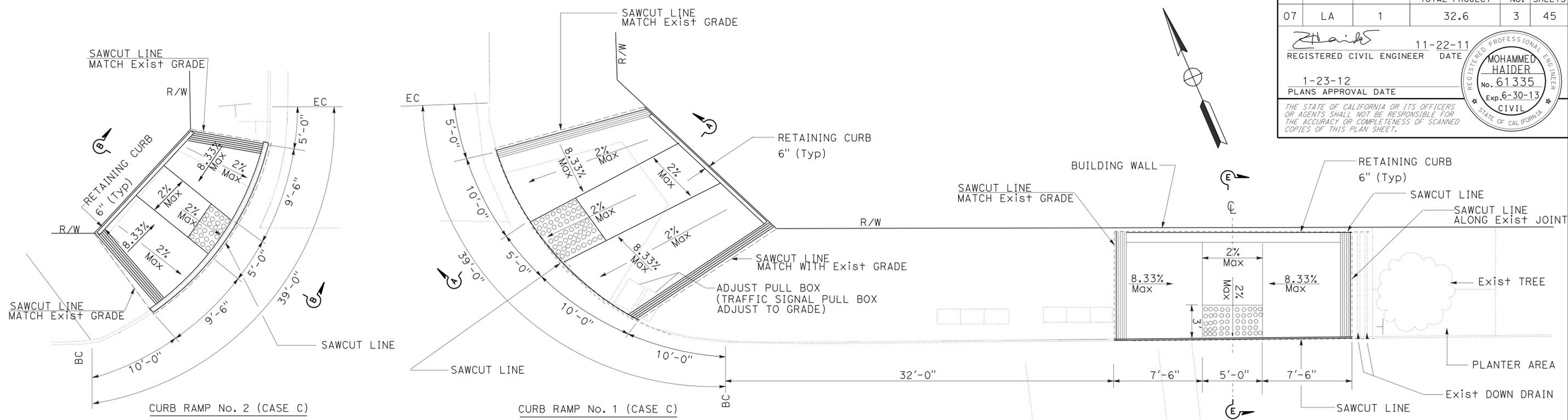
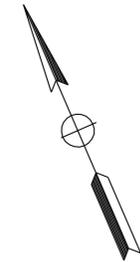


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
 FUNCTIONAL SUPERVISOR: MOHAMMED CHOWDHURY
 CALCULATED/DESIGNED BY: FRANCISCO MARTINEZ
 CHECKED BY: MOHAMMED HAIDER
 REVISED BY: FRANCISCO MARTINEZ
 DATE REVISED: MOHAMMED HAIDER

LAYOUT PLAN
SCALE: 1" = 20'

L-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	3	45
			11-22-11	DATE	
REGISTERED CIVIL ENGINEER			MOHAMMED HAIDER No. 61335 Exp. 6-30-13 CIVIL		
1-23-12 PLANS APPROVAL DATE			REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA		
<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
 DETECTABLE WARNING SURFACE

CONSTRUCTION DETAILS
 NO SCALE
C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
 FRANCISCO MARTINEZ
 MOHAMMED HAIDER
 MOHAMMED CHOWHURY
 MOHAMMED CHOWHURY
 MOHAMMED CHOWHURY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	4	45

M. Celina Aviles 11-22-11
 REGISTERED CIVIL ENGINEER DATE
 1-23-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 N. CELIVA AVILES
 No. 57106
 Exp. 2/31/11
 CIVIL
 STATE OF CALIFORNIA

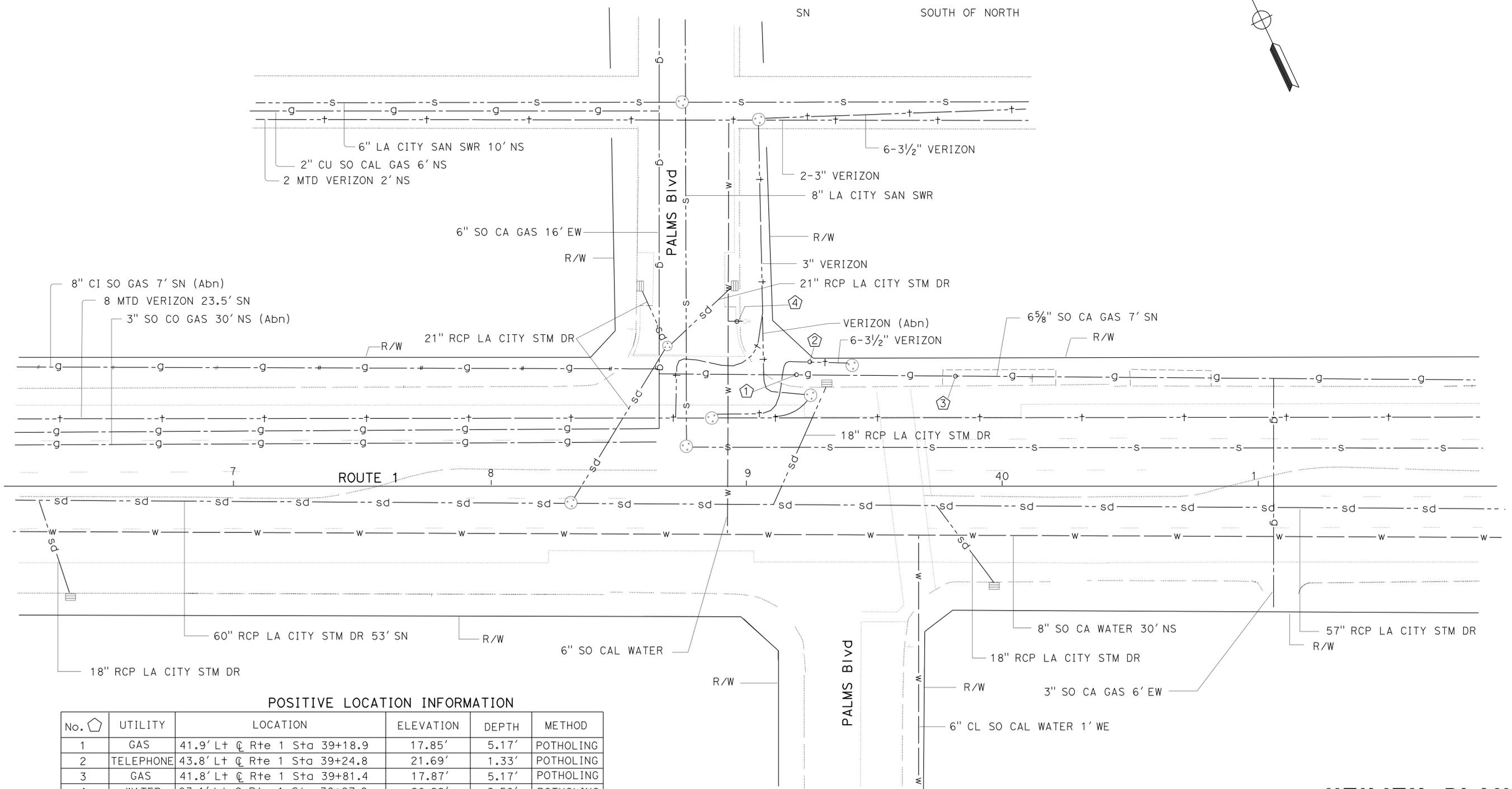
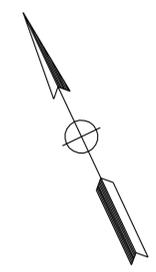
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

- FOR COMPLETE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- LOCATION OF UTILITY FACILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- UTILITY OWNERSHIP ON THIS PROJECT:
 TELEPHONE - VERIZON
 WATER - SOUTHERN CALIFORNIA WATER
 GAS - SOUTHERN CALIFORNIA GAS
 SEWER - LA CITY SANITARY SEWER

ABBREVIATION

- | | |
|-----------------|---------------------------|
| MTD | MUTIPLE TITLE DUCT |
| CU | COPPER |
| SO CAL WATER | SOUTHERN CALIFORNIA WATER |
| SO CAL GAS | SOUTHERN CALIFORNIA GAS |
| LA CITY SAN SWR | LA CITY SANITARY SEWER |
| LA CITY STM DR | LA CITY STORM DRAIN |
| EW | EAST OF WEST |
| NS | NORTH OF SOUTH |
| WE | WEST OF EAST |
| SN | SOUTH OF NORTH |



POSITIVE LOCATION INFORMATION

No.	UTILITY	LOCATION	ELEVATION	DEPTH	METHOD
1	GAS	41.9' Lt C Rte 1 Sta 39+18.9	17.85'	5.17'	POTHOLING
2	TELEPHONE	43.8' Lt C Rte 1 Sta 39+24.8	21.69'	1.33'	POTHOLING
3	GAS	41.8' Lt C Rte 1 Sta 39+81.4	17.87'	5.17'	POTHOLING
4	WATER	63.1' Lt C Rte 1 Sta 38+87.9	20.22'	2.50'	POTHOLING

THIS PLAN ACCURATE FOR EXISTING UTILITY ONLY.

UTILITY PLAN
SCALE: 1" = 20'

U-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
 FUNCTIONAL SUPERVISOR: CELINA AVILES
 CALCULATED/DESIGNED BY: CELINA AVILES
 CHECKED BY: KENNY NGUYEN
 REVISIONS: CELINA AVILES
 DATE: 7/2/2010

USERNAME => s128843
DGN FILE => 0741420ka01.dgn



UNIT 1843

PROJECT NUMBER & PHASE

0700021016

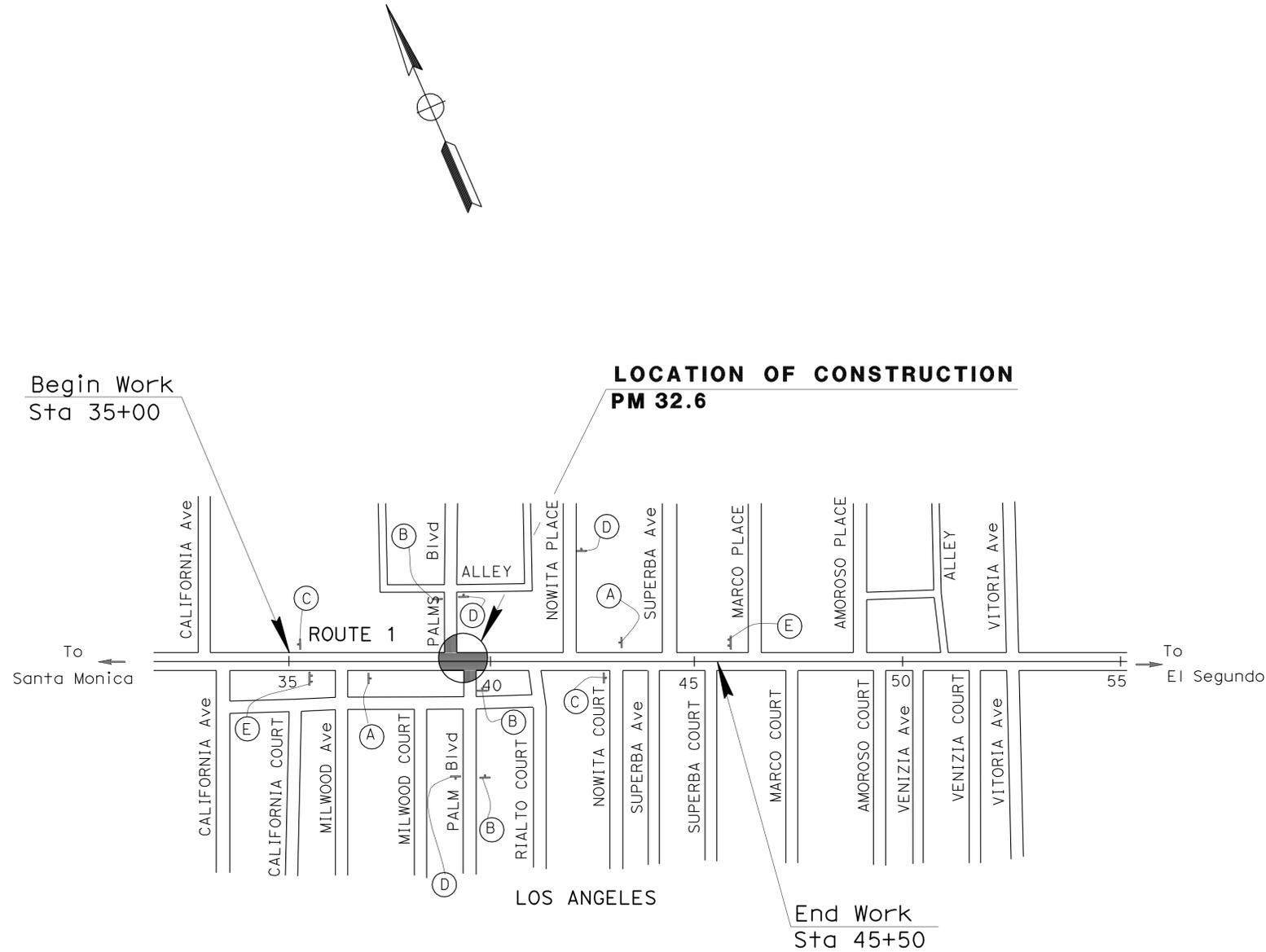
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 00-00-00 TIME PLOTTED => 14:33

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	5	45

REGISTERED CIVIL ENGINEER DATE 11-22-11
 REGISTERED CIVIL ENGINEER DATE 1-23-12
 PLANS APPROVAL DATE

MOHAMMED HAIDER
 No. 61335
 Exp. 6-30-13
 CIVIL

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



STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE	DESCRIPTION	PANEL SIZE	No. OF POSTS AND SIZE	No. OF SIGNS
(A)	W20-1	ROAD WORK AHEAD	48" X 48"	1- 4" X 6"	2
(B)	W20-1	ROAD WORK AHEAD	36" X 36"	1- 4" X 4"	3
(C)	G20-2	END ROAD WORK	48" X 24"	1- 4" X 6"	2
(D)	G20-2	END ROAD WORK	36" X 18"	1- 4" X 4"	3
(E)	C40	TRAFFIC FINES DOUBLED IN CONSTRUCTION	144" X 60"	2- 6" X 6"	2

NOTE: EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Caltrans® TRAFFIC DESIGN
 FUNCTIONAL SUPERVISOR: MOHAMMED CHOWDHURY
 CALCULATED/DESIGNED BY: FRANCISCO MARTINEZ
 CHECKED BY: MOHAMMED HAIDER
 REVISOR: FRANCISCO MARTINEZ
 DATE REVISOR: MOHAMMED HAIDER

CONSTRUCTION AREA SIGNS
 NO SCALE
CS-1

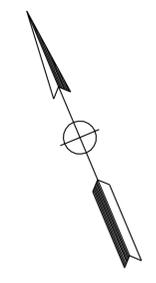
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 00-00-00 | TIME PLOTTED => 06:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	6	45

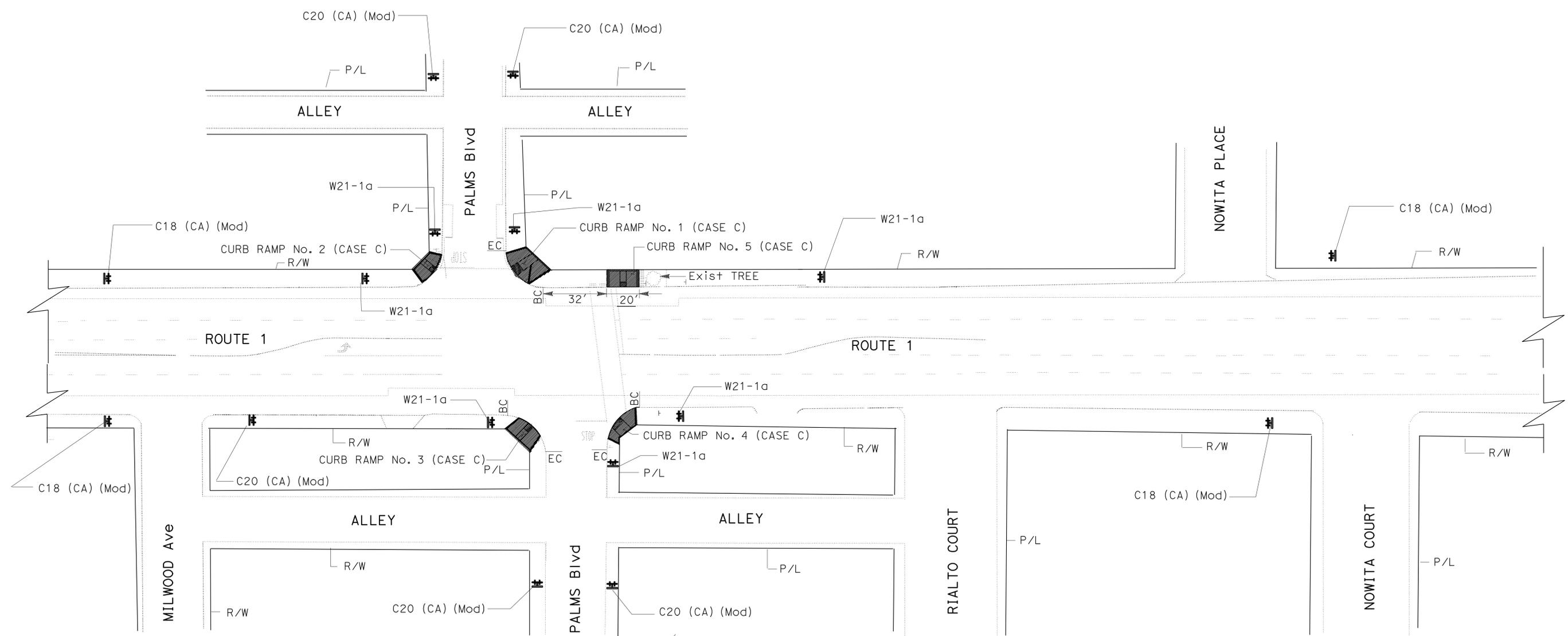
<i>Haider</i>	11-22-11
REGISTERED CIVIL ENGINEER	DATE
1-23-12	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
MOHAMMED HAIDER
No. 61335
Exp. 6-30-13
CIVIL

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



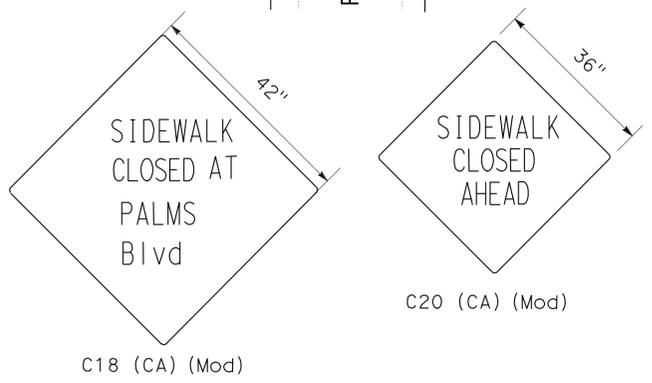
NOTES:
 1. PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES.



SIGN CODE LEGEND:
 XXXY-Y: FEDERAL SIGN CODE PER MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
 XXXY-Y (CA): CALIFORNIA SIGN CODE PER CALIFORNIA MUTCD

LEGEND

- WORK AREA
- BARRICADE (TYPE II)
- DIRECTION OF TRAFFIC



**PEDESTRIAN HANDLING DETAILS
 TRAFFIC CONTROL SYSTEM**

THIS PLAN ACCURATE FOR PEDESTRIAN HANDLING DETAILS ONLY.

NO SCALE

TH-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
 FUNCTIONAL SUPERVISOR: MOHAMMED CROWDHURY
 CALCULATED/DESIGNED BY: MOHAMMED HAIDER
 CHECKED BY: FRANCISCO MARTINEZ
 REVISOR: MOHAMMED HAIDER
 DATE: 11-22-11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	7	45

<i>Haider</i>	11-22-11
REGISTERED CIVIL ENGINEER	DATE
1-23-12	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER	MOHAMMED HAIDER
No. 61335	
Exp. 6-30-13	
CIVIL	

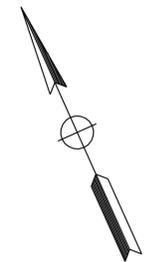
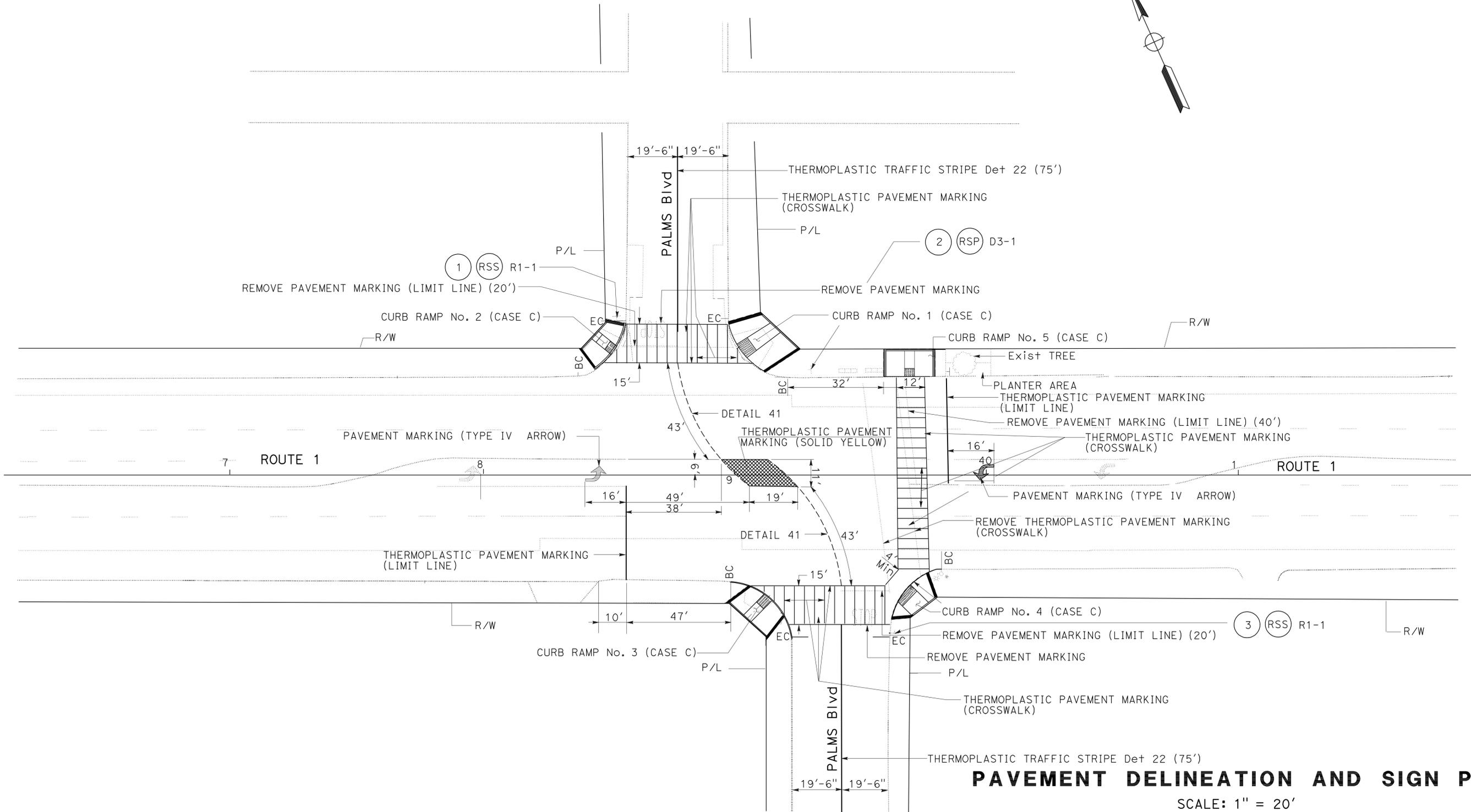
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

LEGEND:

- (X) SIGN ID
- (RSP) REMOVE ROADSIDE SIGN (METAL POST)
- (RSS) REMOVE ROADSIDE SIGN (STRAP AND SADDLE BRACKET METHOD)

REVISED BY	DATE REVISED
FRANCISCO MARTINEZ	MOHAMMED HAIDER
CALCULATED/DESIGNED BY	CHECKED BY
FUNCTIONAL SUPERVISOR	MOHAMMED CHOWDHURY
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	TRAFFIC DESIGN



PAVEMENT DELINEATION AND SIGN PLAN

SCALE: 1" = 20'

PD-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	8	45

11-22-11
 REGISTERED CIVIL ENGINEER DATE
 1-23-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 MOHAMMED HAIDER
 No. 61335
 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.

ROADWAY QUANTITIES

LOCATION	REMOVE CONCRETE	ROADWAY EXCAVATION	MINOR CONCRETE (CURB)	MINOR CONCRETE (CURB RAMP)	DETECTABLE WARNING SURFACE (N)	TEMPORARY DRAINAGE INLET PROTECTION	ADJUST PULL BOX
	(CURB, SIDEWALK & CURB RAMP)						
	CY	CY	CY	CY	SQFT	EA	EA
CURB RAMP No. 1	4.44	4.44	1	3.44	12.0	2	2
CURB RAMP No. 2	3.93	3.93	1	2.93	12.0	1	
CURB RAMP No. 3	3.89	3.89	.60	3.29	12.0		
CURB RAMP No. 4	3.87	3.87	.80	3.07	24.0	1	
CURB RAMP No. 5	3.06	3.06	.62	2.44	12.0		
TOTAL	19.19	19.19	4.02	15.17		4	2

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

PAVEMENT DELINEATION AND SIGN QUANTITIES

SHEET No.	PAVEMENT DELINEATION						REMOVE		
	THERMOPLASTIC TRAFFIC STRIPE		THERMOPLASTIC PAVEMENT MARKING			PAVEMENT MARKER (RETROREFLECTIVE)	THERMOPLASTIC PAVEMENT MARKING		
	De+ 22	De+ 41	SOLID YELLOW	12" WHITE CROSSWALK	12" WHITE LIMIT LINE	ARROW	TYPE D	WORD	LIMIT LINE
	LF	LF	SQFT	SQFT	SQFT	SQFT	EA	SQFT	SQFT
PD-1	300	86	209	1026	100	30	16	30	80
TOTAL		386		1365			16		110

ROADWAY SIGN QUANTITIES

SHEET No.	SIGN ID	SIGN CODE	REMOVE	
			METAL POST	STRAP AND SADDLE BRACKET METHOD
PD-1	①	R1-1		1
	②	D3-1	1	
	③	R1-1		1
TOTAL			1	2

SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
 FRANCISCO MARTINEZ
 MOHAMMED CHOWDHURY
 MOHAMMED HAIDER
 REVISOR DATE
 CHECKED BY
 CALCULATED BY
 FUNCTIONAL SUPERVISOR
 DESIGNED BY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	9	45

Kenny Nguyen		11-22-11
REGISTERED ELEC. ENGINEER	DATE	
1-23-12		
PLANS APPROVAL DATE		

Kenny Nguyen	
No. E17759	
Exp. 6/30/12	
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.

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

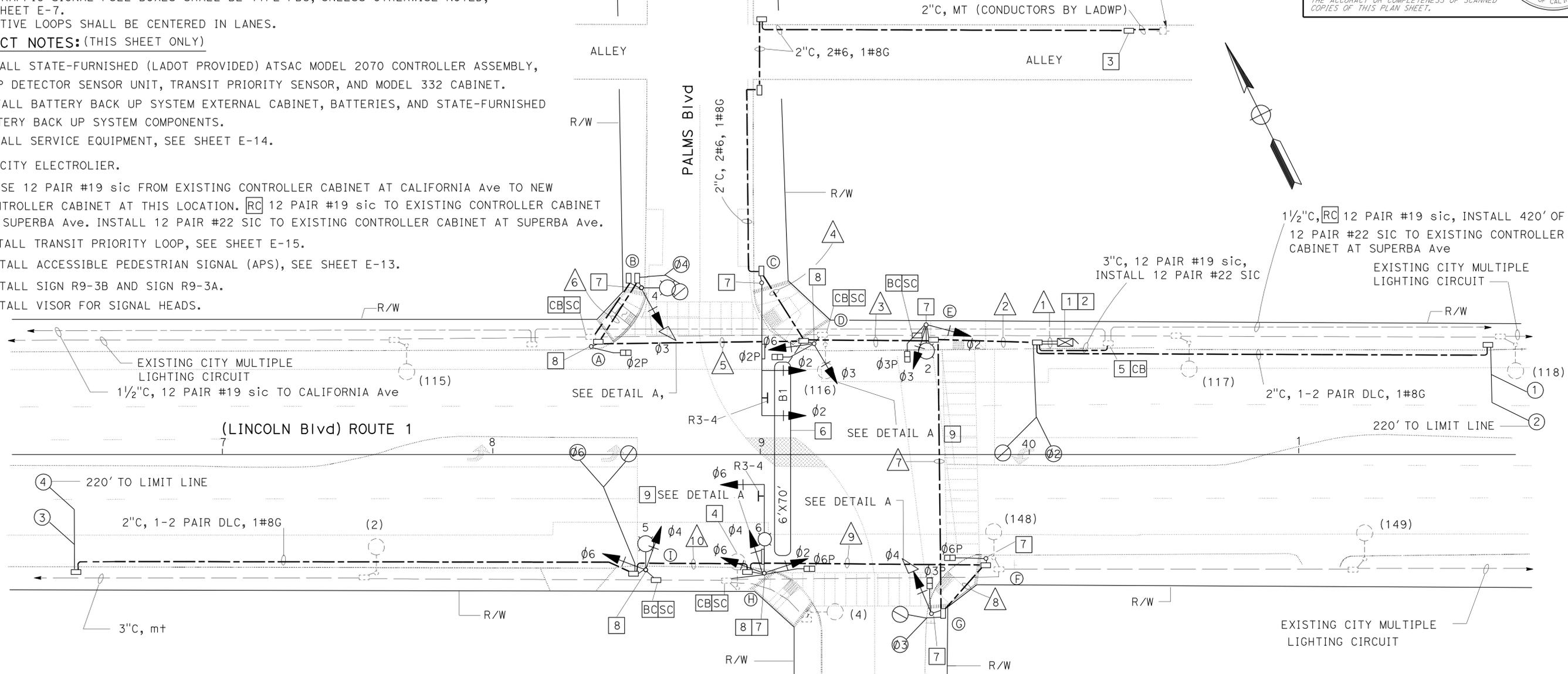
NOTES: (THIS SHEET ONLY)

1. FOR POLE AND EQUIPMENT SCHEDULE, AND CONDUIT AND CONDUCTOR SCHEDULE, SEE SHEET E-2.
2. ALL NEW VEHICLE SIGNAL SECTION AND BACKPLATES SHALL BE PLASTIC.
3. FOR ADDITIONAL STREET LIGHTING DETAILS, SEE SHEET E-3.
4. SEE SHEETS E-8 TO E-12 FOR LOOP DETECTOR DETAILS.
5. ALL TRAFFIC SIGNAL PULL BOXES SHALL BE TYPE PB3, UNLESS OTHERWISE NOTED, SEE SHEET E-7.
6. INDUCTIVE LOOPS SHALL BE CENTERED IN LANES.

PROJECT NOTES: (THIS SHEET ONLY)

1. INSTALL STATE-FURNISHED (LADOT PROVIDED) ATSAC MODEL 2070 CONTROLLER ASSEMBLY, LOOP DETECTOR SENSOR UNIT, TRANSIT PRIORITY SENSOR, AND MODEL 332 CABINET.
2. INSTALL BATTERY BACK UP SYSTEM EXTERNAL CABINET, BATTERIES, AND STATE-FURNISHED BATTERY BACK UP SYSTEM COMPONENTS.
3. INSTALL SERVICE EQUIPMENT, SEE SHEET E-14.
4. RC CITY ELECTROLIER.
5. REUSE 12 PAIR #19 sic FROM EXISTING CONTROLLER CABINET AT CALIFORNIA Ave TO NEW CONTROLLER CABINET AT THIS LOCATION. RC 12 PAIR #19 sic TO EXISTING CONTROLLER CABINET AT SUPERBA Ave. INSTALL 12 PAIR #22 SIC TO EXISTING CONTROLLER CABINET AT SUPERBA Ave.
6. INSTALL TRANSIT PRIORITY LOOP, SEE SHEET E-15.
7. INSTALL ACCESSIBLE PEDESTRIAN SIGNAL (APS), SEE SHEET E-13.
8. INSTALL SIGN R9-3B AND SIGN R9-3A.
9. INSTALL VISOR FOR SIGNAL HEADS.

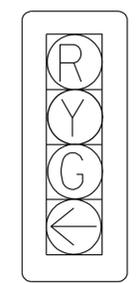
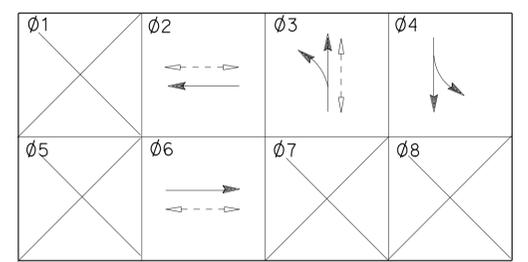
NEW TRAFFIC SIGNAL SERVICE, [3]
 pp # 83783M
 INSTALL STAND OFF BRACKET AT 3 O'CLOCK OF SERVICE POLE 83783M, THEN INSTALL 2"C RISER AT THE "2A" POSITION OF THE BRACKET PER LADWP RISER CONFIGURATION. SEE SHEET E-16
 ADDRESS: 1600 1/2 LINCOLN Blvd



- ABBREVIATIONS: (FOR SHEETS E-1 TO E-3)**
- ATSAC AUTOMATED TRAFFIC SURVEILLANCE AND CONTROL
 - LADOT LOS ANGELES DEPARTMENT OF TRANSPORTATION
 - LADWP LOS ANGELES DEPARTMENT OF WATER AND POWER
 - LABSL LOS ANGELES BUREAU OF STREET LIGHTING
 - APS ACCESSIBLE PEDESTRIAN SIGNAL

LEGENDS: (THIS SHEET ONLY)

- BICYCLE LOOP DETECTOR
- STREET NAME SIGN



DETAIL A

SIGNAL AND LIGHTING (CITY)

SCALE: 1" = 20'
 LADOT INTERSECTION 21005

E-1

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
 FUNCTIONAL SUPERVISOR: HASSAN MANNA
 CALCULATED/DESIGNED BY: HASSAN MANNA
 CHECKED BY: HASSAN MANNA
 REVISED BY: KENNY NGUYEN
 DATE REVISED: HASSAN MANNA

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	10	45

Kenny Nguyen 11-22-11
 REGISTERED ELEC. ENGINEER DATE

1-23-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 KENNY NGUYEN
 No. E17759
 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.

POLE AND EQUIPMENT SCHEDULE

No.	STANDARD			VEH SIG MTG		PED SIGNAL	APS		LED LUMINAIRE	SPECIAL REQUIRMENTS
	Type	SMA	LMA	Mast Arm	Pole	MTG	Ø	ARROW		
(A)	1-B					TP-1-T				
(B)	15TS *		8			SV-1-T	2 **	→	165 W	
(C)	28-5-100	50		1 MAT 1 MAS			2 **	←		PALMS Blvd
(D)	1-B					TV-2-T				
(E)	15TS *		8			SV-2-TC	3	←	165 W	
(F)	1-B					TP-1-T	3	←		
(G)	1-B					TV-1-T	6 **	→		
(H)	19-4-100*	30	8	1 MAT		SV-3-TA	6 **	→	165 W	PALMS Blvd
(I)	15TS *		8			SV-2-TA			165 W	

- * THE POLE HEIGHT IS 29', SEE SHEETS SES-1, SES-2.
- ** NON-ACTUATED PEDESTRIAN PHASE, WALK INTERVAL IS ON RECALL.

CONDUIT AND CONDUCTOR SCHEDULE

AWG OR CABLE	CONDUCTOR RUN	CONDUCTOR RUN NUMBER AND SIZE												
		1	2	3	4	5	6	7	8	9	10			
DLC	Ø 2 2-PAIR	1												
	Ø 3 2-PAIR	1	1					1						
	Ø 4 2-PAIR	1	1	1		1	1							
	Ø 6 2-PAIR	1	1					1	1	1	1			
	SYSTEM LOOP 2-PAIR	2	1					1	1	1	1			
	TRANSIT LOOP	1	1	1										
TOTAL		7	5	2		1	1	3	2	2	2			
#6	SERVICE	2	2	2	2									
#8	GROUND	1	1	1	1	1	1	1	1	1	1			
28CSC	SIGNAL	2	2	1	1	1	1	1	1	1	1			
12 PAIR #19	sic	1												
12 PAIR #22	SIC	1												
5CSC	APS				1		1		2					
CONDUIT SIZE		2-3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"

SIGNAL AND LIGHTING
(CITY)

LADOT INTERSECTION 21005

E-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR
 HASSAN MANNA

REVISOR
 KENNY NGUYEN
 HASSAN MANNA

DESIGNER
 HASSAN MANNA

CHECKED BY

DESIGNED BY

DATE REVISOR



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	11	45

KENNY NGUYEN 11-22-11
 REGISTERED ELEC. ENGINEER DATE
 1-23-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 KENNY NGUYEN
 No. E 17759
 Exp. 6/30/12
 ELECTRICAL
 STATE OF CALIFORNIA

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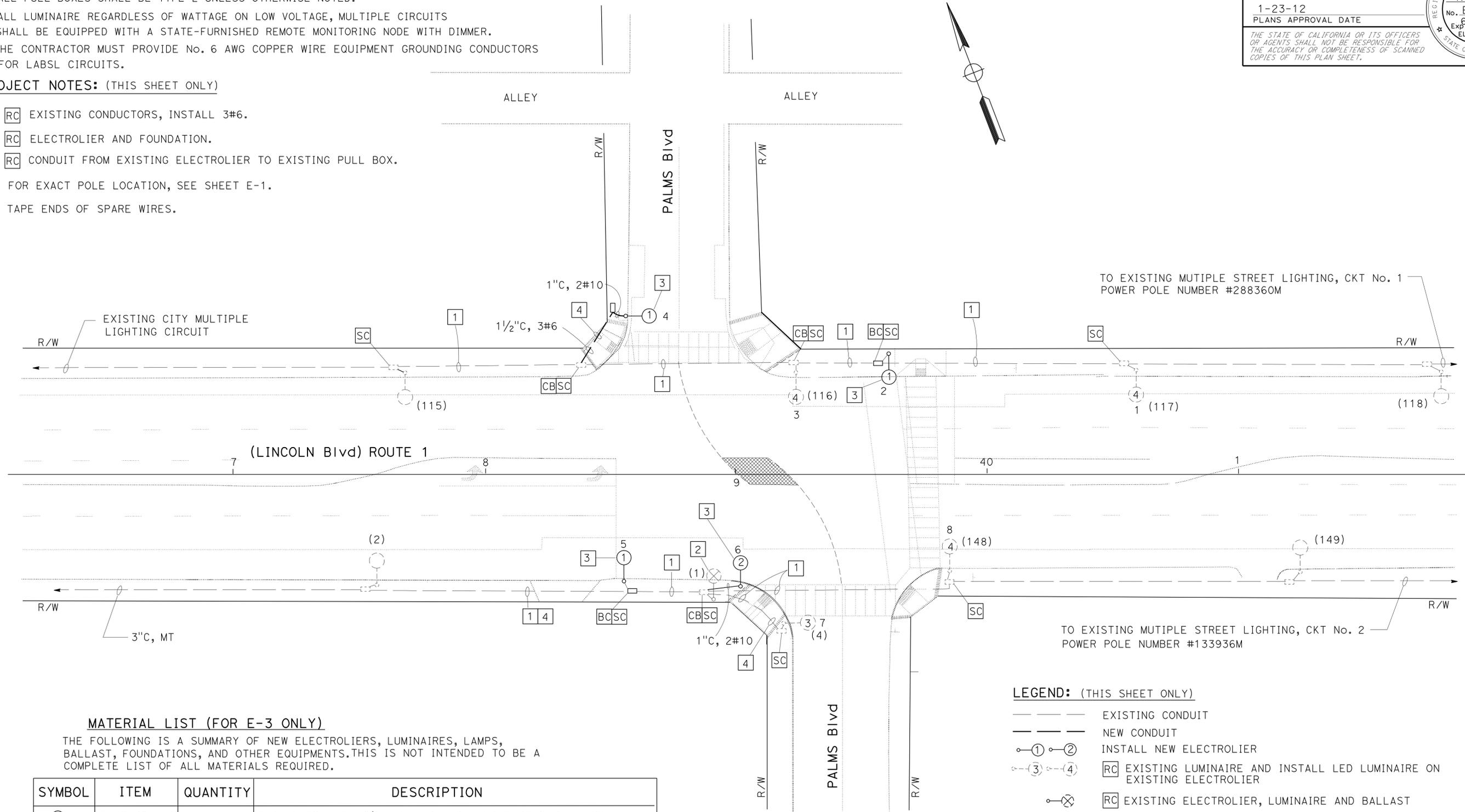
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

GENERAL NOTES: (THIS SHEET ONLY)

1. ALL PULL BOXES SHALL BE TYPE 2 UNLESS OTHERWISE NOTED.
2. ALL LUMINAIRE REGARDLESS OF WATTAGE ON LOW VOLTAGE, MULTIPLE CIRCUITS SHALL BE EQUIPPED WITH A STATE-FURNISHED REMOTE MONITORING NODE WITH DIMMER.
3. THE CONTRACTOR MUST PROVIDE No. 6 AWG COPPER WIRE EQUIPMENT GROUNDING CONDUCTORS FOR LABSL CIRCUITS.

PROJECT NOTES: (THIS SHEET ONLY)

- 1 RC EXISTING CONDUCTORS, INSTALL 3#6.
- 2 RC ELECTROLIER AND FOUNDATION.
- RC CONDUIT FROM EXISTING ELECTROLIER TO EXISTING PULL BOX.
- 3 FOR EXACT POLE LOCATION, SEE SHEET E-1.
- 4 TAPE ENDS OF SPARE WIRES.



LEGEND: (THIS SHEET ONLY)

- EXISTING CONDUIT
- - - NEW CONDUIT
- ⊙-⊙ INSTALL NEW ELECTROLIER
- ⊙-⊙ RC EXISTING LUMINAIRE AND INSTALL LED LUMINAIRE ON EXISTING ELECTROLIER
- ⊙-⊙ RC EXISTING ELECTROLIER, LUMINAIRE AND BALLAST
- ⊙-⊙ EXISTING ELECTROLIER TO REMAIN

MATERIAL LIST (FOR E-3 ONLY)

THE FOLLOWING IS A SUMMARY OF NEW ELECTROLIERS, LUMINAIRES, LAMPS, BALLAST, FOUNDATIONS, AND OTHER EQUIPMENTS. THIS IS NOT INTENDED TO BE A COMPLETE LIST OF ALL MATERIALS REQUIRED.

SYMBOL	ITEM	QUANTITY	DESCRIPTION
⊙-1	ELECTROLIER	3	TYPE 15TS, WITH 8' LUMINAIRE ARM AND TYPE 2 PULL BOX
⊙-2	ELECTROLIER	1	TYPE 19-4-100, WITH 8' LUMINAIRE ARM AND TYPE 2 PULL BOX
⊙-1 ⊙-2 ⊙-3 ⊙-4	LUMINAIRE	8	165 W LED LUMINAIRE WITH DIM OPTION AND STATE-FURNISHED REMOTE MONITORING NODE WITH DIMMER

SIGNAL AND LIGHTING (CITY) (STREET LIGHTING)
SCALE: 1" = 20'

FOR WIRING DIAGRAM, SEE SHEET E-4
APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
 KENNY NGUYEN
 HASSAN MANNA
 HASSAN MANNA
 HASSAN MANNA

REVISIONS: 00-00-00 DATE PLOTTED => 24-JAN-2012 TIME PLOTTED => 06:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	12	45

KENNY NGUYEN 11-22-11
 REGISTERED ELEC. ENGINEER DATE
 1-23-12
 PLANS APPROVAL DATE

KENNY NGUYEN
 No. E17759
 Exp. 6/30/12
 ELECTRICAL
 STATE OF CALIFORNIA

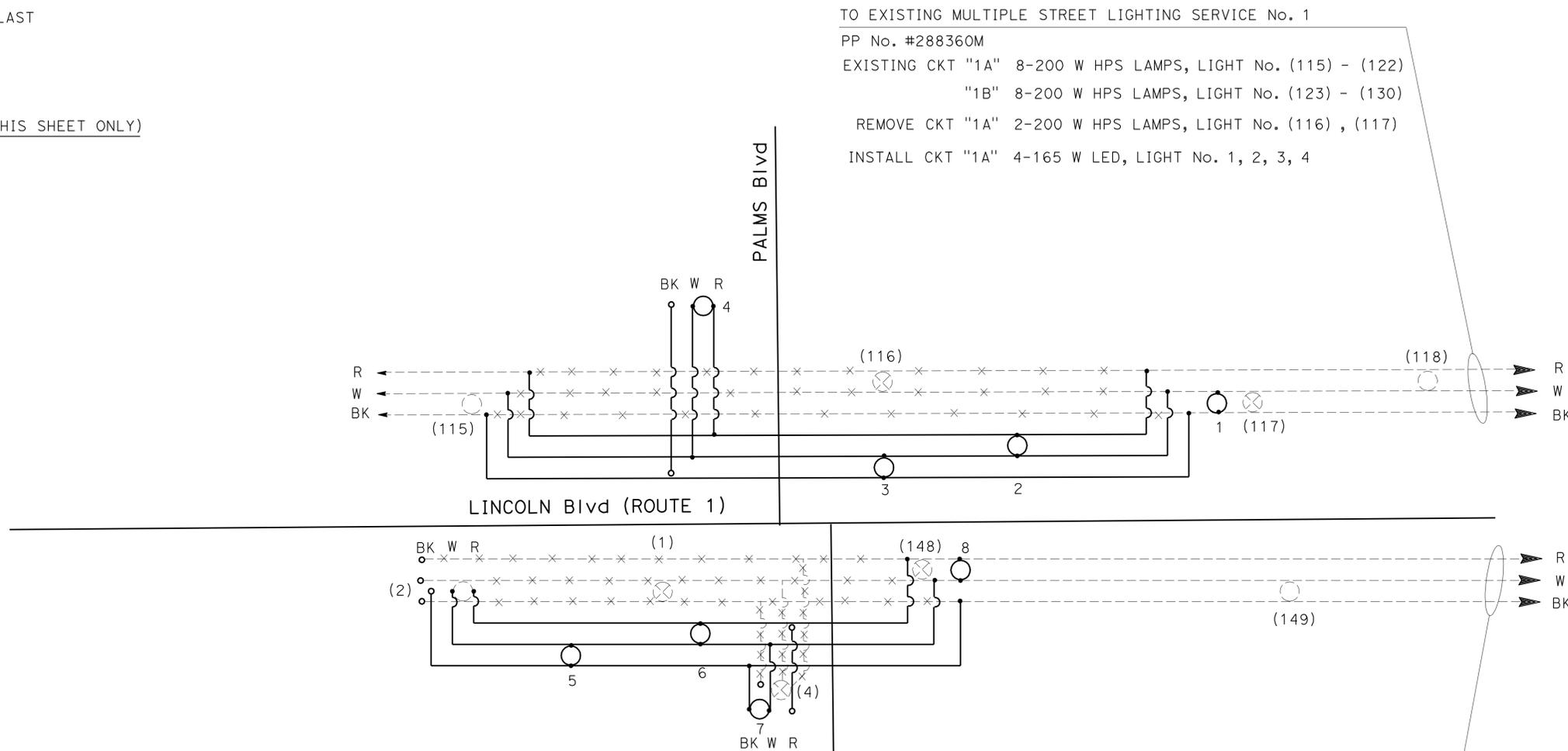
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WIRING DIAGRAM LEGEND: (THIS SHEET ONLY)

-  EXISTING LAMP AND BALLAST TO REMAIN
-  EXISTING LAMP AND BALLAST
-  EXISTING CONDUCTOR
-  EXISTING CONDUCTOR TO REMAIN
-  NEW CONDUCTOR
-  TAPE END OF SPLICE WIRE
-  NEW LAMP AND BALLAST
-  PROPOSED SPLICE

ABBREVIATION: (THIS SHEET ONLY)

- R RED
- W WHITE
- BK BLACK



TO EXISTING MULTIPLE STREET LIGHTING SERVICE No. 1
 PP No. #288360M
 EXISTING CKT "1A" 8-200 W HPS LAMPS, LIGHT No. (115) - (122)
 "1B" 8-200 W HPS LAMPS, LIGHT No. (123) - (130)
 REMOVE CKT "1A" 2-200 W HPS LAMPS, LIGHT No. (116), (117)
 INSTALL CKT "1A" 4-165 W LED, LIGHT No. 1, 2, 3, 4

TO EXISTING MULTIPLE STREET LIGHTING SERVICE No. 2
 PP No. 133936M
 EXISTING CKT "2A" 8-200 W HPS LAMPS, LIGHT No. (155) - (162)
 "2B" 1-150 W HPS LAMPS, LIGHT No. (4)
 "2B" 6-200 W HPS LAMPS, LIGHT No. (149) - (154)
 "2B" 2-250 W HPS LAMPS, LIGHT No. (1), (2)
 REMOVE CKT "2B" 1-150 W HPS LAMPS, LIGHT No. (4)
 "2B" 1-250 W HPS LAMPS, LIGHT No. (1)
 "2B" 1-200 W HPS LAMPS, LIGHT No. (148)
 INSTALL CKT "2B" 4-165 W LED, LIGHT No. 5, 6, 7, 8

WIRING DIAGRAM

**SIGNAL AND LIGHTING
 (CITY)
 (STREET LIGHTING)**

NO SCALE

E-4

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
 KENNY NGUYEN
 HASSAN MANNA
 HASSAN MANNA
 HASSAN MANNA

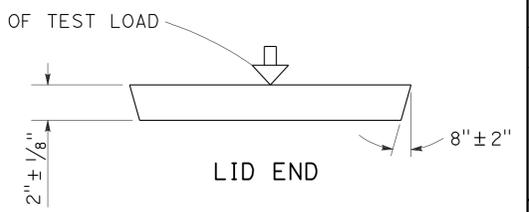
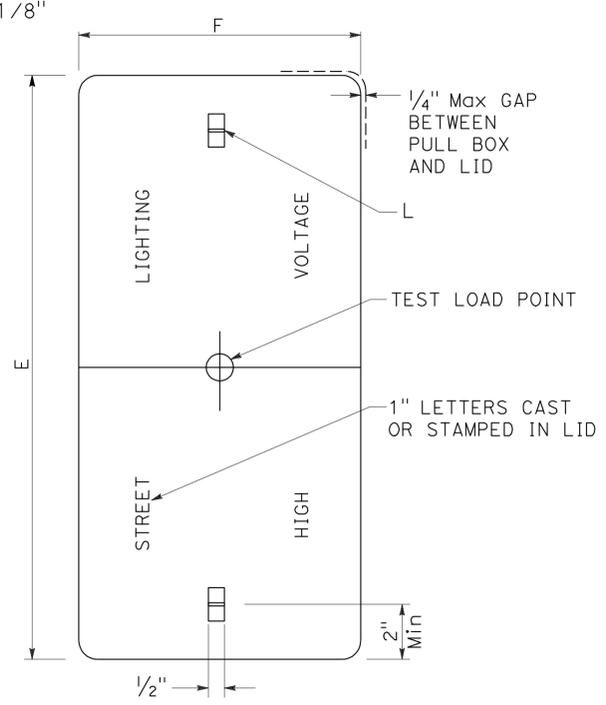
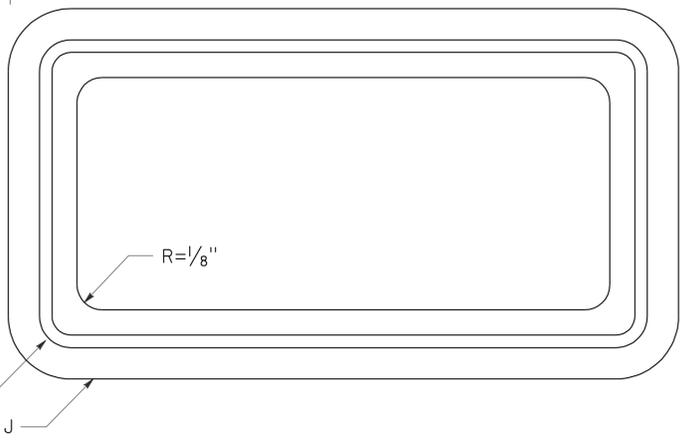
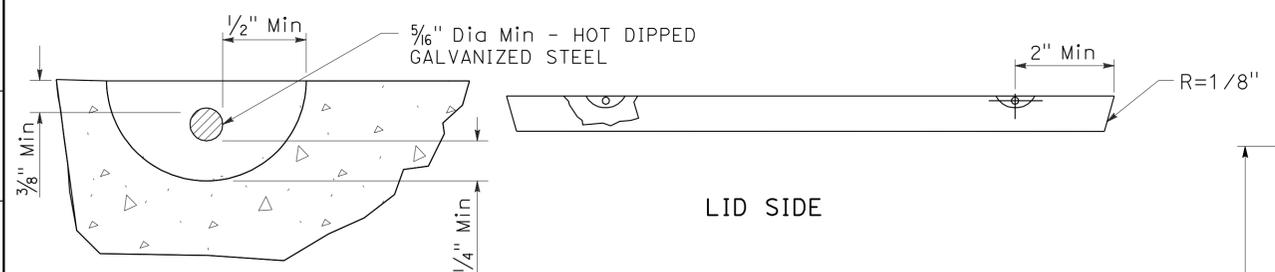
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	13	45

Kenny Nguyen 11-22-11
REGISTERED ELECTRICAL ENGINEER DATE

1-23-12
PLANS APPROVAL DATE

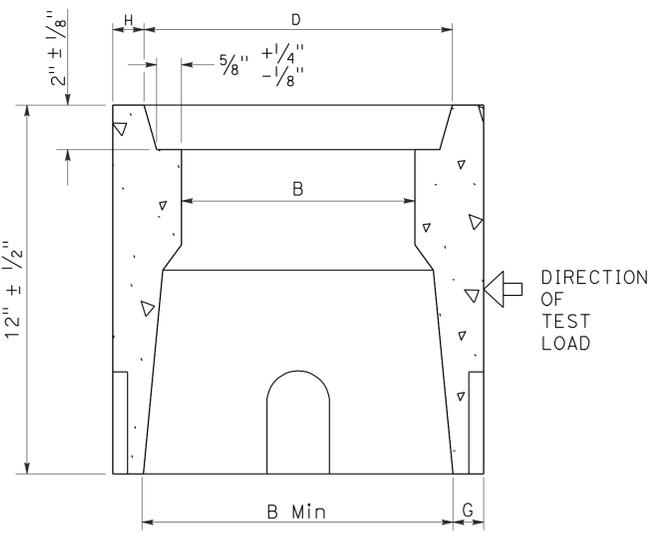
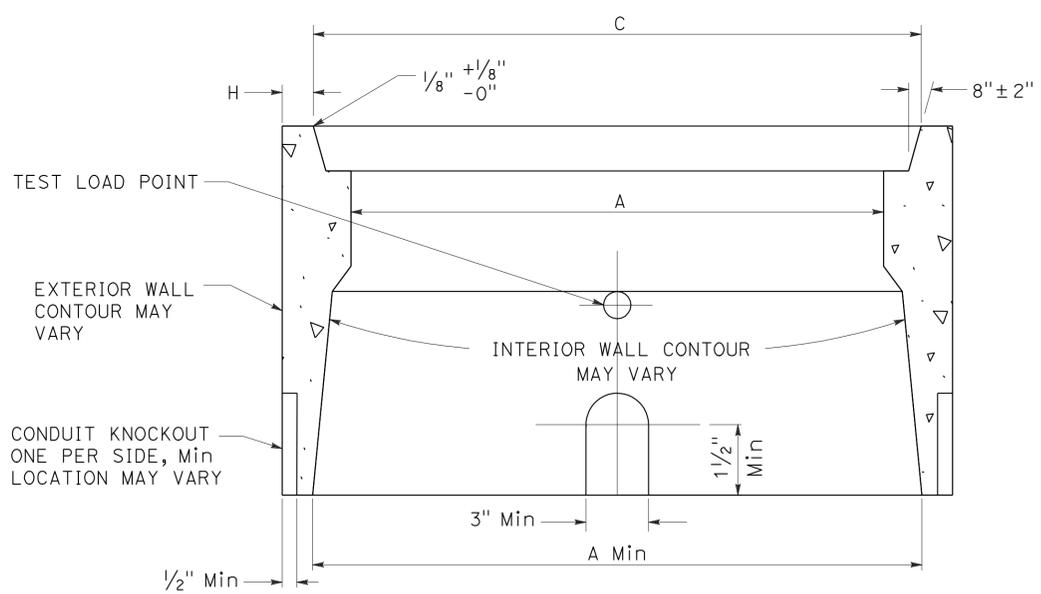
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REGISTERED PROFESSIONAL ENGINEER
KENNY NGUYEN
No. E17759
Exp 6/30/12
ELECTRICAL
STATE OF CALIFORNIA



NOTES: (THIS SHEET ONLY)

- WHERE "PULL BOX" IS SPECIFIED IN THE PLANS, IT SHALL CONSIST OF A PULL BOX AND LID, AND SHALL MEET THE REQUIREMENTS OF THIS PLAN.
- ALL CONCRETE USED IN PULL BOX CONSTRUCTION SHALL HAVE 3000 psi MINIMUM COMPRESSIVE STRENGTH.
- ALL EDGES AND CORNERS SHALL HAVE SMOOTH AND UNIFORM RADII OF 1/4" OR LESS UNLESS OTHERWISE SPECIFIED HEREON.
- VOIDS, BLEMISHES, OR IMPERFECTIONS EXCEEDING 3/8" IN MAXIMUM DIMENSION SHALL NOT EXISTING IN ANY SURFACE.
- ALL SURFACES EXPOSED AFTER INSTALLATION SHALL BE SMOOTHLY FINISHED AND REGULAR. CHIPS AND VOIDS THEREIN ARE NOT PERMITTED.
- MOLD, JOINT, OR SEAM LINES WITHIN 1" OF THE OF THE BOX SHALL BE SMOOTHLY FINISHED.
- CONDUIT KNOCKOUTS SHALL BE REMOVABLE WITHOUT DAMAGE TO THE REMAINDER OF THE BOX.
- PULL BOXES AND LIDS SHALL BE STEEL REINFORCED.
- REINFORCING STEEL SHALL NOT BE EXPOSED.
- WHERE STEEL REINFORCING INTERSECTS, IT SHALL BE SECURELY WELDED.
- THE LIFT BAR IN THE PULL BOX LID SHALL BE SECURELY WELDED TO THE REINFORCING STEEL OR MADE EQUALLY SECURE IN THE LID BY SOME OTHER METHOD.
- LETTERS SHOWN ON LID SHALL BE DIFFERENT FROM OR OF A SIZE LESS THAN THAT INDICATED HEREON.
- LID SHALL SEAT EVENLY ON THE LID FLANGE AND SHALL NOT ROCK MORE THAN 1/8".
- LID BOLTS SHALL BE PROVIDED WHEN SPECIFIED. THEY SHALL CONSIST OF NOT LESS THAN TWO BOLTS, 5/16" Dia MINIMUM WHICH SHALL EACH EXTEND THROUGH PULL BOX AND LID. THEY SHALL SECURE THE LID WITH Hex HEADED NUTS AND WASHERS WHICH SHALL BE RECESSED BELOW THE TOP OF THE LID. BOLTS SHALL BE LOCATED SYMETRICALLY WITH RESPECT TO THE TOP SURFACE OF THE LID AND SHALL HAVE A NON-CORROSIVE SURFACE.
- PULL BOX LID AND PULL BOX SHALL NOT SHOW ANY EVIDENCE OF FAILURE WHEN SUBJECTED TO A 1000 lbs. VERTICAL LOAD APPLIED DOWNWARD AT THE CENTER OF THE LID WITH THE EDGES SUPPORTED BY THE PULL BOX. TEST LOAD SHALL BE APPLIED BY A SMOOTH SURFACE OF ONE SQUARE INCH CROSS SECTION.
- THE PULL BOX SHALL NOT SHOW ANY EVIDENCE OF FAILURE WHEN SUBJECTED TO A LOAD OF 500 lbs AT THE CENTER OF AND PERPENDICULAR TO ANY SIDE WITH THE OPPOSITE SIDE UNIFORMLY SUPPORTED. TEST LOAD SHALL BE APPLIED AS IN NOTE No. 16 ABOVE.
- TWO PULL BOXES MAY BE SELECTED FROM EACH LOT OF ONE HUNDRED DELIVERED, AND USED FOR TEST PURPOSES. FAILURE OF ANY TEST PULL BOX MAY BE CAUSE FOR REJECTION OF THE LOT.
- WHERE A PULL BOX WITH EXTENSION IS SPECIFIED IN THE PLANS, IT MAY CONSIST OF A SECOND PULL BOX INSTALLED IMMEDIATELY BENEATH THE FIRST, OR IT MAY BE A DIFFERENT PART WHICH MEETS THE APPLICABLE DIMENSIONS AND SPECIFICATIONS OF THIS PLAN.
- PULL BOXES SHALL BE INSTALLED ON A BED OF 1" CRUSHED ROCK WHICH SHALL BE A MINIMUM OF 12" DEPTH WHICH SHALL EXTEND A MINIMUM OF 6" BEYOND THE PULL BOX SIDES.



LETTER	DESCRIPTION	TYPE 2			TYPE 3		
		DIMENSION	TOLERANCE		DIMENSION	TOLERANCE	
			+	-		+	-
A	BOX LENGTH, INSIDE	20"	+	0	28"	+	0
B	BOX WIDTH, INSIDE	10"	+	0	16"	+	0
C	LID OPENING LENGTH	22"	1/8"	0	30"	1/8"	0
D	LID OPENING WIDTH	12"	1/8"	0	18"	1/8"	0
E	LID LENGTH	21 3/8"	0	1/8"	29 7/8"	0	1/8"
F	LID WIDTH	11 1/8"	0	1/8"	17 7/8"	0	1/8"
G	BOX THICKNESS	1"	+	0	1 1/2"	+	0

LETTER	DESCRIPTION	TYPE 2			TYPE 3		
		DIMENSION	TOLERANCE		DIMENSION	TOLERANCE	
			+	-		+	-
H	BOX, LIP THICKNESS	1 1/2"	+	0	2"	+	0
I	BOX, LID FLANGE RADIUS	1 1/4"	1/8"	1/8"	1"	1/8"	1/8"
J	BOX, CORNER RADIUS	2 7/8"	1/8"	1/8"	3"	1/2"	1/2"
K	LID, MAJOR CORNER RADIUS	1 1/8"	1/8"	1/8"	7/8"	1/8"	1/8"
L	LIFT BAR	1 REQUIRED			2 REQUIRED		

+ , 0 INDICATES GREATER THAN OR EQUAL TO DIMENSION.

**SIGNAL AND LIGHTING
(CITY)
(ELECTRICAL DETAILS)
NO SCALE**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN

REVISOR BY
DATE

KENNY NGUYEN
HASSAN MANNA

CALCULATED BY
DESIGNED BY
CHECKED BY

FUNCTIONAL SUPERVISOR
HASSAN MANNA

USERNAME => s128843
DGN FILE => 074t420ua05.dgn



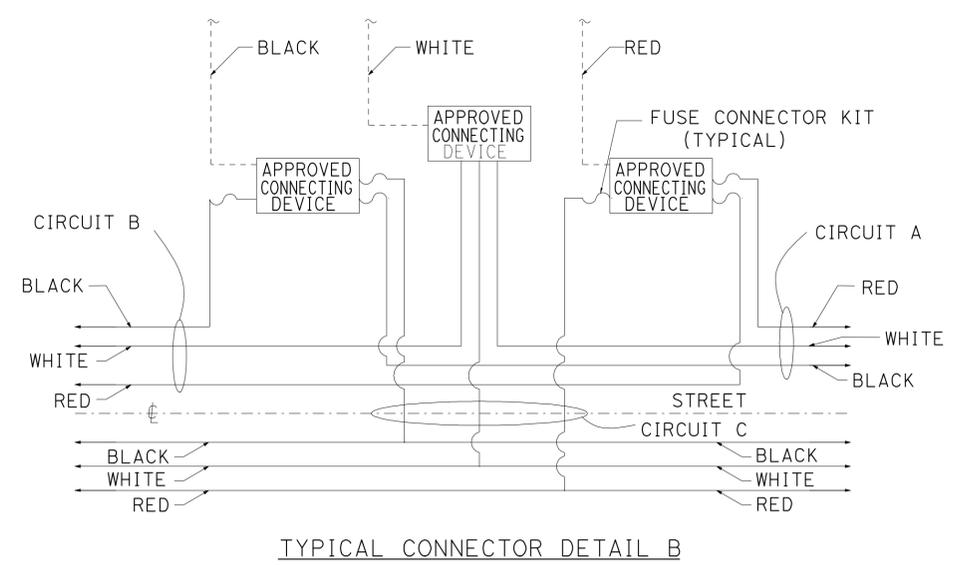
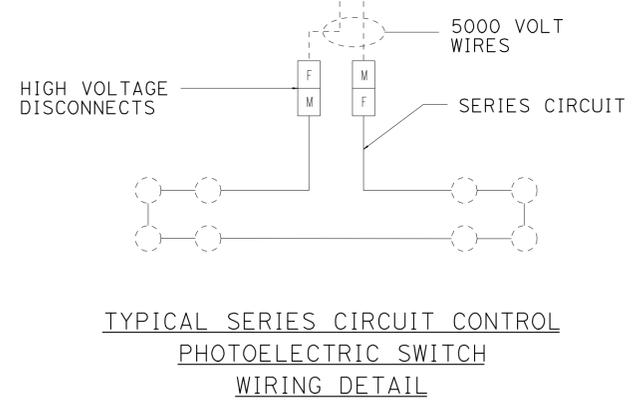
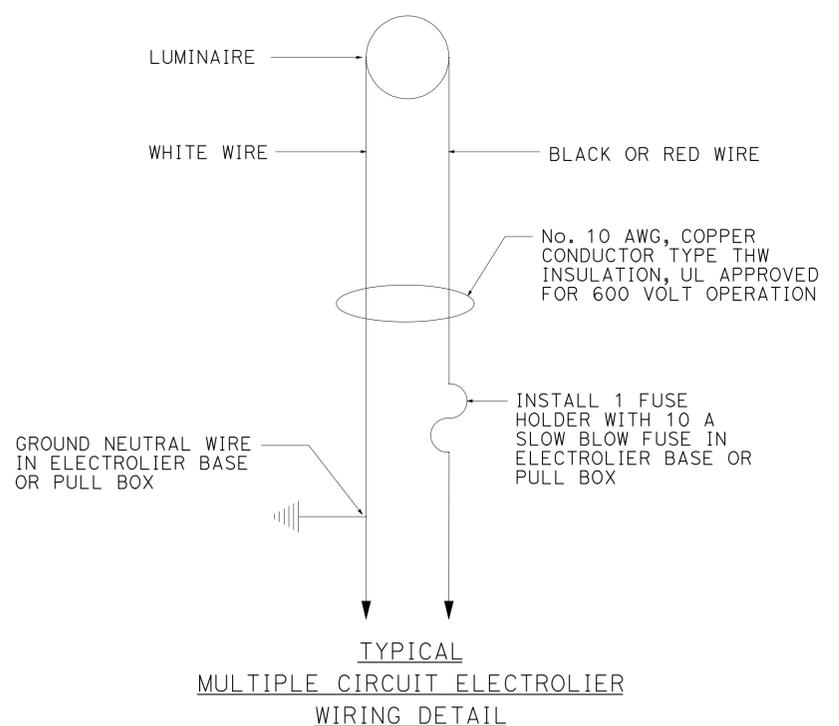
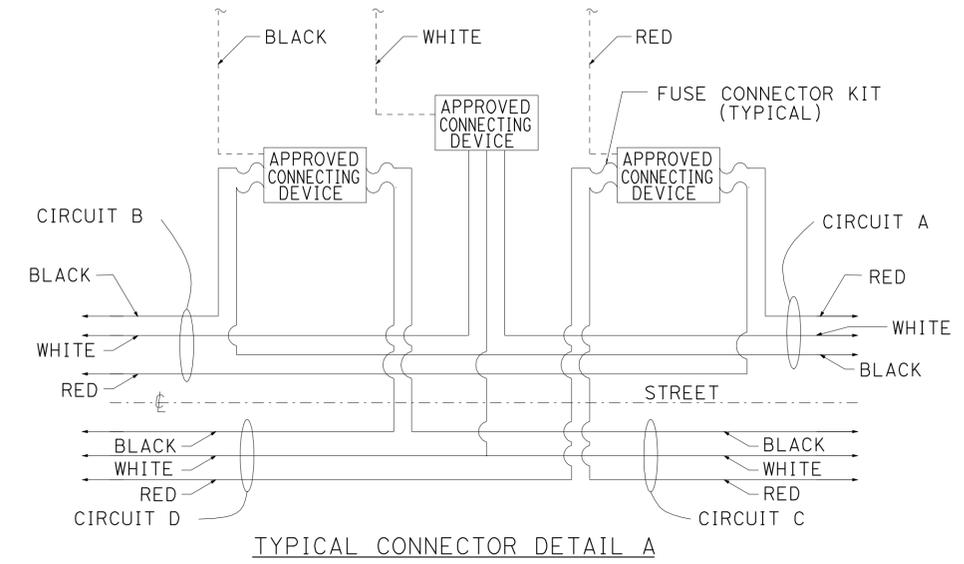
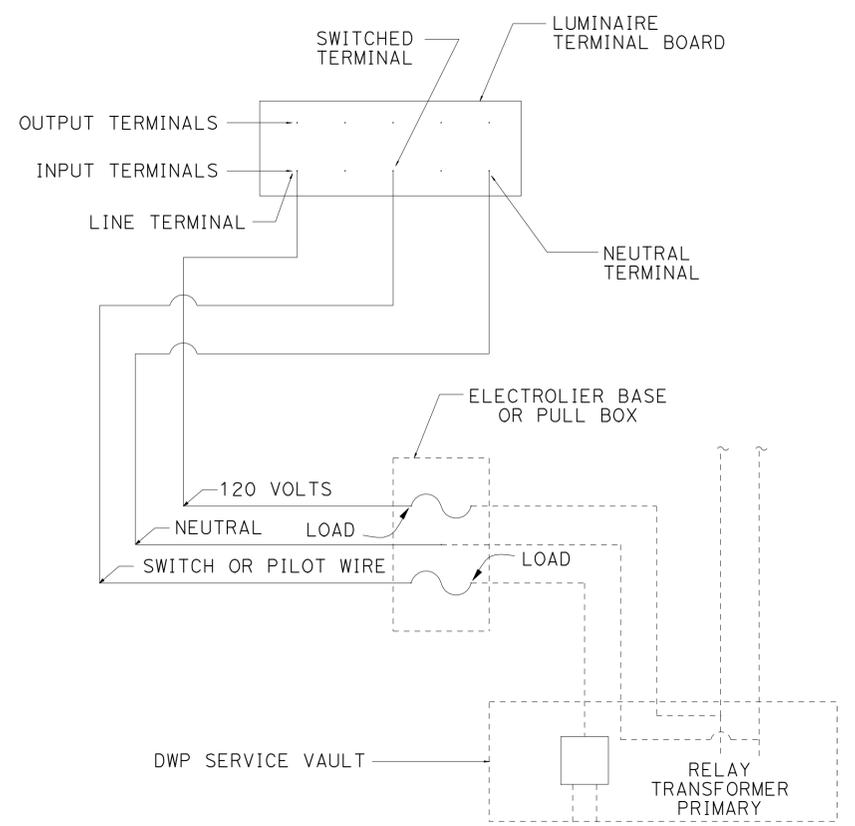
UNIT 1879

PROJECT NUMBER & PHASE

07000210161

LAST REVISION DATE PLOTTED => 23-JAN-2012
00-00-00 TIME PLOTTED => 17:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	14	45
Kenny Nguyen		11-22-11		REGISTERED ELECTRICAL ENGINEER DATE	
1-23-12		PLANS APPROVAL DATE			
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———— INDICATES WIRES INSTALLED BY STREET LIGHTING CONTRACTOR
 - - - - - INDICATES WIRES INSTALLED BY SERVICE COMPANY

SIGNAL AND LIGHTING (CITY) (ELECTRICAL DETAILS)

NO SCALE

E-6

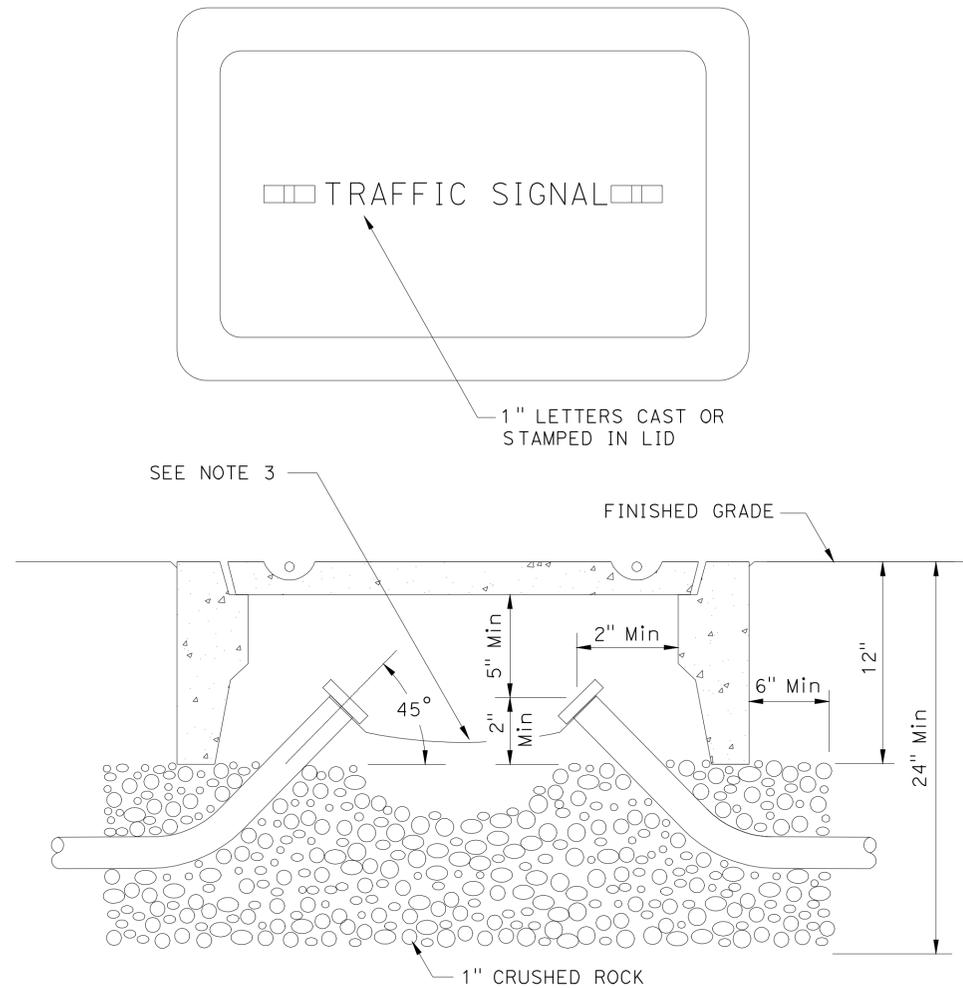
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans **TRAFFIC DESIGN**
 FUNCTIONAL SUPERVISOR: HASSAN MANNA
 KENNY NGUYEN
 HASSAN MANNA
 CALCULATED/DESIGNED BY: HASSAN MANNA
 CHECKED BY: HASSAN MANNA
 REVISOR: HASSAN MANNA
 DATE: 11-22-11
 REVISION: 1-23-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	15	45

<i>Kenny Nguyen</i>	11-22-11
REGISTERED ELECTRICAL ENGINEER	DATE
1-23-12	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
KENNY NGUYEN
No. E17759
Exp 6/30/12
ELECTRICAL
STATE OF CALIFORNIA

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NOTES: (THIS SHEET ONLY)

- PULL BOX DETAILS NOT SHOWN ON THIS PLAN SHALL CONFORM TO SHEET E-5.
- OUTSIDE DIMENSION: TYPE PB2 - 15" x 25", TYPE PB3 - 22" x 34".
- GALVANIZED CONDUITS MUST BE BONDED WITH COPPER GROUND STRAP AROUND THE NECK OF EACH CONDUIT. PVC CONDUITS MUST HAVE THEIR GROUND WIRES SPLICED TOGETHER.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans **TRAFFIC DESIGN**
 FUNCTIONAL SUPERVISOR: HASSAN MANNA
 CALCULATED/DESIGNED BY: HASSAN MANNA
 CHECKED BY: HASSAN MANNA
 KENNY NGUYEN
 HASSAN MANNA
 REVISOR: KENNY NGUYEN
 DATE: 11-22-11
 REVISION: 1-23-12
 DATE: 1-23-12

**SIGNAL AND LIGHTING
(CITY)
(ELECTRICAL DETAILS)**

NO SCALE

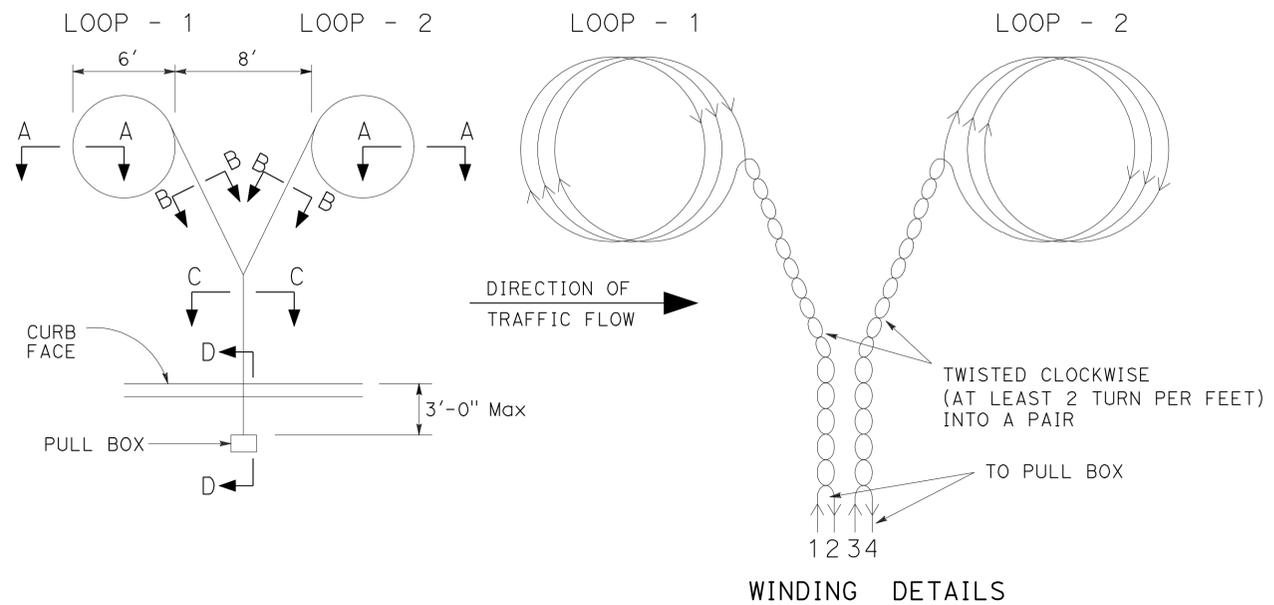
E-7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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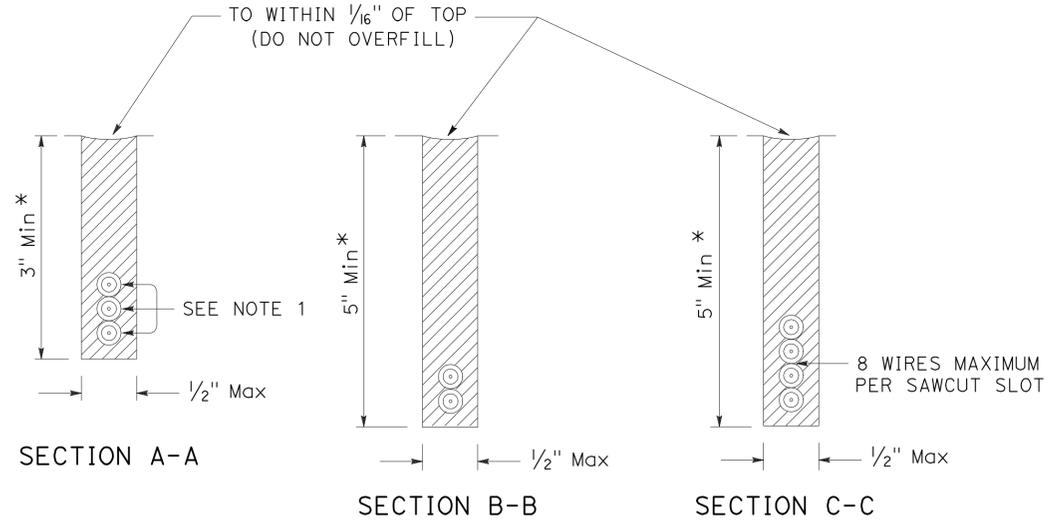
<i>Kenny Nguyen</i>	11-22-11
REGISTERED ELECTRICAL ENGINEER	DATE
1-23-12	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER	KENNY NGUYEN
No. E17759	
Exp. 6/30/12	
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.



- NOTES: (THIS SHEET ONLY)**
1. INSTALL 3 CLOCKWISE TURNS OF LOOP WIRE FOR EACH DETECTOR, UNLESS OTHERWISE SHOWN ON SIGNAL PLAN.
 2. ANY NON-ROUND SHAPED LOOPS MUST CONFORM TO ALL OTHER SPECIFICATIONS SHOWN ON THIS SHEET.



* DEPTH OF SLOT NOT TO EXCEED DEPTH OF PAVEMENT, FOR PCC SURFACES, THE MINIMUM COVER ABOVE LOOP WIRE SHALL BE 2.5" MINIMUM.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
 FUNCTIONAL SUPERVISOR: HASSAN MANNA
 KENNY NGUYEN
 HASSAN MANNA
 REVISIONS: 00-00-00
 DATE PLOTTED => 23-JAN-2012
 TIME PLOTTED => 17:39

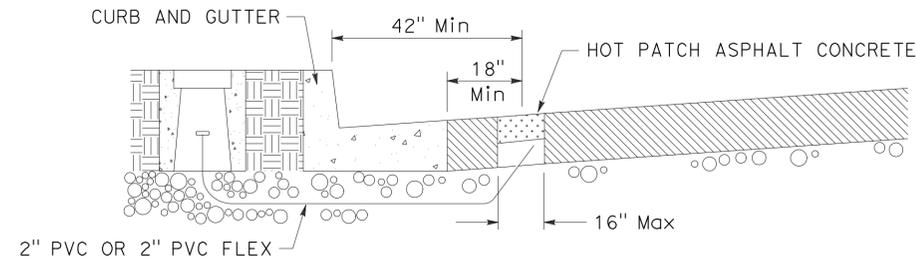
SIGNAL AND LIGHTING
(CITY)
(ELECTRICAL DETAILS)
 NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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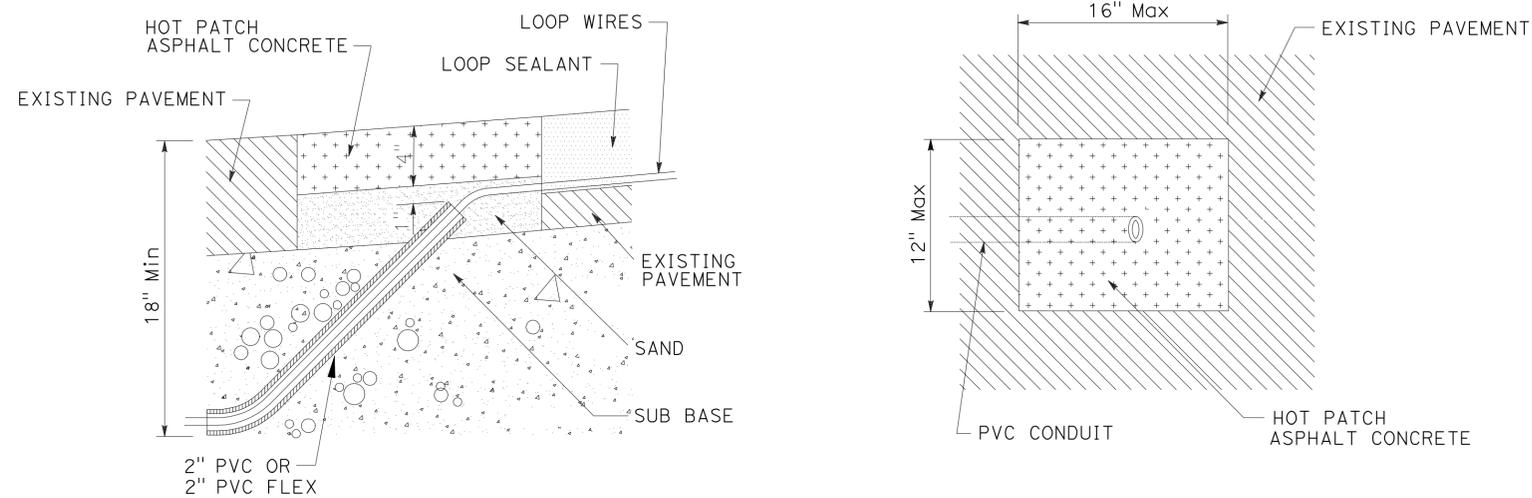
Kenny Nguyen 11-22-11
REGISTERED ELECTRICAL ENGINEER DATE

1-23-12
PLANS APPROVAL DATE

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SECTION D-D



CONDUIT DETAIL

STUB-OUT DETAIL (TOP VIEW)

NOTES: (THIS SHEET ONLY)

PERFORM LOOP INSTALLATION IN THE FOLLOWING ORDER:

1. OPEN THE PAVEMENT AT LEAST 42" FROM CURB FACE AND AT LEAST 18" FROM EDGE OF GUTTER (ASPHALT CONCRETE ONLY). OPEN NO MORE THAN A 12" x 16" AREA. IN CASES WHERE THERE IS A CONCRETE BUS PAD ADJACENT TO THE GUTTER, INSTALL THE STUBOUT BEYOND THE EDGE OF THE BUS PAD.
2. INSTALL 2" PVC (SCHEDULE 80) OR PVC FLEX (SCHEDULE 40) FROM THE PULL BOX PIT WITH A 45 DEGREE ELBOW AT THE STUB-OUT AS SHOWN. DEPTH OF THE CONDUIT SHALL BE AT LEAST 18" BELOW THE STREET GRADE.
3. PATCH STREET USING HOT PATCH ASPHALT CONCRETE AND SAND AS SHOWN.
4. INSTALL DUCT SEAL WHERE WIRES ENTER 2" PVC OR 2" PVC FLEX.
5. FILL SAWCUT SLOT WITH HOT-MELT RUBBERIZED ASPHALT SEALANT.
6. NO MORE THAN 8 LOOPS OR 16 WIRES PER STUB-OUT.

**SIGNAL AND LIGHTING
(CITY)
(ELECTRICAL DETAILS)**

NO SCALE

E-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
Caltrans TRAFFIC DESIGN	HASSAN MANNA	CHECKED BY	DATE



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	18	45

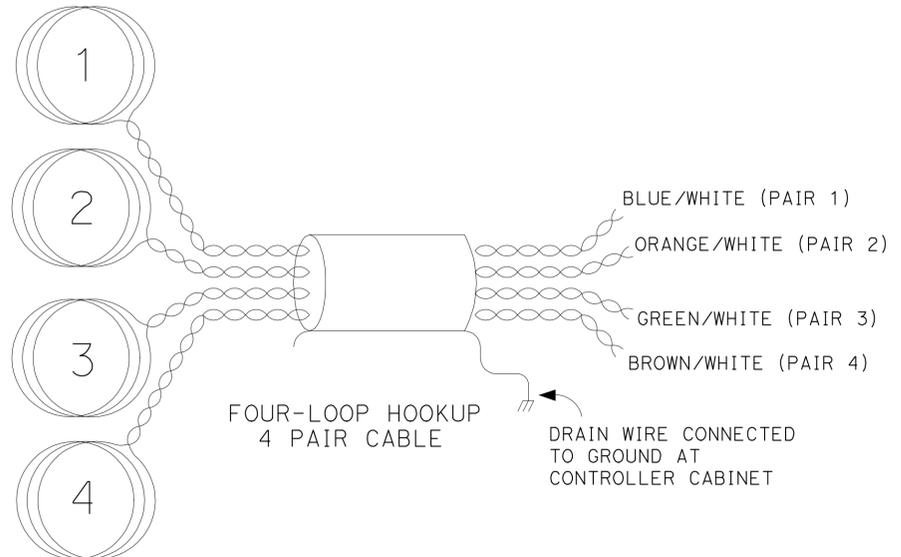
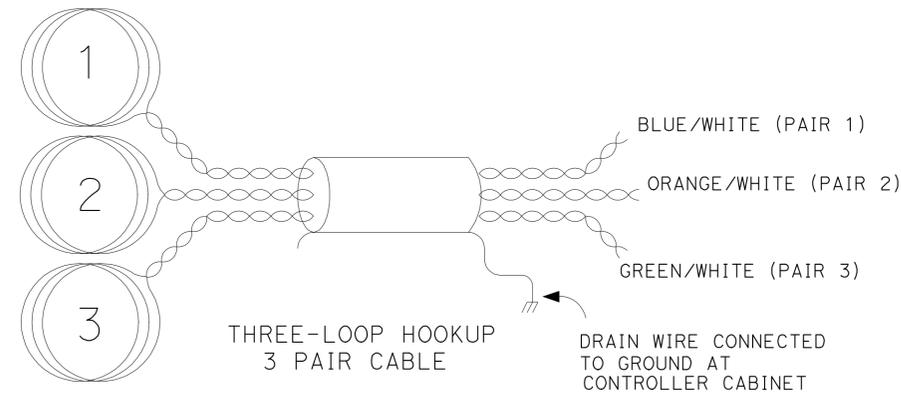
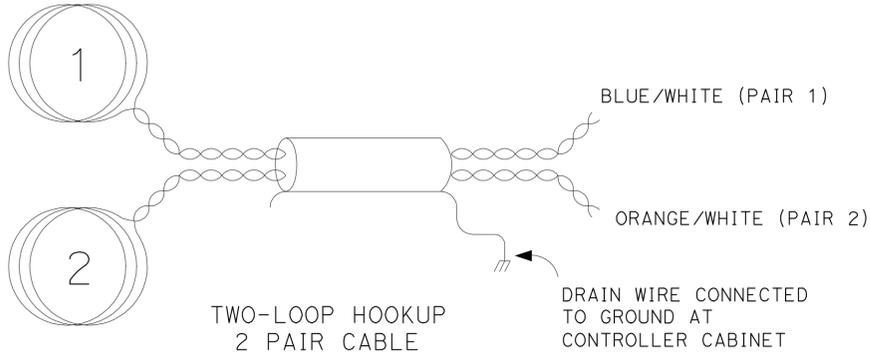
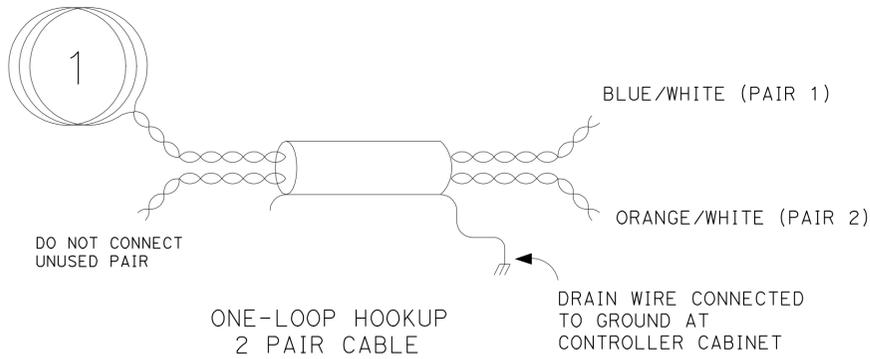
Kenny Nguyen		11-22-11
REGISTERED ELECTRICAL ENGINEER	DATE	
1-23-12		
PLANS APPROVAL DATE		

Kenny Nguyen	
No. E17759	Exp. 6/30/12
ELECTRICAL	

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NOTES:(THIS SHEET ONLY)

1. THIS SHEET DESCRIBES A TWO, THREE OR FOUR PAIR LOOP DETECTOR LEAD-IN CABLE, INDIVIDUALLY SHIELDED AND JACKETED AND SUITABLE FOR INSTALLATION IN A PAVEMENT SAWCUT, CONDUIT, OR DIRECT BURIAL.
2. THE DETECTOR LEAD-IN CABLE CAN BE WIRED IN EITHER A SINGLE, DOUBLE, TRIPLE OR QUADRUPLE CHANNEL CONFIGURATION.
3. ELECTRICAL CONNECTIONS SHALL BE CAREFULLY SOLDERED AND WATERPROOFED.
4. LOOP NUMBERS SHOWN ARE TYPICAL.
5. SYSTEM LOOPS USE A SINGLE PAIR FOR EACH LOOP.



MODIFY SIGNAL AND LIGHTING
(CITY)
(ELECTRICAL DETAILS)
NO SCALE

E-10

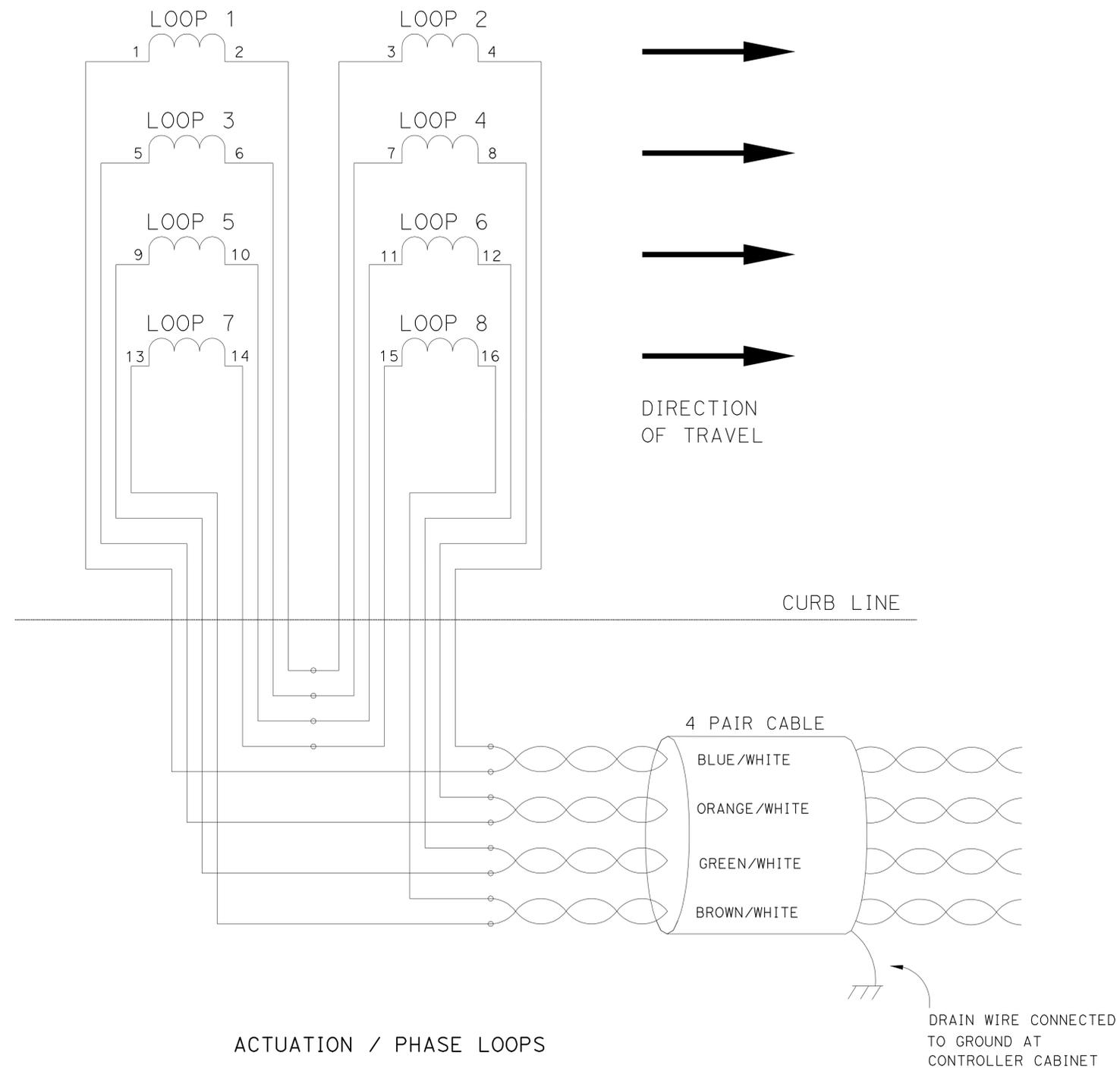
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR	DATE
Caltrans TRAFFIC DESIGN	HASSAN MANNA	HASSAN MANNA	KENNY NGUYEN	
		CHECKED BY	DATE	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	19	45

KENNY NGUYEN
 REGISTERED ELECTRICAL ENGINEER
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 1-23-12
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KENNY NGUYEN
 No. E17759
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ACTUATION / PHASE LOOPS

**SIGNAL AND LIGHTING
(CITY)
(ELECTRICAL DETAILS)**
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	REVISOR	DATE
Caltrans TRAFFIC DESIGN	KENNY NGUYEN	11-22-11
FUNCTIONAL SUPERVISOR	HASSAN MANNA	1-23-12
CALCULATED / DESIGNED BY	CHECKED BY	

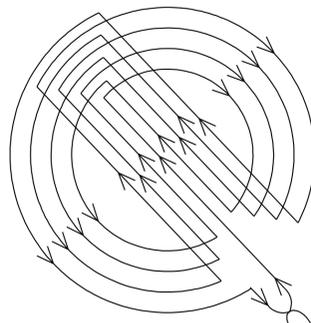
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07	LA	1	32.6	20	45

KENNY NGUYEN
 REGISTERED ELECTRICAL ENGINEER
 DATE 11-22-11
 1-23-12
 PLANS APPROVAL DATE

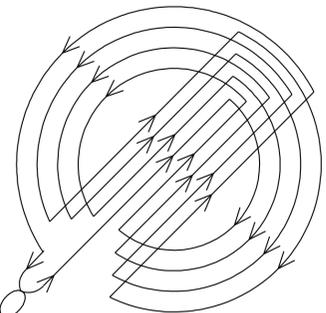
KENNY NGUYEN
 No. E17759
 Exp. 6/30/12
 ELECTRICAL
 STATE OF CALIFORNIA

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LOOP - 1

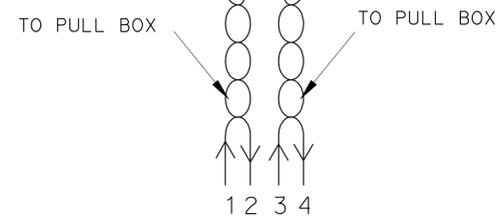


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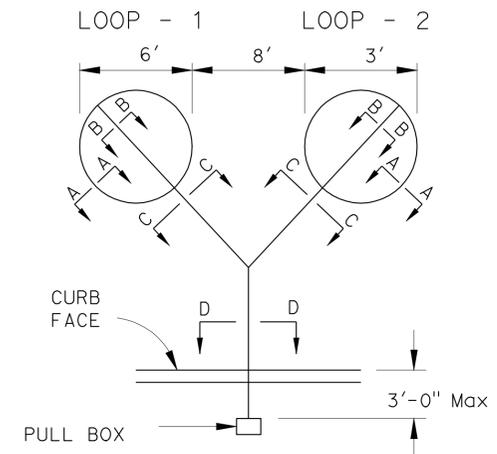
TWISTED CLOCKWISE
(AT LEAST 2 TURN PER Ft)
INTO A PAIR

TWISTED CLOCKWISE
(AT LEAST 2 TURN PER Ft)
INTO A PAIR

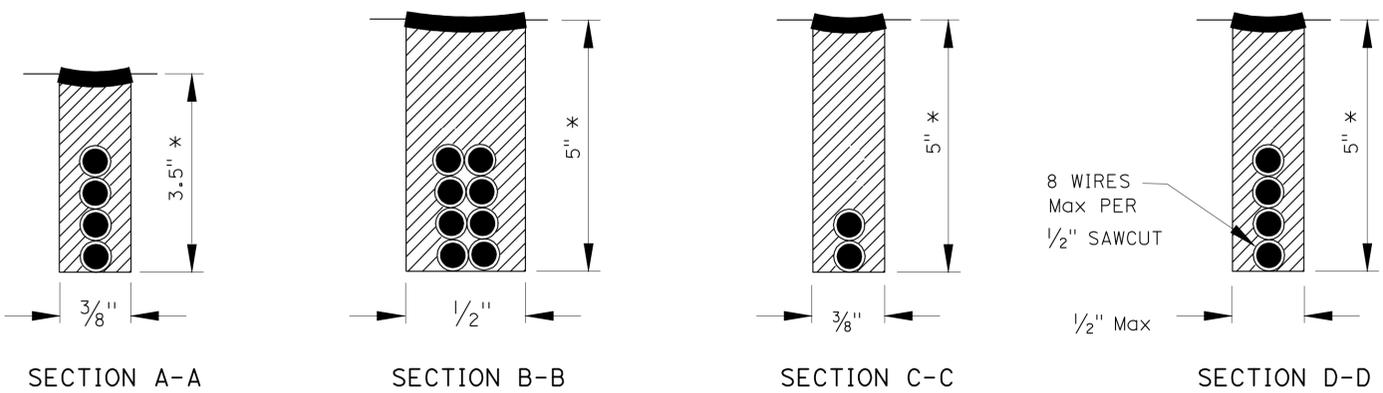


WINDING DETAIL
NOT TO SCALE

DIRECTION OF
TRAFFIC FLOW



CASE II
(BICYCLE & VEHICLE)



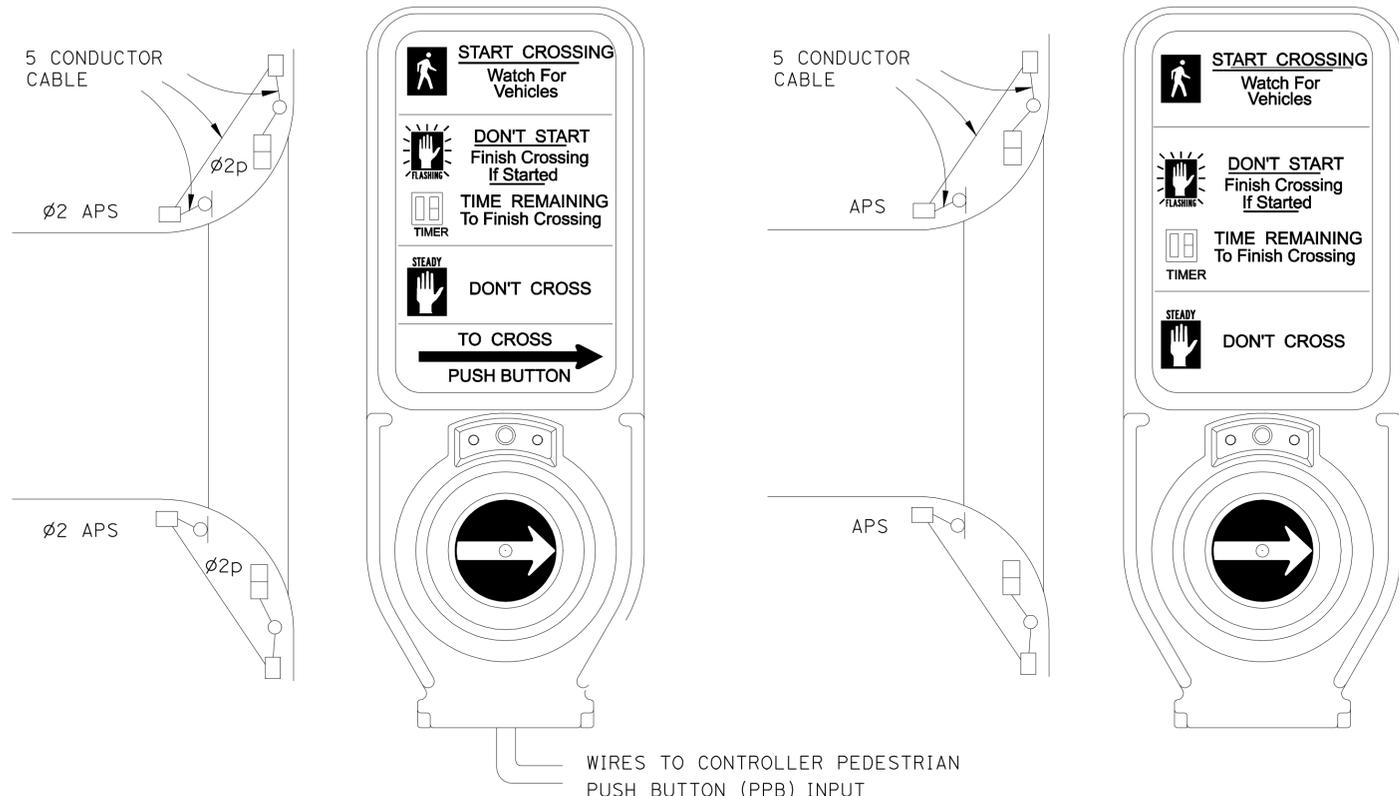
* DEPTH OF SLOT NOT TO EXCEED DEPTH OF PAVEMENT

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
 FUNCTIONAL SUPERVISOR: HASSAN MANNA
 CALCULATED/DESIGNED BY: KENNY NGUYEN
 CHECKED BY: HASSAN MANNA
 REVISED BY: KENNY NGUYEN
 DATE REVISED: HASSAN MANNA

**SIGNAL AND LIGHTING
(CITY)
(ELECTRICAL DETAILS)**
NO SCALE

E-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	21	45
Kenny Nguyen		11-22-11		REGISTERED ELECTRICAL ENGINEER DATE	
1-23-12		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>					



PED-ACTUATED PEDESTRIAN CROSSING
(PUSH BUTTON ACTIVATES ACCESSIBLE PEDESTRIAN SIGNALS AND THE WALK INTERVAL.)

PRE-TIMED AND REST-IN-WALK PEDESTRIAN CROSSING
(PUSH BUTTON ACTIVATES ACCESSIBLE PEDESTRIAN SIGNALS ONLY. WALK INTERVAL IS ON RECALL.)

NOTES: (THIS SHEET ONLY)

1. APS SHALL BE USED FOR SITUATIONS WHERE NEW PEDESTRIAN PUSH BUTTONS ARE BEING INSTALLED OR WHERE THEY ARE BEING REPLACED, DUE TO MAINTENANCE.
2. COUNTDOWN PEDESTRIAN HEADS SHALL BE INSTALLED AT ALL ACCESSIBLE PEDESTRIAN SIGNAL LOCATIONS.
3. A SEPARATE 5 CONDUCTOR CABLE SHALL BE USED TO ISOLATE FROM ANY OTHER WIRES.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
 FUNCTIONAL SUPERVISOR: HASSAN MANNA
 CALCULATED/DESIGNED BY: HASSAN MANNA
 CHECKED BY: HASSAN MANNA
 KENNY NGUYEN
 HASSAN MANNA
 REVISED BY: HASSAN MANNA
 DATE REVISED:

**SIGNAL AND LIGHTING
(CITY)
(ELECTRICAL DETAILS)
NO SCALE**

E-13

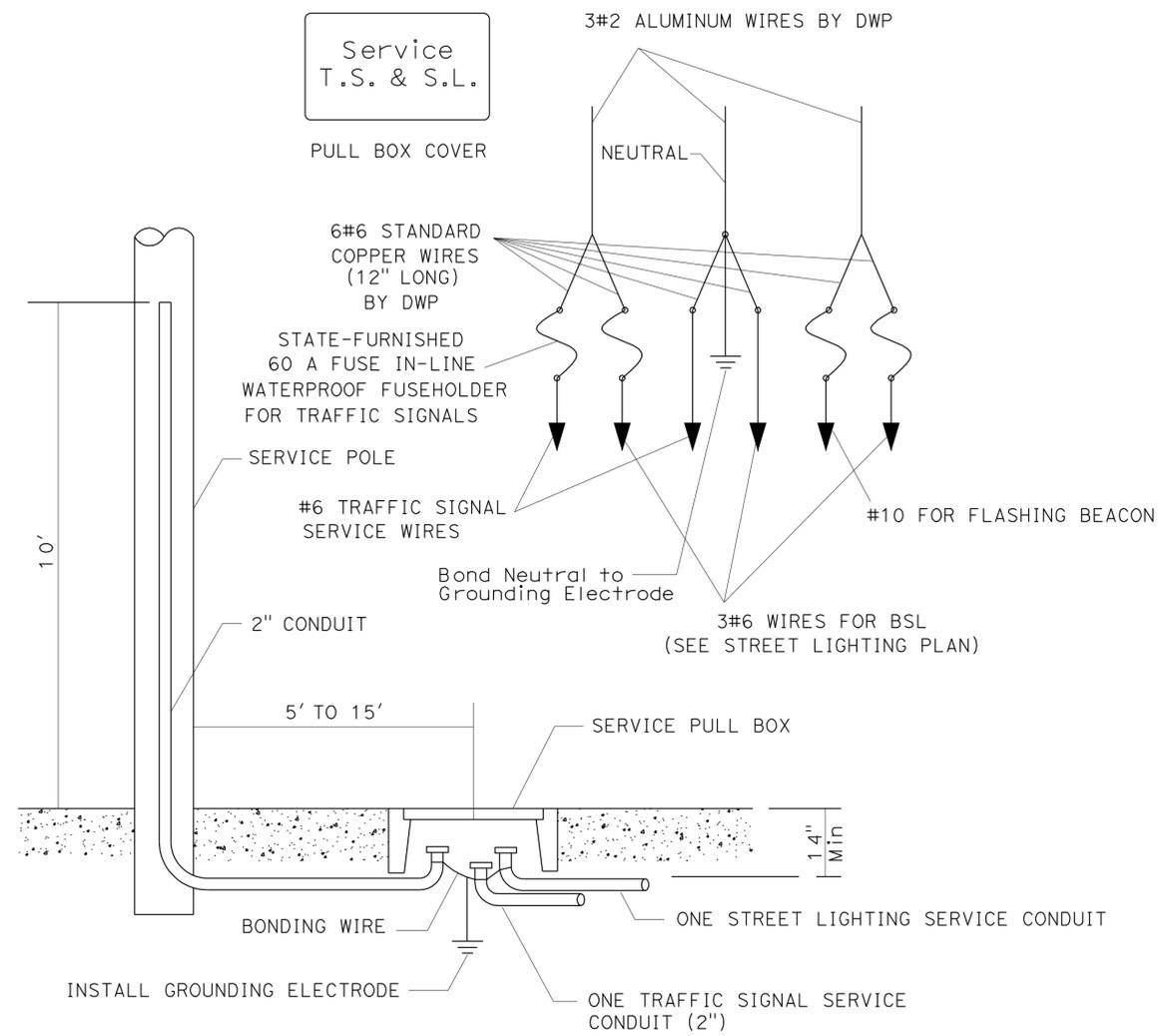
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07	LA	1	32.6	22	45

<i>Kenny Nguyen</i>	11-22-11
REGISTERED ELECTRICAL ENGINEER	DATE
1-23-12	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
KENNY NGUYEN
No. E17759
Exp 6/30/12
ELECTRICAL
STATE OF CALIFORNIA

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NOTES: (THIS SHEET ONLY)

1. DEPARTMENT OF WATER & POWER TO INSTALL 3#2 STRANDED ALUMINUM WIRES FROM SERVICE POLE TO PULL BOX. AT THE TERMINUS OF EACH #2 ALUMINUM WIRE THE DEPARTMENT OF WATER & POWER TO SPLICE 2#6 STRANDED COPPER WIRES, (12"± LONG) USING COMPRESSION TYPE CONNECTORS. THE EXPOSED ENDS OF EACH COPPER WIRE SHALL BE TAPED WHEN NOT IN USE.
2. INSTALL CONTINUOUS #8 GREEN GROUND CONDUCTOR TO CONTROLLER CABINET.
3. SEE SHEET E-7 FOR PULL BOX DETAILS.

**SIGNAL AND LIGHTING
(CITY)
(ELECTRICAL DETAILS)
NO SCALE**

E-14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR	DATE
Caltrans TRAFFIC DESIGN	HASSAN MANNA	HASSAN MANNA	KENNY NGUYEN	
		CHECKED BY	DATE	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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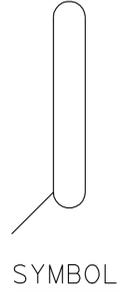
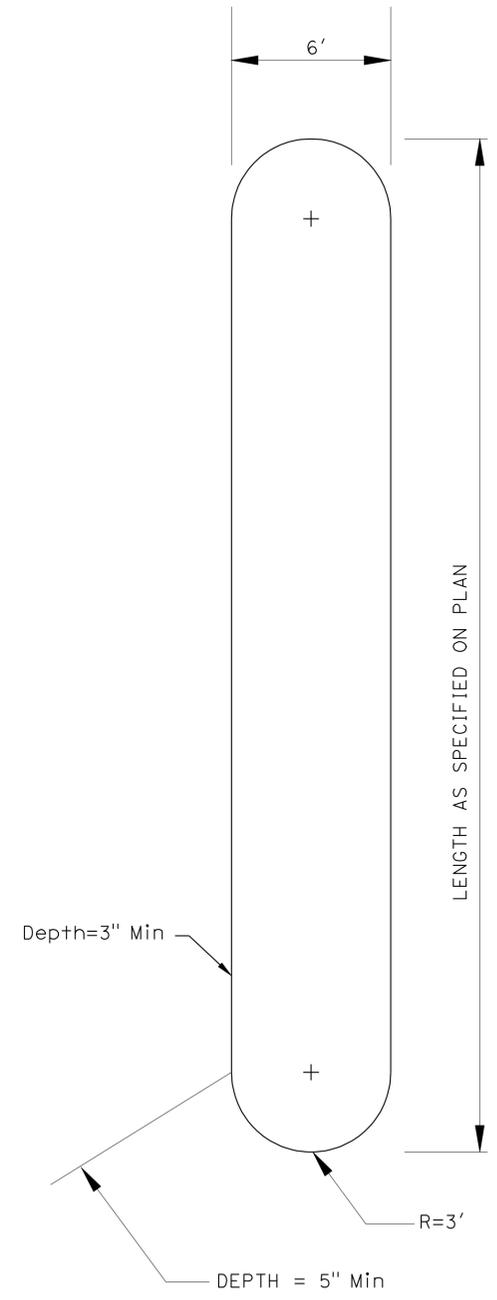
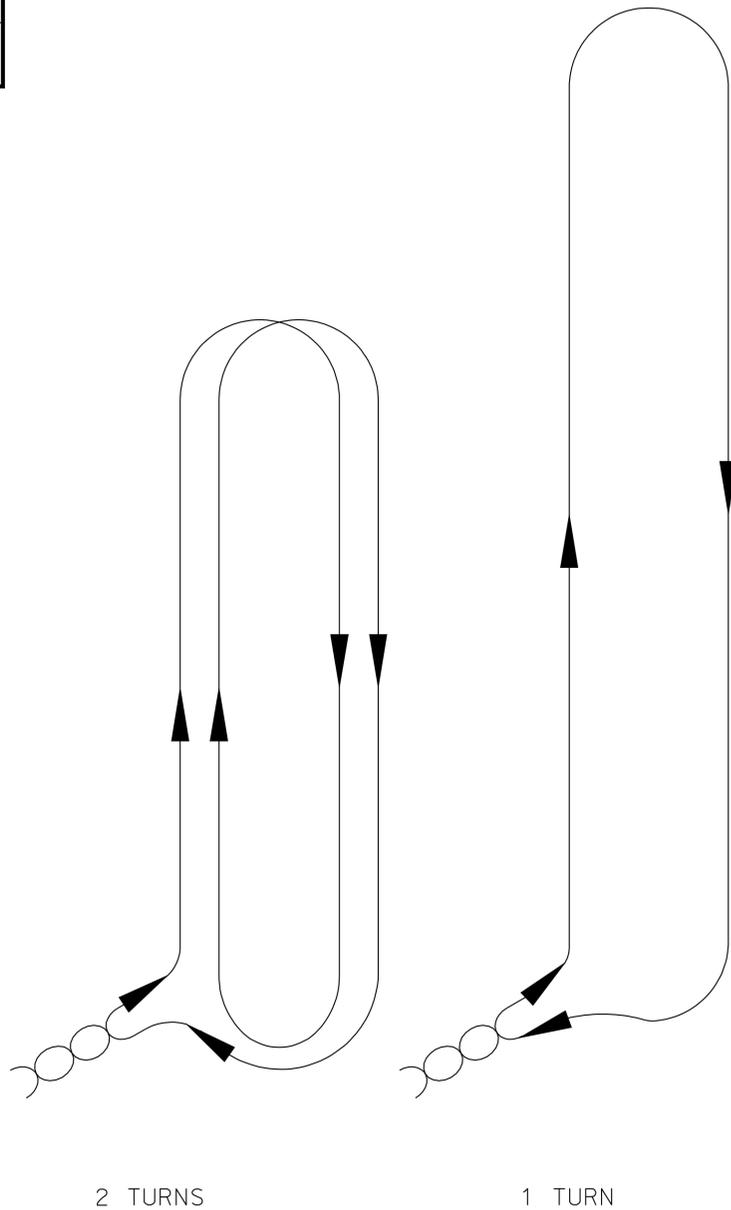
KENNY NGUYEN
 REGISTERED ELECTRICAL ENGINEER
 No. E17759
 Exp. 6/30/12
 STATE OF CALIFORNIA
 ELECTRICAL

11-22-11
 DATE
 1-23-12
 PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS
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 THE ACCURACY OR COMPLETENESS OF SCANNED
 COPIES OF THIS PLAN SHEET.

LENGTH OF LOOP	NUMBER OF TURNS
< 40'	2
≥ 40'	1

SAW SLOT DETAIL



TRANSIT PRIORITY LOOP WINDING DETAILS

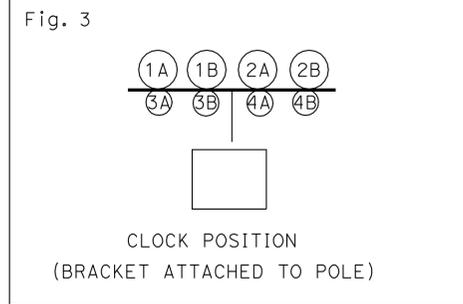
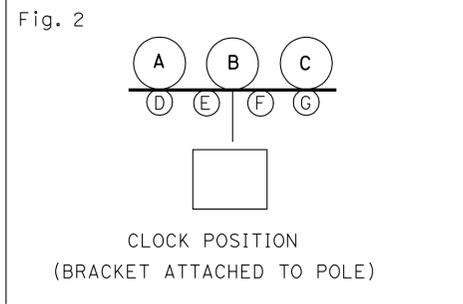
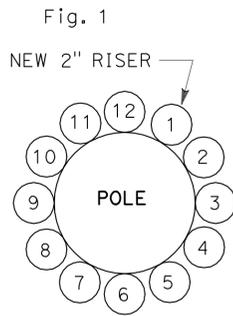
SIGNAL AND LIGHTING
(CITY)
(ELECTRICAL DETAILS)
 NO SCALE

E-15

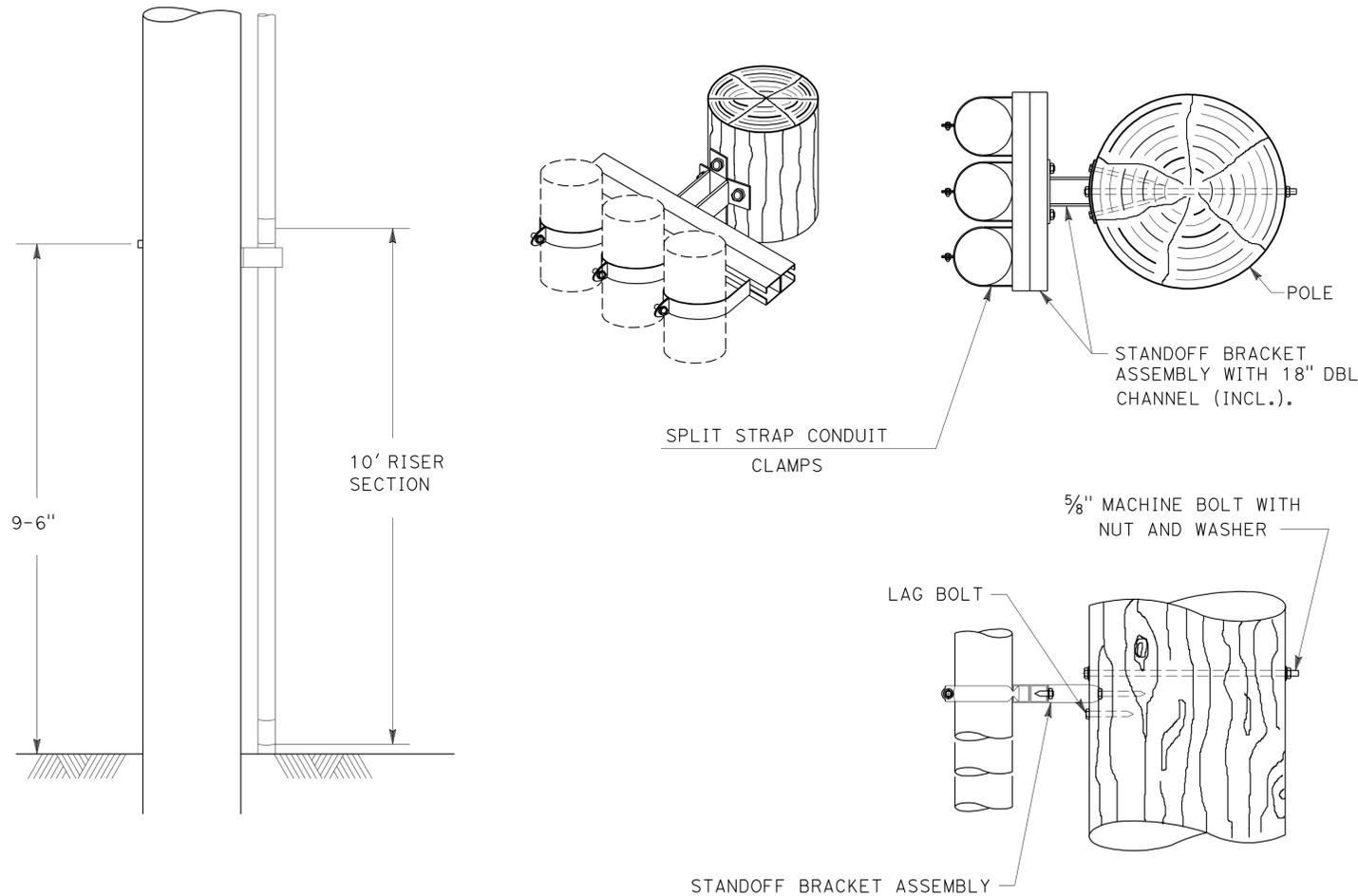
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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Kenny Nguyen		11-22-11		REGISTERED ELECTRICAL ENGINEER DATE	
1-23-12		PLANS APPROVAL DATE		Kenny Nguyen No. E17759 Exp. 6/30/12 ELECTRICAL	
<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>					

LADWP RISER CONFIGURATIONS



ALL CLOCK POSITIONS ARE BASED ON THE CENTERLINE OF THE STREET OR ALLEY BEING 12 O'CLOCK.



STAND-OFF BRACKET INSTALLATION

WHEN THE CONTRACTORS INSTALL RISERS AGAINST POWER POLES, SHALL NOT DRILL HOLES TO INSTALL THE FIRST RISER BRACKET AT 9'-6" ABOVE GRADE. THE BRACKET WILL ONLY BE TEMPORARY ATTACHED USING WIRE OR SIMILAR AS A MEANS OF ATTACHMENT.

**SIGNAL AND LIGHTING
(CITY)
(ELECTRICAL DETAILS)
NO SCALE**

E-16

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR: HASSAN MANNA
DESIGNED BY: HASSAN MANNA
CHECKED BY: HASSAN MANNA
REVISOR: KENNY NGUYEN
DATE: 11-22-11
REVISION: HASSAN MANNA

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	1	32.6	25	45

Eliseo Lopez 9/12/11
 REGISTERED CIVIL ENGINEER DATE

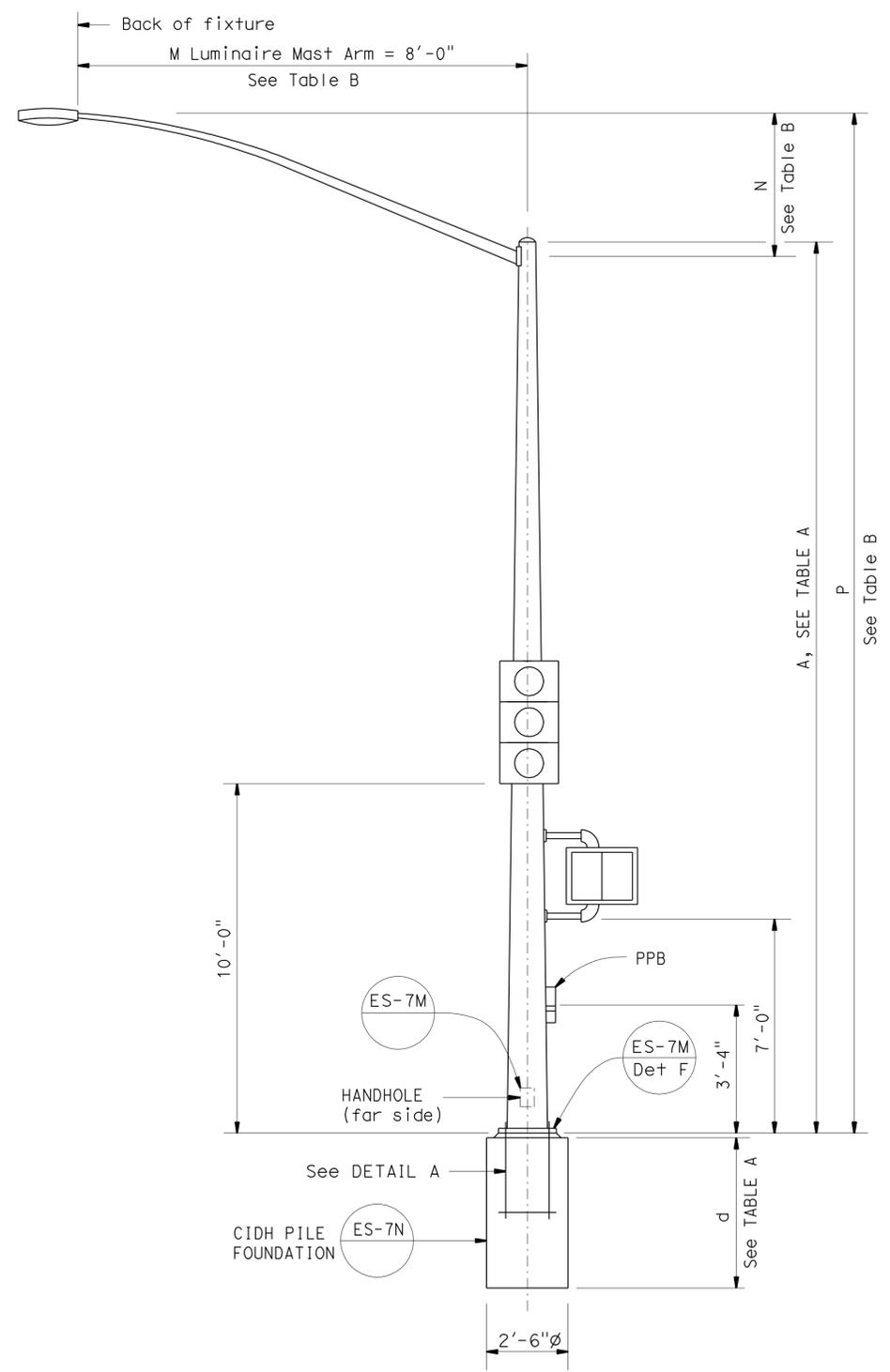
1-23-12
 PLANS APPROVAL DATE

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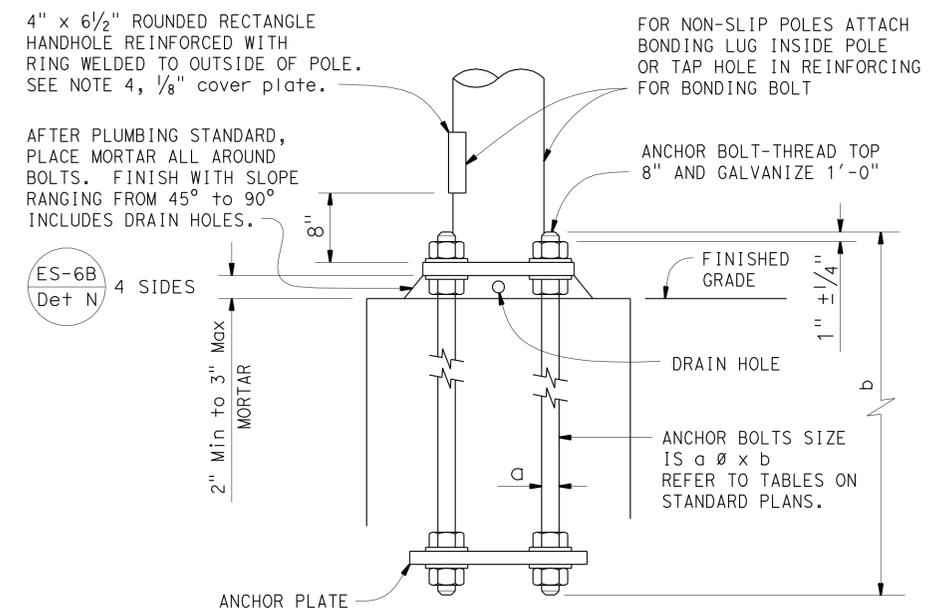
REGISTERED PROFESSIONAL ENGINEER
 ELISEO LOPEZ
 No. C72910
 Exp. 12/31/12
 CIVIL
 STATE OF CALIFORNIA

Pole Type	Pole Data			Base Plate Data				d 2'-6"Ø CIDH Pile		Structural Steel LBS plus 3.5% Galvanizing	
	Height A	Min OD		Wall Thickness	C	Thickness	Anchor Bolts				
		BASE	TOP				SIZE	BC = BOLT CIRCLE	LEVEL GROUND		SLOPING GROUND
15TS MODIFIED	26'-6"	8"	3 7/8"	0.1793"	1'-0"	1"	1 1/4"Ø x 42"	1'-0"	7'-0"	9'-0"	452

TABLE B LUMINAIRE ARM DATA				
M Projected Length	N Rise	Min OD at Pole	Nominal Thickness	P Mounting Height
8'-0"	2'-6"±	3 1/2"	0.1196	26'-6" Pole 29'-0"



**ELEVATION
TYPE 15TS MODIFIED**
See Note ①



**HANDHOLE AND ANCHORAGE
DETAIL A**

GENERAL NOTES:

SPECIFICATIONS

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

LOADING

Wind Loadings: 100 MPH

UNIT STRESSES

Structural Steel: fy = 48,000 psi tapered steel tube
fy = 36,000 psi unless otherwise noted.
Anchor bolts = A307
Reinforced Concrete: f'c = 3,600 psi
fy = 60,000 psi

NOTES:

- For pole locations, see "ELECTRICAL" Plans.
- All steel shall be galvanized after fabrication.
- During pole erection the post shall be raked as necessary with the use of leveling nuts to provide a plumb pole axis.
- The foundation shall be treated as level ground condition if the slope inclination is flatter than 4H:1V.
- Foundation design is based on AASHTO 2001 article 13.6 Broms' approximate procedure assuming a cohesionless material. The angle of internal friction used is 30 degrees and unit weight of soil used is 120 lbs/ft³.
- For details not shown, see "2006 STANDARD PLANS" and "2006 REVISED STANDARD PLANS".

NOTES:

- For additional details and data for Type 15TS Standard, see Standard Plan ES-7A.

NO SCALE

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

BRANCH CHIEF JEFFREY B WOODY	DESIGN	BY <i>E LOPEZ</i>	CHECKED <i>D VORA</i>	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH A	BRIDGE NO.	N/A	TYPE 15TS MODIFIED POLE DETAILS	SES-1
	DETAILS	BY <i>A R DUDSAK</i>	CHECKED <i>D VORA</i>			POST MILE			
	QUANTITIES	BY <i>E LOPEZ</i>	CHECKED <i>D VORA</i>						

(ENGLISH) SPECIAL DESIGNS BRANCH BORDER SHEET (REV. 7-1-09) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 UNIT: 3619 PROJECT NUMBER & PHASE: 0700021016-1 CONTRACT NO.: 07-4T4201 DISREGARD PRINTS BEARING EARLIER REVISION DATES 8-30-11 9-7-11 9-12-11 SHEET OF

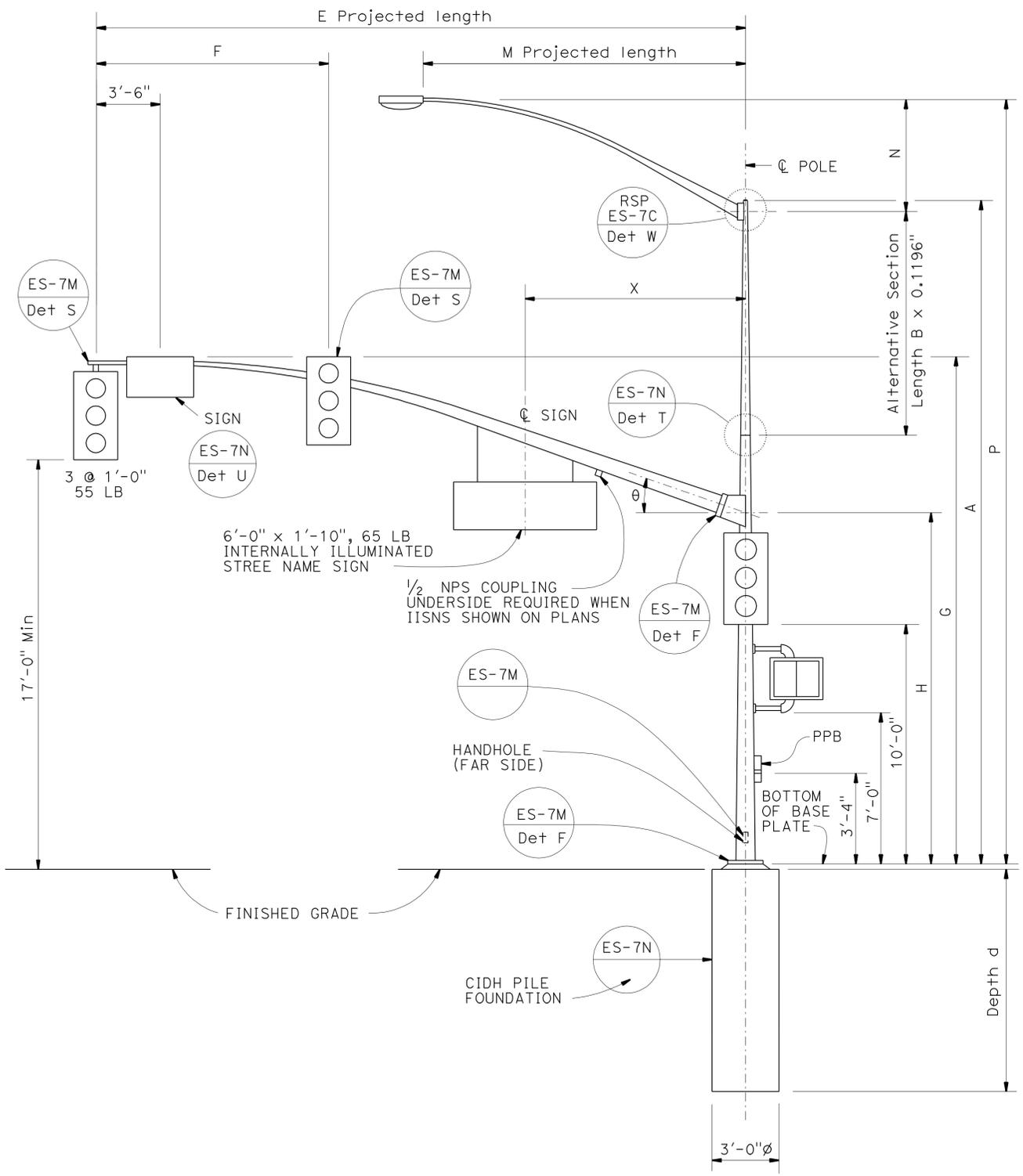
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	1	32.6	26	45

Eliseo Lopez 9/12/11
 REGISTERED CIVIL ENGINEER DATE

1-23-12
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
 ELISEO LOPEZ
 No. C72910
 Exp. 12/31/12
 CIVIL
 STATE OF CALIFORNIA



**TYPE 19-4-100 MODIFIED
ELEVATION**

M Projected Length	N Rise	Min OD at Pole	Nominal Thickness	P Mounting Height
8'-0"	2'-6"±	3 1/2"	0.1196	26'-6" Pole

E Projected Length	F Min Spacing	G Mounting Height	H	Min OD at Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate Size	K Arm R Thickness	L Pole R Thickness	φ	X Max	Structural Steel LBS plus 3.5% Galvanizing
25'-0"	10'-0"	22'-8"±	16'-0"	7 3/8"	0.2391"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°	10'-6"	1523
30'-0"	12'-0"	23'-0"±	16'-0"	8 1/16"	0.2391"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°	10'-6"	1683

Pole Type	A Height	Min OD		Thickness	Alternative Section			BASE PLATE DATA			d 3'-0"Ø CIDH Pile		
		Base	Top		B Length	Bottom	Top	C	DI Bolt Circle	Thickness	Anchor Bolts Size	Level Ground	Sloping Ground
19-4-100 Modified	26'-6"	12"	8"	0.2391"	10'-0"	9 3/8"	8"	1'-6"	1'-6"	1 1/2"	2"Ø x 42" x 6"	11'-0"	13'-0"

GENERAL NOTES:

SPECIFICATIONS

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

LOADING

Wind Loadings: 100 MPH

UNIT STRESSES

Structural Steel: fy = 48,000 psi tapered steel tube
 fy = 36,000 psi unless otherwise noted.

Anchor bolts = A307

Reinforced Concrete: f'c = 3,600 psi
 fy = 60,000 psi

NOTES:

- For pole locations, see "ELECTRICAL" Plans.
- All steel shall be galvanized after fabrication.
- During pole erection the post shall be raked as necessary with the use of leveling nuts to provide a plumb pole axis.
- The foundation shall be treated as level ground condition if the slope inclination is flatter than 4H:1V.
- Foundation design is based on AASHTO 2001 article 13.6 Broms' approximate procedure assuming a cohesionless material. The angle of internal friction used is 30 degrees and unit weight of soil used is 120 lbs/ft³.
- For details not shown, see "2006 STANDARD PLANS" and "2006 REVISED STANDARD PLANS".

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

NO SCALE

BRANCH CHIEF JEFFREY B WOODY	DESIGN	BY <i>E LOPEZ</i>	CHECKED <i>D VORA</i>	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO.	N/A	TYPE 19-4-100 MODIFIED POLE DETAILS	SES-2
	DETAILS	BY <i>A R DUDSAK</i>	CHECKED <i>D VORA</i>			POST MILE			
	QUANTITIES	BY <i>E LOPEZ</i>	CHECKED <i>D VORA</i>						

(ENGLISH) SPECIAL DESIGNS BRANCH BORDER SHEET (REV. 7-1-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3

UNIT: 3619
 PROJECT NUMBER & PHASE: 0700021016-1
 CONTRACT NO.: 07-4T4201

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 8-30-11, 9-7-11, 9-12-11

SHEET OF

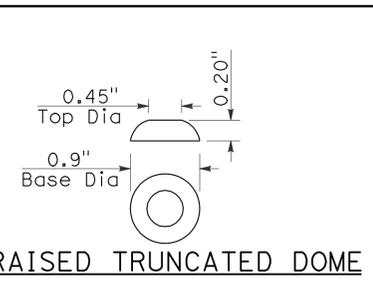
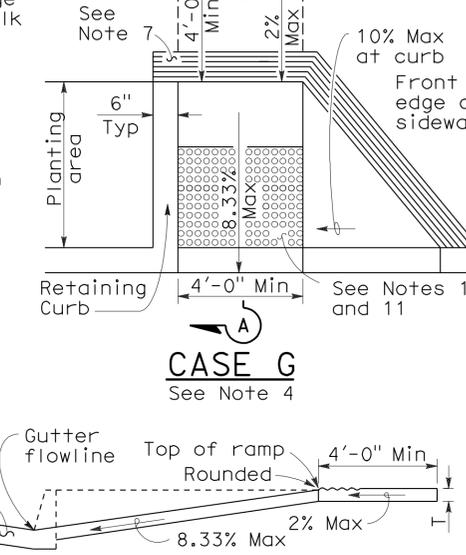
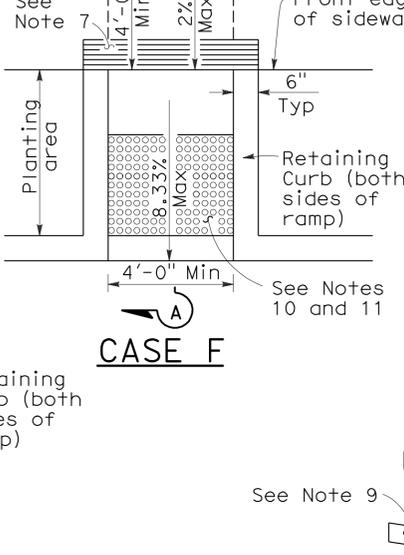
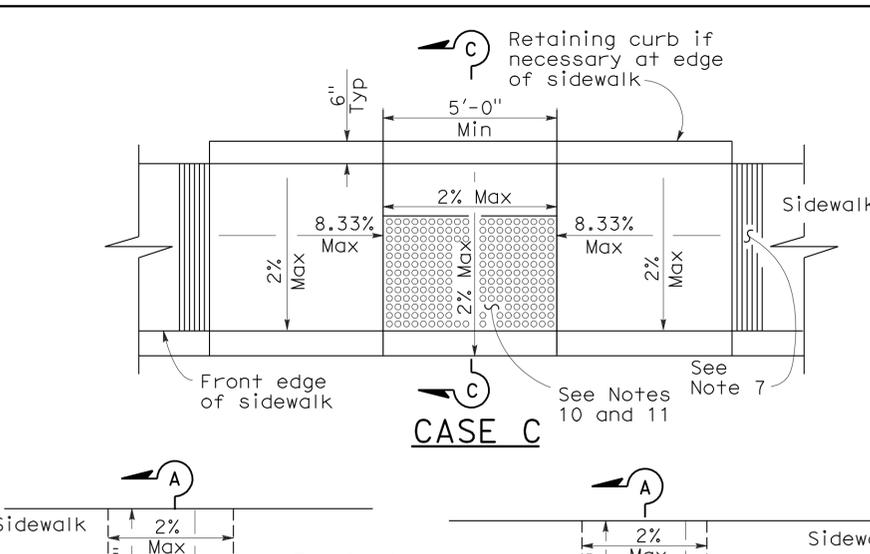
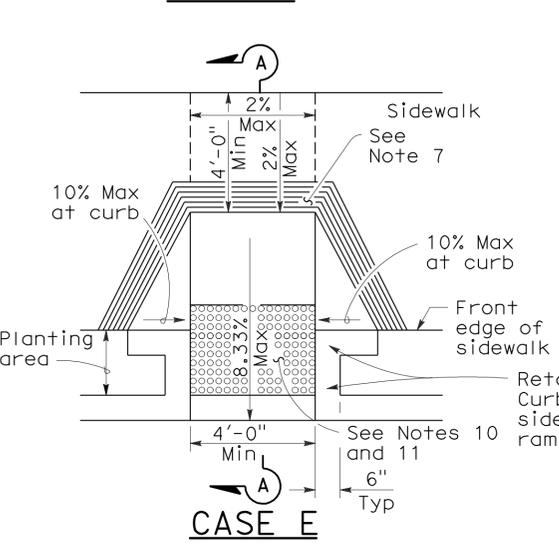
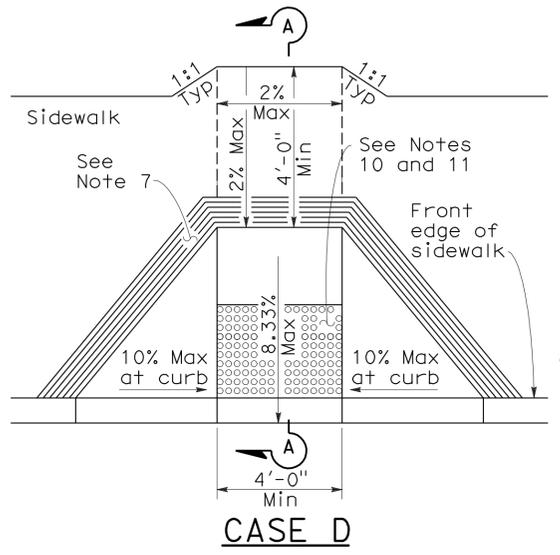
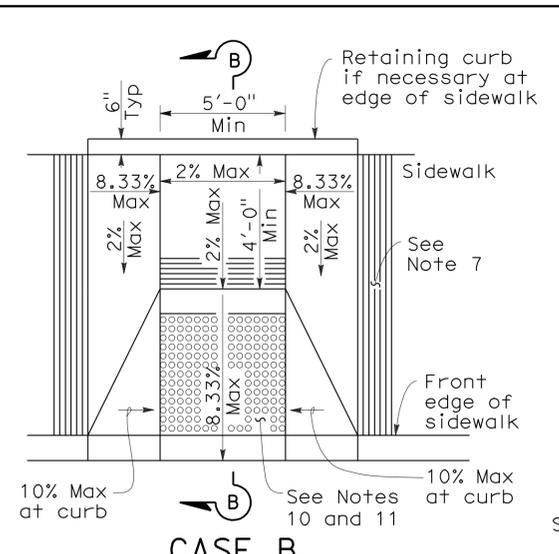
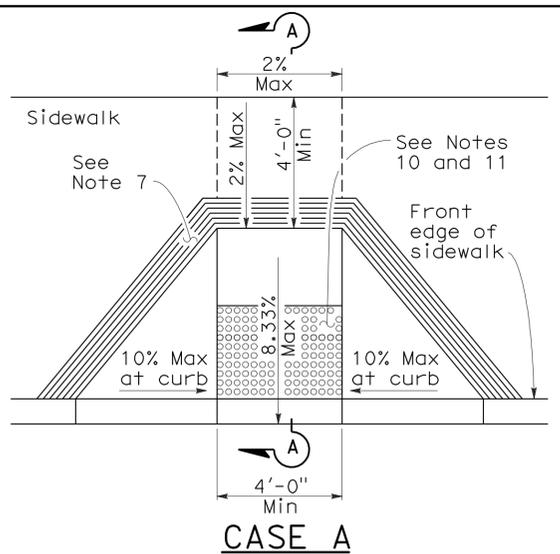
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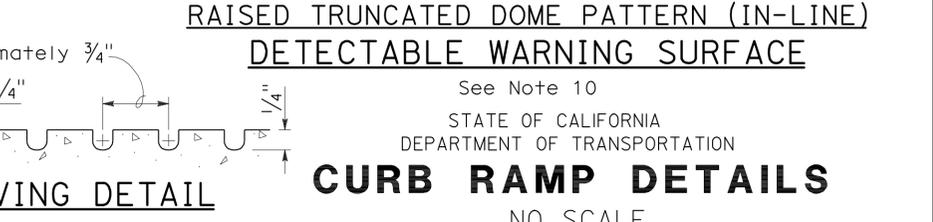
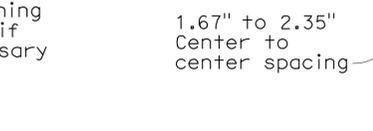
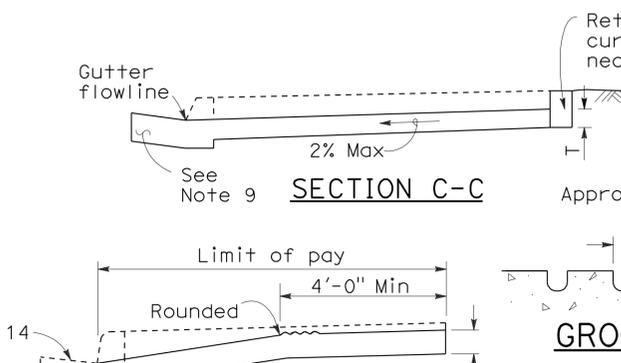
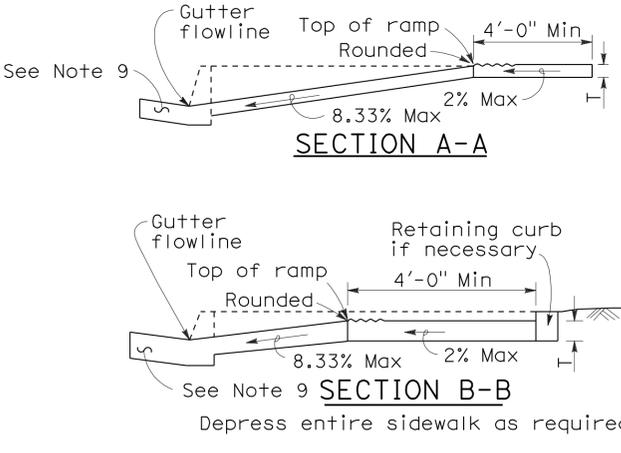
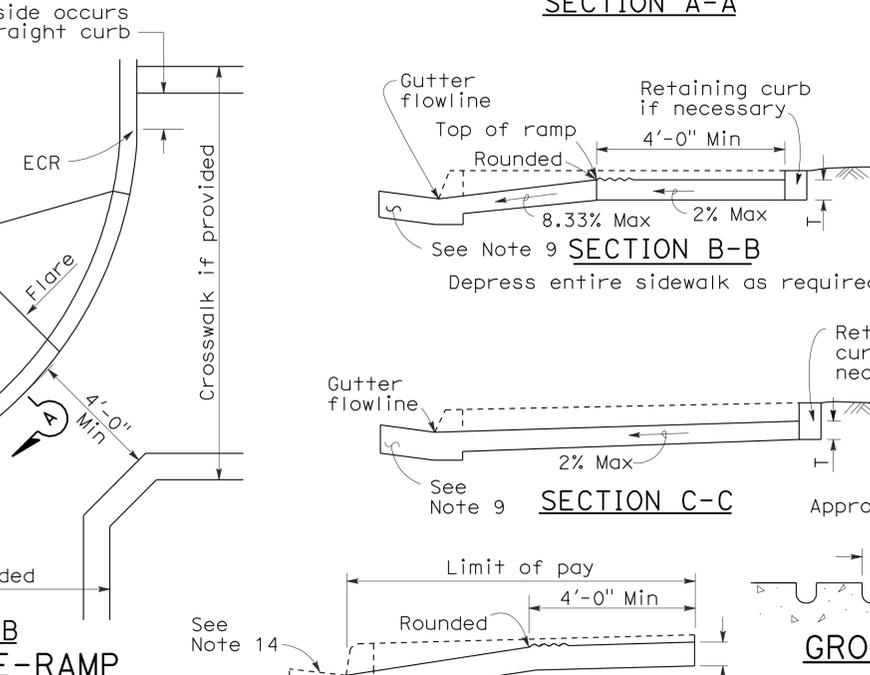
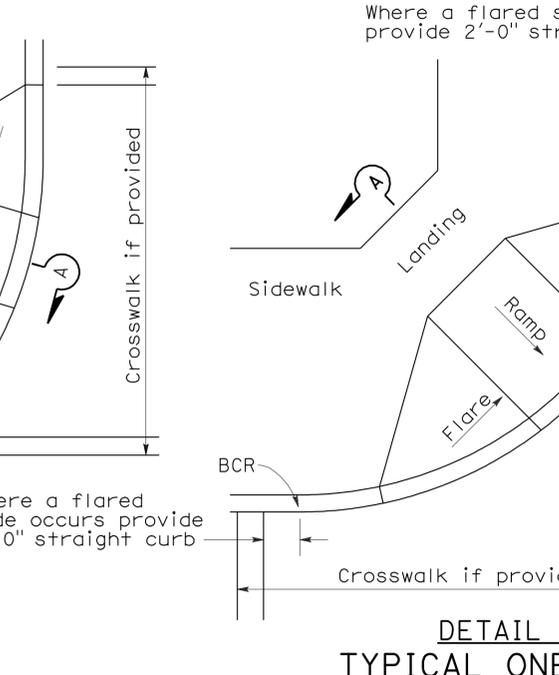
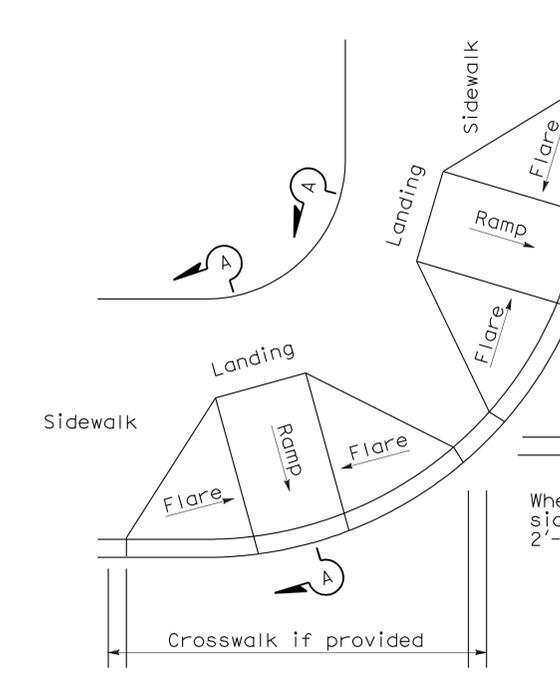
H. David Cordova
 REGISTERED CIVIL ENGINEER
 September 1, 2006
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
Hector David Cordova
No. C41957
Exp. 3-31-08
CIVIL
STATE OF CALIFORNIA



NOTES:

- As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
- If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-0" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
- When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
- As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
- If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-0".
- Side slope of ramp flares vary uniformly from a maximum of 10% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
- The curb ramp shall be outlined, as shown, with a 1'-0" wide border with 1/4" grooves approximately 3/4" on center. See grooving detail.
- Transitions from ramps and landing to walks, gutters or streets shall be flush and free of abrupt changes.
- Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'-0" of the top and bottom of the curb ramp.
- Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Special Provisions.
- The edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
- Sidewalk and ramp thickness, "T", shall be 3/2" minimum.
- Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
- For retrofit conditions, removal and replacement of curb apron will be at the Contractor's option, unless otherwise shown on project plans.



TYPICAL TWO-RAMP CORNER INSTALLATION
See Note 1

TYPICAL ONE-RAMP CORNER INSTALLATION
See Notes 1 and 3

RETROFIT DETAIL
Existing curb and sidewalk

2006 REVISED STANDARD PLAN RSP A88A

RSP A88A DATED SEPTEMBER 1, 2006 SUPERSEDES STANDARD PLAN A88A DATED MAY 1, 2006 - PAGE 115 OF THE STANDARD PLANS BOOK DATED MAY 2006.

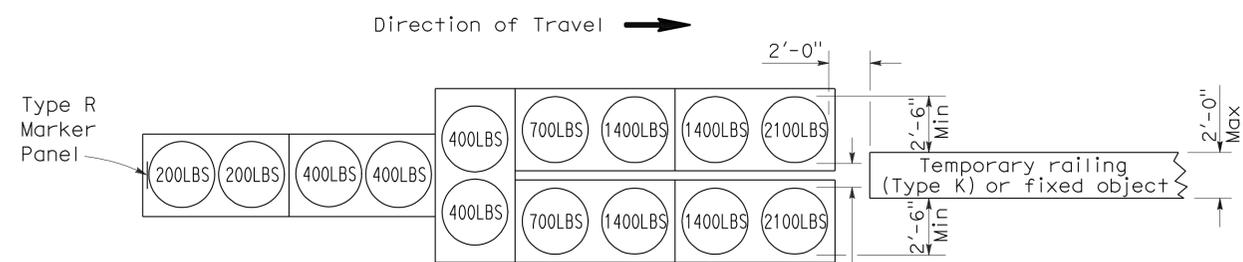
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	32.6	28	45

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

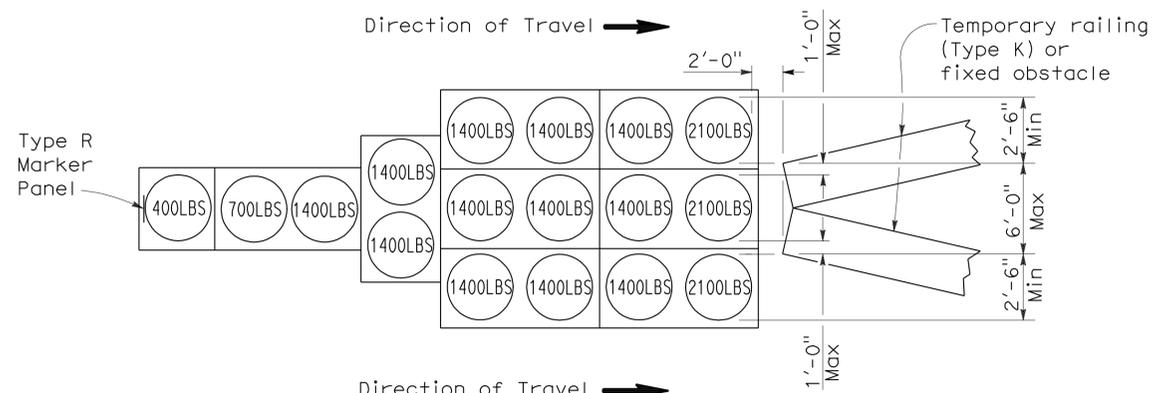
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To accompany plans dated 1-23-12



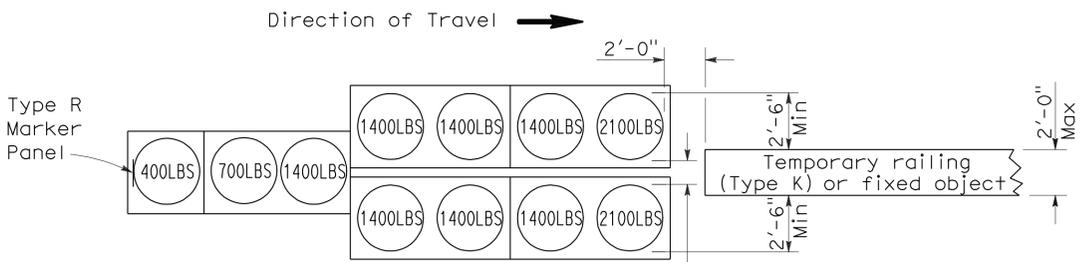
ARRAY 'TU14'

Approach speed 45 mph or more



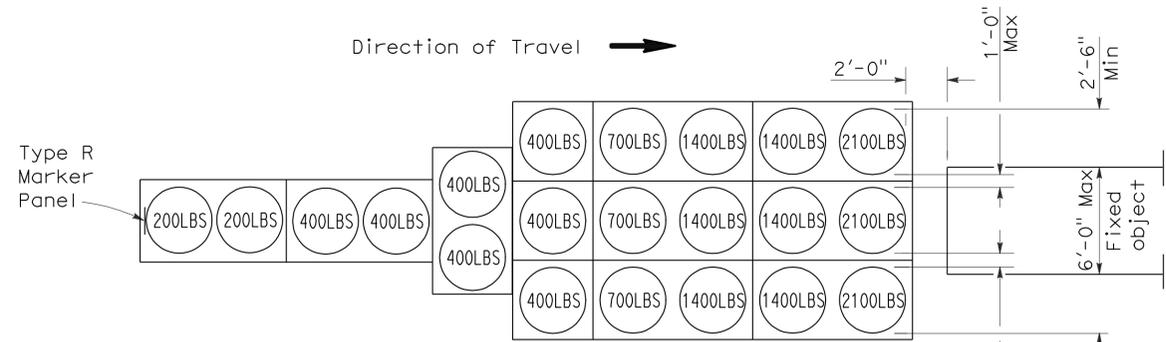
ARRAY 'TU17'

Approach speed less than 45 mph



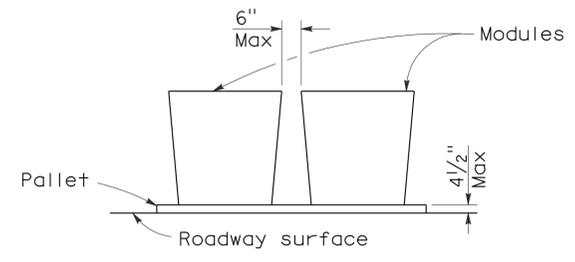
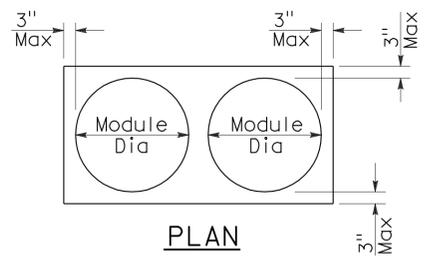
ARRAY 'TU11'

Approach speed less than 45 mph



ARRAY 'TU21'

Approach speed 45 mph or more



CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(UNIDIRECTIONAL)**

NO SCALE

RSP T1A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1A
DATED MAY 1, 2006 - PAGE 211 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T1A

2006 REVISED STANDARD PLAN RSP T1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	32.6	29	45

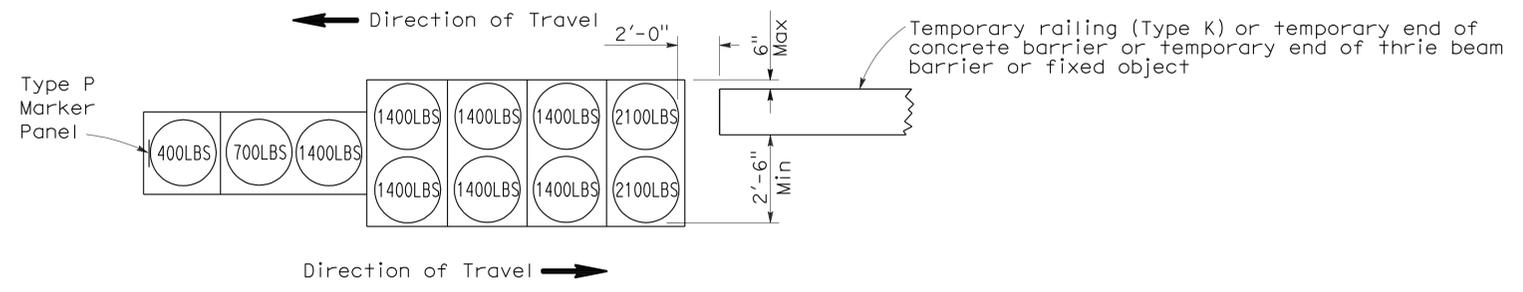
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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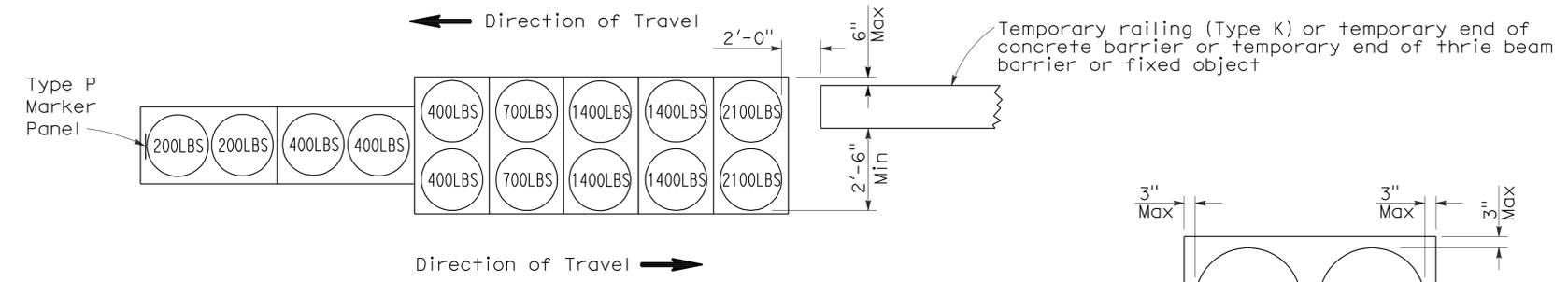
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 1-23-12



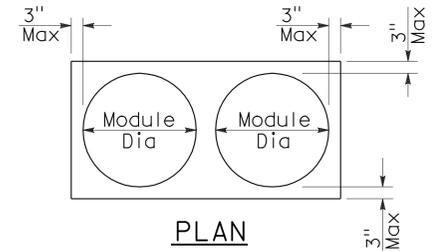
ARRAY 'TB11'

Approach speed less than 45 mph

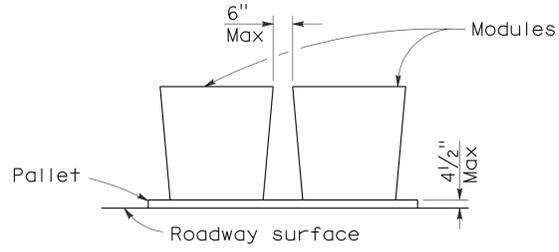


ARRAY 'TB14'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(BIDIRECTIONAL)**

NO SCALE

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

REVISED STANDARD PLAN RSP T1B

2006 REVISED STANDARD PLAN RSP T1B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	32.6	30	45

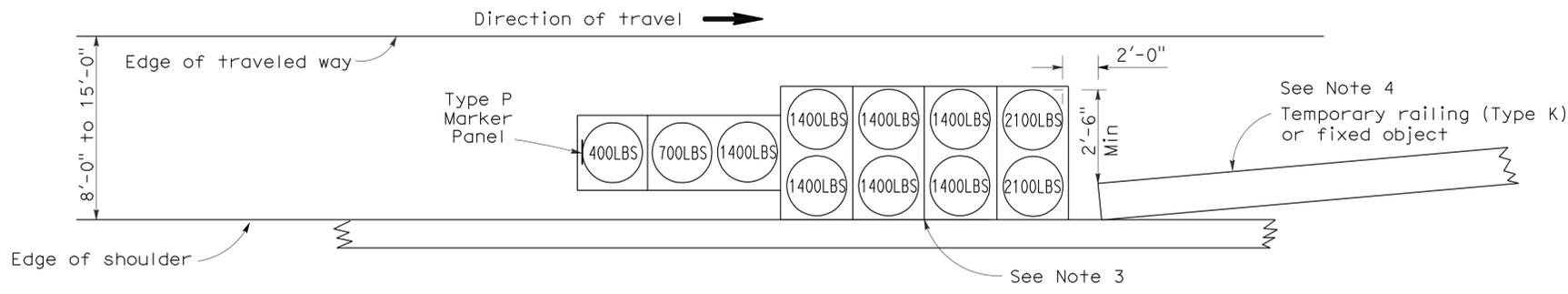
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

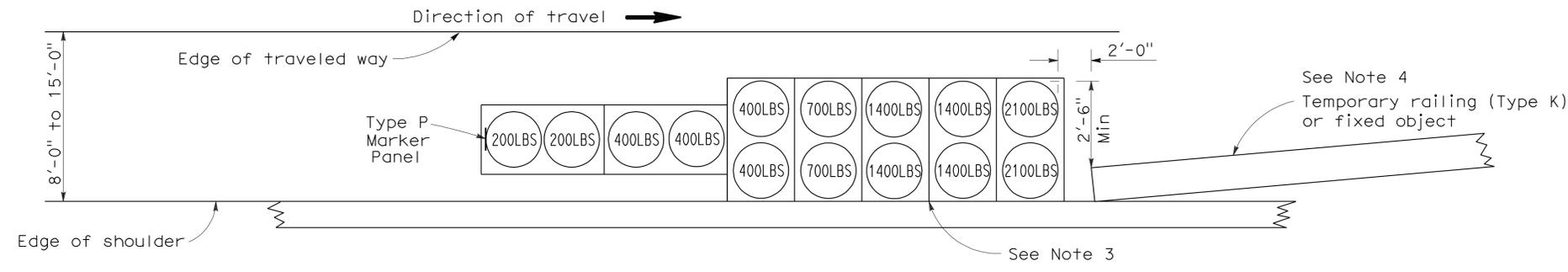
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REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 1-23-12



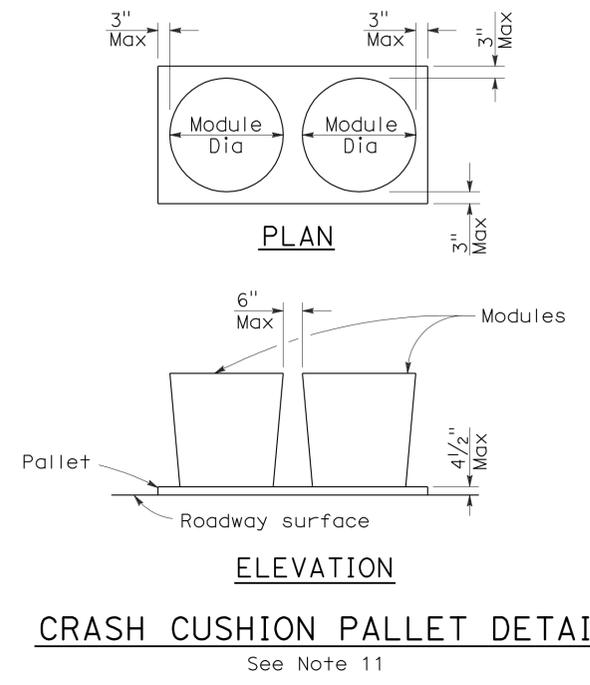
ARRAY 'TS11'
Approach speed less than 45 mph
See Note 9



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

NOTES:

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



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(SHOULDER INSTALLATIONS)**

NO SCALE
RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T2

2006 REVISED STANDARD PLAN RSP T2

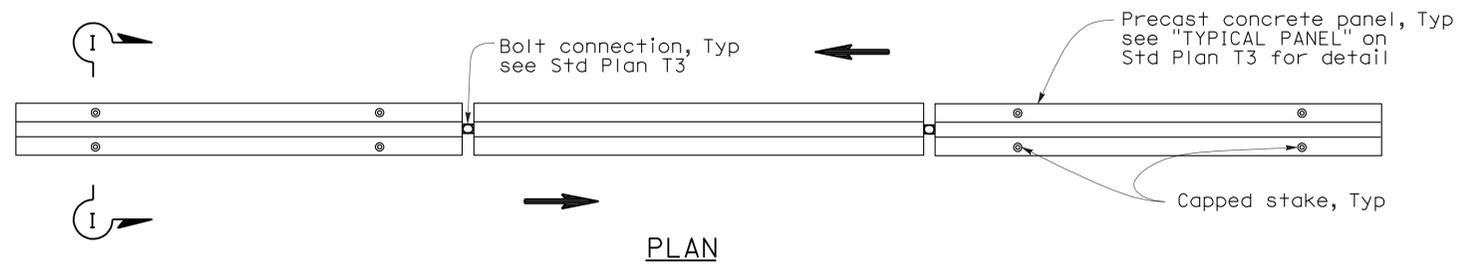
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	32.6	31	45

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

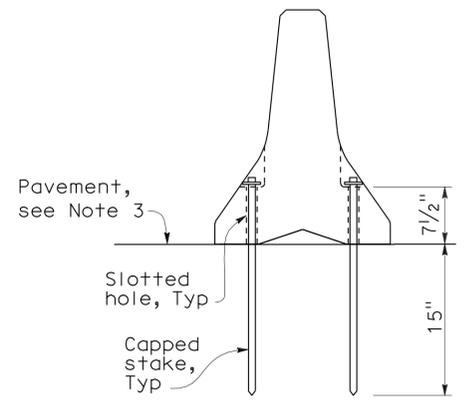
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 1-23-12



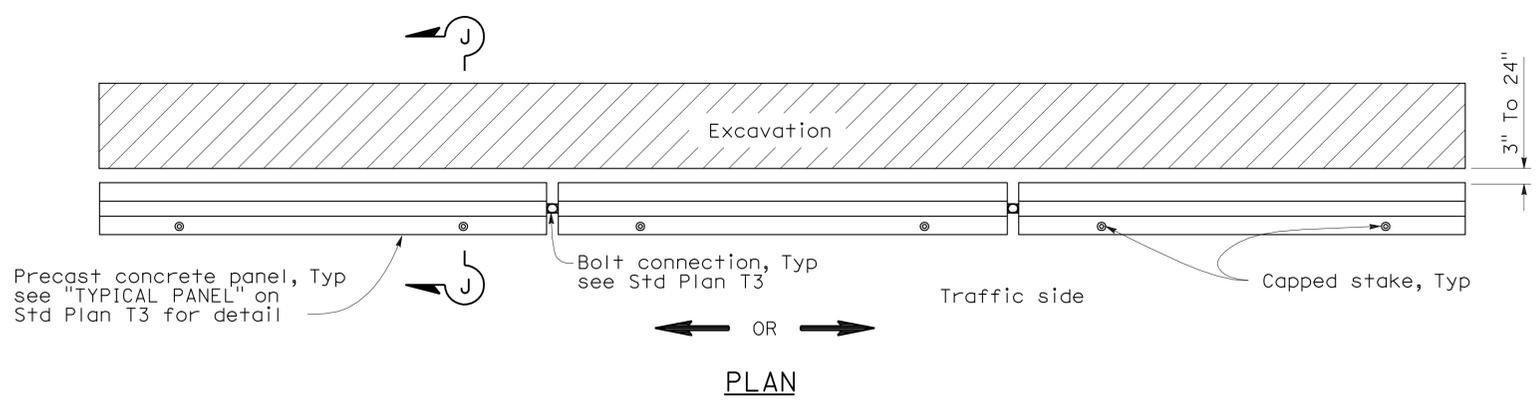
RAILING STAKING CONFIGURATION FOR TWO-WAY TRAFFIC

See Note 1



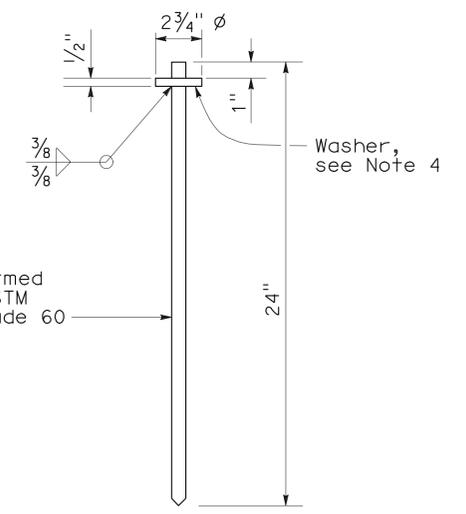
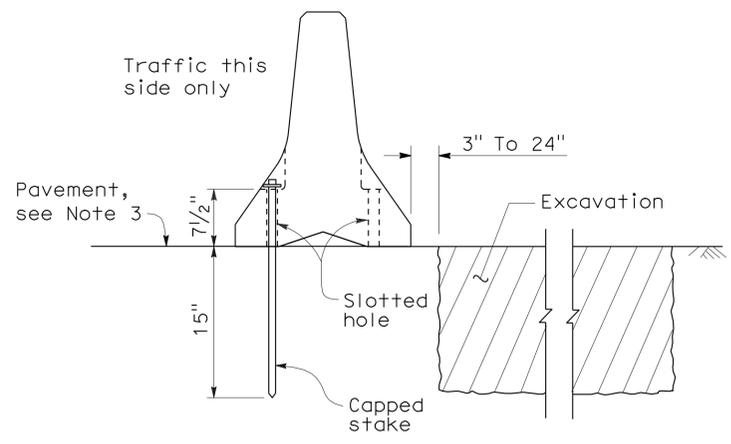
NOTES:

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



RAILING STAKING CONFIGURATION ADJACENT TO AN EXCAVATION

See Note 2



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY RAILING
(TYPE K)**

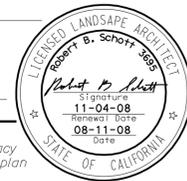
NO SCALE

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

2006 NEW STANDARD PLAN NSP T3A

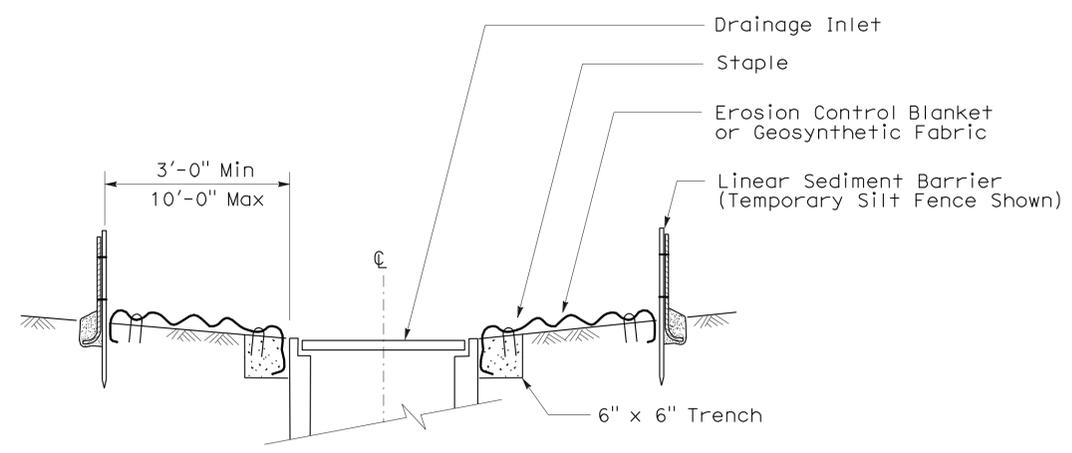
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	32.6	33	45

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 PLANS Approval DATE
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

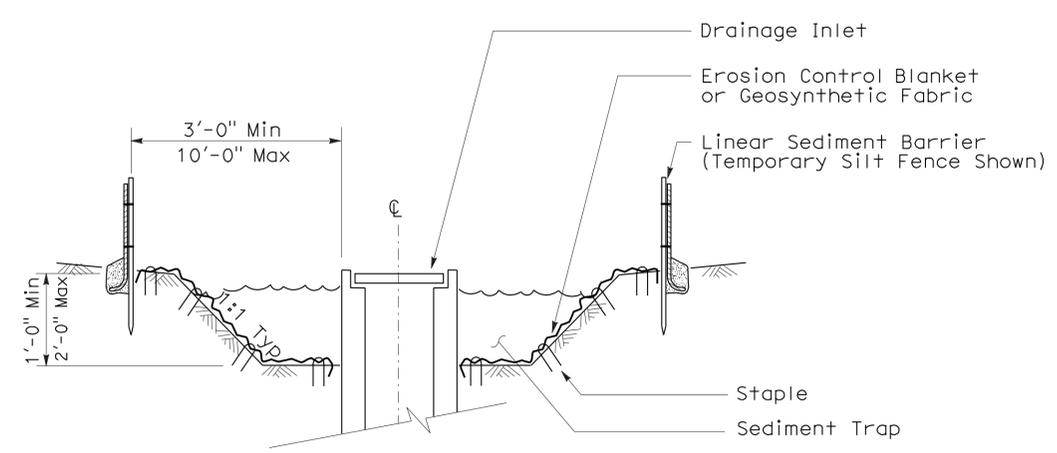


To accompany plans dated 1-23-12

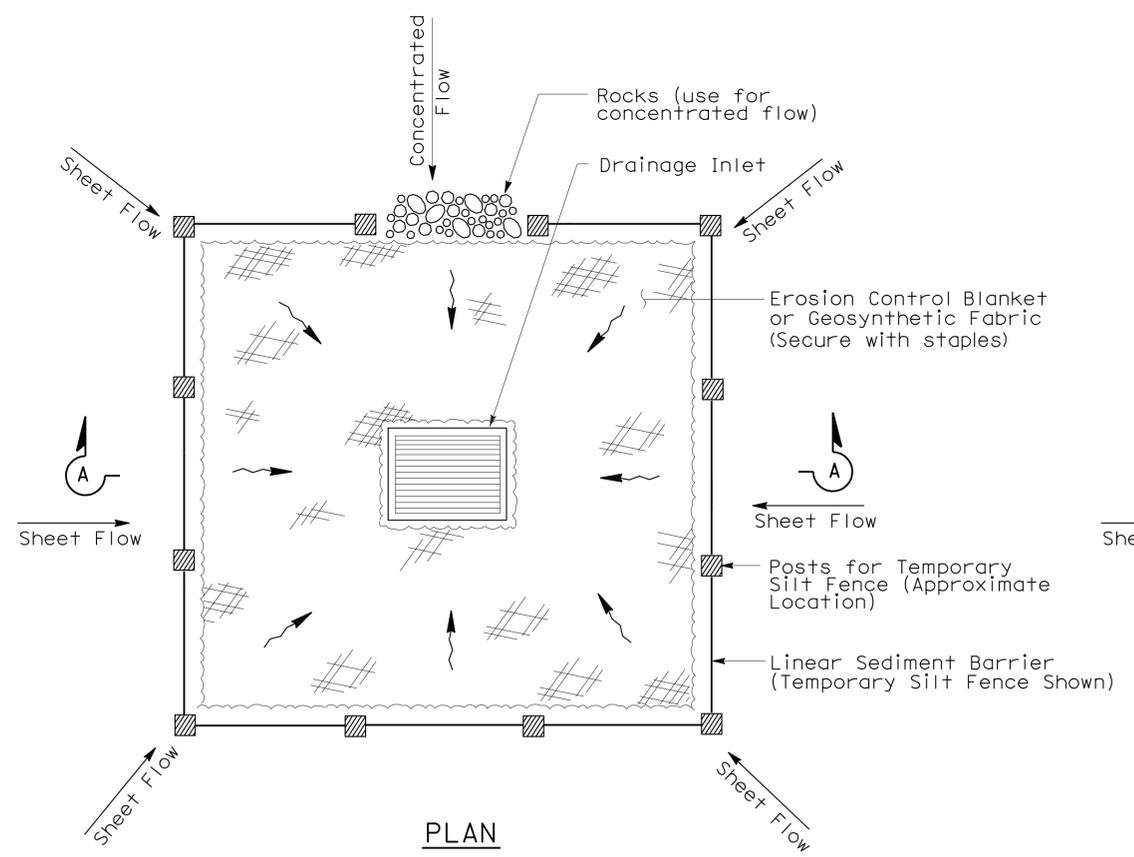
- NOTES:**
- See Standard Plan T51 for Temporary Silt Fence.
 - Dimensions may vary to fit field conditions.



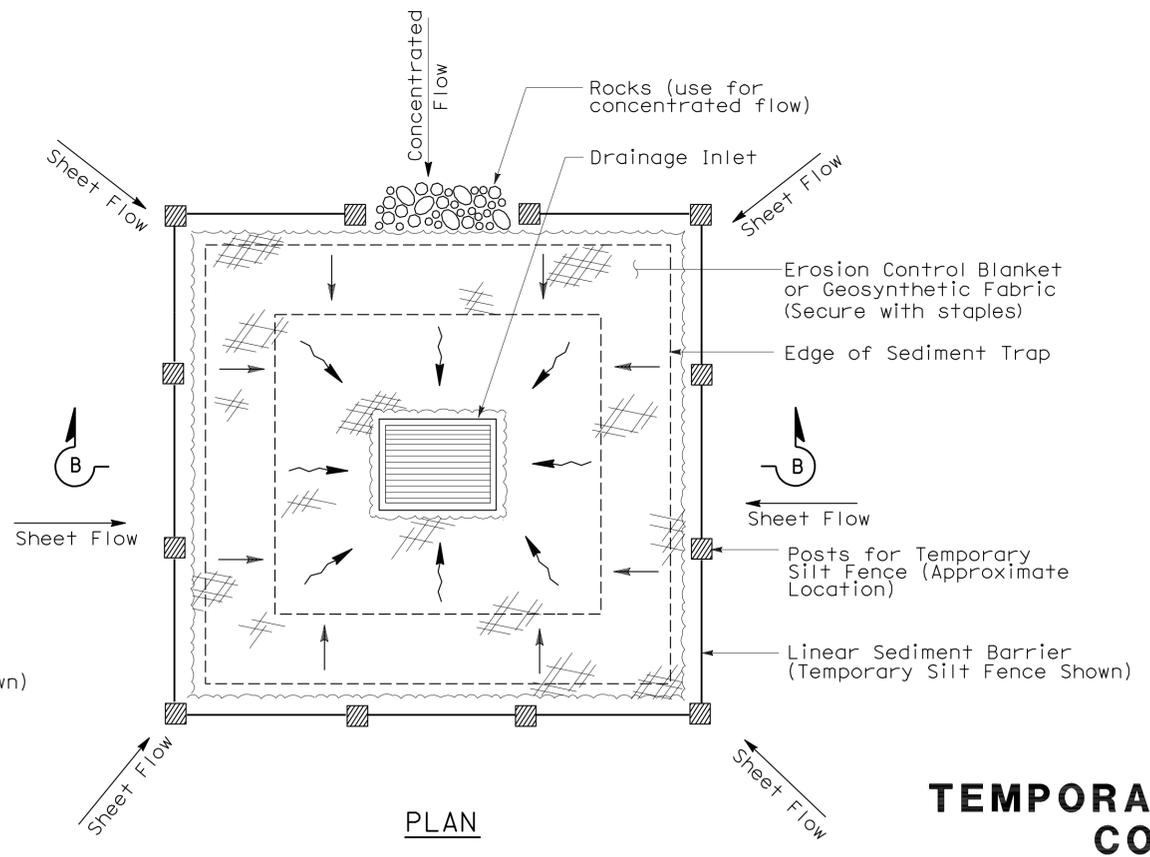
SECTION A-A



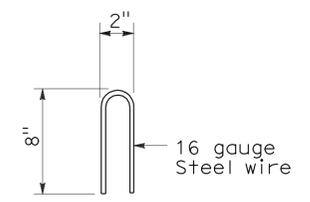
SECTION B-B



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 1)



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



STAPLE DETAIL

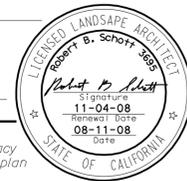
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
TEMPORARY WATER POLLUTION CONTROL DETAILS
(TEMPORARY DRAINAGE INLET PROTECTION)
 NO SCALE

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

2006 NEW STANDARD PLAN NSP T61

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	32.6	34	45

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 PLANS APPROVAL DATE
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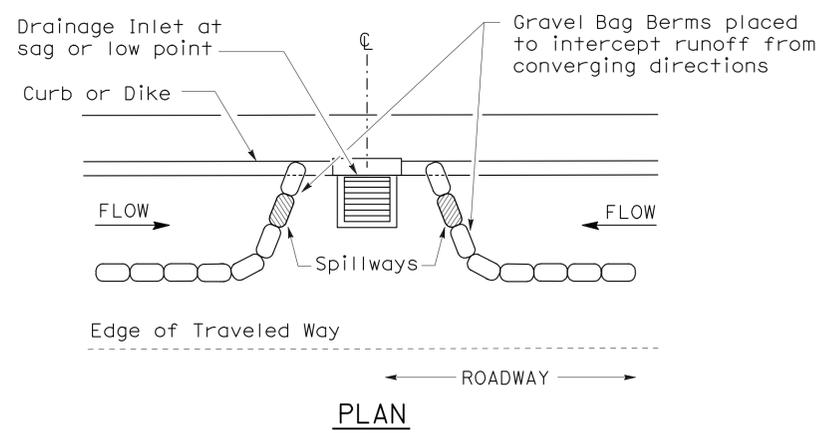


To accompany plans dated 1-23-12

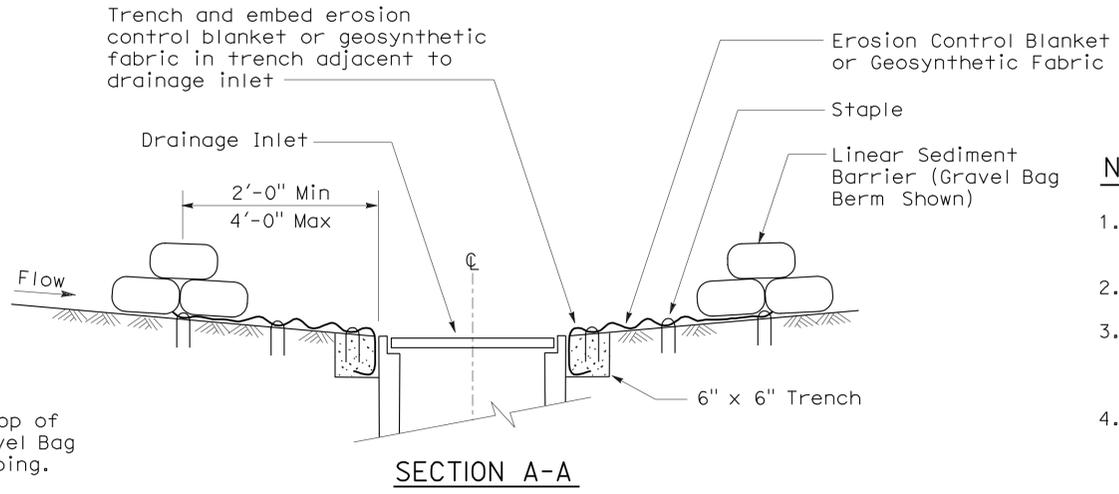
GRAVEL BAG BERM (TYPE 3A) SPACING TABLE

SLOPE OF ROADWAY (PERCENT)	1 to 3.9	4 to 5.9	6 to 7.9	8 to 10	10+
INTERVAL BETWEEN BERM	100'	75'	50'	25'	12'

For slope of less than 1%, install barriers only if erosion/sediment is prevalent



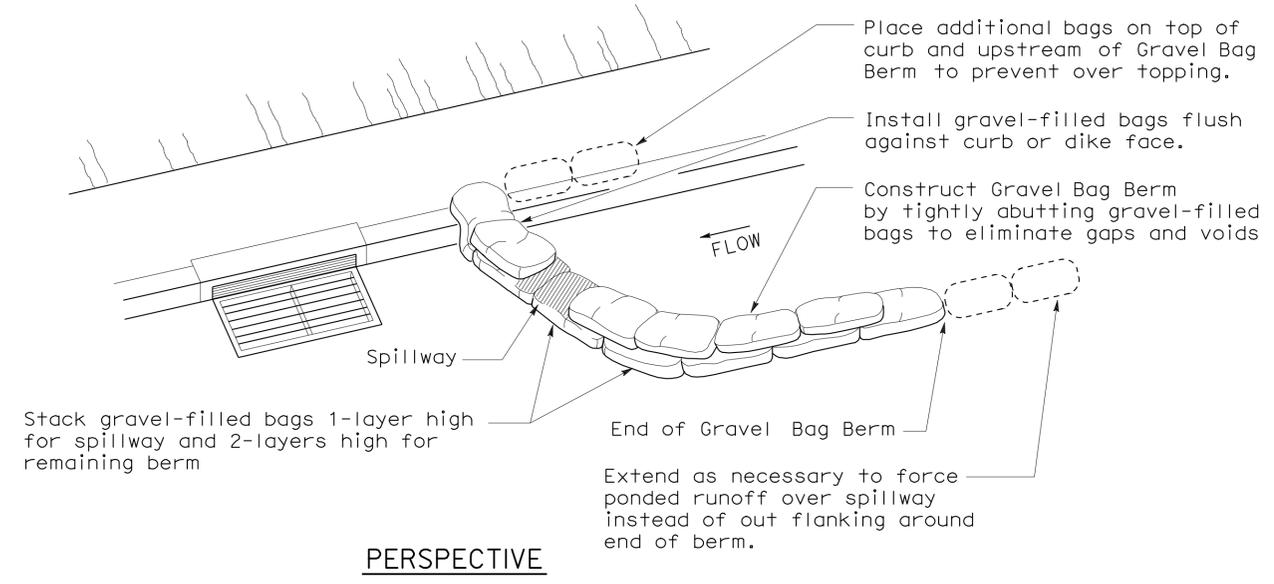
PLAN
CONFIGURATION FOR SAG POINT INLET (GRAVEL BAG BERM)



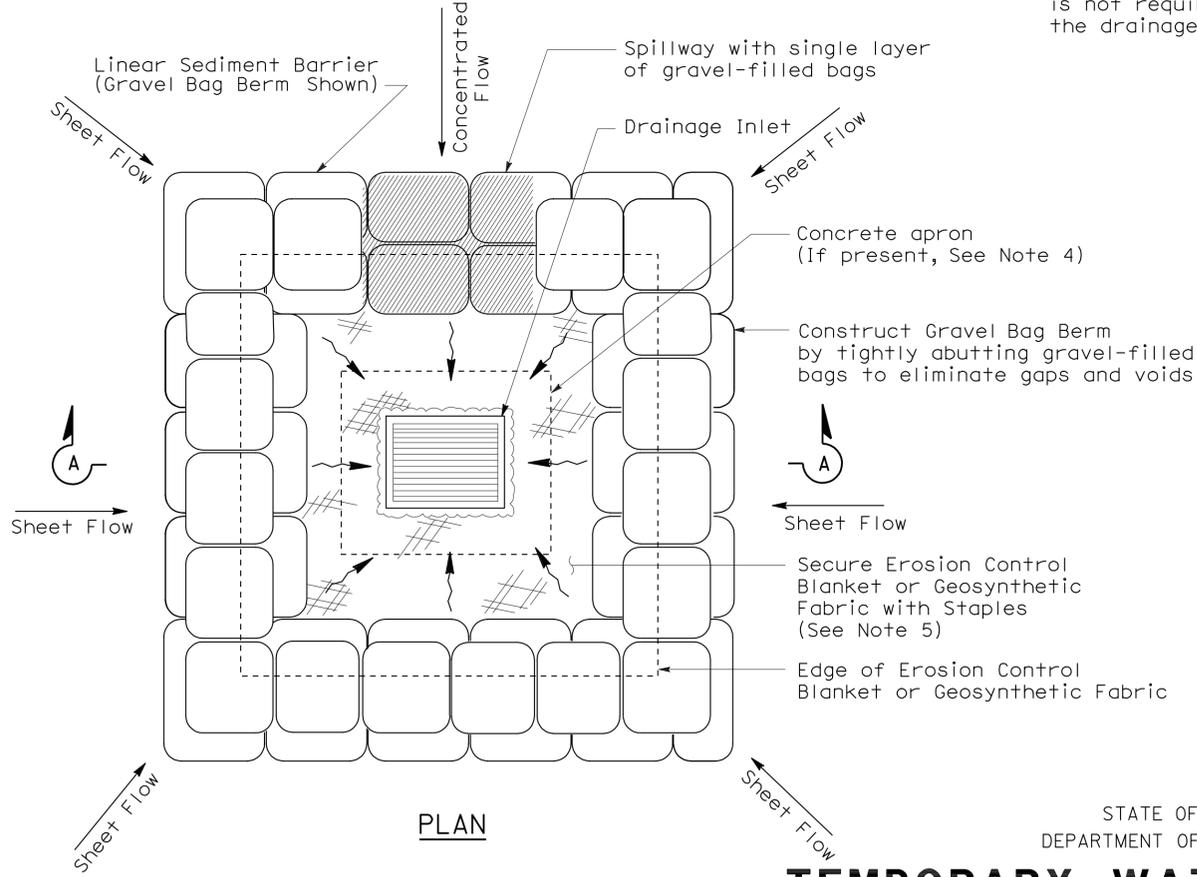
SECTION A-A

NOTES:

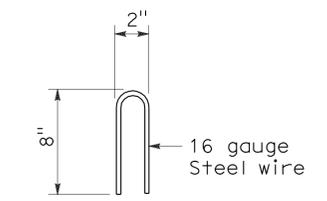
1. Place safety cones adjacent to drainage inlet protection.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 gravel bag berms upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.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



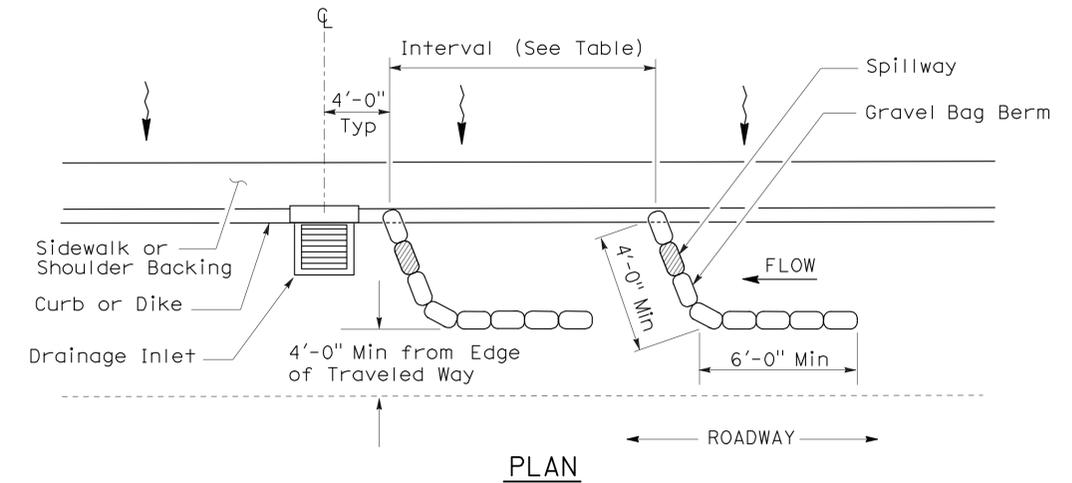
PERSPECTIVE



PLAN
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3B)



STAPLE DETAIL



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

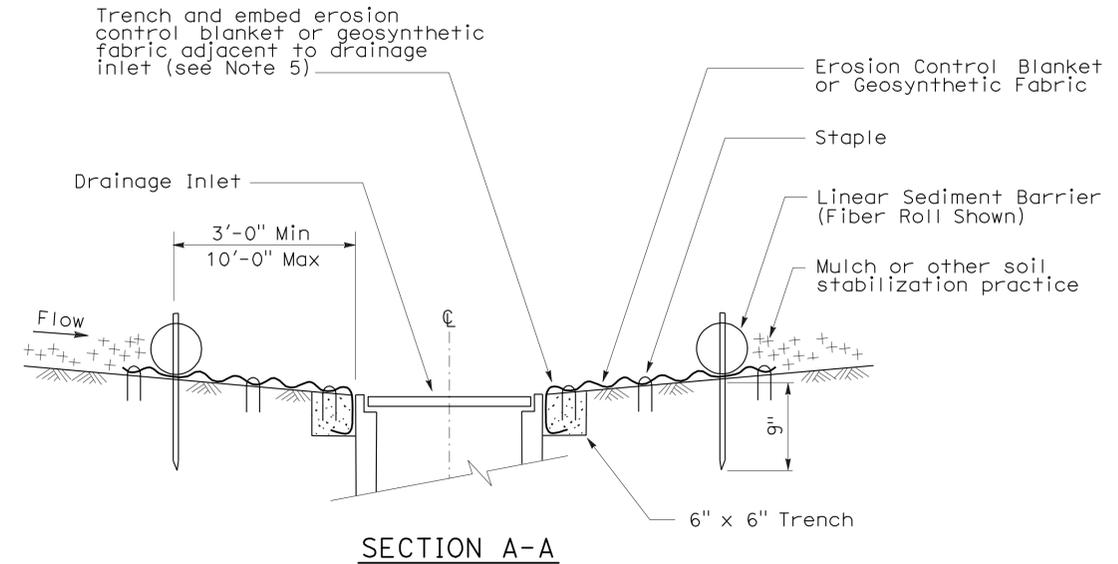
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE
NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

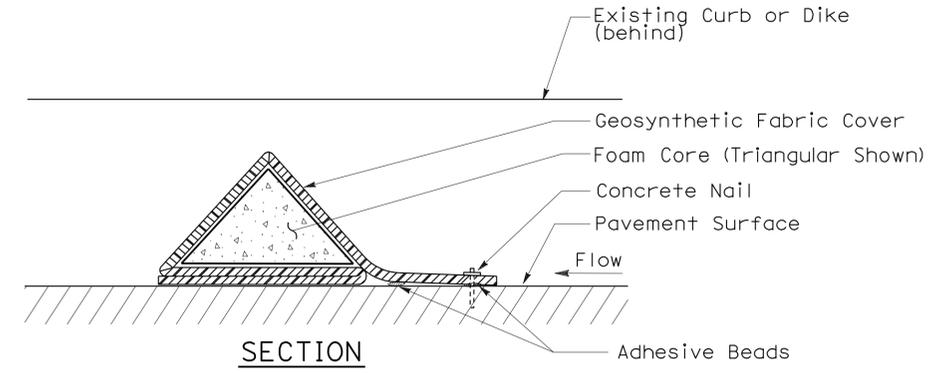
2006 NEW STANDARD PLAN NSP T62

FLEXIBLE SEDIMENT BARRIER SPACING TABLE

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



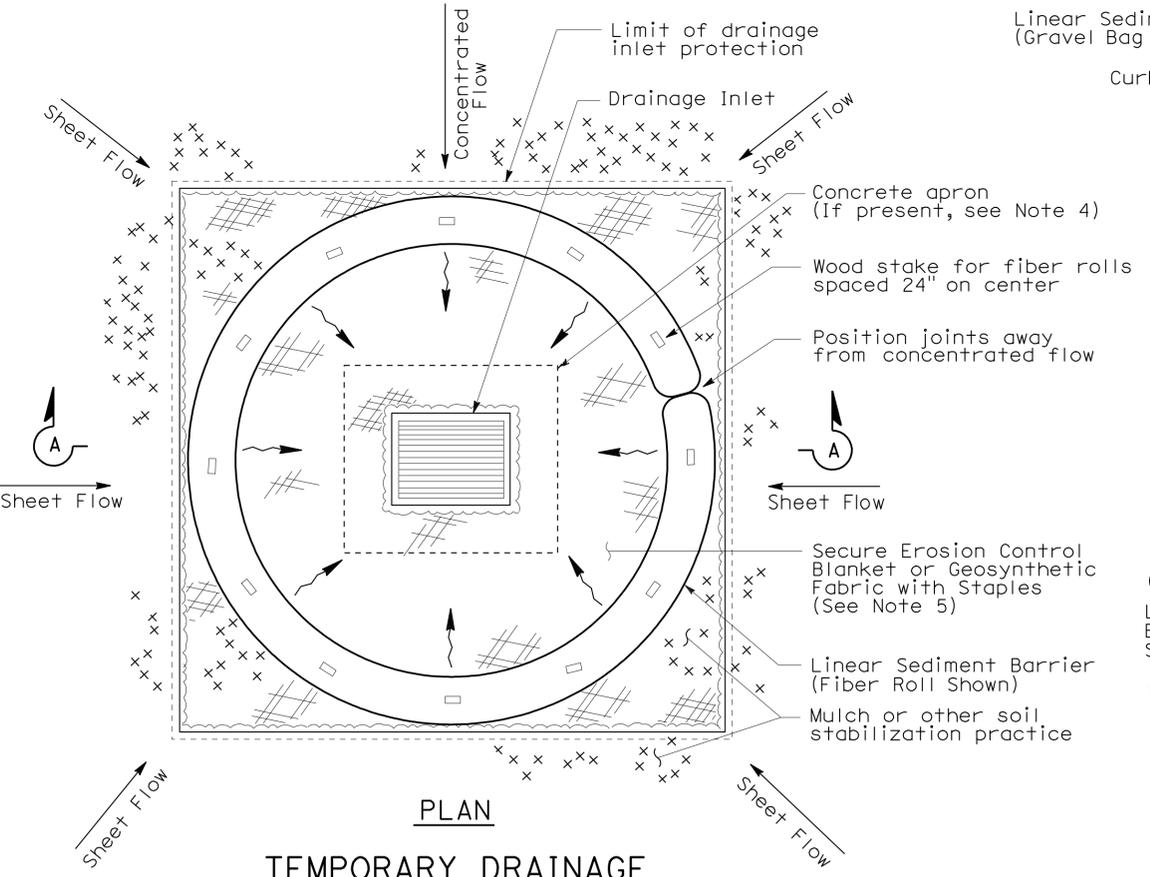
SECTION A-A



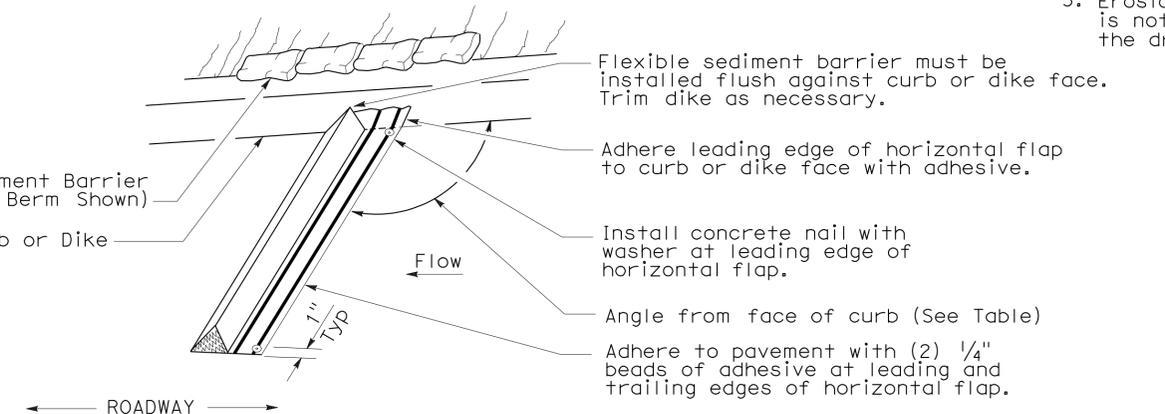
SECTION FLEXIBLE SEDIMENT BARRIER DETAIL (FOAM BARRIER SHOWN)

NOTES:

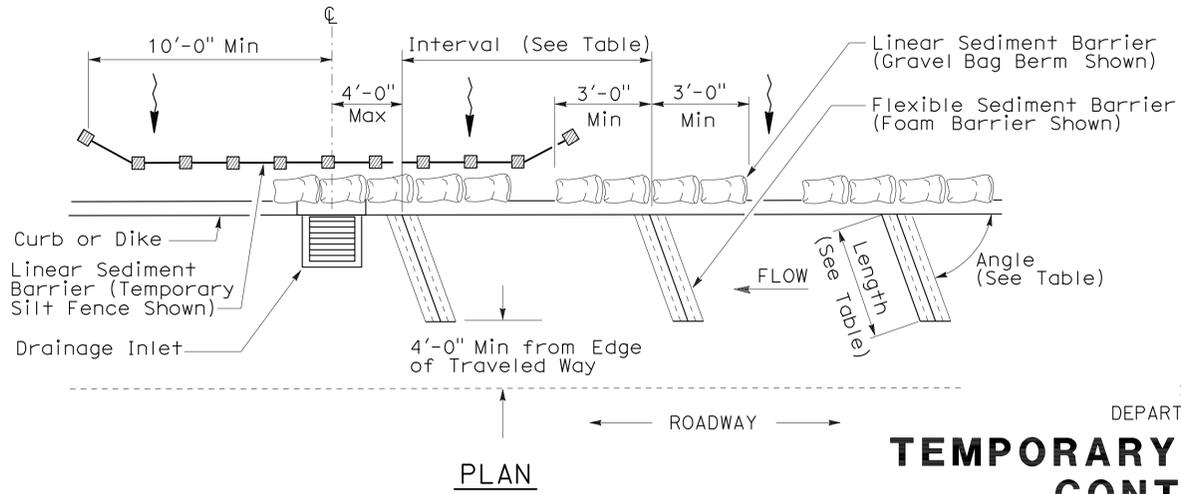
1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 flexible sediment barriers upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
5. Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated.



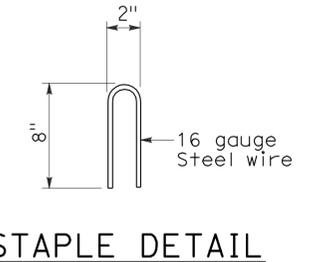
PLAN TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4A)



PERSPECTIVE



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



STAPLE DETAIL

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)
 NO SCALE
 NSP T63 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T63

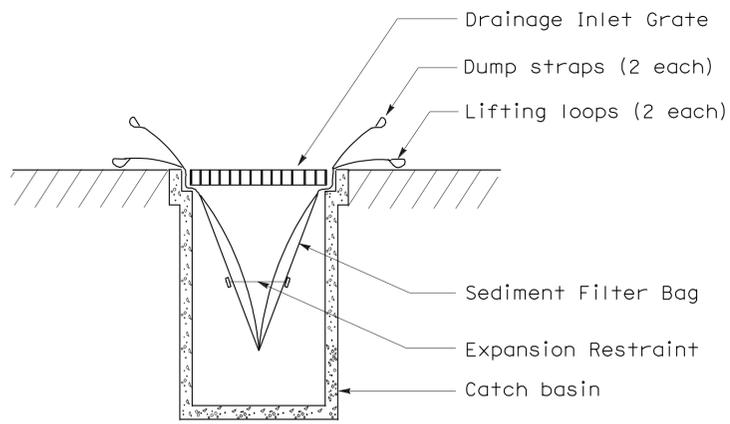
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	32.6	36	45

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT

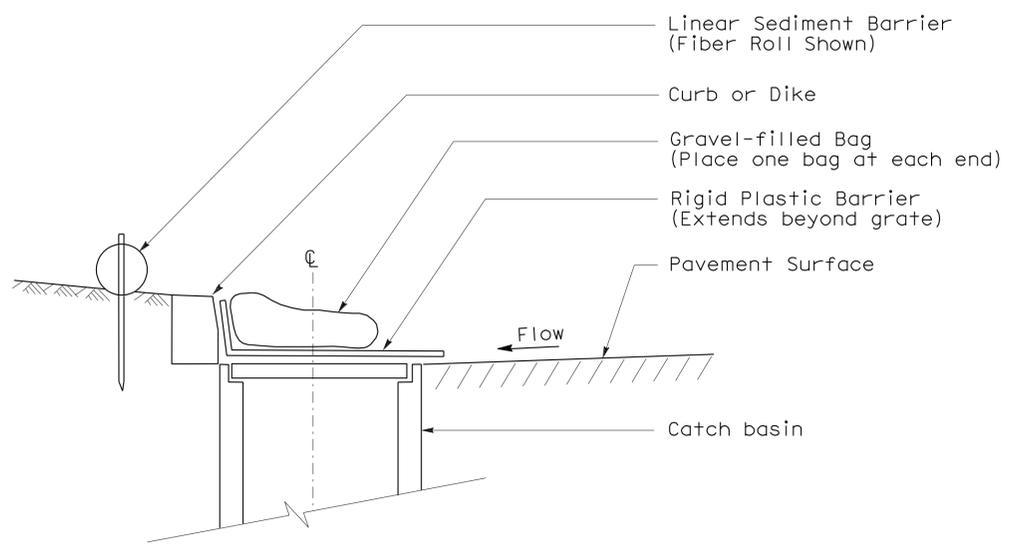
August 15, 2008
 PLANS APPROVAL DATE

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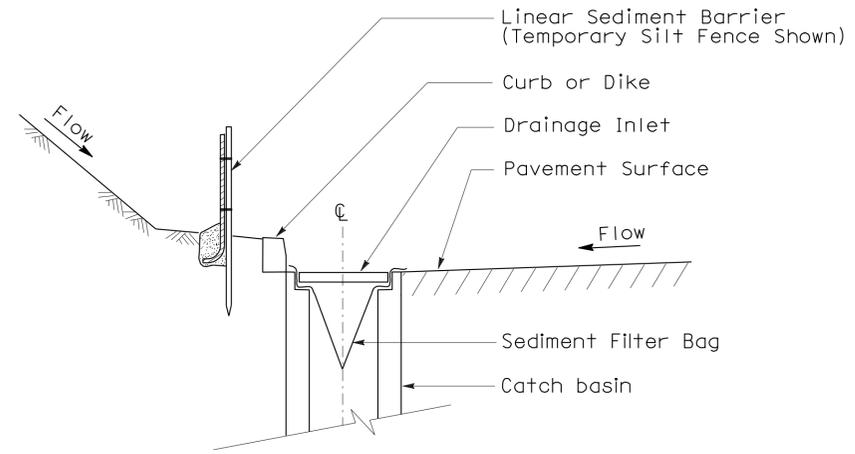
To accompany plans dated 1-23-12



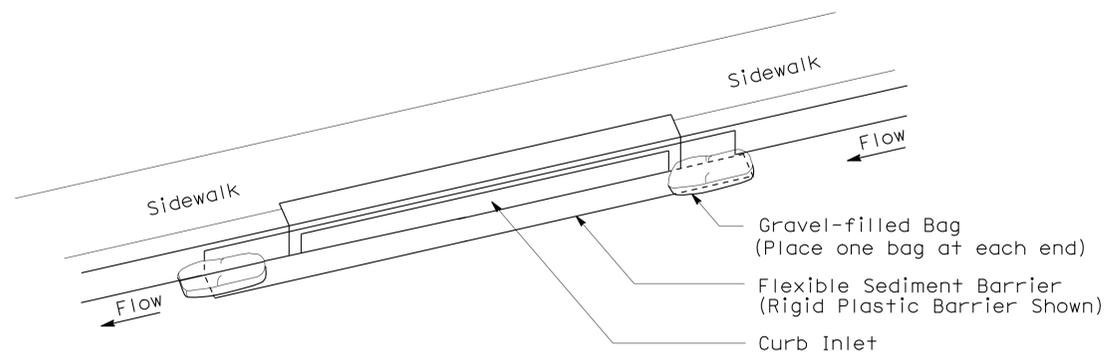
SECTION B-B
SEDIMENT FILTER BAG DETAIL



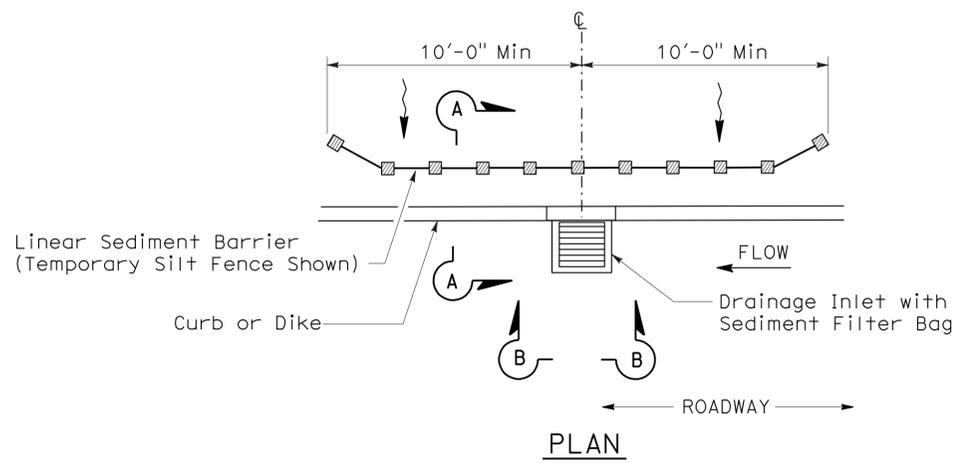
SECTION
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 6A)
(CATCH BASIN WITH GRATE)



SECTION A-A



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



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

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE

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

NEW STANDARD PLAN NSP T64

2006 NEW STANDARD PLAN NSP T64

ELECTROLIERS

STANDARD TYPES	Symbol	Description
15, 15D		High mast light pole
15 STRUCTURE		Double Arm lighting standard
21, 21D STRUCTURE		Existing electrolier
30		Electrolier foundation (Future installation)
31		NOTES: 1. Luminares shall be 310 W HPS when installed on Type 21, 21D, 30, 31, 32, 35 and 36-20A Standards, unless otherwise specified. Luminares shall be 200 W HPS when installed on other type standards or poles, unless otherwise specified. 2. Luminares shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified. 3. Variations noted adjacent to symbol on project plans.
32		
35		
36-20A		

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

STANDARD NOTES:

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

ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

PROPOSED EXISTING

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	32.6	37	45

REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE

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

To accompany plans dated 1-23-12

SOFFIT AND WALL MOUNTED LUMINAIRES

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

NOTE:

Arrow indicates "street side" of luminaire.

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

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1A

2006 REVISED STANDARD PLAN RSP ES-1A

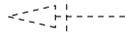
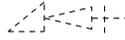
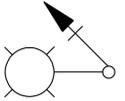
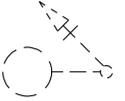
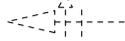
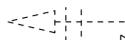
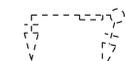
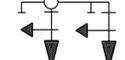
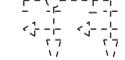
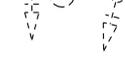
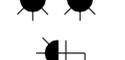
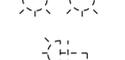
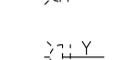
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	32.6	38	45

Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
 Jeffrey G. McRae
 REGISTERED PROFESSIONAL ENGINEER
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA
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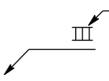
CONDUIT

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

SIGNAL EQUIPMENT

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

SERVICE EQUIPMENT

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

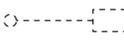
POLE-MOUNTED SERVICE DESIGNATION



ILLUMINATED OVERHEAD SIGN

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

SIGNAL EQUIPMENT Cont

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

NOTES:

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

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

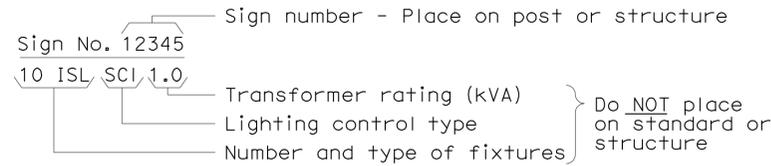
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1B

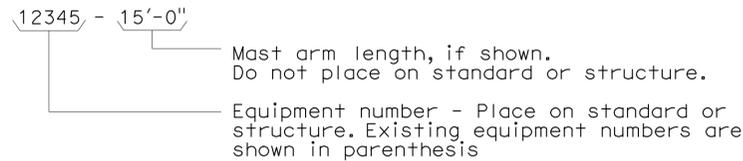
2006 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

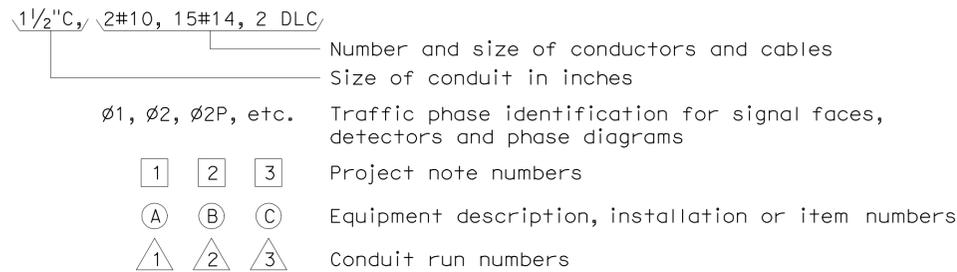
ILLUMINATED SIGN IDENTIFICATION NUMBER:



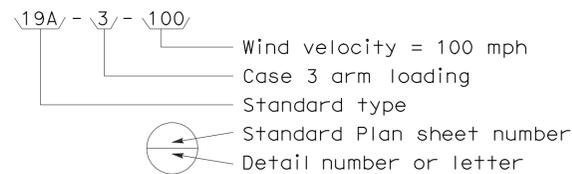
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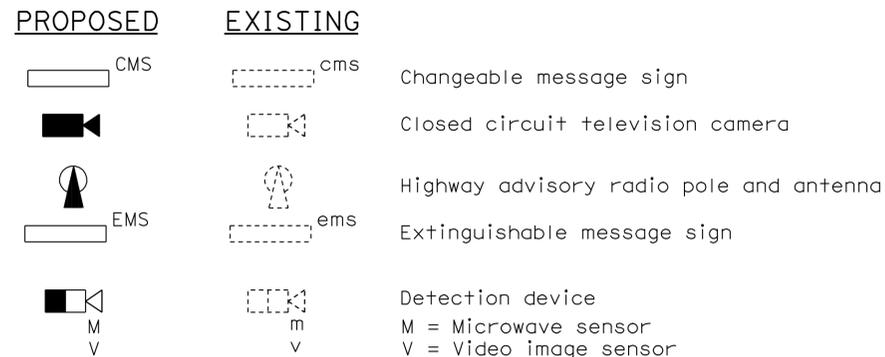
CONDUIT AND CONDUCTOR IDENTIFICATION:



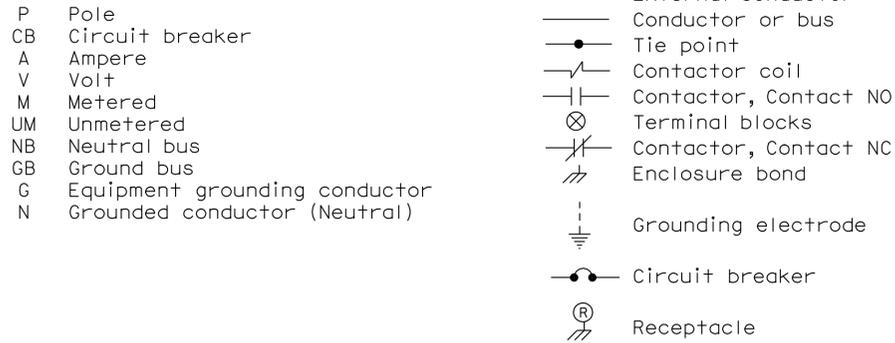
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



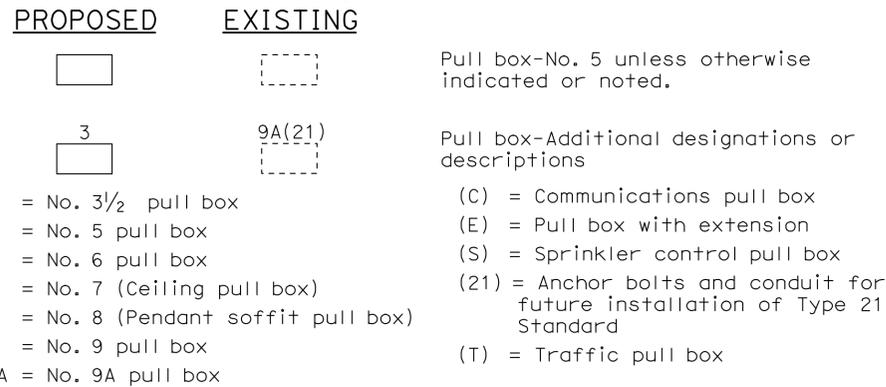
MISCELLANEOUS EQUIPMENT



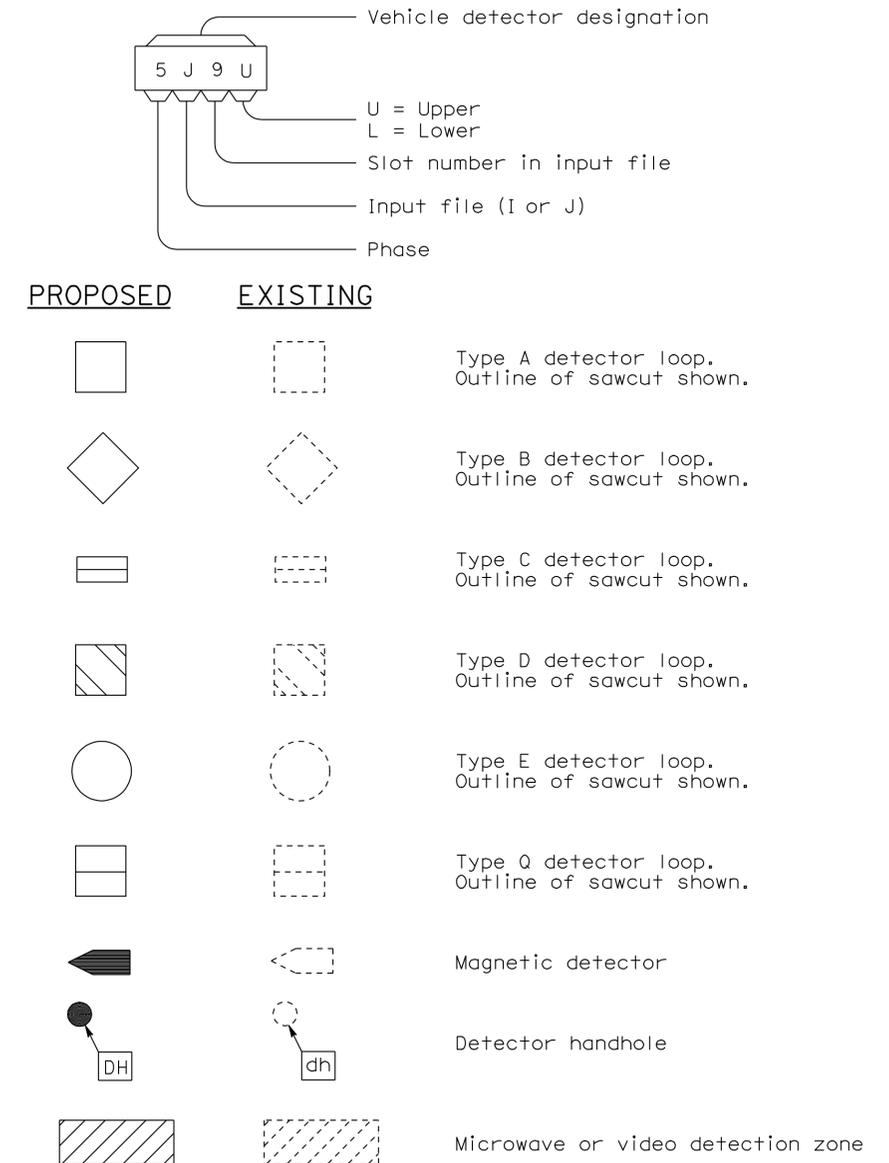
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1C

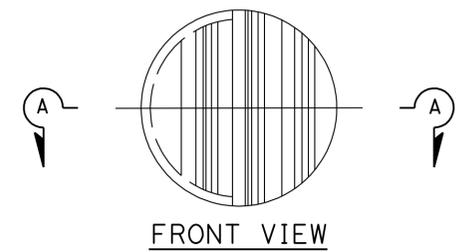
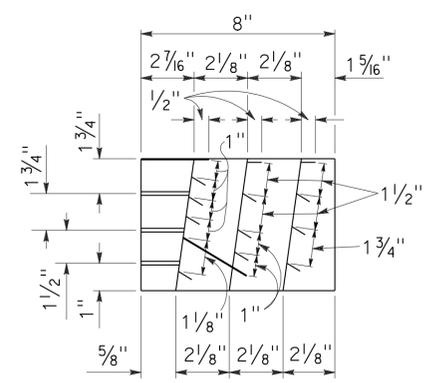
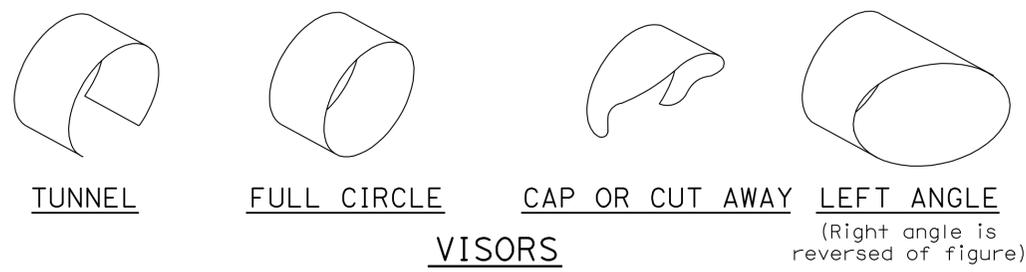
2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	32.6	40	45

Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
 No. E14512
 Exp. 6-30-10
 ELECTRICAL
 STATE OF CALIFORNIA

June 6, 2008
 PLANS APPROVAL DATE

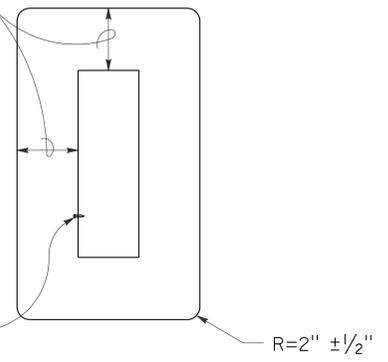
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DIRECTIONAL LOUVER

Directional louvers shall be oriented as directed by the Engineer and secured in place with one plated brass machine screw and nut.

8" ± 1/2" for 8" sections
 5 1/2" ± 1/2" for 12" sections

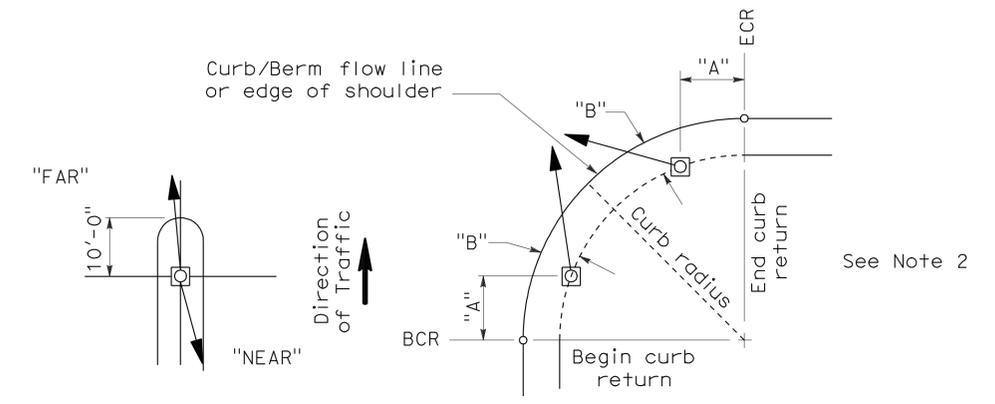


Drill signal face and attach backplate with six 10-24 or 10-32 self-tapping and locking stainless steel machine screws and flat washers

8" AND 12" SECTIONS

BACKPLATE

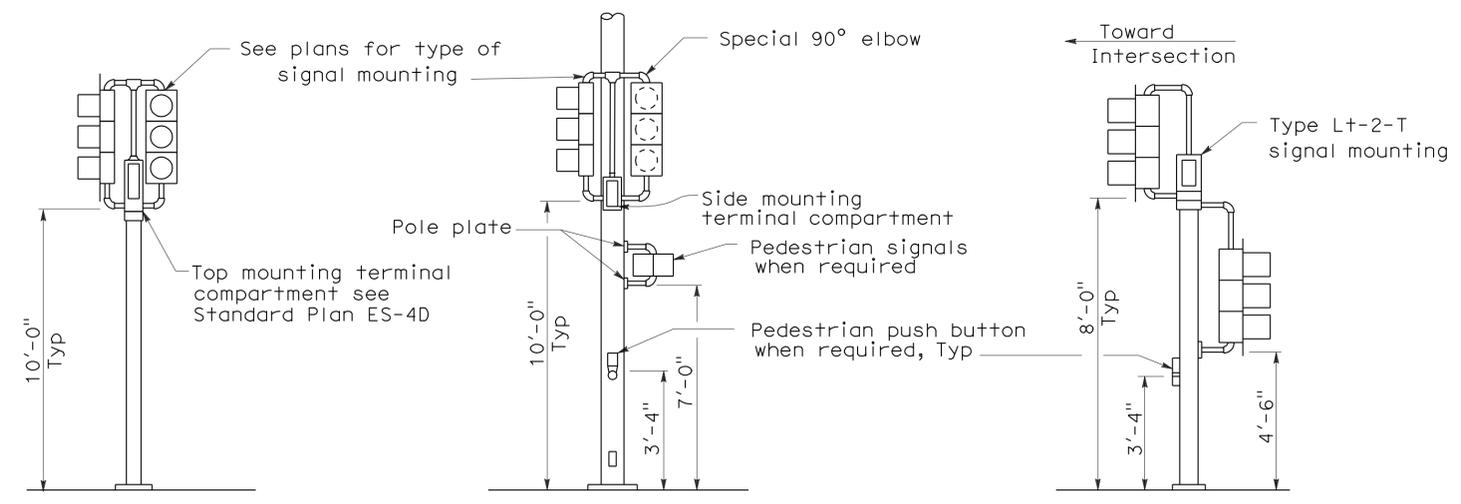
1/16" minimum thickness
 3001-14 aluminum, or plastic when specified



NOTES:

1. Typical signal pole placement unless dimensioned on plans.
2. For "A" and "B" dimensions, see Pole Schedule, or as directed by the Engineer.

SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS



TOP MOUNTED SIGNALS (TV)

Type 1-A, 1-B, 1-C and 1-D standard as indicated on the plans

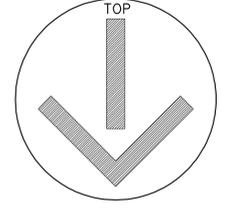
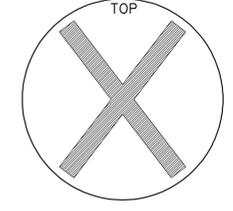
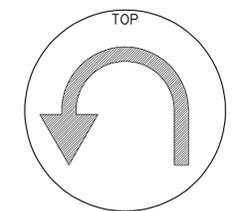
SIDE MOUNTED SIGNALS (SV AND SP)

Normally used on standards with luminaire or signal mast arm

LEFT TURN LANE SIGNAL

Type 1-A, 1-B, 1-C and 1-D standard as indicated on plans

TYPICAL SIGNAL INSTALLATIONS



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)

NO SCALE

RSP ES-4C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN ES-4C DATED MAY 1, 2006 - PAGE 420 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-4C

2006 REVISED STANDARD PLAN RSP ES-4C

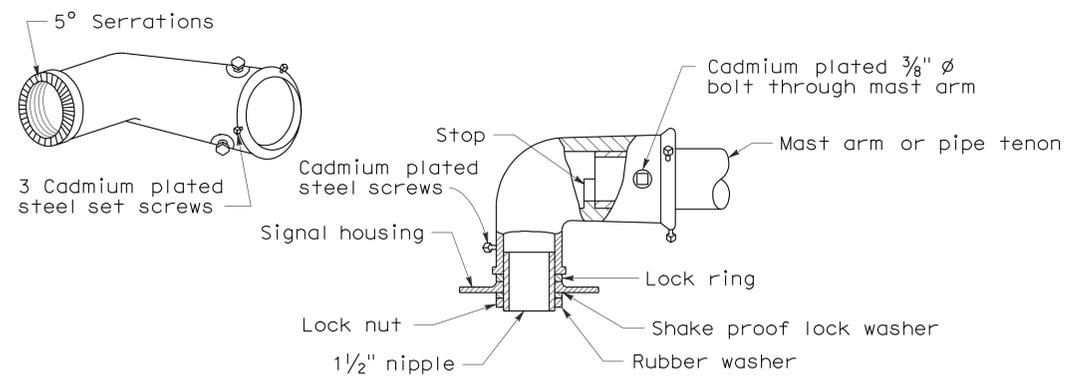
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	32.6	41	45

Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
 No. E14512
 Exp. 6-30-10
 ELECTRICAL
 STATE OF CALIFORNIA

June 6, 2008
 PLANS APPROVAL DATE

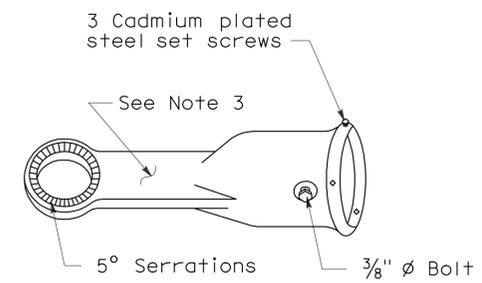
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 1-23-12



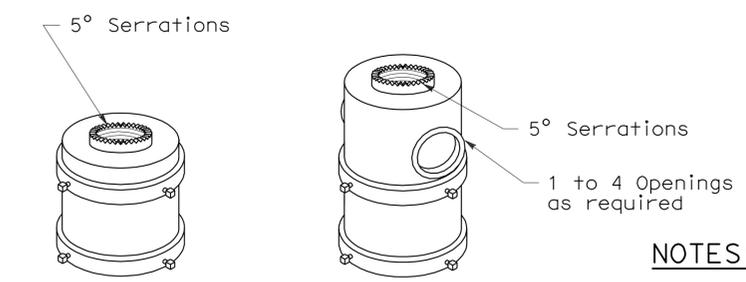
MAST ARM MOUNTING - TYPE "MAT"

For 2 NPS pipe, see Note 1.



MAST ARM MOUNTING - TYPE "MAS"

For 2 NPS pipe. See Note 1.



For one mounting For multiple mountings

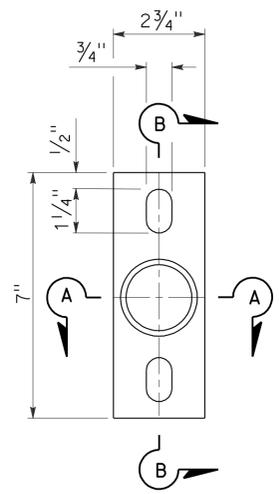
TOP MOUNTINGS

For 4 NPS pipe, see Note 2.

NOTES:

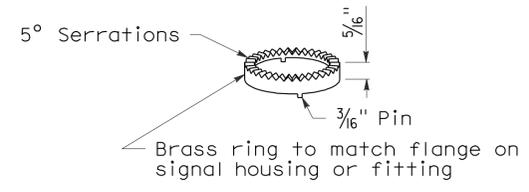
- After mast arm signal has been plumbed and secured, drill 7/16" hole through mast arm tenon in line with slip fitter hole. Place a cadmium plated 3/8" diameter galvanized bolt with washer under bolt head through hole and secure with washer, nut, and locknut. Seal openings between mast arm mountings and mast arm with mastic.
- (a) Threaded top mounted slip fitter openings shall be 1/2 NPS.
(b) Serrations in fittings shall match those on bottom of signal heads or in lock ring.
(c) Top opening shall be offset when backplate is used.
- Wireway shall have a cross section area of 0.95 square inch minimum. Minimum width of 1/2".

SIGNAL SLIP FITTERS



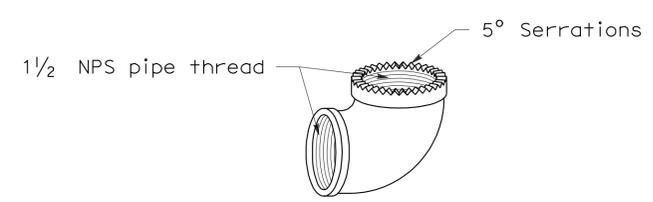
POLE PLATE

For side mountings



LOCK RING

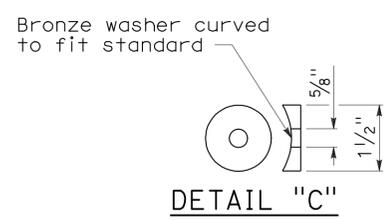
Use where locking ring is not integral with signal housing or fitting.



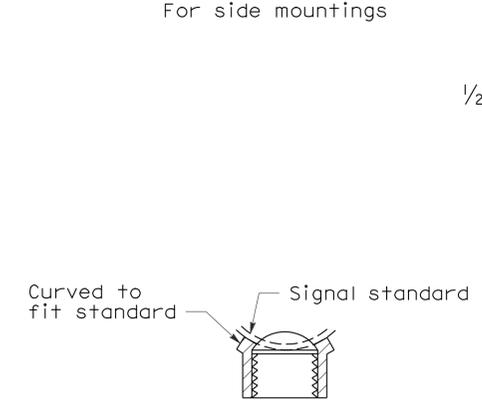
SPECIAL 90° ELBOW

One for each signal head, except those with special slip fitter mounting

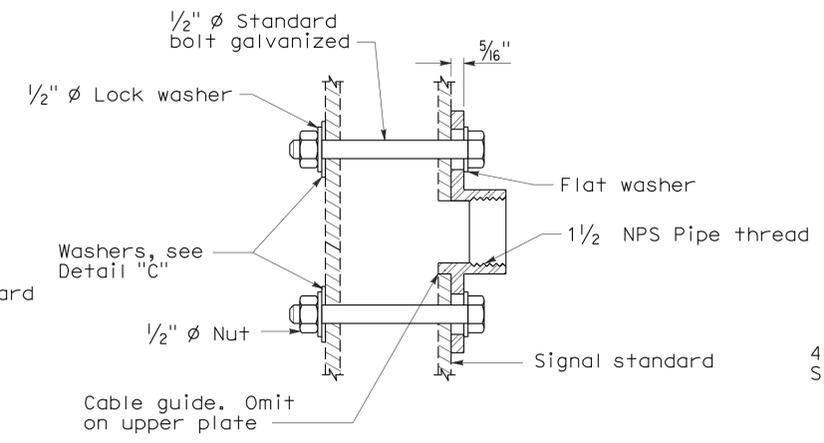
MISCELLANEOUS MOUNTING HARDWARE



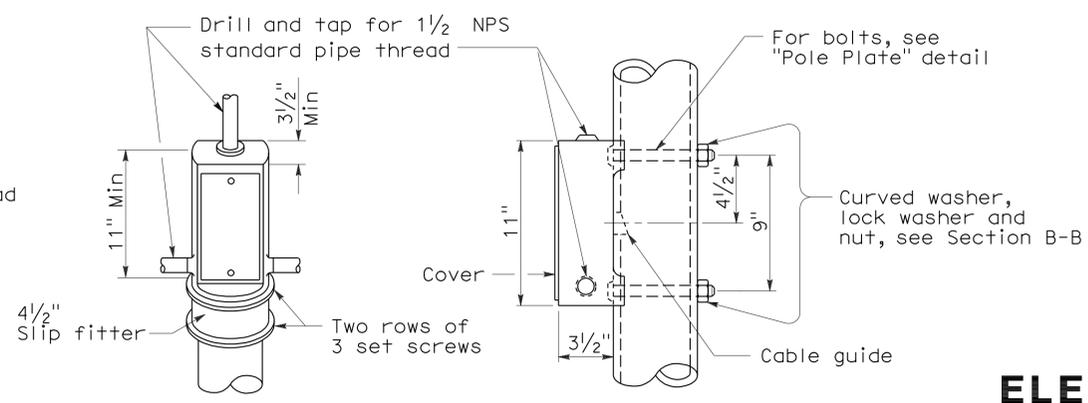
DETAIL "C"



SECTION A-A



SECTION B-B



TOP MOUNTING

SIDE MOUNTING

TERMINAL COMPARTMENTS

ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)

NO SCALE

RSP ES-4D DATED June 6, 2008 SUPERSEDES STANDARD PLAN ES-4D DATED MAY 1, 2006 - PAGE 421 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-4D

2006 REVISED STANDARD PLAN RSP ES-4D

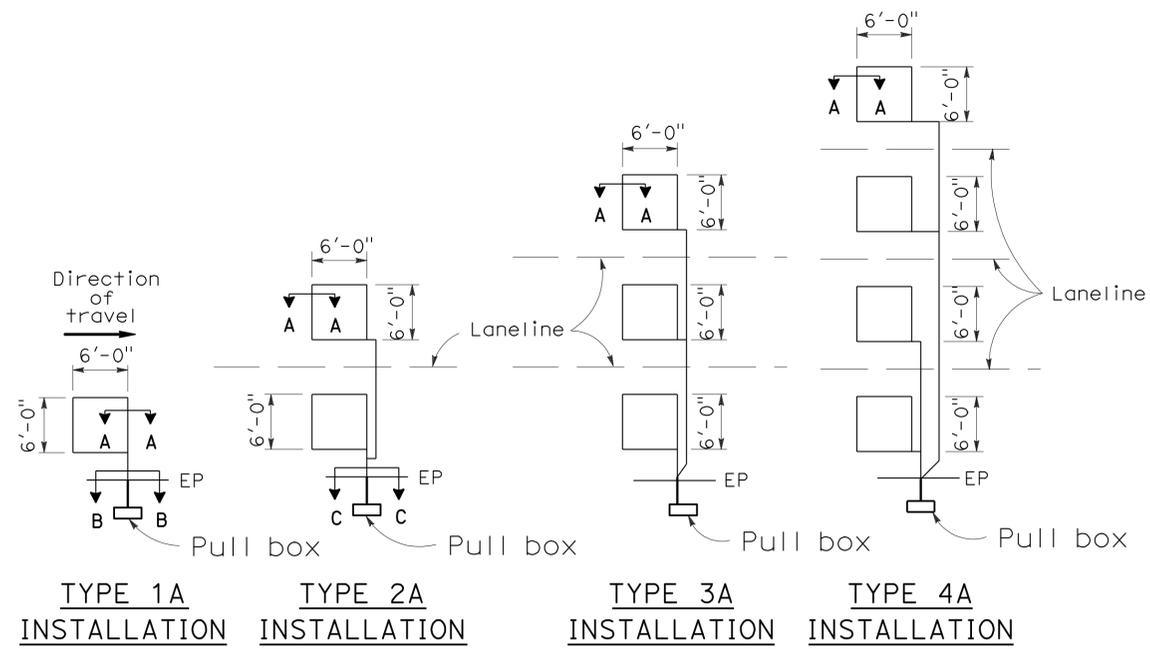
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	32.6	42	45

Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Jeffery G. McRae
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

LOOP INSTALLATION PROCEDURE

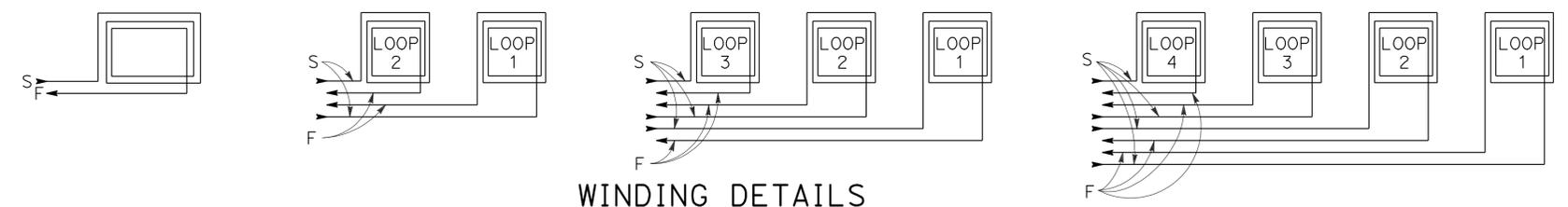
- Loops shall be centered in lanes.
- Saw slots in pavement for loop conductors as shown in details.
- Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
- Bottom of saw slot shall be smooth with no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



TYPE 1A INSTALLATION TYPE 2A INSTALLATION TYPE 3A INSTALLATION TYPE 4A INSTALLATION

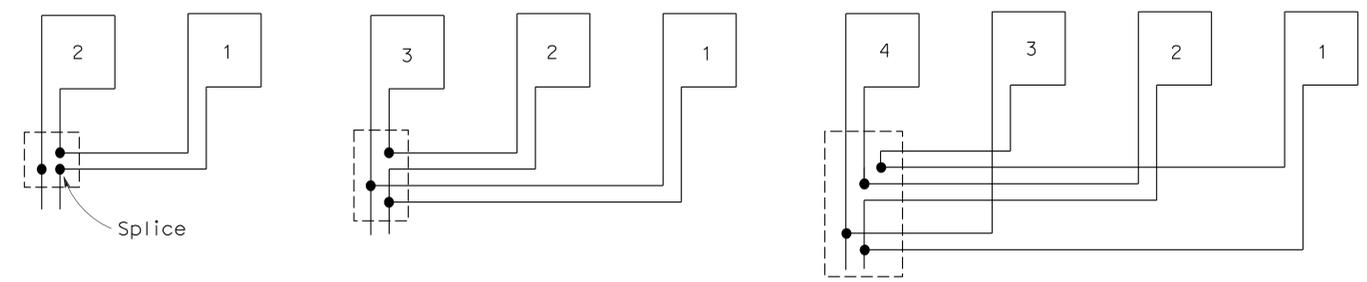
SAWCUT DETAILS

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



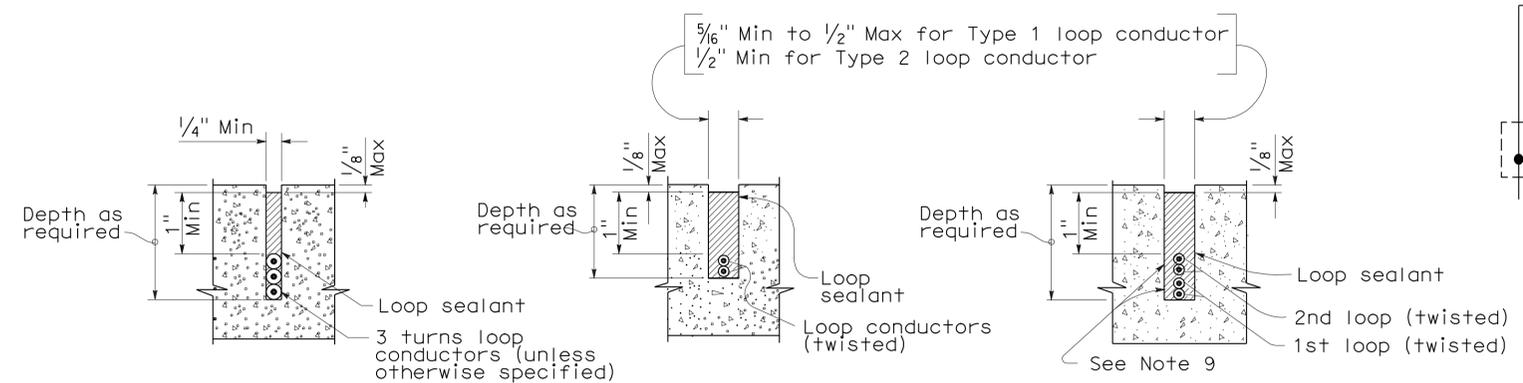
WINDING DETAILS

See Notes 6 and 7



TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



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

ELECTRICAL SYSTEMS (DETECTORS)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

NO SCALE

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

REVISED STANDARD PLAN RSP ES-5A

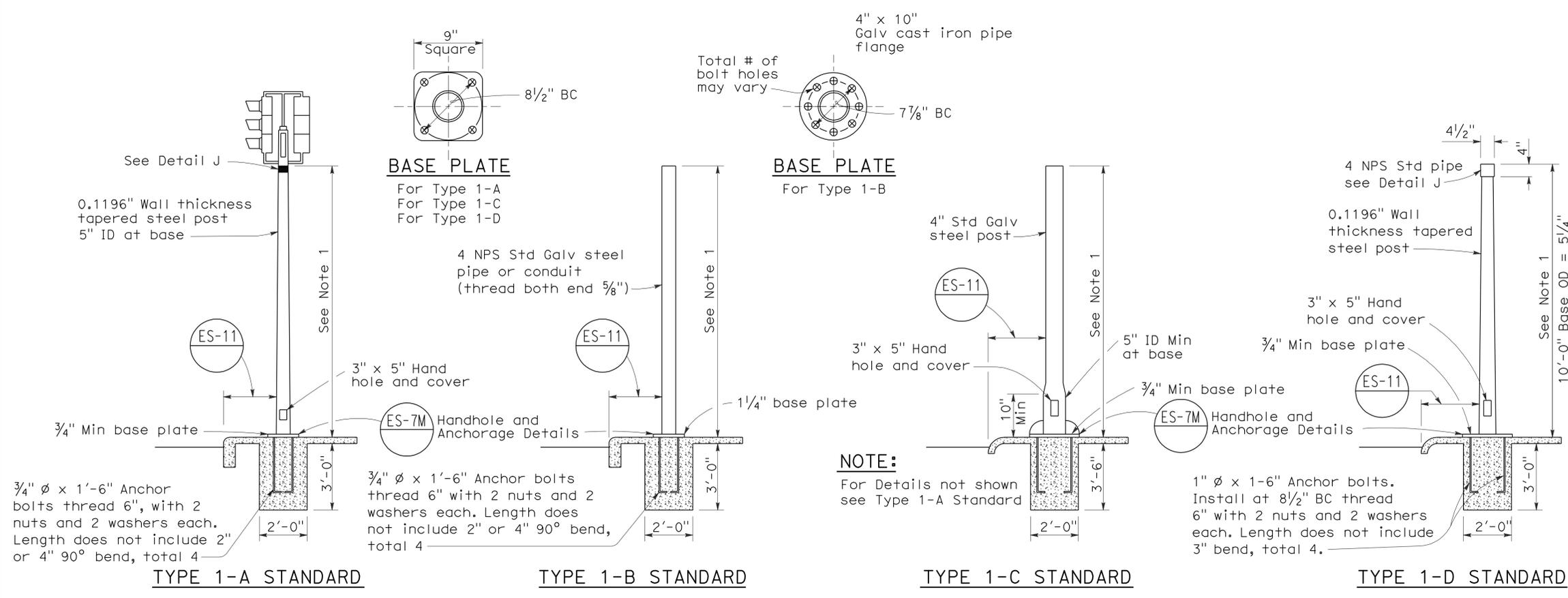
2006 REVISED STANDARD PLAN RSP ES-5A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	32.6	43	45

Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

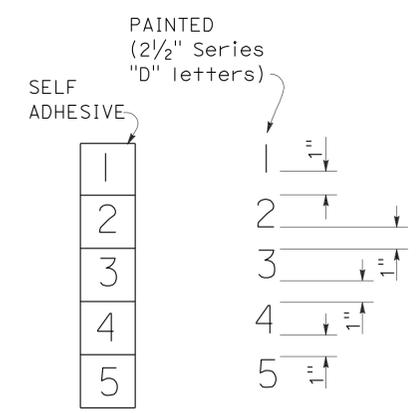
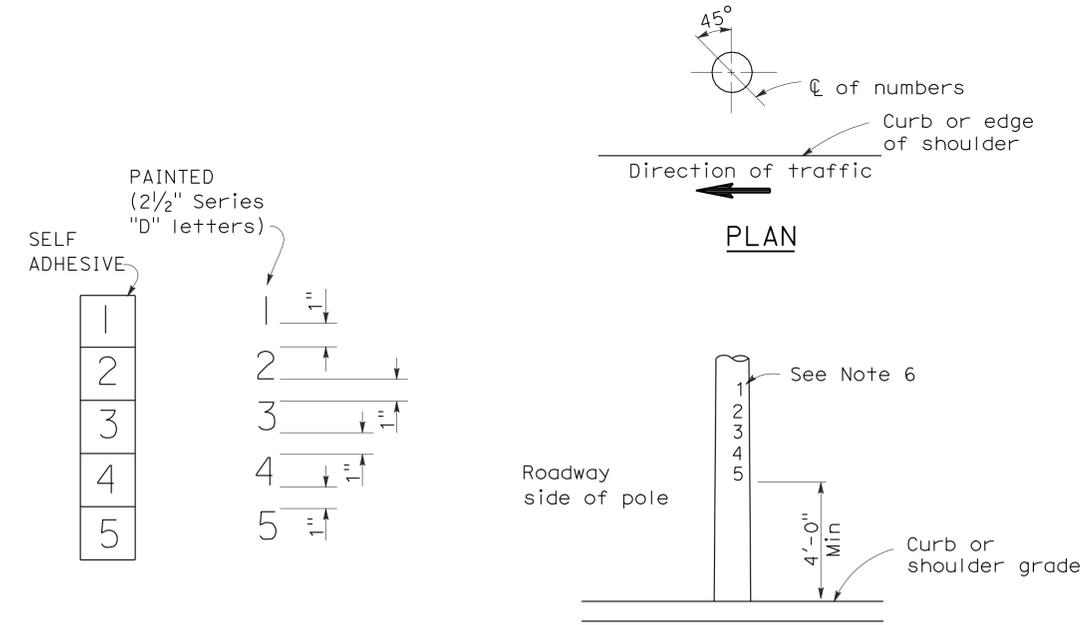
REGISTERED PROFESSIONAL ENGINEER
 Stanley P. Johnson
 No. C57793
 Exp. 3-31-08
 CIVIL
 STATE OF CALIFORNIA

To accompany plans dated 1-23-12

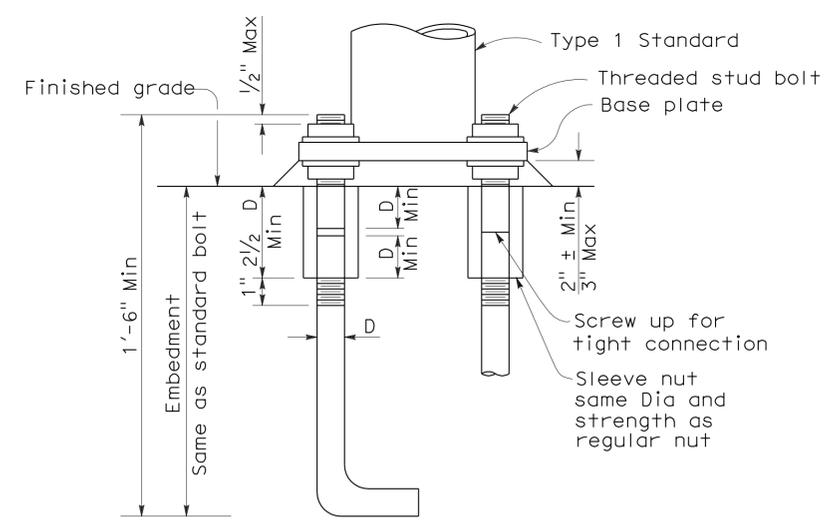


- NOTES:**
- Standards shall be 10'-0" \pm 2" for vehicle signals and 7'-0" \pm 2" for pedestrian signals unless otherwise noted on plans.
 - Top of standards shall be 4 1/2" OD.
 - Conduits shall extend 2" maximum above finished surface of foundation and for Types 1-A, 1-C and 1-D shall be sloped toward handhole.
 - Anchor bolts shall be bonded to conduit or grounding conductor.
 - Conduit between standard and adjacent pull box shall be 2" minimum.
 - Paint numbers on roadway side facing traffic when electrolier or post is left of direction of traffic.

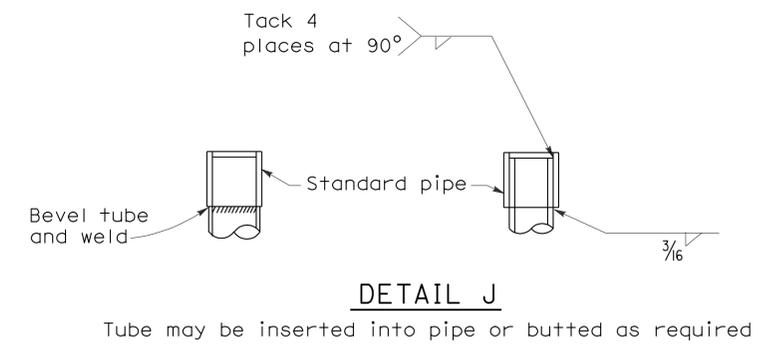
TYPE 1 SIGNAL STANDARDS



LOCATION OF EQUIPMENT NUMBERS ON STANDARDS AND POSTS



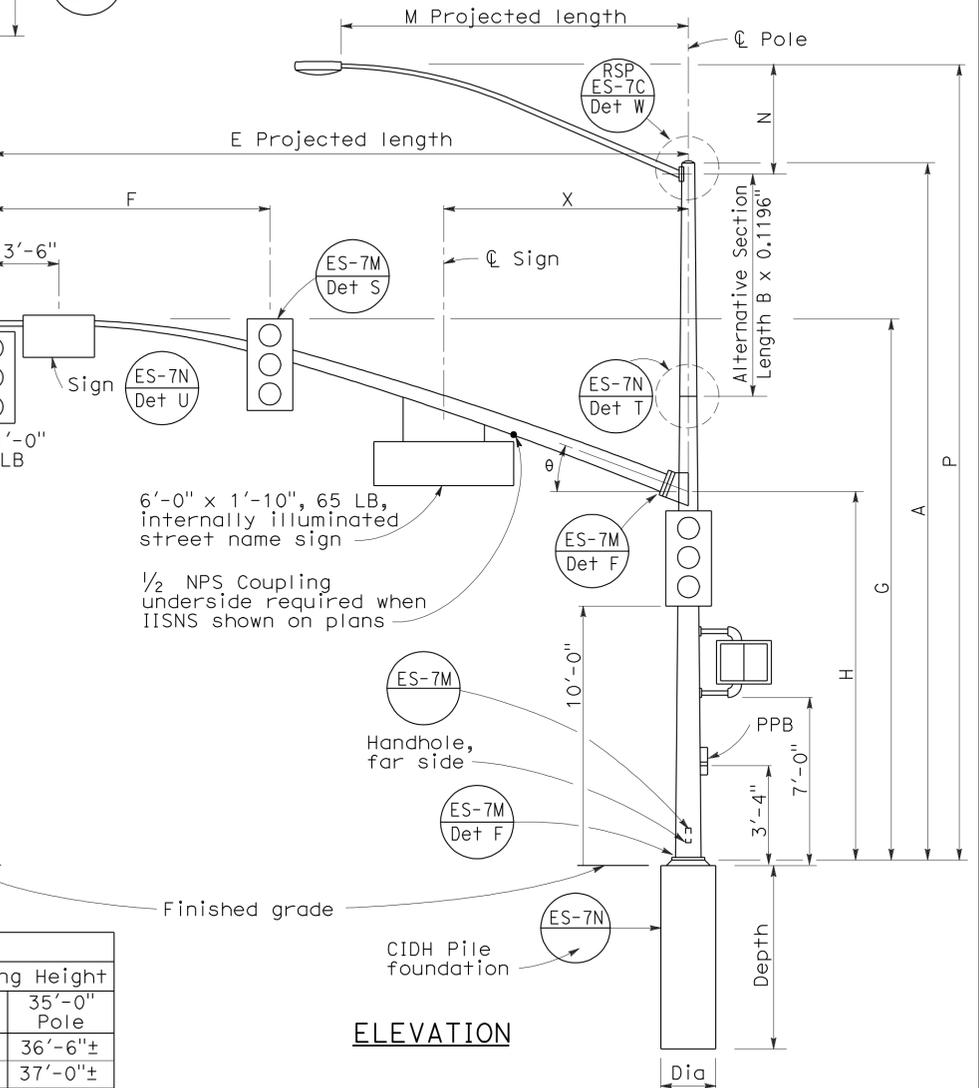
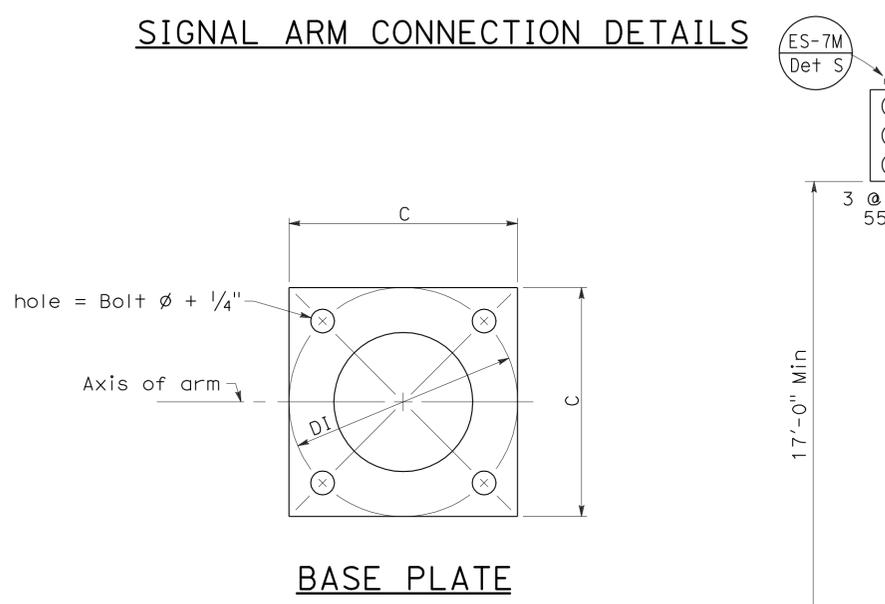
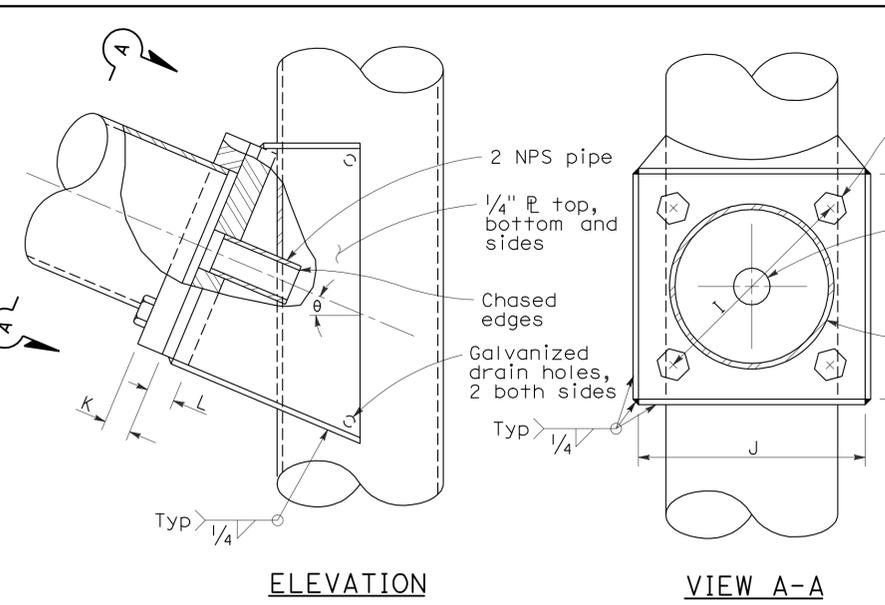
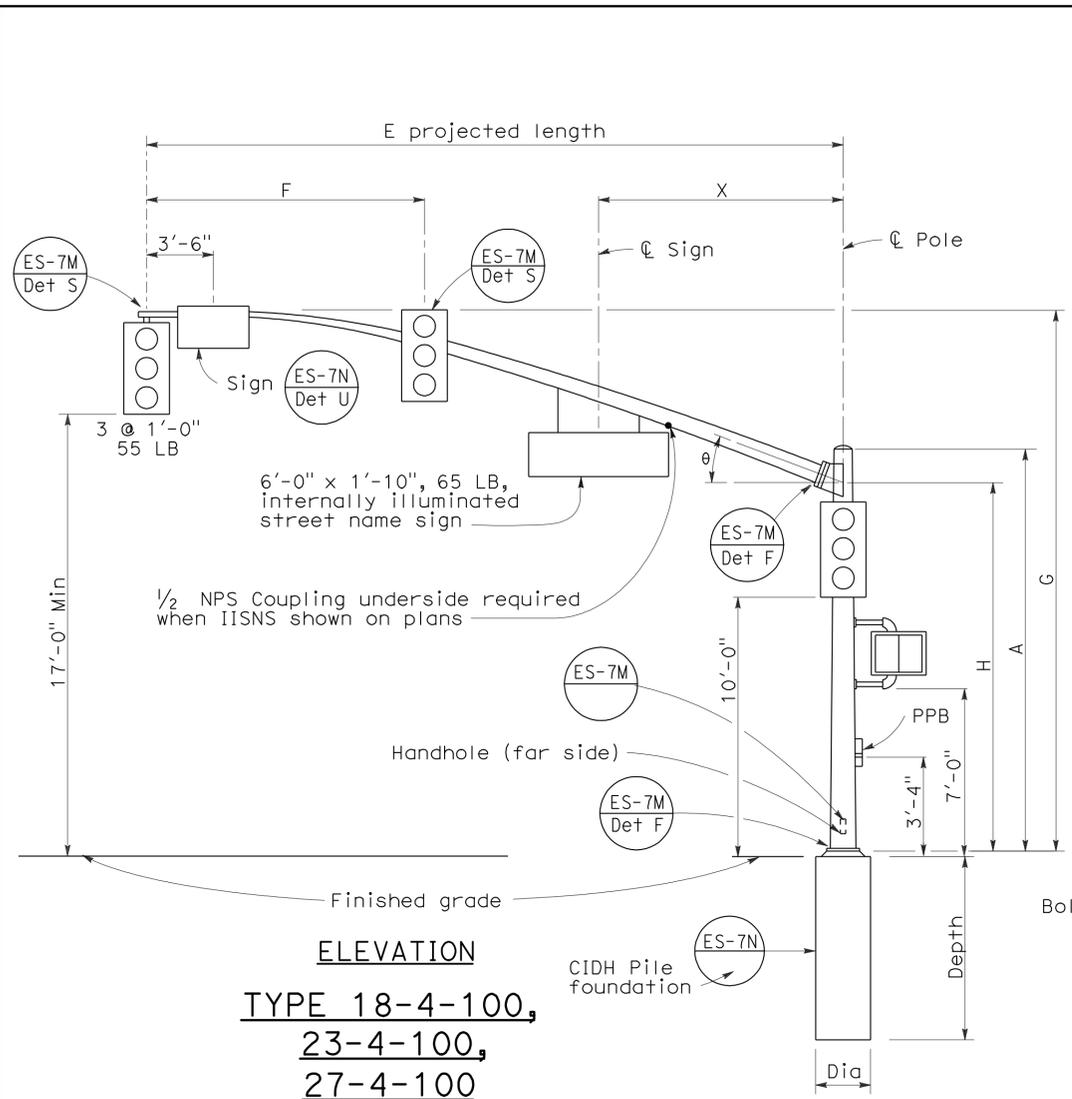
Sleeve nuts to be used only when shown or specified on Project Plans
D = Diameter of anchor bolt



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD TYPE 1 STANDARD AND EQUIPMENT NUMBERING)
NO SCALE

RSP ES-7B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-7B DATED MAY 1, 2006 - PAGE 438 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-7B



E Projected Length	F Min Spacing	G Mounting Height	H	Min OD at Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate Size	K Arm P Thickness	L Pole P Thickness	θ	X Max
25'-0"	10'-0"	22'-8"±	16'-0"	7 5/16"	0.2391"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°	10'-6"
30'-0"	12'-0"	8"										
35'-0"	14'-0"	23'-0"±		8 1/16"		13 1/2"		1'-1 1/2"	1 1/2"	1 3/4"	21°	
40'-0"	15'-0"	9 3/8"										
45'-0"		23'-8"±	10 1/4"	None	None	None	None	None	None	15°	13'-0"	

M Projected Length	N Rise	Min OD at Pole	Thickness	P Mounting Height	
				30'-0" Pole	35'-0" Pole
6'-0"	2'-0"±	3 1/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3 1/2"		32'-0"±	37'-0"±
10'-0"	3'-3"±	3 7/8"		32'-9"±	37'-9"±
12'-0"	4'-3"±	4"		33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"		34'-3"±	39'-3"±

Pole Type	Load Case	Wind Velocity mph	POLE DATA						BASE PLATE DATA				Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION				
			A Height	Min OD		Thickness	Alternative Section			C	DI Bolt Circle	Thickness			Anchor Bolts Size	Dia	Depth	Reinforced	
				Base	Top		B Length	Bottom	Top										
18-4-100	4	100	17'-0"	12"	0.2391"	None	9 3/8"	8"	1'-6"	1'-6"	1 1/2"	2" Ø x 42" x 6"	None	25'-0", 30'-0"	3'-0"	9'-0"	Yes		
19-4-100			30'-0"			8"												None	8"
19A-4-100			35'-0"			7 5/16"												15'-0"	7 5/16"
23-4-100			17'-0"			9"												None	None
24-4-100			30'-0"	8"	10'-0"	8"													
24A-4-100			35'-0"	7 5/16"	15'-0"	7 5/16"													
26-4-100			30'-0"	8"	10'-0"	8 3/8"													
26A-4-100			35'-0"	7 5/16"	15'-0"	9 3/4"	7 1/16"												
27-4-100			17'-0"	9 3/4"	None	None													

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(SIGNAL AND LIGHTING STANDARD
CASE 4 ARM LOADING
WIND VELOCITY=100 MPH
ARM LENGTHS 25' TO 45')
 NO SCALE
 RSP ES-7F DATED OCTOBER 5, 2007 SUPERCEDES RSP ES-7F DATED NOVEMBER 17, 2006 AND STANDARD PLAN ES-7F DATED MAY 1, 2006 - PAGE 442 OF THE STANDARD PLANS BOOK DATED MAY 2006.

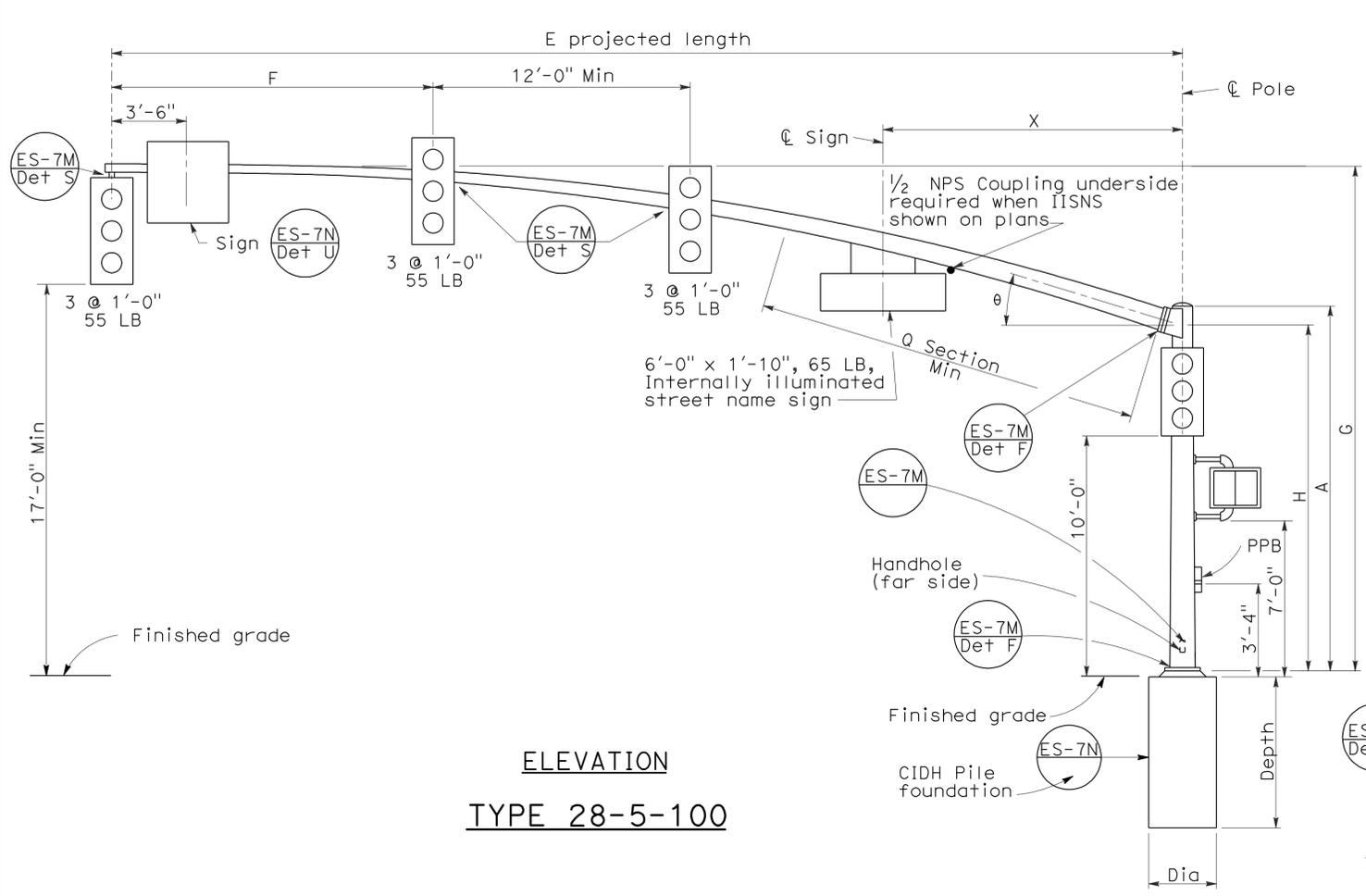
□ Indicates arm length to be used unless otherwise noted on plans.

2006 REVISED STANDARD PLAN RSP ES-7F

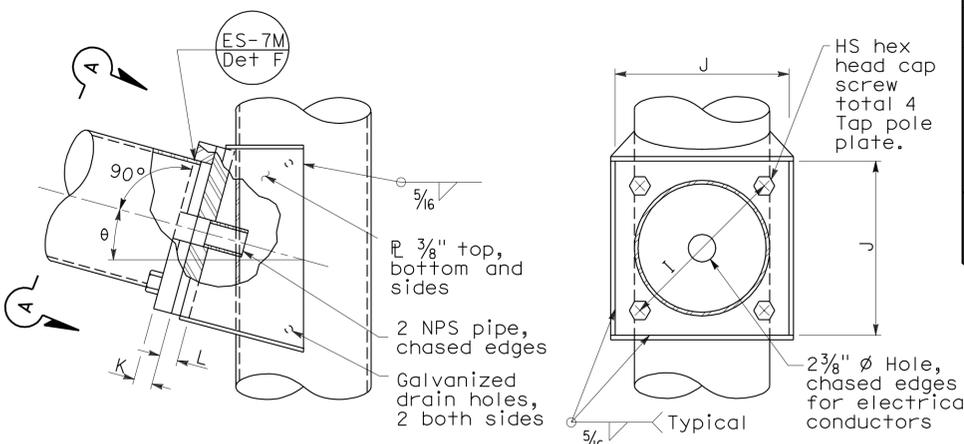
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	32.6	45	45

Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 November 17, 2006
 PLANS APPROVAL DATE
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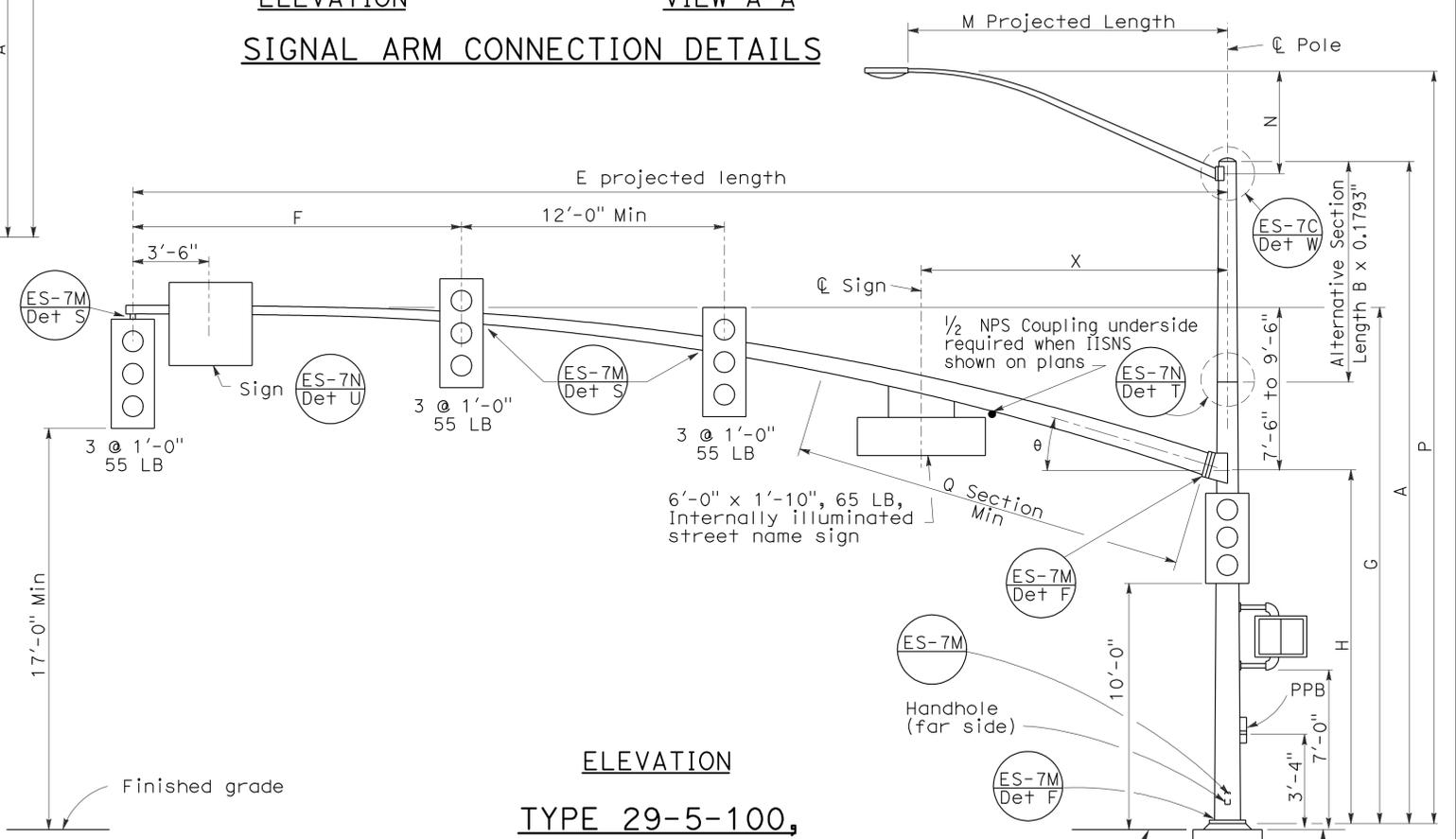
To accompany plans dated 1-23-12



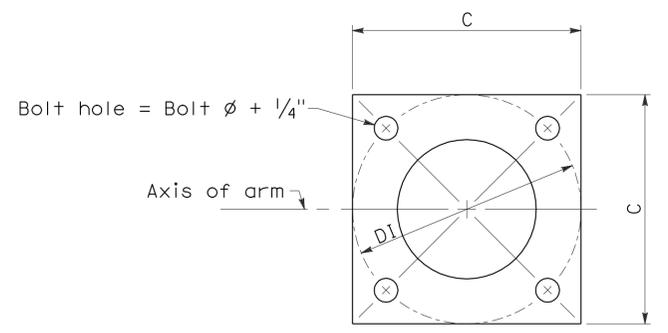
ELEVATION
TYPE 28-5-100



ELEVATION
VIEW A-A
SIGNAL ARM CONNECTION DETAILS



ELEVATION
TYPE 29-5-100,
29A-5-100



BASE PLATE

M Projected Length	N Rise	Min OD at Pole	Thickness	P Mounting Height
6'-0"	2'-0"±	3 1/4"	0.1196"	30'-0" Pole
8'-0"	2'-6"±	3 1/2"		31'-6"±
10'-0"	3'-3"±	3 7/8"		32'-0"±
12'-0"	4'-3"±	4 1/4"		32'-9"±
15'-0"	4'-9"±	4 1/4"		33'-9"±
				35'-0" Pole
				36'-6"±
				37'-0"±
				37'-9"±
				38'-9"±
				39'-3"±

E Projected Length	F Min Spacing	G Mounting Height	H	Min OD at Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate Size	K Arm R Thickness	L Pole R Thickness	θ	Q Section		X Max
												Length	Thickness	
50'-0" 55'-0"	15'-0"	23'-7"± to 25'-7"±	16'-0"	11 7/16" 1'-1/4"	0.1793"	16"	1 1/2"-6NC-3 1/4"	1'-4"	1 3/4"	1 3/4"	15°	18'-0" 23'-0"	0.2391"	14'-0"

Pole Type	Load Case	Wind Velocity mph	POLE DATA					BASE PLATE DATA				Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION					
			A Height	Min OD		Thickness	Alternative Section			C	DI Bolt Circle			Thickness	Anchor Bolts Size	Dia	Depth	Reinforced	
				Base	Top		B Length	Bottom	Top										
28-5-100			17'-0"		11 11/16"														
29-5-100	5	100	30'-0"	14"	9 7/8"	0.3125"	10'-0"	11 1/4"	9 7/8"	21"	21"	1 3/4"	2" ø x 42" x 6"	6'-15'	15'-0"	50'-0", 55'-0"	3'-0"	9'-2"	Yes
29A-5-100			35'-0"		9 3/16"		15'-0"	9 3/16"	23"	23"									

□ Indicates arm length to be used unless otherwise noted on plans.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(SIGNAL AND LIGHTING STANDARD
CASE 5 ARM LOADING
WIND VELOCITY=100 MPH,
ARM LENGTHS 50' TO 55')
 NO SCALE

RSP ES-7G DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN ES-7G
 DATED MAY 1, 2006 - PAGE 443 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-7G

2006 REVISED STANDARD PLAN RSP ES-7G