

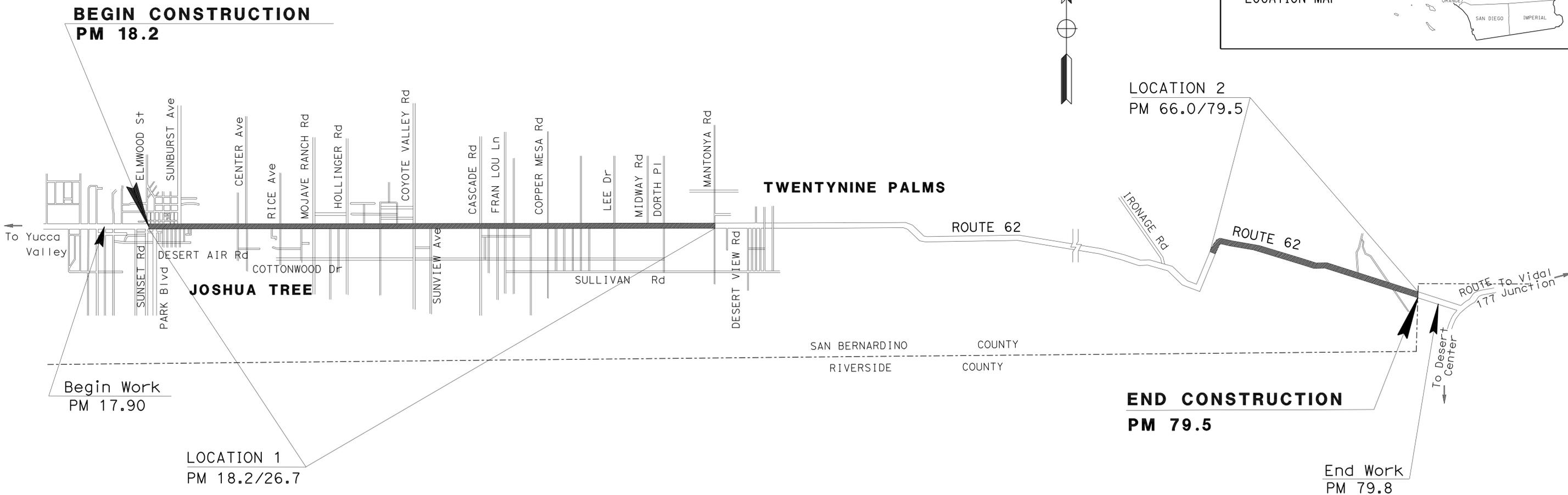
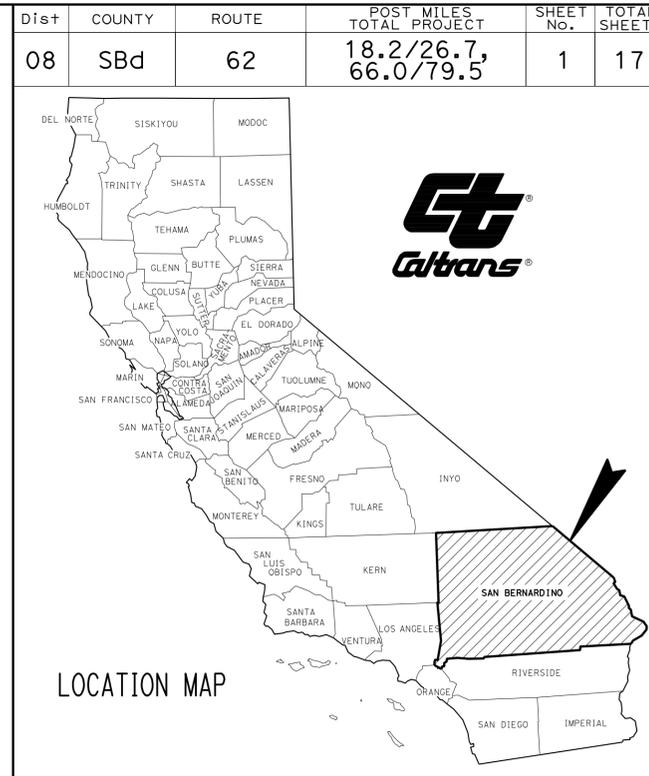
INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2	TYPICAL CROSS SECTIONS
3-4	CONSTRUCTION DETAILS
5	CONSTRUCTION AREA SIGNS
6	PAVEMENT DELINEATION QUANTITIES
7	SUMMARY OF QUANTITIES
8-10	ELECTRICAL PLANS
11-17	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 SAN BERNARDINO COUNTY
IN JOSHUA TREE AND TWENTYNINE PALMS
FROM ELWOOD STREET TO MANTONYA ROAD AND
FROM 11 MILES EAST OF IRONAGE ROAD
TO THE RIVERSIDE COUNTY LINE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



PROJECT MANAGER
CATALINO PINING

DESIGN ENGINEER
MINLUNG HO

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

NO SCALE

PROJECT ENGINEER
 REGISTERED CIVIL ENGINEER
 DATE 3-01-10
 March 22, 2010
 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.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	62	18.2/26.7, 66.0/79.5	3	17

3-01-10
REGISTERED CIVIL ENGINEER DATE

3-22-10
PLANS APPROVAL DATE

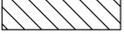
REGISTERED PROFESSIONAL ENGINEER
MINLUNG HO
No. C 68641
Exp 9/30/11
CIVIL
STATE OF CALIFORNIA

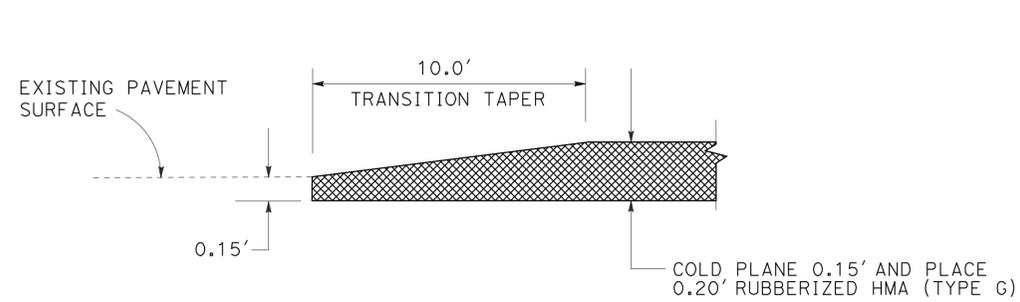
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

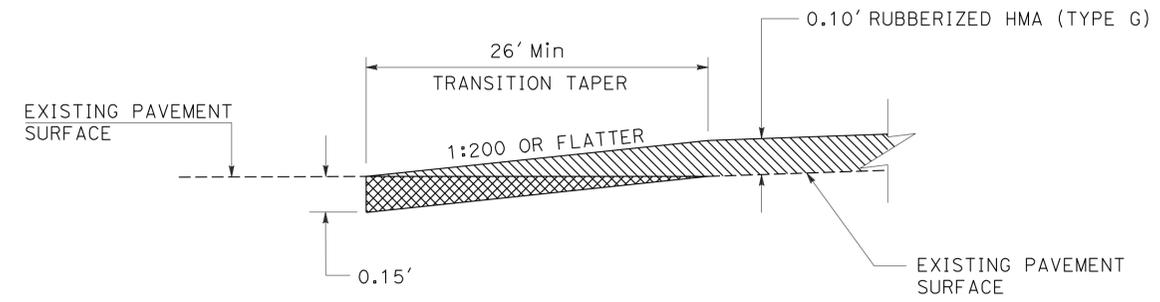
1. EXACT LIMITS AND LOCATIONS OF REPLACE ASPHALT CONCRETE SURFACING SHALL BE DETERMINED BY THE ENGINEER.

LEGEND:

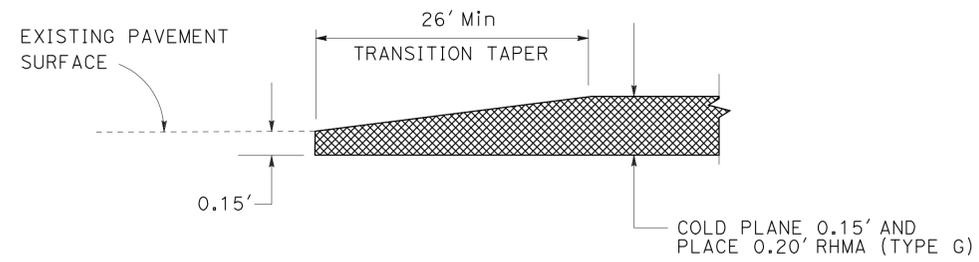
-  PAVING LIMITS OF WORK
-  PLACE RUBBERIZED HMA (TYPE-G)
-  COLD PLANE AND PLACE RUBBERIZED HMA (TYPE G)



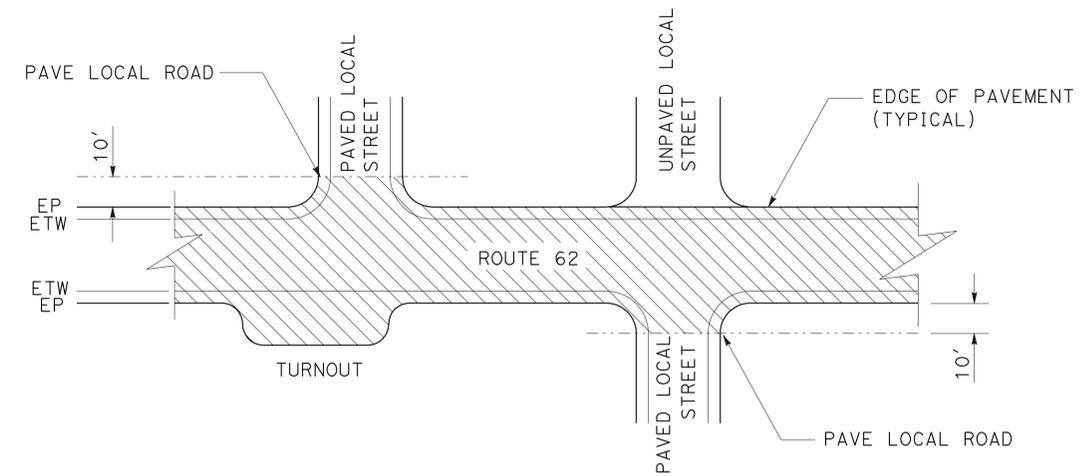
PAVING CONFORM
PM 20.5/23.5
AT LOCAL STREET INTERSECTIONS



PAVING CONFORM
(PM 66.0/70.0)
AT BEGIN AND END PLACE RUBBERIZED HMA (TYPE G)



PAVING CONFORM
(PM 20.5/23.5)
AT BEGIN AND END OF COLD PLANE AND
PLACE RUBBERIZED HMA (TYPE G)



PAVING LIMITS OF WORK
LOCAL STREETS

CONSTRUCTION DETAILS

NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

REVISOR BY
DATE

MINLUNG HO
MICHAEL RISTIC

CALCULATED/DESIGNED BY
CHECKED BY

FUNCTIONAL SUPERVISOR
MICHAEL RISTIC

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

NOTES:

1. LOCATIONS OF THE CONSTRUCTION AREA SIGNS ARE APPROXIMATE. THE EXACT LOCATIONS WILL BE DETERMINED BY THE FIELD ENGINEER.
2. REFER TO Std PLANS T11, T12 AND T13 FOR TRAFFIC CONTROL REQUIREMENTS.
3. REFER TO Std PLANS T15, T16 AND T17 FOR TRAFFIC CONTROL REQUIREMENTS AND FOR MOVING LANE CLOSURES.
4. MINIMUM SPACING BETWEEN TWO CONSECUTIVE SIGNS SHALL BE 500 FEET.

LEGEND:

- ↓ CONSTRUCTION AREA SIGNS (1 POST)
- ↓ CONSTRUCTION AREA SIGNS (2 POSTS)
- ROAD WORK AREA
- X-X CONSTRUCTION AREA SIGN CODE
- ☒ PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	62	18.2/26.7, 66.0/79.5	5	17

W E Wasser 3-01-10
 REGISTERED CIVIL ENGINEER DATE

3-22-10
 PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER
W. E. WASSER
 No. 37378
 Exp. 6/30/10
 CIVIL
 STATE OF CALIFORNIA

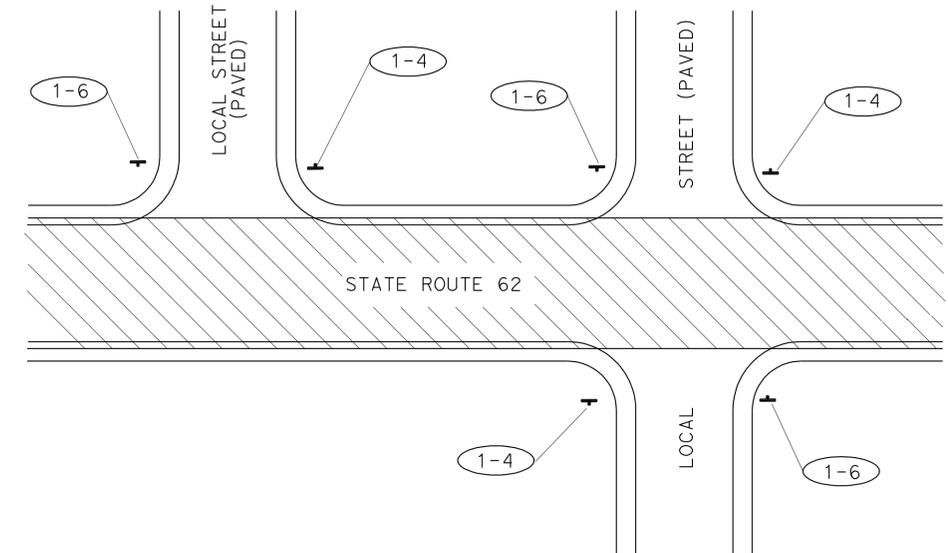
STATIONARY CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE	PANEL SIZE	SIGN MESSAGE	NO. OF POST(S) AND SIZE	NO. OF SIGNS (N) (EA)
1-1	C40(CA)	144" x 60"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	2 - 6" x 8"	4
1-2	G20-1	90" x 36"	ROAD WORK NEXT 9 MILES	2 - 4" x 6"	2
1-3	G20-1	90" x 36"	ROAD WORK NEXT 14 MILES	2 - 4" x 6"	2
1-4	G20-2	36" x 18"	END ROAD WORK	1 - 4" x 4"	65
1-5	G20-2	48" x 24"	END ROAD WORK	1 - 4" x 6"	4
1-6	W20-1	48" x 48"	ROAD WORK AHEAD	1 - 4" x 6"	65

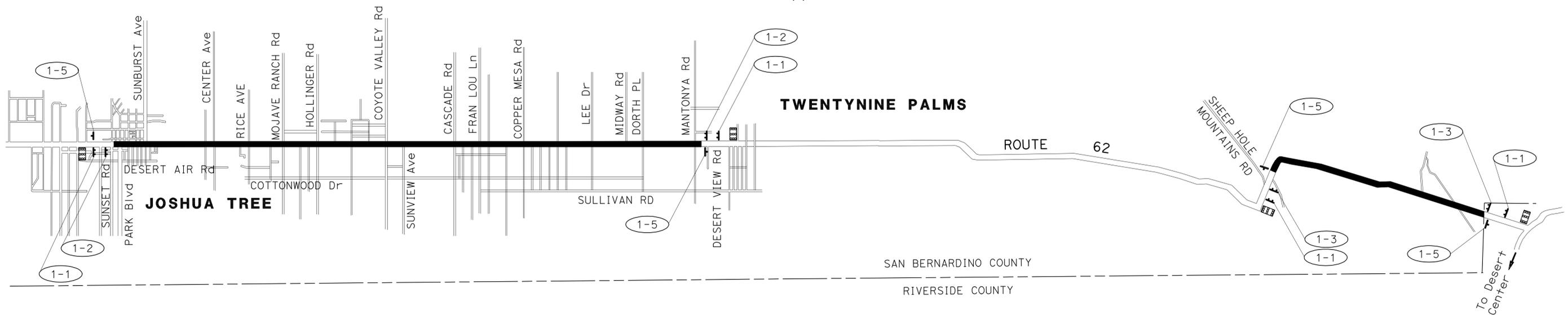
(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

(EA)
4



TYPICAL CONSTRUCTION AREA SIGN PLACEMENT AT INTERSECTIONS ON ROUTE 62



CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

THIS SHEET IS ACCURATE FOR CONSTRUCTION AREA SIGNS ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	62	18.2/26.7, 66.0/79.5	6	17

W E Wasser 3-01-10
 REGISTERED CIVIL ENGINEER DATE
 3-22-10
 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.

PAVEMENT DELINEATION QUANTITIES

POST MILE LIMITS	DIRECTION	DETAIL No.	REMOVE PAVEMENT MARKER	PAVEMENT MARKER RETROREFLECTIVE		THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)		THERMOPLASTIC TRAFFIC STRIPE
				TYPE D	TYPE G	4" YELLOW	4" WHITE	8" WHITE
				EA	EA	LF		LF
PM 20.5 TO PM 23.5	WB/EB	12	-	-	661	-	31,680	-
	WB/EB	27B	-	-	-	-	31,680	-
	WB/EB	32	-	1654	-	31,680	-	-
	WB/EB	36	-	-	-	-	-	160
PM 66.0 TO PM 70.0	WB/EB	6	335	335	-	15,999	-	-
	WB/EB	19	132	132	-	6284	-	-
	WB/EB	22	32	32	-	1479	-	-
	WB/EB	27B	-	-	-	-	47,520	-
SUBTOTAL			499	2153	661	55,442	110,880	160
TOTAL			499	2814		166,322		160

THERMOPLASTIC PAVEMENT MARKING

POST MILE LIMITS	THERMOPLASTIC PAVEMENT MARKING		
	INSTALL	QUANTITY (EA)	SQ FT
PM 20.5 TO PM 23.5	SIGNAL	10	320
	AHEAD	10	310
	TYPE IV ARROW	25	375
	TYPE VI ARROW	9	378
	CROSSWALK	2	1200
	TOTAL		2583

PAVEMENT DELINEATION QUANTITIES

NO SCALE

PDQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN "A"
 FUNCTIONAL SUPERVISOR: BILL WASSER
 CALCULATED/DESIGNED BY: SHABBIR AHMED
 CHECKED BY: PATTI BARTOLI
 REVISED BY: SHABBIR AHMED
 DATE REVISED: PATTI BARTOLI

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	62	18.2/26.7, 66.0/79.5	7	17

3-01-10
REGISTERED CIVIL ENGINEER DATE

3-22-10
PLANS APPROVAL DATE

MINLUNG HO
No. C 68641
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.

RUBBERIZED HOT MIX ASPHALT (TYPE G)

PM	DIRECTION	(N) LENGTH (FT)	(N) WIDTH (FT)	(N) AREA (SQFT)	RUBBERIZED HOT MIX ASPHALT(TYPE G) (TON)	TACK COAT (TON)
20.5/23.5	EB/WB	15,840	52-64	847,123	12,707	15.7
66.0/70.0	EB/WB	21,120	26	54,9120	4213	10.2
	TURNOUT	700	10	7000	53	0.1
TOTAL					16,973	26.0

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

REPLACE ASPHALT CONCRETE SURFACING

PM	DIRECTION	WHEEL TRACK	(N) LENGTH (FT)	(N) NUMBER OF LOCATION	REPLACE ASPHALT CONCRETE SURFACING (CY)
18.2/26.7	EB/WB	L, R, C	100	3	40
18.2/26.7	EB/WB	L, R, C	200	25	578
18.2/26.7	EB/WB	L, R, C	300	16	600
66.0/70.5	EB/WB	L, R, C	100	12	54
66.0/70.5	EB/WB	L, R, C	200	10	89
66.0/70.5	EB/WB	L, R, C	300	10	133
66.0/70.5	EB/WB (CURVE AREA)	L, R, C	400	30	133
70.5/79.5	EB/WB	L, R, C	200	20	45
TOTAL				126	1672

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

COLD PLANE QUANTITIES

PM	DIRECTION	COLD PLANE ASPHALT CONCRETE PAVEMENT (SQYD)
20.5/23.5	EB/WB	94,375
66.0/70.0	EB/WB	162
TOTAL		94,537

SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE - DESIGN
 FUNCTIONAL SUPERVISOR
 MICHAEL RISTIC
 CALCULATED/DESIGNED BY
 CHECKED BY
 MICHAEL RISTIC
 MINLUNG HO
 MICHAEL RISTIC
 REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	62	18.2/26.7, 66.0/79.5	8	17

3-01-10
 REGISTERED ELECTRICAL ENGINEER DATE
 3-22-10
 PLANS APPROVAL DATE

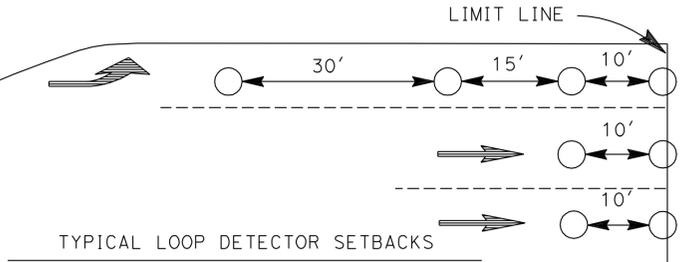
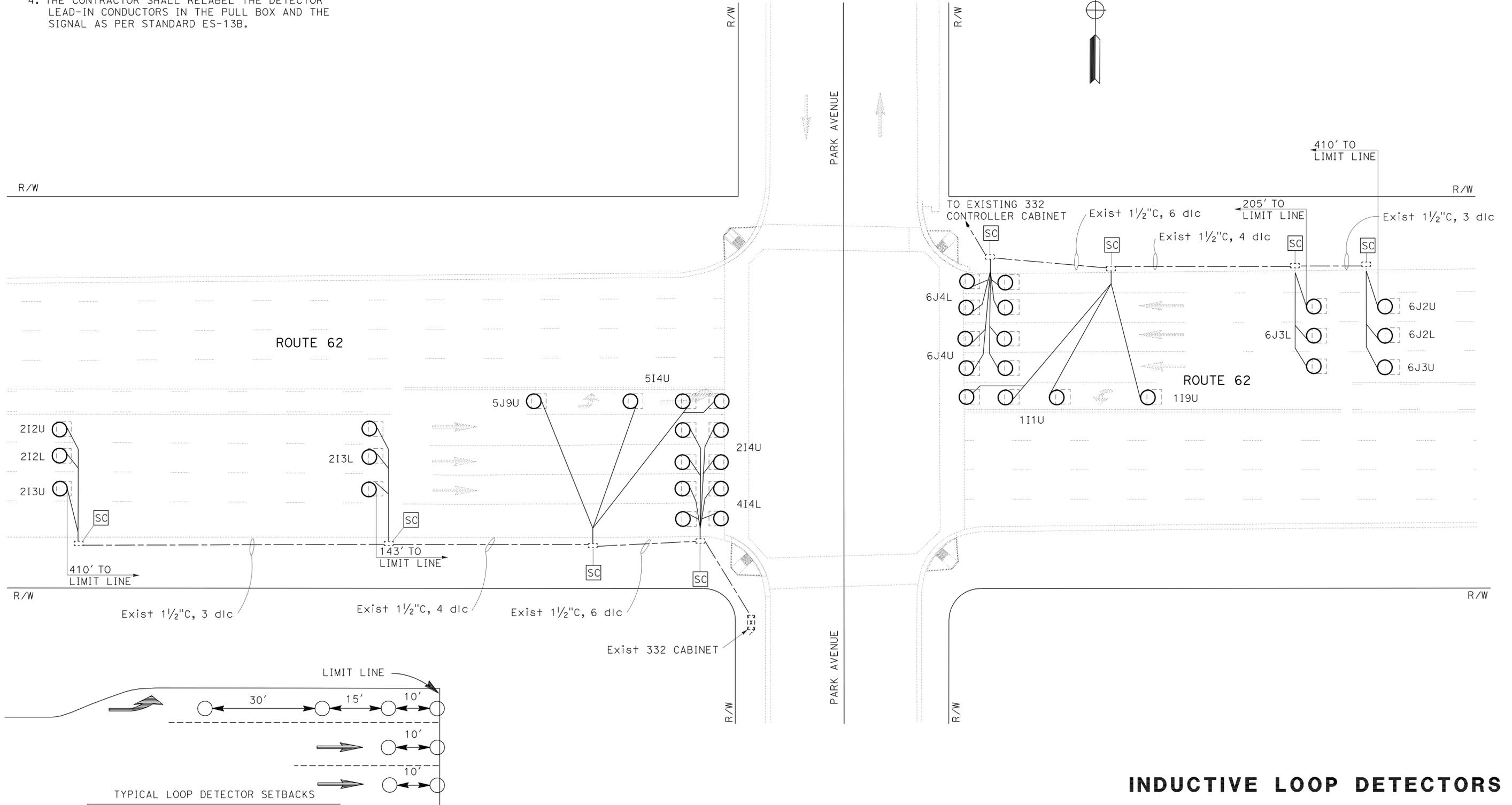
THE STATE OF CALIFORNIA OR ITS OFFICERS
 OR AGENTS SHALL NOT BE RESPONSIBLE FOR
 THE ACCURACY OR COMPLETENESS OF SCANNED
 COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
FERDINAND DE LA CRUZ
 No. E 17215
 Exp. 6-30-10
 Elect

GENERAL NOTES: (SHEETS E-1 THRU E-3)

1. THE CONTRACTOR SHALL CONTACT THE ENGINEER THREE WORKING DAYS PRIOR TO INSTALLING NEW DETECTOR LOOPS.
2. **AB** EXISTING LOOPS SHOWN TO BE REPLACED.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER FIVE WORKING DAYS BEFORE CONSTRUCTION BEGINS.
4. THE CONTRACTOR SHALL RELABEL THE DETECTOR LEAD-IN CONDUCTORS IN THE PULL BOX AND THE SIGNAL AS PER STANDARD ES-13B.

NOTE: FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



INDUCTIVE LOOP DETECTORS

NO SCALE

E-1

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN B
 FUNCTIONAL SUPERVISOR: FERDINAND DE LA CRUZ
 CALCULATED/DESIGNED BY: FERDINAND DE LA CRUZ
 CHECKED BY:
 REVISOR: LUIS PENALOZA, JR.
 DATE: FERDINAND DE LA CRUZ

NOTE: FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

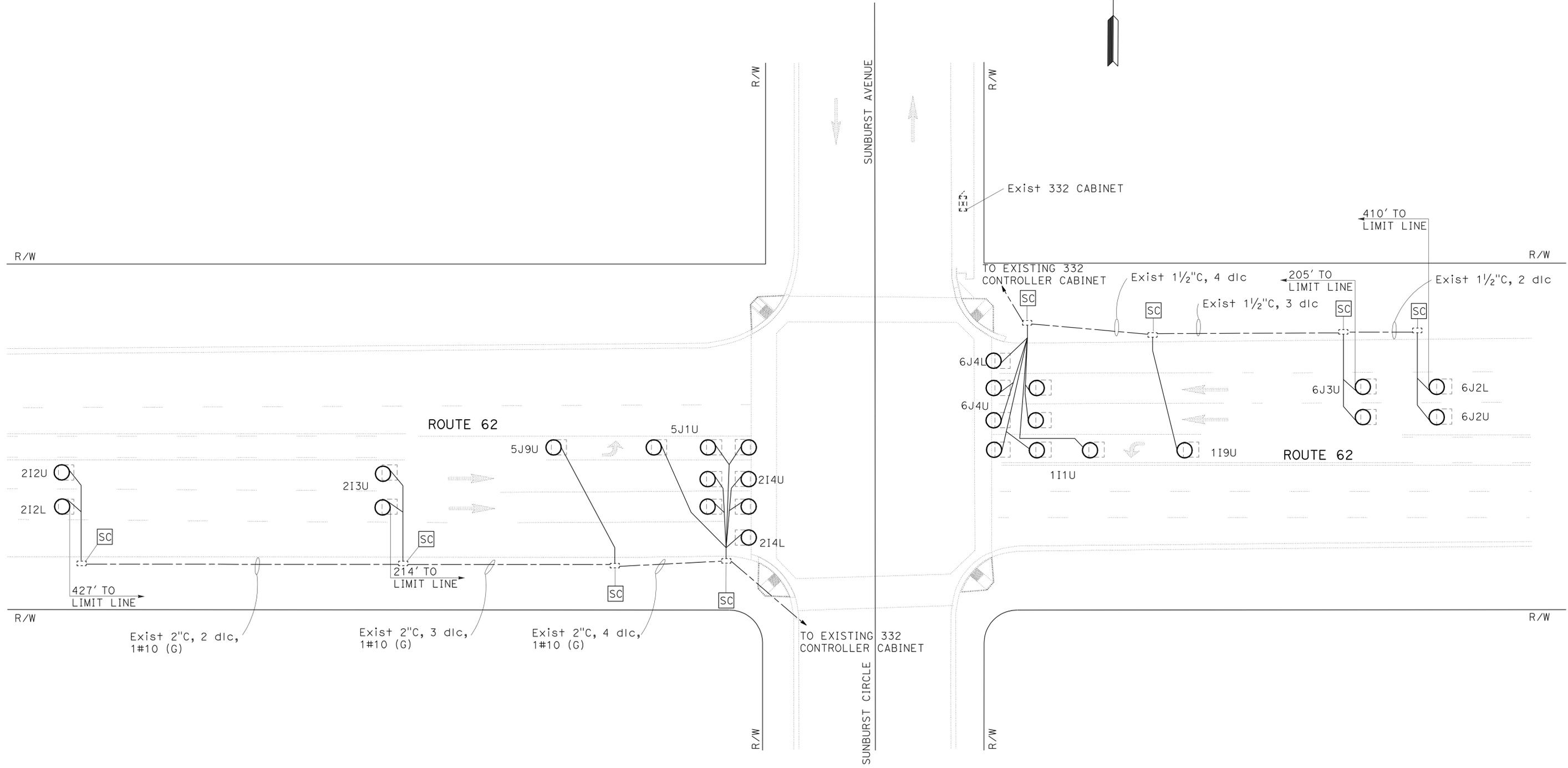
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	62	18.2/26.7, 66.0/79.5	9	17

Ferdinand De La Cruz 3-01-10
 REGISTERED ELECTRICAL ENGINEER DATE

3-22-10
 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.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN B
 FUNCTIONAL SUPERVISOR: FERDINAND DE LA CRUZ
 REVISIONS: REVISOR, DATE, REVISION
 LUIS PENALOZA, JR. / FERDINAND DE LA CRUZ
 CALCULATED/DESIGNED BY / CHECKED BY
 REVISOR, DATE, REVISION



INDUCTIVE LOOP DETECTORS

NO SCALE

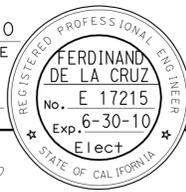
E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	62	18.2/26.7, 66.0/79.5	10	17

3-01-10
 REGISTERED ELECTRICAL ENGINEER DATE
 3-22-10
 PLANS APPROVAL DATE

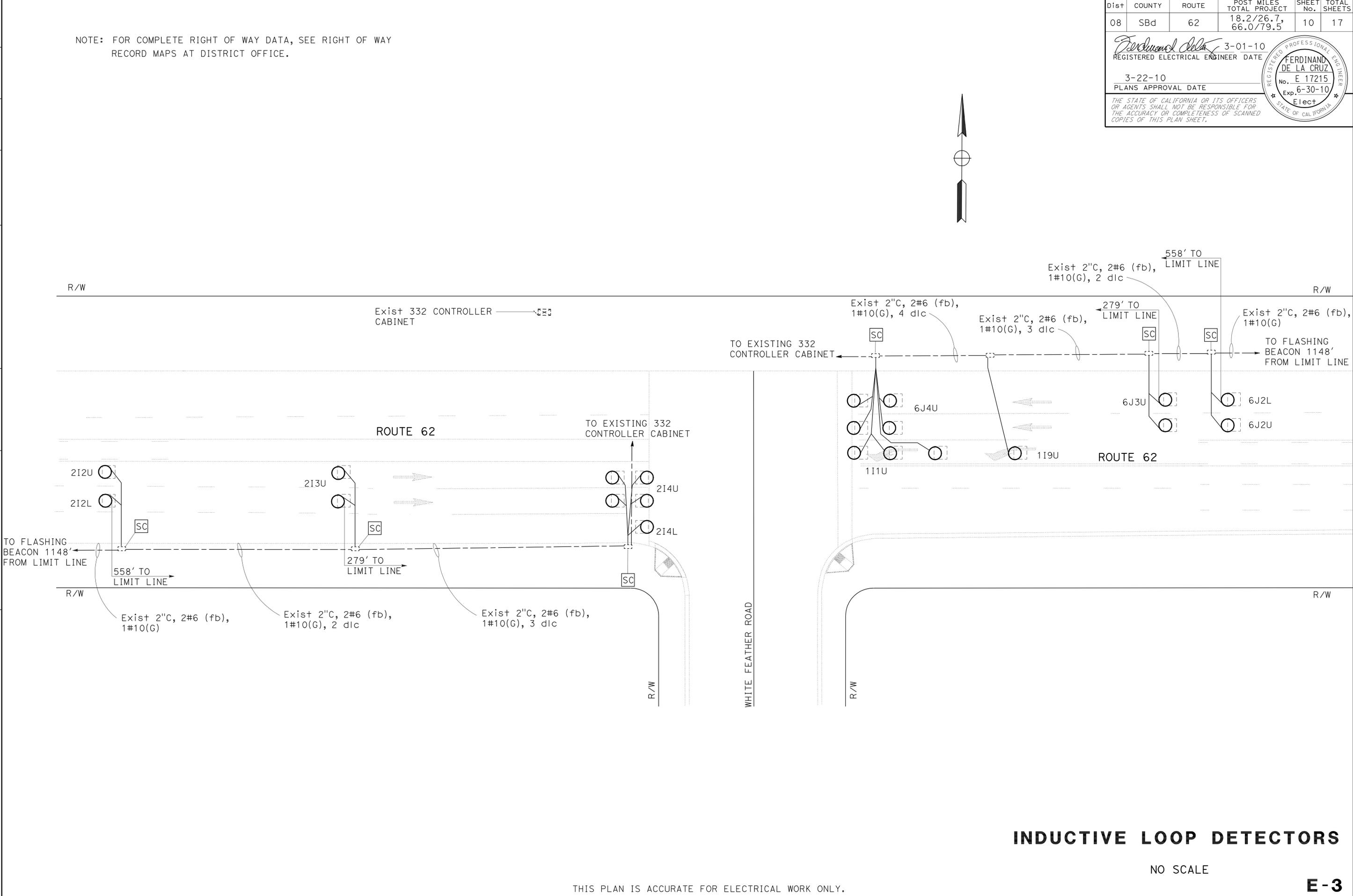
THE STATE OF CALIFORNIA OR ITS OFFICERS
 OR AGENTS SHALL NOT BE RESPONSIBLE FOR
 THE ACCURACY OR COMPLETENESS OF SCANNED
 COPIES OF THIS PLAN SHEET.



NOTE: FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN B
 FUNCTIONAL SUPERVISOR: FERDINAND DE LA CRUZ
 CALCULATED/DESIGNED BY: FERDINAND DE LA CRUZ
 CHECKED BY:
 REVISOR: LUIS PENALOZA, JR.
 DATE: FERDINAND DE LA CRUZ



INDUCTIVE LOOP DETECTORS

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

E-3

LAST REVISION: DATE PLOTTED => 25-MAR-2010
 03-01-10 TIME PLOTTED => 14:26

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	62	18.2/26.7, 66.0/79.5	11	17

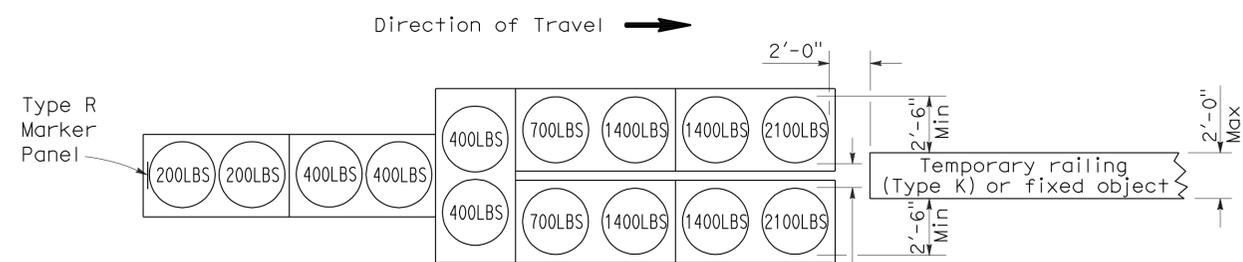
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

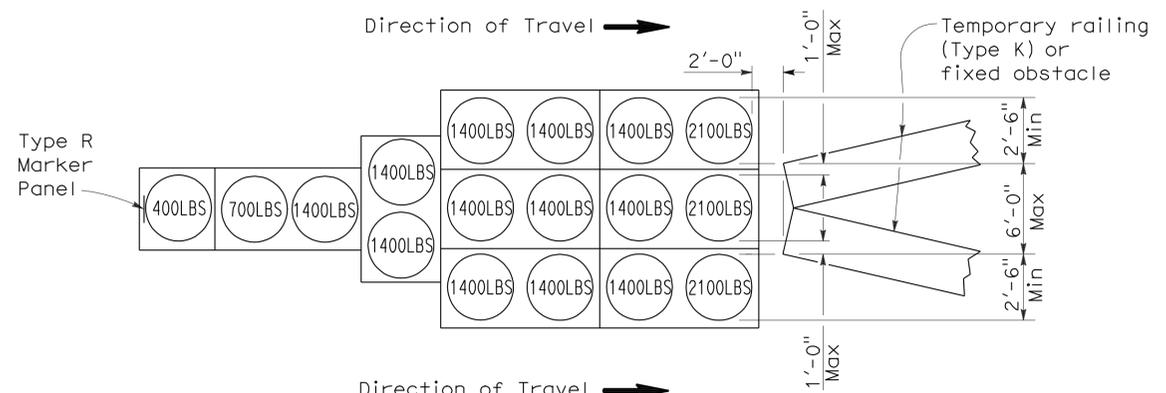
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 3-22-10



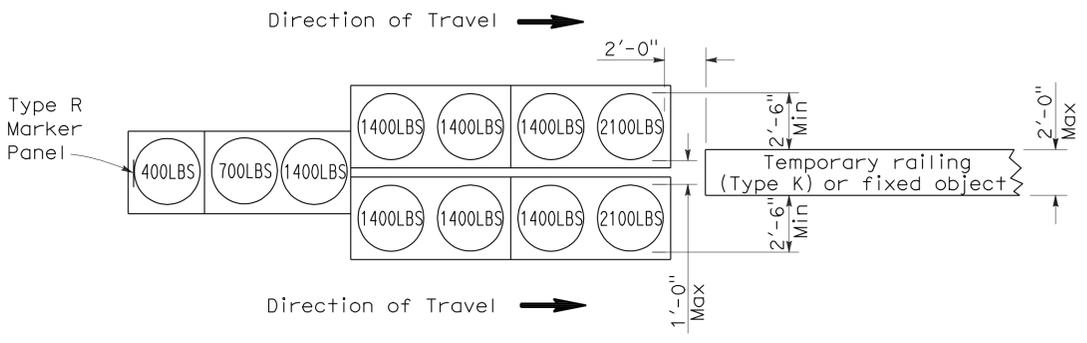
ARRAY 'TU14'

Approach speed 45 mph or more



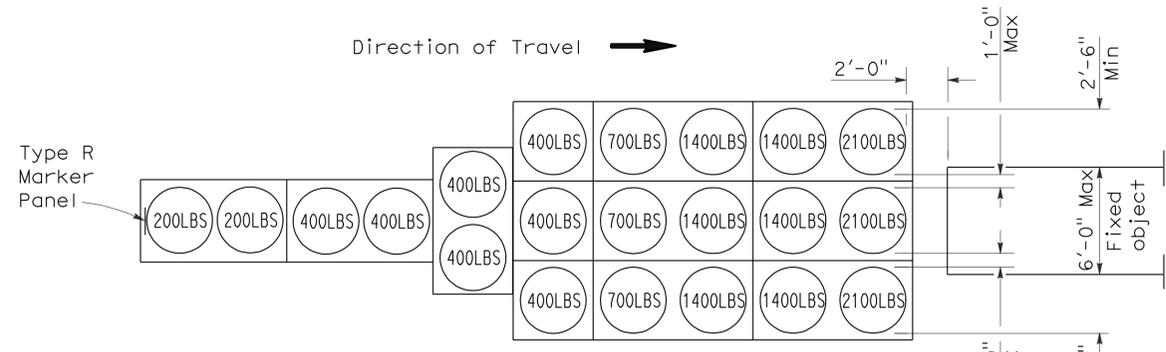
ARRAY 'TU17'

Approach speed less than 45 mph



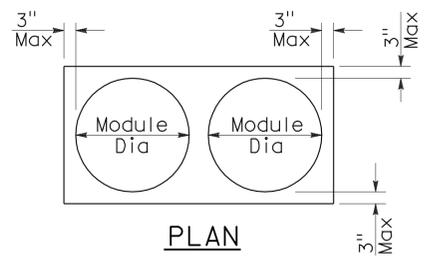
ARRAY 'TU11'

Approach speed less than 45 mph

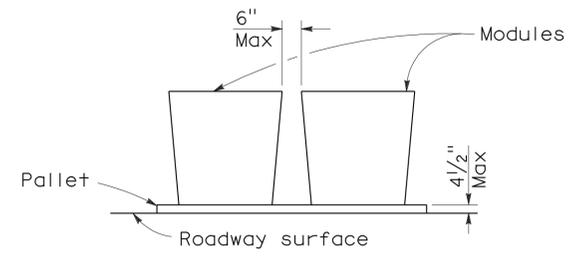


ARRAY 'TU21'

Approach speed 45 mph or more



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

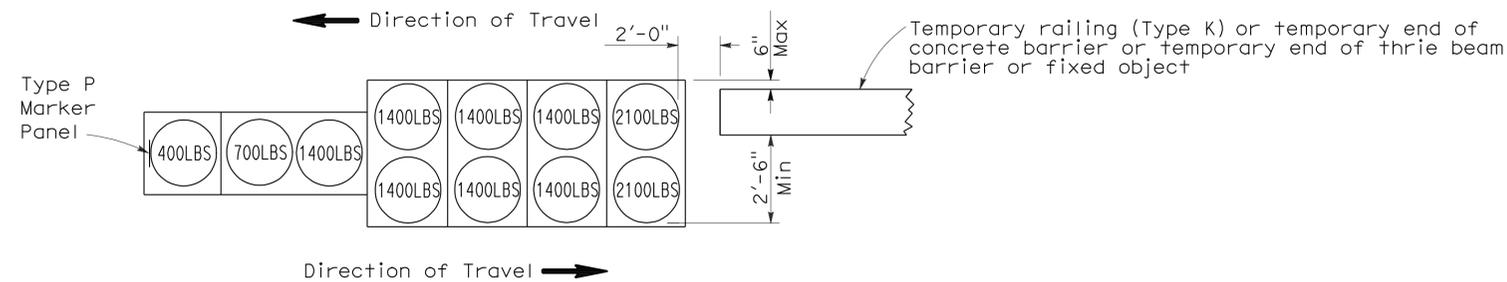
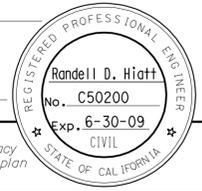
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	62	18.2/26.7, 66.0/79.5	12	17

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

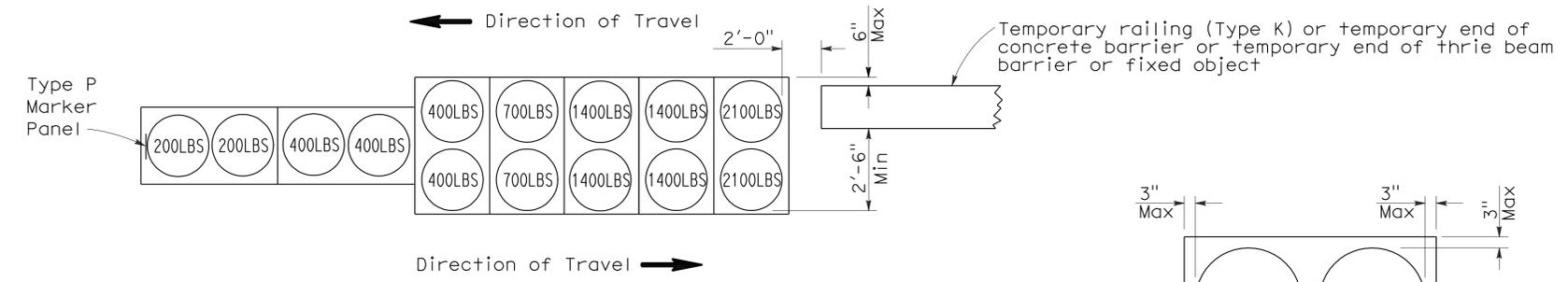
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 3-22-10



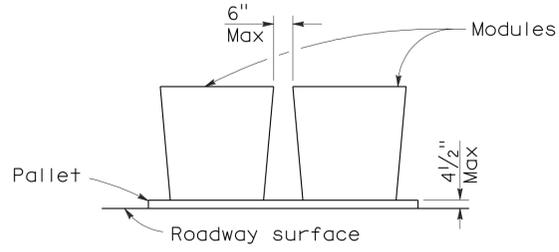
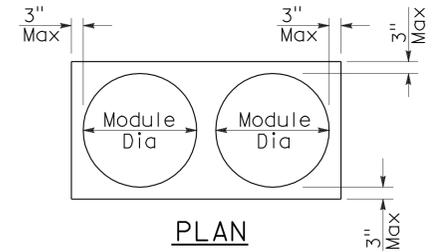
ARRAY 'TB11'

Approach speed less than 45 mph



ARRAY 'TB14'

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 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

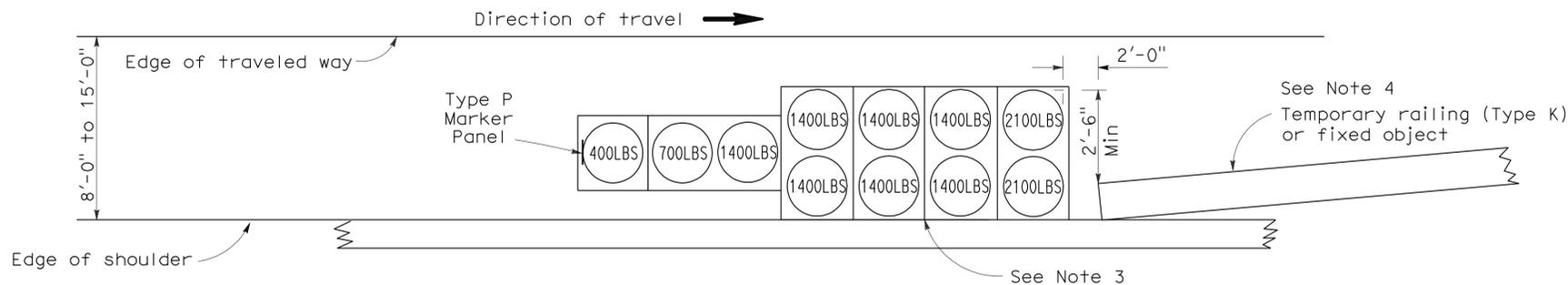
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	62	18.2/26.7, 66.0/79.5	13	17

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

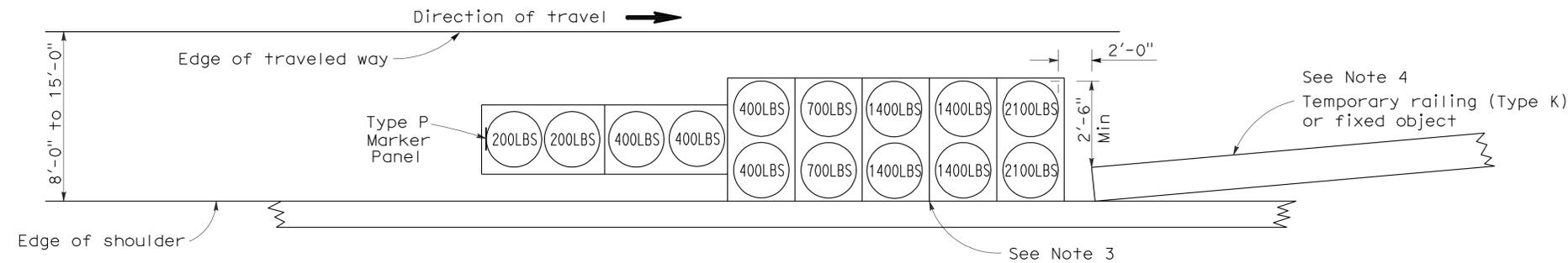
June 6, 2008
PLANS APPROVAL DATE

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.

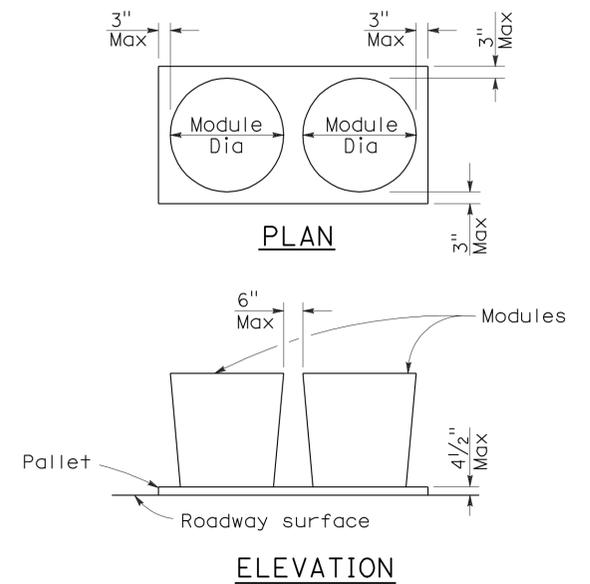
To accompany plans dated 3-22-10



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



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



CRASH CUSHION PALLET DETAIL
See Note 11

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.

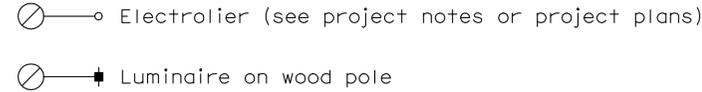
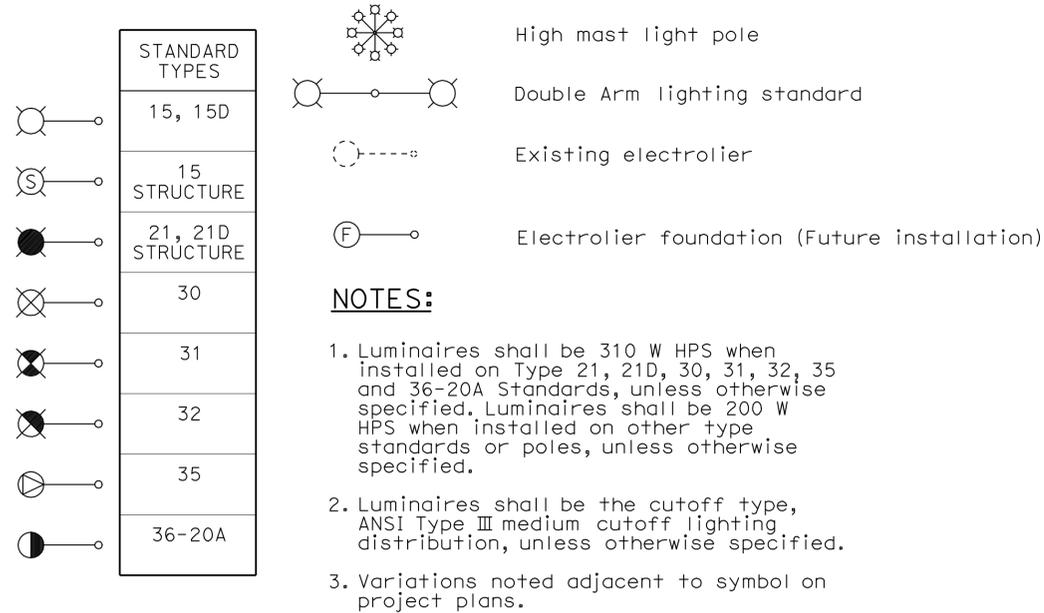
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**TEMPORARY CRASH CUSHION,
SAND FILLED
(SHOULDER INSTALLATIONS)**

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

ELECTROLIERS



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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	62	18.2/26.7, 66.0/79.5	14	17

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

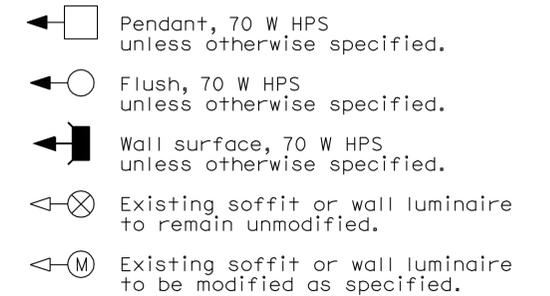
October 5, 2007
PLANS APPROVAL DATE

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

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

To accompany plans dated 3-22-10

SOFFIT AND WALL MOUNTED LUMINAIRES



NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

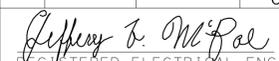
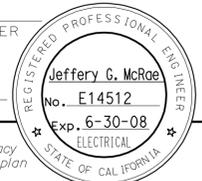
NO SCALE

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
08	SBd	62	18.2/26.7, 66.0/79.5	15	17


 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.

CONDUIT

PROPOSED	EXISTING	
		Lighting Conduit, unless otherwise indicated or noted
		Traffic signal conduit
		Communication conduit
		Telephone conduit
		Fire alarm conduit
		Fiber optic conduit
		Conduit termination 
		Conduit riser in/on structure or service pole

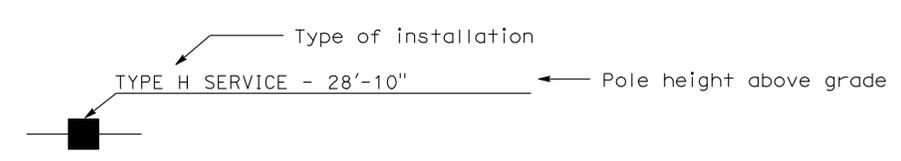
SIGNAL EQUIPMENT

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	
		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:

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

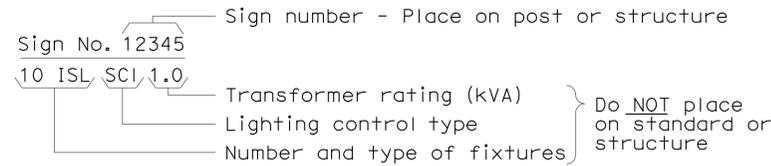
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1B

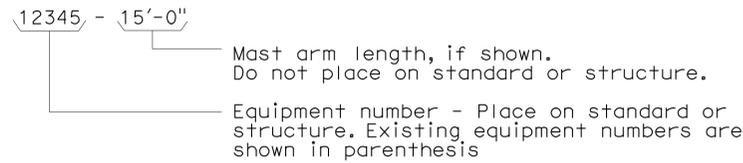
2006 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

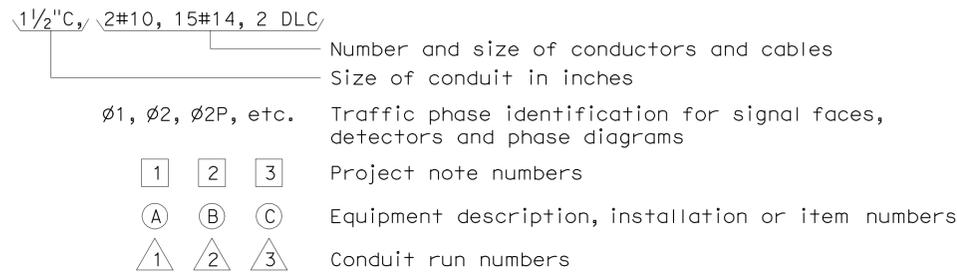
ILLUMINATED SIGN IDENTIFICATION NUMBER:



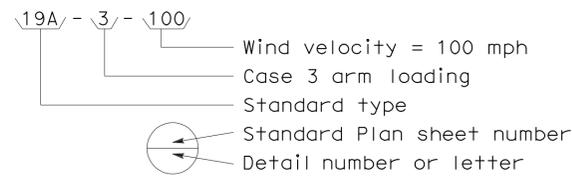
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



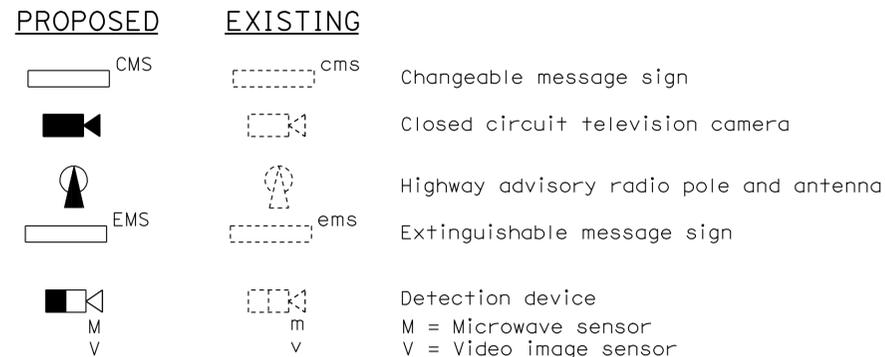
CONDUIT AND CONDUCTOR IDENTIFICATION:



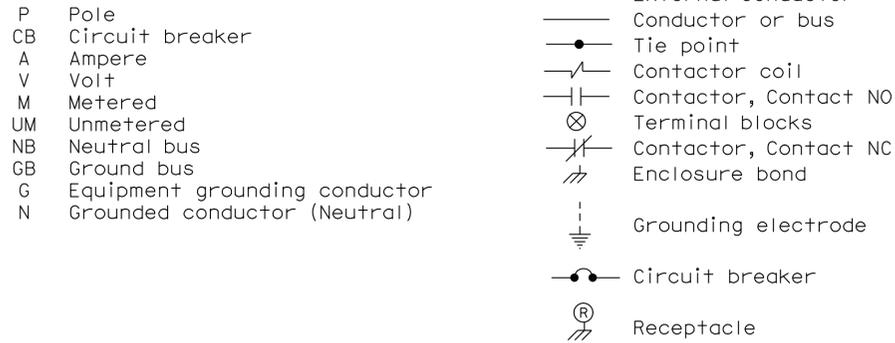
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



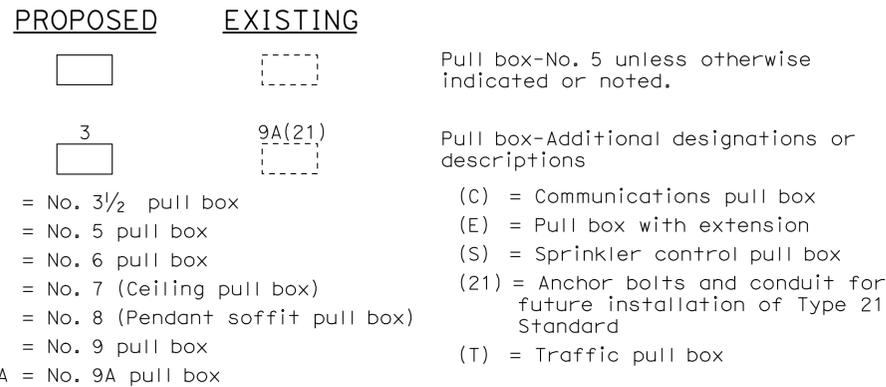
MISCELLANEOUS EQUIPMENT



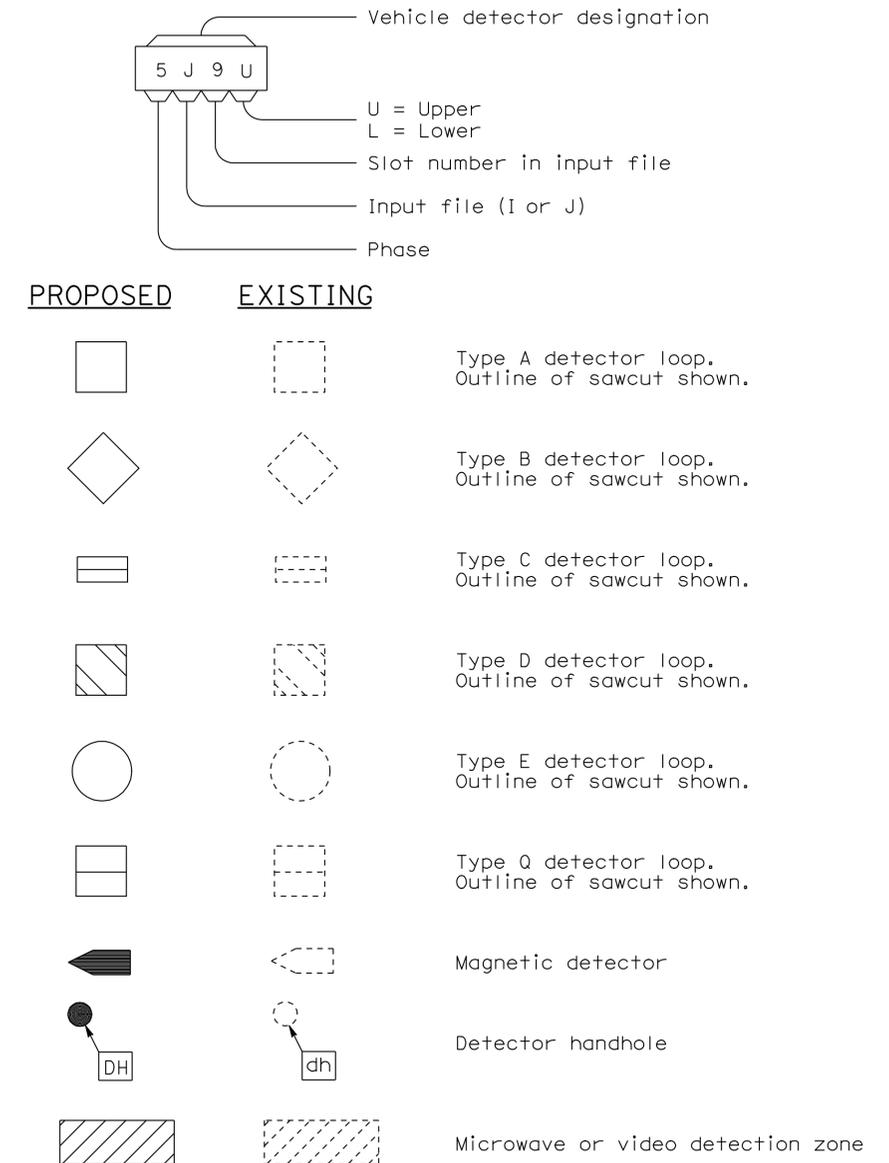
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(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
08	SBd	62	18.2/26.7, 66.0/79.5	17	17

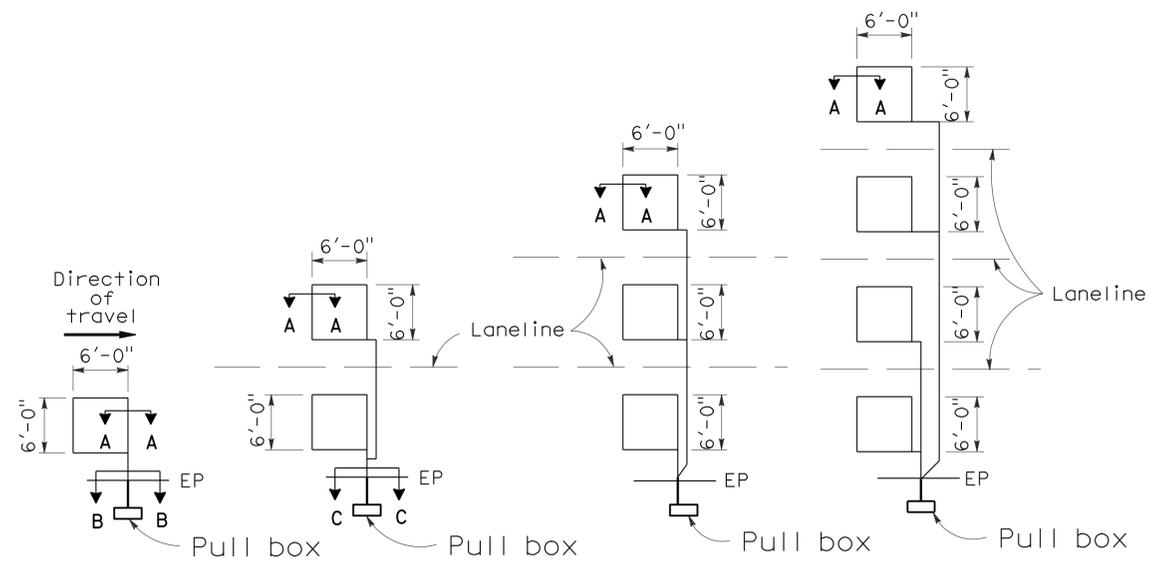
Registered Electrical Engineer
 Jeffrey G. McRae
 No. E14512
 Exp. 6-30-08
 STATE OF CALIFORNIA

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.

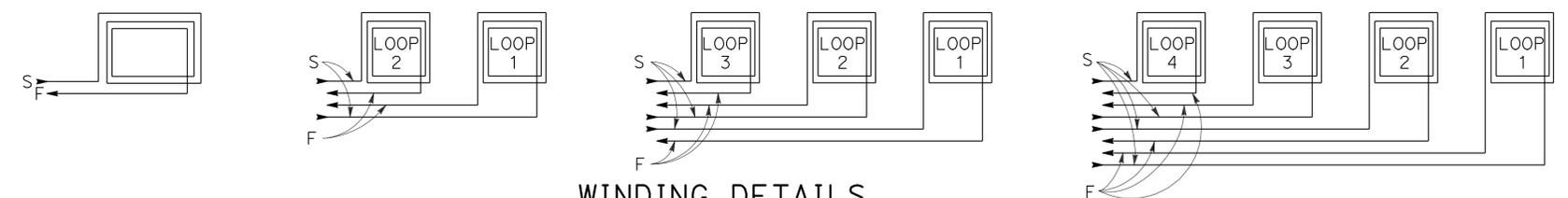
LOOP INSTALLATION PROCEDURE

- 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.



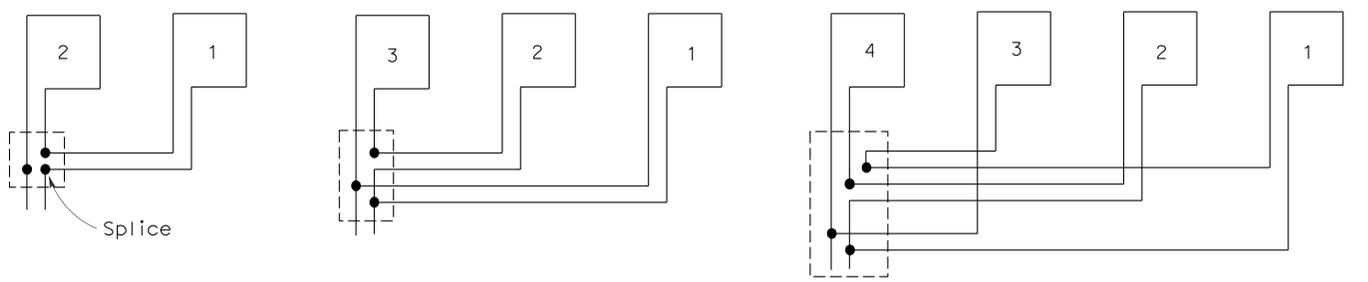
TYPE 1A INSTALLATION TYPE 2A INSTALLATION TYPE 3A INSTALLATION TYPE 4A INSTALLATION
SAWCUT DETAILS
 (Type A loop detector configurations illustrated)

- 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)



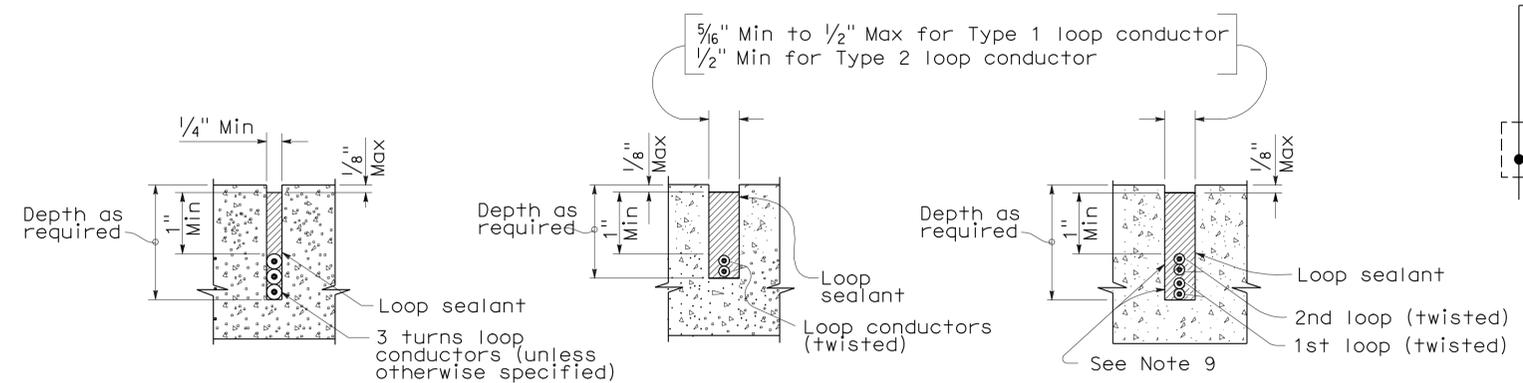
WINDING DETAILS

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.

2006 REVISED STANDARD PLAN RSP ES-5A