

INDEX OF PLANS

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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

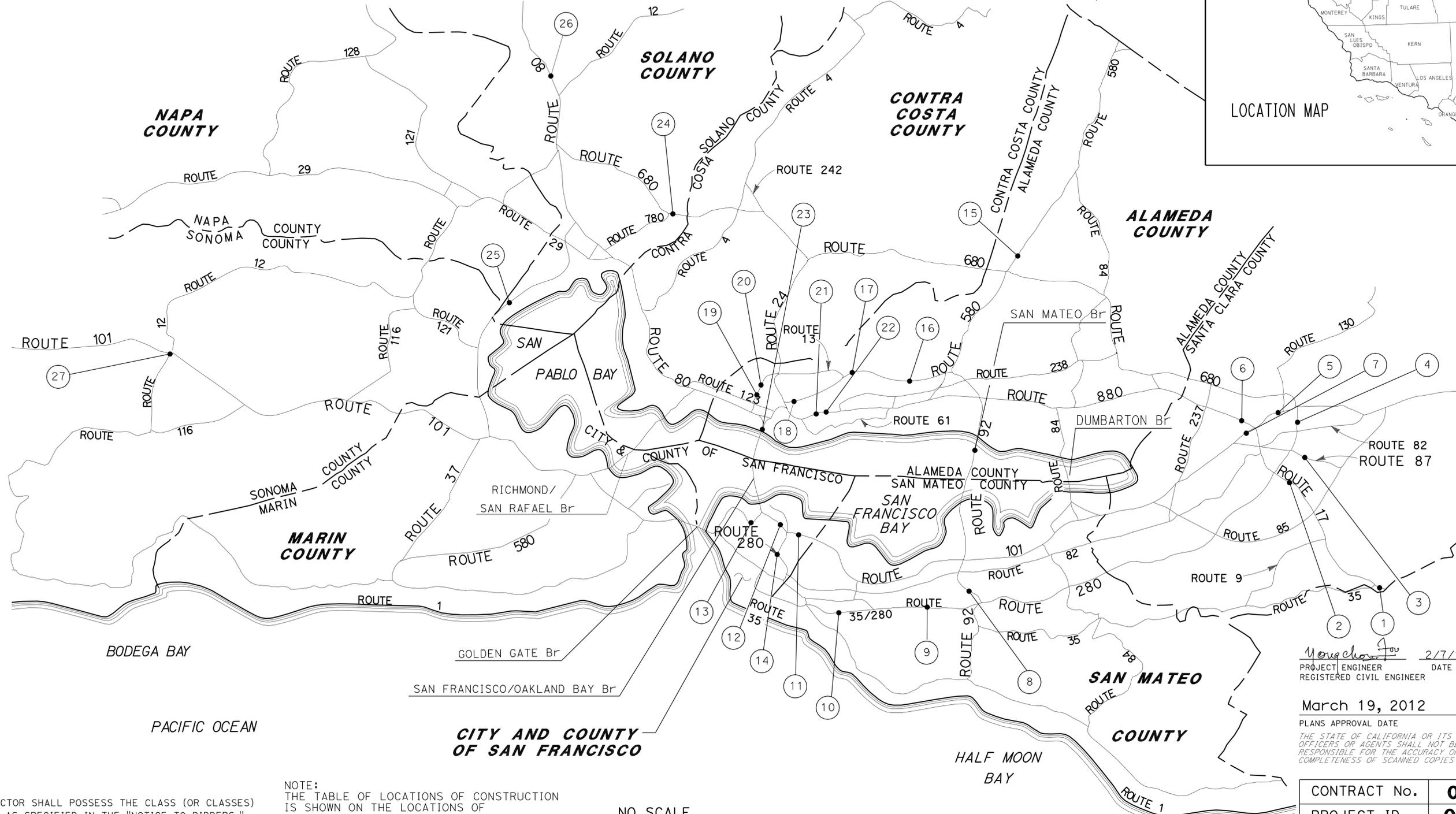
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY

IN ALAMEDA, SAN MATEO, SANTA CLARA, SOLANO,
SONOMA COUNTIES AND CITY AND COUNTY OF SAN FRANCISCO
AT VARIOUS LOCATIONS

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, Sol, Son, SF, SM, SCI	17, 24, 37, 80, 87, etc	Var	1	17

LOCATION MAP



PROJECT MANAGER
RAMSES SARGISS

DESIGN ENGINEER
CHOON F. YONG

Project Engineer
REGISTERED CIVIL ENGINEER
Choon F. Yong
No. 51254
Exp. 9-30-12
CIVIL
STATE OF CALIFORNIA

2/7/12
DATE

March 19, 2012
PLANS APPROVAL DATE

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

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

NOTE:
THE TABLE OF LOCATIONS OF CONSTRUCTION IS SHOWN ON THE LOCATIONS OF CONSTRUCTION SHEET.

NO SCALE

CONTRACT No. **04-2E7704**
PROJECT ID **0400021134**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

MINH VAN LE
 CHHOON F. YONG

REVISOR
 DATE

DESIGNED BY
 CHECKED BY

FUNCTIONAL SUPERVISOR
 RAMSES SARGISS

DATE PLOTTED => 20-MAR-2012
 TIME PLOTTED => 14:16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, SF, SM, SCI, Sol, Son	17, 24, 37, 80, 87, etc	Var	2	17

REGISTERED CIVIL ENGINEER *Choon F. Yong* DATE 2/7/12
 No. 51254
 Exp. 3-30-13
 CIVIL
 3-19-12
 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.

LOCATIONS OF CONSTRUCTION

LOCATION	Maint ID	COUNTY	ROUTE	PM	DIRECTION	CITY	CMS LOCATION
1	CM036	SCI	17	6.1	SB	LGTS	N17 SANTA CRUZ Ave ON-RAMP
2	CM035	SCI	17	11.5	SB	CMB	S17 S OF CAMPBELL Ave OC
3	CM081	SCI	87	2.5	NB	SJS	N87 200 Ft S OF CAROL Dr
4	CM033	SCI	280	R0.76	NB	SJS	N280 N OF MCLAUGHLIN Ave UC
5	CM075	SCI	880	3.0	NB	SJS	N880 N OF COLEMAN Ave OC
6	CM074	SCI	880	5.4	SB	MPS	S880 N OF BROKAW Rd
7	CM082	SCI	101	43.4	SB	SUNV	S OF LAWRENCE Expy
8	CM072	SM	92	R8.67	WB	SM	W92 100 Ft W OF DE ANZA Blvd IC
9	CM135	SM	280	R15.0	SB	SM	S280 N OF BLACK MOUNTAIN Rd
10	CM137	SM	280	22.2	SB	SM	S280 S OF HICKEY Blvd
11	CM079	SF	101	0.19	NB	SF	N101 N OF CANDLESTICK Dr
12	CM028	SF	101	3.0	SB	SF	S101 N OF ARMY St
13	CM043	SF	101	R5.14	SB	SF	S101 AT S VAN NESS Ave ON-RAMP
14	CM080	SF	280	R3.1	NB	SF	N280 MISSION St OC
15	CM111	Ala	580	18.4	WB	PLE	W580 HACIENDA Rd OFF-RAMP
16	CM109	Ala	580	R33.6	EB	SLN	E580 E OF GRAND Ave
17	CM108	Ala	580	R37.0	WB	SLN	W580 E OF FONTAINE St OC
18	CM097	Ala	580	44.0	WB	OAK	W580 CHETWOOD St OC
19	CM096	Ala	24	R2.9	WB	OAK	W24 AT SHATTUCK Ave/55Th St
20	CM025	Ala	24	R3.5	EB	OAK	E24 W OF BROADWAY OFF-RAMP
21	CM098	Ala	880	31.0	NB	OAK	N880 S OF OAK St OFF-RAMP
22	CM068	Ala	880	R32.6	NB	OAK	7Th St OR TO S880
23	CM078	Ala	80	6.2	EB	BER	E80 E OF UNIVERSITY Ave
24	CM054	Sol	680	R0.8	SB	BEN	S680 S OF BAYSHORE Rd
25	CM107	Sol	37	9.0	WB	VAL	W37 W OF JCT29
26	CM029	Sol	80	14.0	WB	COR	W80 AT CORDELIA WEIGHT STATION
27	CM113	Son	101	21.6	SB	SOR	90 M S OF STEELE LANE

LOCATIONS OF CONSTRUCTION

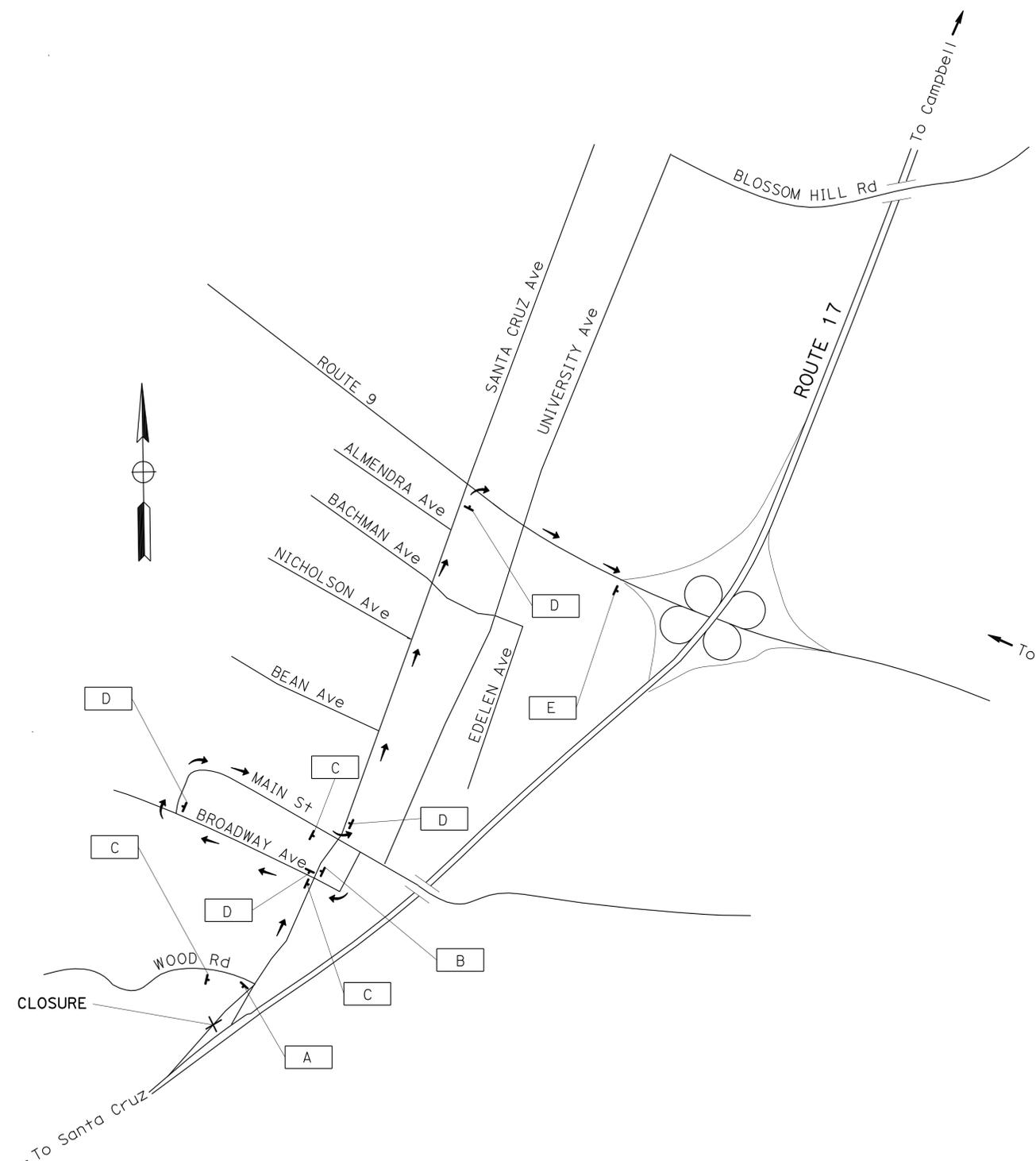
LC-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda, Santa Clara, Santa Cruz, Sonoma	17, 24, 37, 80, 87, etc	Var	3	17

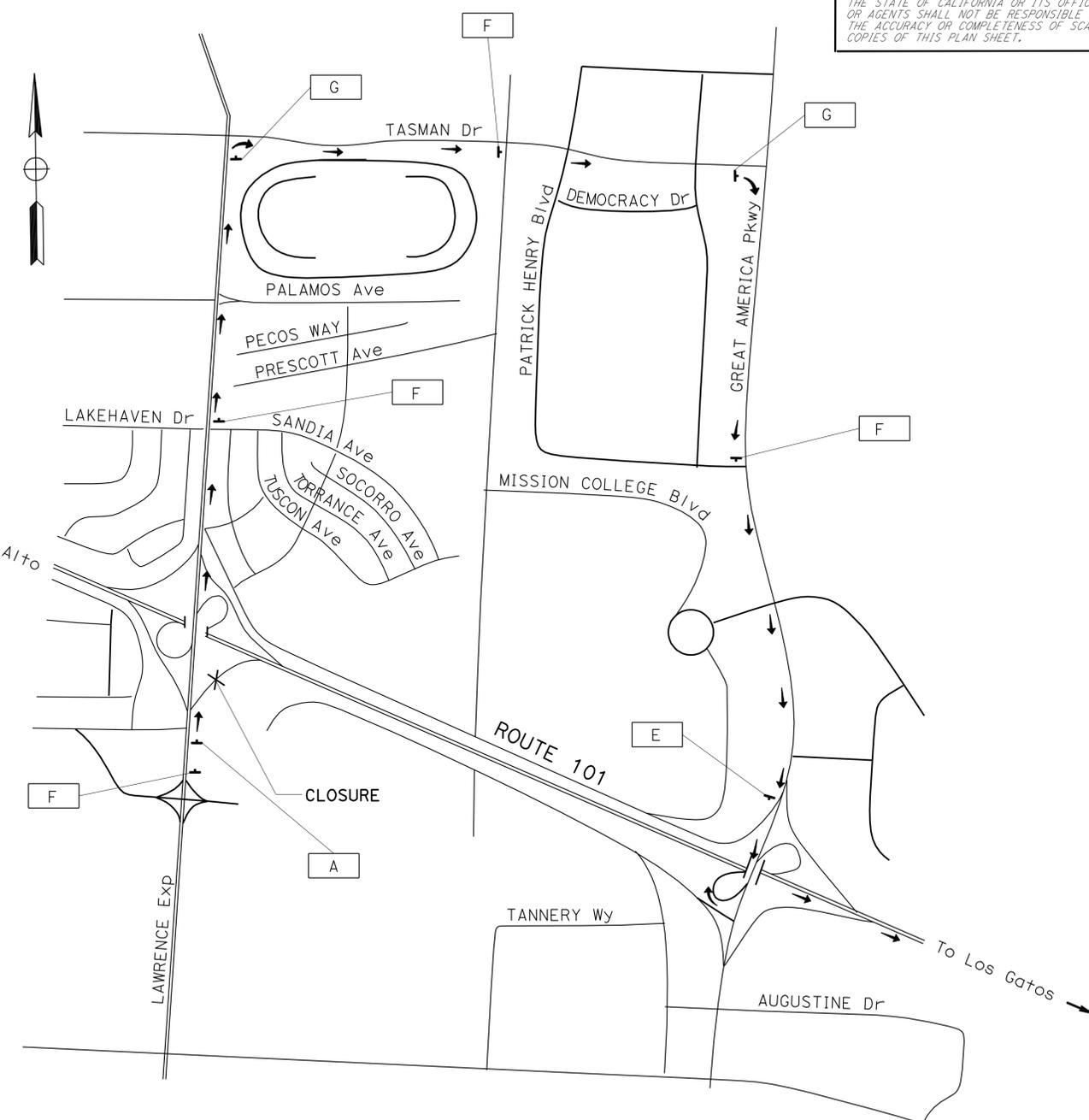
REGISTERED CIVIL ENGINEER DATE 14/12
 3-19-12 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 Florante P. Perez
 No. 41030
 Exp. 3-31-13
 CIVIL
 STATE OF CALIFORNIA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR: LOURDES DAVID
 PARWIN SARWARY
 FLORANTE PEREZ
 PS
 2/13/12
 REVISOR: DATE
 CALCULATED/DESIGNED BY: CHECKED BY:
 TRAFFIC



LOCATION 1
DETOUR PLAN No. 1
 SB ROUTE 17 ON-RAMP FROM
 S SANTA CRUZ Ave
 CLOSED
 VIA:
 BROADWAY;
 EB W MAIN St;
 NB N SANTA CRUZ Ave;
 EB ROUTE 9 TO SB ROUTE 17 ON-RAMP.



LOCATION 7
DETOUR PLAN No. 2
 SB ROUTE 101 ON-RAMP FROM
 NB LAWRENCE Exp Ave
 CLOSED
 VIA:
 NB LAWRENCE Exp;
 EB TASMAN Dr;
 SB GREAT AMERICA PARKWAY;
 LOOP ON-RAMP TO SB ROUTE 101.

CONSTRUCTION AREA SIGNS
 NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CS-1

LAST REVISION DATE PLOTTED => 20-MAR-2012 02-03-12 TIME PLOTTED => 14:17

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR: LOURDES DAVID
 PARWIN SARWARY
 FLORANTE PEREZ
 PS
 2/13/12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda, Contra Costa, San Joaquin, Solano	17,24,37, 80,87,etc	Var	4	17

Florante P. Perez 2/14/12
 REGISTERED CIVIL ENGINEER DATE
 3-19-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Florante P. Perez
 No. 41030
 Exp. 3-31-13
 CIVIL
 STATE OF CALIFORNIA

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STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN LETTER	SIGN CODE	MESSAGE	PANEL SIZE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
A	SC6-4 (CA)	RAMP CLOSED	48" x 60"	1 - 6" x 6"	2
	M4-8	DETOUR	30" x 15"		
B	G28-2(17)(CA)	STATE ROUTE SHIELD	24" x 25"	1 - 4" x 4"	1
	M3-3	SOUTH	30" x 15"		
	M6-3	STRAIGHT ARROW	21" x 15"		
C	M4-8	DETOUR	30" x 15"	1 - 4" x 4"	3
	G28-2(17)(CA)	STATE ROUTE SHIELD	24" x 25"		
	M3-3	SOUTH	30" x 15"		
D	M6-1	LEFT ARROW	21" x 15"	1 - 4" x 4"	3
	M4-8	DETOUR	30" x 15"		
	G28-2(17)(CA)	STATE ROUTE SHIELD	24" x 25"		
E	M3-3	SOUTH	30" x 15"	1 - 4" x 4"	2
	M6-1	RIGHT ARROW	21" x 15"		
	M4-8A	END DETOUR	24" x 18"		
F	M4-8	DETOUR	30" x 15"	1 - 4" x 4"	4
	G26-2(101)(CA)	STATE ROUTE SHIELD	24" x 25"		
	M3-3	SOUTH	30" x 15"		
G	M6-3	STRAIGHT ARROW	21" x 15"	1 - 4" x 4"	2
	M4-8	DETOUR	30" x 15"		
	G26-2(101)(CA)	STATE ROUTE SHIELD	24" x 25"		
	M3-3	SOUTH	30" x 15"		
	M6-1	RIGHT ARROW	21" x 15"		

CONSTRUCTION AREA SIGNS
CS-2

LAST REVISION DATE PLOTTED => 20-MAR-2012
 02-03-12 TIME PLOTTED => 14:17

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda, Contra Costa, San Joaquin, Sonoma, Stanislaus	17,24,37, 80,87,etc	Var	5	17

Nasrin Ghari 2/8/12
 REGISTERED ELECTRICAL ENGINEER DATE
 3-19-12
 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.

ELECTRICAL INDEX

- E-1 ELECTRICAL INDEX, NOTES AND ABBREVIATIONS
- E-2 TO E-5 RETROFIT CHANGEABLE MESSAGE SYSTEM (LOCATIONS 1-27) (MODEL 500/510)
- E-6 ELECTRICAL DETAILS (CMS RETROFIT MODEL 500 AND 510 LED PMM DIMENSIONS AND SHAPE)

PROJECT NOTE

- 1. RC EXISTING CMS XENON PIXEL MATRIX MODULES. INSTALL LED PIXEL MATRIX MODULES. SEE E-6 FOR DETAILS.

GENERAL NOTES:

1. PRIOR TO ANY WORK ON PG&E SERVICE CONDUCTORS, THE CONTRACTOR SHALL NOTIFY THE PG&E INSPECTOR.
2. CONTRACTOR SHALL VERIFY THROUGH TESTING EQUIPMENT THAT THE POWER FOR THE CMS SYSTEM HAS BEEN SHUT OFF BEFORE ANY WORK ON THE CMS SYSTEM.
3. EXISTING CMS DISCONNECT IS MOUNTED TYPICALLY 6' ABOVE FINISHED GRADE ON CMS STRUCTURE.
4. CONTRACTOR SHALL TEST THE CMS IN THE PRESENCE OF THE ENGINEER BEFORE AND AFTER THE MODULE REPLACEMENTS. THE CONTRACTOR SHALL PROVIDE TWO REPORTS PER CMS LOCATION ON THE WORKING STATUS OF EACH PIXEL MATRIX MODULE. THE REPORTS SHALL BE SUBMITTED TO THE ENGINEER, ONE BEFORE STARTING REPLACEMENT AND THE OTHER AFTER REPLACEMENT HAS BEEN COMPLETED AT EACH CMS LOCATION.
5. DURING THE TEST OF THE EXISTING XENON CMS SIGNS, CONTRACTOR SHALL SELECT AND LABEL THE EXISTING XENON PIXEL MATRIX MODULES FOR SALVAGE. SELECTED EXISTING XENON PIXEL MATRIX MODULES TO BE SALVAGED SHALL BE APPROVED BY THE ENGINEER IN THE FIELD.
6. NO MORE THAN THREE DAYS SHALL BE ALLOCATED FOR CONVERSION OF EACH CHANGEABLE MESSAGE SIGN. EACH CONVERTED CHANGEABLE MESSAGE SIGN SHALL BE IN OPERATION WITHIN THE TIME ALLOWED. NO MORE THAN THREE SIGNS CAN BE OUT OF SERVICE AT ANY TIME.

ABBREVIATIONS

- IC INTERCHANGE
- OC OVER CROSSING
- PMM PIXEL MATRIX MODULE
- UC UNDER CROSSING

ELECTRICAL INDEX, NOTES, AND ABBREVIATIONS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda, Santa Clara, Santa Cruz, San Joaquin, etc	17, 24, 37, 80, 87, etc	Var	6	17

Nasrin Charib 2/8/12
 REGISTERED ELECTRICAL ENGINEER DATE
 3-19-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Nasrin Charib
 No. 17498
 Exp 3-30-13
 ELECT

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

	CMS AND CONTROLLER LOCATION DESCRIPTION	N17 SANTA CRUZ AVE ON-RAMP	S17 SOF CAMPBELL AVE OC	N87 200' SOF CAROL DR	N280 NOF MCLAUGHLIN AVE UC	N880 NOF COLEMAN AVE OC	S880 NOF BROKAW RD	SOF LAWRENCE EXPWAY	W92 100' WOF DE ANZA BLVD IC	
	LOCATION NO.	1	2	3	4	5	6	7	8	
	COUNTY	SCI	SCI	SCI	SCI	SCI	SCI	SCI	SM	
	ROUTE	17	17	87	280	880	880	101	92	
	POST MILE	6.1	11.5	2.5	R0.76	3.0	5.4	43.3	R8.67	
	DIRECTION A. NB (NORTHBOUND) B. SB (SOUTHBOUND) C. EB (EASTBOUND) D. WB (WESTBOUND)	SB	SB	NB	NB	NB	SB	SB	WB	
	LOCATION: A. RIGHT SHOULDER/(RIGHT ETW) B. LEFT SHOULDER/(LEFT ETW) C. MEDIAN D. OVERHEAD STRUCTURE	A	A	A	A	A	A	A	A	
EXISTING	CMS TYPE: X. XENON CMS PANELS	X	X	X	X	X	X	X	X	
	CMS TYPE: L. LED CMS PANELS	L	L	L	L	L	L	L	L	
	HARNES REPLACEMENT (Y=YES N=NO)	N	N	N	N	N	N	N	N	
	TYPE OF HARNES SHALL BE REPLACED A. HARNES 4 B. HARNES 5 C. NONE	C	C	C	C	C	C	C	C	
	PROPOSED COMPLETE LED CMS ON EXISTING FRAME	1	1	1	1	1	1	1	1	
	WORK DESCRIPTION	1	1	1	1	1	1	1	1	
										TOTAL PROPOSED LED CMS ON EXISTING FRAME (E-2) 8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 ELECTRICAL
 NASRIN GHARIB
 REVISOR BY NG
 DATE REVISED 2/3/12
 CALCULATED/DESIGNED BY
 CHECKED BY
 FUNCTIONAL SUPERVISOR
 ELAINE WONG

RETROFIT CHANGEABLE MESSAGE SYSTEM (MODEL 500/ 510)

APPROVED FOR ELECTRICAL WORK ONLY

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET E-1

LAST REVISION DATE PLOTTED => 20-MAR-2012
 02-03-12 TIME PLOTTED => 14:17

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda, SF, Sol, Sonoma	17, 24, 37, 80, 87, etc	Var	7	17

Nasrin Gharib 2/8/12
REGISTERED ELECTRICAL ENGINEER DATE

3-19-12
PLANS APPROVAL DATE

Nasrin Gharib
No. 17498
Exp. 6-30-13
ELECT

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CMS AND CONTROLLER LOCATION DESCRIPTION	S280 NOF BLACK MOUNTAIN RD	S280 SOF HICKEY BLVD	N101 NOF CANDLESTICK OFF-RAMP	S101 NOF ARMY ST	S101 AT S VAN NESS ON RAMP	N280 MISSION ST OC	W580 HACIENDA RD OFF RAMP
LOCATION NO.	9	10	11	12	13	14	15
COUNTY	SM	SM	SF	SF	SF	SF	Ala
ROUTE	280	280	101	101	101	280	580
POST MILE	R15.0	22.2	.17	3.2	5.14	R3.12	18.4
DIRECTION A. NB (NORTHBOUND) B. SB (SOUTHBOUND) C. EB (EASTBOUND) D. WB (WESTBOUND)	SB	SB	NB	SB	SB	NB	WB
LOCATION: A. RIGHT SHOULDER/(RIGHT ETW) B. LEFT SHOULDER/(LEFT ETW) C. MEDIAN D. OVERHEAD STRUCTURE	A	A	A	A	A	A	A
CMS TYPE: X. XENON CMS PANELS	X	X	X	X	X	X	X
CMS TYPE: L. LED CMS PANELS	L	L	L	L	L	L	L
HARNES REPLACEMENT (Y=YES N=NO)	N	N	N	N	N	N	N
TYPE OF HARNES SHALL BE REPLACED A. HARNES 4 B. HARNES 5 C. NONE	C	C	C	C	C	C	C
PROPOSED COMPLETE LED CMS ON EXISTING FRAME	1	1	1	1	1	1	1
WORK DESCRIPTION	1	1	1	1	1	1	1

TOTAL PROPOSED LED CMS ON EXISTING FRAME (E-3)
7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ELECTRICAL
NASRIN GHARIB
ELAINE WONG
REVISIED BY NG
DATE REVISED 2/3/12
CALCULATED/DESIGNED BY
CHECKED BY
FUNCTIONAL SUPERVISOR
ELAINE WONG

RETROFIT CHANGEABLE MESSAGE SYSTEM (MODEL 500/ 510)

APPROVED FOR ELECTRICAL WORK ONLY

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET E-1

LAST REVISION | DATE PLOTTED => 20-MAR-2012
02-03-12 | TIME PLOTTED => 14:17

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma, Stanislaus, Sutter, Tehama, Yuba, etc	17, 24, 37, 80, 87, etc	Var	8	17

Nasrin Gharif 2/8/12
 REGISTERED ELECTRICAL ENGINEER DATE

3-19-12
 PLANS APPROVAL DATE

Nasrin Gharif
 No. 17498
 Exp. 3-30-13
 ELECT

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CMS AND CONTROLLER LOCATION DESCRIPTION	E580 EOF GRAND AVENUE	W580 EOF FONTAIN ST OC	W580 CHETWOOD ST OC	W24 AT SHATTUCK AVE 55TH ST	E24 WOF BROADWAY OFF-RAMP	N880 SOF OAK ST OFF-RAMP	UNION ST. ON-RAMP TO N880
LOCATION NO.	16	17	18	19	20	21	22
COUNTY	Ala	Ala	Ala	Ala	Ala	Ala	Ala
ROUTE	580	580	580	24	24	880	880
POST MILE	R33.6	R37.0	44.0	R2.9	R3.5	31.0	R32.6
DIRECTION A. NB (NORTHBOUND) B. SB (SOUTHBOUND) C. EB (EASTBOUND) D. WB (WESTBOUND)	EB	WB	WB	WB	EB	NB	NB
LOCATION: A. RIGHT SHOULDER/(RIGHT ETW) B. LEFT SHOULDER/(LEFT ETW) C. MEDIAN D. OVERHEAD STRUCTURE	A	A	A	A	A	A	A
EXISTING PROPOSED CMS TYPE: X. XENON CMS PANELS	X	X	X	X	X	X	X
CMS TYPE: L. LED CMS PANELS	L	L	L	L	L	L	L
HARNES REPLACEMENT (Y=YES N=NO)	N	N	N	N	N	N	N
TYPE OF HARNES SHALL BE REPLACED A. HARNES 4 B. HARNES 5 C. NONE	C	C	C	C	C	C	C
PROPOSED COMPLETE LED CMS ON EXISTING FRAME	1	1	1	1	1	1	1
WORK DESCRIPTION	1	1	1	1	1	1	1

TOTAL PROPOSED LED CMS ON EXISTING FRAME (E-4)
7

RETROFIT CHANGEABLE MESSAGE SYSTEM (MODEL 500/ 510)

APPROVED FOR ELECTRICAL WORK ONLY

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET E-1

E-4

LAST REVISION DATE PLOTTED => 20-MAR-2012 02-03-12 TIME PLOTTED => 14:17

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda, Solano, Sonoma, Contra Costa, etc	17, 24, 37, 80, 87, etc	Var	9	17

Nasrin Ghari 2/8/12
 REGISTERED ELECTRICAL ENGINEER DATE
 3-19-12
 PLANS APPROVAL DATE

Nasrin Ghari
 No. 17498
 Exp 3-30-13
 ELECT
 STATE OF CALIFORNIA

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	CMS AND CONTROLLER LOCATION DESCRIPTION	E80 E OF UNIVERSITY AV	S680 S OF BAYSHORE RD	W37 W OF JCT 29	W80 AT CORDELIA WEIGH STATION	90 M S OF STEEL LANE
	LOCATION NO.	23	24	25	26	27
	COUNTY	Ala	SoI	SoI	SoI	Son
	ROUTE	80	680	37	80	101
	POST MILE	6.2	RO.8	9.0	14.0	21.6
	DIRECTION A. NB (NORTHBOUND) B. SB (SOUTHBOUND) C. EB (EASTBOUND) D. WB (WESTBOUND)	EB	SB	WB	WB	SB
	LOCATION: A. RIGHT SHOULDER/(RIGHT ETW) B. LEFT SHOULDER/(LEFT ETW) C. MEDIAN D. OVERHEAD STRUCTURE	A	A	A	A	A
EXISTING	CMS TYPE: X. XENON CMS PANELS	X	X	X	X	X
PROPOSED	CMS TYPE: L. LED CMS PANELS	L	L	L	L	L
	HARNES REPLACEMENT (Y=YES N=NO)	N	N	N	N	N
	TYPE OF HARNES SHALL BE REPLACED A. HARNES 4 B. HARNES 5 C. NONE	C	C	C	C	C
	PROPOSED COMPLETE LED CMS ON EXISTING FRAME	1	1	1	1	1
	WORK DESCRIPTION	1	1	1	1	1

TOTAL PROPOSED LED CMS ON EXISTING FRAME (E-5)	GRAND TOTAL PROPOSED LED CMS ON EXISTING FRAME (E-2 TO E-5)
6	27

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

ELECTRICAL

FUNCTIONAL SUPERVISOR: ELAINE WONG

CALCULATED/DESIGNED BY: NASRIN GHARIB

CHECKED BY: NASRIN GHARIB

REVISOR: NG

DATE REVISED: 2/3/12

BORDER LAST REVISED 7/2/2010

APPROVED FOR ELECTRICAL WORK ONLY

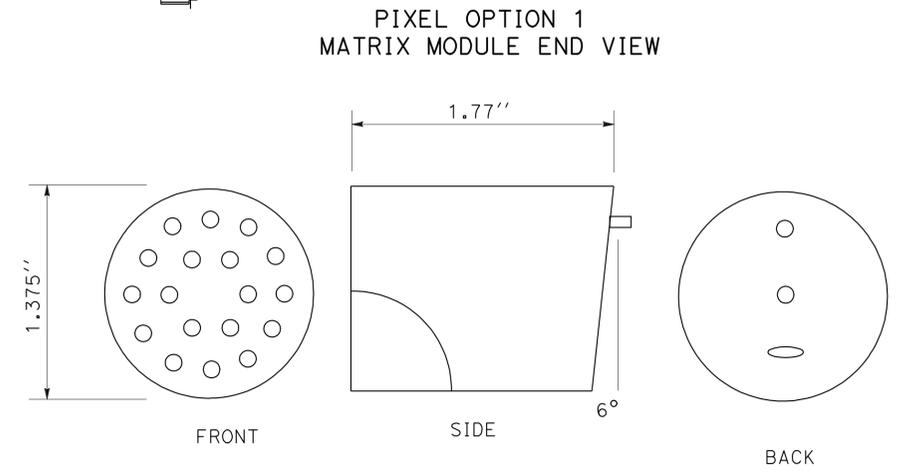
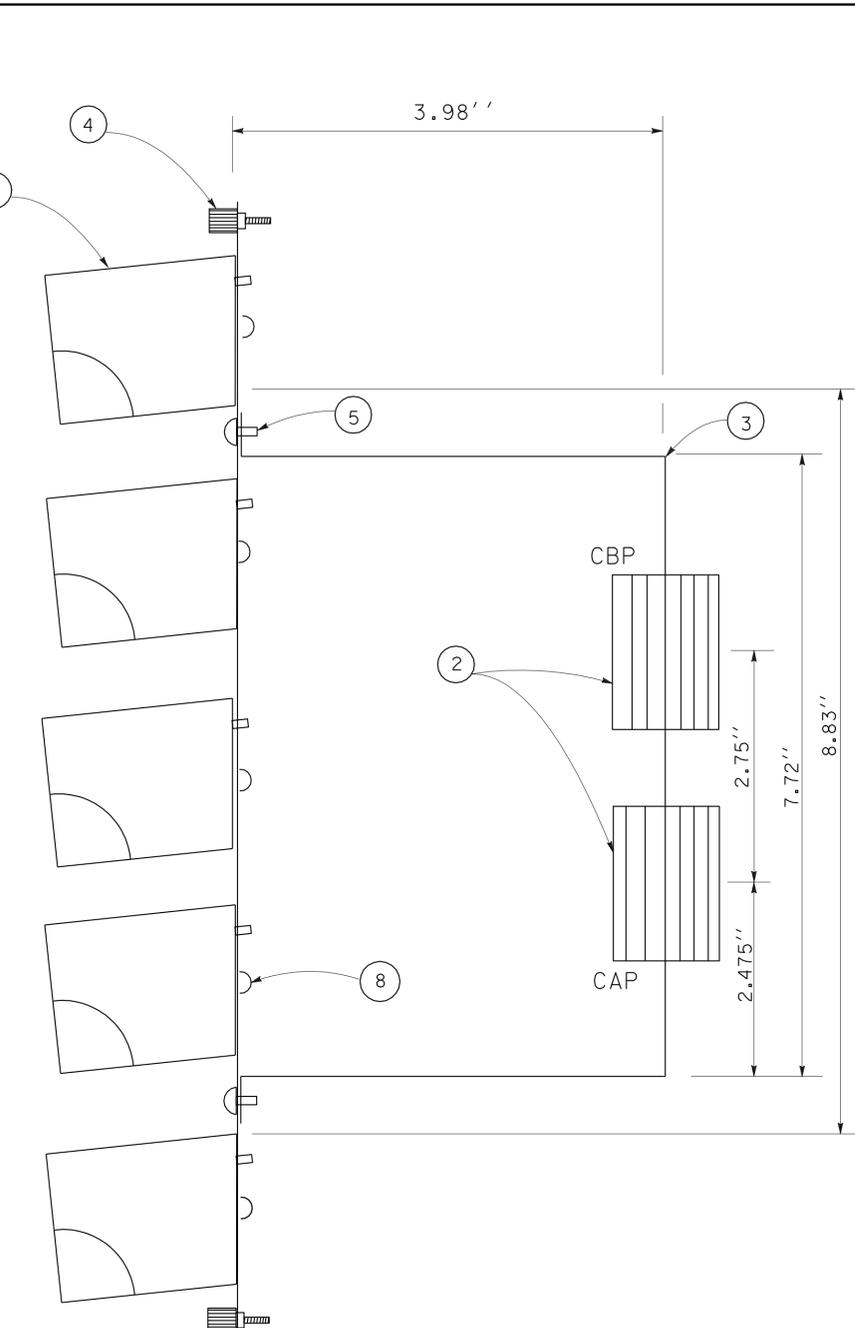
FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET E-1

SCALE: 1" = 50'

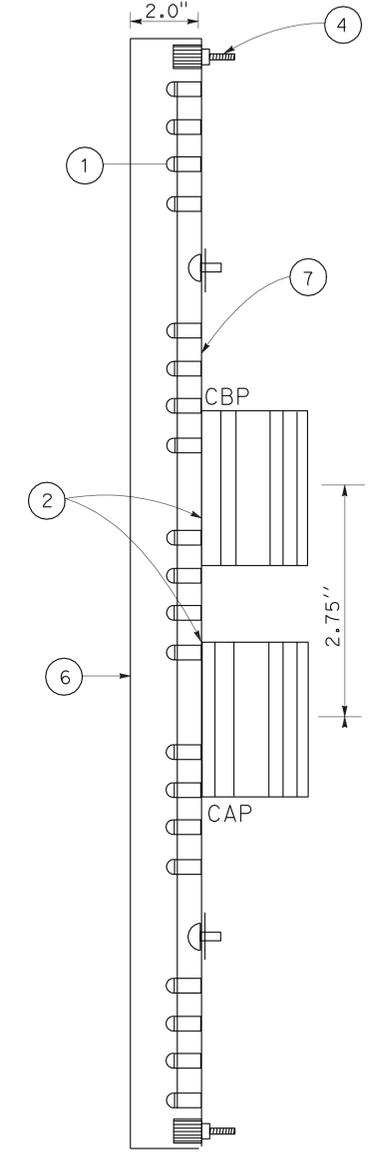
E-5

LAST REVISION DATE PLOTTED => 20-MAR-2012
 02-03-12 TIME PLOTTED => 14:18

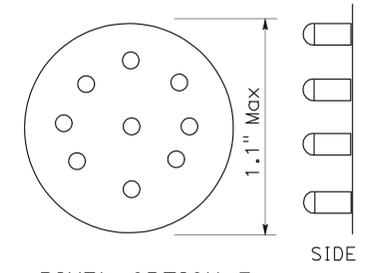
FUNCTIONAL SUPERVISOR CHARLES PRICE	CALCULATED-DESIGNED BY MICHAEL P. LEE	REVISOR MVL	DATE 2/3/12
CHECKED BY	DESIGNED BY MICHAEL P. LEE	DATE REVISOR	DATE



PIXEL OPTION 1
PMM (TYPE 1)



PIXEL OPTION 3
 MATRIX MODULE END VIEW



PIXEL OPTION 3
PMM (TYPE 3)
PMM DIMENSION
14\"/>

ELECTRICAL DETAILS
 (CMS RETROFIT MODEL 500 AND 510 LED PMM DIMENSIONS AND SHAPE)
 NO SCALE

GENERAL NOTES:

(FOR THIS SHEET ONLY)

1. NOMINAL CENTER TO CENTER SPACING OF PIXEL: 2.75".
2. SEE CMS MODEL 500 AND 510 SPECIFICATIONS, SECTION 8, SECTION 9, FIGURES 8-8-5 AND 8-8-6 FOR ADDITIONAL DETAILS.
3. REMOVE EXISTING XENON PMM AND INSTALL 60 LED PMM (CONTRACTOR FURNISHED) PER SIGN PANEL. CONNECT EXISTING CABLE HARNESSSES WITH CONNECTORS TO THE MATING CONNECTORS ON THE BACK OF PIXEL MATRIX MODULE UNIT. SECURE PMM WITH FOUR THUMB SCREWS TO MODULE MOUNTING FRAME.
4. **RC** EXISTING CMS SCREEN.

PROJECT NOTES:

(FOR THIS SHEET ONLY)

1. LED "PIXEL" ASSEMBLY.
2. PLASTIC CABLE HARNESS MATING CONNECTOR PLUG.
3. 0.0625" ALUMINUM U SHAPED CONNECTOR MOUNTING BRACKET.
4. THUMB SCREW DEVICE (TSD No. 2)- TYPICAL (SOUTH Co No. 47-62-301-60 OR EQUAL)
5. UNIVERSAL HEAD ALUMINUM DRIVE RIVET-TYPICAL (SOUTH Co No. 38-104-04-13 OR EQUAL)
6. FORMED PLASTIC COVER ON LED PMM WITH 0.080" UV STABILIZED. THE COVER SHALL BE COATED OR TREATED FOR GLARE & SHALL NOT DISMINISH LIGHT OUTPUT BY MORE THAN 15%.
7. ALL PIXELS SHALL BE MOUNTED TO THE SAME PC BOARD
8. EACH PIXEL SHALL HAVE TWO 12.02" LEADS TO CONNECT TO THE CAP OR CBP AS PER SECTION 8-8

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda, Contra Costa, San Joaquin, Solano	17,24,37,80,87, etc	Var	10	17

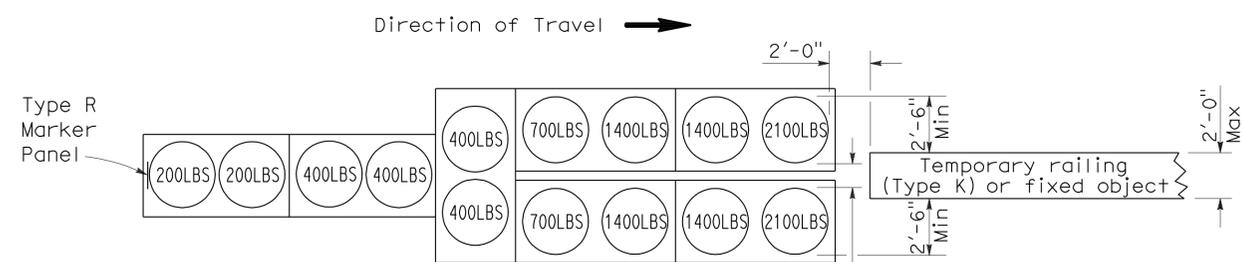
REGISTERED ELECTRICAL ENGINEER
 Michael P. Lee
 No. 13435
 Exp. 9-30-12
 ELECT

DATE: 2/9/12
 DATE: 3-19-12
 PLANS APPROVAL DATE

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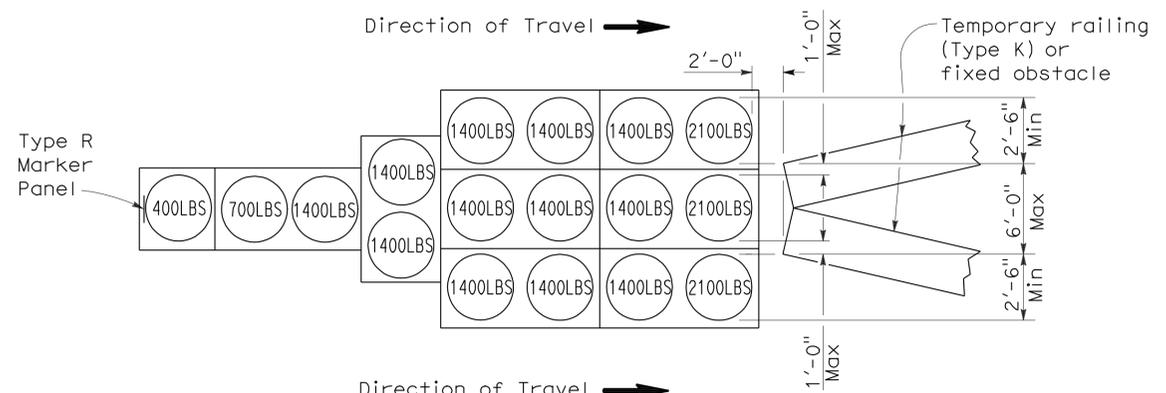
APPROVED FOR ELECTRICAL WORK ONLY

To accompany plans dated 3-19-12



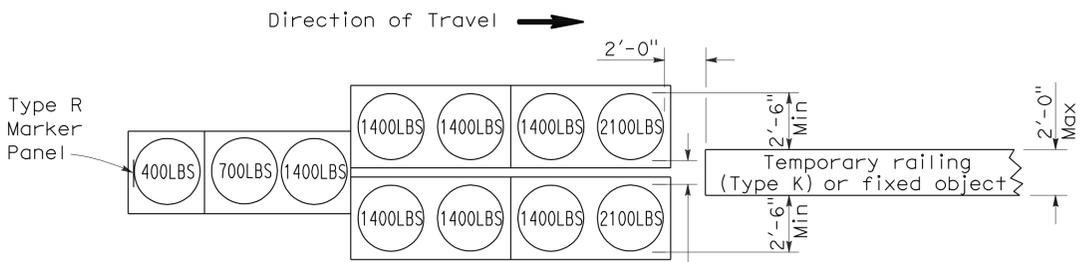
ARRAY 'TU14'

Approach speed 45 mph or more



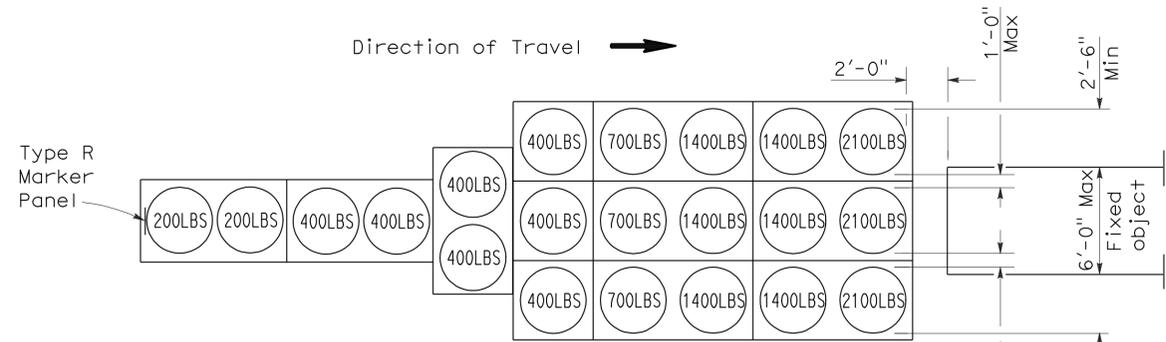
ARRAY 'TU17'

Approach speed less than 45 mph



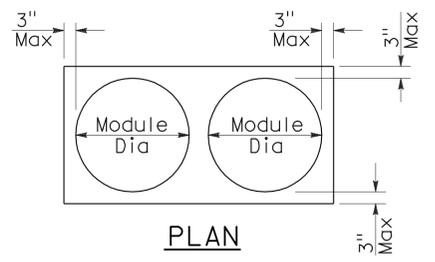
ARRAY 'TU11'

Approach speed less than 45 mph

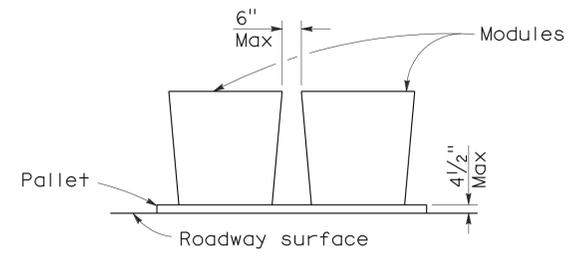


ARRAY 'TU21'

Approach speed 45 mph or more



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
04	Alameda, Contra Costa, San Joaquin, Sonoma	17, 24, 37, 80, 87, etc	Var	12	17

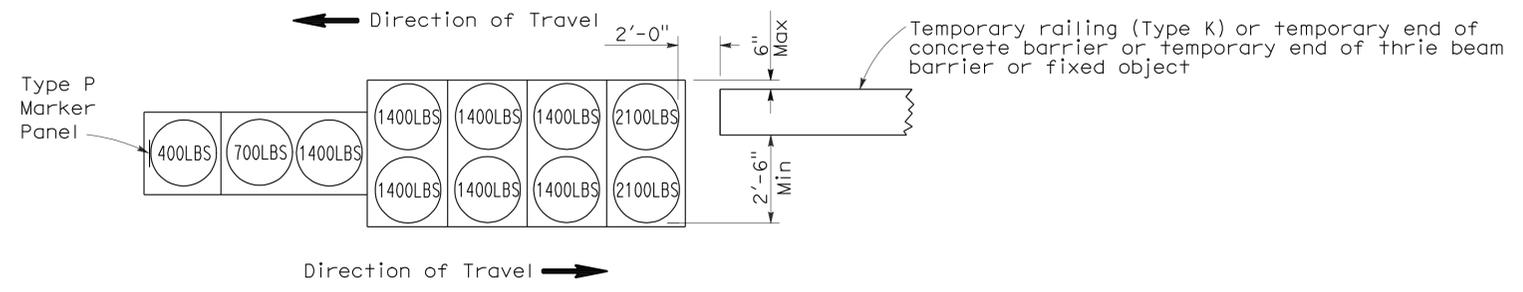
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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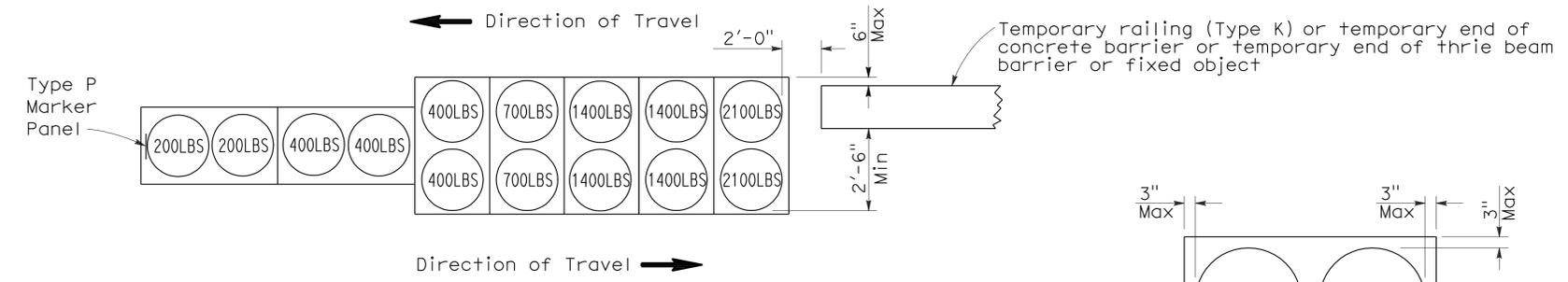


To accompany plans dated 3-19-12



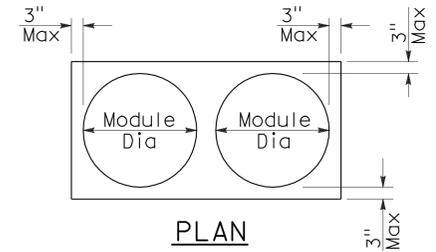
ARRAY 'TB11'

Approach speed less than 45 mph

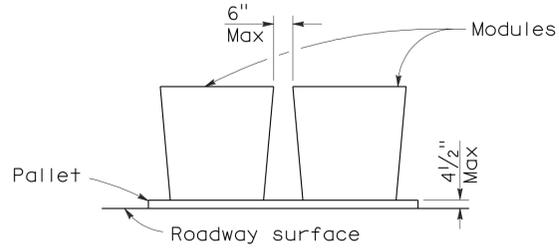


ARRAY 'TB14'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP T1B

2006 REVISED STANDARD PLAN RSP T1B

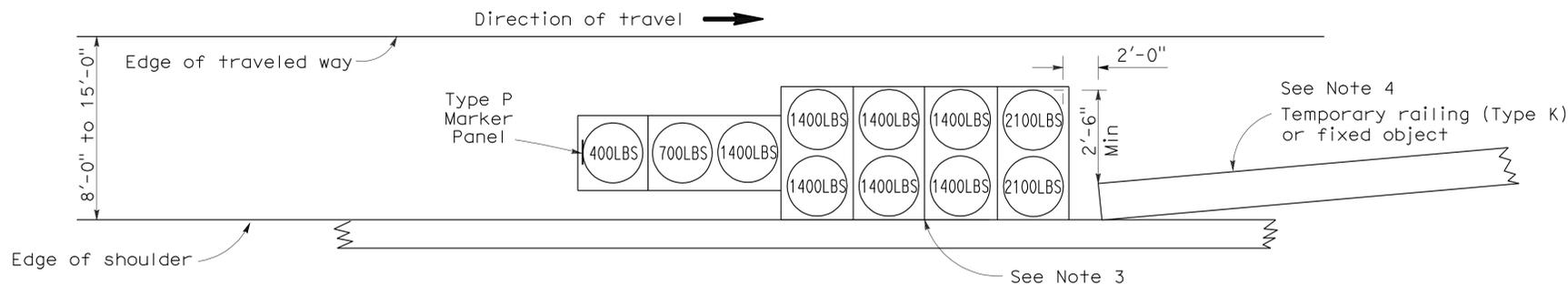
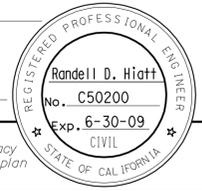
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Alameda, Contra Costa, San Joaquin, Solano	17, 24, 37, 80, 87, etc	Var	13	17

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

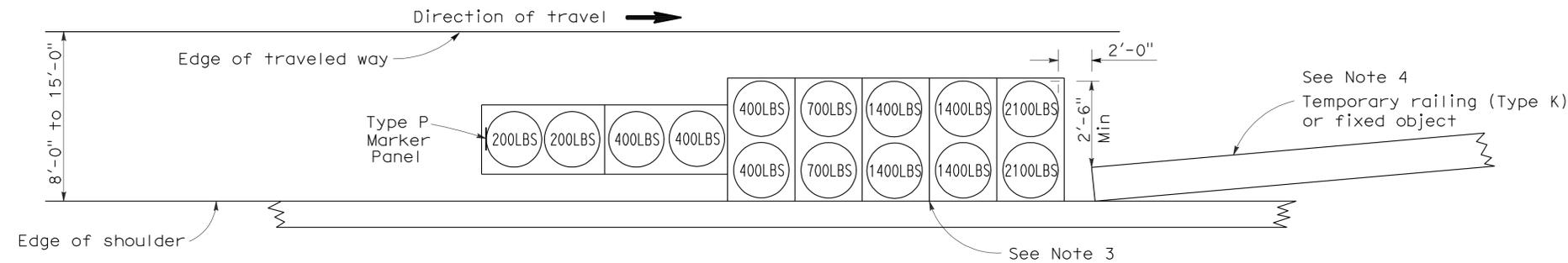
June 6, 2008
PLANS APPROVAL DATE

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 3-19-12



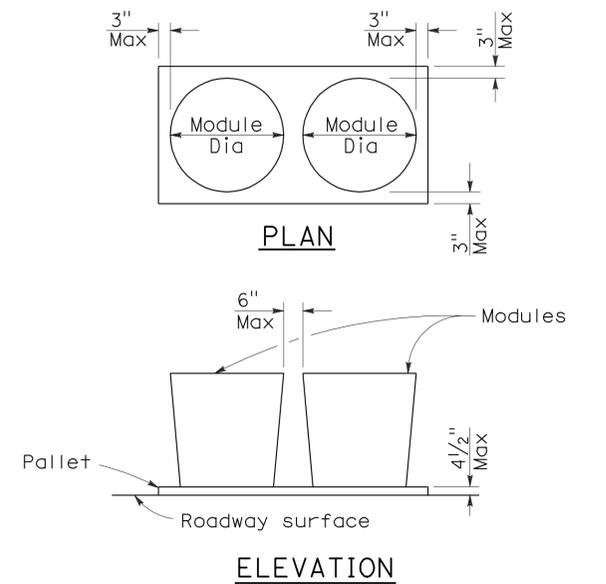
ARRAY 'TS11'
Approach speed less than 45 mph
See Note 9



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

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.



CRASH CUSHION PALLET DETAIL
See Note 11

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

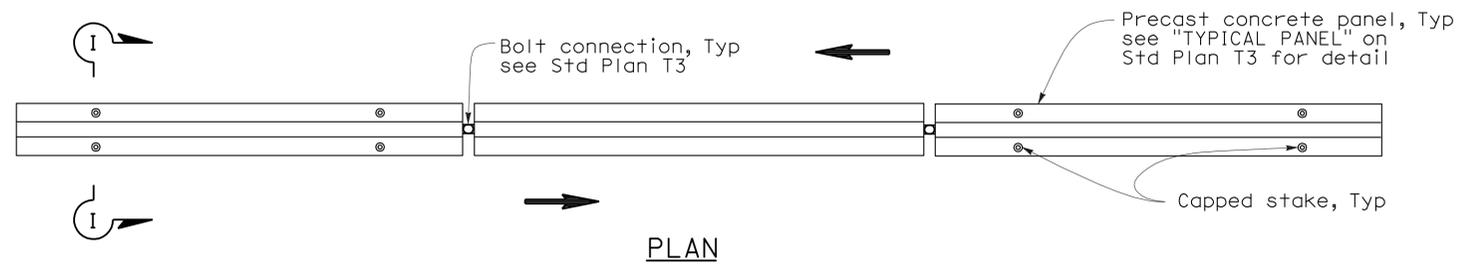
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Alameda, Contra Costa, San Joaquin, Sonoma	17, 24, 37, 80, 87, etc	Var	14	17

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

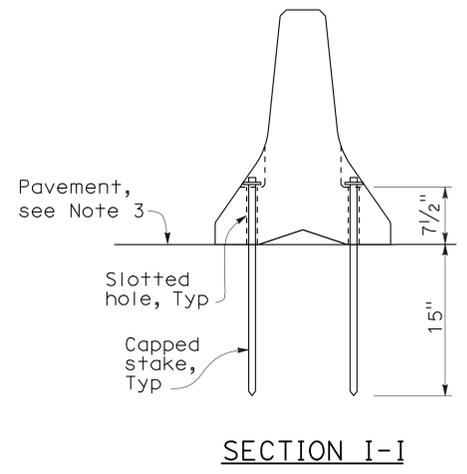
May 20, 2011
PLANS APPROVAL DATE

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To accompany plans dated 3-19-12



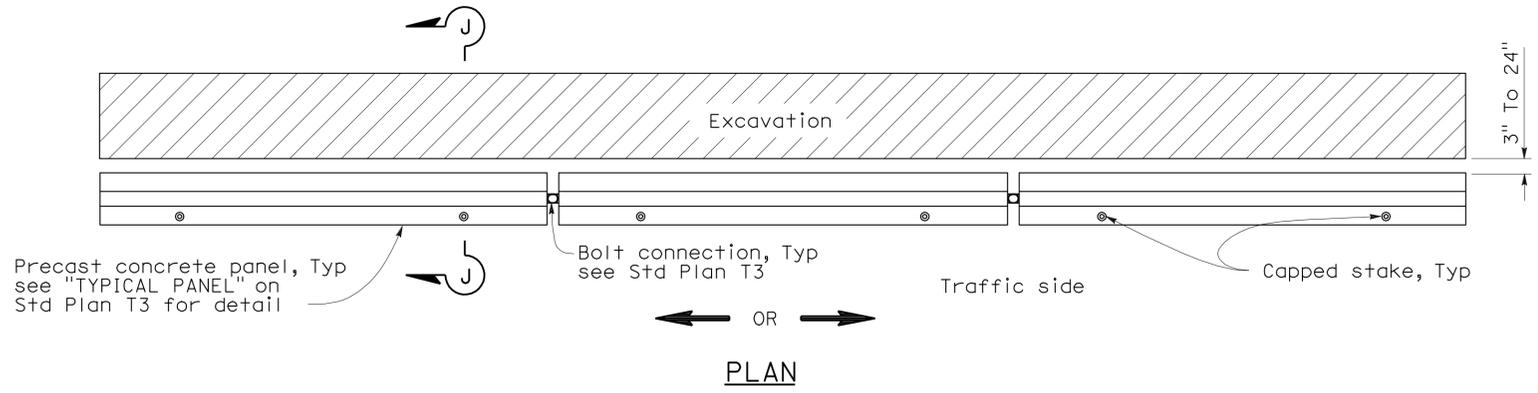
RAILING STAKING CONFIGURATION FOR TWO-WAY TRAFFIC
See Note 1



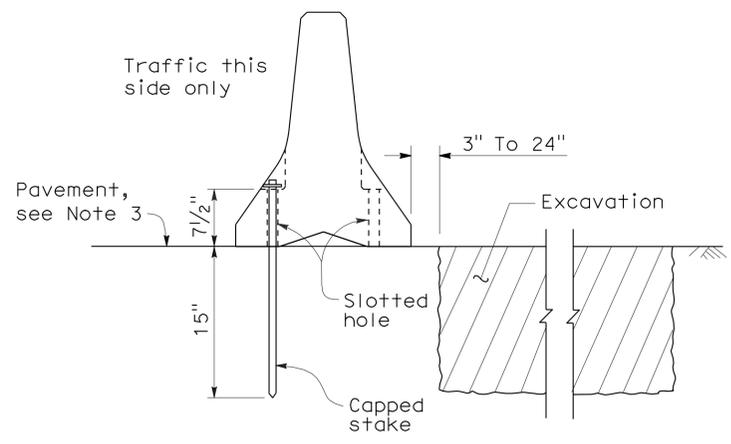
SECTION I-I

NOTES:

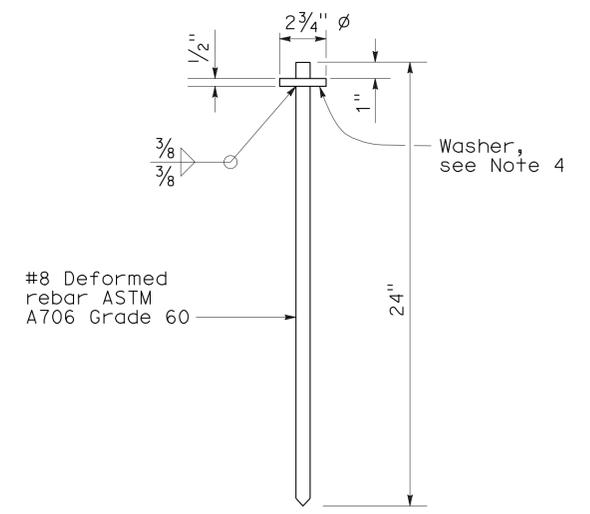
1. Where Type K Temporary Railing is placed as a temporary or long term barrier in two-way traffic on highways with less than 24" from the edge of traveled way, use four capped stakes per every other panel with end panels staked.
2. Where Type K Temporary Railing is placed 3" to 24" from the edge of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



RAILING STAKING CONFIGURATION ADJACENT TO AN EXCAVATION
See Note 2



SECTION J-J



CAPPED STAKE DETAIL

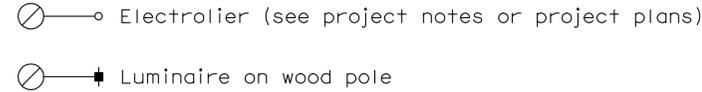
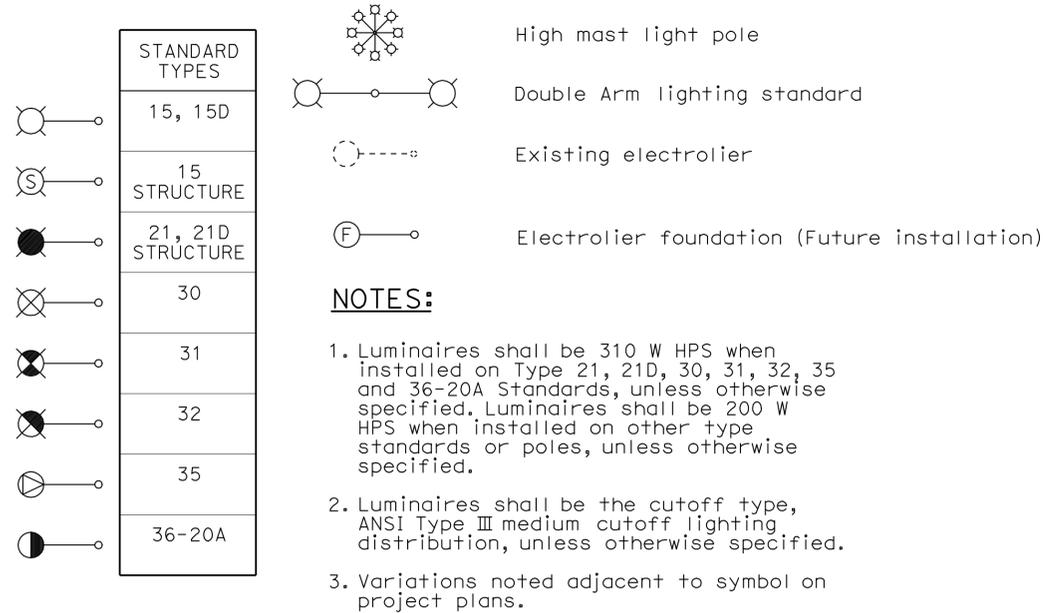
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**TEMPORARY RAILING
(TYPE K)**
NO SCALE

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

NEW STANDARD PLAN NSP T3A

2006 NEW STANDARD PLAN NSP T3A

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
04	Alameda, Contra Costa, San Joaquin, Solano	17,24,37, 80,87,etc	Var	15	17

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

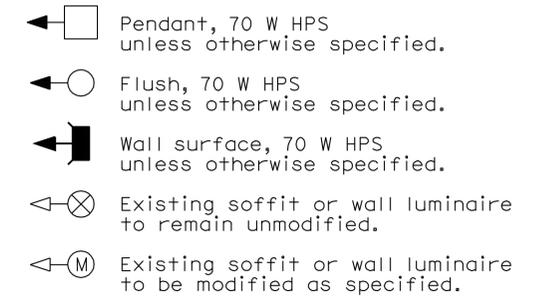
October 5, 2007
PLANS APPROVAL DATE

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

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To accompany plans dated 3-19-12

SOFFIT AND WALL MOUNTED LUMINAIRES



NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

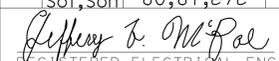
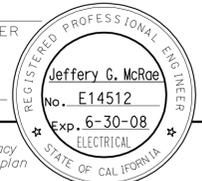
NO SCALE

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
04	Alameda, Contra Costa, San Joaquin	17, 24, 37, 80, 87, etc	Var	16	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

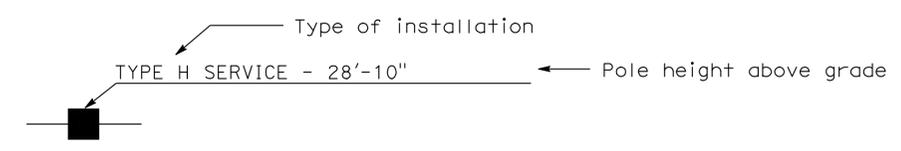
SIGNAL EQUIPMENT

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:

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

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

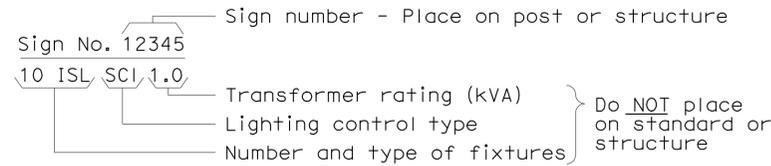
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1B

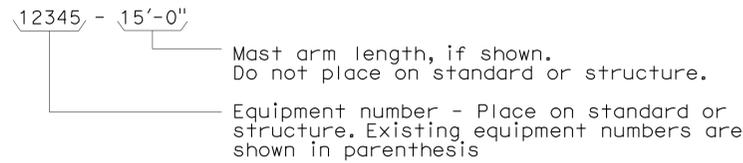
2006 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

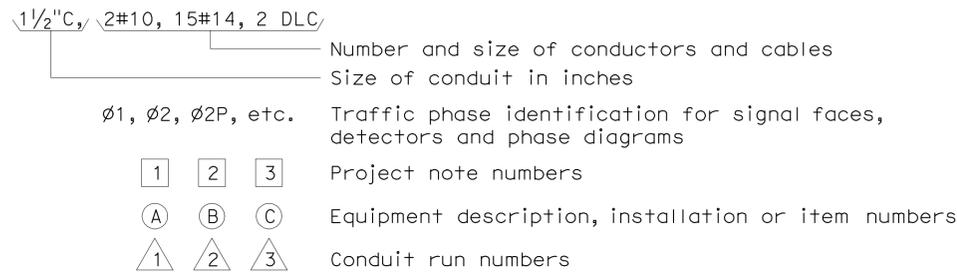
ILLUMINATED SIGN IDENTIFICATION NUMBER:



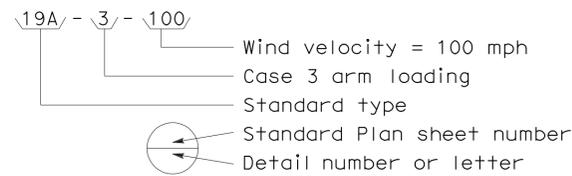
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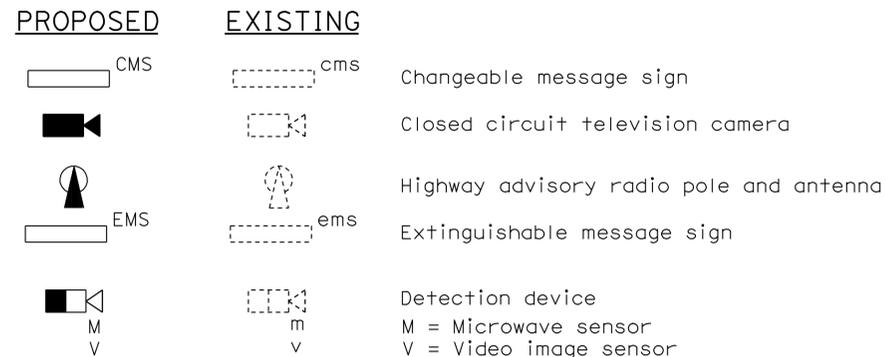
CONDUIT AND CONDUCTOR IDENTIFICATION:



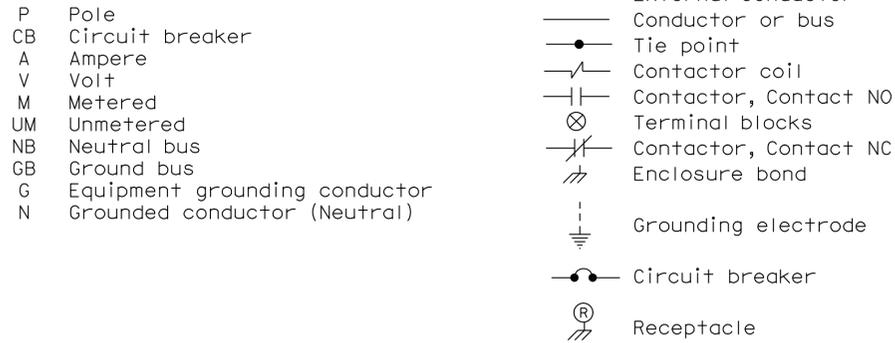
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



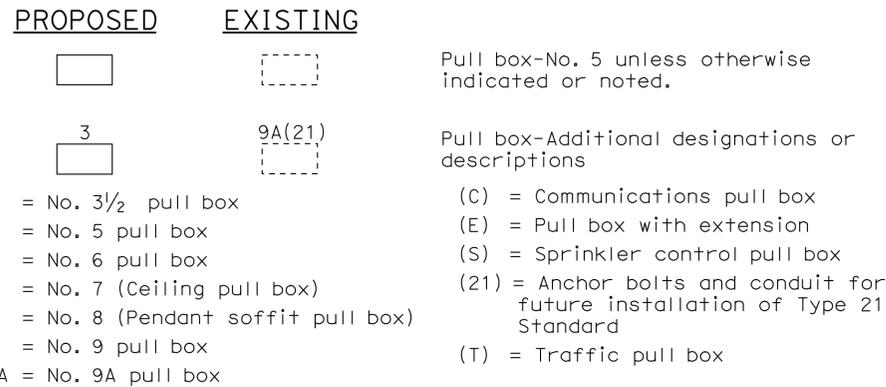
MISCELLANEOUS EQUIPMENT



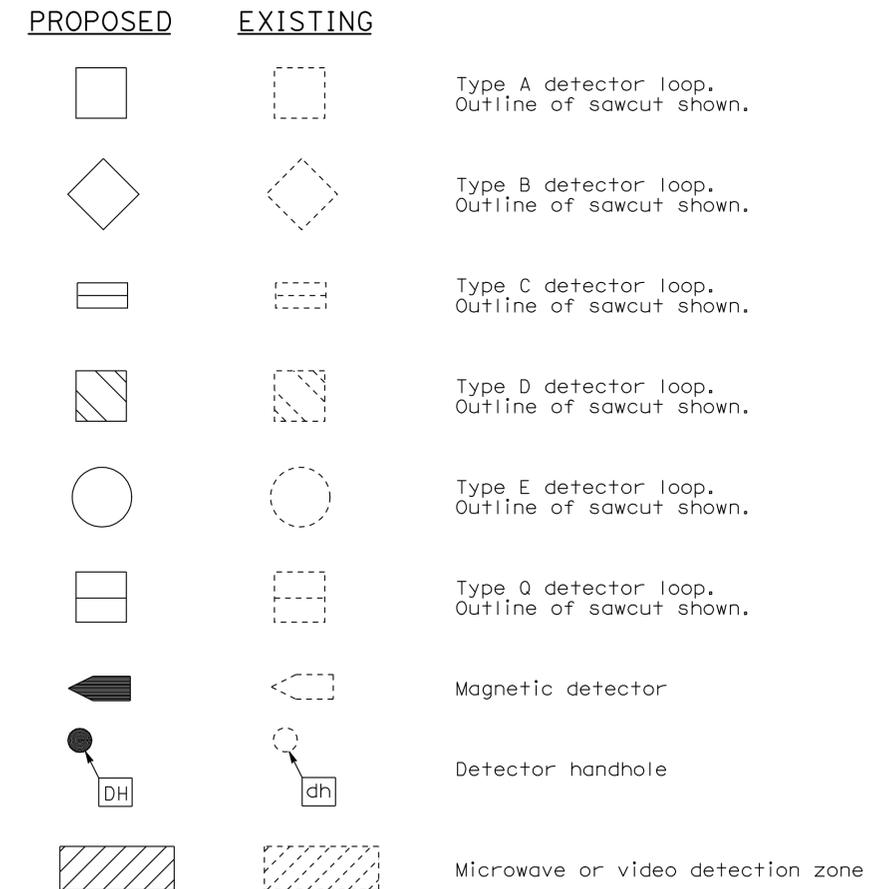
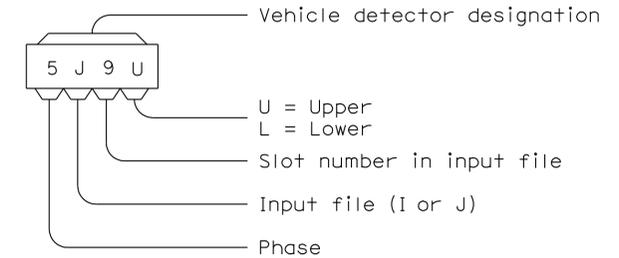
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

2006 REVISED STANDARD PLAN RSP ES-1C