

INDEX OF PLANS

SHEET No.	DESCRIPTION
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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 ER-4313(004)E  
 DEPARTMENT OF TRANSPORTATION  
**PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY**  
**IN FRESNO COUNTY ABOUT 8 MILES NORTH OF LEMOORE FROM LAGUNA AVENUE TO 0.04 MILE SOUTH OF HARLAN AVENUE**

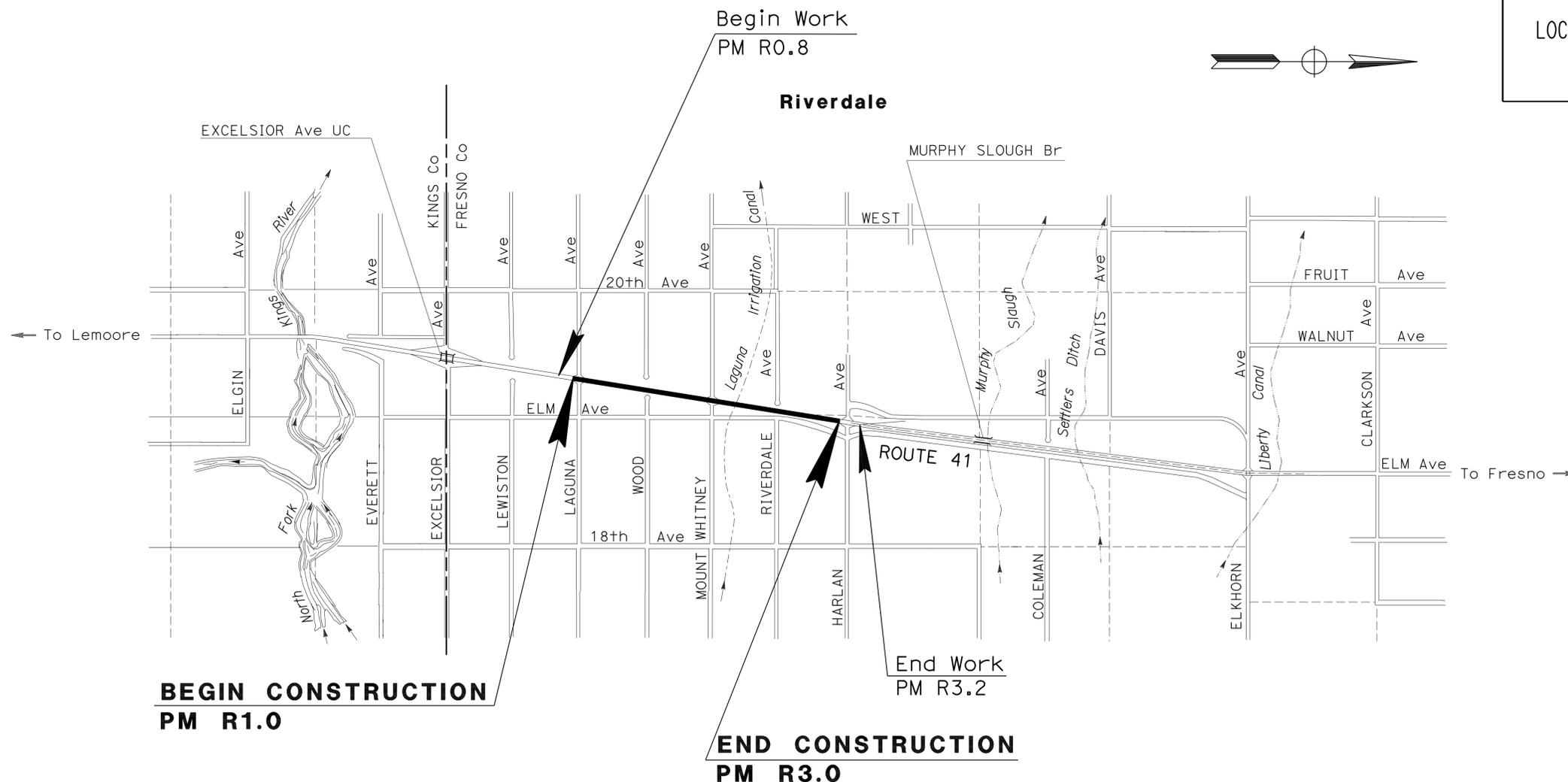
TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41	R1.0/R3.0	1	15





LOCATION MAP



NO SCALE

PROJECT MANAGER <b>SUZIE HOLDRIDGE</b>
DESIGN ENGINEER <b>ROBERTO BANDA</b>

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

*Peter A. Chander* 9-20-10  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER



September 20, 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.	<b>06-0H0004</b>
PROJECT ID	<b>0600020028</b>

DATE PLOTTED => 19-NOV-2010 TIME PLOTTED => 13:14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41	R1.0/R3.0	2	15

<i>Peter Chander</i>	9-20-10
REGISTERED CIVIL ENGINEER	DATE
9-20-10	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER  
**PETER A CHANDER**  
 No. 63988  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

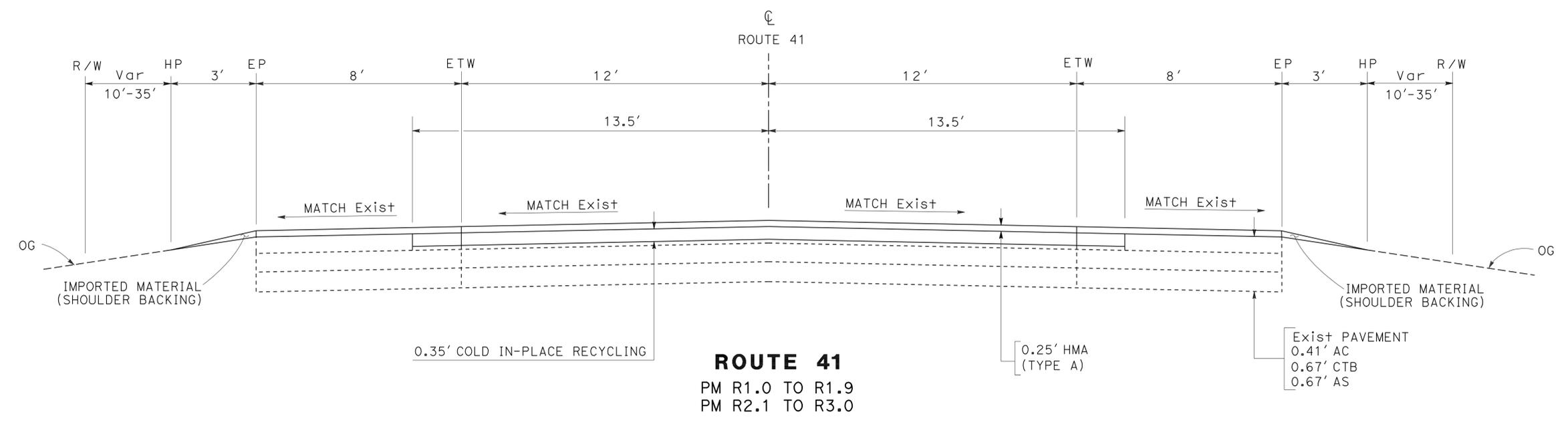
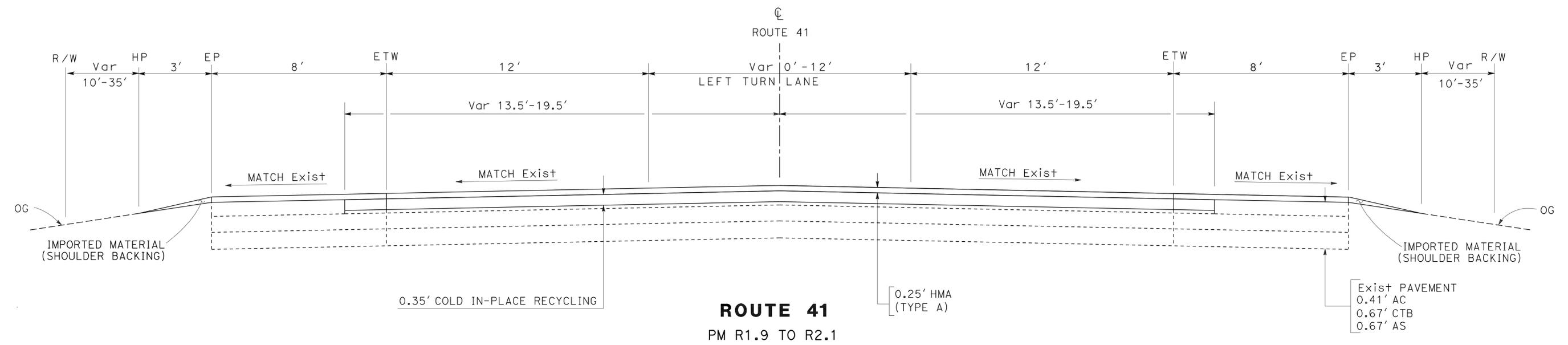
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES:**

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

**DESIGN DESIGNATION**

2010	ADT	20,300				
2015	ADT	22,800				
2020	ADT	25,500				
2015	DHV	2,750	TI 10.5	ESAL	3,490,000	
2020	DHV	3,050	TI 11.5	ESAL	7,440,000	
D			53%	PEAK DIRECTIONAL VOLUME 2010-2020		
T			8%	TRUCK DESIGN HOURLY VOLUME 2010-2020		



**TYPICAL CROSS SECTIONS**  
NO SCALE **X-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 ROBERTO BANDA  
 FUNCTIONAL SUPERVISOR  
 CHECKED BY  
 DESIGNED BY  
 PETER CHANDER  
 HAL KENYON  
 REVISOR  
 DATE  
 REVISIONS

USERNAME => s118789  
DGN FILE => 60h000ca001.dgn



UNIT 1469

PROJECT NUMBER & PHASE

06000200281

LAST REVISION | DATE PLOTTED => 21-SEP-2010  
 09-13-10 | TIME PLOTTED => 14:30

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41	R1.0/R3.0	3	15

<i>Peter Chander</i>	9-20-10
REGISTERED CIVIL ENGINEER	DATE
9-20-10	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER	
PETER A CHANDER	
No. 63988	
Exp. 09-30-12	
CIVIL	
STATE OF CALIFORNIA	

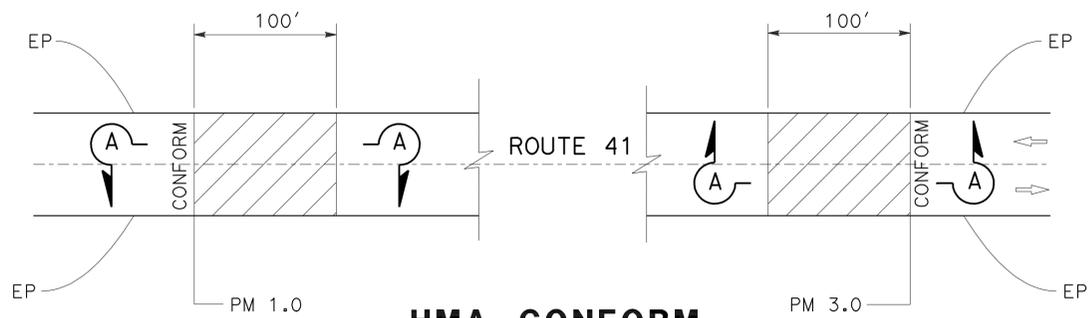
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES:**

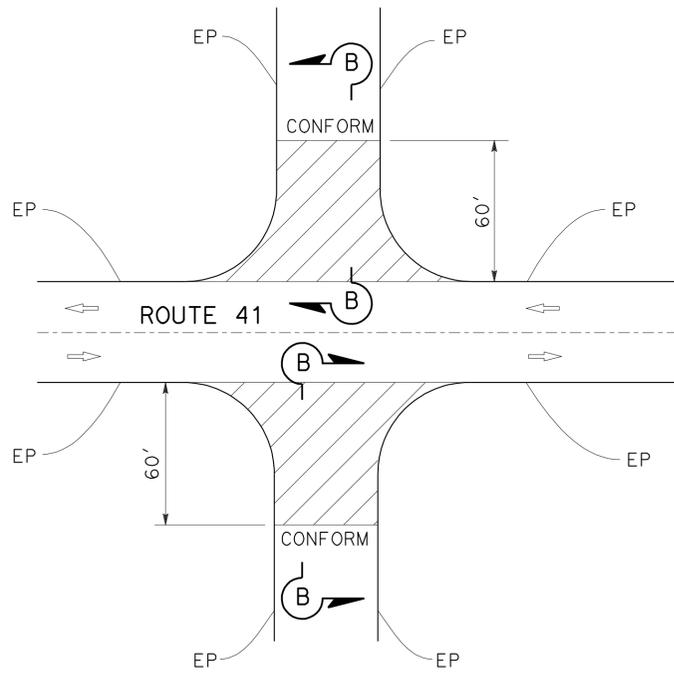
- EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
- STATIONING SHOWN IS FOR CONSTRUCTION PURPOSES ONLY.

**LEGEND:**

- COLD PLANE AC PAVEMENT
- DIRECTION OF TRAVEL

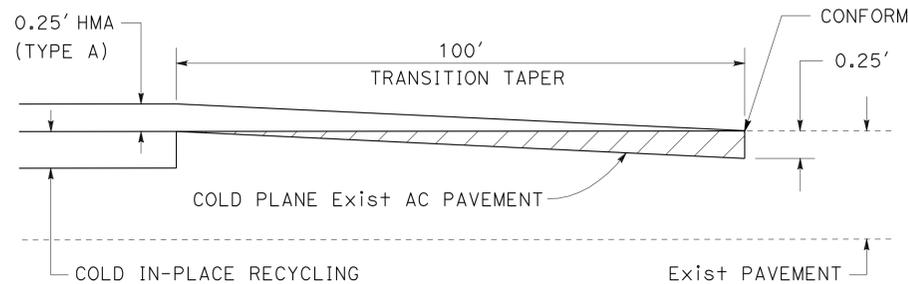


**HMA CONFORM**  
BEGIN AND END OF PROJECT



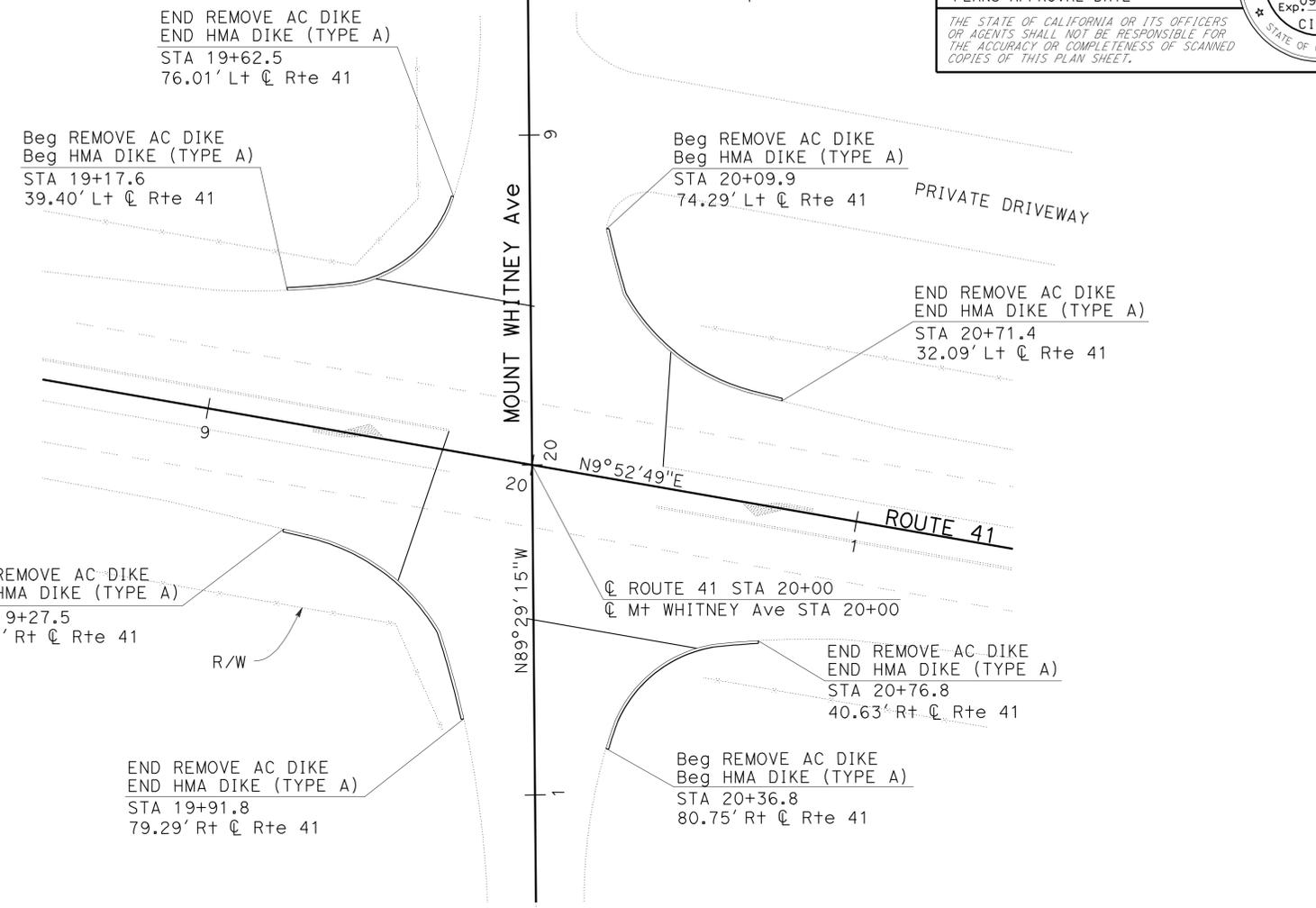
**TYPICAL INTERSECTION CONFORM**

ROUTE 41/LAGUNA Ave  
ROUTE 41/Mt WHITNEY Ave

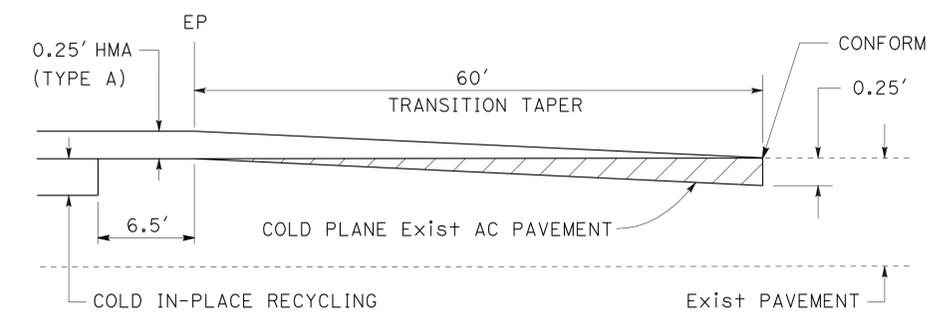


SECTION A-A

**LONGITUDINAL CONFORM TAPER**



**HMA DIKE**



SECTION B-B

**LONGITUDINAL CONFORM TAPER**

**CONSTRUCTION DETAILS**

NO SCALE

**C-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
DESIGN

FUNCTIONAL SUPERVISOR: ROBERTO BANDA  
CALCULATED/DESIGNED BY: [blank]  
CHECKED BY: [blank]

REVISOR: HAL KENYON  
DATE: [blank]  
REVISOR: PETER CHANDER  
DATE: [blank]

# STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre	41	R1.0/R3.0	4	15

*Hassan M. Taha* 3-26-10  
 REGISTERED CIVIL ENGINEER DATE

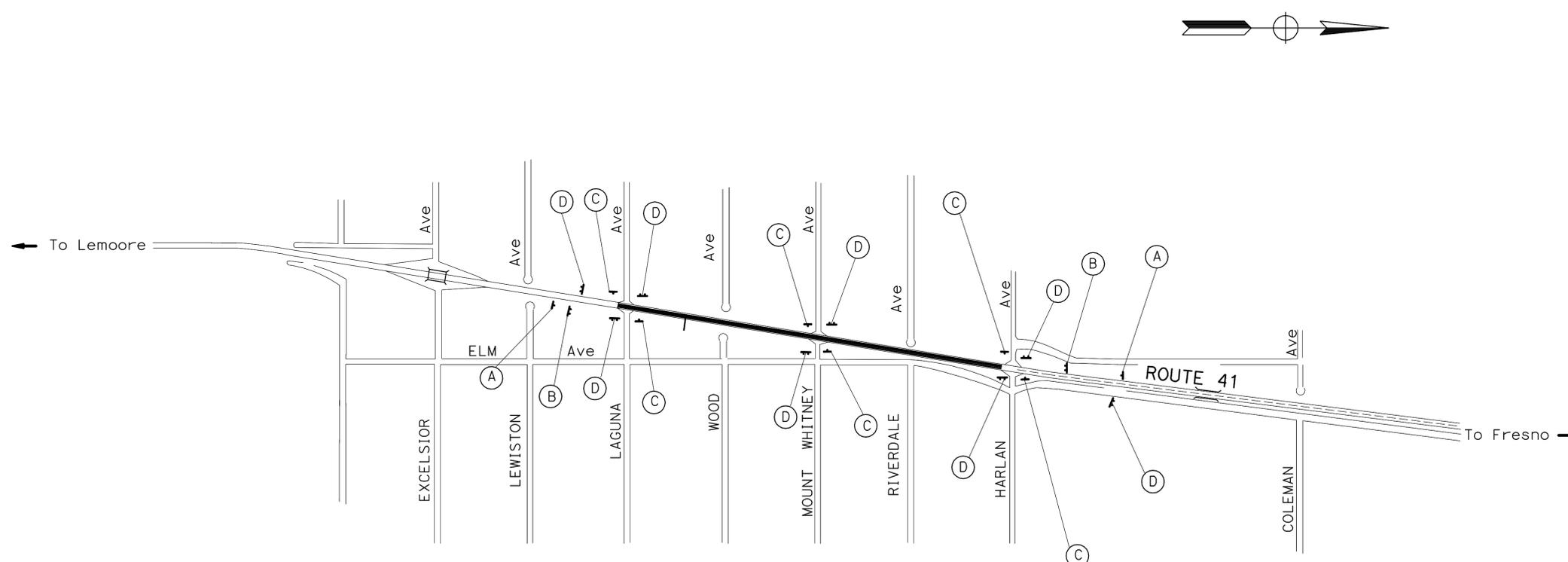
9-20-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**HASSAN M. TAHA**  
 No. 60130  
 Exp. 06/30/12  
 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.

SIGN CODE	SIGN MESSAGE	PANEL SIZE	SIGN MESSAGE	No. OF POST AND SIZE	EACH
(A)	W20-1	48" x 48"	ROAD WORK AHEAD	1- 4" x 6"	2
(B)	C40(CA)	102" x 42"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	2- 6" x 6"	2
(C)	W20-1	36" x 36"	ROAD WORK AHEAD	1- 4" x 4"	6
(D)	G20-2	48" x 24"	END ROAD WORK	2- 6" x 6"	8

NOTE: EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: MOHAMMED QATAMI  
 CALCULATED/DESIGNED BY: MOHAMMED QATAMI  
 KEVIN NGUYEN  
 HASSAN TAHA  
 P.P.: 09-10-09  
 REVISED BY: KEVIN NGUYEN  
 DATE REVISED: 09-10-09

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.  
 EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.

**CONSTRUCTION AREA SIGNS**  
NO SCALE  
**CS-1**

LAST REVISION | DATE PLOTTED => 21-SEP-2010  
 09-13-10 | TIME PLOTTED => 15:00

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** **TRAFFIC DESIGN**  
 FUNCTIONAL SUPERVISOR: MOHAMMED QATAMI  
 CALCULATED/DESIGNED BY: KEVIN NGUYEN  
 CHECKED BY: HASSAN TAHA  
 REVISED BY: DATE REVISED:

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41	R1.0/R3.0	5	15

*Hassan Taaha* 3-26-10  
 REGISTERED CIVIL ENGINEER DATE  
 9-20-10  
 PLANS APPROVAL DATE

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### TEMPORARY TRAFFIC STRIPE (PAINT)

LOCATION PM	DETAIL No.	TEMPORARY TRAFFIC STRIPE (PAINT)				TEMPORARY PAVEMENT MARKING (PAINT)	
		4" SOLID	4" (BROKEN 12-3)	4" (BROKEN 36-12)	8" SOLID	DESCRIPTION	SQFT
		LF	LF	LF	LF		
1.02 TO 1.07	19	264		264			
1.07 TO 1.81	6			3,907			
1.81 TO 1.88	19	370		370			
1.88 TO 2.02	22	1,478					
2.04 TO 2.16	22	1,268					
2.16 TO 2.26	19	528		528			
2.26 TO 2.97	6			3,749			
2.97 TO 3.04	19	370		370			
1.94 TO 2.03	38B				475	3-TYPE III (L) ARROWS	126
2.04 TO 2.12	38B				425	3-TYPE III (L) ARROWS	126
1.04 TO 3.02	27B	19,958					
Rte 41/LAGUNA Ave	27C		528			2-LIMIT LINE, 2-STOP	68
Rte 41/MOUNT WHITNEY	27C		422			4-LIMIT LINE	48
Rte 41/HARLAN Ave	27C		528			2-LIMIT LINE, 2-STOP	68
SUB-TOTAL		24,236	1,478	9,188	900		436
TOTAL		35,802					436

## TRAFFIC HANDLING QUANTITIES THQ-1

LAST REVISION | DATE PLOTTED => 21-SEP-2010  
 08-04-10 | TIME PLOTTED => 15:01

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre	41	R1.0/R3.0	6	15

*Peter Chander* 9-20-10  
 REGISTERED CIVIL ENGINEER DATE

9-20-10  
 PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER  
 PETER A  
 CHANDER  
 No. 63988  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

**NOTE:**  
SEE SHEET THQ-1 FOR TEMPORARY TRAFFIC STRIPE (PAINT) QUANTITIES.

**PAVEMENT DELINEATION**

LOCATION PM	DETAIL No.	PAVEMENT MARKER (RETROREFLECTIVE)			(N)  REMOVE PAVEMENT MARKER	THERMOPLASTIC TRAFFIC STRIPE				THERMOPLASTIC PAVEMENT MARKING	
		TYPE D Yellow (Two-Way)	TYPE H Yellow (One-Way)	TYPE G Clear (One-Way)		4" SOLID	4" (BROKEN 12-3)	4" (BROKEN 36-12)	8" SOLID	DESCRIPTION	SQFT
		EA	EA	EA		EA	LF	LF	LF		
1.02 TO 1.07	19	7	12		19	264		264			
1.07 TO 1.81	6	83			83			3,907			
1.81 TO 1.88	19	9	17		26	370		370			
1.88 TO 2.02	22	63			63	1,478					
2.04 TO 2.16	22	54			54	1,268					
2.16 TO 2.26	19	12	23		35	528		528			
2.26 TO 2.97	6	80			80			3,749			
2.97 TO 3.04	19	9	17		26	370		370			
1.94 TO 2.03	38B			42	42				475	3-TYPE III (L) ARROWS	126
2.04 TO 2.12	38B			38	38				425	3-TYPE III (L) ARROWS	126
1.04 TO 3.02	27B					19,958					
Rte 41/LAGUNA Ave	27C						528			2-LIMIT LINE, 2-STOP	68
Rte 41/MOUNT WHITNEY	27C						422			4-LIMIT LINE	48
Rte 41/HARLAN Ave	27C						528			2-LIMIT LINE, 2-STOP	68
SUB-TOTAL		317	69	80	466	24,236	1,478	9,188	900		436
TOTAL		466				24,236	1,478	9,188	900		436

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

**ROADWAY QUANTITIES**

ROUTE	LOCATION PM		COLD IN-PLACE RECYCLING	EMULSIFIED RECYCLING AGENT	TACK COAT	HMA (TYPE A)	COLD PLANE AC PAVEMENT	REMOVE AC DIKE	PLACE HMA DIKE (TYPE A)	ASPHALTIC EMULSION (FOG SEAL COAT)	SAND COVER	
	FROM	TO	SQYD	TON	TON	TON	SQYD	LF	LF	TON	TON	
41	1.0	1.9	14,541	106	2.2	3,531				5.8	12.5	
	1.9	2.1	5,835	44	0.5	1,275				1.3	2.8	
	2.1	3.0	14,541	106	2.2	3,531				5.7	12.5	
	LAGUNA Ave (INTERSECTION)					0.2	201	1,320				
	MOUNT WHITNEY Ave (INTERSECTION)					0.2	195	1,284				
MOUNT WHITNEY Ave (DIKE)						8		292	292			
LONGITUDINAL CONFORM (PM 1.0, 3.0)					0.2	149	979					
TOTAL			34,917	256	5.5	8,890	3,583	292	292	12.8	27.8	

**IMPORTED MATERIAL  
(SHOULDER BACKING)**

POSTMILE	Loc	TON
1.0 TO 1.9	Lt/Rt	254
1.9 TO 2.1	Lt/Rt	57
2.1 TO 3.0	Lt/Rt	254
TOTAL		565

**SUMMARY OF QUANTITIES  
Q-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 Hal Kenyon  
 PETER CHANDER  
 ROBERTO BANDA

LAST REVISION DATE PLOTTED => 21-SEP-2010  
 09-13-10 TIME PLOTTED => 15:02

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41	R1.0/R3.0	7	15

<i>Mona Attallah</i> 8-24-10 REGISTERED ELECTRICAL ENGINEER DATE	
9-20-10 PLANS APPROVAL DATE	

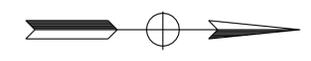
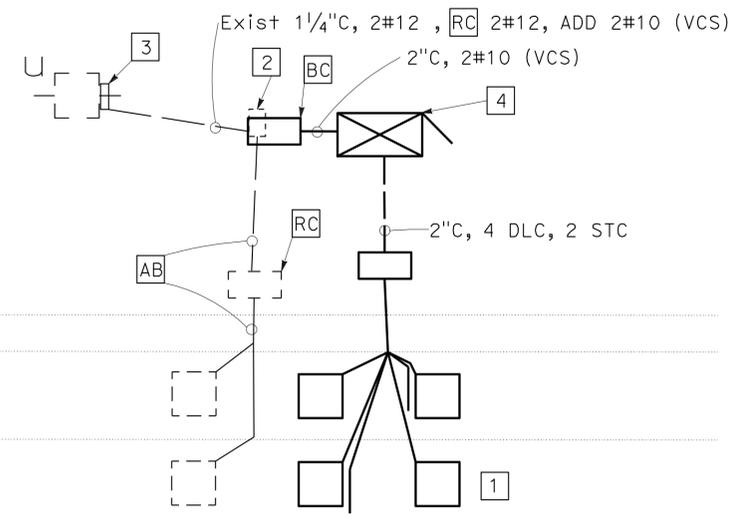
  

REGISTERED PROFESSIONAL ENGINEER MONA N. ATTALLAH No. 18407 Exp 6/30/12 ELECTRICAL STATE OF CALIFORNIA
---

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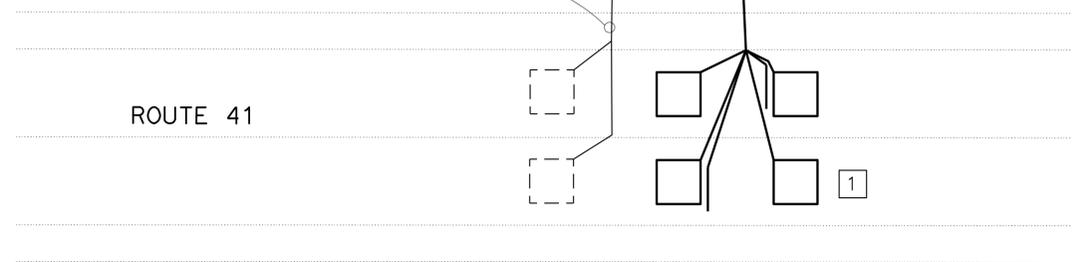
**NOTES: (FOR THIS SHEET ONLY)**

- INDUCTIVE LOOP DETECTORS AND PIEZO AXLE SENSORS SHALL BE PLACED AND IDENTIFIED AS SHOWN ON DETAILS A AND B.
- RC ELECTRICAL ENCLOSURE.
- Exist TYPE A SERVICE. REUSE EXISTING CIRCUIT BREAKER.
- MODEL 334 CABINET WITH AUTOMATED TRAFFIC COUNTER.
- AB ALL EXISTING LOOP CONDUCTORS.
- RIGHT OF WAY LIMITS ARE INDETERMINATE, AND ARE NOT SHOWN. THE CONTRACTOR MUST CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE FOR CONDITIONS OF USE PRIOR TO COMMENCING WORK.
- EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.

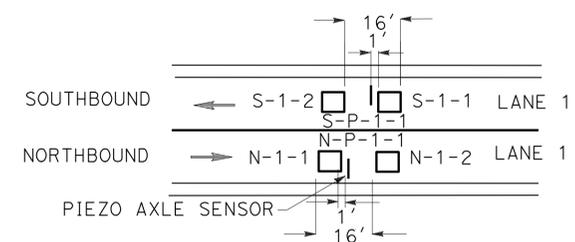


**ABBREVIATIONS:**

- VCS - VEHICLE CLASSIFICATION STATION  
 STC - SCREENED TRANSMISSION CABLE



**MODIFY VCS  
PM 1.01**



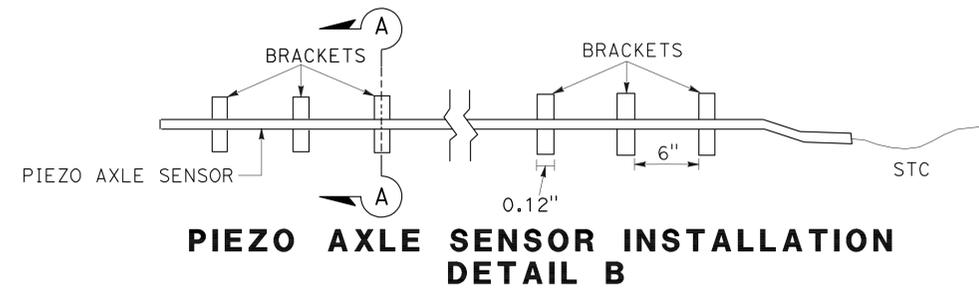
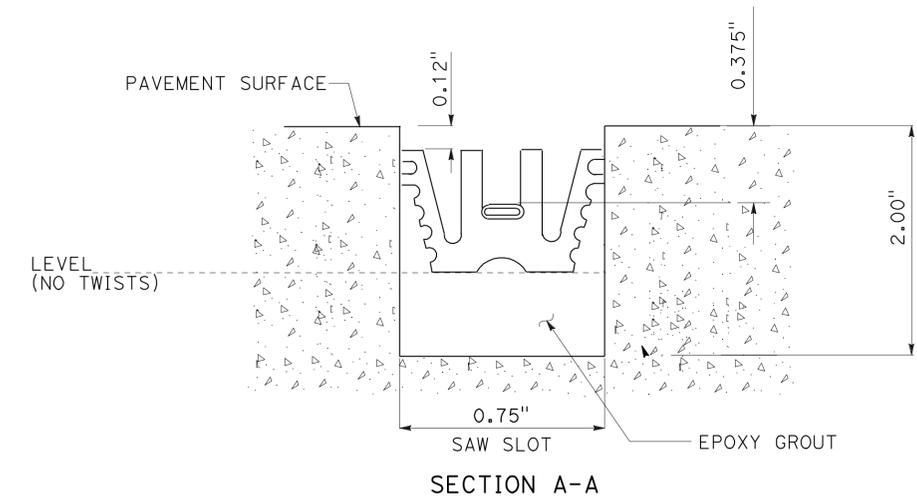
**DLC AND PIEZO AXLE SENSOR IDENTIFICATION  
DETAIL A**

**DLC IDENTIFICATION**

- DIRECTION OF TRAFFIC  
 N - NORTHBOUND  
 S - SOUTHBOUND  
 E - EASTBOUND  
 W - WESTBOUND
- 1 - ENTERING  
 2 - LEAVING  
 LANE NUMBER

**PIEZO AXLE SENSOR IDENTIFICATION**

- DIRECTION OF TRAFFIC  
 N - NORTHBOUND  
 S - SOUTHBOUND  
 E - EASTBOUND  
 W - WESTBOUND
- 1 - FOR ALL PIEZO AXLE SENSORS  
 LANE NUMBER  
 P - PIEZO AXLE SENSOR



**MODIFY VEHICLE CLASSIFICATION STATION  
NO SCALE  
E-1**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ALI BAKHDOUD  
 CALCULATED/DESIGNED BY: DANIEL VO  
 CHECKED BY: MONA ATTALLAH  
 REVISOR: DANIEL VO  
 DATE: 7/2/2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41	R1.0/R3.0	8	15

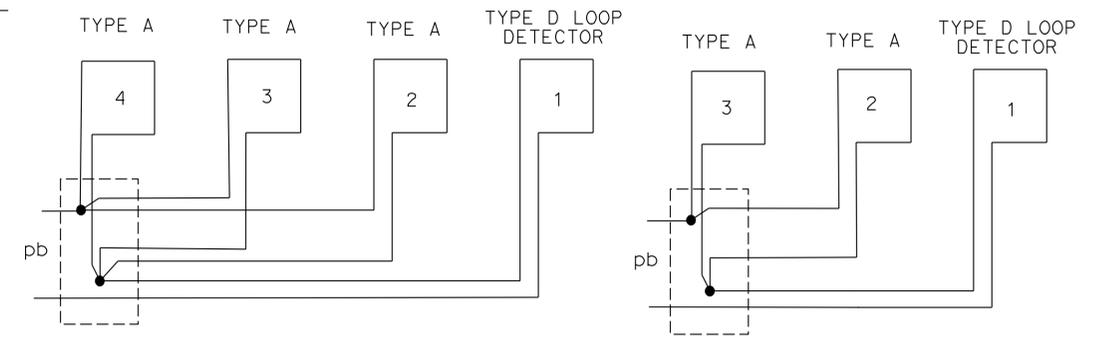
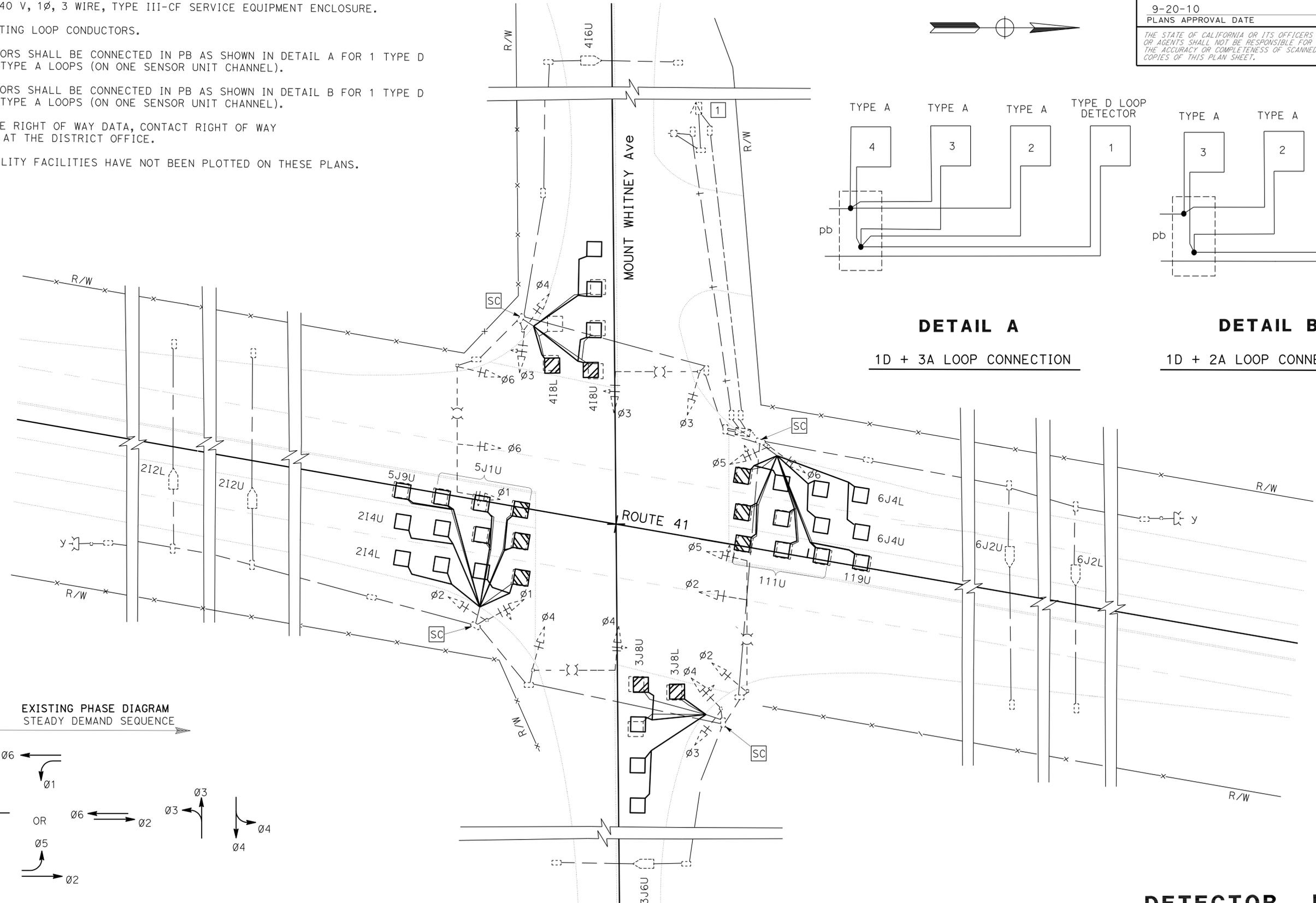
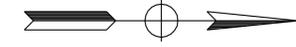
8-24-10  
 REGISTERED ELECTRICAL ENGINEER DATE  
 9-20-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 MONA N. ATTALLAH  
 No. 18407  
 Exp. 6/30/12  
 ELECTRICAL  
 STATE OF CALIFORNIA

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

**NOTES: (FOR THIS SHEET ONLY)**

- 1 Exist 120/240 V, 1Ø, 3 WIRE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
- 2 AB ALL EXISTING LOOP CONDUCTORS.
- 3 LOOP DETECTORS SHALL BE CONNECTED IN PB AS SHOWN IN DETAIL A FOR 1 TYPE D LOOP AND 3 TYPE A LOOPS (ON ONE SENSOR UNIT CHANNEL).
- 4 LOOP DETECTORS SHALL BE CONNECTED IN PB AS SHOWN IN DETAIL B FOR 1 TYPE D LOOP AND 2 TYPE A LOOPS (ON ONE SENSOR UNIT CHANNEL).
- 5 FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
6. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.



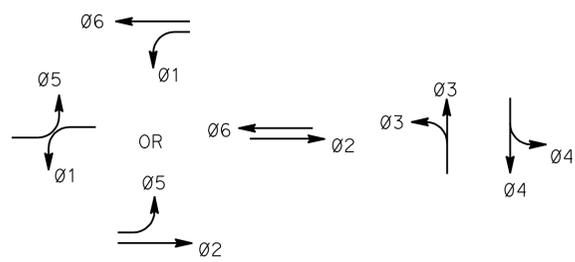
**DETAIL A**

1D + 3A LOOP CONNECTION

**DETAIL B**

1D + 2A LOOP CONNECTION

EXISTING PHASE DIAGRAM  
STEADY DEMAND SEQUENCE



THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**DETECTOR LOOP**  
SCALE: 1"=20'  
**E-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ALI BAKHOUD  
 CALCULATED/DESIGNED BY: DANIEL VO  
 REVISIONS: MONA ATTALLAH  
 REVISED BY: DANIEL VO  
 DATE REVISION:

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre	41	R1.0/R3.0	9	15

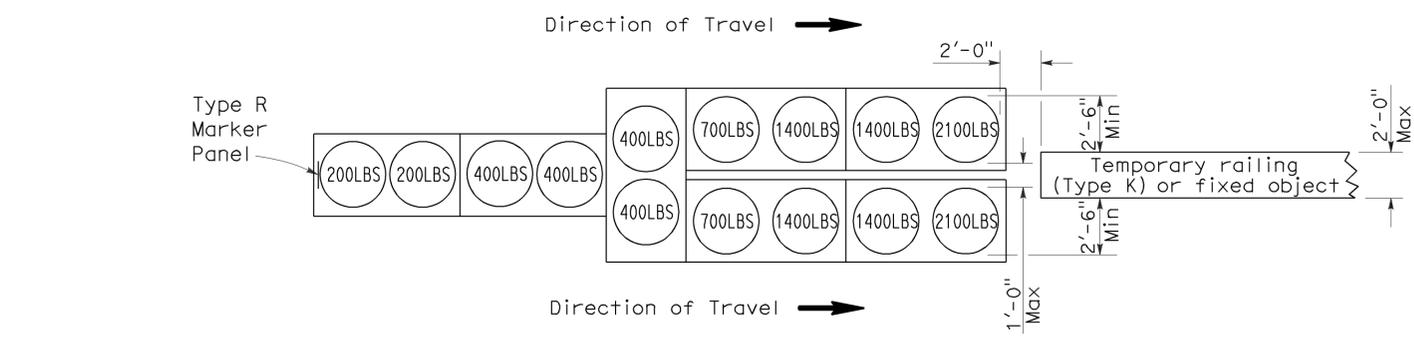
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

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.*

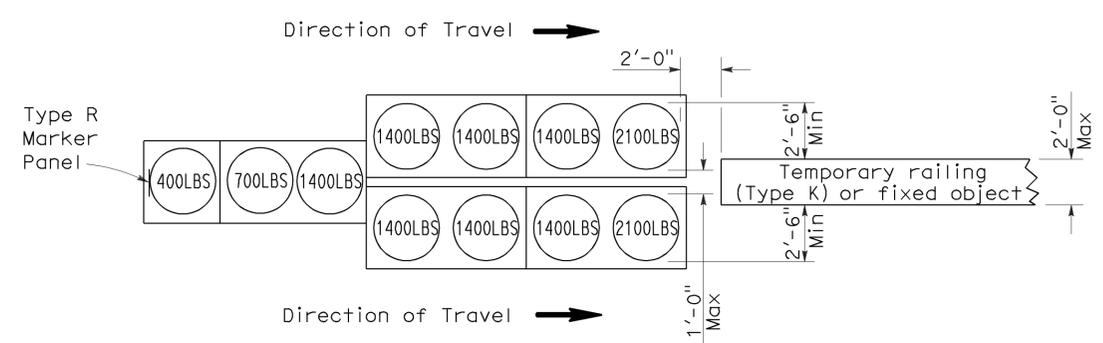
REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

To accompany plans dated 9-20-10



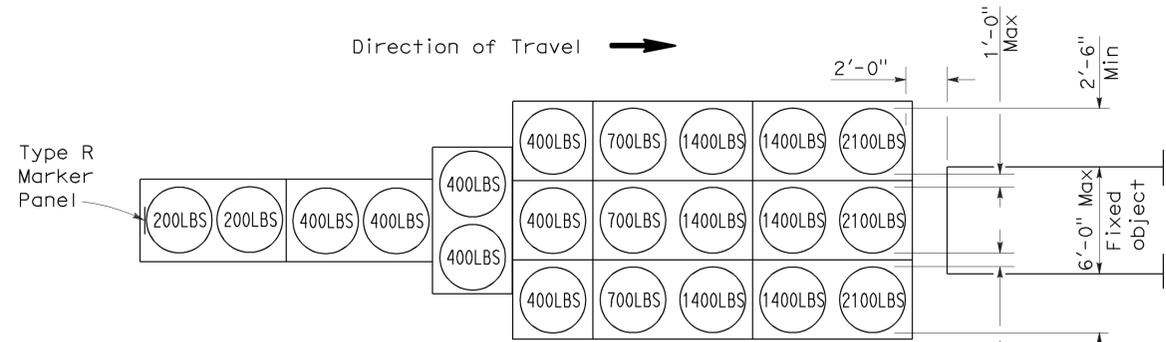
**ARRAY 'TU14'**

Approach speed 45 mph or more



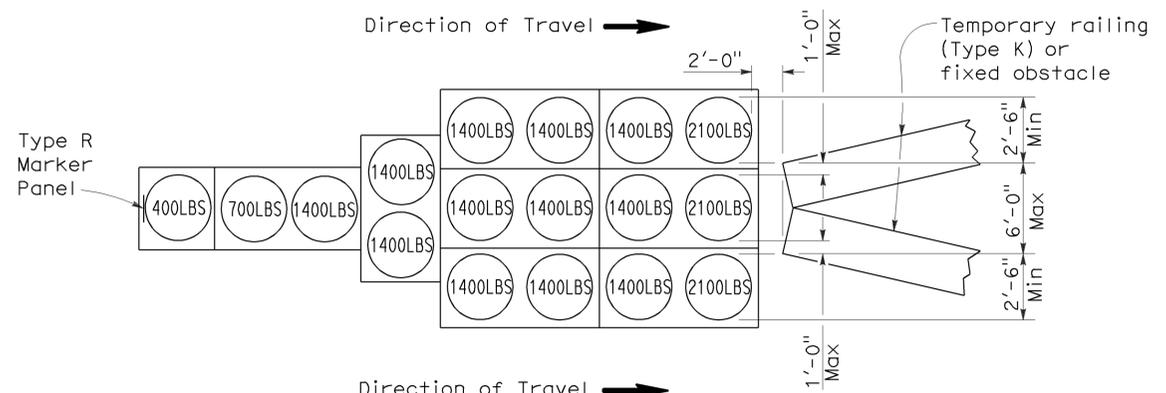
**ARRAY 'TU11'**

Approach speed less than 45 mph



**ARRAY 'TU21'**

Approach speed 45 mph or more

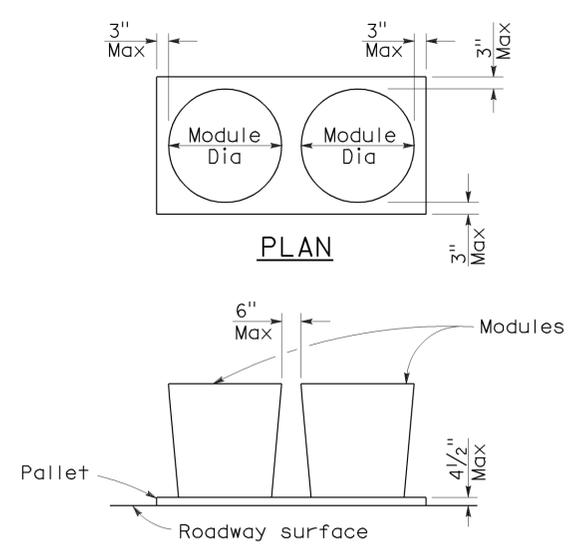


**ARRAY 'TU17'**

Approach speed less than 45 mph

**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.



**CRASH CUSHION PALLET DETAIL**  
See Note 7

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

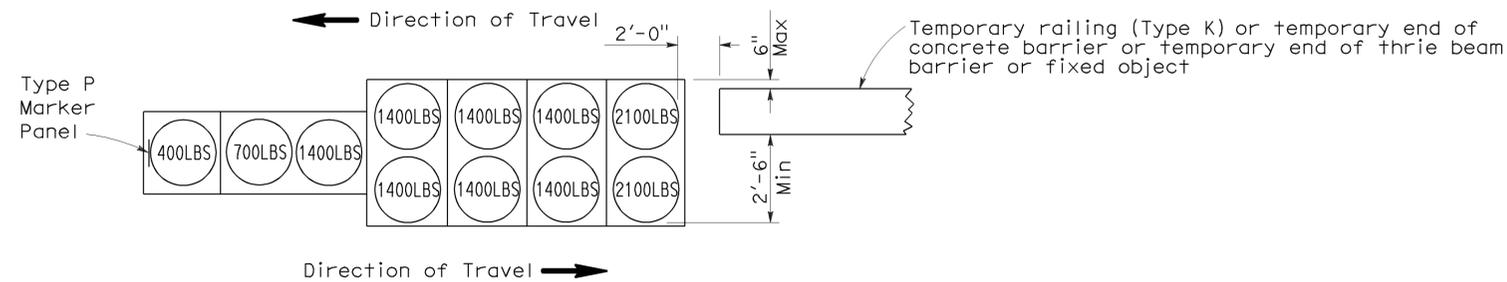
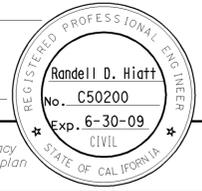
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre	41	R1.0/R3.0	10	15

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

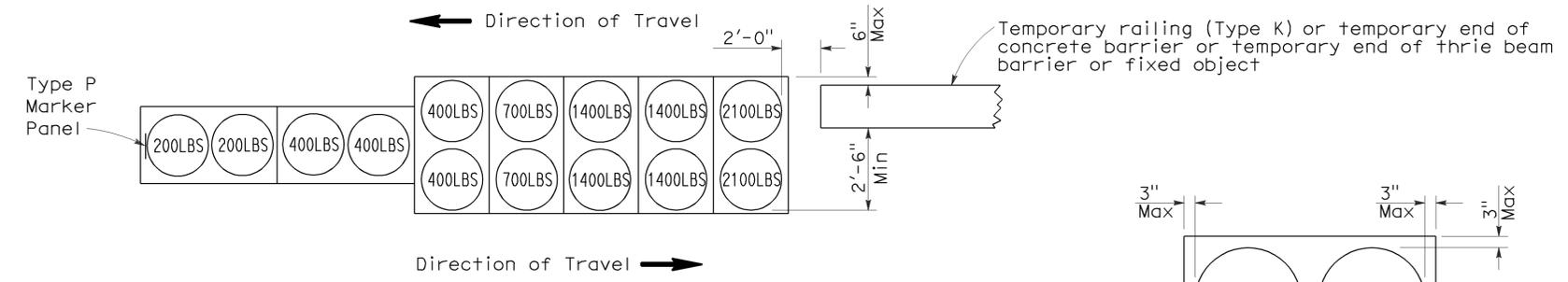
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 9-20-10



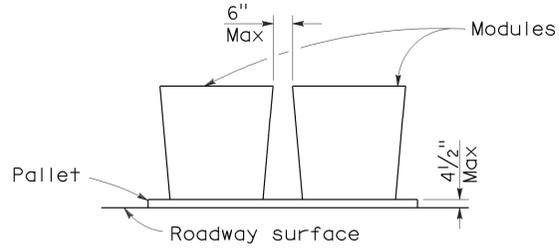
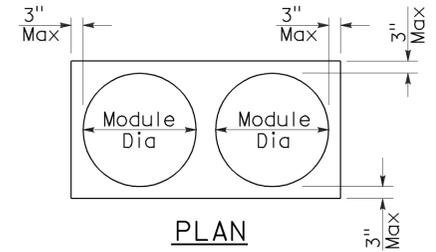
**ARRAY 'TB11'**

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

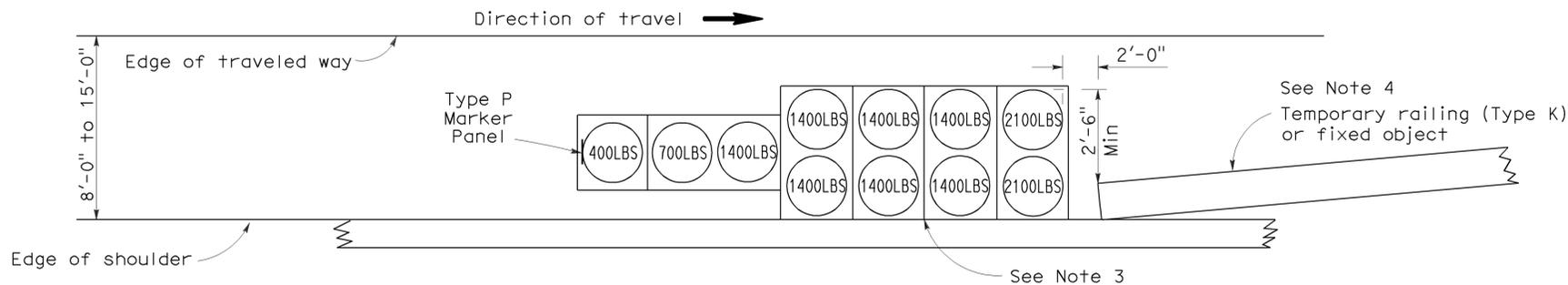
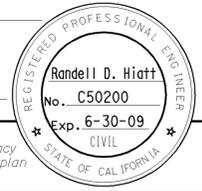
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre	41	R1.0/R3.0	11	15

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

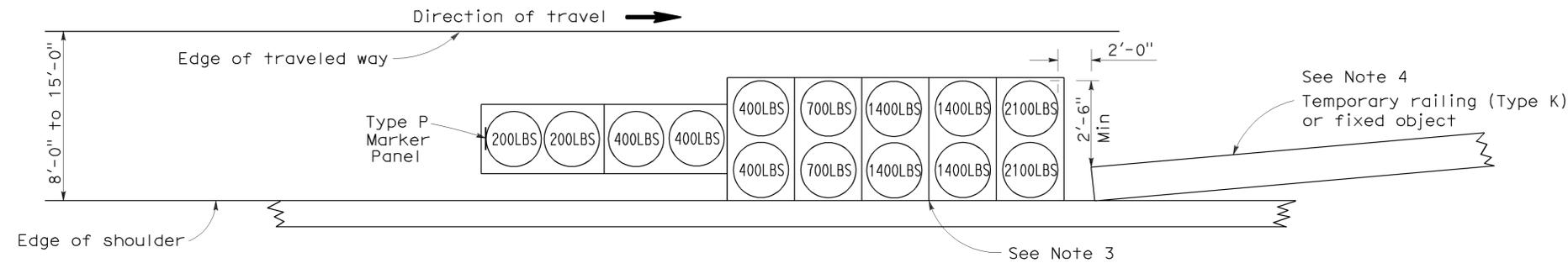
June 6, 2008  
PLANS APPROVAL DATE

*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.*

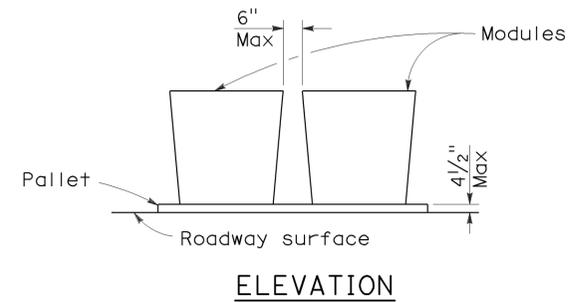
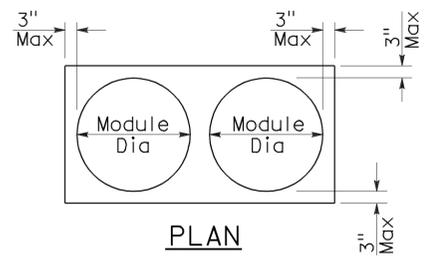
To accompany plans dated 9-20-10



**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 TYPES		
15, 15D		High mast light pole
15 STRUCTURE		Double Arm lighting standard
21, 21D STRUCTURE		Existing electrolier
30		Electrolier foundation (Future installation)
31		
32		
35		
36-20A		

**NOTES:**

- 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.
- Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.
- Variations noted adjacent to symbol on project plans.

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

## STANDARD NOTES:

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

# ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

## PROPOSED EXISTING

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre	41	R1.0/R3.0	12	15

*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 9-20-10

## SOFFIT AND WALL MOUNTED LUMINAIRES

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

### NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

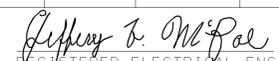
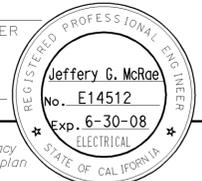
NO SCALE

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

**REVISED STANDARD PLAN RSP ES-1A**

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre	41	R1.0/R3.0	13	15

  
 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

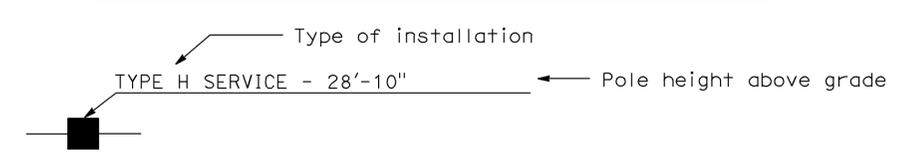
### SIGNAL EQUIPMENT

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

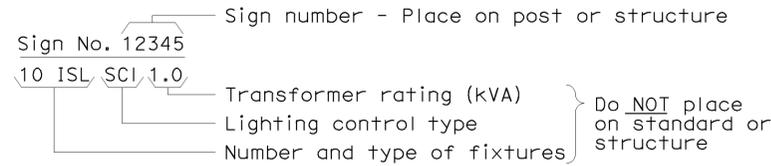
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-1B**

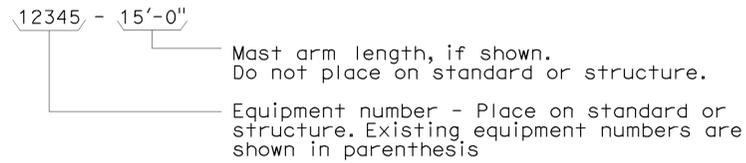
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

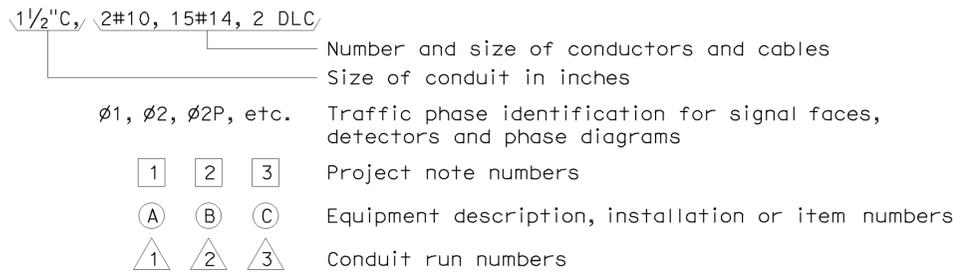
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



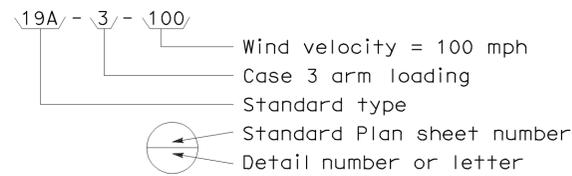
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



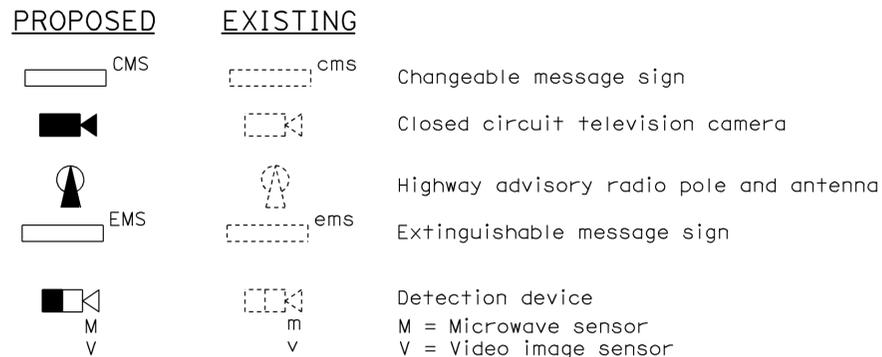
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



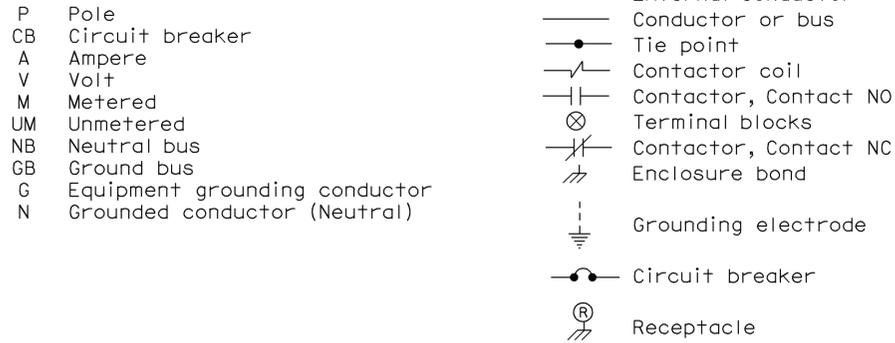
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



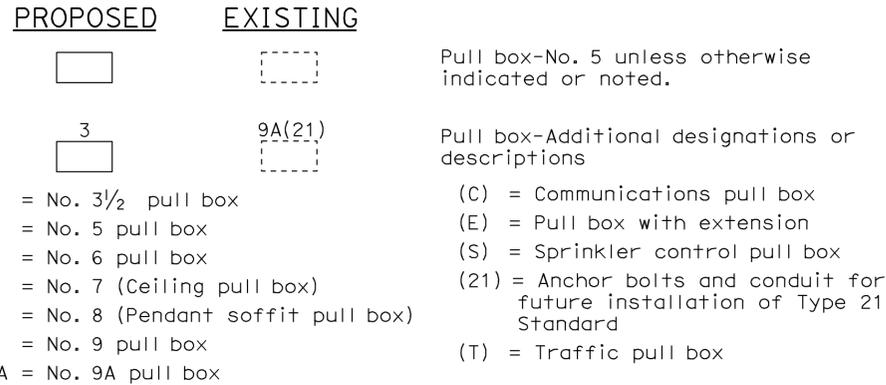
### MISCELLANEOUS EQUIPMENT



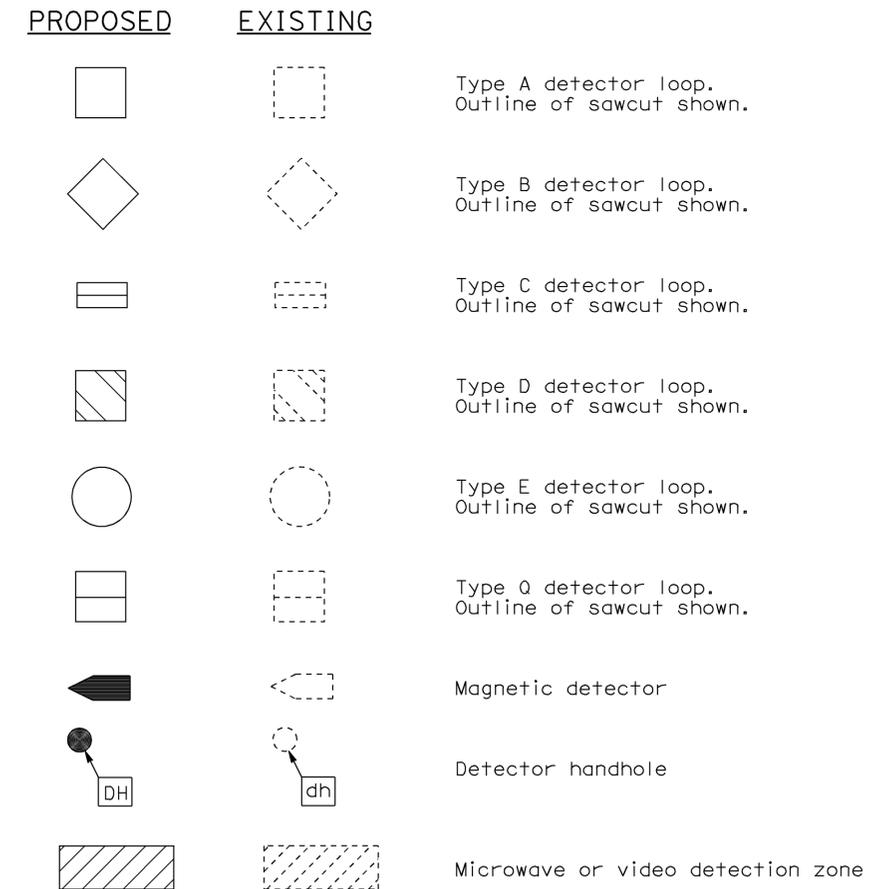
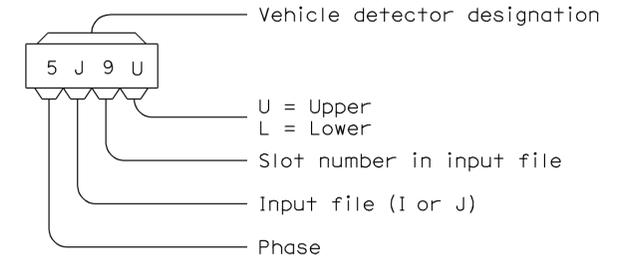
### WIRING DIAGRAM LEGEND



### 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.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre	41	R1.0/R3.0	15	15

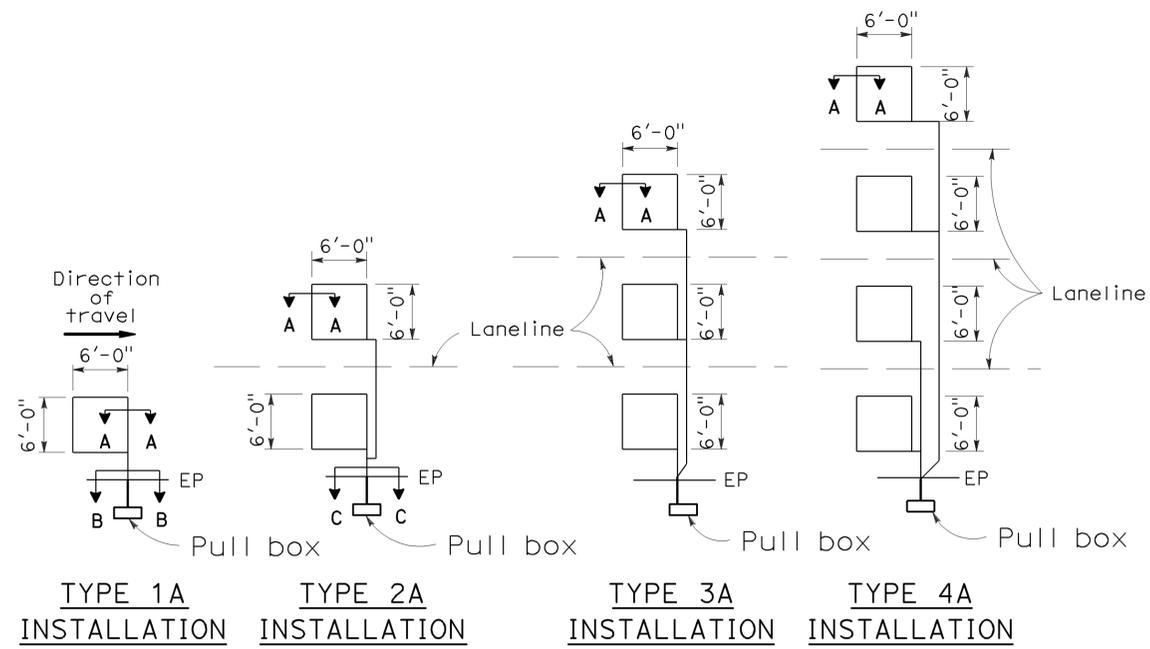
Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA

October 5, 2007  
 PLANS APPROVAL DATE

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## LOOP INSTALLATION PROCEDURE

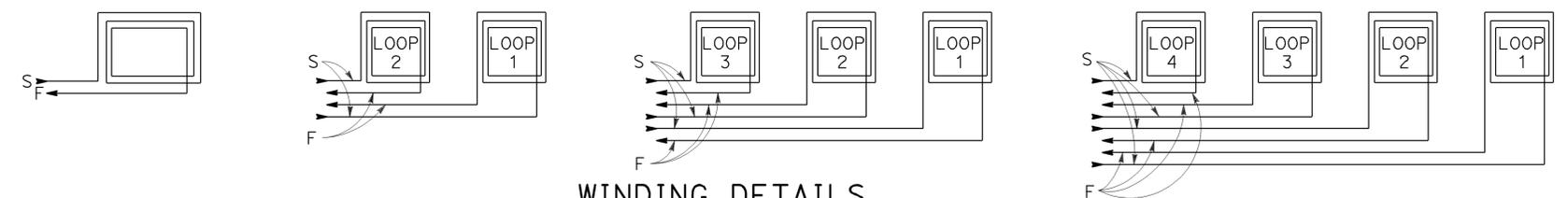
- Loops shall be centered in lanes.
- Saw slots in pavement for loop conductors as shown in details.
- Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
- Bottom of saw slot shall be smooth with no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



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

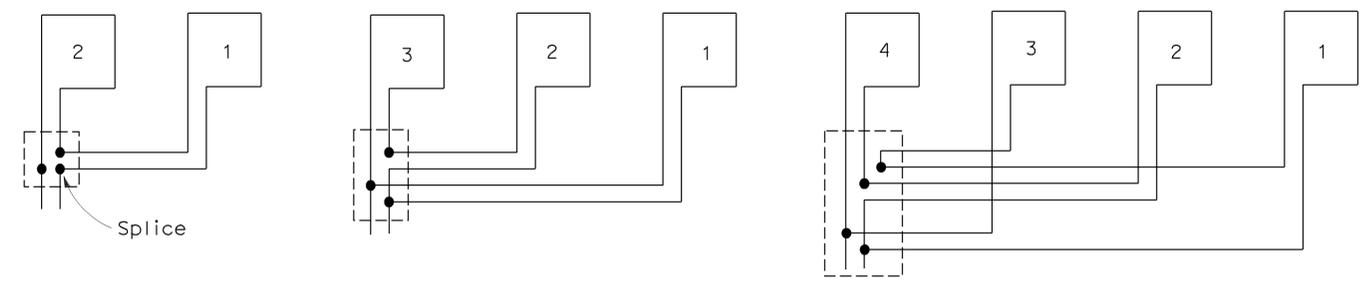
### SAWCUT DETAILS

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



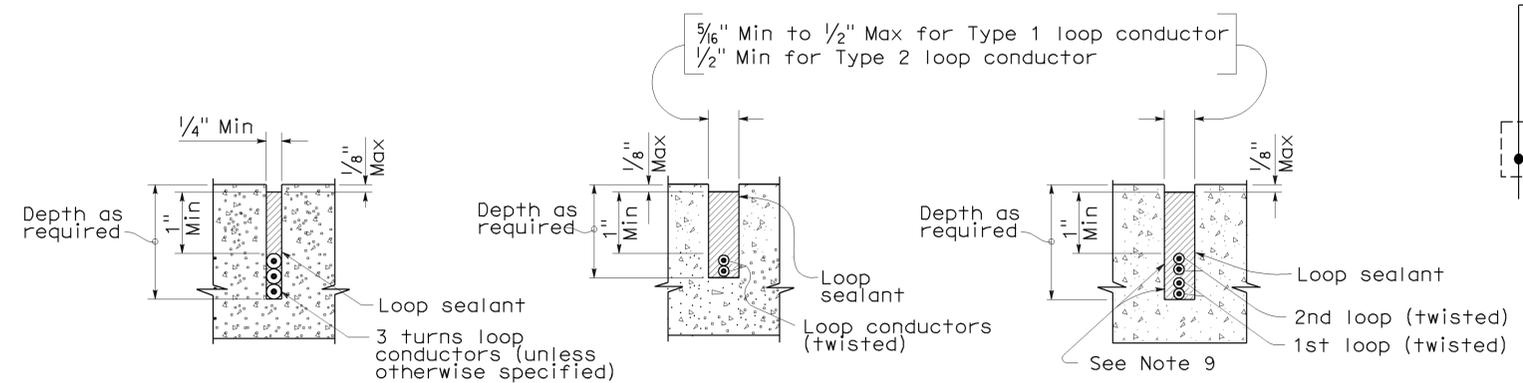
### WINDING DETAILS

See Notes 6 and 7



### TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



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

## ELECTRICAL SYSTEMS (DETECTORS)

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

NO SCALE

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

## REVISED STANDARD PLAN RSP ES-5A

2006 REVISED STANDARD PLAN RSP ES-5A