Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	1	20

INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2	TYPICAL CROSS SECTIONS
3-5	CONSTRUCTION DETAILS
6-7	CONSTRUCTION AREA SIGNS
8	PAVEMENT DELINEATION QUANTITIES
9-10	SUMMARY OF QUANTITIES
11-13	ELECTRICAL PLANS
14-20	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

ACSTP-P247(009)E

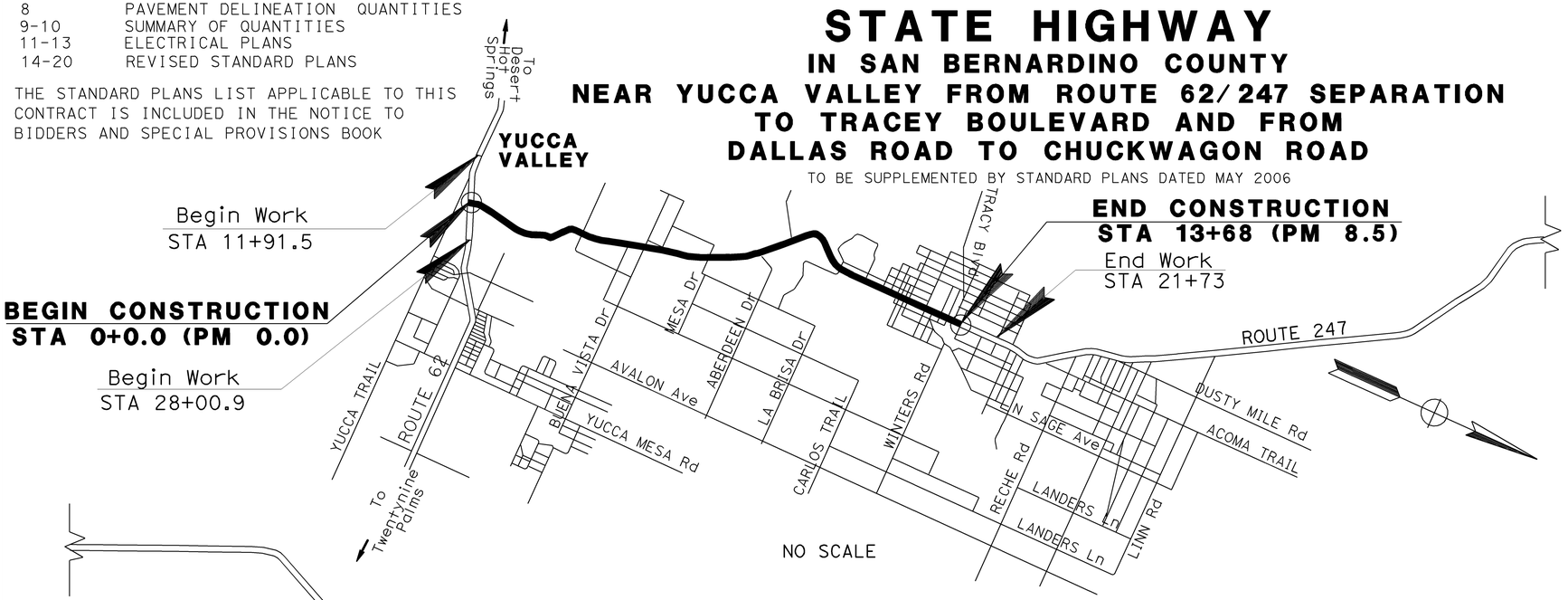
PROJECT PLANS FOR CONSTRUCTION ON

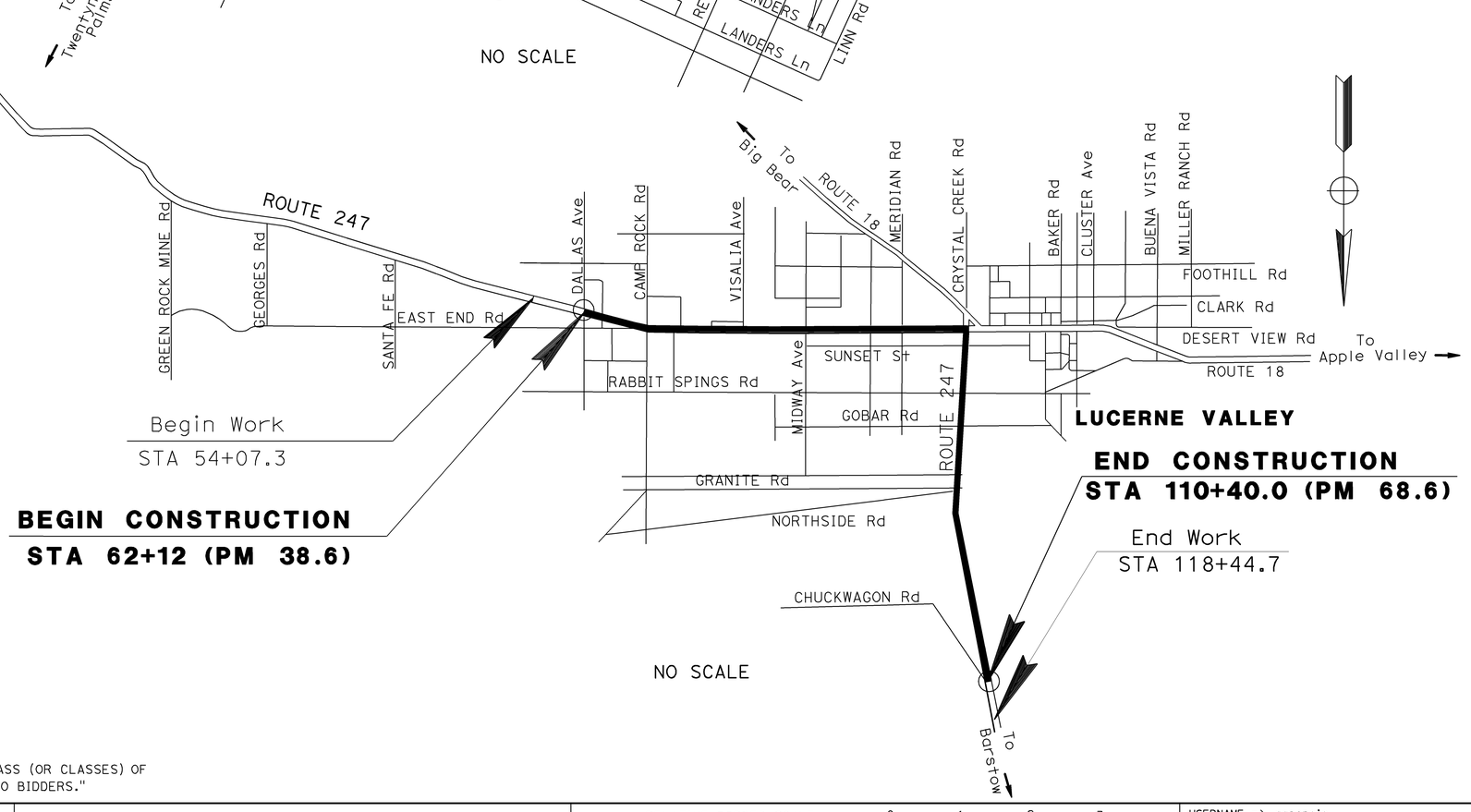
STATE HIGHWAY

IN SAN BERNARDINO COUNTY

NEAR YUCCA VALLEY FROM ROUTE 62/247 SEPARATION TO TRACEY BOULEVARD AND FROM DALLAS ROAD TO CHUCKWAGON ROAD

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006





Caltrans

PROJECT MANAGER: CATALINO PINING

DESIGN ENGINEER: MICHAEL P. RISTIC

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

02-11-10
PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER
JAY L GWIE
No. C-36509
Exp. 6/30/10
CIVIL
STATE OF CALIFORNIA

February 16, 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.

CONTRACT No. **08-0M8604**

LAST REVISION 02-11-10
DATE PLOTTED => 11-FEB-2010
TIME PLOTTED => 14:44

BORDER LAST REVISED 4/11/2008 | CALTRANS WEB SITE IS: HTTP//WWW.DOT.CA.GOV/ | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => aasencio DGN FILE => 80m860ab001.dgn | CU 08608 | EA 0M8601

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	2	20

02-11-10
REGISTERED CIVIL ENGINEER DATE

02-16-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JAY L. GWIE
No. C 36509
Exp 6/30/10
CIVIL
STATE OF CALIFORNIA

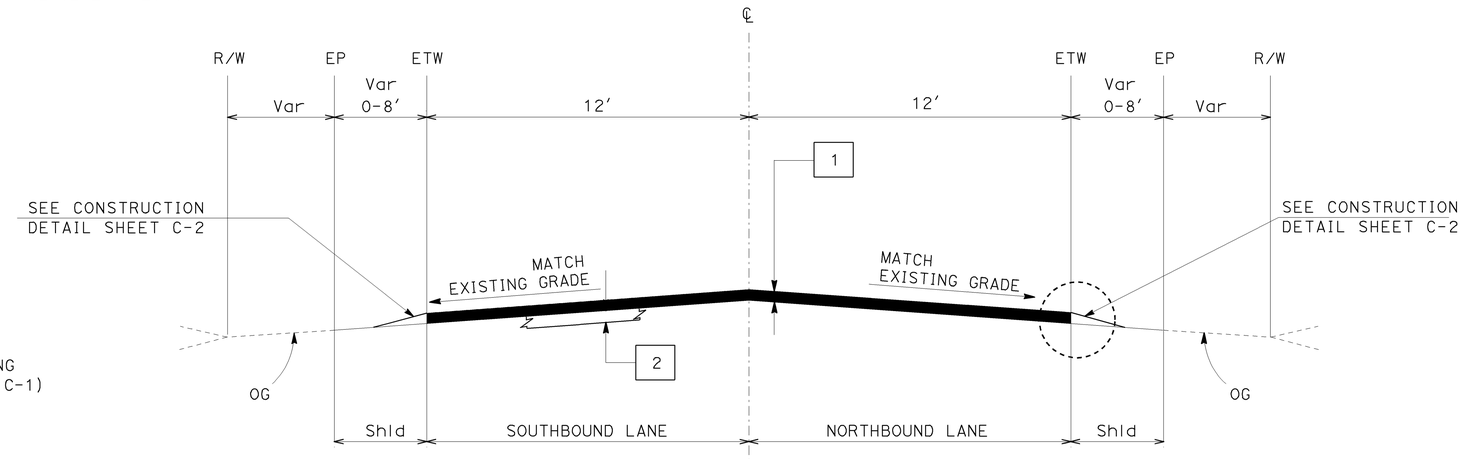
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

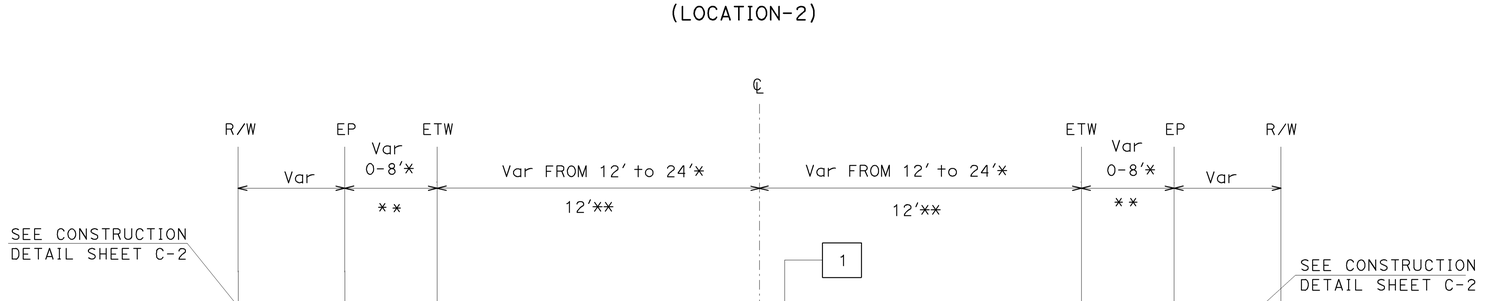
1. DIMENSIONS OF STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. EXACT LOCATIONS AND DIMENSIONS OF LOCALIZED DIG-OUTS SHALL BE DETERMINED BY THE ENGINEER.
4. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
5. EXACT LOCATION OF SURVEY MONUMENTS SHALL BE DETERMINED BY THE ENGINEER.

STRUCTURAL SECTION NOTES:

1	RUBBERIZED HMA (TYPE O) (0.10′ OVERLAY)
2	REPLACE ASPHALT CONCRETE SURFACING 0.4′ MAX (TYPE-A) (FOR DETAILS SEE C-1) (FOR LOCATION SEE Q-1)



ROUTE 247
FROM PM 38.6 TO PM 68.6
(LOCATION-2)



ROUTE 247
FROM PM 0.0 TO PM 0.5 *
FROM PM 0.5 TO PM 8.5 **
(LOCATION-1)

TYPICAL CROSS SECTIONS

NO SCALE

X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE DESIGN
FUNCTIONAL SUPERVISOR: MICHAEL P. RISTIC
CALCULATED-DESIGNED BY: JAY L. GWIE
CHECKED BY: MICHAEL RISTIC
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 11-FEB-2010
02-11-10 | TIME PLOTTED => 14:09

BORDER LAST REVISED 4/11/2008
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
USERNAME => gasencio
DGN FILE => 80m860ca001.dgn
CU 08608
EA 0M8601

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	3	20

REGISTERED CIVIL ENGINEER — 02-11-10 DATE

02-16-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JAY L. GWIE
No. C 36509
Exp 6-30-10
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. EXACT LIMITS SHALL BE DETERMINED BY THE ENGINEER.
2. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
3. EXACT LOCATIONS AND DIMENSIONS OF LOCALIZED DIG-OUTS SHALL BE DETERMINED BY THE ENGINEER.

LEGEND:

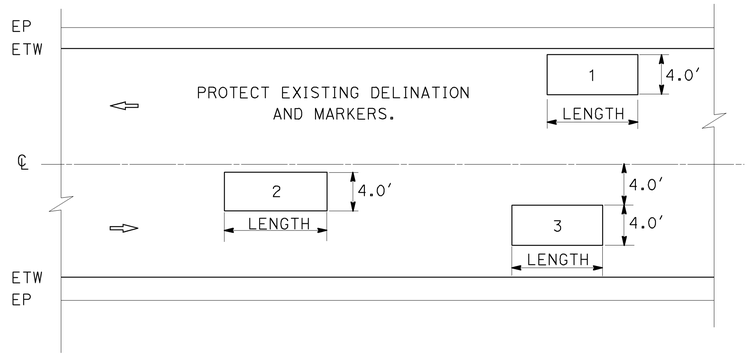
COLD PLANE AC PAVEMENT

LIMITS OF WORK

RHMA(TYPE O)

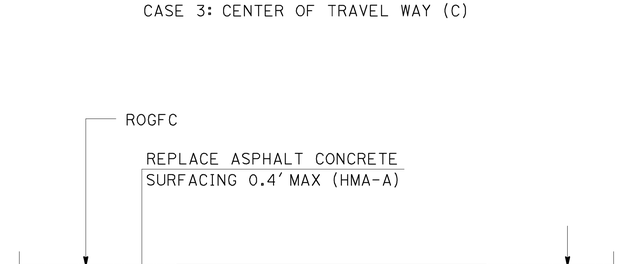
REPLACE ASPHALT CONCRETE SURFACING
0.4′ MAX (TYPE-A)(FOR DETAILS SEE C-2)
(FOR LOCATION SEE Q-1)

RHMA - RUBBERIZED HOTMIX ASPHALT



REPLACE ASPHALT SURFACING (LAYOUT)

CASE 1: RIGHT WHEEL TRACK (R)
CASE 2: LEFT WHEEL TRACK (L)
CASE 3: CENTER OF TRAVEL WAY (C)



REPLACE ASPHALT SURFACING (PROFILE)

FOR LOCATIONS AND DIMENSIONS
TO REPLACE ASPHALTH CONCRETE SURFACING
SEE SHEET Q-1

CONSTRUCTION DETAILS

NO SCALE

C-1

REVISED BY | DATE REVISED
JAY L. GWIE | MICHAEL RISTIC
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: MICHAEL P. RISTIC
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE DESIGN

LAST REVISION | DATE PLOTTED => 11-FEB-2010
02-11-10 | TIME PLOTTED => 14:09

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => gasencio | DGN FILE => 80m860ga001.dgn | CU 08608 | EA 0M8601

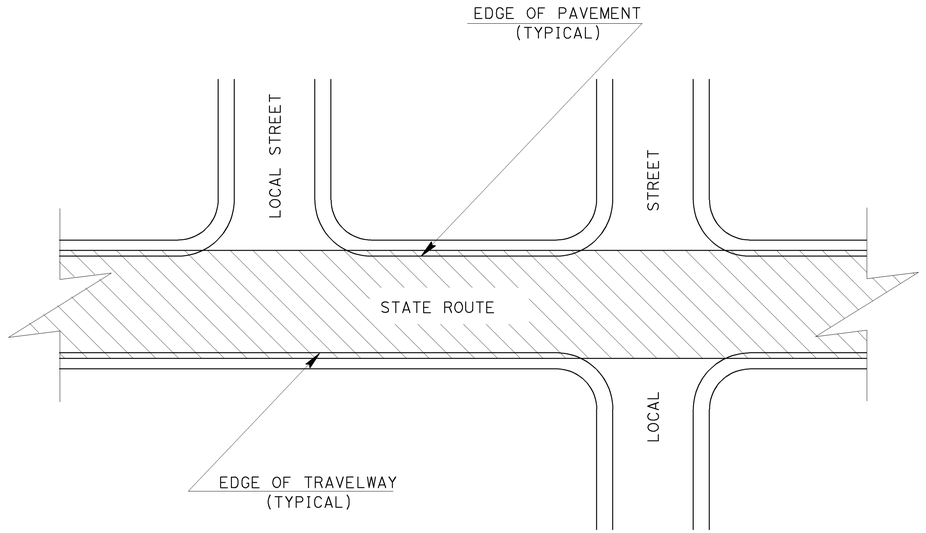
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	4	20

02-11-10
REGISTERED CIVIL ENGINEER DATE

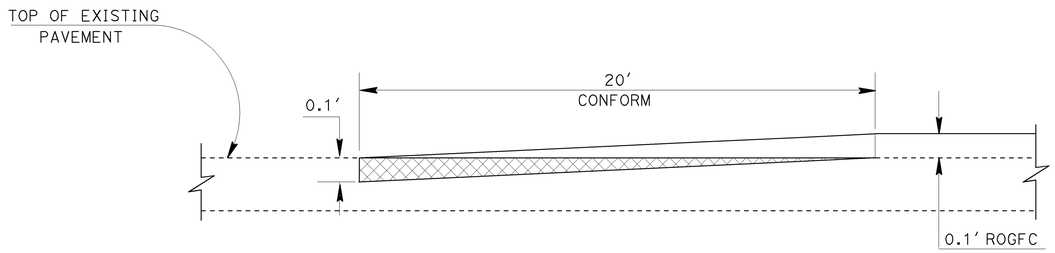
02-16-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JAY L. GWIE
No. C 36509
Exp 6-30-10
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.

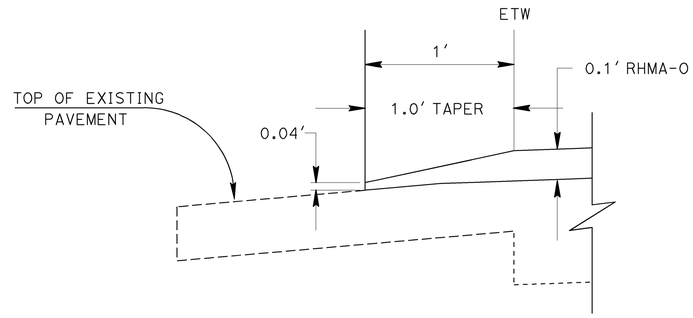


LIMITS OF WORK



PAVEMENT CONFORM (LONGITUDINAL)

BEGIN AND END OF CONSTRUCTION
(TYPICAL)



PAVEMENT CONFORM (TRANSVERSAL)

EDGE OF TRAVELWAY
(TYPICAL)

CONSTRUCTION DETAILS

NO SCALE

C-2

CALCULATED-DESIGNED BY: JAY L. GWIE
CHECKED BY: MICHAEL RISTIC
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR: MICHAEL P. RISTIC
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE DESIGN

LAST REVISION DATE PLOTTED => 11-FEB-2010
02-11-10 TIME PLOTTED => 14:09

BORDER LAST REVISED 4/11/2008
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
USERNAME => aasencio
DGN FILE => 80m860ga002.dgn
CU 08608
EA 0M8601

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	5	20

Jay L Gwie 02-11-10
REGISTERED CIVIL ENGINEER DATE

02-16-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JAY L. GWIE
No. C 36509
Exp 6-30-10
CIVIL
STATE OF CALIFORNIA

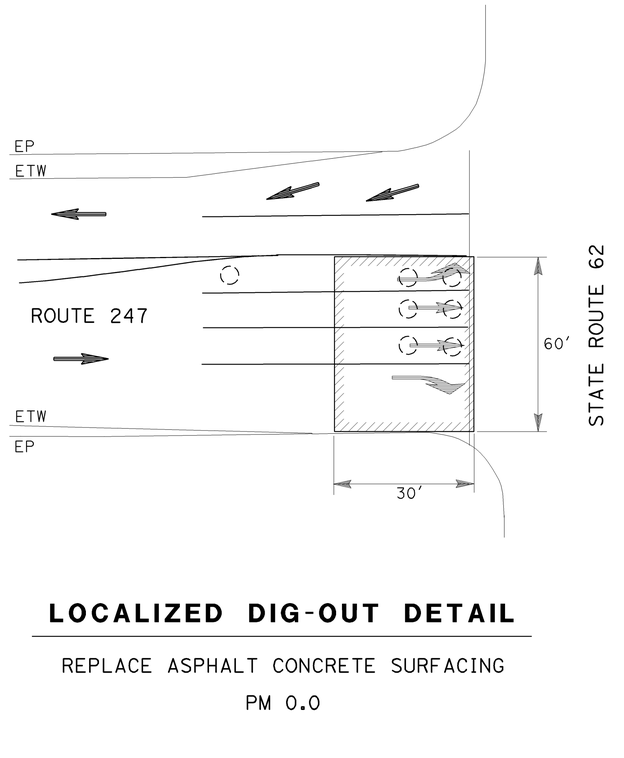
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

LEGEND:

REPLACE AC SURFACING

LOCALIZED DIG-OUT DETAIL

REPLACE ASPHALT CONCRETE SURFACING
PM 0.5 TO PM 8.5
PM 38.6 TO PM 68.6



LOCALIZED DIG-OUT DETAIL

REPLACE ASPHALT CONCRETE SURFACING
PM 0.0

CONSTRUCTION DETAILS

NO SCALE

C-3

CALCULATED-DESIGNED BY: JAY L. GWIE
CHECKED BY: MICHAEL RISTIC
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR: MICHAEL P. RISTIC
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE DESIGN

LAST REVISION 02-11-10
DATE PLOTTED => 11-FEB-2010
TIME PLOTTED => 14:09

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
USERNAME => aasencio
DGN FILE => 80m860ga003.dgn
CU 08608
EA 0M8601

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	8	20

Thanh Trinh 02-11-10
REGISTERED CIVIL ENGINEER DATE

02-16-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
T. TRINH
No. C41189
Exp. 3/31/11
CIVIL
STATE OF CALIFORNIA

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PAVEMENT DELINEATION QUANTITIES

MARKING SYMBOLS	REMOVE THERMOPLASTIC PAVEMENT MARKING	REMOVE YELLOW THERMOPLASTIC PAVEMENT MARKING	THERMOPLASTIC PAVEMENT MARKING	REMOVE THERMOPLASTIC TRAFFIC STRIPE (WHITE)	REMOVE PAVEMENT MARKER (EA)	PAVEMENT MARKER (RETROREFLECTIVE RECESSED) (EA)		PAVEMENT MARKER (RETROREFLECTIVE) (EA)			THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) LF												REMARKS
	SQFT	SQFT	SQFT	LF DETAIL 38A		TYPE D (YELLOW)	TYPE H (YELLOW)	TYPE D (YELLOW)	TYPE G (CLEAR)	TYPE H (YELLOW)	DETAIL 5	DETAIL 6	DETAIL 11	DETAIL 12	DETAIL 18	DETAIL 19	DETAIL 21	DETAIL 22	DETAIL 27B	DETAIL 28	DETAIL 29	DETAIL 31	DETAIL 38A	
				2375					85				1850	4013					406560				2375	ON NB & SB
						1485	381	2457		368	13068	117982			11906	16289	25766	11933		3590	2429	2534		ON CENTER LINE; INCLUDED ADDITIONAL RECESSED PAVEMENT MARKERS FROM PM 54.0 TO PM 68.0
					4776																			ON NB, SB & CENTERLINE
TYPE IV ARROW	390		390																					
TYPE VI ARROW	126		126																					
LIMIT LINE (1'-0" White Line)	250		250																					
LIMIT LINE (1'-0" Yellow Line)		100	100																					
STOP	198		198																					
SIGNAL	64		64																					
AHEAD	217		217																					
SLOW	46		46																					
SCHOOL	70		70																					
XING	42		42																					
SUBTOTAL	1403	100	1503	2375	4776	1485	381	2457	85	368	13068	117982	1850	4013	11906	16289	25766	11933	406560	3590	2429	2534	2375	
TOTAL	1403	100	1503	4750**	4776	1866		2910			620296													

* CALCULATIONS ADJUSTED FOR GAPS IN STRIPE OR DOUBLE STRIPE

** DOUBLED AS BASED ON 4" STRIPE WIDTH

PAVEMENT DELINEATION QUANTITIES

PDQ-1

THIS PLAN IS ACCURATE FOR PAVEMENT DELINEATION QUANTITIES ONLY.

CALCULATED-DESIGNED BY KN
CHECKED BY TT
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR THANH TRINH
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION DATE PLOTTED => 11-FEB-2010
02-11-10 TIME PLOTTED => 14:09

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
USERNAME => aasencio
DGN FILE => 80m860nc001.dgn
CU 08380
EA 0M8601

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	9	20

Jay L. Gwie 02-11-10
REGISTERED CIVIL ENGINEER DATE

02-16-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JAY L.GWIE
No. C 36509
Exp 6-30-10
CIVIL
STATE OF CALIFORNIA

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REPLACE ASPHALT CONCRETE SURFACING

DIG-OUT NUMBER	PM	DIRECTION	LANE #	WHEEL-TRACK			LENGTH (FT)	DEPTH (FT)	AREA (SQYD)	VOLUME (CYD)
				LEFT	CENTER	RIGHT				
1	0.0	S/B	1	L	C	R	30′	0.4′	40.0	5.3
2	0.0	S/B	2	L	C	R	30′	0.4′	40.0	5.3
3	0.3	S/B	1	L	C	R	500′	0.4′	666.7	88.9
4	0.3	S/B	2	L	C	R	500′	0.4′	666.7	88.9
5	0.0	N/B	1	L	C	R	500′	0.4′	666.7	88.9
6	0.0	N/B	2	L	C	R	500′	0.4′	666.7	88.9
7	0.5	S/B	1	L	C	R	500′	0.4′	666.7	88.9
8	0.5	S/B	2	L	C	R	500′	0.4′	666.7	88.9
9	0.5	N/B	1	L	C	R	500′	0.4′	666.7	88.9
10	0.75	N/B	2	L	C	R	500′	0.4′	666.7	88.9
11	1.0	N/B	1	L	C	R	750′	0.4′	1000.0	133.3
12	1.0	S/B	1	L	C	R	750′	0.4′	1000.0	133.3
13	1.5	N/B	1	L		R	500′	0.4′	444.4	59.3
14	1.5	S/B	1	L		R	500′	0.4′	444.4	59.3
15	8.0	N/B	1	L		R	750′	0.4′	666.7	88.9
16	8.0	S/B	1	L		R	750′	0.4′	666.7	88.9
17	8.5	N/B	1	L		R	500′	0.4′	444.4	59.3
18	8.5	S/B	1	L		R	500′	0.4′	444.4	59.3
									SUBTOTAL-1 =	1403.3
19	44.3	S/B	1	L		R	200′	0.4′	177.8	23.7
20	44.3	N/B	1	L		R	200′	0.4′	177.8	23.7
21	45.0	S/B	1	L		R	200′	0.4′	177.8	23.7
22	45.0	N/B	1	L		R	200′	0.4′	177.8	23.7
23	49.0	N/B	1			R	200′	0.4′	88.9	11.9
24	52.2	N/B	1	L	C	R	100′	0.4′	133.3	17.8
25	55.3	N/B	1	L	C	R	200′	0.4′	266.7	35.6
26	56.2	N/B	1	L	C	R	100′	0.4′	133.3	17.8
27	57.7	N/B	1	L		R	1000′	0.4′	888.9	118.5
28	58.7	N/B	1	L		R	1000′	0.4′	888.9	118.5
29	60.2	S/B	1			R	100′	0.4′	44.4	17.8
30	60.5	N/B	1		C	R	100′	0.4′	88.9	5.9
31	61.5	N/B	1		C	R	100′	0.4′	88.9	11.9
									SUBTOTAL-2 =	444.4
			TOTAL = (SUBTOTAL-1 + SUBTOTAL-2) =							1,850

SUMMARY OF QUANTITIES

NO SCALE **Q-1**

REVISED BY	DATE REVISED
MINLUNG HO	MICHAEL RISTIC
CALCULATED-DESIGNED BY	CHECKED BY
FUNCTIONAL SUPERVISOR	MICHAEL P. RISTIC

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE DESIGN

LAST REVISION | DATE PLOTTED => 11-FEB-2010
02-11-10 | TIME PLOTTED => 14:09

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => aasencio | DGN FILE => 80m860pa001.dgn | CU 08608 | EA 0M8601

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	10	20

REGISTERED CIVIL ENGINEER — 02-11-10 DATE

02-16-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JAY L GWIE
No. C 36509
Exp. 6-30-10
CIVIL
STATE OF CALIFORNIA

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

PAVEMENT QUANTITIES

POSTMILE	TOTAL LENGTH	TOTAL WIDTH	TOTAL AREA	RHMA (TYPE O) OVERLAY (0.10')	TACK COAT (0.05 GALS/SQYD)
	FT	FT	SQYD	(TONS)	(TONS)
PM 0.0/0.5	2,640	26x2	15,253	988	3.18
PM 0.5/8.5	42,240	14x2	13,141	8,516	27.38
PM 38.6/68.6	158,400	14x2	492,800	31,933	102.67
TOTAL	203,280		521,467	41,437	133.00

FOR REPLACE A.C SURFACE LOCATION SEE SHEET Q-1

COLD PLANE A.C QUANTITIES AT 5 (five) LOCATIONS

POSTMILE	TOTAL LENGTH	TOTAL WIDTH	TOTAL AREA
	FT	FT	SQYD
PM 0.0	10	64	71
PM 8.5	10	40	44
PM 38.6	10	40	44
PM 44.6	10	40	44
PM 68.6	10	40	44
TOTAL COLD PLANE A.C AREA =			249

SUMMARY OF QUANTITIES

NO SCALE

Q-2

MINLUNG HO — CALCULATED-DESIGNED BY
MICHAEL RISTIC — CHECKED BY
REVISED BY
DATE REVISED
MICHAEL P. RISTIC — FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE DESIGN

LAST REVISION | DATE PLOTTED => 11-FEB-2010
02-11-10 | TIME PLOTTED => 14:09

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => gasencio
DGN FILE => 80m860pa002.dgn

CU 08608

EA 0M8601

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	11	20

Katherine Dinh 02-11-10
REGISTERED CIVIL ENGINEER DATE

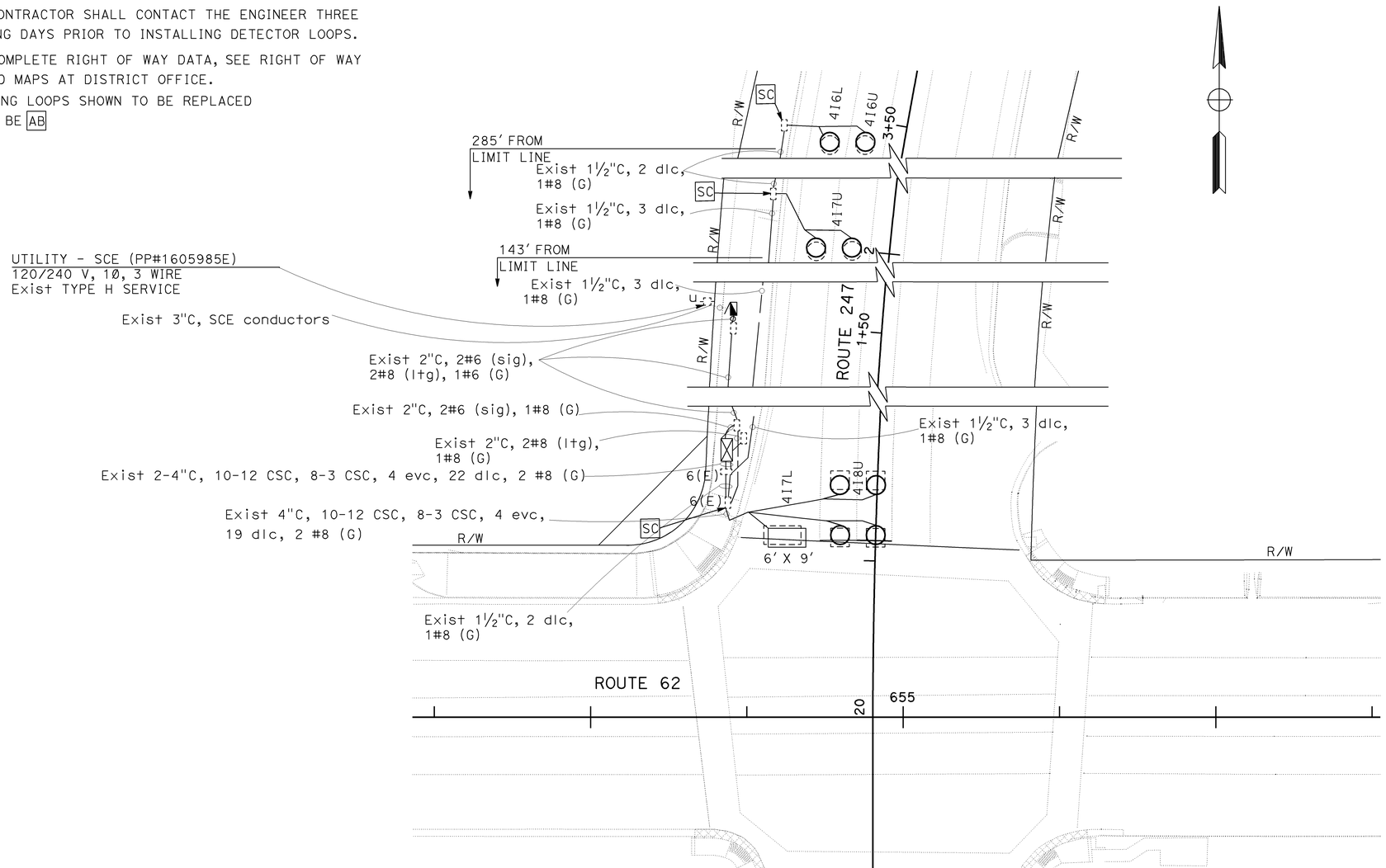
02-16-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — KATHERINE DINH — No. E17157 — 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.

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

1. THE CONTRACTOR SHALL CONTACT THE ENGINEER THREE WORKING DAYS PRIOR TO INSTALLING DETECTOR LOOPS.
2. FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
3. EXISTING LOOPS SHOWN TO BE REPLACED SHALL BE AB



INDUCTIVE LOOP DETECTOR

SCALE 1"=20'

E-1

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN B

FUNCTIONAL SUPERVISOR: FERDINAND DE LA CRUZ
CALCULATED-DESIGNED BY: LUIS PENALOZA JR
CHECKED BY: KATHERINE DINH
REVISED BY: LPJ
DATE REVISED: 06-29-09

LAST REVISION 02-11-10 | DATE PLOTTED => 11-FEB-2010 | TIME PLOTTED => 14:09

BORDER LAST REVISED 4/11/2008
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
USERNAME => aasencio
DGN FILE => 80m860ua001.dgn
CU 08396
EA OM8601

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	12	20

Katherine Dinh 02-11-10
REGISTERED CIVIL ENGINEER DATE

02-16-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
KATHERINE DINH
No. E17157
Exp 9-30-11
CIVIL
STATE OF CALIFORNIA

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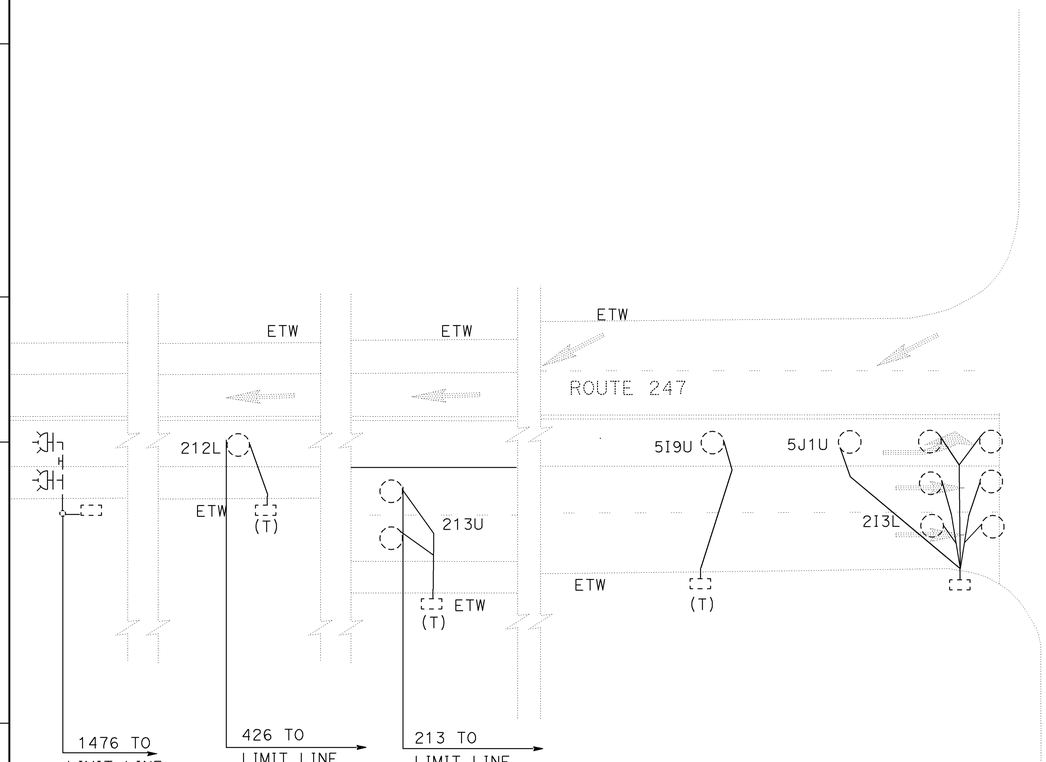
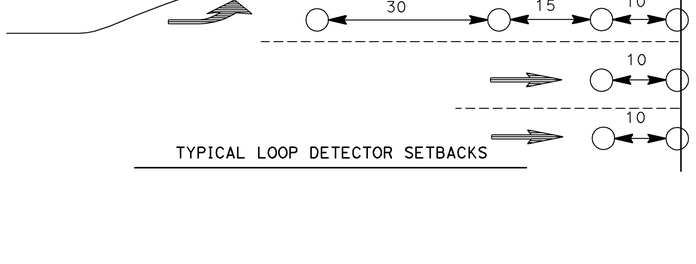
GENERAL NOTE:THIS SHEET ONLY

1. CONTRACTOR SHALL LOCATE ALL INDUCTIVE LOOPS DETECTORS PRIOR TO SEAL COAT.

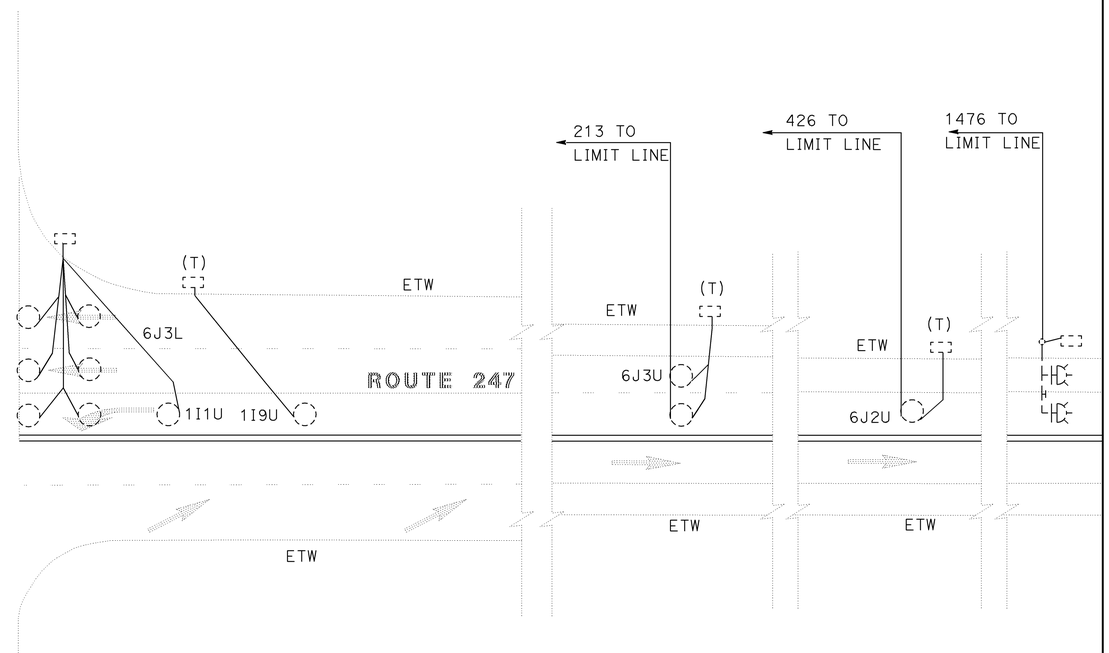




TYPICAL LOOP DETECTOR SETBACKS

SKYLINE RANCH ROAD

BUENA VISTA DRIVE



INDUCTIVE LOOP DETECTOR

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY

NO SCALE

E-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN B
FUNCTIONAL SUPERVISOR: FERDINAND DE LA CRUZ
CALCULATED-DESIGNED BY: LUIS PENALOZA JR
CHECKED BY: KATHERINE DINH
REVISED BY: LPJ
DATE REVISED: 06-29-09

LAST REVISION DATE PLOTTED => 11-FEB-2010
TIME PLOTTED => 14:09
02-11-10

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => aasencio
DGN FILE => 80m860ua002.dgn

CU 08396

EA 0M8601

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	13	20

Katherine Dinh 02-11-10
REGISTERED CIVIL ENGINEER DATE

02-16-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
KATHERINE DINH
No. E17157
Exp 9-30-09
CIVIL
STATE OF CALIFORNIA

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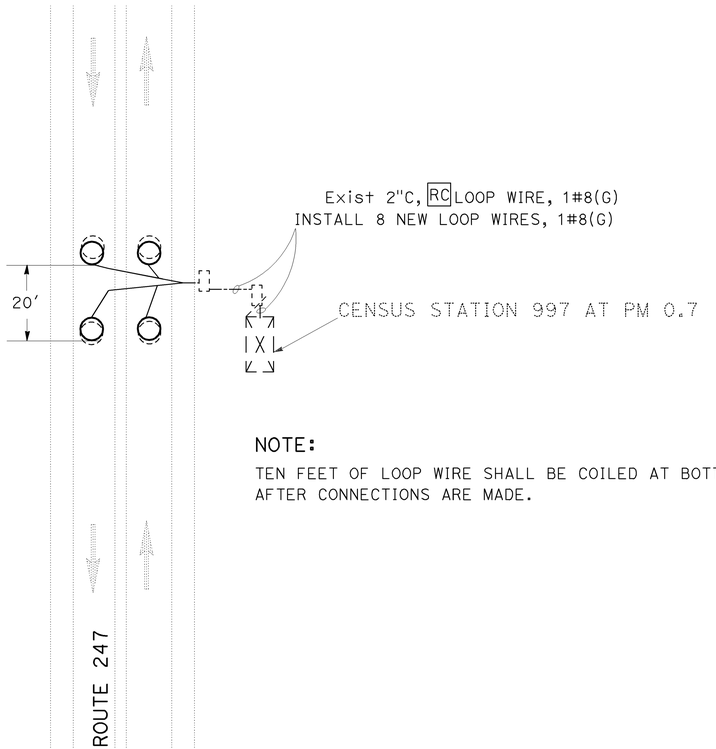

NOTE:

TEN FEET OF LOOP WIRE SHALL BE COILED AT BOTTOM OF CENSUS CABINET AFTER CONNECTIONS ARE MADE.

INDUCTIVE LOOP DETECTOR

NO SCALE

E-3

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

LAST REVISION 02-11-10 | DATE PLOTTED => 11-FEB-2010 | TIME PLOTTED => 14:09

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ELECTRICAL DESIGN B

CALCULATED-DESIGNED BY	CHECKED BY	FUNCTIONAL SUPERVISOR	REVISED BY	DATE REVISED
LUIS PENALOZA JR	KATHERINE DINH	FERDINAND DE LA CRUZ	LPJ	06-29-09

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => aasencio | DGN FILE => 80m860ua003.dgn | CU 08396 | EA 0M8601

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	14	20

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

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

October 5, 2007
PLANS APPROVAL DATE

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To accompany plans dated _____

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,
MAS-4B	mas-4B	side attachment - 4 signal section
MAS-4C	mas-4C	
MAS-5A	mas-5A	Mast arm mounting vehicle signal faces,
MAS-5B	mas-5B	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

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

7-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	15	20

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

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

October 5, 2007
PLANS APPROVAL DATE

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To accompany plans dated 02-16-10

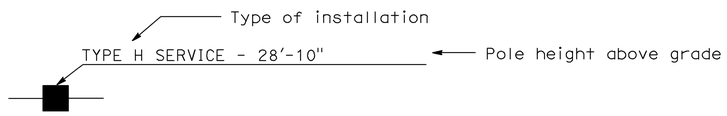
CONDUIT

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



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
08	SBd	247	0.0/8.5, 38.6/68.6	16	20

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

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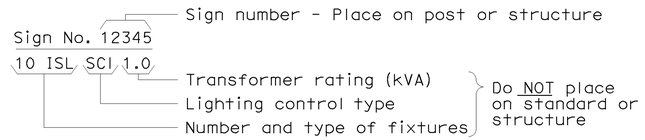
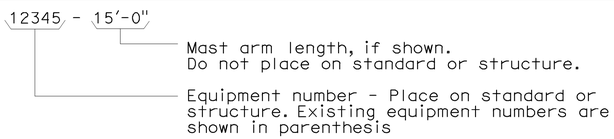
To accompany plans dated 02-16-10

EQUIPMENT IDENTIFICATION

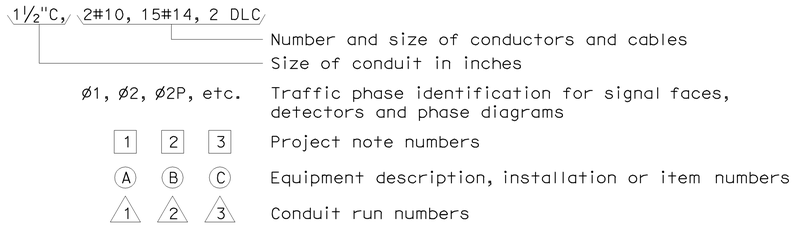
ILLUMINATED SIGN IDENTIFICATION NUMBER:



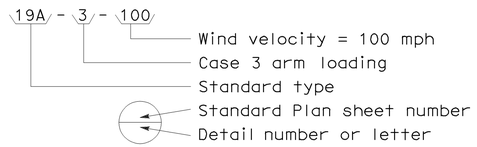
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



CONDUIT AND CONDUCTOR IDENTIFICATION:

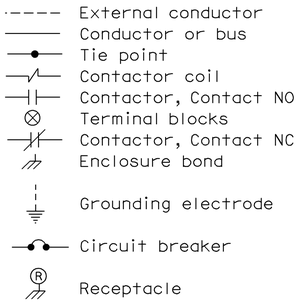


SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



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)



PULL BOXES

PROPOSED EXISTING

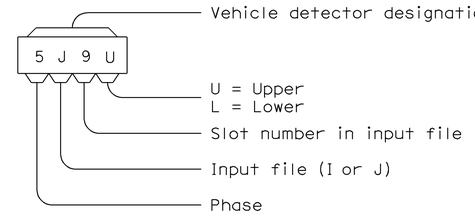
Pull box-No. 5 unless otherwise indicated or noted.

Pull box-Additional designations or descriptions

- (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

- 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

VEHICLE DETECTORS



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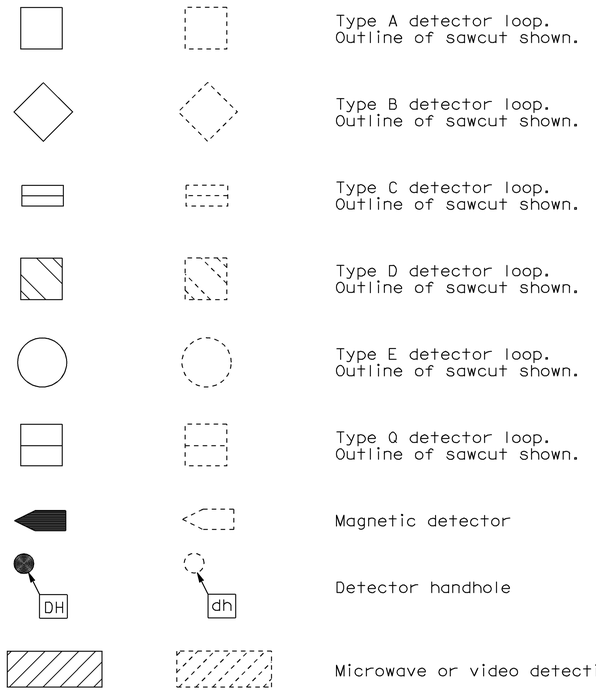
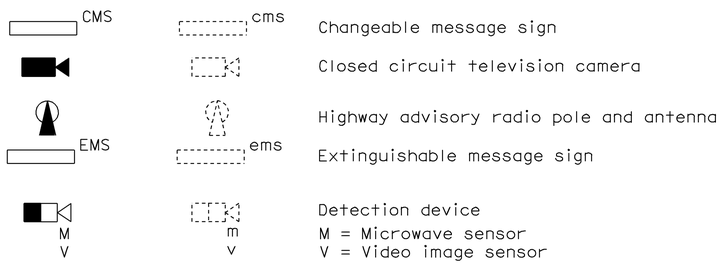


MISCELLANEOUS EQUIPMENT

PROPOSED EXISTING



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

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Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

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

October 5, 2007
PLANS APPROVAL DATE

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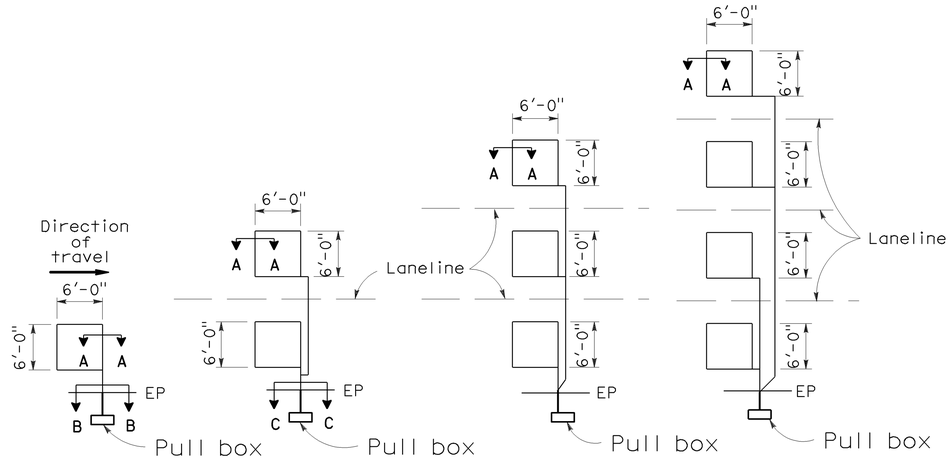
To accompany plans dated 02-16-10

LOOP INSTALLATION PROCEDURE

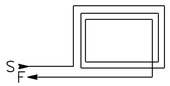
1. Loops shall be centered in lanes.
2. Saw slots in pavement for loop conductors as shown in details.
3. Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
4. Bottom of saw slot shall be smooth with 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.

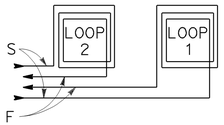


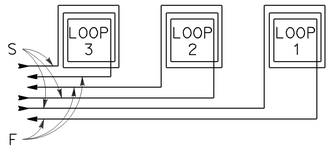
SAWCUT DETAILS

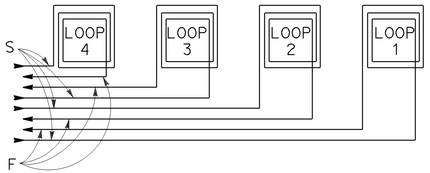
(Type A loop detector configurations illustrated)

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)



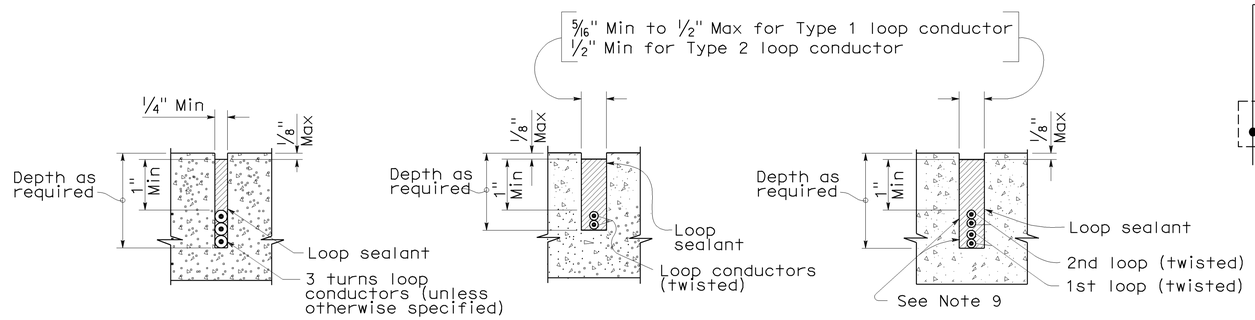






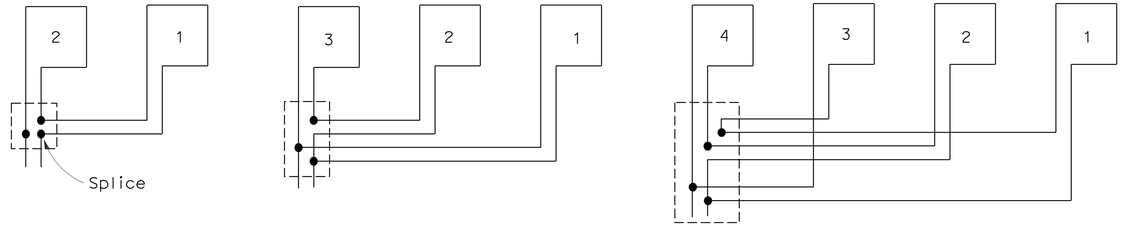
WINDING DETAILS

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	18	20

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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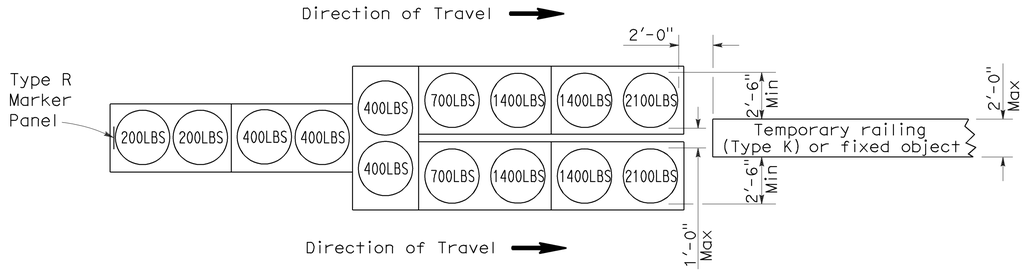
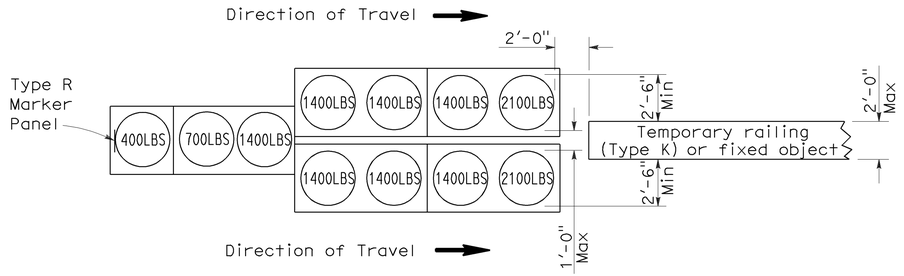
To accompany plans dated 02-16-10



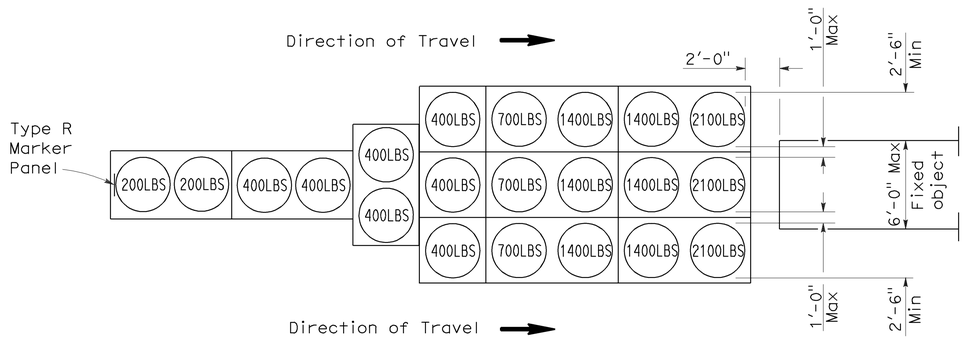
ARRAY 'TU14'

Approach speed 45 mph or more



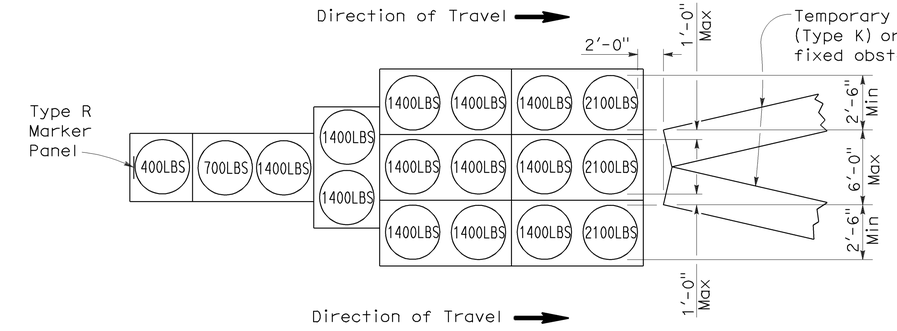
ARRAY 'TU11'

Approach speed less than 45 mph



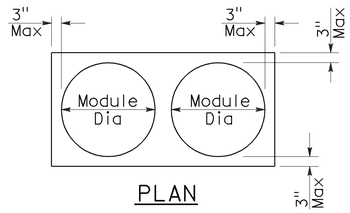
ARRAY 'TU21'

Approach speed 45 mph or more

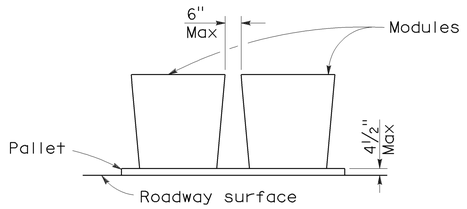


ARRAY 'TU17'

Approach speed less than 45 mph



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

5-15-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	247	0.0/8.5, 38.6/68.6	19	20

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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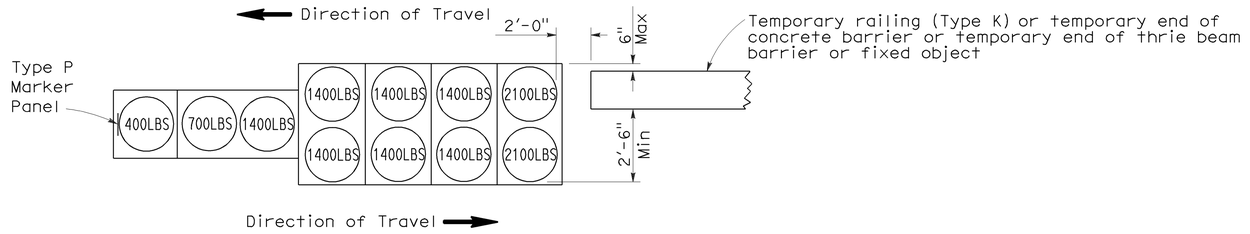
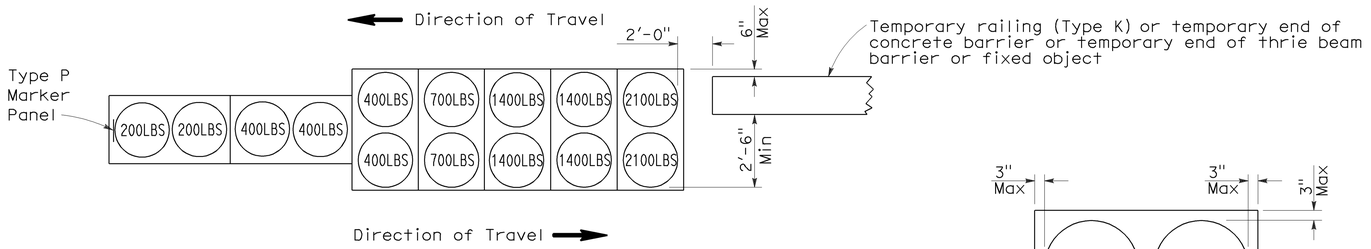
To accompany plans dated 02-16-10



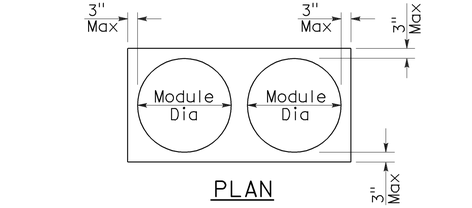
ARRAY 'TB11'

Approach speed less than 45 mph

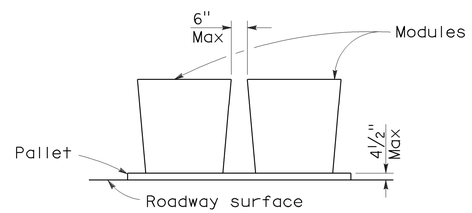


ARRAY 'TB14'

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
08	SBd	247	0.0/8.5, 38.6/68.6	20	20

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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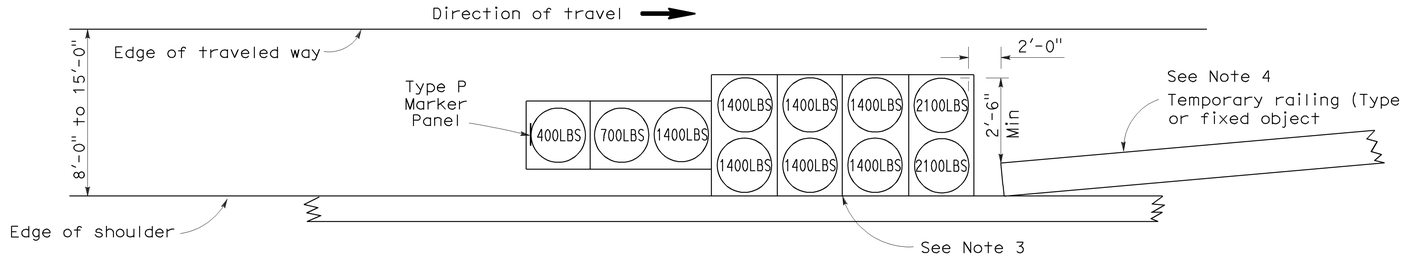
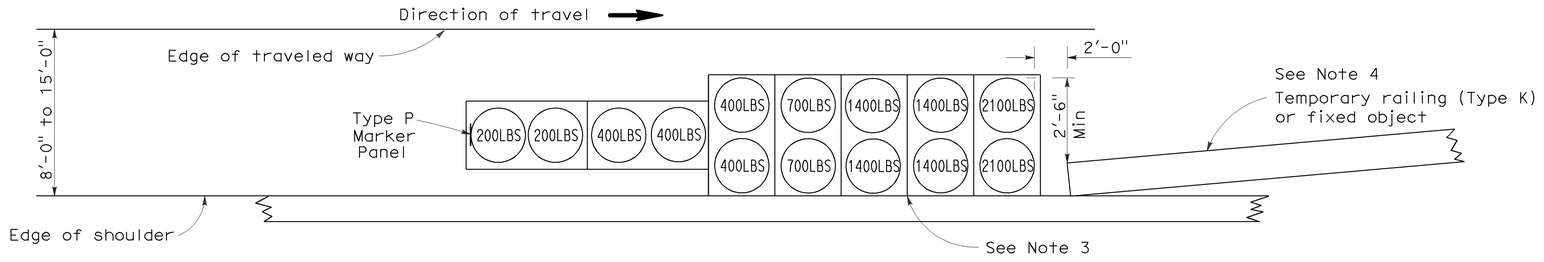
To accompany plans dated 02-16-10



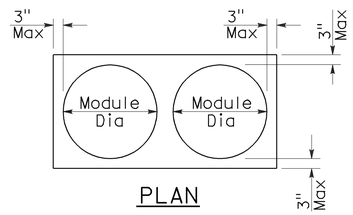
ARRAY 'TS11'

Approach speed less than 45 mph
See Note 9

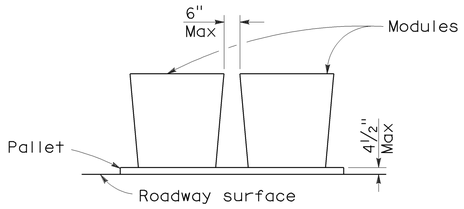


ARRAY 'TS14'

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

5-15-08