Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	3.4/4.5	1	18

INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2	TYPICAL CROSS SECTIONS
3-4	CONSTRUCTION DETAILS
5	CONSTRUCTION AREA SIGNS
6	TRAFFIC HANDLING DETAILS
7	SUMMARY OF QUANTITIES
8-11	ELECTRICAL PLANS
12-18	REVISED 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

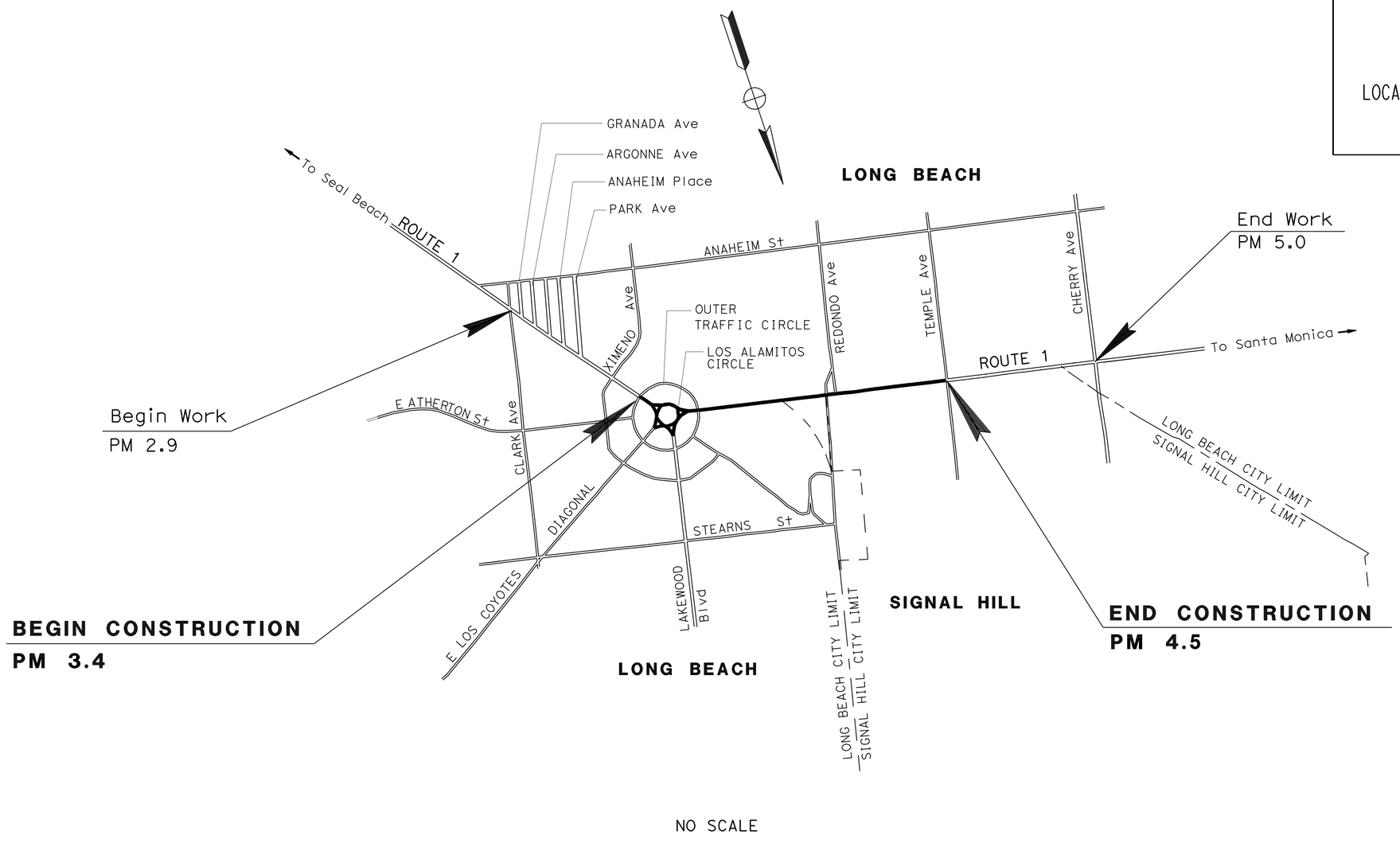
PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN LOS ANGELES COUNTY
IN SIGNAL HILL AND LONG BEACH
FROM OUTER TRAFFIC CIRCLE TO TEMPLE AVENUE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

LOCATION MAP



NO SCALE

Robert Carl Doria 10-28-10
PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

November 1, 2010
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER R.C. DORIA No. 50821 Exp. 9-30-11 CIVIL STATE OF CALIFORNIA

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

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

PROJECT MANAGER GARY KEVORKIAN
DESIGN ENGINEER HAMID SAADATNEJADI

CONTRACT No.	07-4Y3104
PROJECT ID	0700020236

LAST REVISION 11-01-10
DATE PLOTTED => 18-NOV-2010
TIME PLOTTED => 14:20

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	3.4/4.5	2	18

Robert Carl Doria 10-28-10
REGISTERED CIVIL ENGINEER DATE

11-1-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER R.C. DORIA No. 50821 Exp. 9-30-11 CIVIL STATE OF CALIFORNIA

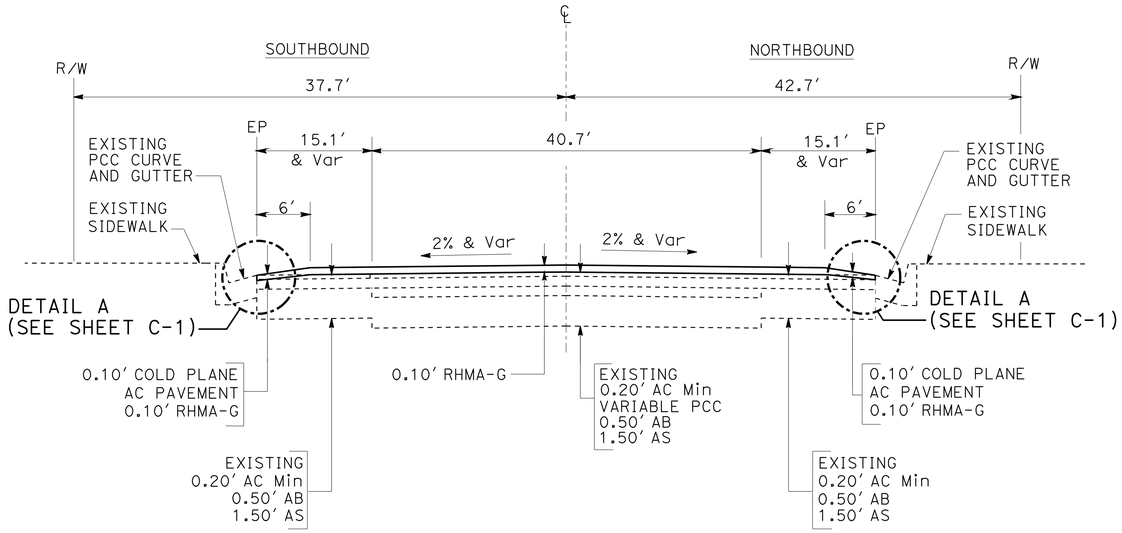
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATIONS AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THIS PLAN.
4. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

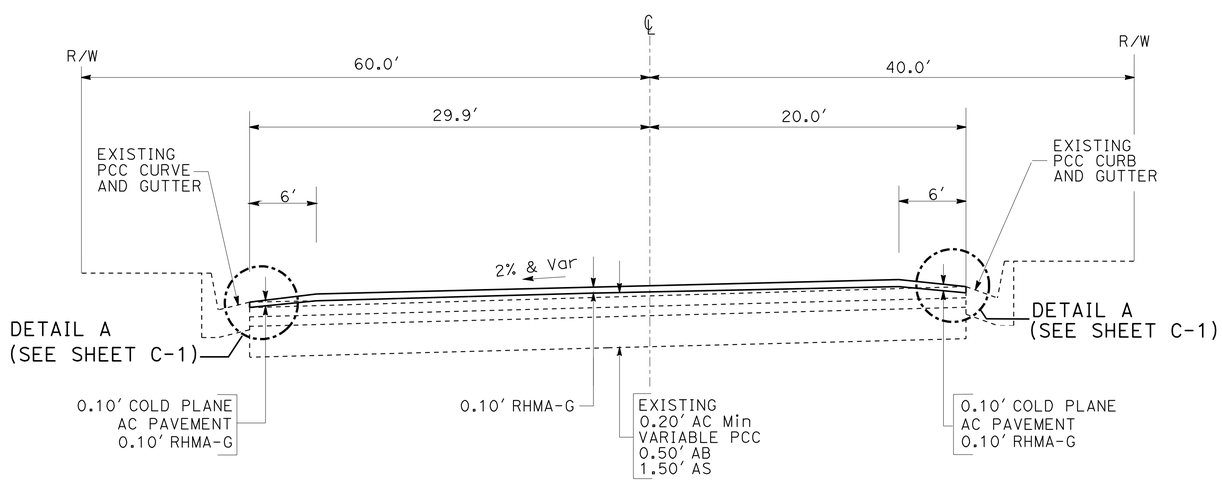
ABBREVIATIONS

1. RHMA-G = RUBBERIZED HOT MIX ASPHALT (GAP GRADED)



OUTER TRAFFIC CIRCLE TO TEMPLE AVENUE

(PM 3.6 - PM 4.5)



LOS ALAMITOS CIRCLE

(PM 3.4 - PM 3.6)

TYPICAL CROSS SECTIONS

NO SCALE

X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: ROBERT CARL DORIA
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 11-01-10
DATE PLOTTED => 18-NOV-2010
TIME PLOTTED => 14:20

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	3.4/4.5	3	18

Robert Carl Doria 10-28-10
REGISTERED CIVIL ENGINEER DATE

11-1-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER R.C. DORIA No. 50821 Exp. 9-30-11 CIVIL STATE OF CALIFORNIA

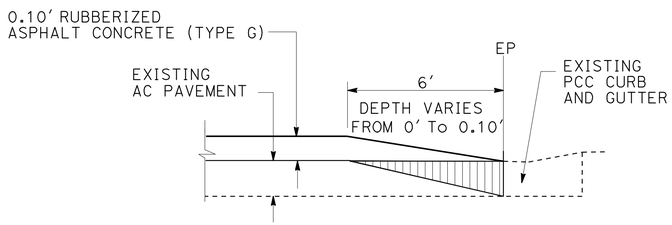
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

1. DETAIL D SHALL MATCH EXISTING LANELINE AT INTERSECTION APPROACHES.

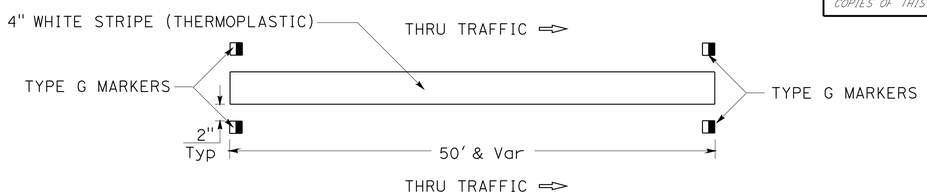
LEGEND:

- LIMITS OF COLD PLANE ASPHALT CONCRETE PAVEMENT
- LIMITS OF RUBBERIZED HOT MIX ASPHALT (GAP GRADED)

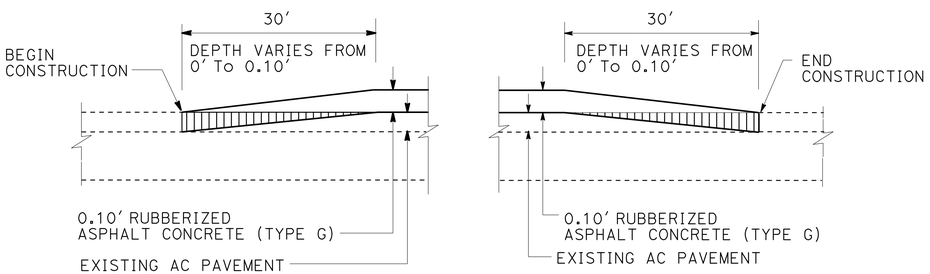


DETAIL A

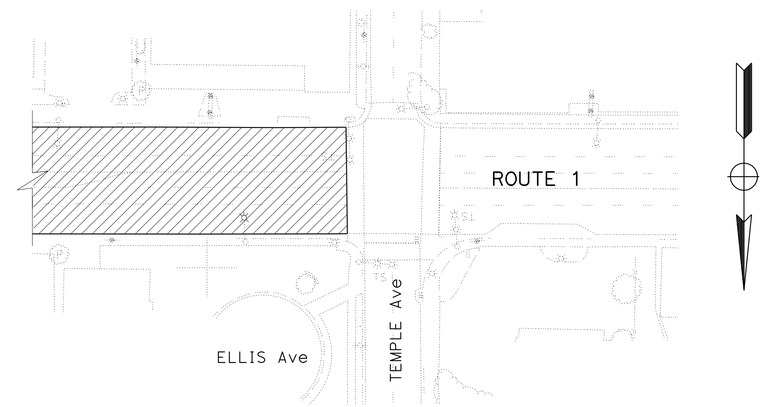
TYPICAL AC TRANSITION
TO CONFORM AT PCC CURB AND GUTTER



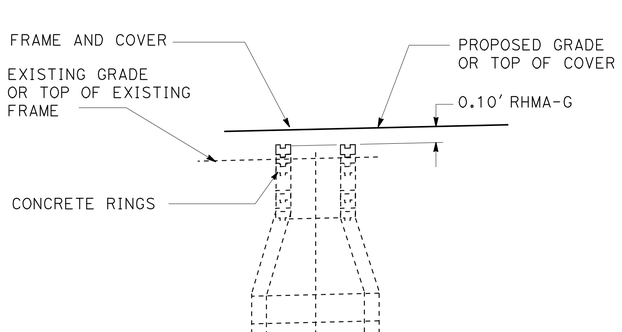
DETAIL D



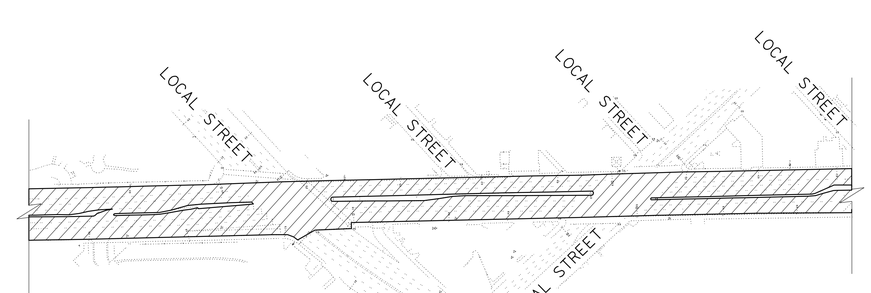
COLD PLANE TO CONFORM DETAILS FOR BEGIN AND END CONSTRUCTION AND LAKEWOOD Blvd AND LOS COYOTES DIAGONAL



END CONSTRUCTION AT TEMPLE AVENUE



ADJUST FRAME AND COVER TO GRADE



TYPICAL PAVING LIMITS

CONSTRUCTION DETAILS

NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: ROBERT CARL DORIA
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 11-01-10 | DATE PLOTTED => 18-NOV-2010 | TIME PLOTTED => 14:20

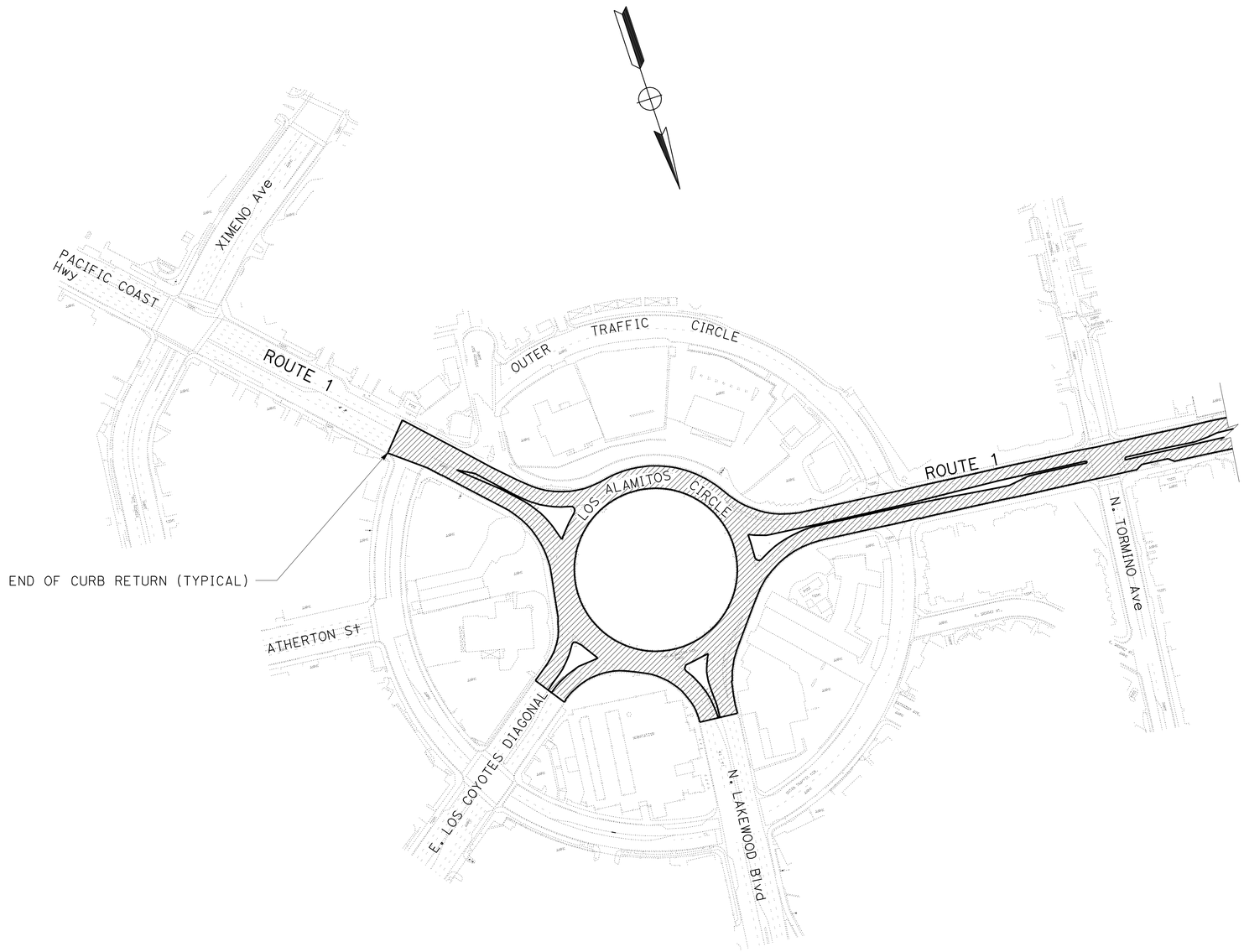
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	3.4/4.5	4	18

Robert Carl Doria 10-28-10
REGISTERED CIVIL ENGINEER DATE

11-1-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
R.C. DORIA
No. 50821
Exp. 9-30-11
CIVIL
STATE OF CALIFORNIA

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



BEGIN CONSTRUCTION AT OUTER TRAFFIC CIRCLE AND
WORK LIMITS AT LAKEWOOD Blvd AND LOS COYOTES DIAGONAL

CONSTRUCTION DETAILS

NO SCALE

C-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: ROBERT CARL DORIA
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 11-01-10
DATE PLOTTED => 18-NOV-2010
TIME PLOTTED => 14:20

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	3.4/4.5	5	18

Robert Carl Doria 10-28-10
REGISTERED CIVIL ENGINEER DATE

11-1-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER R.C. DORIA No. 50821 Exp. 9-30-11 CIVIL STATE OF CALIFORNIA

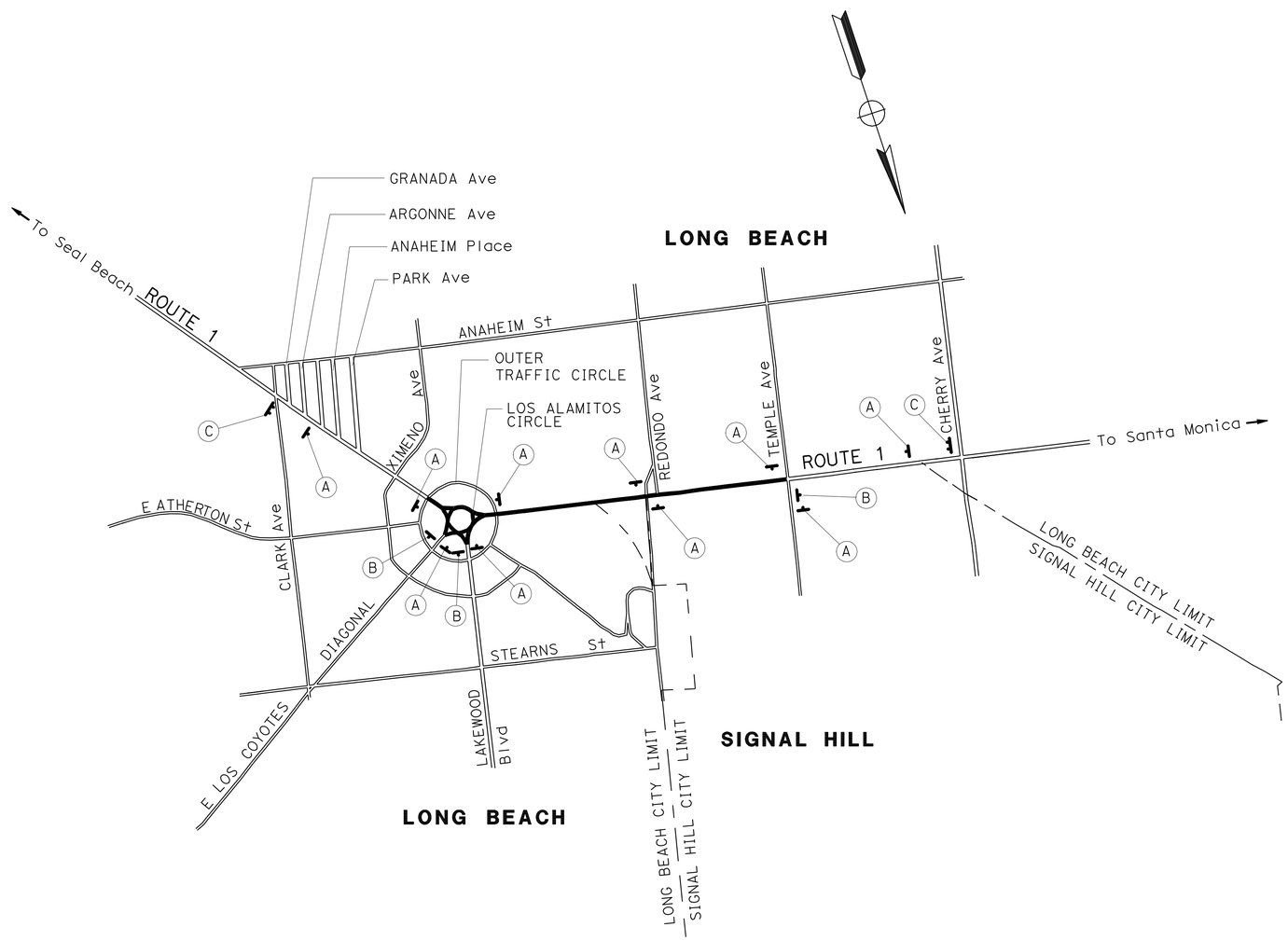
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

1. "TRAFFIC FINE DOUBLED IN CONSTRUCTION ZONES" SIGNS SHALL BE PLACED 500 FEET IN ADVANCE OF "ROAD WORK AHEAD" SIGNS OR AS DETERMINED BY THE ENGINEER.
2. LOCATIONS OF CONSTRUCTION AREA SIGNS AS SHOWN ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
3. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN NUMBER	SIGN CODE	PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
A	W20-1	48" x 48"	ROAD WORK AHEAD	1 - 4" x 6"	10
B	G20-2	48" x 24"	END ROAD WORK	1 - 4" x 6"	3
C	C40 (CA)	72" x 36"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	2 - 6" x 6"	2



CONSTRUCTION AREA SIGNS

NO SCALE

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.

CS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: ROBERT CARL DORIA
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 11-01-10
DATE PLOTTED => 18-NOV-2010
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	3.4/4.5	6	18

Robert Carl Doria 10-28-10
REGISTERED CIVIL ENGINEER DATE

11-1-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER R.C. DORIA No. 50821 Exp. 9-30-11 CIVIL STATE OF CALIFORNIA

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

NOTE:

1. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

LEGEND:

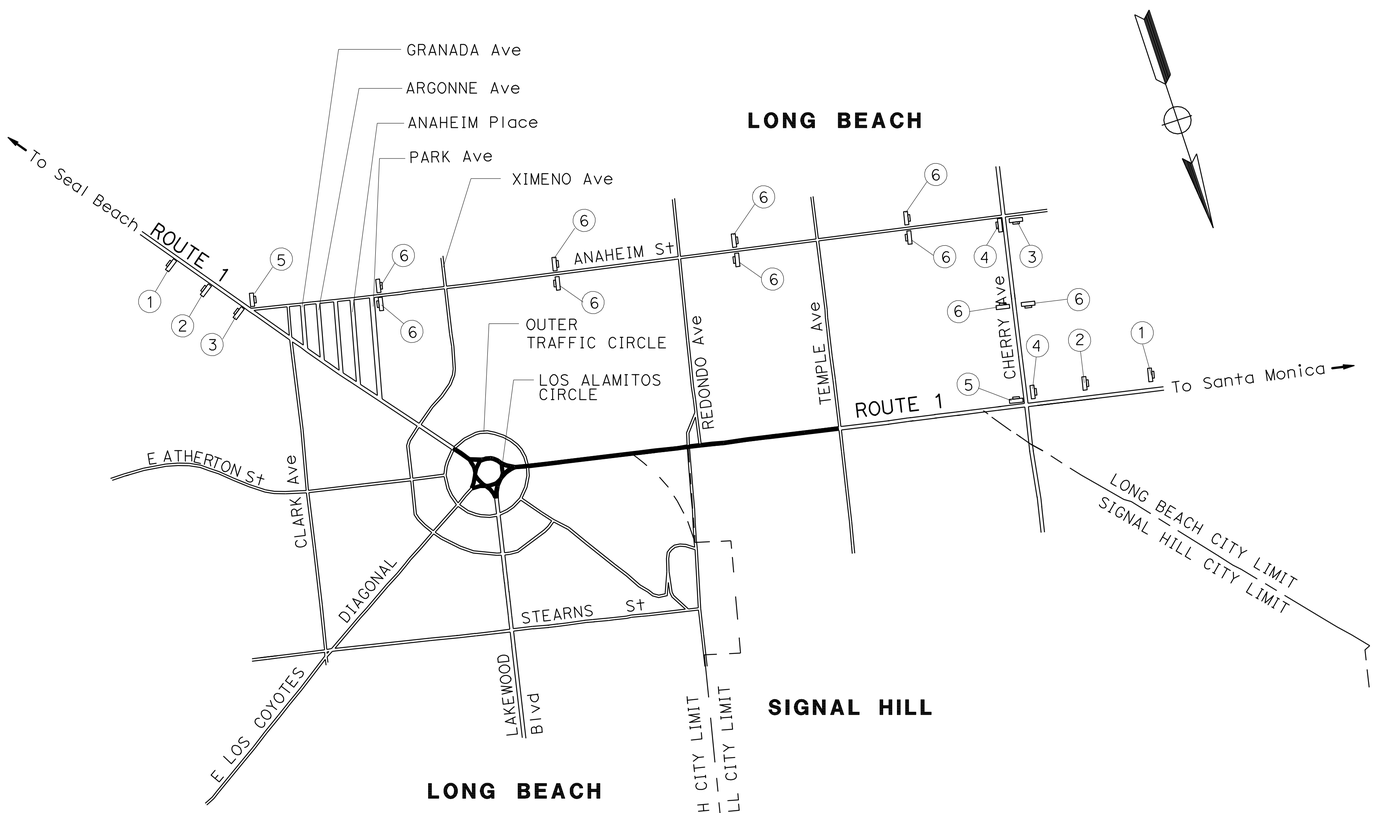
TEMPORARY SIGN MOUNTED ON TYPE II BARRICADE.

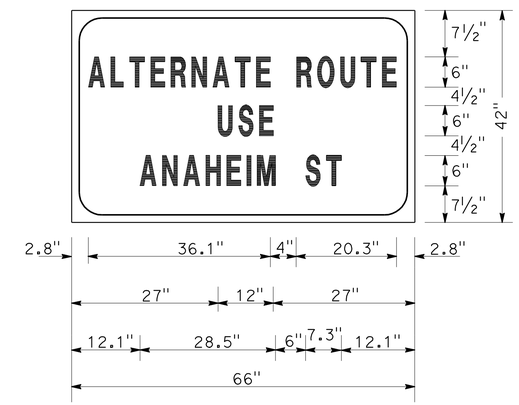
WORK AREA

TRAFFIC HANDLING QUANTITIES

SIGN No.	SIGN CODE	PANEL SIZE (INCHES)	SIGN MESSAGE	NUMBER (N) OF SIGNS	NUMBER OF TYPE II BARRICADES
1	SPECIAL *	66 x 42	ALTERNATE ROUTE	2	2
2	W20-2	36 x 36	DETOUR AHEAD	2	2
3	M4-10L	48 x 18	DETOUR (INSIDE ARROW)	2	2
4	M4-10R	48 x 18	DETOUR (INSIDE ARROW)	2	2
5	M4-8a	24 x 18	END DETOUR	2	2
6	SC3	36 x 12	DETOUR	10	10
			TOTALS	20	20

(N) NOT A SEPARATE PAY ITEM. FOR INFORMATION ONLY.
* SEE DETAIL ON THIS SHEET.





SIGN 1 *

* 2.3" RADIUS; 0.5" BORDER; 0.6" INDENT;
BLACK ON ORANGE; "ALTERNATE ROUTE" C; "USE" C; ANAHEIM ST" C

TRAFFIC HANDLING DETAILS

TRAFFIC CONTROL SYSTEM

NO SCALE

THD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: ROBERT CARL DORIA
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 11-01-10
DATE PLOTTED => 18-NOV-2010
TIME PLOTTED => 14:20

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	3.4/4.5	7	18

Robert Carl Doria 10-28-10
REGISTERED CIVIL ENGINEER DATE

11-1-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER R.C. DORIA No. 50821 Exp. 9-30-11 CIVIL STATE OF CALIFORNIA

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

ROADWAY QUANTITIES

POST MILE	LOCATION	TOTAL (N) CONSTRUCTION AREA	RUBBERIZED HOT MIX ASPHALT (GAP GRADED)	COLD PLANE ASPHALT CONCRETE PAVEMENT	(N) PAINT BINDER (TACK COAT)	REMOVE TRAFFIC STRIPE		REMOVE PAVEMENT MARKING	REMOVE PAVEMENT MARKER
						YELLOW	WHITE	WHITE	
		SQ FT	TON	SQ YD	TON	LF	LF	SQ FT	EA
3.4 / 4.5	OUTER TRAFFIC CIRCLE TO REDONDO AVENUE	302,446.2	2,343.9	8,138.3	8.4	8,328	10,965	1,220	624
4.1 / 4.5	REDONDO AVENUE TO TEMPLE AVENUE	147,968.2	1,146.8	2,994.8	4.1	3,890	6,190	449	301
	SUBTOTAL	450,414.4	3,490.7	11,133.1	12.5	12,218	17,155	1,669	925
	TOTAL	450,414.4	3,490.7	11,133.1	12.5	29,373		1,669	925

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

PAVEMENT DELINEATION QUANTITIES

POST MILE	LOCATION	THERMOPLASTIC TRAFFIC STRIPE											THERMOPLASTIC PAVEMENT MARKINGS			RETROREFLECTIVE PAVEMENT MARKERS		
		8"				4"												
		DETAIL 37B	DETAIL 37D	DETAIL 38	DETAIL 38B	DETAIL 9	DETAIL 19		DETAIL D	DETAIL 22	DETAIL 25A	DETAIL 27B						
		WHITE BROKEN (12-3)	WHITE BROKEN (4-2)	WHITE	WHITE	WHITE BROKEN (17-7)	YELLOW BROKEN (36-12)	YELLOW	WHITE	YELLOW	YELLOW	WHITE	WORDS	ARROWS	12" CROSSWALK	TYPE D	TYPE G	TYPE H
		LF				LF							SQFT			EA		
3.4 / 4.1	OUTER TRAFFIC CIRCLE TO REDONDO AVENUE	491	228	1,823	222	7,699	1,070	1,070	3,148	1,291	3,797	83	441	204	575	130	451	203
4.1 / 4.5	REDONDO AVENUE TO TEMPLE AVENUE			920		4,492	558	558	2,500	1,573				165	284	144	341	24
	SUBTOTAL	491	228	2,743	222	12,191	1,628	1,628	5,648	5,728*	3,797	83	441	369	859	274	792	227
	TOTAL	491	228	2,965		12,191	1,628	16,884					1,669			1,293		

*ADJUSTED TO EQUIVALENT 4" TRAFFIC STRIPING.

SUMMARY OF QUANTITIES

Q-1

REVISED BY | DATE REVISED
ROBERT CARL DORIA | HAMID SAADATNEJADI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR | HAMID SAADATNEJADI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

LAST REVISION 11-01-10 | DATE PLOTTED => 18-NOV-2010 | TIME PLOTTED => 14:20

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	3.4/4.5	8	18

Kenny Nguyen 10-28-10
REGISTERED ELECTRICAL ENGINEER DATE

11-1-10
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.

EXISTING CONDUCTOR AND CONDUIT SCHEDULE

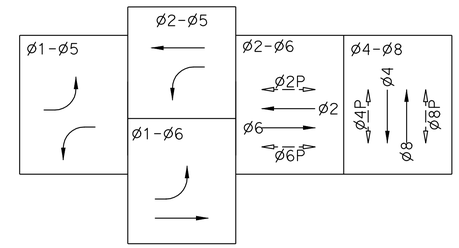
AWG OR CABLE	CONDUCTOR RUN	CONDUIT RUN 1	2	3	4	5	6
DLC	Ø1				1(N)	1(N)	1(N)
	Ø2	7(N)				7(N)	7(N)
	Ø4			3(N)	3(N)	3(N)	3(N)
	Ø5	1(N)				1(N)	1(N)
	Ø6				7(N)	7(N)	7(N)
	Ø8					3(N)	3(N)
	TOTAL	8(N)	-	3(N)	11(N)	22(N)	22(N)
#10	LUMINAIRE	2	2	2	2	-	-
#6	SERVICE	-	-	-	-	2	2
#8	GROUND	1	1	1	1	1	1
28 - CONDUCTOR SIGNAL CABLE		2	2	2	2	2	2
CONDUIT SIZE		3"	3"	3"	3"	3"	2-3"

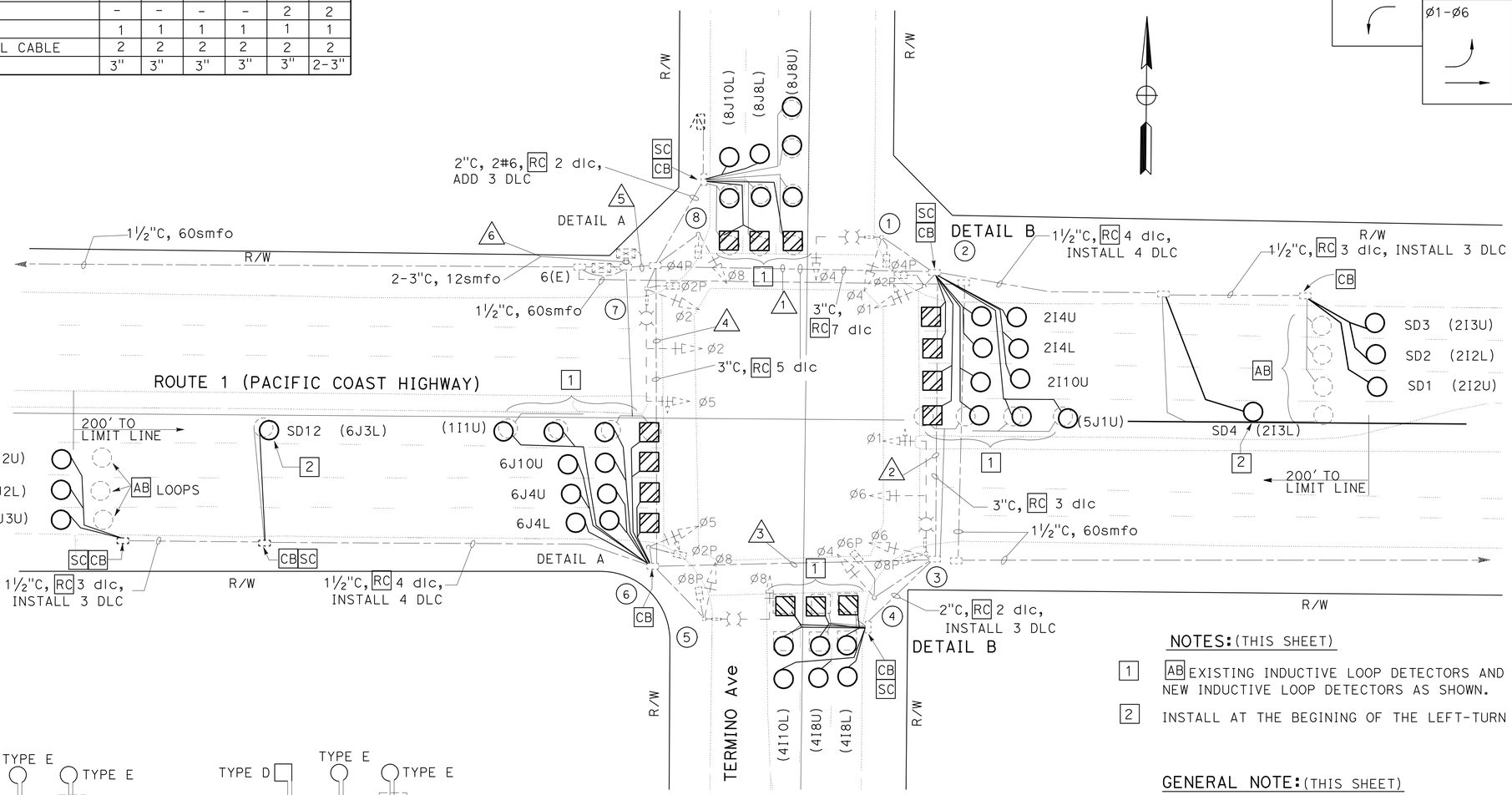
(N) NEW

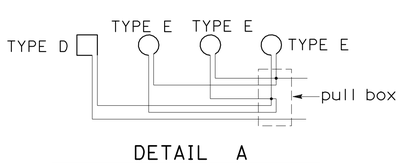
EXISTING POLE AND EQUIPMENT SCHEDULE

No.	TYPE	MAST ARM SIG	MAST ARM LUM	LUMINAIRE	TYPE OF MOUNTING VEH HEAD	TYPE OF MOUNTING PED HEAD	PPB	MAST ARM DOUBLE FACE REFLECTIVE STREET NAME SIGN
1	17-2-113	15′	12′	200	SV-1-T	SP-1-T	Ø2P	PACIFIC COAST HIGHWAY
2	1-A	-	-	-	TV-2-T	SP-1-T	Ø4P	-
3	26-3-100	40′	12′	250	SV-1-T	SP-1-T	Ø4P	TERMINO Ave
4	1-A	-	-	-	TV-2-T	SP-1-T	Ø6P	-
5	17-2-113	15′	12′	200	SV-1-T	SP-1-T	Ø6P	PACIFIC COAST HIGHWAY
6	1-A	-	-	-	TV-2-T	SP-1-T	Ø8P	-
7	26-3-100	40′	12′	250	SV-1-T	SP-1-T	Ø8P	TERMINO Ave
8	1-A	-	-	-	TV-2-T	SP-1-T	Ø2P	-

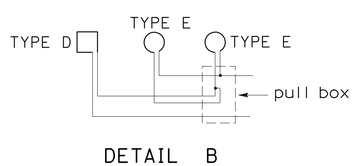
EXISTING PHASE DIAGRAM







DETAIL A
1D + 3E LOOP CONNECTION



DETAIL B
1D + 2E LOOP CONNECTION

NOTES: (THIS SHEET)

1. AB EXISTING INDUCTIVE LOOP DETECTORS AND INSTALL NEW INDUCTIVE LOOP DETECTORS AS SHOWN.
2. INSTALL AT THE BEGINING OF THE LEFT-TURN LANE.

GENERAL NOTE: (THIS SHEET)

1. FOR LOOP CONNECTION SEE DETAILS A AND B.

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

MODIFY SIGNAL AND LIGHTING
(ROUTE 1/ TERMINO Ave)
SCALE: 1" = 20′

E-1

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

LAST REVISION | DATE PLOTTED => 18-NOV-2010 | TIME PLOTTED => 14:20 | 11-01-10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	3.4/4.5	9	18

Kenny Nguyen 10-28-10
REGISTERED ELECTRICAL ENGINEER DATE

11-1-10
PLANS APPROVAL DATE

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

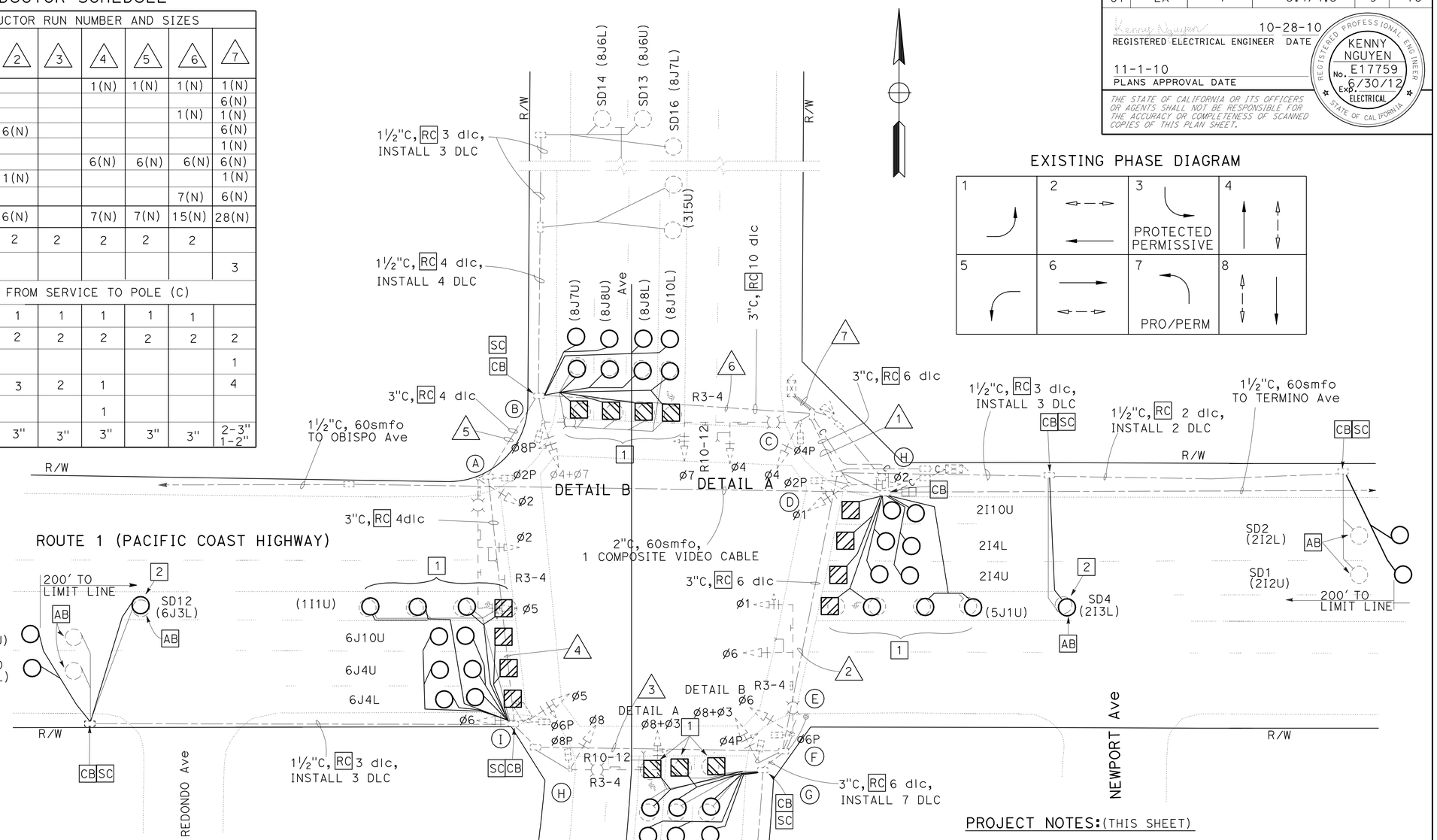
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

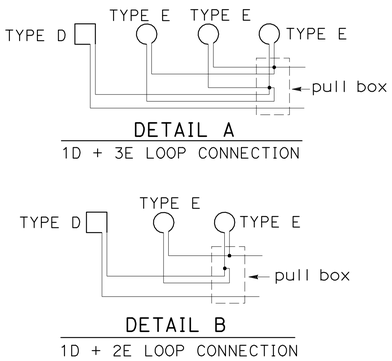
FOR ACCURATE RIGHT OF WAY,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

EXISTING CONDUIT AND CONDUCTOR SCHEDULE

AWG OR CABLE	CONDUCTOR RUN	CONDUCTOR RUN NUMBER AND SIZES 1	2	3	4	5	6	7
DLC	Ø1				1(N)	1(N)	1(N)	1(N)
	Ø2	6(N)						6(N)
	Ø3						1(N)	1(N)
	Ø4	6(N)	6(N)					6(N)
	Ø5	1(N)						1(N)
	Ø6				6(N)	6(N)	6(N)	6(N)
	Ø7	1(N)	1(N)					1(N)
	Ø8						7(N)	6(N)
	TOTAL	13(N)	6(N)		7(N)	7(N)	15(N)	28(N)
#10	LUMINAIRES	2	2	2	2	2	2	
#6	SERVICE							3
#12	PEC	3 FROM SERVICE TO POLE (C)						
#8	GROUND	1	1	1	1	1	1	
28CSC		2	2	2	2	2	2	2
12smfo								1
EVC		3	3	2	1			4
COMPOSITE VIDEO CABLE					1			
CONDUIT SIZE		3"	3"	3"	3"	3"	3"	2-3" 1-2"

(N) NEW





EXISTING POLE AND EQUIPMENT SCHEDULE

No.	STANDARD TYPE	SMA	LMA	Veh Sig MTG MAST ARM	POLE	Ped SIGNAL M+g	PPB Ø	ARROW	HPS LUMINAIRE	SPECIAL REQUIREMENTS SNS
A	26A-4-100	45'-0"	15'-0"	2MAS	SV-1-T	SP-1-T	8	←	250 W	REDONDO Ave
B	15TS	-	12'-0"	-	SV-1-T	SP-1-T	2	→	250 W	-
C	29A-5-100	50'-0"	15'-0"	MAS MAS-5A	SV-1-T	SP-1-T	2	←	250 W	PAC COAST Hwy
D	1-A	-	-	-	TV-2-T	SP-1-T	4	→	-	-
E	PPB POST	-	-	-	-	-	4	←	-	-
F	26A-4-100	45'-0"	15'-0"	2MAS	SV-1-T	SP-1-T	-	-	250 W	REDONDO Ave
G	1-A	-	-	-	TV-1-T	SP-1-T	6	→	-	-
H	29A-5-100	50'-0"	15'-0"	MAS MAS-5A	SV-1-T	SP-1-T	6	←	250 W	PAC COAST Hwy
I	CCTV 45	-	-	-	SV-2-TA	SP-1-T	8	→	-	-

PROJECT NOTES: (THIS SHEET)

1. AB EXISTING INDUCTIVE LOOP DETECTORS AND INSTALL NEW INDUCTIVE LOOP DETECTOR AS SHOWN.
2. INSTALL AT THE BEGINNING OF THE LEFT-TURN LANE.

GENERAL NOTE: (THIS SHEET)

1. FOR LOOP CONNECTION SEE DETAILS A AND B.

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

MODIFY SIGNAL AND LIGHTING
(ROUTE 1/REDONDO Ave)
SCALE: 1" = 20'

E-2

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

LAST REVISION 11-01-10
DATE PLOTTED => 18-NOV-2010
TIME PLOTTED => 14:20

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	3.4/4.5	10	18

Kenny Nguyen 10-28-10
REGISTERED ELECTRICAL ENGINEER DATE

11-1-10
PLANS APPROVAL DATE

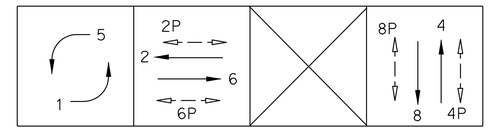
REGISTERED PROFESSIONAL ENGINEER KENNY NGUYEN No. E17759 Exp. 6/30/12 ELECTRICAL STATE OF CALIFORNIA

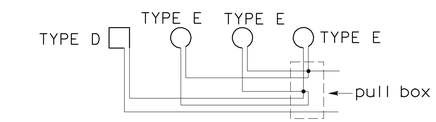
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

EXISTING POLE AND EQUIPMENT SCHEDULE

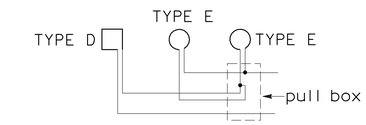
STANDARD				VEH SIG MTG		PPB		PED SIG	LPS LUMINAIRE (W)	STREET NAME SIGN
No.	TYPE	SMA	LMA	MAST ARM	POLE	Ø	ARROW	MTG		
A	26-4-100	40′	12′	1 MAT 1 MAS	SV-1-T	8	←	SP-1-T	250	OBISPO Ave
B	1-A	-	-	TV-1-T	-	2	→	SP-1-T	-	-
C	19-2-113	30′	12′	1 MAS	SV-1-T	2	←	SP-1-T	200	PACIFIC COAST HIGHWAY
D	1-A	-	-	-	TV-2-T	4	→	SP-1-T	-	-
E	26-4-100	40′	12′	1 MAT 1 MAS	SV-1-T	4	←	SP-1-T	250	OBISPO Ave
F	1-A	-	-	-	TV-2-T	6	→	SP-1-T	-	-
G	17-2-113	15′	12′	1 MAT	SV-1-T	6	←→	SP-1-T	200	PACIFIC COAST HIGHWAY
H	1-A	-	-	-	TV-2-T	8		SP-1-T	-	-
I	PPBP	-	-	-	-	-		-	-	-

EXISTING PHASE DIAGRAM

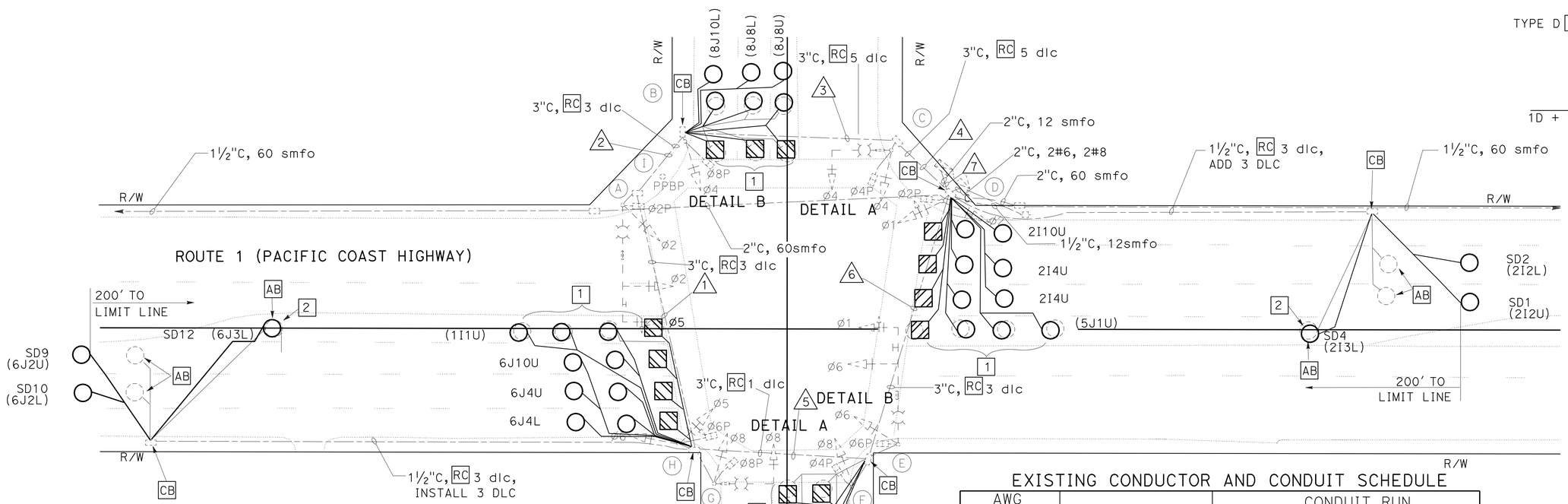




DETAIL A
1D + 3E LOOP CONNECTION



DETAIL B
1D + 2E LOOP CONNECTION



EXISTING CONDUCTOR AND CONDUIT SCHEDULE

AWG OR CABLE	CONDUCTOR RUN	CONDUIT RUN 1	2	3	4	5	6	7
DLC	Ø1					1(N)	1(N)	1(N)
	Ø2							6(N)
	Ø4						2(N)	2(N)
	Ø5							1(N)
	Ø6	6(N)	6(N)	6(N)	6(N)			6(N)
	Ø8			3(N)	3(N)			3(N)
	TOTAL	6(N)	6(N)	9(N)	9(N)	1(N)	3(N)	19(N)
#8	LUMINAIRE		2	2	2	2	2	
#6	SIGNAL SERVICE							2
#8	GROUND	1	1	1	1	1	1	1
28 - CONDUCTOR SIGNAL CABLE		2	2	2	2	2	2	2
12 smfo								1
CONDUIT SIZE		3"	3"	3"	3"	3"	3"	2-3"

(N) NEW

PROJECT NOTES:(THIS SHEET)

1 AB EXISTING INDUCTIVE LOOP DETECTORS AND INSTALL NEW INDUCTIVE LOOP DETECTORS.

2 INSTALL AT THE SAME BEGINNING OF THE LEFT-TURN LANE.

GENERAL NOTE:(THIS SHEET)

1. FOR LOOP CONNECTION SEE DETAILS A AND B.

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

MODIFY SIGNAL AND LIGHTING
(ROUTE 1/OBISPO Ave)
SCALE: 1" = 20′

E-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR HASSAN MANNAA
CALCULATED-DESIGNED BY XOCHILT NARANJO
CHECKED BY KENNY NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 11-01-10
DATE PLOTTED => 18-NOV-2010
TIME PLOTTED => 14:20

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	3.4/4.5	11	18

Kenny Nguyen 10-28-10
REGISTERED ELECTRICAL ENGINEER DATE

11-01-10
PLANS APPROVAL DATE

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

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EXISTING PHASE DIAGRAM

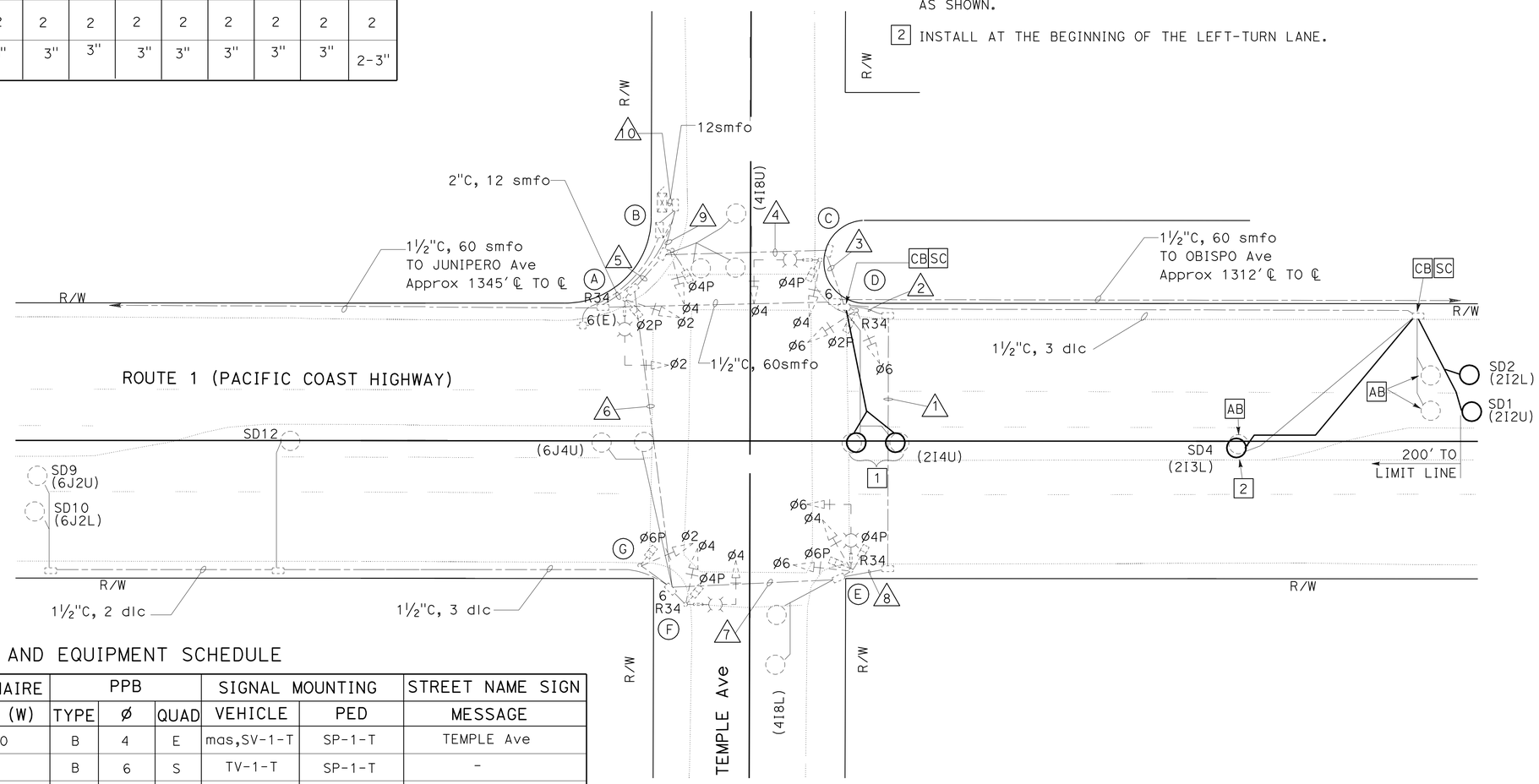
	GROUP 1		GROUP 2	
RING A	NOT USED	⇄	NOT USED	↑↑↑↑
	PHASE 1	PHASE 2	PHASE 3	PHASE 4
RING B	NOT USED	⇄	NOT USED	NOT USED
	PHASE 5	PHASE 6	PHASE 7	PHASE 8

EXISTING CONDUIT AND CONDUCTOR SCHEDULE

AWG OR CABLE	CONDUCTOR RUN	CONDUIT RUN 1	2	3	4	5	6	7	8	9	10
dlc	Ø2 DETECTOR			4	4					4	4
	Ø4 DETECTOR									2	2
	Ø6 DETECTOR					4	4			4	4
	Ø4 DETECTOR	1	1	1	1				1	1	1
TOTAL		1	1	5	5	4	4		1	11	11
#8	LUMINAIRES				2	2	2	2		2	
#8	SIGNAL COMMON				1	1	1	1	1	1	2
#6	SIGNAL SERVICE										2
12SMFO CABLE	sic										1
28-CONDUCTOR CABLE	SIGNAL	2	2	2	2	2	2	2	2	2	2
CONDUIT SIZE		3"	3"	3"	3"	3"	3"	3"	3"	3"	2-3"

PROJECT NOTES:(THIS SHEET)

1. AB INDUCTIVE LOOP DETECTORS AND INSTALL INDUCTIVE LOOP DETECTOR AS SHOWN.
2. INSTALL AT THE BEGINNING OF THE LEFT-TURN LANE.



EXISTING POLE AND EQUIPMENT SCHEDULE

	STANDARD		MAST ARM		LUMINAIRE	PPB			SIGNAL MOUNTING		STREET NAME SIGN
No.	TYPE	HEIGHT	SIG	LUM	LPS (W)	TYPE	Ø	QUAD	VEHICLE	PED	MESSAGE
A	17-2-113	30'	20'	12'	180	B	4	E	mas,SV-1-T	SP-1-T	TEMPLE Ave
B	1-A	10'	-	-	-	B	6	S	TV-1-T	SP-1-T	-
C	17-1-113	30'	15'	12'	180	B	6	S	mas,SV-1-T	SP-1-T	-
D	1-A	10'	-	-	-	B	4	W	TV-1-T	SP-1-T	-
E	17-2-113	30'	20'	12'	180	B/B	4/2	W/S	mas,SV-2-TB	SP-2-T	TEMPLE Ave
F	17-1-113	30'	15'	12'	180	B	2	N	mas,SV-1-T	SP-1-T	-
G	1-A	10'	-	-	-	B	4	E	TV-1-T	SP-1-T	-

MODIFY SIGNAL AND LIGHTING

(ROUTE 1/TEMPLE Ave)

SCALE: 1" = 20'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

E-4

REVISED BY | DATE REVISED
XOCHILT NARANJO | KENNY NGUYEN
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR
HASSAN MANNAA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN

LAST REVISION | DATE PLOTTED => 18-NOV-2010 | TIME PLOTTED => 14:21
11-01-10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	3.4/4.5	12	18

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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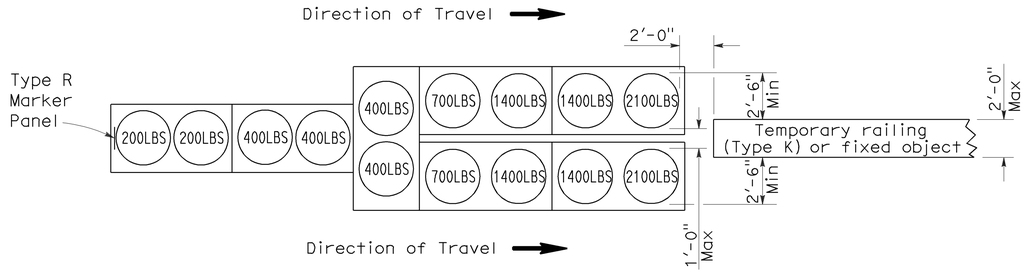
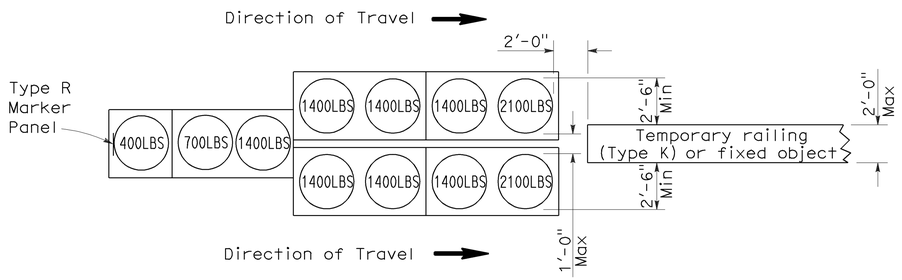
To accompany plans dated 11-1-10



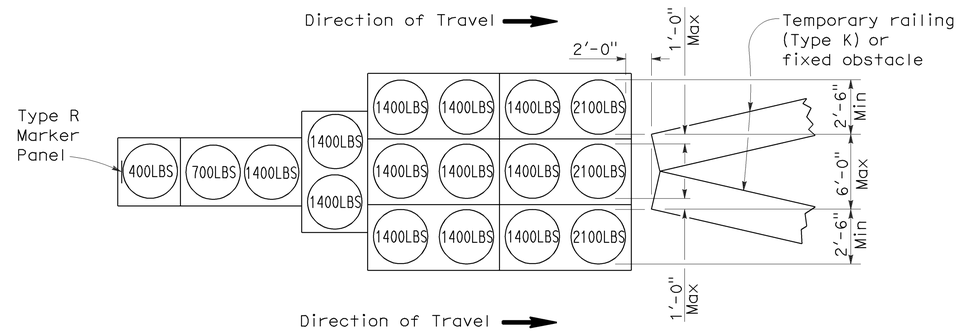
ARRAY 'TU14'

Approach speed 45 mph or more



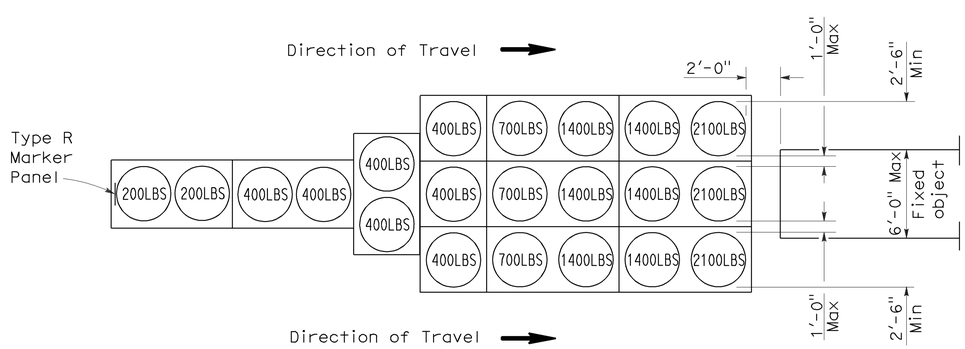
ARRAY 'TU11'

Approach speed less than 45 mph



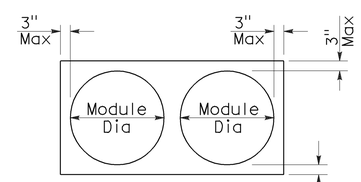
ARRAY 'TU17'

Approach speed less than 45 mph

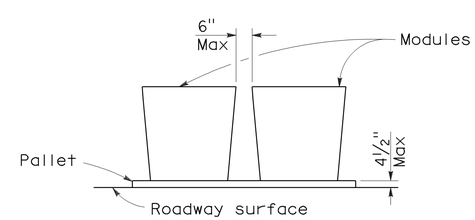


ARRAY 'TU21'

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 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	3.4/4.5	13	18

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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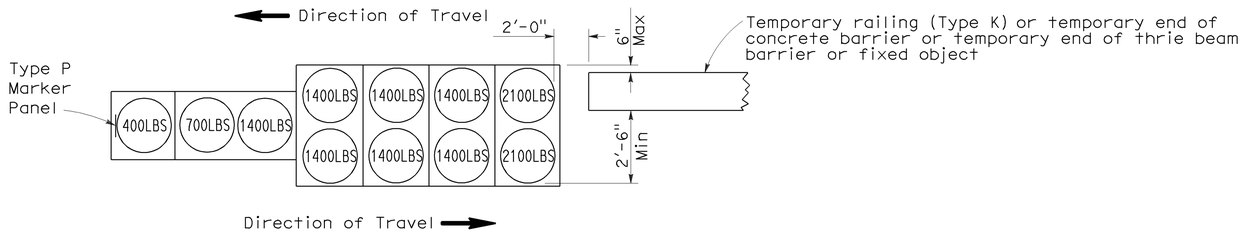
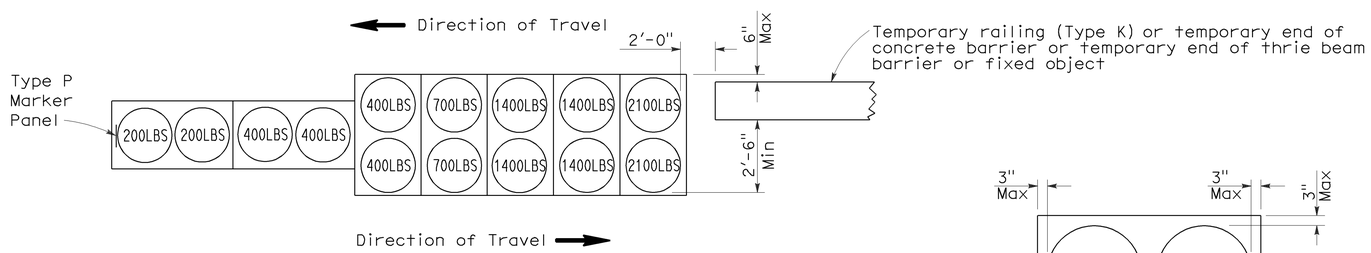
To accompany plans dated 11-1-10



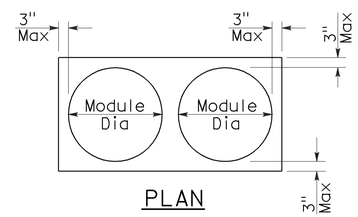
ARRAY 'TB11'

Approach speed less than 45 mph

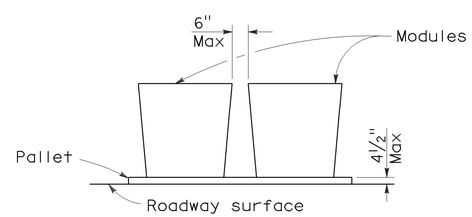


ARRAY 'TB14'

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

5-15-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	3.4/4.5	14	18

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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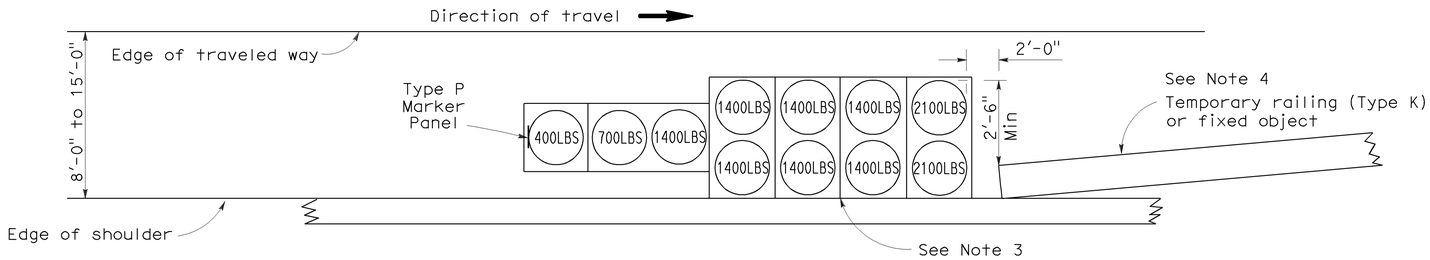
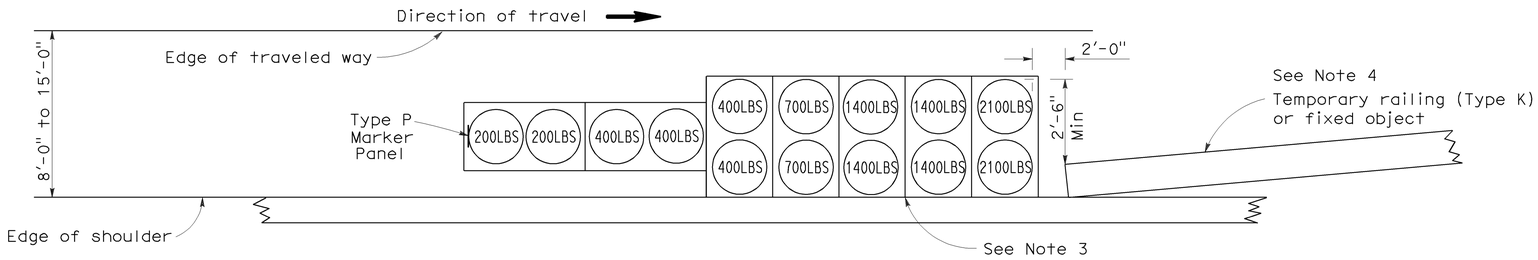
To accompany plans dated 11-1-10



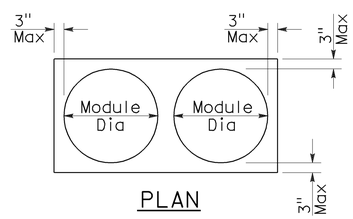
ARRAY 'TS11'

Approach speed less than 45 mph
See Note 9

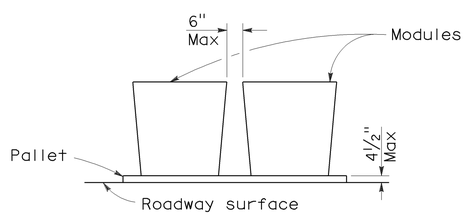


ARRAY 'TS14'

Approach speed 45 mph or more
See Note 9



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 11

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. 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.
4. 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.
5. Temporary crash cushion arrays shall not encroach on the traveled way.
6. Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
7. Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
8. Refer to Standard Plan A73B for marker details.
9. 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.
10. Approach speeds indicated conform to NCHRP 350 Report criteria.
11. 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	3.4/4.5	15	18

REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

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To accompany plans dated 11-1-10

ELECTROLIERS

STANDARD TYPES
15, 15D
15 STRUCTURE
21, 21D STRUCTURE
30
31
32
35
36-20A

High mast light pole

Double Arm lighting standard

Existing electrolier

Electrolier foundation (Future installation)

NOTES:

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

Electrolier (see project notes or project plans)

Luminaire on wood pole

STANDARD NOTES:

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

ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

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

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	3.4/4.5	16	18

REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

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To accompany plans dated 11-1-10

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 (RSP ES-9A C)
R	r	Conduit riser in/on structure or service pole

SERVICE EQUIPMENT

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

POLE-MOUNTED SERVICE DESIGNATION

Type of installation

TYPE H SERVICE - 28'-10" ← Pole height above grade

ILLUMINATED OVERHEAD SIGN

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

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
PV	PV	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
R	Y	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

SIGNAL EQUIPMENT Cont

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

NOTES:

1. All signal sections shall be 12" unless shown otherwise.
2. Signal heads shall be provided with backplates unless shown otherwise.
3. 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

7-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	3.4/4.5	17	18

REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

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To accompany plans dated 11-1-10

EQUIPMENT IDENTIFICATION

ILLUMINATED SIGN IDENTIFICATION NUMBER:

Sign No. 12345

10 ISL SCI 1.0

- Sign number - Place on post or structure
- Transformer rating (kVA)
- Lighting control type
- Number and type of fixtures

Do NOT place on standard or structure

ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:

12345 - 15'-0"

- Mast arm length, if shown. Do not place on standard or structure.
- Equipment number - Place on standard or structure. Existing equipment numbers are shown in parenthesis

CONDUIT AND CONDUCTOR IDENTIFICATION:

1½"C, 2#10, 15#14, 2 DLC

- Number and size of conductors and cables
- Size of conduit in inches

Ø1, Ø2, Ø2P, etc.	Traffic phase identification for signal faces, detectors and phase diagrams
1 2 3	Project note numbers
A B C	Equipment description, installation or item numbers
1 2 3	Conduit run numbers

SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):

19A - 3 - 100

- Wind velocity = 100 mph
- Case 3 arm loading
- Standard type
- Standard Plan sheet number
- Detail number or letter

MISCELLANEOUS EQUIPMENT

PROPOSED	EXISTING	
CMS	cms	Changeable message sign
		Closed circuit television camera
		Highway advisory radio pole and antenna
EMS	ems	Extinguishable message sign
M V	m v	Detection device M = Microwave sensor V = Video image sensor

WIRING DIAGRAM LEGEND

P	Pole
CB	Circuit breaker
A	Ampere
V	Volt
M	Metered
UM	Unmetered
NB	Neutral bus
GB	Ground bus
G	Equipment grounding conductor
N	Grounded conductor (Neutral)

- External conductor
- Conductor or bus
- Tie point
- Contactor coil
- Contactor, Contact NO
- Terminal blocks
- Contactor, Contact NC
- Enclosure bond
- Grounding electrode
- Circuit breaker
- Receptacle

PULL BOXES

PROPOSED EXISTING

Pull box-No. 5 unless otherwise indicated or noted.

3 9A(21)

Pull box-Additional designations or descriptions

3	= No. 3½ pull box
5	= No. 5 pull box
6	= No. 6 pull box
7	= No. 7 (Ceiling pull box)
8	= No. 8 (Pendant soffit pull box)
9	= No. 9 pull box
9A	= No. 9A pull box

(C) = Communications pull box
(E) = Pull box with extension
(S) = Sprinkler control pull box
(21) = Anchor bolts and conduit for future installation of Type 21 Standard
(T) = Traffic pull box

VEHICLE DETECTORS

5 J 9 U

- U = Upper
- L = Lower
- Slot number in input file
- Input file (I or J)
- Phase

PROPOSED EXISTING

	Type A detector loop. Outline of sawcut shown.
	Type B detector loop. Outline of sawcut shown.
	Type C detector loop. Outline of sawcut shown.
	Type D detector loop. Outline of sawcut shown.
	Type E detector loop. Outline of sawcut shown.
	Type Q detector loop. Outline of sawcut shown.
	Magnetic detector
DH dh	Detector handhole
	Microwave or video detection zone

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

7-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	3.4/4.5	18	18

REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

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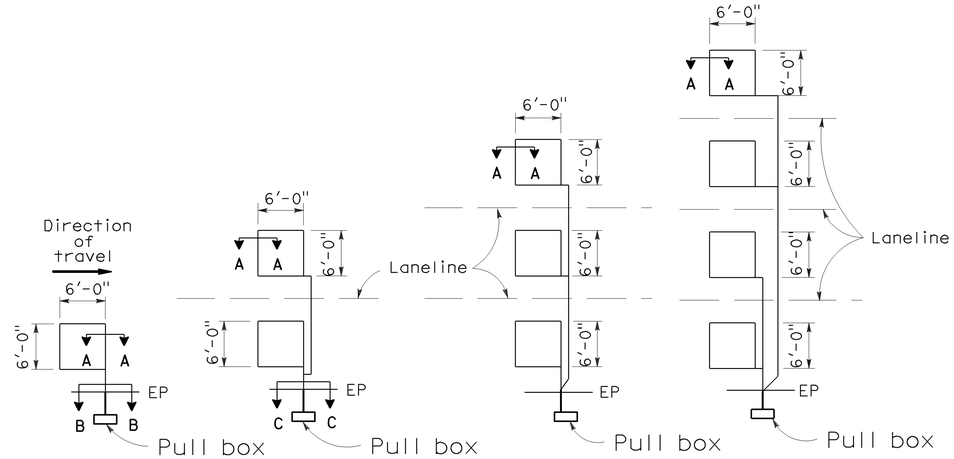
To accompany plans dated 11-1-10

LOOP INSTALLATION PROCEDURE

1. Loops shall be centered in lanes.
2. Saw slots in pavement for loop conductors as shown in details.
3. 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.
4. Bottom of saw slot shall be smooth with no sharp edges.
5. Slots shall be washed until clean, blown out and thoroughly dried before installing loop conductors.
6. Adjacent loops on the same sensor unit channel shall be wound in opposite directions.
7. 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.
8. 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.
9. No more than 2 twisted pairs shall be installed in one sawed slot.
10. Allow additional 5'-0" of slack length of conductor for the lead-in run to pull box.
11. 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.
12. Test each loop circuit for continuity, circuit resistance and insulation resistance at the pull box before filling slots.
13. Fill slots as shown in details.
14. Splice loop conductors to lead-in-cable. Splices shall be soldered.
15. 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.
16. Lead-in-cable shall not be spliced between the pull box and the controller cabinet terminals.
17. Test each loop circuit for continuity, circuit resistance and insulation resistance at the controller cabinet location.
18. 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.

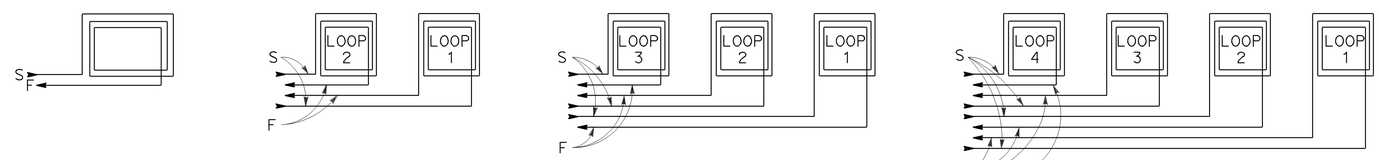


TYPE 1A INSTALLATION | TYPE 2A INSTALLATION | TYPE 3A INSTALLATION | TYPE 4A INSTALLATION

SAWCUT DETAILS

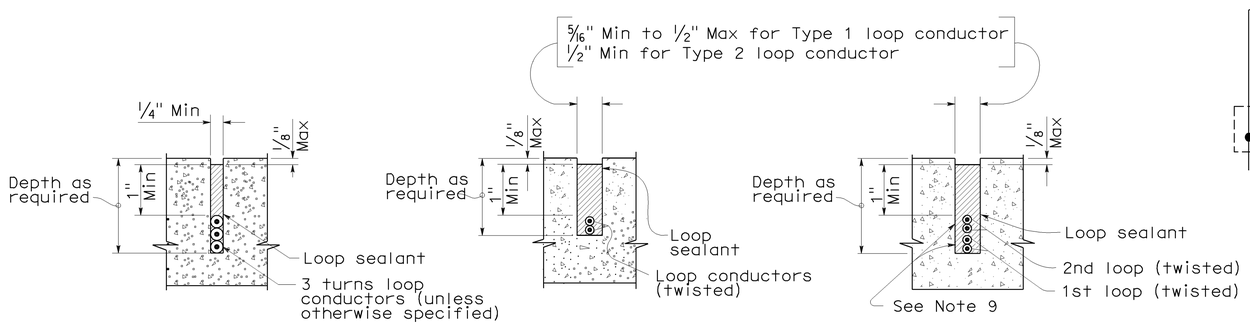
(Type A loop detector configurations illustrated)

1. 1A thru 4A = 1 Type A loop configuration in each lane.
2. 1B thru 4B = 1 Type B loop configuration in each lane.
3. 1C = 1 Type C loop configuration entering lanes as required.
4. 1D thru 4D = 1 Type D loop configuration in each lane.
5. 1E thru 4E = 1 Type E loop configuration in each lane.
6. 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)



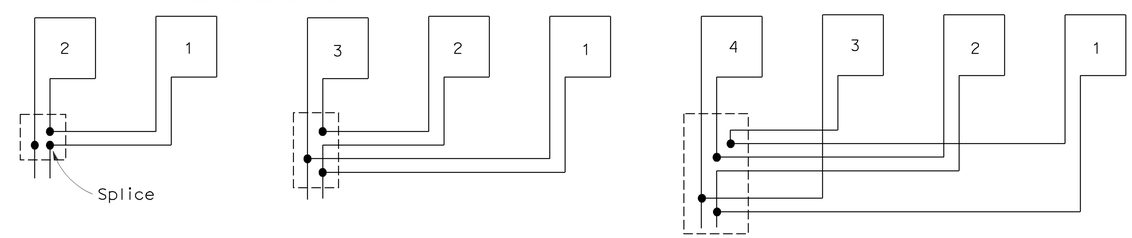
WINDING DETAILS

See Notes 6 and 7



SECTION A-A | SECTION B-B | SECTION C-C

SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR



TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (DETECTORS)

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

8-17-07