

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 **ACHSNHG-P099(560)E**  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN BUTTE COUNTY**  
**NEAR CHICO**  
**FROM 0.1 MILE SOUTH OF NEAL ROAD**  
**TO 0.2 MILE NORTH OF NEAL ROAD**

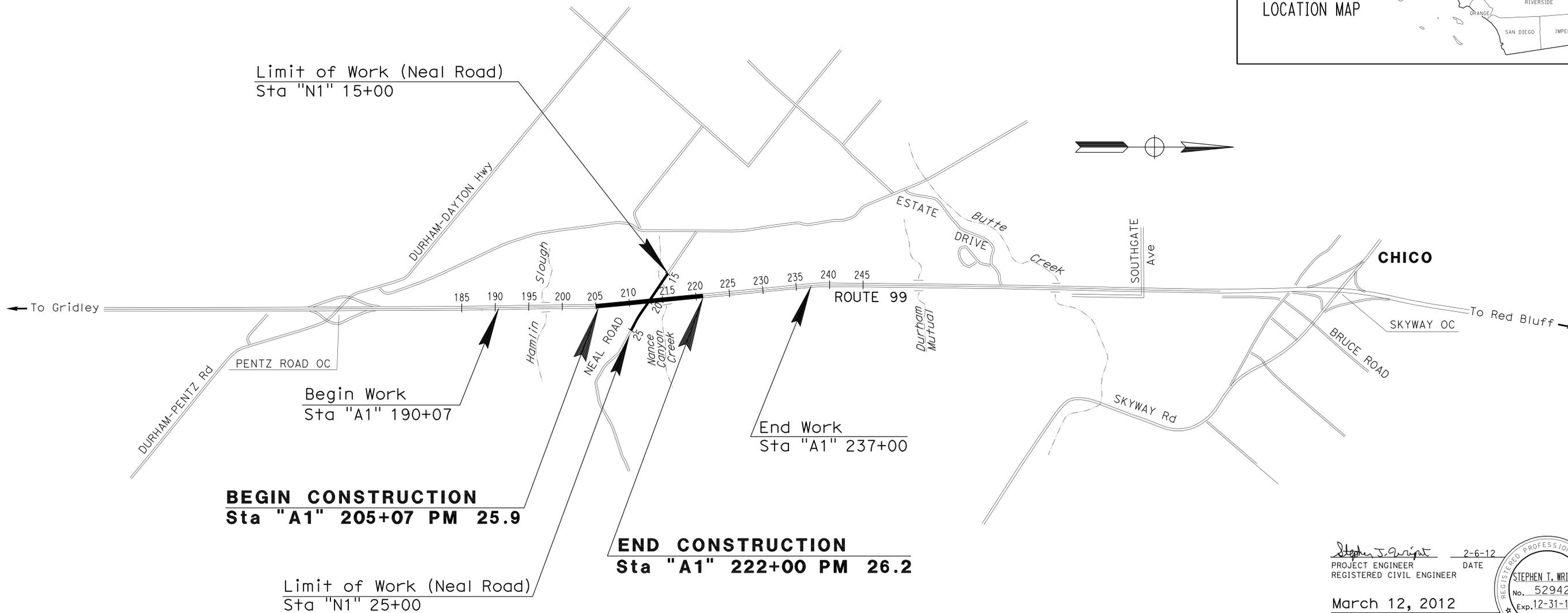
TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	1	52

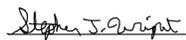


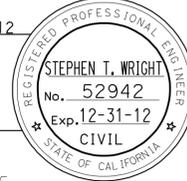


LOCATION MAP



NO SCALE

  
 PROJECT ENGINEER DATE 2-6-12  
 REGISTERED CIVIL ENGINEER  
**March 12, 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.



CONTRACT No.	<b>03-4E9904</b>
PROJECT ID	<b>0300000732</b>

PROJECT MANAGER  
**NAJED DAKAK**  
 DESIGN ENGINEER  
**LAURIE LAMMERT**

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

DATE PLOTTED => 16-MAY-2012  
 TIME PLOTTED => 08:25  
 02-09-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	2	52

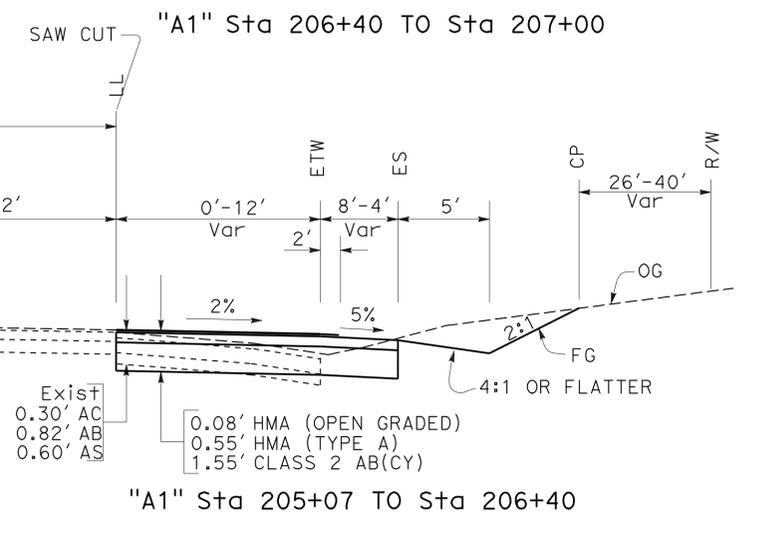
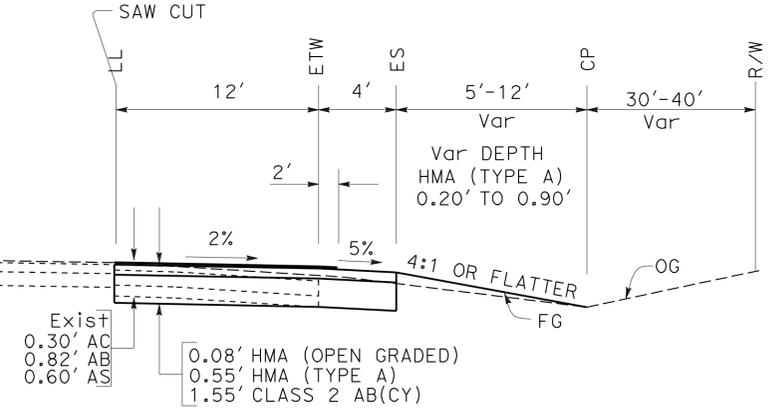
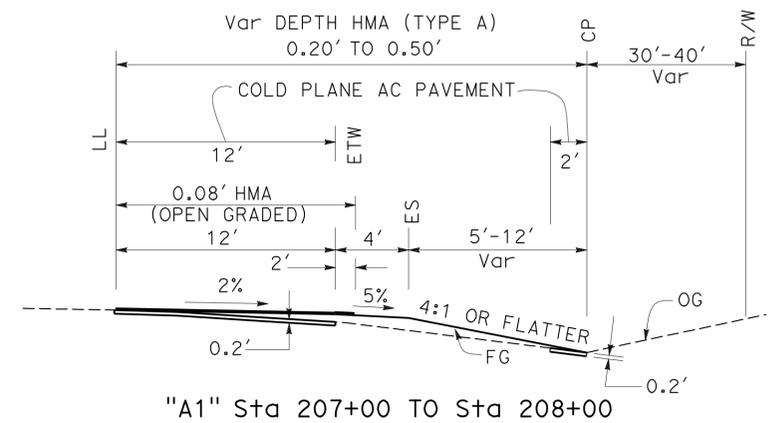
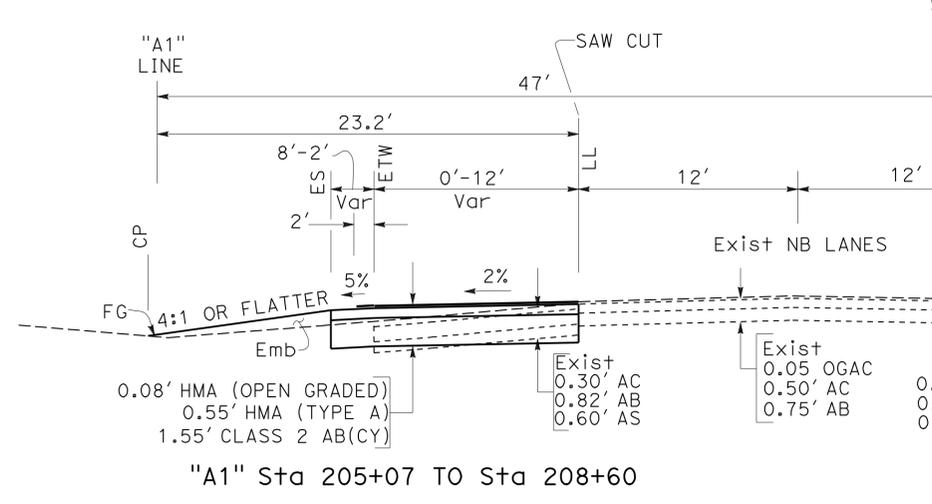
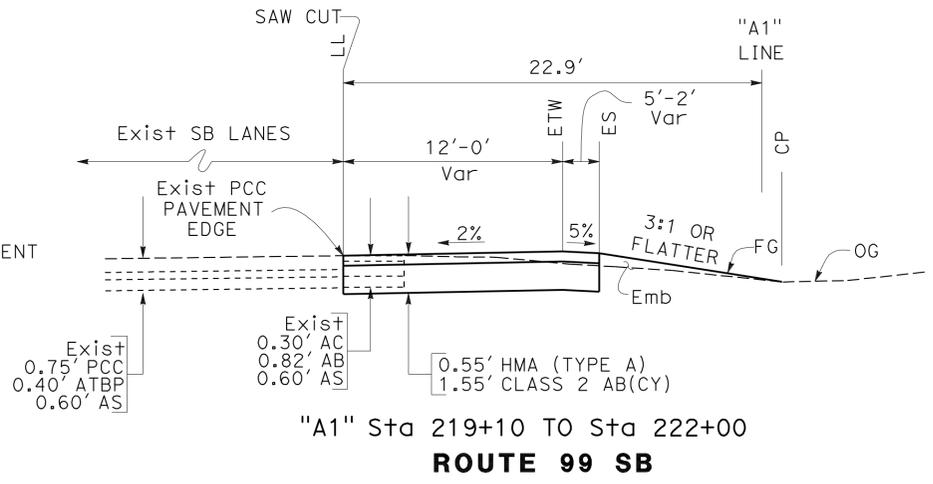
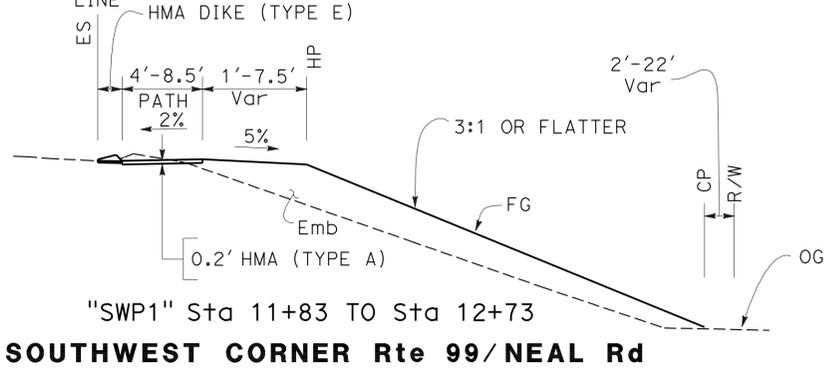
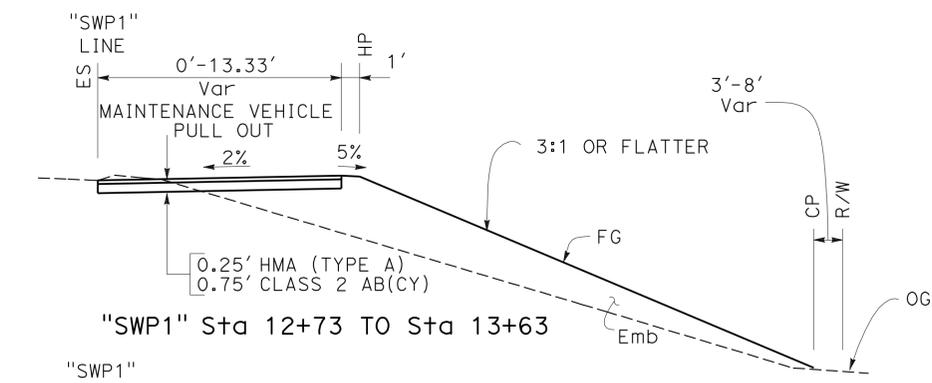
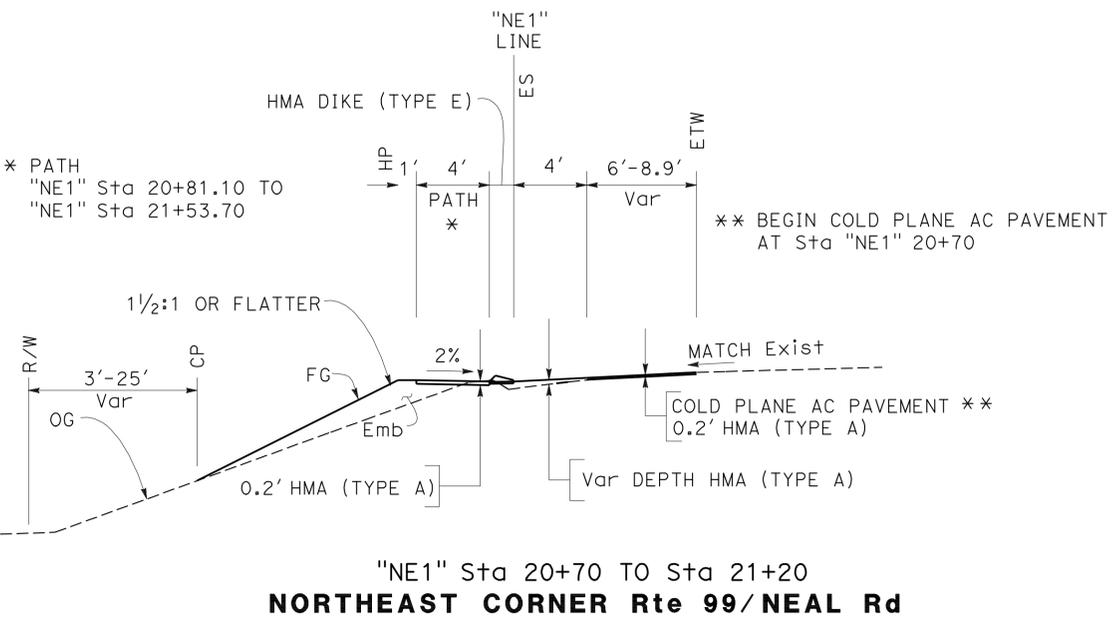
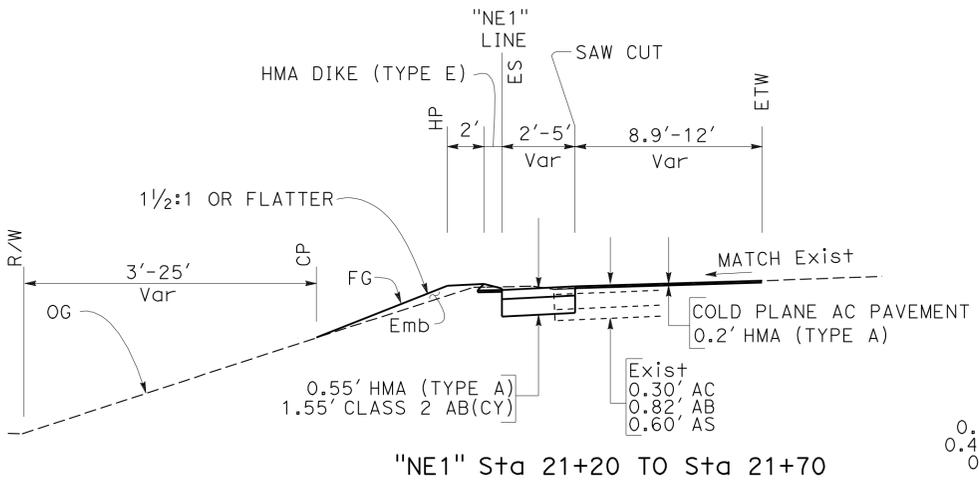
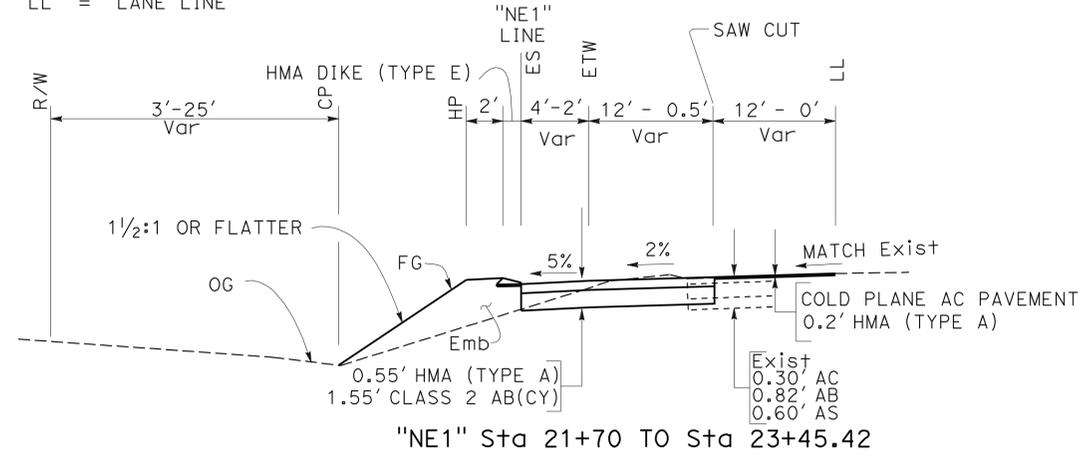
  

REGISTERED CIVIL ENGINEER	DATE
STEPHEN T. WRIGHT	2-6-12
No. 52942	
PLANS APPROVAL DATE	
3-12-12	

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:**
- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
  - SUPERELEVATIONS ARE AS SHOWN OR AS DIRECTED BY THE ENGINEER.
  - FOR EXACT LOCATIONS OF DIKE, SEE SHEET C-2.
  - FOR PLACE HMA (MISCELLANEOUS AREA), SEE SUMMARY OF QUANTITIES, SHEET Q-1.

**ABBREVIATION:**  
LL = LANE LINE



**TYPICAL CROSS SECTIONS**  
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
Caltrans

FUNCTIONAL SUPERVISOR  
LAURIE LAMBERT

TRAFFIC

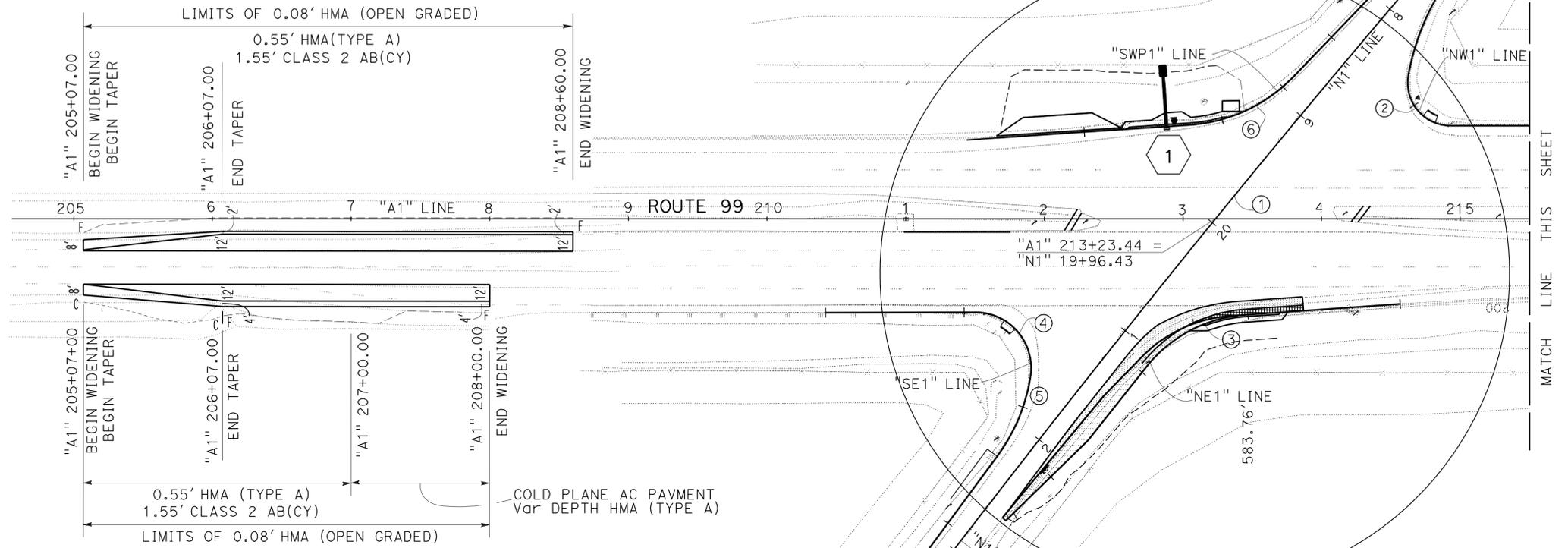
**NOTES:**

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR INTERSECTION DETAILS SEE SHEET C-2.
3. FOR DRAINAGE SYSTEM DETAILS SEE SHEET DD-1.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	3	52

REGISTERED CIVIL ENGINEER *Stephen T. Wright* 2-6-12 DATE  
 3-12-12 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  
 No. 52942  
 Exp. 12-31-12  
 CIVIL  
 STATE OF CALIFORNIA

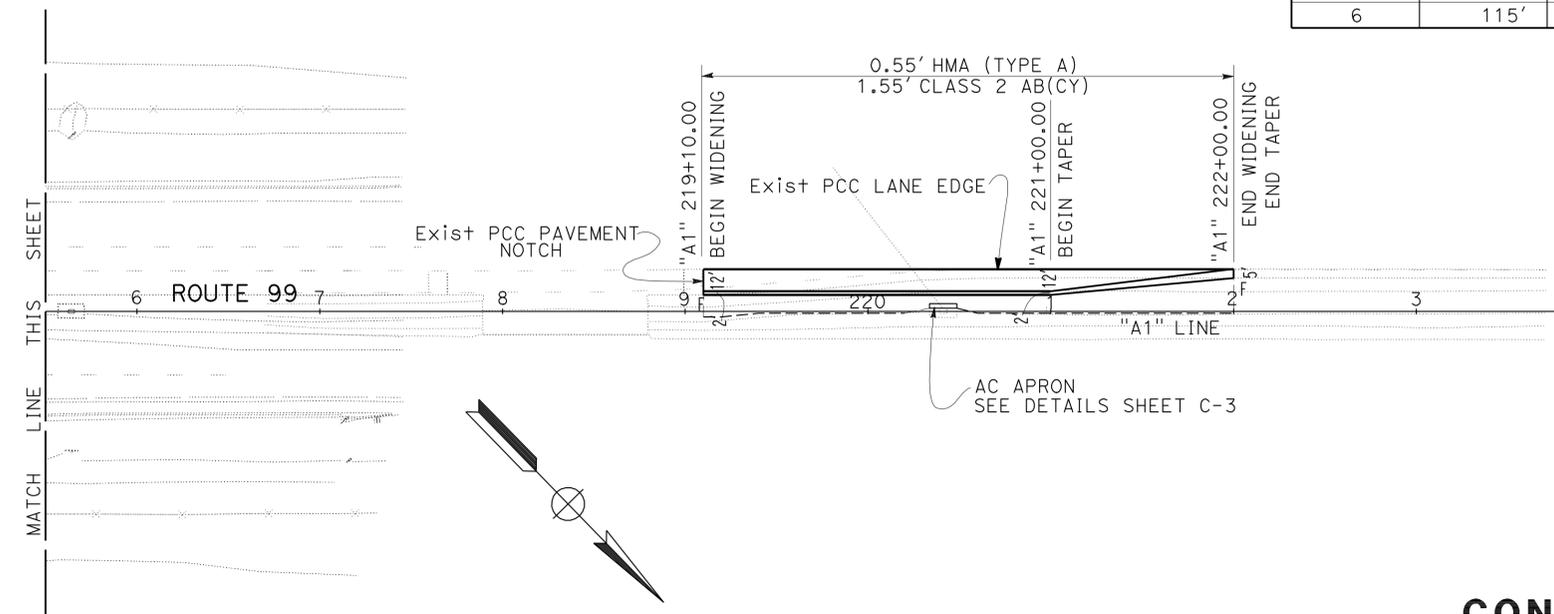


**LEGEND:**

- [Cross-hatched box] Var DEPTH HMA (TYPE A)
- [Diagonal lines box] COLD PLANE AC PAVEMENT 0.20' HMA (TYPE A)
- [Dotted box] 0.55' HMA (TYPE A) 1.55' CLASS 2 AB(CY)
- [Hexagon with 'x'] DRAINAGE SYSTEM No.

**CURVE DATA**

No.	R	Δ	T	L
1	10000'	3°20'41"	291.96'	593.76'
2	31'	101°26'16"	37.90'	54.88'
3	100'	47°26'46"	43.94'	82.81'
4	40'	99°14'22"	47.03'	69.28'
5	130'	27°27'58"	31.77'	62.32'
6	115'	42°15'11"	44.44'	84.71'



**CONSTRUCTION DETAILS**  
 SCALE: 1" = 50'  
**C-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 FUNCTIONAL SUPERVISOR: LAURIE LAMMERT  
 DESIGNED BY: A. G. CHIN  
 CHECKED BY: S. WRIGHT  
 REVISIONS: (None shown)

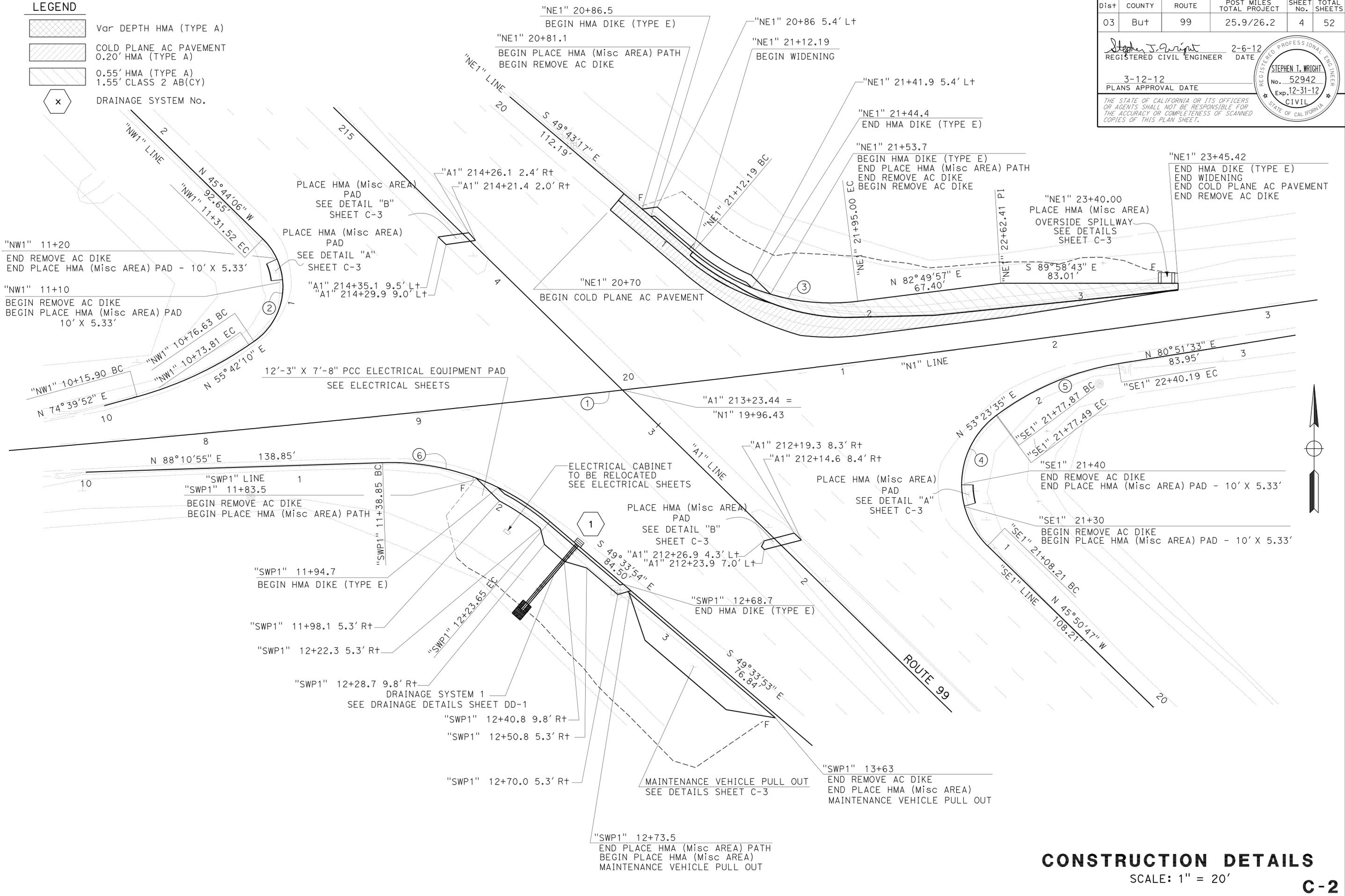
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 FUNCTIONAL SUPERVISOR: LAURRIE LAMMERT  
 CALCULATED/DESIGNED BY: A.G. CHIN  
 CHECKED BY: S. WRIGHT  
 REVISED BY: DATE REVISION

**LEGEND**

- Var DEPTH HMA (TYPE A)
- COLD PLANE AC PAVEMENT  
0.20' HMA (TYPE A)
- 0.55' HMA (TYPE A)  
1.55' CLASS 2 AB(CY)
- DRAINAGE SYSTEM No.

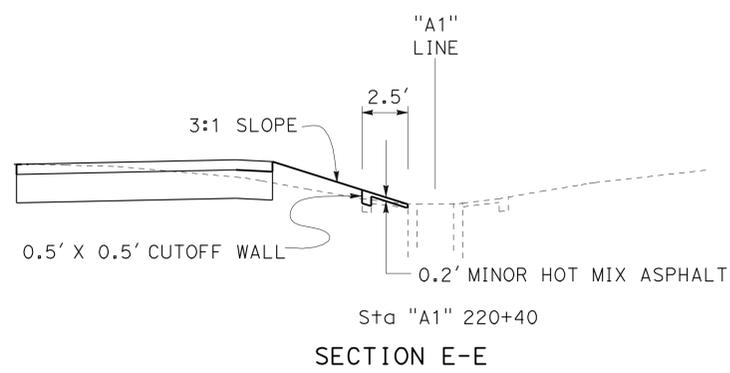
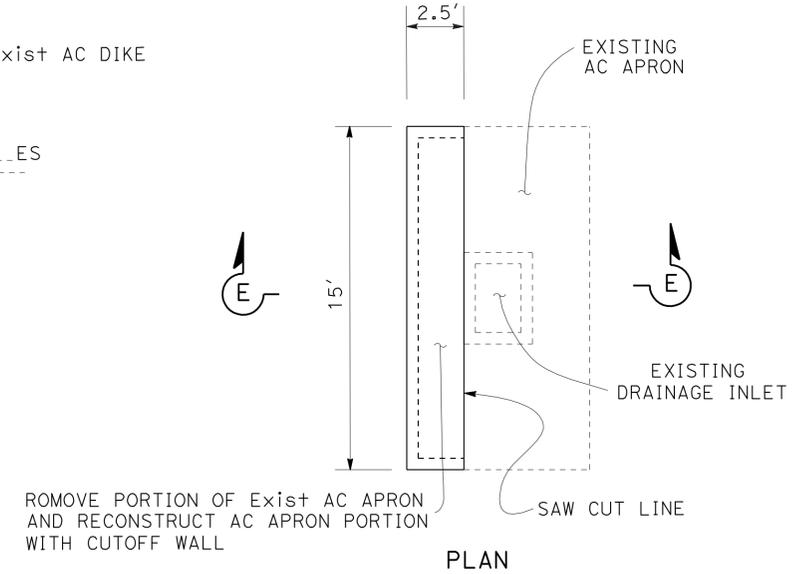
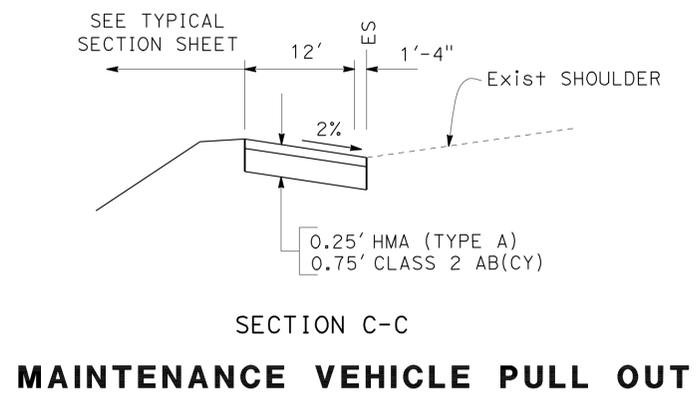
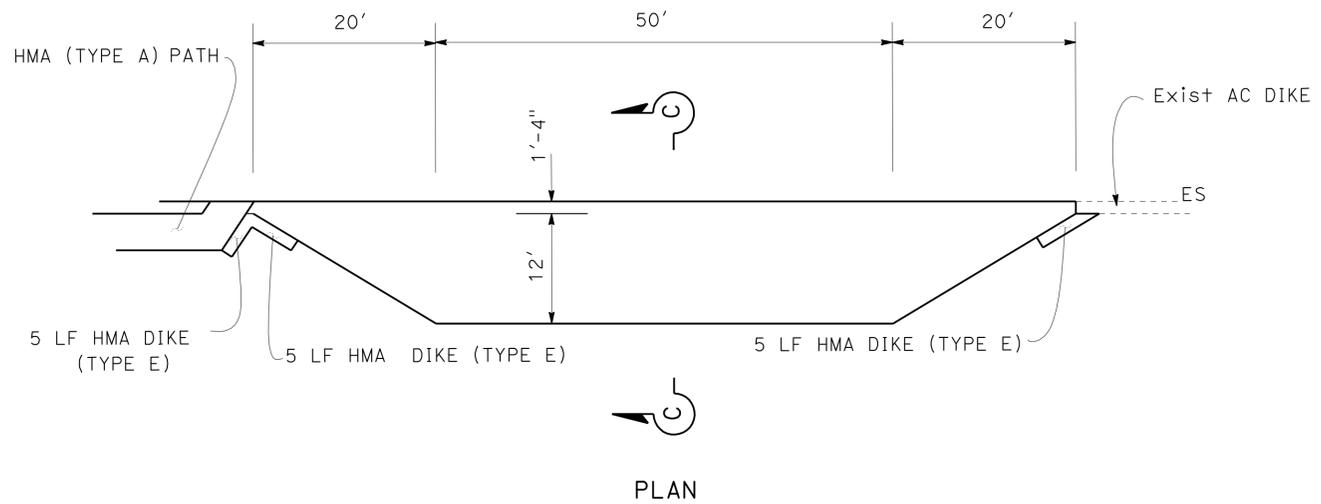
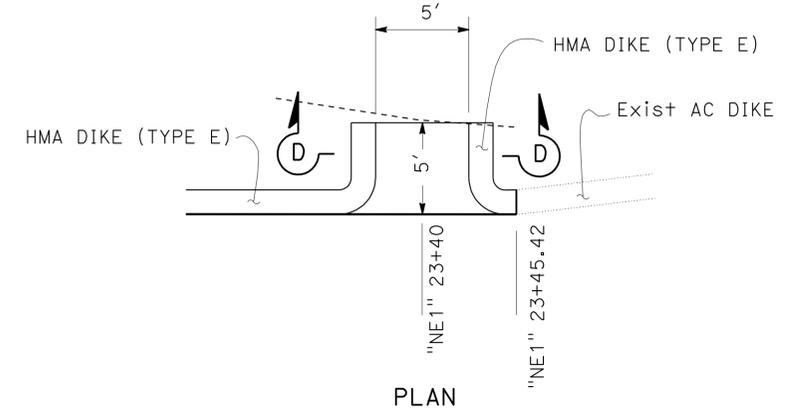
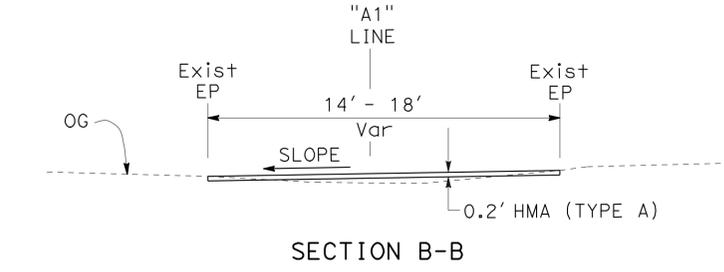
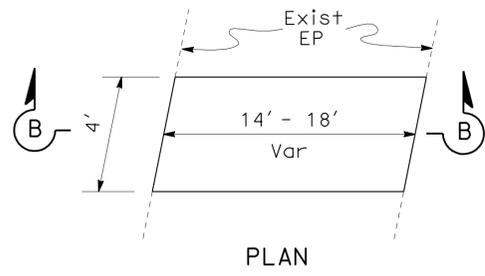
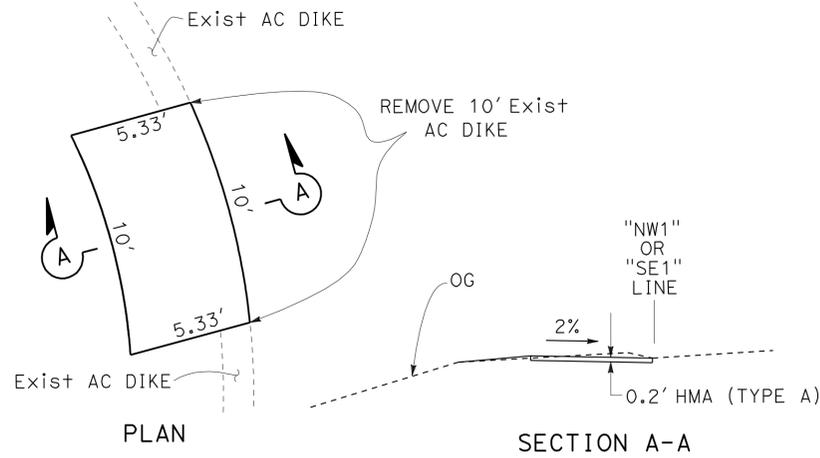
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	4	52

REGISTERED CIVIL ENGINEER: *Stephen T. Wright* No. 52942  
 DATE: 2-6-12  
 PLANS APPROVAL DATE: 3-12-12  
 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.



**CONSTRUCTION DETAILS**  
 SCALE: 1" = 20'  
**C-2**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	5	52
Stephen J. Wright REGISTERED CIVIL ENGINEER			2-6-12	DATE	
3-12-12 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 No. 52942 Exp. 12-31-12 CIVIL STATE OF CALIFORNIA					



**OVERSIDE SPILLWAY**

**MAINTENANCE VEHICLE PULL OUT**

**AC APRON**

**CONSTRUCTION DETAILS**

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Caltrans

FUNCTIONAL SUPERVISOR  
 LAURRIE LAMMERT

CALCULATED/DESIGNED BY  
 A.G. CHIN

CHECKED BY  
 S. WRIGHT

REVISOR BY  
 DATE

REVISOR BY  
 DATE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	6	52

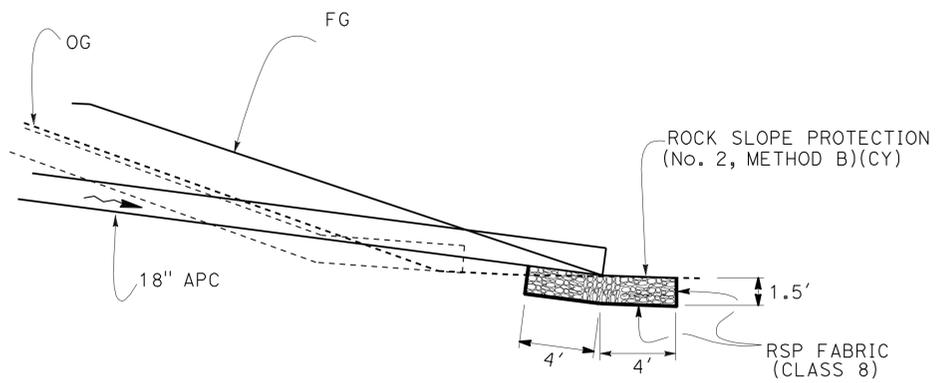
 REGISTERED CIVIL ENGINEER DATE 2-6-12		
3-12-12 PLANS APPROVAL DATE		

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.

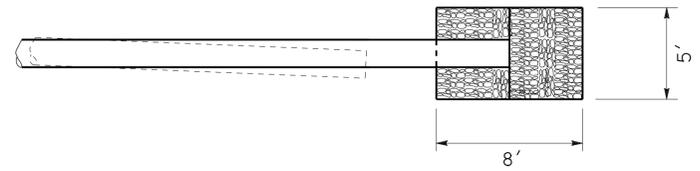
APC ALLOWABLE PIPE MATERIALS
1. RCP 2. HDPE (TYPE S)** 3. SSRP (0.109" THICK)

\*\* HDPE = HIGH DENSITY POLYETHYLENE CORRUGATED PIPE, SMOOTH INTERIOR.

NOTES: 1. CLASS DESIGNATION OF RCP MUST MEET THE LIMITS IN THE STANDARD PLANS AS DETERMINED BY BACKFILL METHOD AND HEIGHT OF COVER.  
 2. ALL PIPE CULVERT JOINTS ARE STANDARD JOINT TYPE.



SECTION



PLAN

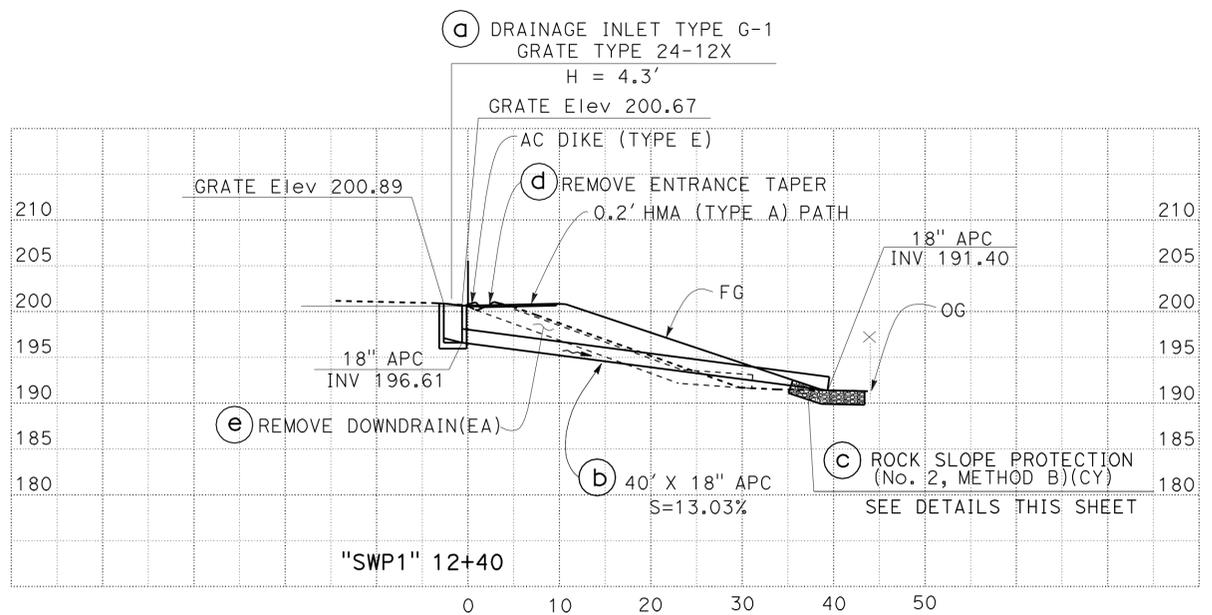
**ROCK SLOPE PROTECTION DETAIL**

NO SCALE

**DRAINAGE QUANTITIES**

DRAINAGE SYSTEM No.	DRAINAGE UNIT	(N)	(N)	(N)	MINOR CONCRETE (MINOR STRUCTURE)	Misc IRON AND STEEL	18" ALTERNATIVE PIPE CULVERT	ROCK SLOPE PROTECTION (No. 2, METHOD B)(CY)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	REMOVE ENTRANCE TAPER	REMOVE DOWNDRAIN (EA)	
		TYPE G1-DI	HEIGHT OF INLET	GRATE TYPE 24-12X								EA
1	a	1	4.3	1	1.24	239						
	b						40					
	c							3	9			
	d									1		
	e										1	
<b>TOTAL</b>					1.24	239	40	3	9	1	1	

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



**DRAINAGE SYSTEM No. 1**

SCALE : 1"=10' Vert  
 1"=10' Horiz

**DRAINAGE DETAILS AND QUANTITIES**

SCALE AS SHOWN

**DD-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Caltrans®  
 FUNCTIONAL SUPERVISOR: LAURIE LAMMERT  
 CALCULATED/DESIGNED BY: A. G. CHIN  
 CHECKED BY: S. WRIGHT  
 REVISED BY: DATE  
 REVISIONS:

LAST REVISION DATE PLOTTED => 14-MAR-2012  
 02-09-12 TIME PLOTTED => 10:11

### STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

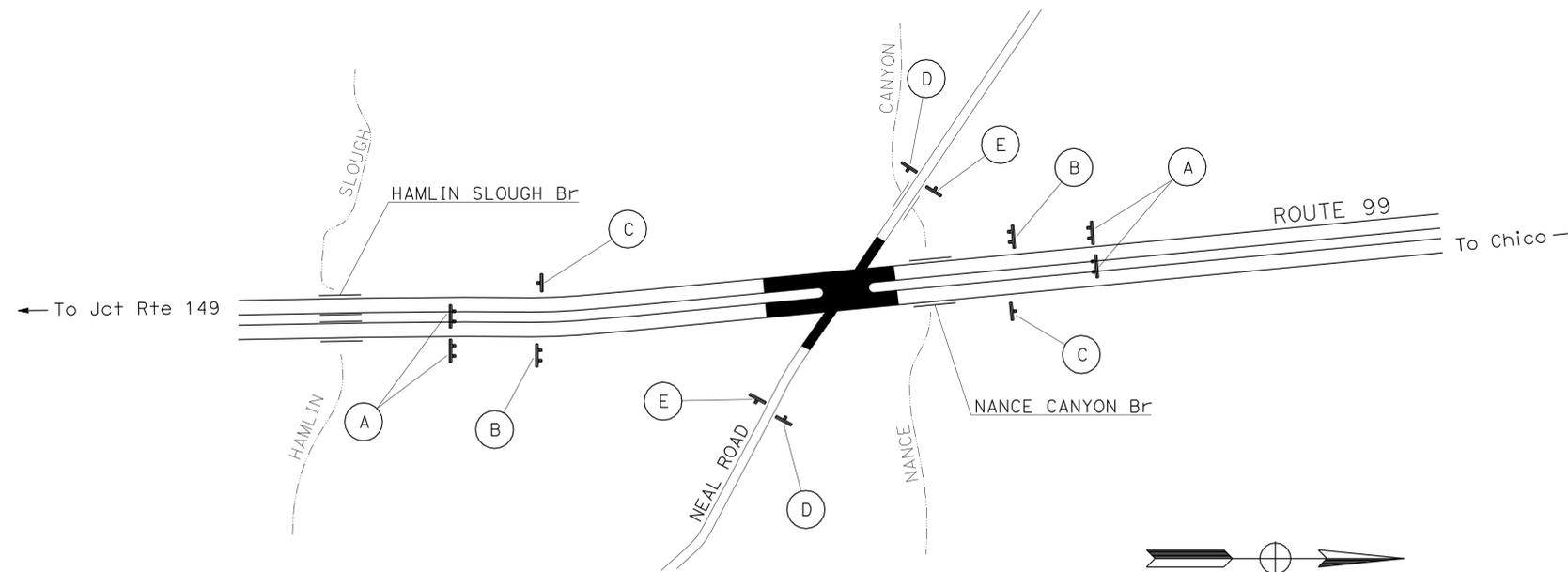
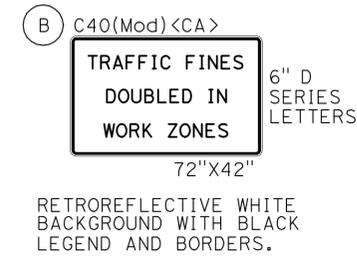
SIGN LETTER	SIGN CODE		PANEL SIZE	SIGN MESSAGE	NUMBER OF POST AND SIZE	NUMBER OF SIGNS
	FEDERAL	CALIFORNIA				
A	W20-1	C23	60" x 60"	ROAD WORK AHEAD	2 - 4" x 6"	4
B		C40(Mod)	72" x 42"	TRAFFIC FINES DOUBLED IN WORK ZONES	2 - 4" x 6"	2
C		C14	48" x 24"	END ROAD WORK	1 - 4" x 6"	2
D	W20-1	C23	48" x 48"	ROAD WORK AHEAD	1 - 6" x 6"	2
E	G20-2	C14	36" x 18"	END ROAD WORK	1 - 4" x 4"	2

**NOTE:**  
EXACT SIGN LOCATION TO BE DETERMINED BY THE ENGINEER.

#### LEGEND:

- (X) CONSTRUCTION AREA SIGN LETTER
- <CA> CALIFORNIA SIGN CODE
- ┆ SIGN - SINGLE POST
- ┆┆ SIGN - TWO POST

#### SIGN DETAILS



## CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	9	52

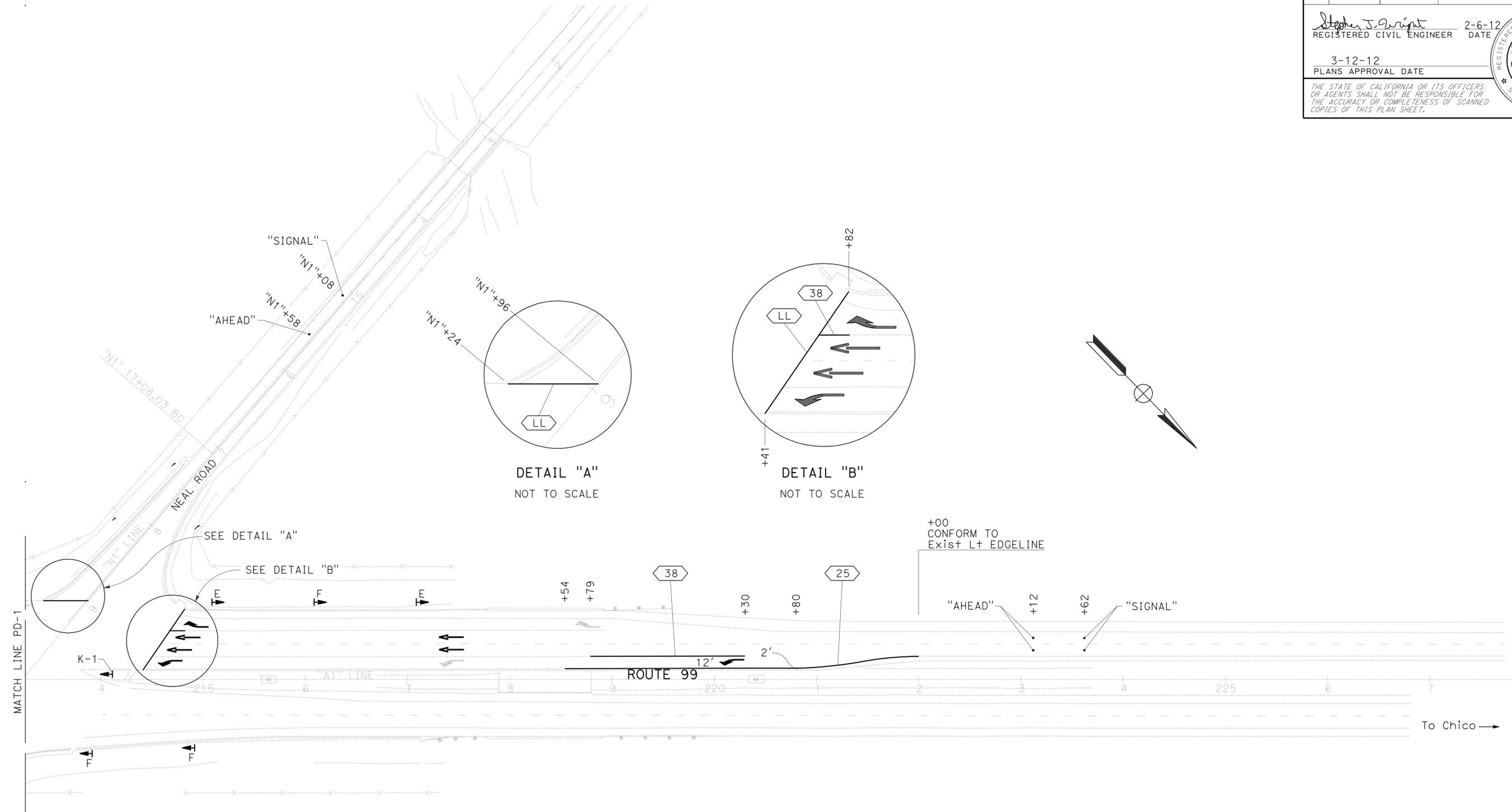
<i>Stephen T. Wright</i> REGISTERED CIVIL ENGINEER	2-6-12 DATE
3-12-12 PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER STEPHEN T. WRIGHT No. 52942 Exp. 12-31-12 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.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans	Laurie Lammert	J. Kemmerly	
	TRAFFIC	S. Wright	
	CALCULATED/DESIGNED BY	CHECKED BY	



**PAVEMENT DELINEATION PLAN**

SCALE: 1" = 50'

**PD-2**

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

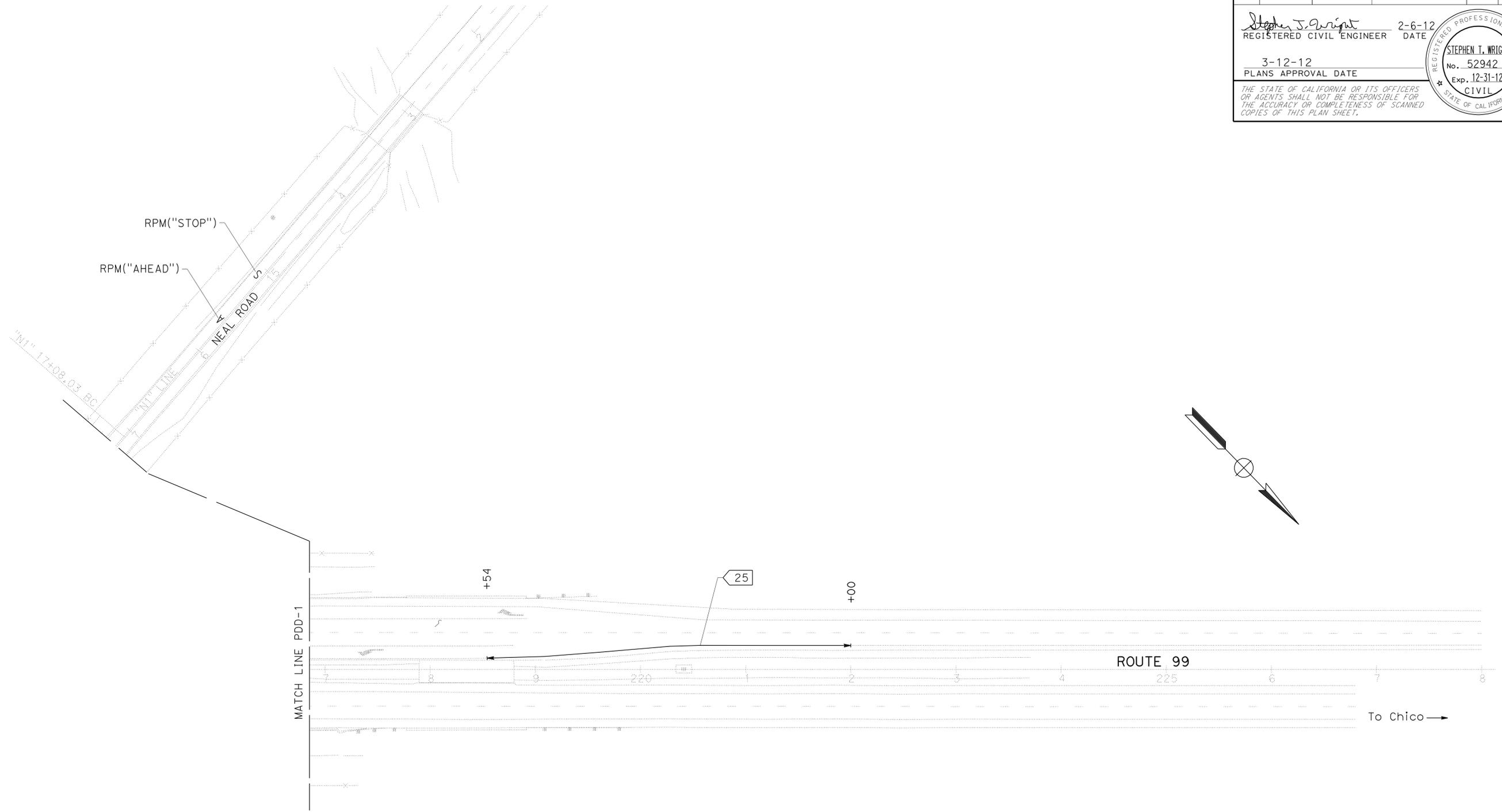


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	11	52

Stephen J. Wright  
 REGISTERED CIVIL ENGINEER DATE 2-6-12  
 3-12-12  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 STATE OF CALIFORNIA  
 No. 52942  
 Exp. 12-31-12  
 CIVIL

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	REVISION
<b>Caltrans</b>	LAURIE LAMMERT	J. KEMMERLY	J. KEMMERLY	
TRAFFIC		S. WRIGHT		

**PAVEMENT DELINEATION DETAILS**  
**EXISTING STRIPE/MARKING REMOVAL**  
 SCALE: 1" = 50'

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

**PDD-2**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	12	52

Stephen T. Wright  
 REGISTERED CIVIL ENGINEER DATE 2-6-12  
 3-12-12  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 No. 52942  
 Exp. 12-31-12  
 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.

### PAVEMENT DELINEATION REMOVAL QUANTITIES

LOCATION	REMOVE THERMOPLASTIC TRAFFIC STRIPE (HPB)				REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE, HPB)		REMOVE THERMOPLASTIC PAVEMENT MARKING (HPB)				
	DETAIL 12	DETAIL 27B	DETAIL 27C	DETAIL 38	DETAIL 22	DETAIL 25	STOP	AHEAD	TYPE III ARROW	TYPE V ARROW	LIMIT LINE
	LF	LF	LF	LF	LF	LF	SQFT	SQFT	SQFT	SQFT	SQFT
NORTHBOUND ROUTE 99	185	702	303	1,168		721			168	132	
SOUTHBOUND ROUTE 99	10	123		142		356			84	132	
EASTBOUND NEAL ROAD					52		44	31			45
WESTBOUND NEAL ROAD		285			388		44	31			36
<b>SUBTOTAL</b>	195	1,110	303	1,310	440	1,077	88	62	252	264	81
<b>TOTAL</b>	2,918				1,517		747				

NOTE: HPB = HIGH PRESSURE BLASTING

### PAVEMENT DELINEATION QUANTITIES

LOCATION	4" THERMOPLASTIC TRAFFIC STRIPE			8" THERMOPLASTIC TRAFFIC STRIPE	4" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 36-12)	PAVEMENT MARKER (RETROREFLECTIVE)			THERMOPLASTIC PAVEMENT MARKING						DELINEATOR (CLASS 1)		OBJECT MARKER (TYPE K-1)
	DETAIL 22	DETAIL 25	DETAIL 27B	DETAIL 38	DETAIL 12	TYPE D	TYPE G	TYPE H	SIGNAL	AHEAD	TYPE II ARROW	TYPE III ARROW	TYPE V ARROW	LIMIT LINE	TYPE E	TYPE F	
	LF	LF	LF	LF	LF	EA	EA	EA	SQFT	SQFT	SQFT	SQFT	SQFT	SQFT	EA	EA	EA
NORTHBOUND ROUTE 99		699	666	1,031	685		59	16	64	62		252	132	75	2	3	1
SOUTHBOUND ROUTE 99		346		167			8	8	64	62		126	132	73	2	3	1
EASTBOUND NEAL ROAD									32	31				45			
WESTBOUND NEAL ROAD	152		188	87		8	5		32	31	45	42		47			
<b>SUBTOTAL</b>	152	1,045	854	1,285	685	8	72	24	192	186	45	420	264	240	4	6	2
<b>TOTAL</b>	2,051			1,285	685	104			1,347						10		2

### PAVEMENT DELINEATION QUANTITIES

PDQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Caltrans  
 J. KEMMERLY  
 S. WRIGHT  
 LAURIE LAMMERT  
 TRAFFIC

LAST REVISION DATE PLOTTED => 14-MAR-2012  
 12-13-11 TIME PLOTTED => 10:07

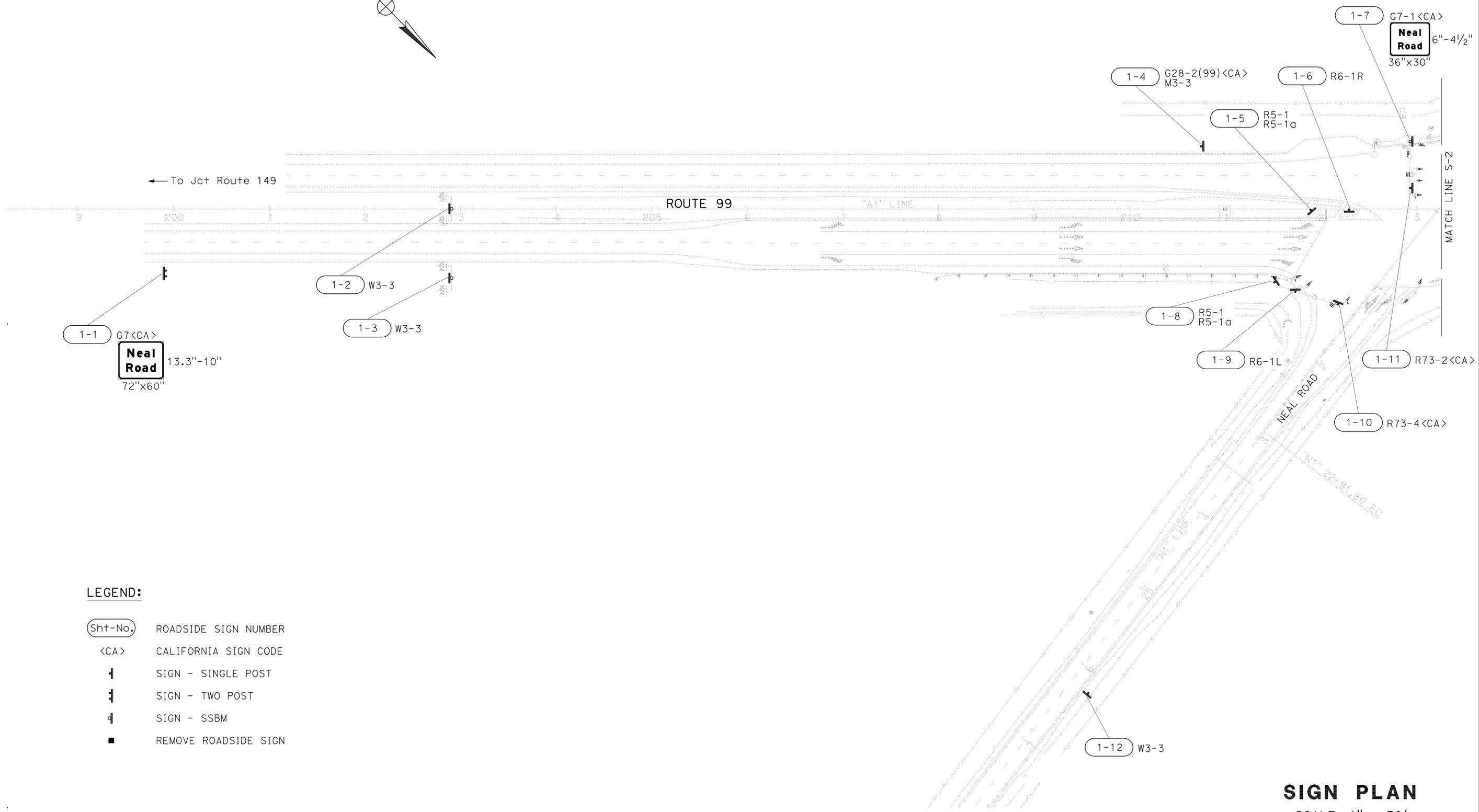
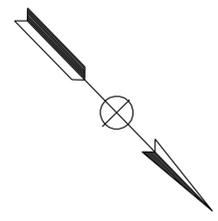
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	13	52

REGISTERED CIVIL ENGINEER	DATE
<i>Stephen T. Wright</i>	2-6-12
REGISTERED PROFESSIONAL ENGINEER	DATE
STEPHEN T. WRIGHT	3-12-12
No. 52942	PLANS APPROVAL DATE
Exp. 12-31-12	
CIVIL	

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- NOTES:
1. ALL EXISTING SIGNS NOT SHOWN FOR REMOVAL SHALL REMAIN IN PLACE.
  2. ALL SIGN CODES SHOWN ARE FEDERAL SIGN CODES UNLESS OTHERWISE DESIGNATED AS CALIFORNIA SIGN CODES.



- LEGEND:
- (Sh#-No.) ROADSIDE SIGN NUMBER
  - <CA> CALIFORNIA SIGN CODE
  - ┆ SIGN - SINGLE POST
  - ┆ SIGN - TWO POST
  - ┆ SIGN - SSBM
  - REMOVE ROADSIDE SIGN

**SIGN PLAN**  
SCALE: 1" = 50'  
**S-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	DATE
<b>Caltrans</b>	Laurie Lammert	J. Kemmerly	S. Wright	
TRAFFIC				

APPROVED FOR SIGN WORK ONLY

LAST REVISION DATE PLOTTED => 14-MAR-2012 TIME PLOTTED => 10:07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	14	52

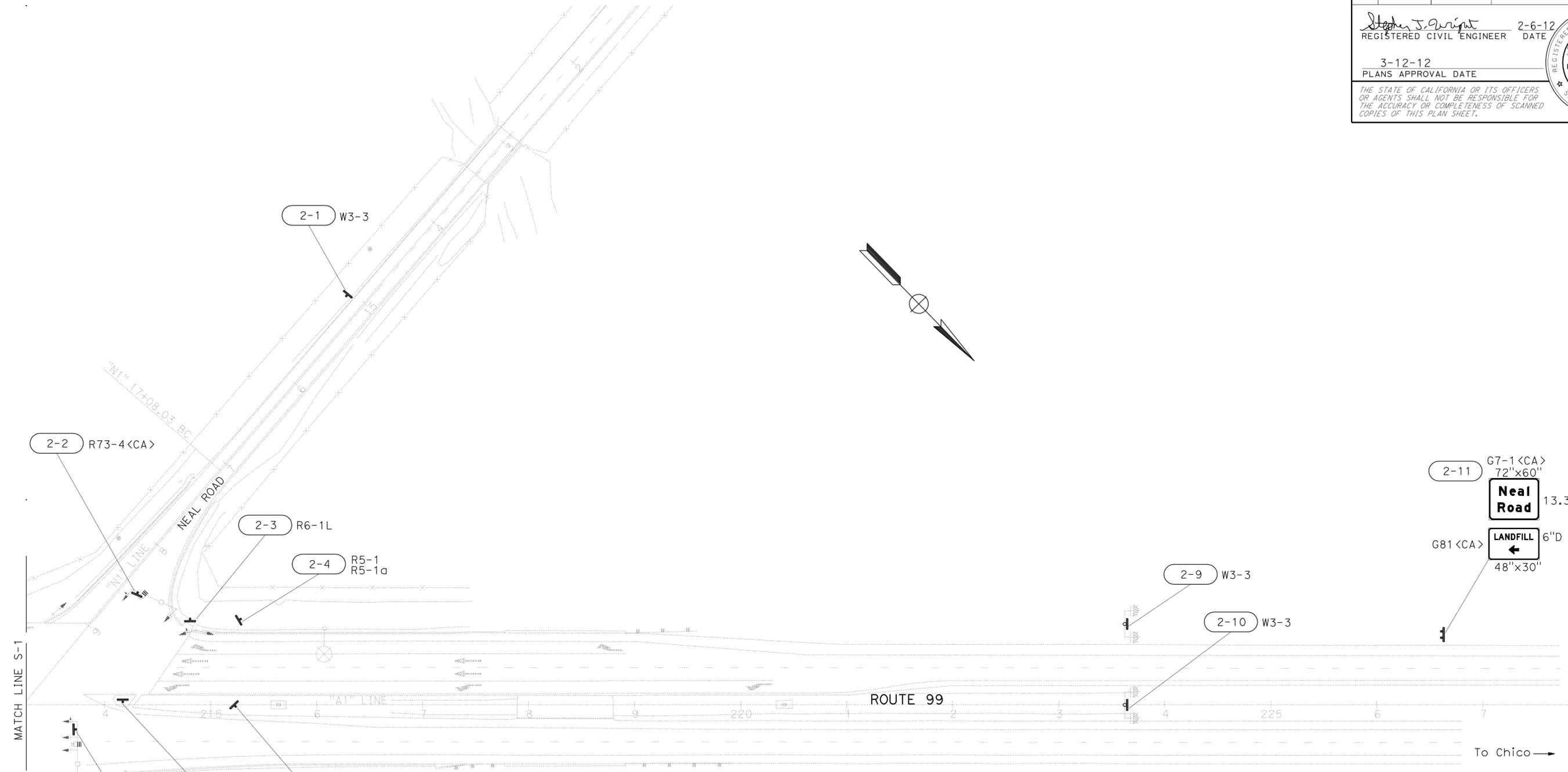
<i>Stephen T. Wright</i> REGISTERED CIVIL ENGINEER	2-6-12 DATE
3-12-12 PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER STEPHEN T. WRIGHT No. 52942 Exp. 12-31-12 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.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
<b>Caltrans</b>	LAURIE LAMMERT	J. KEMMERLY	J. KEMMERLY
TRAFFIC		S. WRIGHT	S. WRIGHT



**SIGN PLAN**  
SCALE: 1" = 50'

**S-2**

APPROVED FOR SIGN WORK ONLY

DATE PLOTTED => 14-MAR-2012  
TIME PLOTTED => 10:07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	15	52

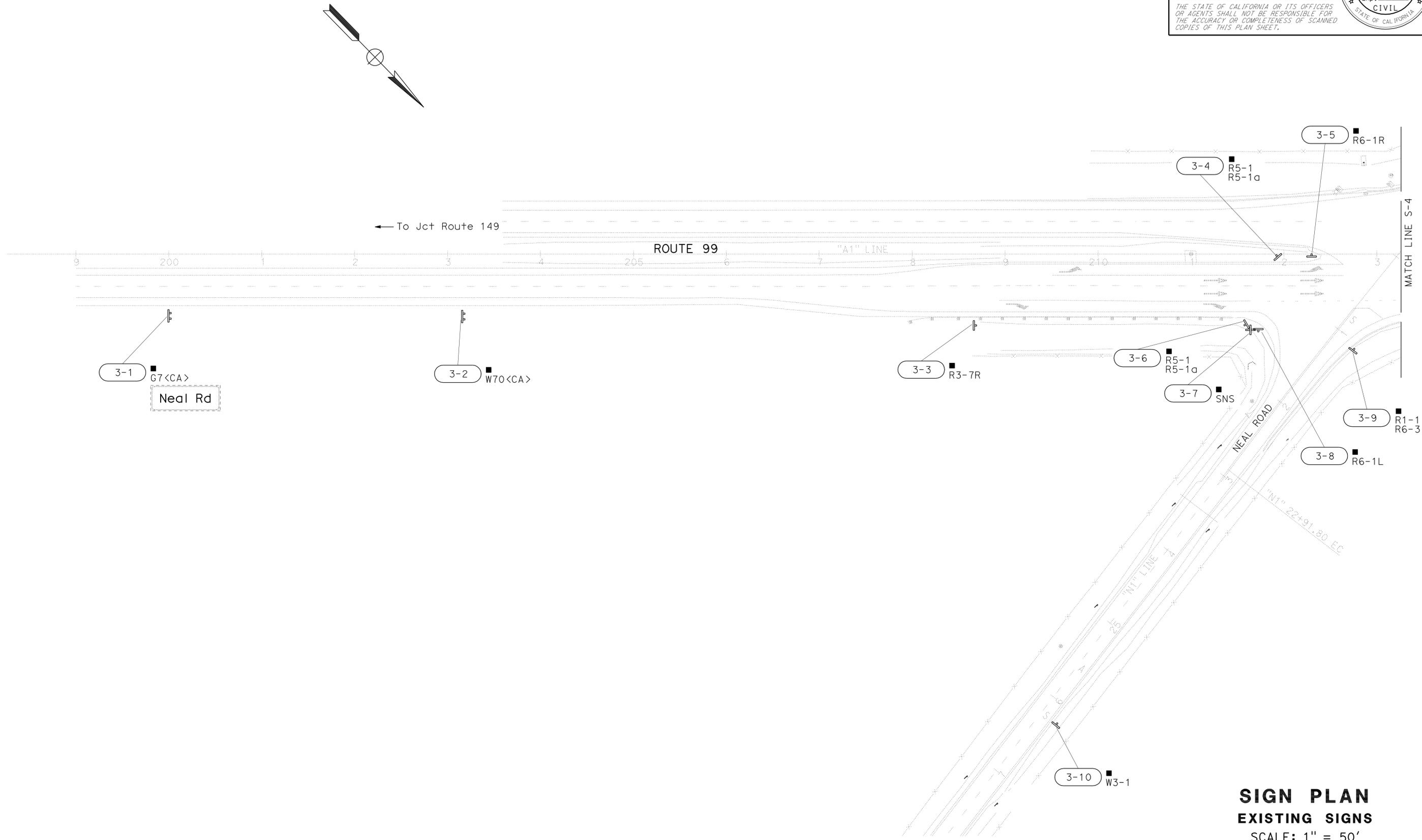
<i>Stephen T. Wright</i> REGISTERED CIVIL ENGINEER	2-6-12 DATE
3-12-12 PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER STEPHEN T. WRIGHT No. 52942 Exp. 12-31-12 CIVIL STATE OF CALIFORNIA
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	DATE
<b>Caltrans</b>	LAURIE LAMMERT	J. KEMMERLY	J. KEMMERLY	
<b>TRAFFIC</b>		S. WRIGHT	S. WRIGHT	



APPROVED FOR SIGN WORK ONLY

**SIGN PLAN**  
**EXISTING SIGNS**  
SCALE: 1" = 50'

**S-3**

DATE PLOTTED => 14-MAR-2012  
TIME PLOTTED => 10:08  
LAST REVISION  
1-26-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	16	52

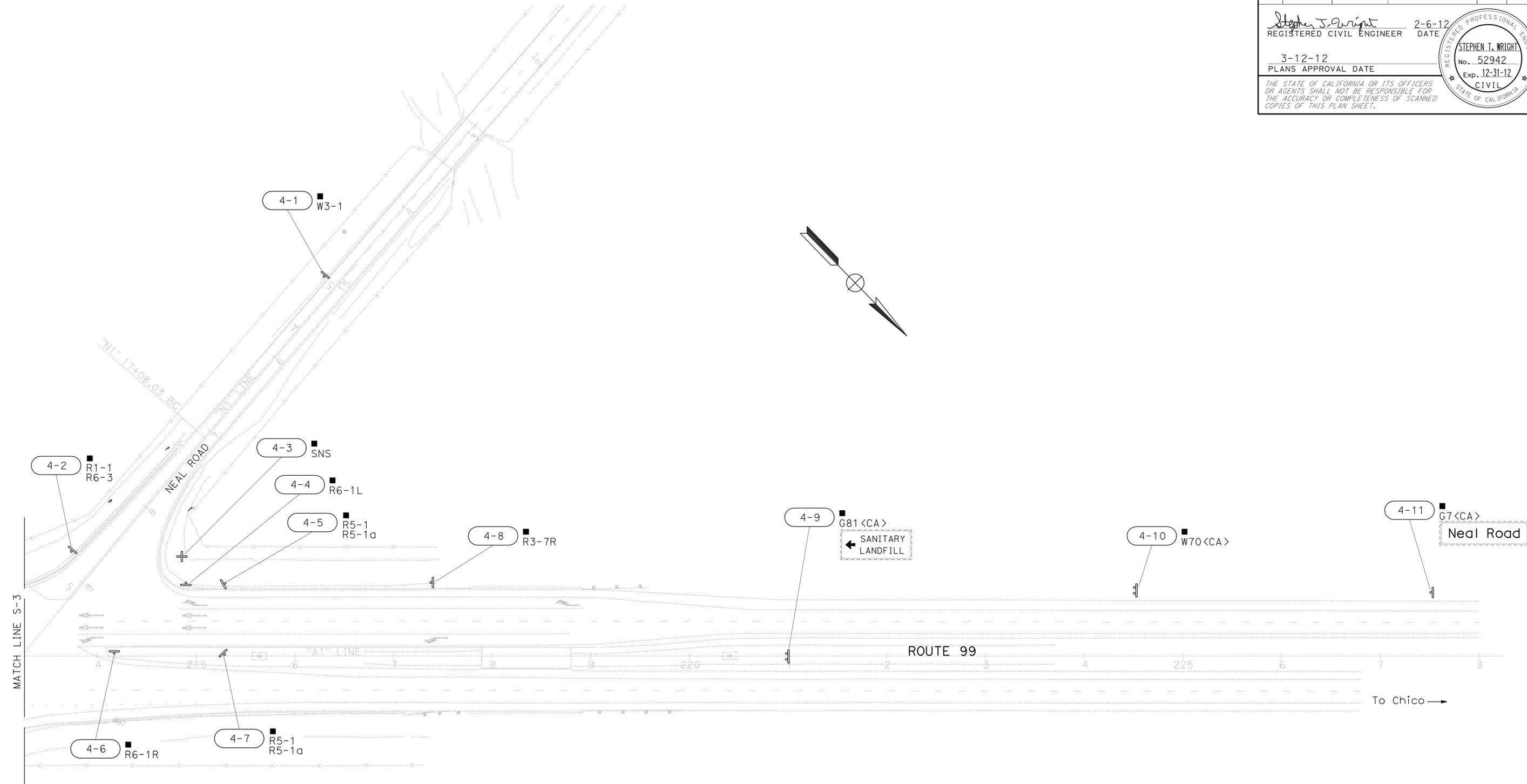
  

<i>Stephen T. Wright</i> REGISTERED CIVIL ENGINEER	2-6-12 DATE
3-12-12 PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER  
 STEPHEN T. WRIGHT  
 No. 52942  
 Exp. 12-31-12  
 CIVIL  
 STATE OF CALIFORNIA

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
<b>Caltrans</b>	LAURIE LAMMERT	CHECKED BY	J. KEMMERLY
TRAFFIC			S. WRIGHT
			DATE REVISOR



**SIGN PLAN**  
**EXISTING SIGNS**  
 SCALE: 1" = 50'

**S-4**

LAST REVISION: 1-26-12  
 DATE PLOTTED => 14-MAR-2012  
 TIME PLOTTED => 10:08

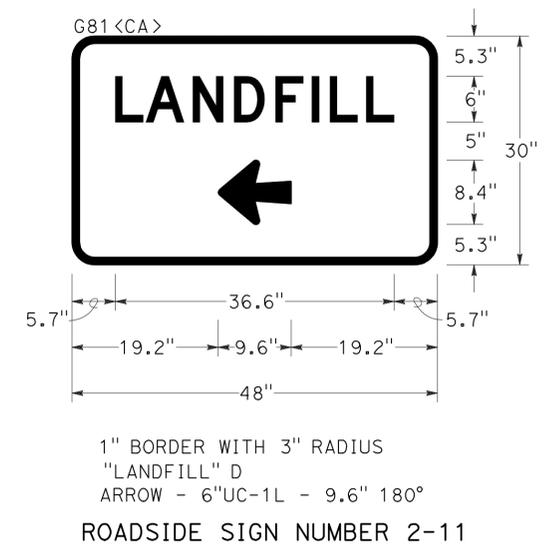
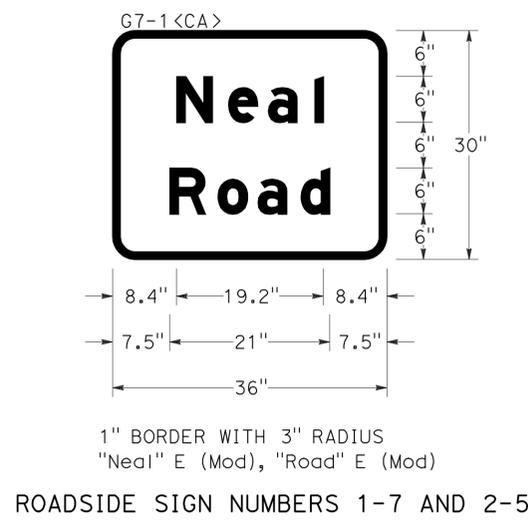
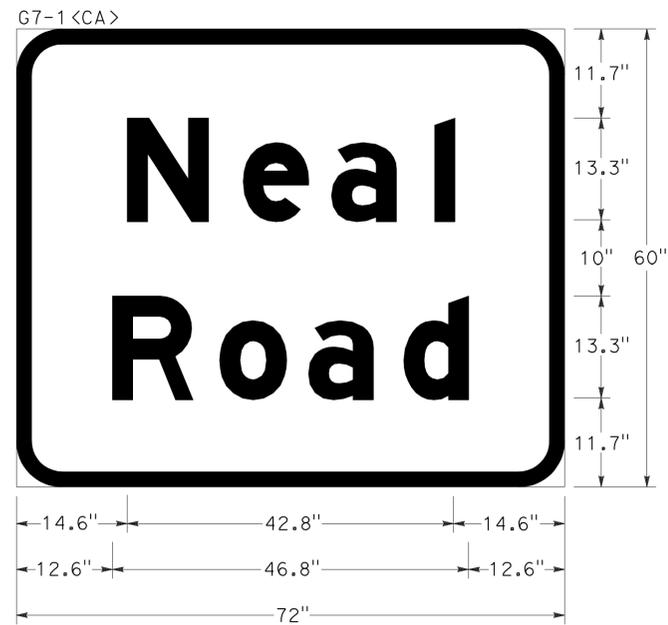
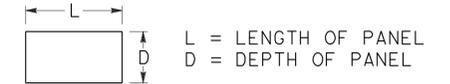


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	18	52

Stephen J. Wright  
 REGISTERED CIVIL ENGINEER DATE 2-6-12  
 3-12-12  
 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.

### ROADSIDE SIGN PANEL QUANTITIES

SIGN CODE	SIGN MESSAGE/DESCRIPTION	PANEL SIZE L x D	PANEL AREA	NUMBER OF PANELS	BACKGROUND		LEGEND		PROTECTIVE OVERLAY	FURNISH SINGLE SHEET ALUMINUM SIGN			
					SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	PREMIUM	UNFRAMED		FRAMED	
										0.063"	0.080"	0.063"	
FEDERAL	CALIFORNIA	INCHES	SQFT						SQFT	SQFT	SQFT		
M3-3		SOUTH	30 x 15	3.13	1	GREEN	III	WHITE	III	X	3.13		
R5-1		DO NOT ENTER	36 x 36	9.00	4	RED	IX	WHITE	IX	X	36.00		
R5-1a		WRONG WAY	36 x 24	6.00	4	RED	IX	WHITE	IX	X	24.00		
R6-1L		ONE WAY ARROW	54 x 18	6.75	2	WHITE	III	BLACK		X		13.50	
R6-1R		ONE WAY ARROW	54 x 18	6.75	2	WHITE	III	BLACK		X		13.50	
W3-3		SIGNAL AHEAD (SYMBOL SIGN)	36 x 36	9.00	2	YELLOW	IX	RED, GREEN BLACK	IX	X	18.00		
W3-3		SIGNAL AHEAD (SYMBOL SIGN)	48 x 48	16.00	4	YELLOW	IX	RED, GREEN BLACK	IX	X		64.00	
	G28-2(99)	STATE ROUTE MARKER	30 x 31	6.46	1	GREEN	III	WHITE	III	X	6.46		
	G7-1	"Neal Road"	72 x 60	30.00	2	GREEN	III	WHITE	IX	X		60.00	
	G7-1	"Neal Road"	36 x 30	7.50	2	GREEN	III	WHITE	IX	X	15.00		
	G81	LANDFILL	48 x 30	10.00	1	BLUE	III	WHITE	III	X		10.00	
	R73-2	INTERSECTION LANE CONTROL	36 x 36	9.00	2	WHITE	III	BLACK		X	18.00		
	R73-4	INTERSECTION LANE CONTROL	36 x 45	11.25	2	WHITE	III	BLACK		X	22.50		
<b>TOTAL</b>											143.09	101.00	60.00



### SIGN DETAILS AND QUANTITIES

SD-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Caltrans®  
 FUNCTIONAL SUPERVISOR: LAURIE LAMMERT  
 TRAFFIC  
 J. KEMMERLY  
 S. WRIGHT  
 REVISIONS: REVISED BY: DATE REVISED: CALCULATED/DESIGNED BY: CHECKED BY:

LAST REVISION: 1-26-12 DATE PLOTTED => 14-MAR-2012 TIME PLOTTED => 10:08

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	19	52

Stephen J. Wright  
 REGISTERED CIVIL ENGINEER DATE 2-6-12  
 3-12-12  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 No. 52942  
 Exp. 12-31-12  
 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.

### ROADSIDE SIGN QUANTITIES

SIGN NUMBER (SHT-NO.)	SIGN CODE		PANEL SIZE	"C" DIM IN FEET	POST SIZE AND LENGTH		ROADSIDE SIGN		INSTALL SIGN (SSBM)	REMOVE ROADSIDE SIGN	REMARKS	
	FEDERAL	CALIFORNIA	INCHES		6"x6"	METAL POST 2 1/2"x2 1/2"	ONE POST EA	TWO POST EA				
1-1		G7-1	72 x 60	7	18'			1				
1-2	W3-3		48 x 48								SEE NOTES 7 AND 8	
1-3	W3-3		48 x 48								SEE NOTES 7 AND 8	
1-4	M3-3	G28-2(99)	30 x 31 30 x 15	7		12'		1				
1-5	R5-1 R5-1a		36 x 36 36 x 24	4		10'		1				
1-6	R6-1R		54 x 18	2		6'		1				
1-7		G7-1	36 x 30					1			SEE NOTE 9	
1-8	R5-1 R5-1a		36 x 36 36 x 24	4		10'		1				
1-9	R6-1L		54 x 18	2		6'		1				
1-10		R73-4	36 x 45								SEE NOTES 7 AND 10	
1-11		R73-2	36 x 36								SEE NOTES 7 AND 10	
1-12	W3-3		36 x 36	5		12'		1				
2-1	W3-3		36 x 36	5		12'		1				
2-2		R73-4	36 x 45								SEE NOTES 7 AND 10	
2-3	R6-1L		54 x 18	2		6'		1				
2-4	R5-1 R5-1a		36 x 36 36 x 24	4		10'		1				
2-5		G7-1	36 x 30					1			SEE NOTE 9	
2-6		R73-2	36 x 36								SEE NOTES 7 AND 10	
2-7	R6-1R		54 x 18	2		6'		1				
2-8	R5-1 R5-1a		36 x 36 36 x 24	4		10'		1				
2-9	W3-3		48 x 48								SEE NOTES 7 AND 8	
2-10	W3-3		48 x 48								SEE NOTES 7 AND 8	
2-11		G7-1 G81	72 x 60 48 x 30	5	18'			1				
3-1		G7								1		
3-2		W70								1		
3-3	R3-7R									1		
3-4	R5-1 R5-1a									1		
3-5	R6-1R									1		
3-6	R5-1 R5-1a									1		
3-7		SNS								1		
3-8	R6-1L									1		
3-9	R1-1 R6-3									1		
3-10	W3-1									1		
4-1	W3-1									1		
4-2	R1-1 R6-3									1		
4-3		SNS								1		
4-4	R6-1L									1		
4-5	R5-1 R5-1a									1		
4-6	R6-1R									1		
4-7	R5-1 R5-1a									1		
4-8	R3-7R									1		
4-9		G81								1		
4-10		W70								1		
4-11		G7								1		
<b>TOTAL</b>								11	2	2	21	

**NOTES:**

- EXACT LOCATION AND POSITION OF ROADSIDE SIGNS TO BE DETERMINED BY THE ENGINEER.
- POST LENGTHS GIVEN ARE APPROXIMATE.
- "C" DIM = VERTICAL CLEARANCE EP TO BOTTOM OF SIGN PANEL.
- FOR ADDITIONAL METAL POST INSTALLATION INFORMATION, SEE SHEET SD-1.
- FOR PANEL LEGEND LAYOUT, SEE SHEET SD-2.
- SNS = STREET NAME SIGN.
- (N) - NOT A SEPARATE PAY ITEM. FOR INFORMATION ONLY.
- SIGN PANEL TO BE MOUNTED ON ADVANCE FLASHING BEACON STANDARD. SEE ELECTRICAL PLANS FOR DETAILS.
- SIGN PANEL TO BE MOUNTED ON SIGNAL STANDARD DIRECTLY ABOVE THE SIGNAL MAST ARM CONNECTION.
- SIGN PANEL TO BE MOUNTED ON SIGNAL MAST ARM.

## SIGN QUANTITIES

**SQ-1**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	20	52

REGISTERED CIVIL ENGINEER: *Stephen T. Wright*  
 DATE: 2-6-12  
 PLANS APPROVAL DATE: 3-12-12  
 No. 52942  
 Exp. 12-31-12  
 CIVIL  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**ROADWAY QUANTITIES**

LOCATION	ROADWAY EXCAVATION CY	(N) EMBANKMENT CY	HMA (TYPE A) TON				MINOR HMA TON					HMA (OPEN GRADED) TON	CLASS 2 AB(CY) CY	REMOVE AC DIKE LF	PLACE HMA DIKE (TYPE E) LF	COLD PLANE AC PAVEMENT SQYD	PLACE HMA (Misc AREA) SQYD				TACK COAT TON	
			AC STRUCTURE	COLD PLANE AC PAVEMENT	Var DEPTH AC	MAINTENANCE VEHICLE PULL OUT	AC PATH	AC PAD	HMA DIKE (TYPE E)	AC SPILLWAY	AC APRON						AC PATH	AC PAD	AC SPILLWAY	AC APRON		
NB Rte 99 RIGHT TURN TO EB NEAL ROAD																						
"A1" 205+07 TO "A1" 208+00	200	25	110	25	40						21	150			150						0.2	
NB Rte 99 LEFT TURN TO WB NEAL ROAD																						
"A1" 205+07 TO "A1" 208+60	320	60	210								21	270									0.2	
SB Rte 99 LEFT TURN TO EB NEAL ROAD																						
"A1" 219+10 TO "A1" 222+00 Rte 99 AT MEDIAN	255	25	165									210							8		0.1	
"A1" 212+22												1							8			
"A1" 214+25												1							8			
NW QUADRANT Rte 99 AND NEAL ROAD																						
"NW1" 11+10 TO "NW1" 11+20												1		10					6			
SW QUADRANT Rte 99 AND NEAL ROAD																						
"SWP1" 11+83 TO "SWP11" 13+63	16	500				20	7		3			30	180	89		48						
NE QUADRANT Rte 99 AND NEAL ROAD																						
"NE1" 20+70 TO "NE1" 23+45	130	120	75	32	5		5		8	1		95	265	260	190	30		3			0.1	
SE QUADRANT Rte 99 AND NEAL ROAD																						
"SE1" 21+30 TO "SE1" 21+40													10						6			
<b>SUBTOTAL</b>	921	730	560	57	45	20	12	4	11	1	1	42	755	465	349	340	78	6	28	3	8	0.6
<b>TOTAL</b>	921			682						29			42	755	465	349	340		117			0.6

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

**EROSION CONTROL**

	(N) DISTURBED AREA	EROSION CONTROL (COMPOST BLANKET)
	SQFT	CY
SUBTOTAL	18,100	120
TOTAL		120

NOTE: APPLY EROSION CONTROL (COMPOST BLANKET) TO A UNIFORM DEPTH OF 2 INCHES.

**TEMPORARY WATER POLLUTION CONTROL**

TEMPORARY DRAINAGE INLET PROTECTION
EACH
2

**SUMMARY OF QUANTITIES**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	BuT	99	25.9/26.2	21	52

REGISTERED ELECTRICAL ENGINEER DATE  
**HABIB GOLBAN**  
 No. E17928  
 Exp. 09-3-12  
 ELECTRICAL  
 STATE OF CALIFORNIA

3-12-12  
 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.

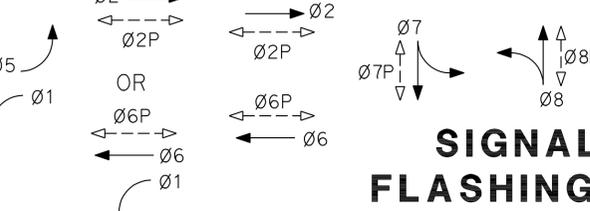
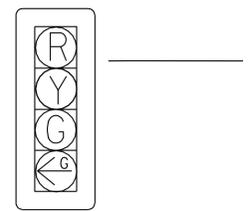
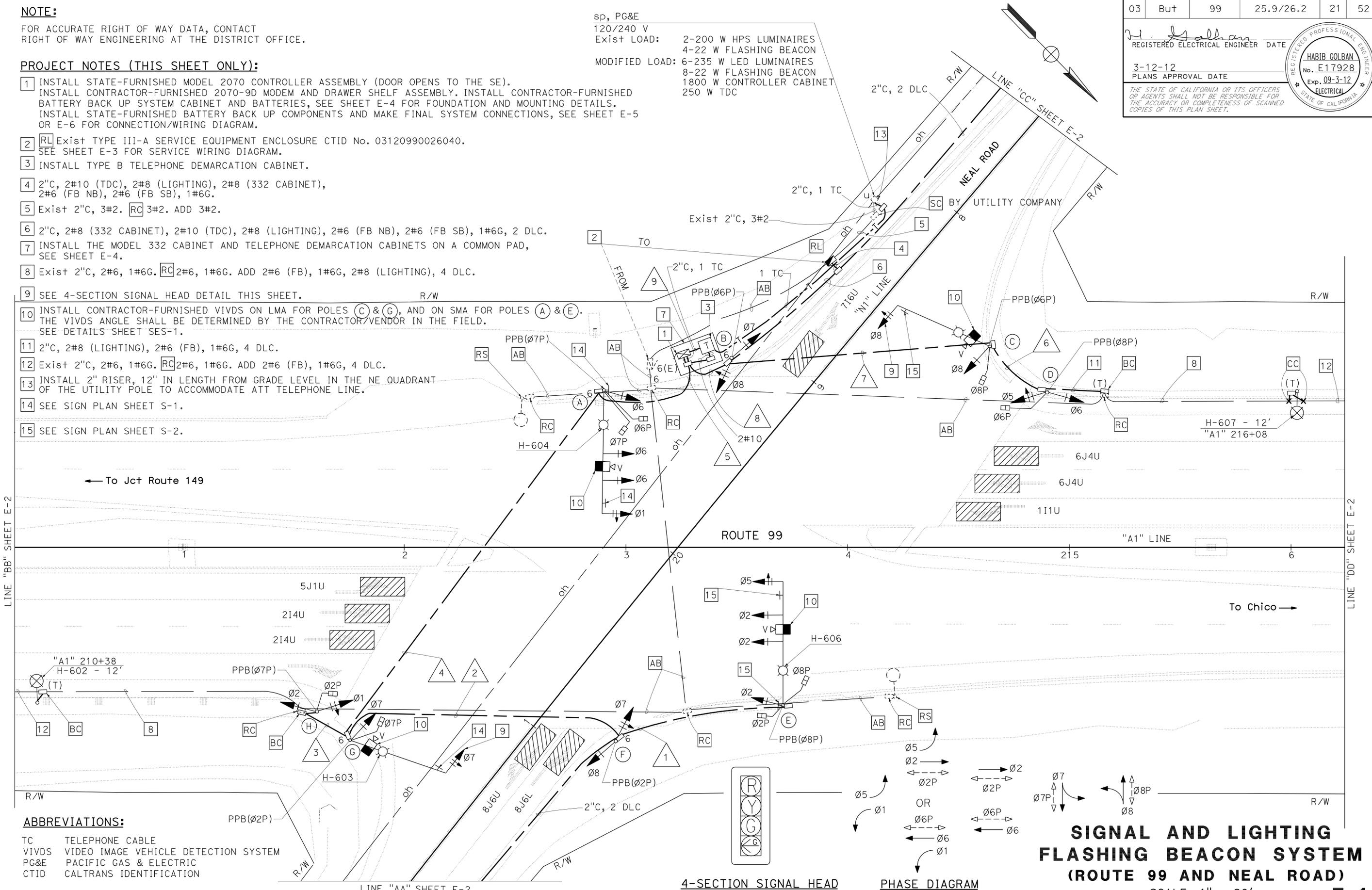
**NOTE:**

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

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

- 1 INSTALL STATE-FURNISHED MODEL 2070 CONTROLLER ASSEMBLY (DOOR OPENS TO THE SE). INSTALL CONTRACTOR-FURNISHED 2070-9D MODEM AND DRAWER SHELF ASSEMBLY. INSTALL CONTRACTOR-FURNISHED BATTERY BACK UP SYSTEM CABINET AND BATTERIES, SEE SHEET E-4 FOR FOUNDATION AND MOUNTING DETAILS. INSTALL STATE-FURNISHED BATTERY BACK UP COMPONENTS AND MAKE FINAL SYSTEM CONNECTIONS, SEE SHEET E-5 OR E-6 FOR CONNECTION/WIRING DIAGRAM.
- 2 RL Exist TYPE III-A SERVICE EQUIPMENT ENCLOSURE CTID No. 03120990026040. SEE SHEET E-3 FOR SERVICE WIRING DIAGRAM.
- 3 INSTALL TYPE B TELEPHONE DEMARCATION CABINET.
- 4 2"C, 2#10 (TDC), 2#8 (LIGHTING), 2#8 (332 CABINET), 2#6 (FB NB), 2#6 (FB SB), 1#6G.
- 5 Exist 2"C, 3#2. RC 3#2. ADD 3#2.
- 6 2"C, 2#8 (332 CABINET), 2#10 (TDC), 2#8 (LIGHTING), 2#6 (FB NB), 2#6 (FB SB), 1#6G, 2 DLC.
- 7 INSTALL THE MODEL 332 CABINET AND TELEPHONE DEMARCATION CABINETS ON A COMMON PAD, SEE SHEET E-4.
- 8 Exist 2"C, 2#6, 1#6G. RC 2#6, 1#6G. ADD 2#6 (FB), 1#6G, 2#8 (LIGHTING), 4 DLC.
- 9 SEE 4-SECTION SIGNAL HEAD DETAIL THIS SHEET.
- 10 INSTALL CONTRACTOR-FURNISHED VIVDS ON LMA FOR POLES (C) & (G), AND ON SMA FOR POLES (A) & (E). THE VIVDS ANGLE SHALL BE DETERMINED BY THE CONTRACTOR/VENDOR IN THE FIELD. SEE DETAILS SHEET SES-1.
- 11 2"C, 2#8 (LIGHTING), 2#6 (FB), 1#6G, 4 DLC.
- 12 Exist 2"C, 2#6, 1#6G. RC 2#6, 1#6G. ADD 2#6 (FB), 1#6G, 4 DLC.
- 13 INSTALL 2" RISER, 12" IN LENGTH FROM GRADE LEVEL IN THE NE QUADRANT OF THE UTILITY POLE TO ACCOMMODATE ATT TELEPHONE LINE.
- 14 SEE SIGN PLAN SHEET S-1.
- 15 SEE SIGN PLAN SHEET S-2.

sp, PG&E  
 120/240 V  
 Exist LOAD: 2-200 W HPS LUMINAIRE  
 4-22 W FLASHING BEACON  
 MODIFIED LOAD: 6-235 W LED LUMINAIRE  
 8-22 W FLASHING BEACON  
 1800 W CONTROLLER CABINET  
 250 W TDC



**SIGNAL AND LIGHTING FLASHING BEACON SYSTEM (ROUTE 99 AND NEAL ROAD)**  
 SCALE: 1" = 20'  
**E-1**

**ABBREVIATIONS:**  
 TC TELEPHONE CABLE  
 VIVDS VIDEO IMAGE VEHICLE DETECTION SYSTEM  
 PG&E PACIFIC GAS & ELECTRIC  
 CTID CALTRANS IDENTIFICATION

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR NELSON LEE  
 CALCULATED/DESIGNED BY CHECKED BY  
 JAMIE KOJAK HABIB GOLBAN  
 REVISED BY DATE REVISED

APPROVED FOR ELECTRICAL WORK ONLY

LAST REVISION DATE PLOTTED => 14-MAR-2012  
 TIME PLOTTED => 10:02

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	22	52

H. Golban  
 REGISTERED ELECTRICAL ENGINEER DATE  
 3-12-12  
 PLANS APPROVAL DATE  
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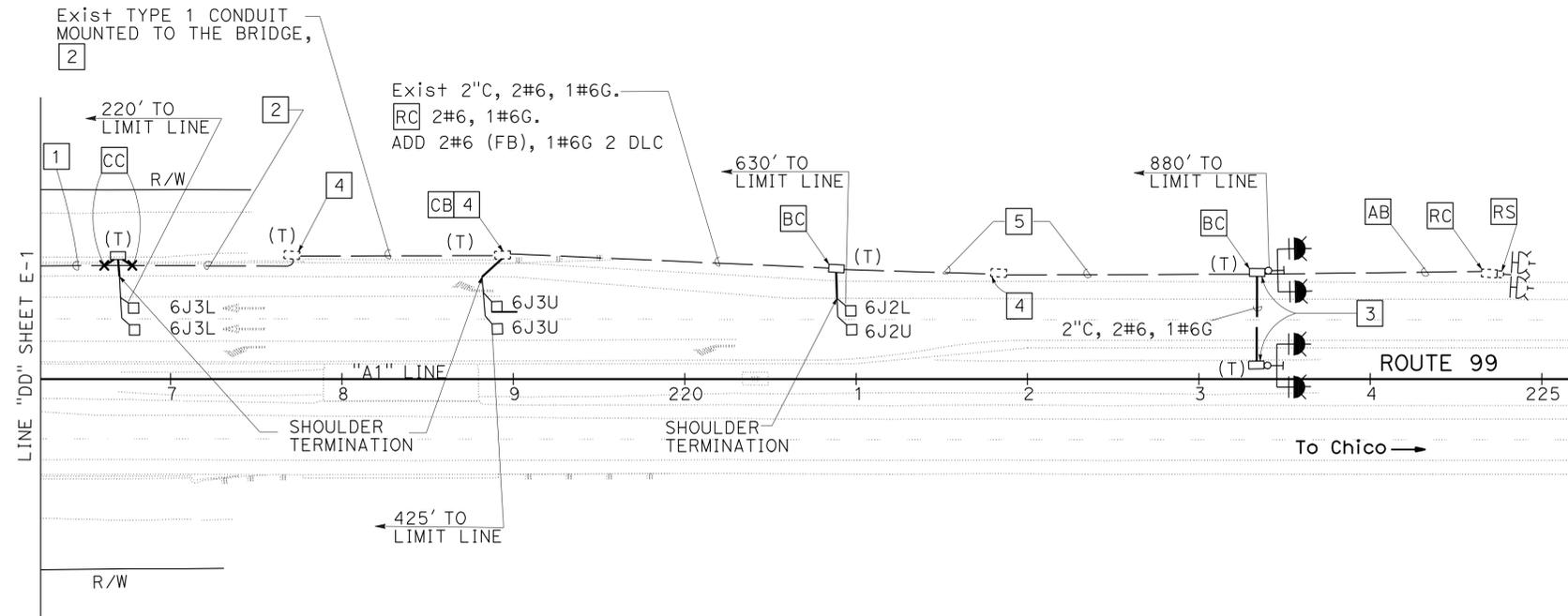
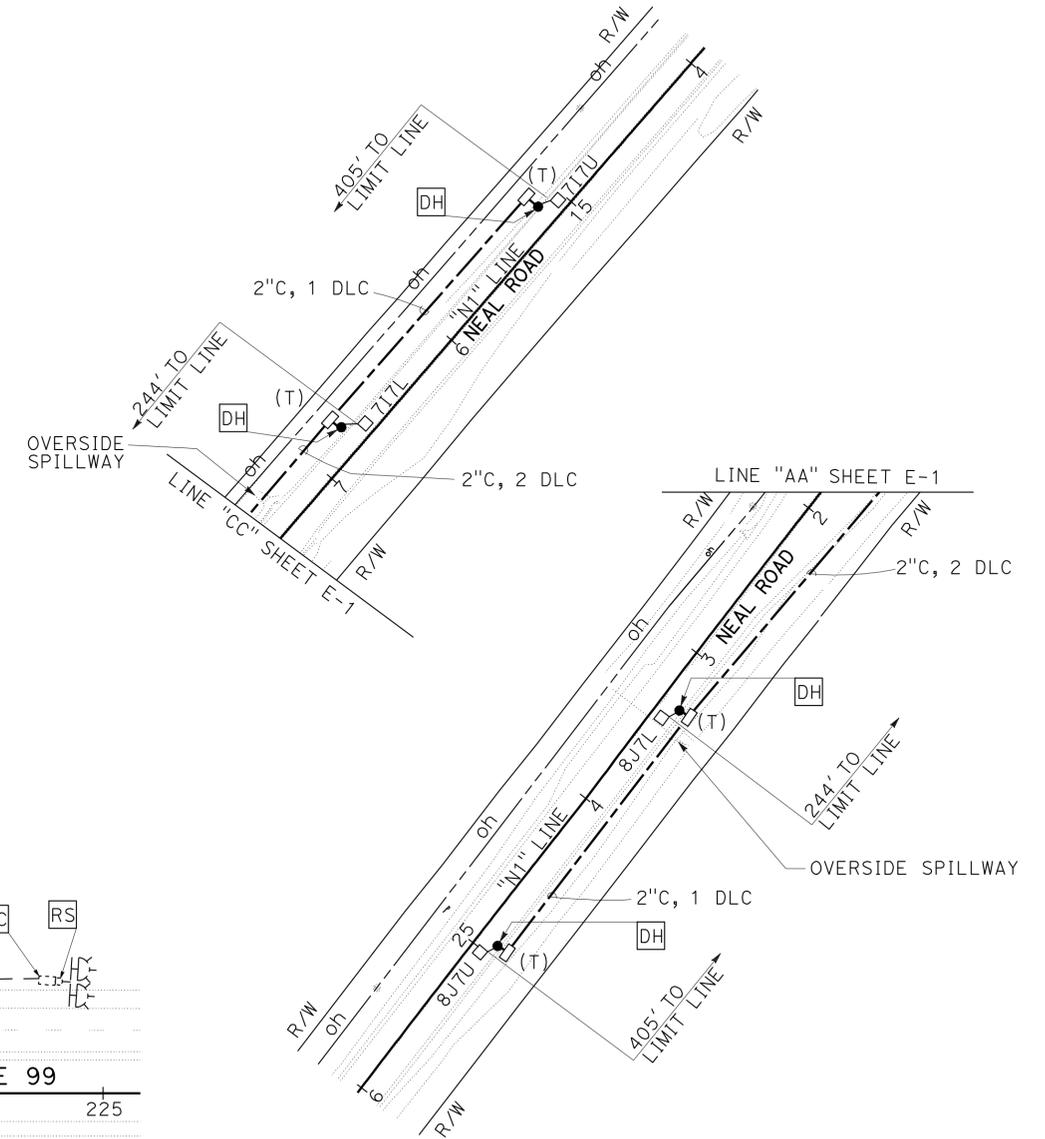
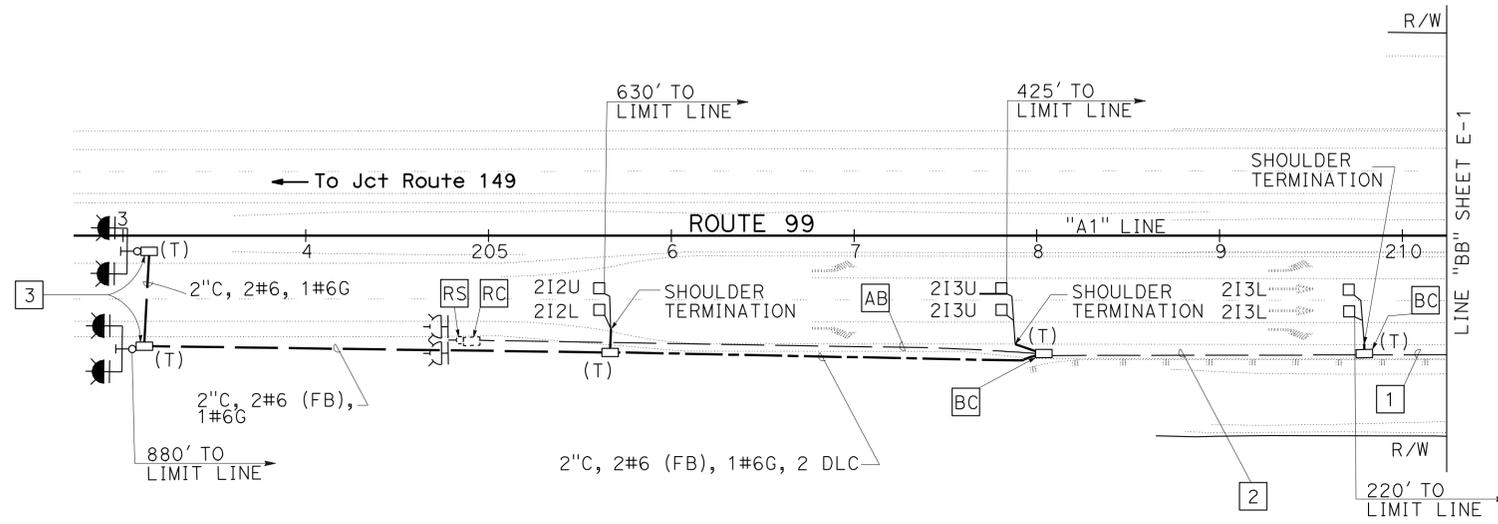
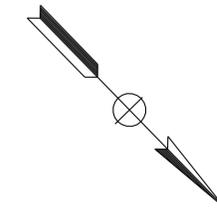
REGISTERED PROFESSIONAL ENGINEER  
 HABIB GOLBAN  
 No. E17928  
 Exp. 09-3-12  
 ELECTRICAL  
 STATE OF CALIFORNIA

**NOTE:**

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

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

- 1 Exist 2"C, 2#6, 1#6G. RC 2#6, 1#6G. ADD 2#6 (FB), 1#6G, 4 DLC.
- 2 Exist 2"C, 2#6, 1#6G. RC 2#6, 1#6G. ADD 2#6 (FB), 1#6G, 3 DLC.
- 3 INSTALL 5 A FUSED SPLICE CONNECTORS ON ALL CONDUCTORS, SEE ES-13B FOR KINKING DETAIL.
- 4 WELD COVER 3 INCHES ON LONG SIDE TO FRAME.
- 5 Exist 2"C, 2#6, 1#6G. RC 2#6, 1#6G. ADD 2#6 (FB), 1#6G.



**SIGNAL AND LIGHTING FLASHING BEACON SYSTEM (ROUTE 99 AND NEAL ROAD)**

SCALE: 1" = 50'

E-2

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
ELECTRICAL DESIGN  
CALTRANS

FUNCTIONAL SUPERVISOR  
NELSON LEE

CALCULATED-DESIGNED BY  
CHECKED BY

JAMIE KOJAK  
HABIB GOLBAN

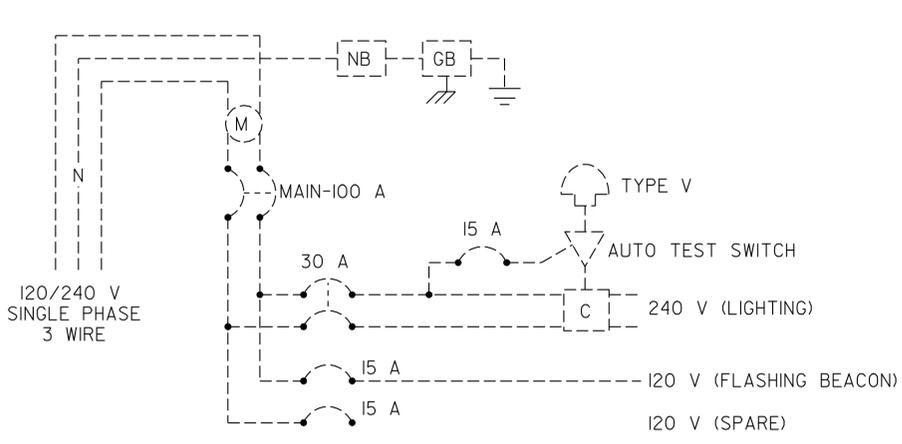
REVISED BY  
DATE REVISED

### CONDUCTOR SCHEDULE

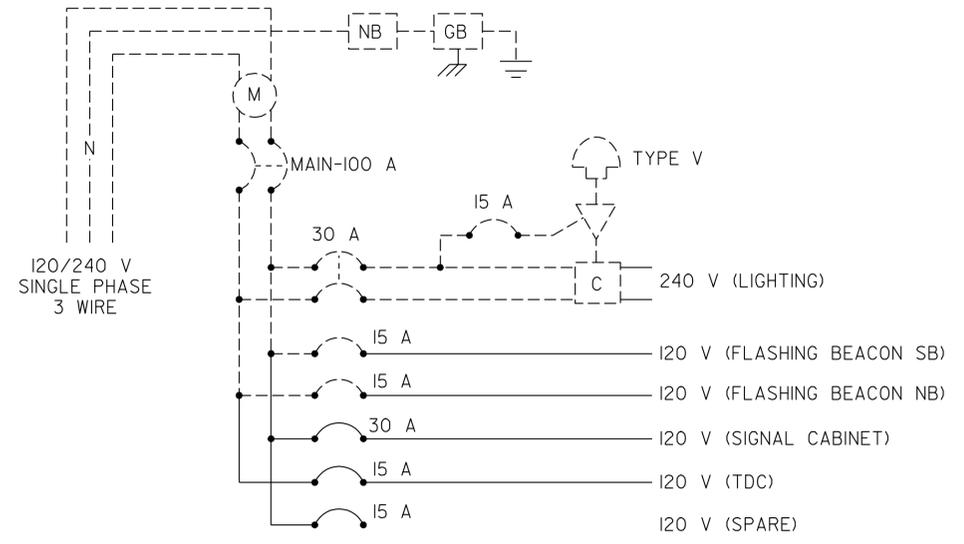
CONDUCTOR DESIGNATION			CONDUIT RUN NUMBER AND SIZE													
CABLE TYPE	S t d	PHASE	1	2	3	4	5	6	7	8	9					
			2"	3"	3"	2-3"	2-3"	2"	3"	3"	2-4"					
VEH-PED 12CSC	(A)	1,6,6P,7P	7				1	1			1	1				
	(B)	7,8	6							1	1	1				
	(C)	8,8P	6						1	1	1	1				
	(D)	5,6,6P	8					1	1	1	1	1				
	(E)	2,5,2P,8P	8	1	1	1	1	1	1	1	1	1				
	(F)	7,8	2		1	1	1	1				1				
	(G)	7,7P	2		1	1	1					1				
	(H)	1,2,2P	7			1	1	1	1			1	1			
TOTAL CABLES			1	1	2	1	4	4	5	5	1	2	3	3	8	8
AWG	CIRCUIT															
#8	LIGHTING		2	2	2	2	2	2	2	2						
	SIGNAL CABINET										2	2				
#6	FLASHING BEACON (NB)				2	2	2				2					
	GROUND				1	1	1	1	1	1	1					
	FLASHING BEACON (SB)							2	2							
DETECTORS																
PHASE																
	Ø1															
	Ø2				4	4	4					4				
	Ø3															
	Ø4															
	Ø5															
	Ø6							4	4	4	4					
	Ø7									2	2					
	Ø8			2		2	2					2				
TOTAL DLC																
VEDIO DETECTOR CABLE			1	1		2	3			1	1	4				

### POLE AND EQUIPMENT SCHEDULE

	STANDARDS			VEH SIG MTG		PED SIGNAL MTG	PPB		LED LUMINAIRE	SPECIAL REQUIREMENTS		
	TYPE	SMA	LMA	MAST ARM			Ø	ARROW				
				Ø	MTG						Ø	MTG
(A)	29A-5-100	55	15	1	MAT	6	SV-1-T	SP-2-T	7	←	235 W	CIDH PILE FOUNDATION DEPTH MUST BE 10'-8"
(B)	1-B					7	TV-2-T		6	→		
(C)	26A-3-100	45	15	8	MAT	8	SV-1-T	SP-1-T	6	←	235 W	CIDH PILE FOUNDATION DEPTH MUST BE 10'-0"
(D)	1-B					5	TV-2-T	SP-1-T	8	→		
(E)	29A-5-100	55	15	5	MAT	2	SV-1-T	SP-2-T	8	←	235 W	CIDH PILE FOUNDATION DEPTH MUST BE 11'-2"
(F)	1-B					7	TV-2-T		2	→		
(G)	26A-3-100	45	15	7	MAT	7	SV-1-T	SP-1-T	2	←	235 W	CIDH PILE FOUNDATION DEPTH MUST BE 10'-6"
(H)	1-B					1	TV-2-T	SP-1-T	7	→		



**EXISTING SERVICE WIRING DIAGRAM**  
CTID No. 03120990026040



**MODIFIED SERVICE WIRING DIAGRAM**  
CTID No. 03120990026040

#### WIRING DIAGRAM SYMBOLS

- Exist Contactor (Lighting)
- Exist Neutral Bus
- Exist Ground Bus
- Exist Auto-Test Switch
- Exist Photoelectric Unit
- Exist Meter

### SIGNAL AND LIGHTING (ROUTE 99 AND NEAL ROAD)

NO SCALE

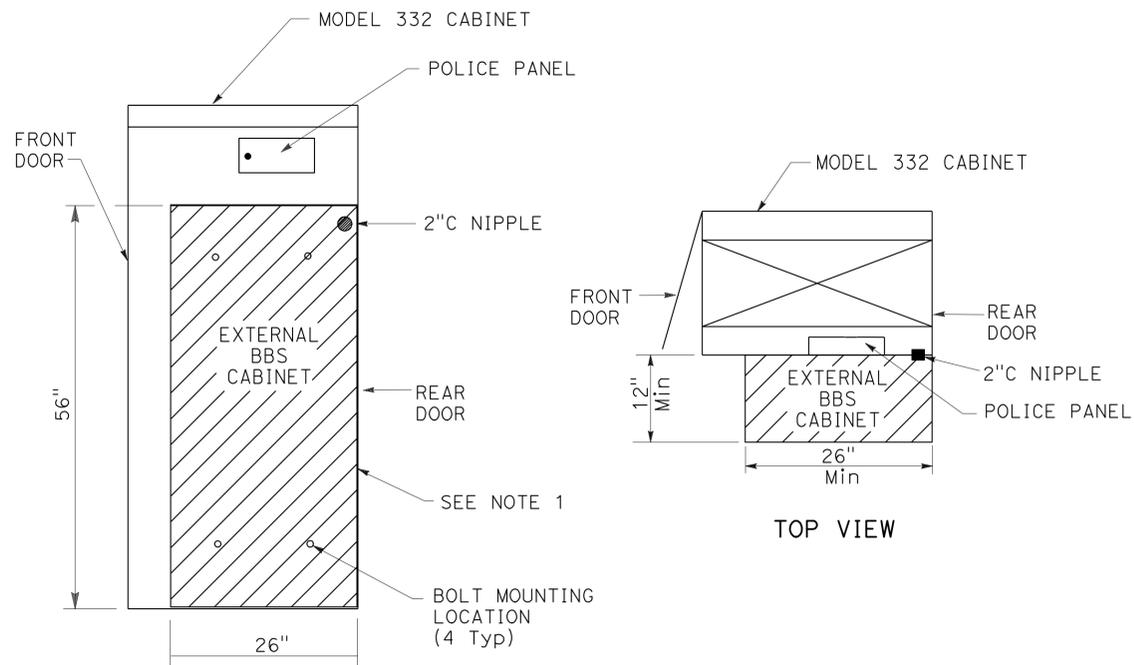
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 ELECTRICAL DESIGN  
 JAMIE KOJAK  
 HABIB GOLBAN  
 NELSON LEE  
 REVISIONS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	24	52

REGISTERED ELECTRICAL ENGINEER		DATE
HABIB GOLBAN		3-12-12
No. E17928		PLANS APPROVAL DATE
Exp. 09-3-12		
ELECTRICAL		

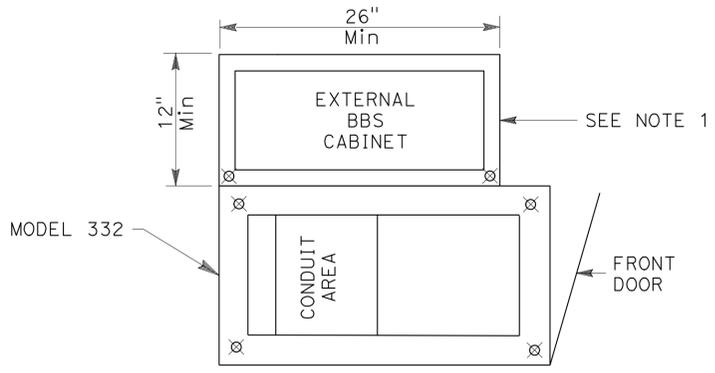
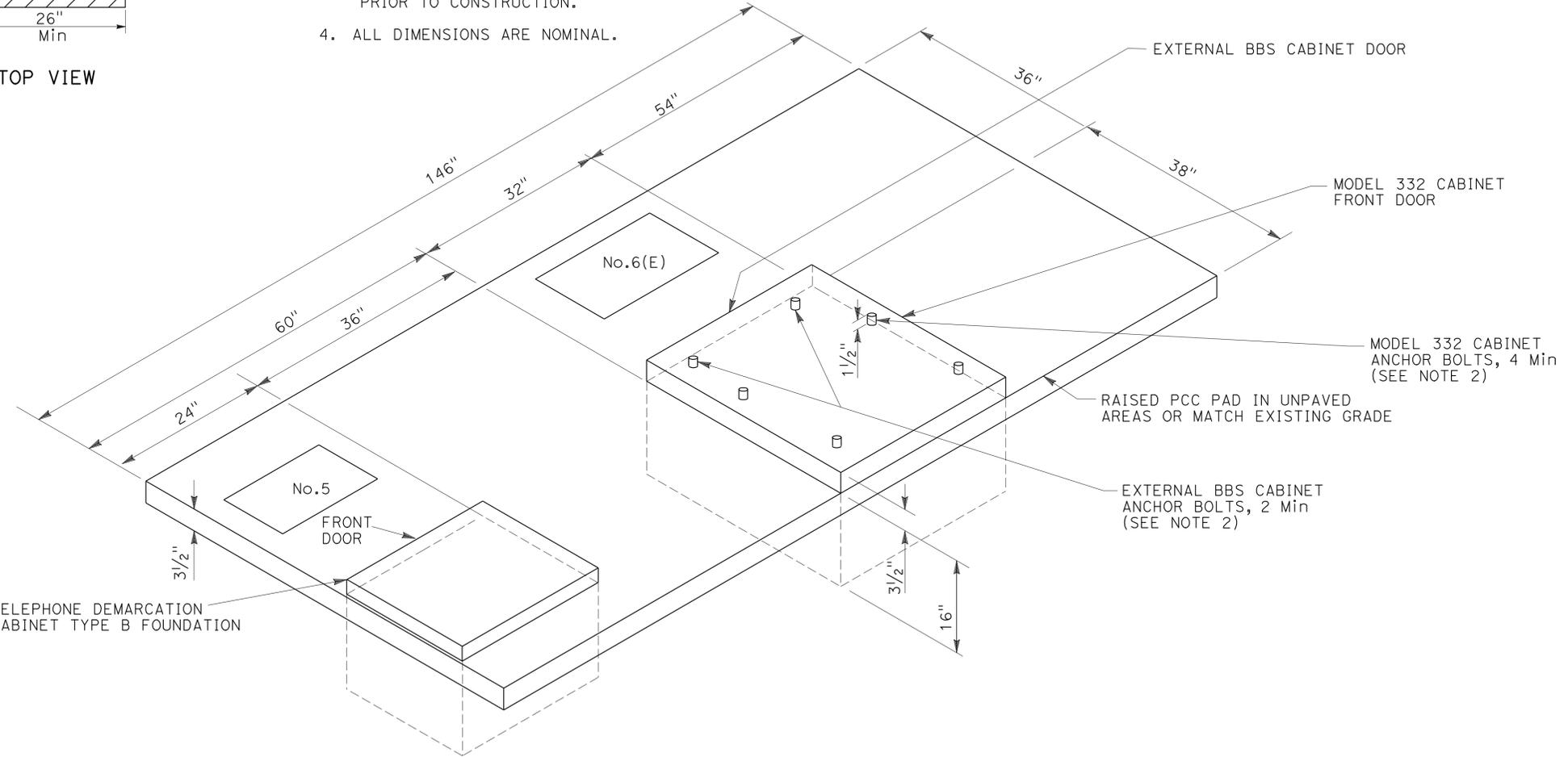
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



**NOTE: (THIS SHEET ONLY)**

1. THE EXTERNAL BBS CABINET SHALL BE MOUNTED TO THE MODEL 332 CABINET WITH FOUR 18-8 STAINLESS STEEL HEX HEAD, FULLY-THREADED, 3/8"-16 X 1" BOLTS; TWO WASHERS PER BOLT, DESIGNED FOR 3/8" BOLTS AND ARE 18-8 STAINLESS STEEL, 1" OUTSIDE DIAMETER, ROUND, AND FLAT; AND ONE K-LOCK NUT PER BOLT THAT IS 18-8 STAINLESS STEEL AND A HEX-NUT. THE ENGINEER WILL HAVE TO APPROVE THE BOLT MOUNTING LOCATION PRIOR TO INSTALLATION.
2. THE ANCHOR BOLTS SHALL BE 3/4" Dia X 15" WITH A 2"-90° BEND. THE CABINET MANUFACTURER'S SPECIFICATION SHALL DETERMINE THE LOCATION OF THE ANCHOR BOLTS IN THE FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE THE ANCHOR BOLTS AND ITS LOCATION IN THE FOUNDATION PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF THE BBS CABINET PRIOR TO CONSTRUCTING THE FOUNDATION OF THE MODIFIED PORTION OF THE STD MODEL 332 CABINET FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE ANY NECESSARY DEVIATIONS PRIOR TO CONSTRUCTION.
4. ALL DIMENSIONS ARE NOMINAL.

**EXTERNAL BBS CABINET MOUNTED TO THE MODEL 332 CABINET**



**BASE PLAN FOR BBS MOUNTED TO THE MODEL 332 CABINET**

(FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE SHEET A6-1 TO A6-4, CABINET HOUSING DETAILS OF THE TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATION (TEES))

**MODIFIED MODEL 332 CABINET FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM (BBS)**

(FOR DIMENSIONS AND DETAILS NOT SHOWN AND ADDITIONAL NOTES, SEE SHEET ES-3C OF THE STANDARD PLANS FOR MODEL 332 CABINET AND RSP ES-3E FOR TDC TYPE B)

**SIGNAL AND LIGHTING (BBS FOUNDATION AND MOUNTING DETAILS)**

NO SCALE

**E-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - ELECTRICAL DESIGN

REVISOR: JAMIE KOJAK, HABIB GOLBAN

DESIGNER: NELSON LEE

FUNCTIONAL SUPERVISOR: NELSON LEE

DESIGNER: NELSON LEE

APPROVED FOR ELECTRICAL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Bu+	99	25.9/26.2	25	52

REGISTERED ELECTRICAL ENGINEER DATE  
 H. Golban  
 3-12-12  
 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.

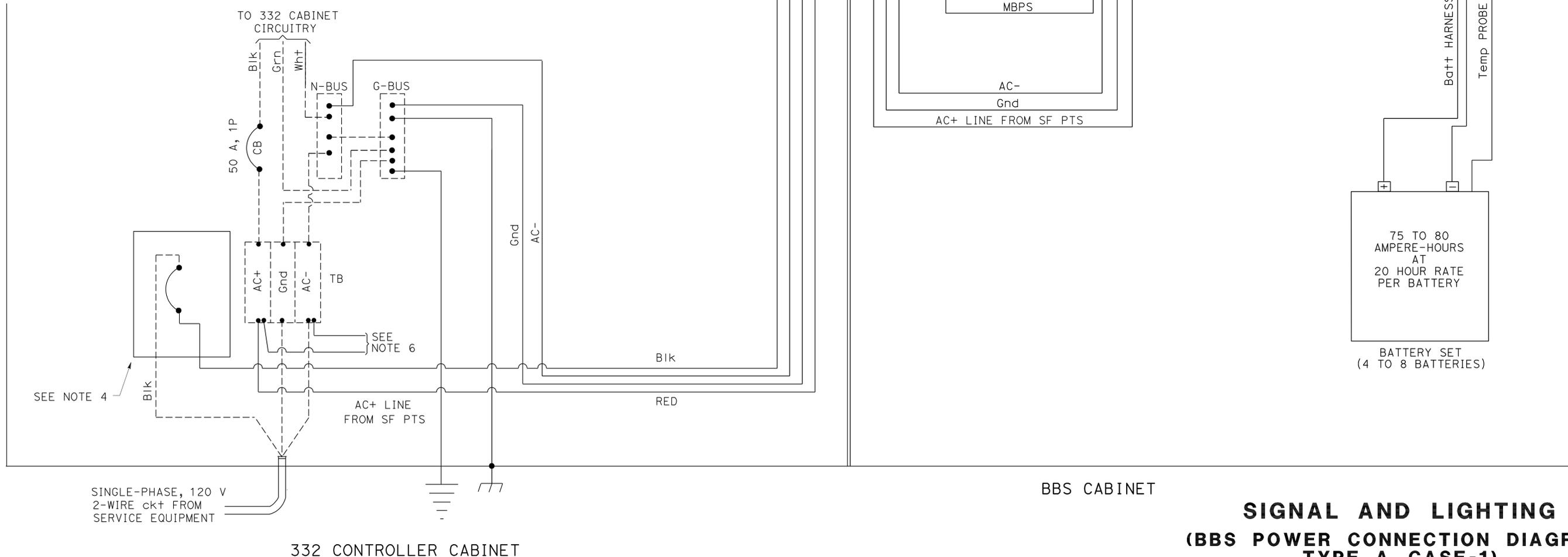
REGISTERED PROFESSIONAL ENGINEER  
 HABIIB GOLBAN  
 No. E17928  
 Exp. 09-3-12  
 ELECTRICAL  
 STATE OF CALIFORNIA

**LEGEND: (THIS SHEET ONLY)**

- AC+ = UNGROUNDED CONDUCTOR
- AC- = GROUNDED CONDUCTOR
- Batt = BATTERY
- Blk = BLACK
- BP = BYPASS
- C = COMMON
- Cntl = CONTROL
- Gnd = GROUND
- Grn = GREEN
- MBPS = MANUAL BYPASS SWITCH
- PTS = POWER TRANSFER SWITCH
- SF = STATE-FURNISHED
- TB = TERMINAL BOARD
- Temp = TEMPERATURE
- UPS = UNINTERRUPTIBLE POWER SUPPLY
- UPSC = UNINTERRUPTIBLE POWER SUPPLY CONTROLLER
- UPSM = UPS MODE
- Whit = WHITE

**NOTES: (THIS SHEET ONLY)**

1. TYPE A REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER A.
2. CASE-1 REFERS TO THE SITUATION WHEN THE ENTIRE BBS EQUIPMENT INCLUDING THE BATTERIES ARE INSTALLED IN THE BBS CABINET.
3. THE LOCATION OF THE 2" NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
6. THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET SHALL BE TAPPED FROM THE BOTTOM OF THE TB IN THE 332 CABINET.
7. THE CONTRACTOR SHALL PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS SHALL BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.



**SIGNAL AND LIGHTING**  
**(BBS POWER CONNECTION DIAGRAM, TYPE A, CASE-1)**  
 NO SCALE

**E-5**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: NELSON LEE  
 REVISIONS: (None shown)  
 REVISOR: JAMIE KOJAK, HABIB GOLBAN  
 DATE: (None shown)  
 DESIGNED BY: (None shown)  
 CHECKED BY: (None shown)

LAST REVISION: DATE PLOTTED => 14-MAR-2012    TIME PLOTTED => 10:02

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	26	52

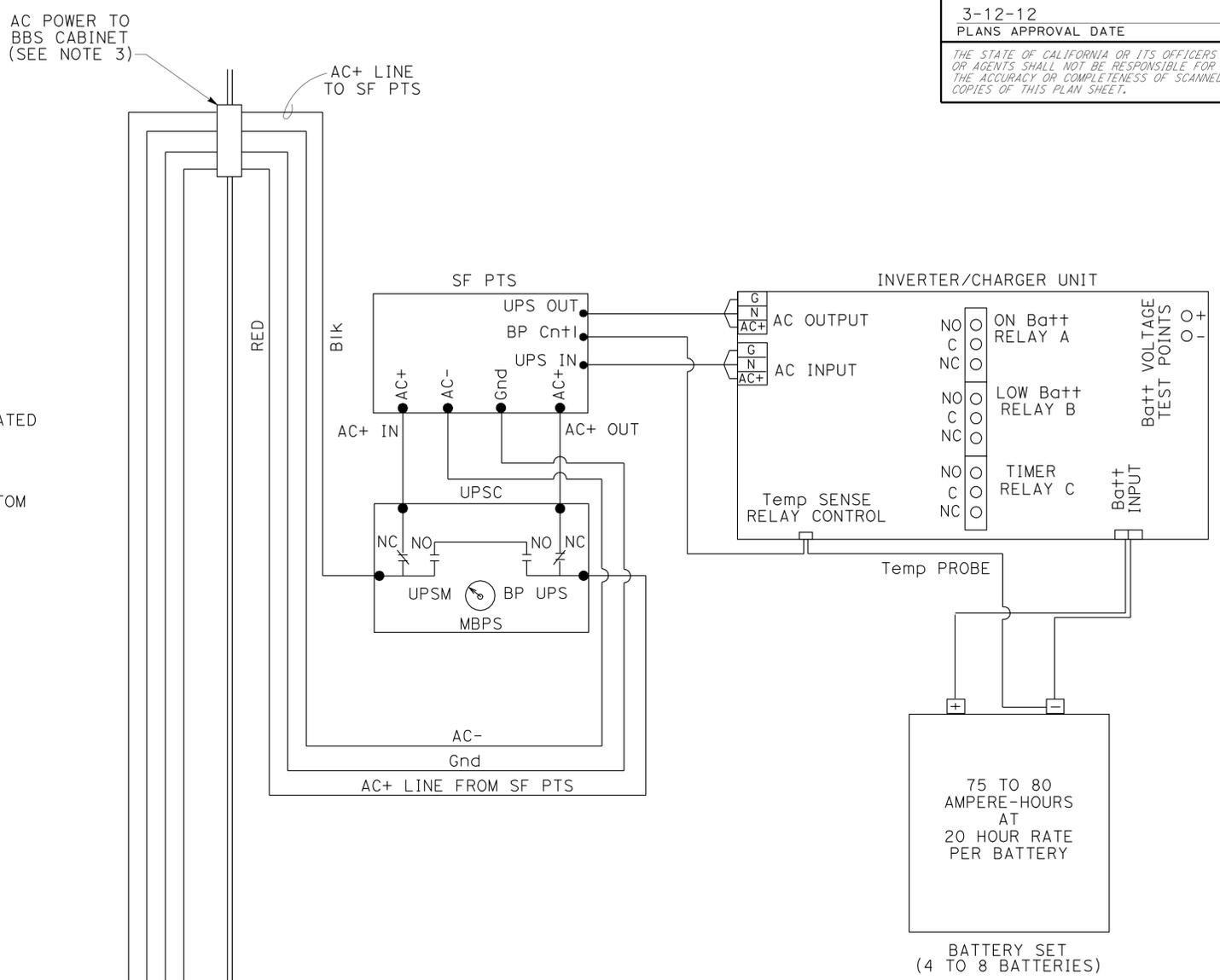
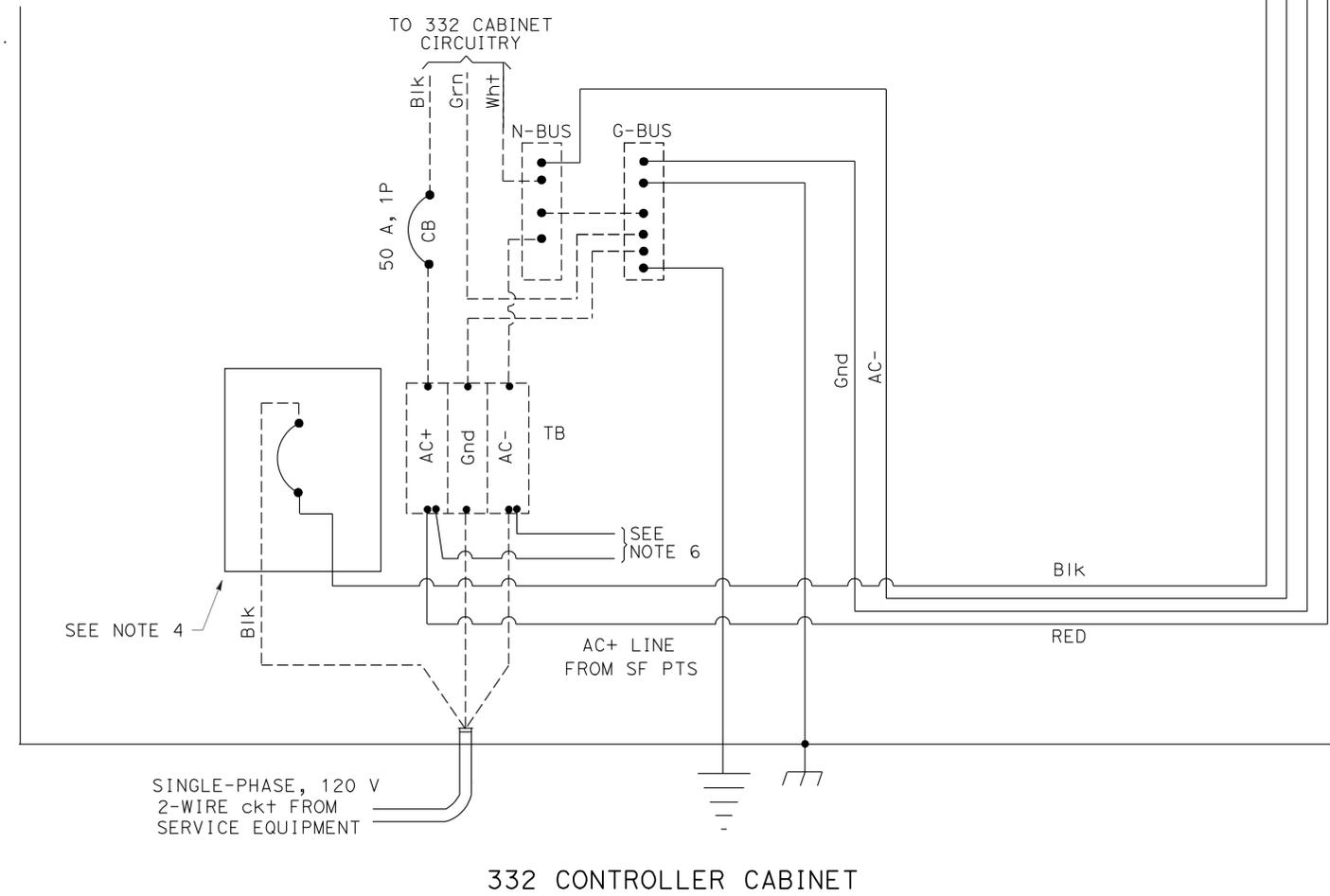
REGISTERED ELECTRICAL ENGINEER DATE	
3-12-12	
PLANS APPROVAL DATE	
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	

**LEGEND: (THIS SHEET ONLY)**

- AC+ = UNGROUNDED CONDUCTOR
- AC- = GROUNDED CONDUCTOR
- Batt = BATTERY
- Blk = BLACK
- BP = BYPASS
- C = COMMON
- Cntl = CONTROL
- Gnd = GROUND
- Grn = GREEN
- MBPS = MANUAL BYPASS SWITCH
- PTS = POWER TRANSFER SWITCH
- SF = STATE-FURNISHED
- TB = TERMINAL BOARD
- Temp = TEMPERATURE
- UPS = UNINTERRUPTIBLE POWER SUPPLY
- UPSC = UNINTERRUPTIBLE POWER SUPPLY CONTROLLER
- UPSM = UPS MODE
- Wht = WHITE

**NOTES: (THIS SHEET ONLY)**

1. TYPE B REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER B.
2. CASE-1 REFERS TO THE SITUATION WHEN THE ENTIRE BBS EQUIPMENT INCLUDING THE BATTERIES ARE INSTALLED IN THE BBS CABINET.
3. THE LOCATION OF THE 2" NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
6. THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET SHALL BE TAPPED FROM THE BOTTOM OF THE TB IN THE 332 CABINET.
7. THE CONTRACTOR SHALL PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS SHALL BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.



BBS CABINET

**SIGNAL AND LIGHTING**  
**(BBS POWER CONNECTION DIAGRAM, TYPE B, CASE-1)**  
 NO SCALE

E-6

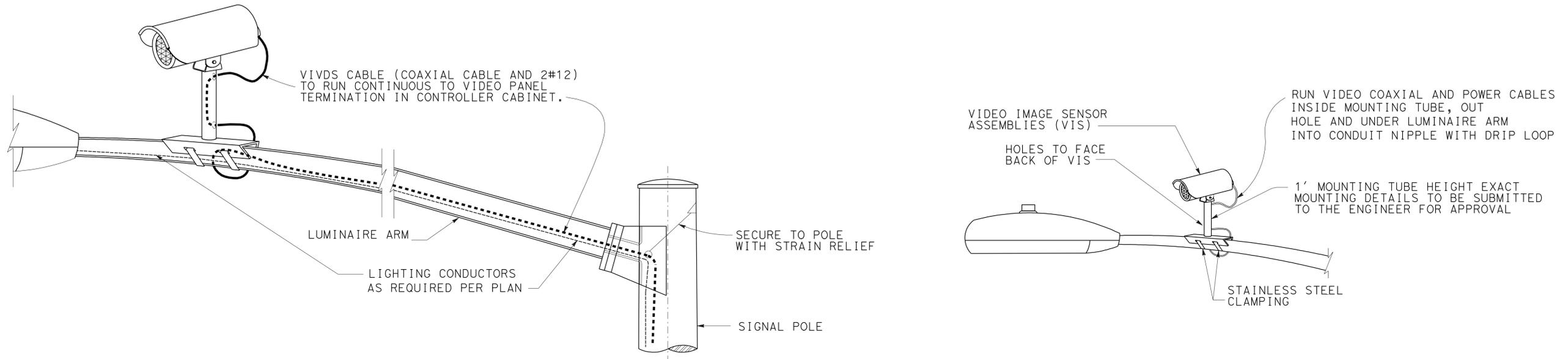
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
<b>Caltrans</b>	NELSON LEE	JAMIE KOJAK	
<b>ELECTRICAL DESIGN</b>		HABIB GOLBAN	

APPROVED FOR ELECTRICAL WORK ONLY

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Bu+	99	25.9/26.2	27	52
<i>Eliseo Lopez</i> REGISTERED CIVIL ENGINEER DATE 2/2/12			No. C72910 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA		
3-12-12 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.		

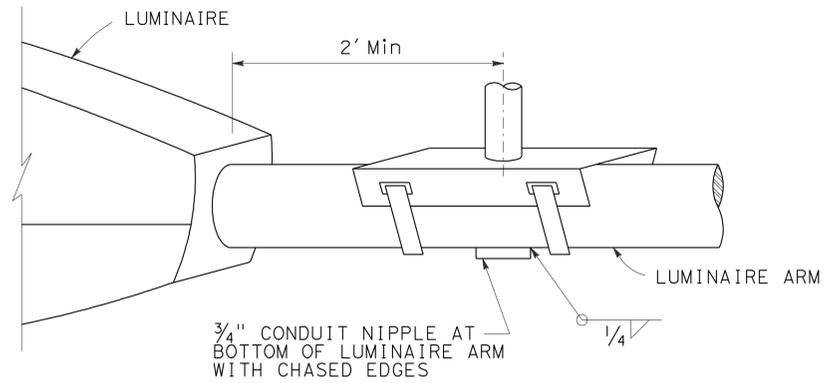
**NOTES:**

- All metallic conduits, bolts, straps and misc hardware shall be galvanized.
- Elements (Total VIVDS assembly) shall have a maximum weight of 10 lbs and a maximum effective pressure area of 1 square foot.
- Maximum of 2 VIVDS elements added per traffic signal structure. Maximum of 1 element per arm (luminaire arm or traffic signal arm). This detail shown applies only to newly installed poles designed according to Standard Plans.



**CAMERA MOUNTING DETAILS**

NO SCALE



**DETAIL A**

NO SCALE

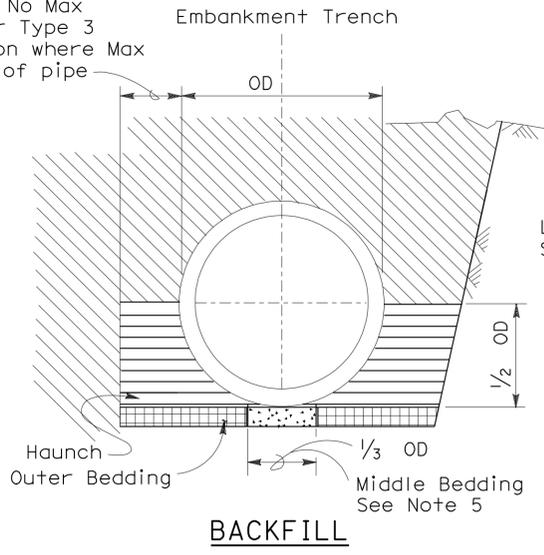
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

BRANCH CHIEF <b>JEFFREY B WOODY</b>	DESIGN	BY <i>E LOPEZ</i>	CHECKED <i>K.C. LIU</i>	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES <b>SPECIAL DESIGNS BRANCH</b>	BRIDGE NO.	N/A	<b>CAMERA MOUNTING DETAILS</b> <b>SIGNAL AND LIGHTING SYSTEM</b>	<b>SES-1</b>
	DETAILS	BY <i>A R DUDSAK</i>	CHECKED <i>K.C. LIU</i>			POST MILE			
	QUANTITIES	BY <i>X</i>	CHECKED <i>X</i>						

USERNAME => s114926 DATE PLOTTED => 14-MAR-2012 TIME PLOTTED => 10:07

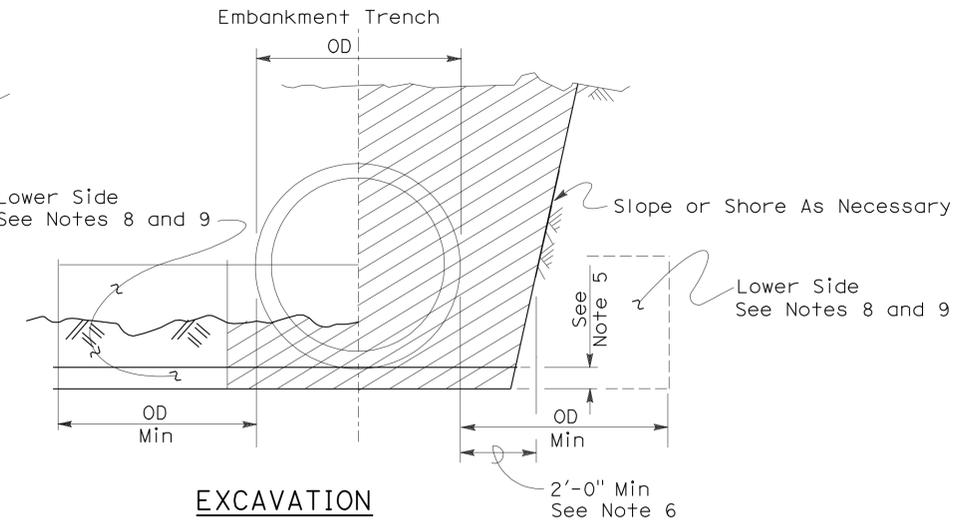
2006 REVISED STANDARD PLAN RSP A62DA

2'-0" Min; No Max except for Type 3 Installation where Max Equals OD of pipe



**BACKFILL**

- Roadway Embankment
- Structure Backfill (Culvert) See Note 6
- Structure Backfill (Culvert) See Note 6
- Loose Backfill



**EXCAVATION**

- Excavation Structure (Culvert)

**TYPE 1 INSTALLATION:**

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 30 and the maximum percentage passing the 75 μm sieve size shall be 12.

**TYPE 2 INSTALLATION:**

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 25.

**TYPE 3 INSTALLATION:**

The haunch and outer bedding shall be compacted to a minimum 85 percent relative compaction. 90 percent relative compaction will be required where the fill over the pipe is less than 4'-0" or 1/2 OD.

**NOTES:**

- Unless otherwise shown on the plans or specified in the special provision, the Contractor shall have the option of selecting the class of RCP and the type of installation to be used, provided the height of cover does not exceed the value shown for the RCP selected.  
 Example: 24" RCP culvert with maximum cover of 19'-0" the options are:  
 a) Class III or stronger with Installation Type 1.  
 b) Class III Special or stronger with Installation Type 2.  
 c) Class IV Special or stronger with Installation Type 3.  
 Cover is defined as the maximum vertical distance from top of the pipe to finished grade within the length of any given culvert.
- The class of RCP and Installation Type selected shall be the same throughout the length of any given culvert.
- The "length of any culvert" is defined as the culvert between:  
 a) Successive drainage structure (inlets, junction boxes, headwalls, etc.).  
 b) A drainage structure and the inlet or outlet end of the culvert.  
 c) The inlet and outlet end of the culvert when there are no intervening drainage structures.
- Oval and arch shaped RCP shall not be used.
- 1/25 OD Min, not less than 3".
- Slurry cement backfill may be substituted for backfill in the outer bedding and haunch areas. If slurry is used the outer and middle beddings shall be omitted. Prior to installation the soil under the middle 1/3 of the outside diameter of the pipe shall be softened by scarifying or other means to a minimum depth of 1/25 OD, but not less than 3". Where slurry cement backfill is used clear distance to trench wall may be reduced as set forth in Section 19-3.062 of the Standard Specifications.
- Backfill shall be placed full width of excavation except where dimensions are shown for backfill width or thickness. Dimensions shown are minimums.
- Lower side shall be suitable material as determined by the Engineer. Otherwise it shall be considered unsuitable as set forth in Section 19-2.02 of the Standard Specifications. See Note 9.
- Where the pipe is placed in a trench, if the trench walls are sloped at 5 vertical to 1 horizontal or steeper for at least 90 percent of the trench height or up to not less than 12" from the grading plane, the firmness of the soil in the lower side need not be considered.
- Non-reinforced precast concrete pipe sizes 3'-0" or smaller may be placed under installation Types 1, 2 or 3.

**INSTALLATION TYPE 1**

MINIMUM CLASS AND D-LOAD	COVER	
	108" Dia AND SMALLER	OVER 108" Dia
Class II 1000D	14.9'	12.9'
Class III 1350D	15.0' - 20.9'	13.0' - 18.9'
Class III Special 1700D	21.0' - 26.9'	19.0' - 24.9'
Class IV 2000D	27.0' - 31.9'	25.0' - 29.9'
Class IV Special 2500D	32.0' - 40.9'	30.0' - 38.9'
Class V 3000D	41.0' - 49.9'	39.0' - 46.9'
Class V Special 3600D	50.0' - 59.0'	47.0' - 58.0'

**INSTALLATION TYPE 2**

MINIMUM CLASS AND D-LOAD	COVER
Class II 1000D	9.9'
Class III 1350D	10.0' - 14.9'
Class III Special 1700D	15.0' - 19.9'
Class IV 2000D	20.0' - 24.9'
Class IV Special 2500D	25.0' - 31.9'
Class V 3000D	32.0' - 38.9'
Class V Special 3600D	39.0' - 47.0'

**INSTALLATION TYPE 3**

MINIMUM CLASS AND D-LOAD	COVER	
	48" Dia AND SMALLER	OVER 48" Dia
Class II 1000D	7.9'	5.9'
Class III 1350D	8.0' - 10.9'	6.0' - 8.9'
Class III Special 1700D	11.0' - 14.9'	9.0' - 12.9'
Class IV 2000D	15.0' - 17.9'	13.0' - 15.9'
Class IV Special 2500D	18.0' - 21.9'	16.0' - 19.9'
Class V 3000D	22.0' - 26.9'	20.0' - 24.9'
Class V Special 3600D	30.0' - 33.0'	25.0' - 31.0'

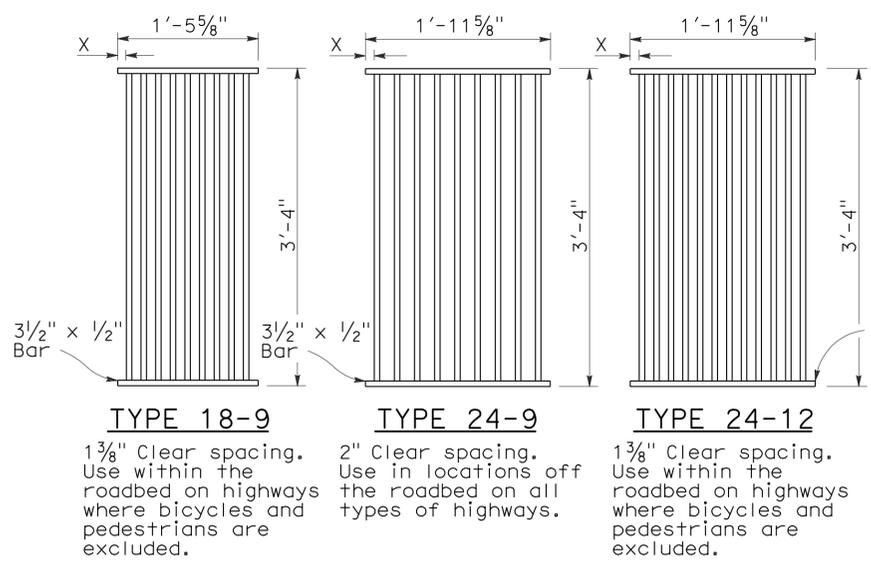
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**EXCAVATION AND BACKFILL  
CONCRETE PIPE CULVERTS**

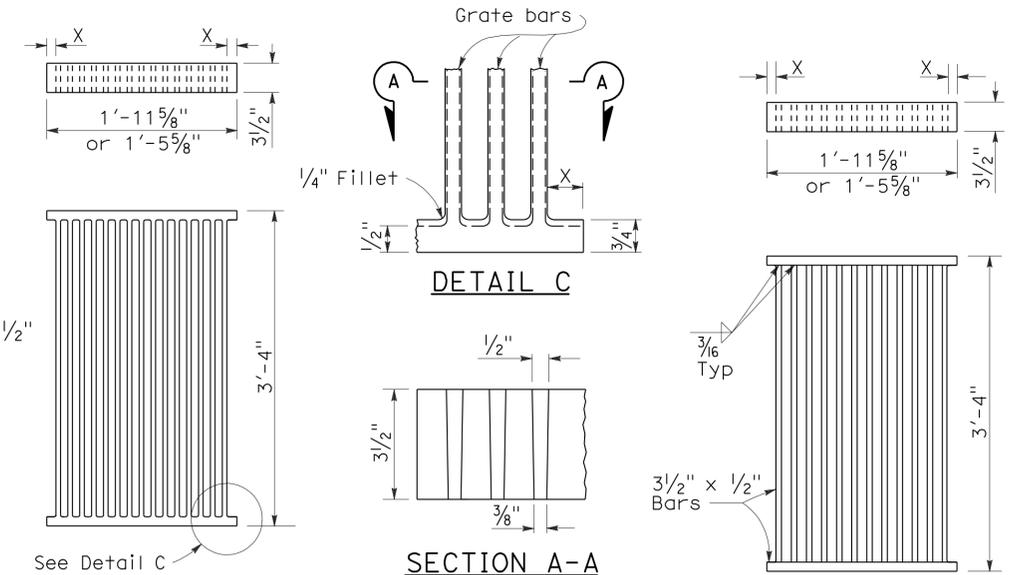
NO SCALE

RSP A62DA DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN A62DA DATED MAY 1, 2006 - PAGE 20 OF THE STANDARD PLANS BOOK DATED MAY 2006.

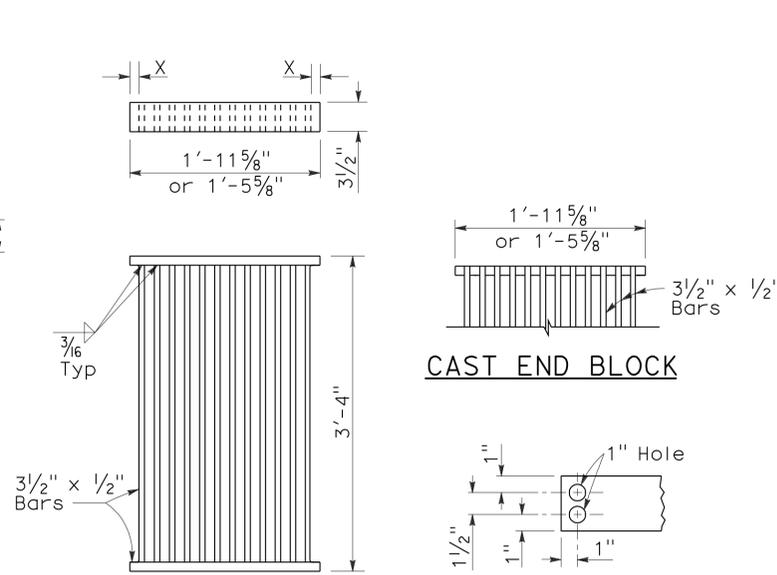
**REVISED STANDARD PLAN RSP A62DA**



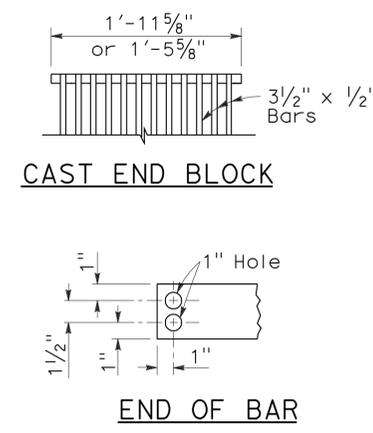
**RECTANGULAR GRATE DETAILS**  
(See table below)



**ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE**



**ALTERNATIVE WELDED GRATE**

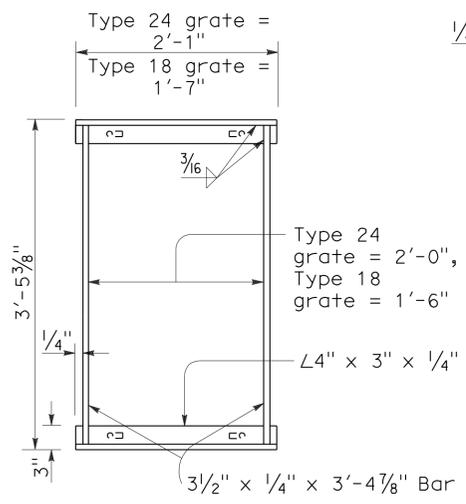


**CAST END BLOCK**

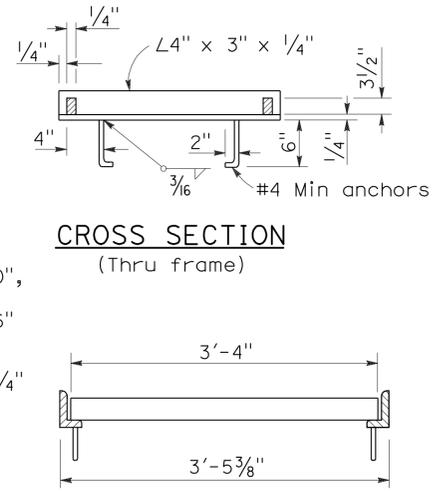
**END OF BAR**

**NOTES:**

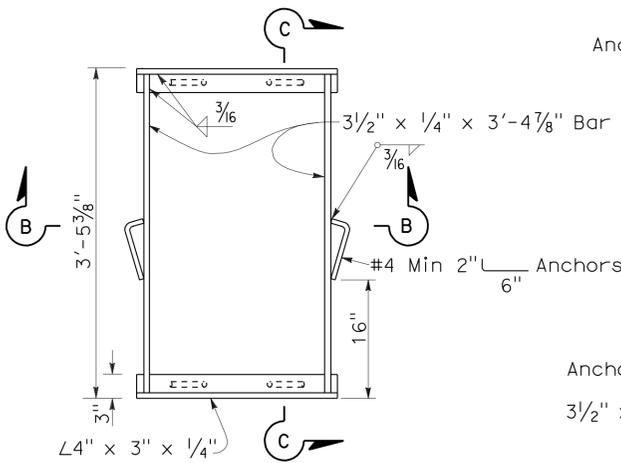
1. Grate type numbers refer to approximate width of grate in inches and number of bars, respectively.
2. Contractor has the option of using cast nodular iron, cast steel, welded, bolted, or cast end block grate.
3. See Special Provisions for requirements pertaining to galvanizing or asphalt dipping of grates and frames.
4. Rounded top of bars optional on all grates.
5. Pipe inlets with a grate shall be placed so that bars parallel direction of principle surface flow.
6. Full penetration butt welds may be substituted for the fillet welds on all anchors.
7. Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.
8. Grate and frame weights are based on welded grates (weights of face angles, steps, protection bars, etc. are not included).



**TYPICAL FRAME**

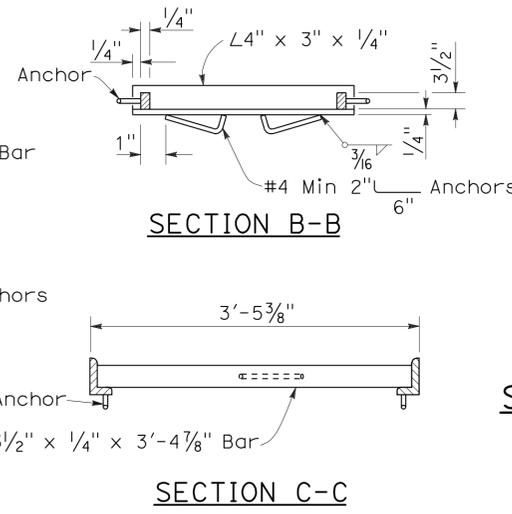


**LONGITUDINAL SECTION**  
(Thru frame and grate)



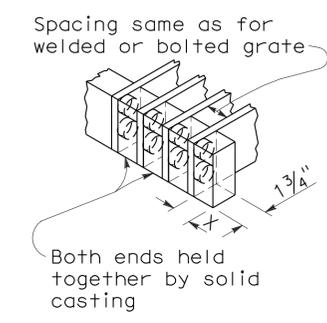
**TYPICAL FRAME**

**ALTERNATIVE ANCHOR FOR RECTANGULAR FRAME**  
(For details not shown, See Rectangular Frame Details)



**SECTION B-B**

**SECTION C-C**



**ALTERNATIVE CAST NODULAR IRON OR CAST STEEL END BLOCK GRATE**

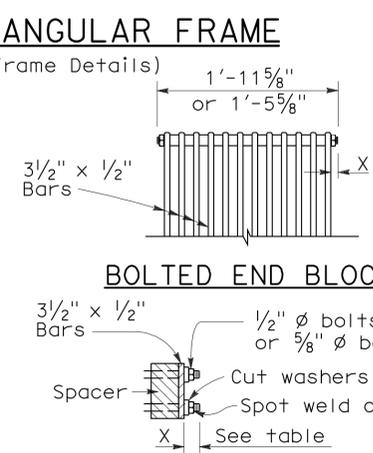
**RECTANGULAR FRAME DETAILS**  
(For all rectangular grates)

**GRATE BAR SPACING TABLE**

TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

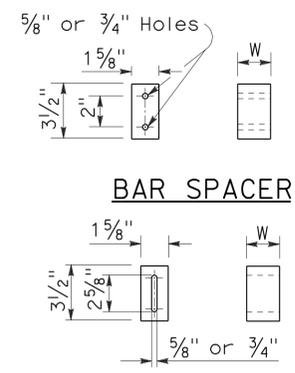
INLET TYPE	COVER TYPE	WEIGHT LB
OS	PLATE	174
OL-7	PLATE	170
OL-10	PLATE	170
OL-14	PLATE	170
OL-21	PLATE	170
OCPI	PLATE	112
OCPI	REDWOOD	42
OMP	PLATE	177
OMPI	PLATE	177

INLET TYPE	GRATE TYPE	NO. OF GRATES	WEIGHT LB
GDO	24-12	2	634
GOL-7	24-12	1	326
GOL-10	24-12	1	326
G0,G1,G2,G3,G4 (TYPE 24)	24-9	1	263
	24-12	1	326
G4 (TYPE 18),G5,G6	18-9	1	249
GT1	18-9	2	498
GT2	18-9	2	498
GT3	24-12	2	652
GT4	24-12	2	652
TRASH RACK			22



**BOLTED END BLOCK**

**BOLTING DETAIL**  
**ALTERNATIVE BOLTED GRATE**



**BAR SPACER**

**ALTERNATIVE SPACER**  
W = 1 3/8" or 2"

**BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS**  
(See General Notes, No 8)

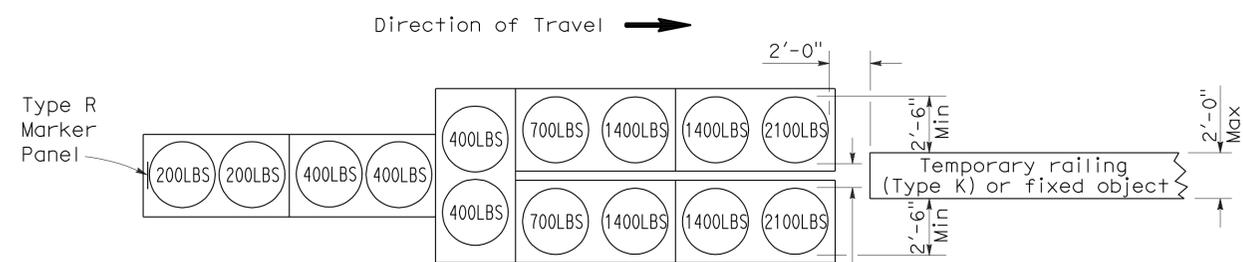
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	30	52

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

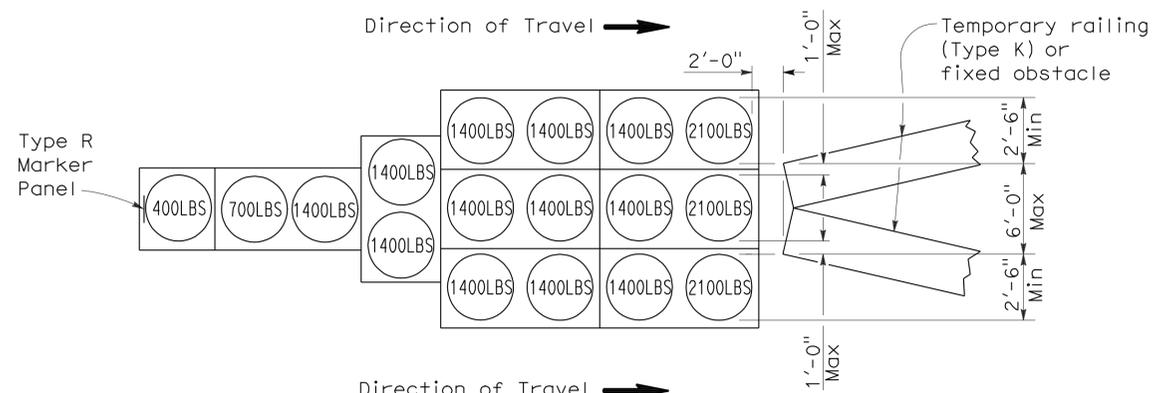
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 3-12-12



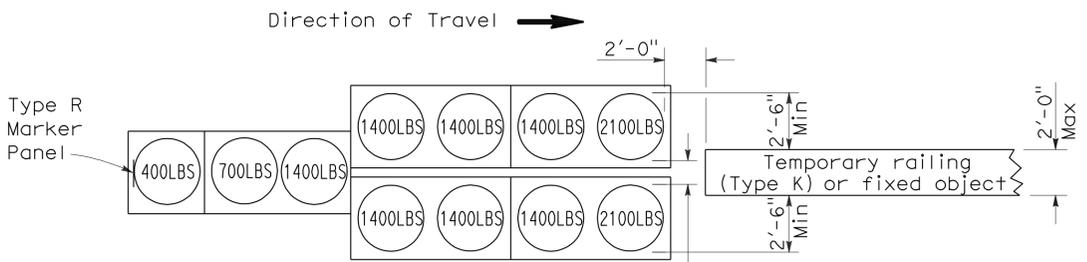
**ARRAY 'TU14'**

Approach speed 45 mph or more



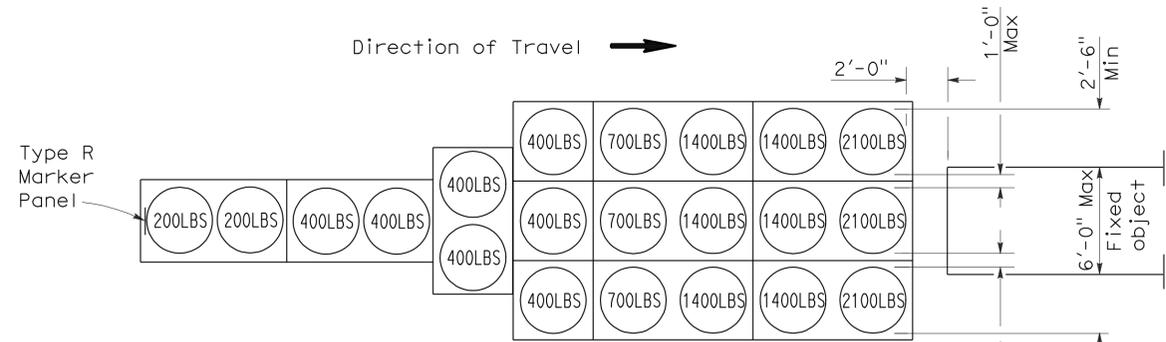
**ARRAY 'TU17'**

Approach speed less than 45 mph



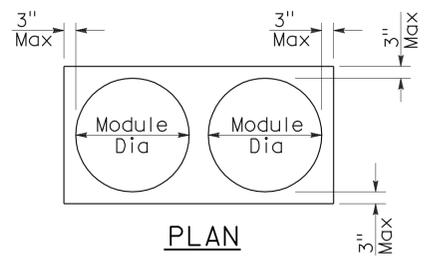
**ARRAY 'TU11'**

Approach speed less than 45 mph

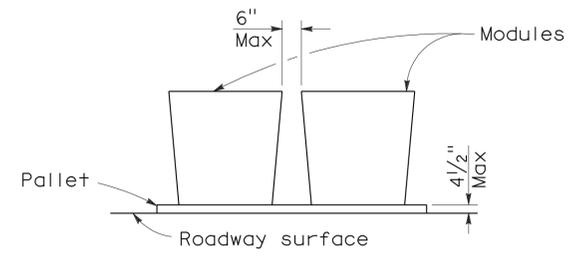


**ARRAY 'TU21'**

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

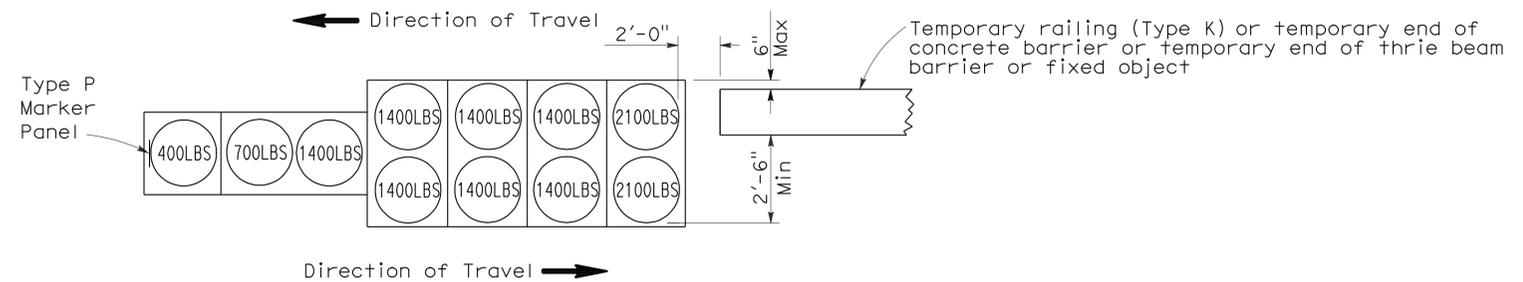
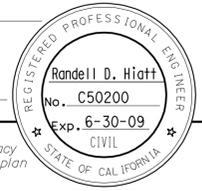
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	31	52

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

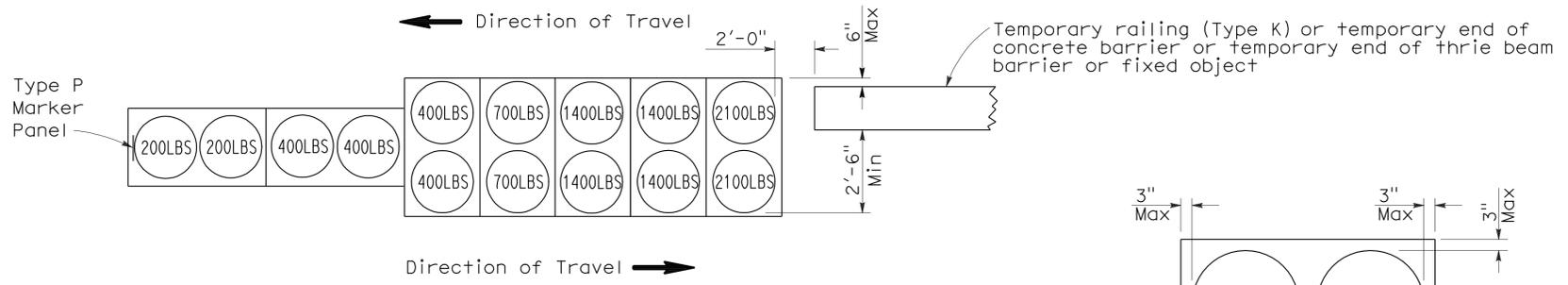
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 3-12-12



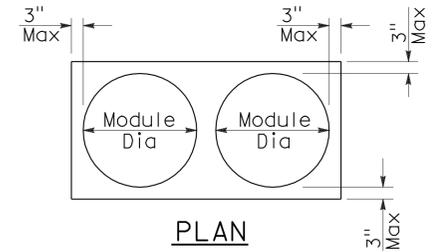
**ARRAY 'TB11'**

Approach speed less than 45 mph

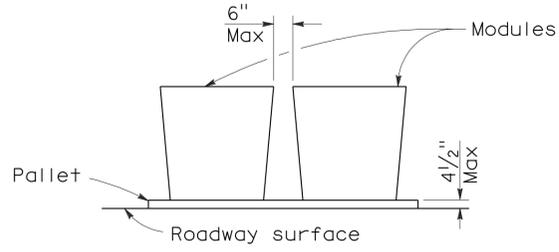


**ARRAY 'TB14'**

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

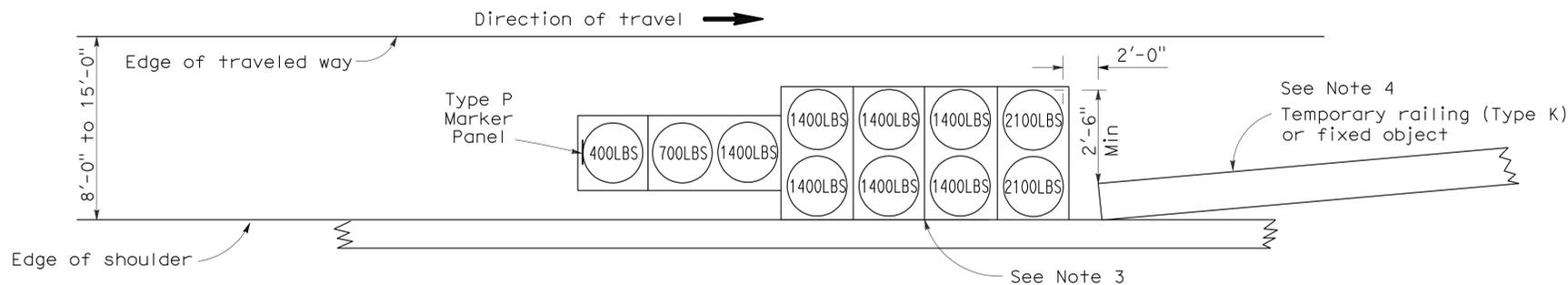
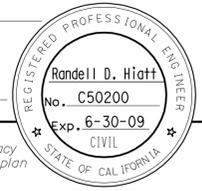
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	32	52

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

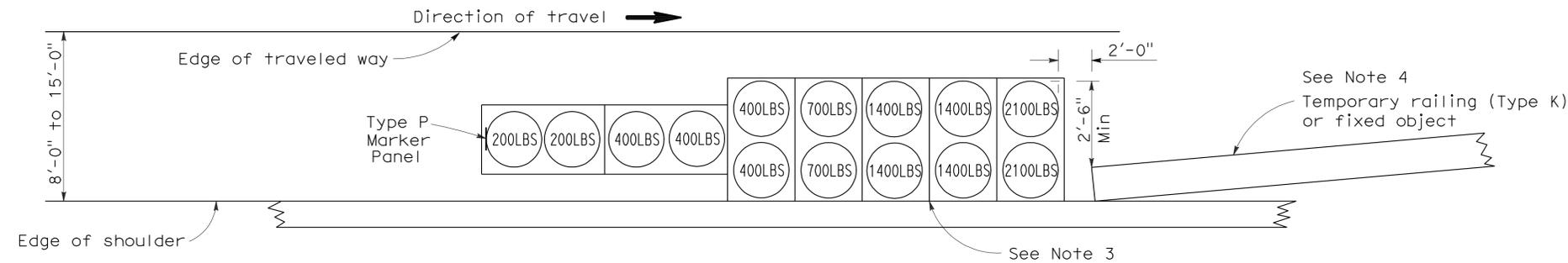
June 6, 2008  
PLANS APPROVAL DATE

*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.*

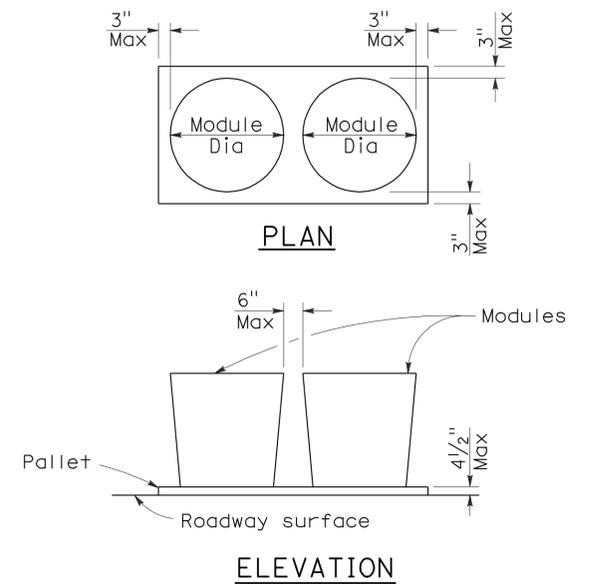
To accompany plans dated 3-12-12



**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

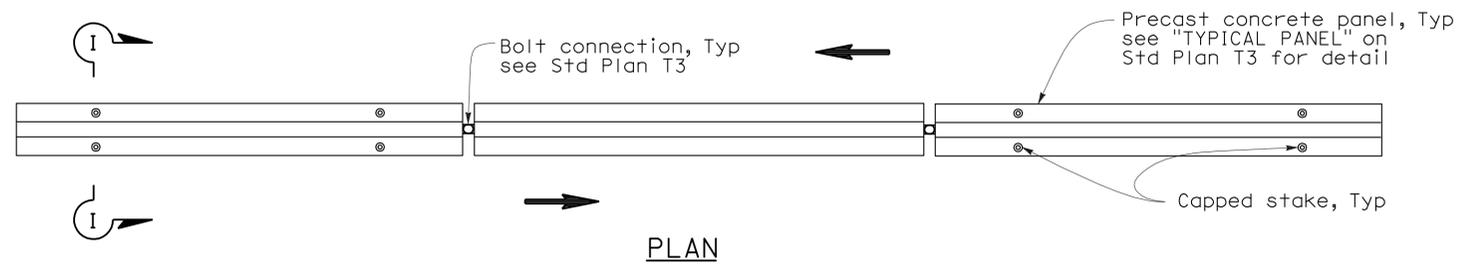
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	99	25.9/26.2	33	52

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

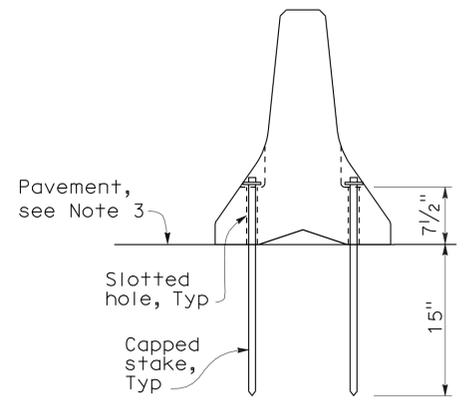
May 20, 2011  
PLANS APPROVAL DATE

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To accompany plans dated 3-12-12



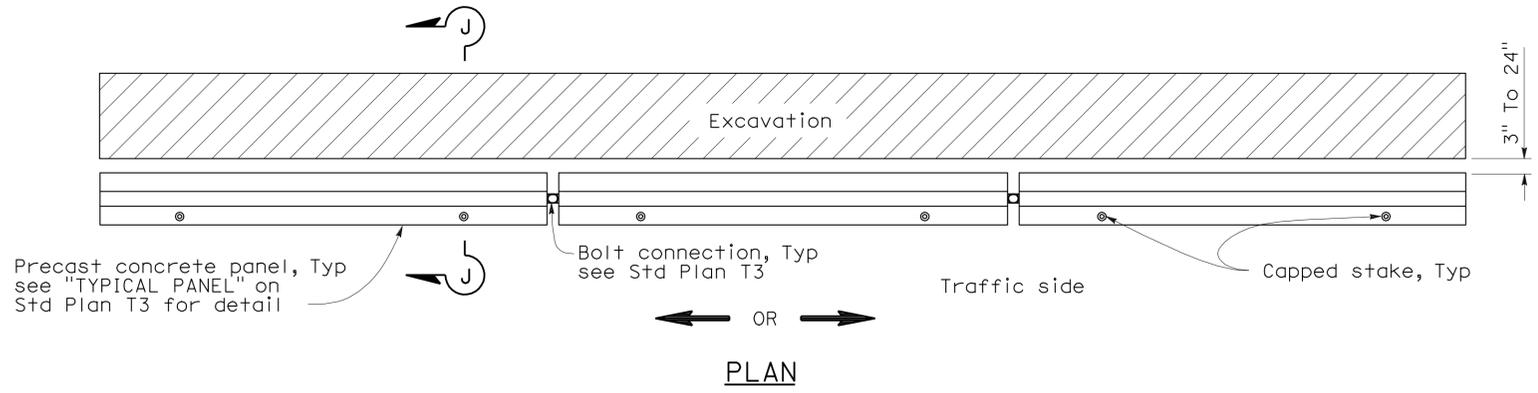
**RAILING STAKING CONFIGURATION FOR TWO-WAY TRAFFIC**  
See Note 1



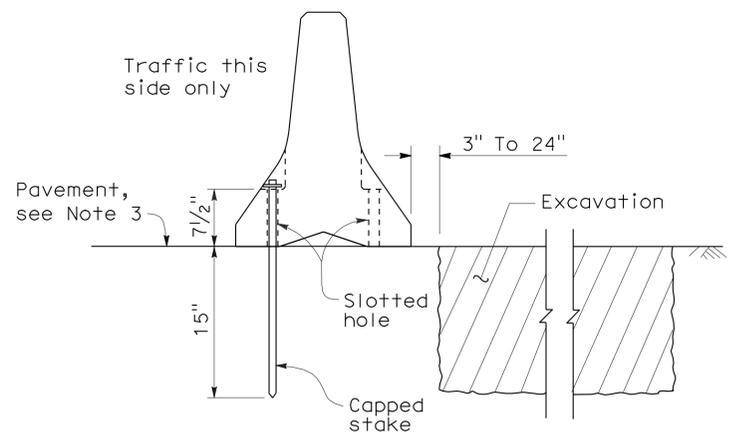
SECTION I-I

**NOTES:**

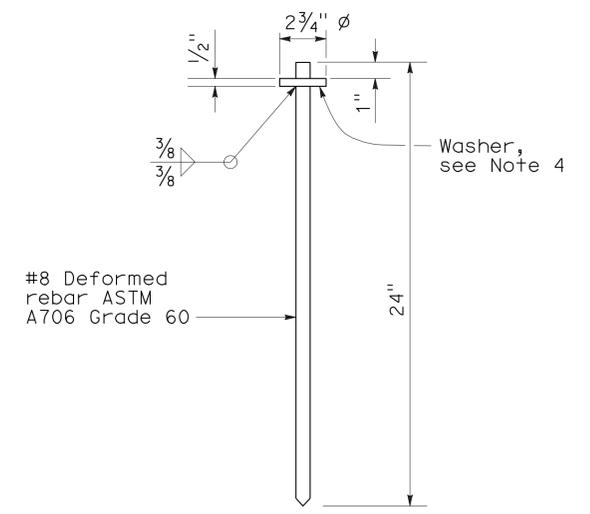
1. Where Type K Temporary Railing is placed as a temporary or long term barrier in two-way traffic on highways with less than 24" from the edge of traveled way, use four capped stakes per every other panel with end panels staked.
2. Where Type K Temporary Railing is placed 3" to 24" from the edge of 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.

2006 NEW STANDARD PLAN NSP T3A

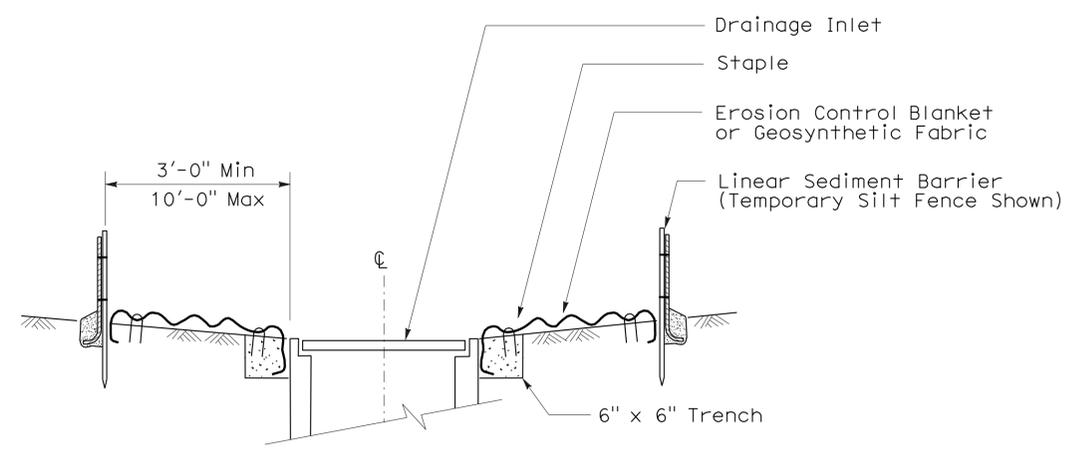
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	34	52

Robert B. Schott  
 LICENSED LANDSCAPE ARCHITECT  
 August 15, 2008  
 PLANS Approval DATE  
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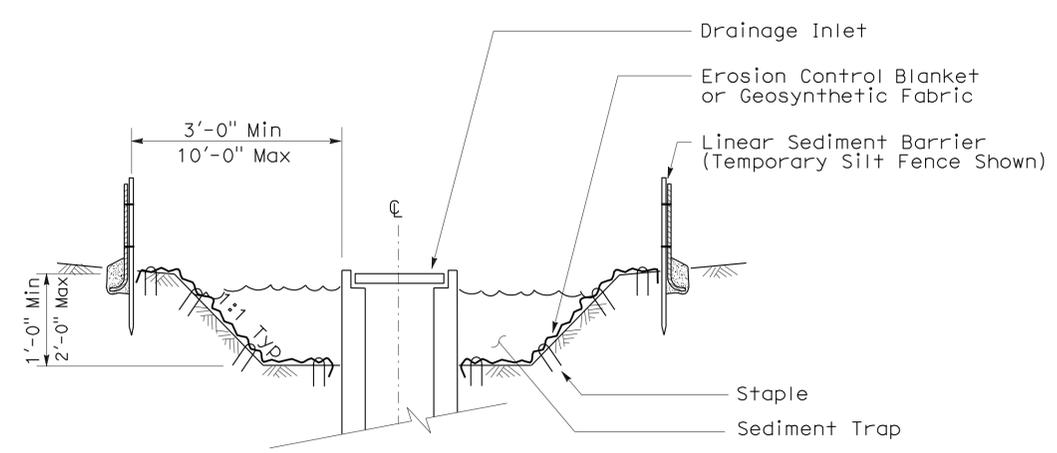


To accompany plans dated 3-12-12

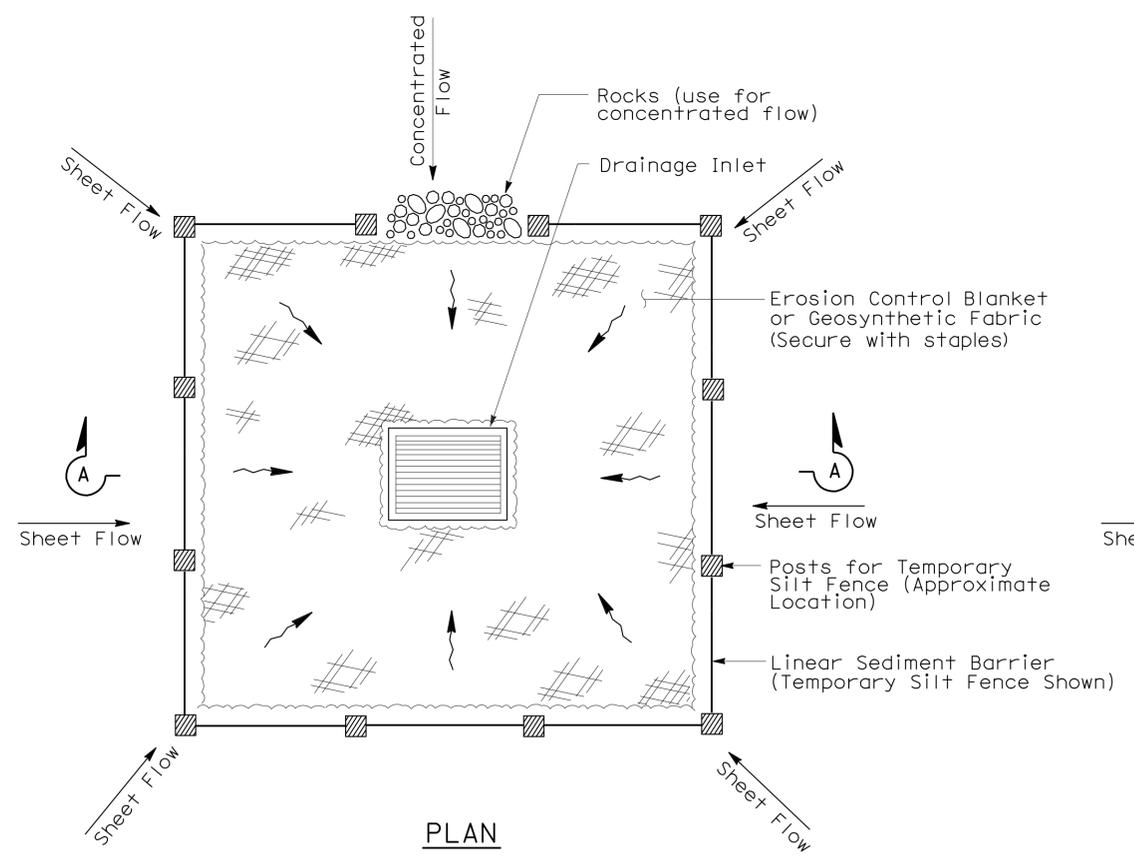
- NOTES:**
- See Standard Plan T51 for Temporary Silt Fence.
  - Dimensions may vary to fit field conditions.



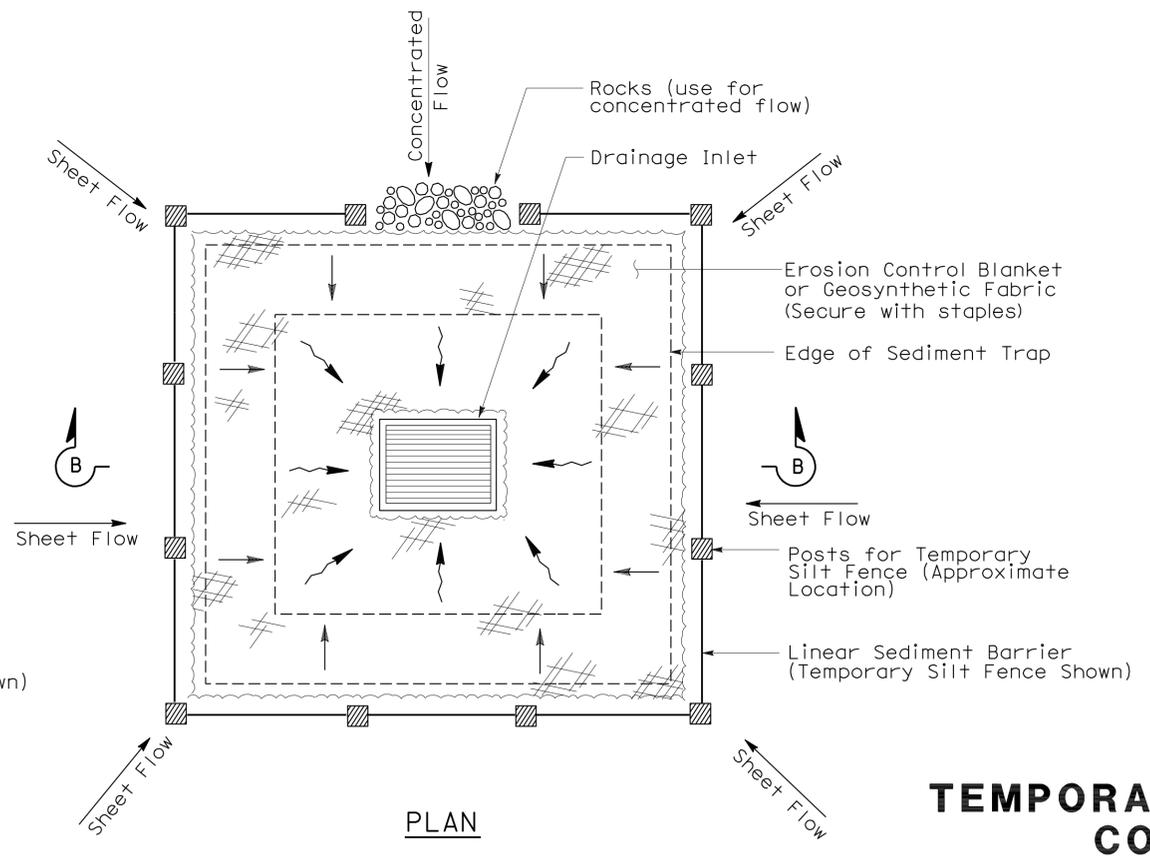
SECTION A-A



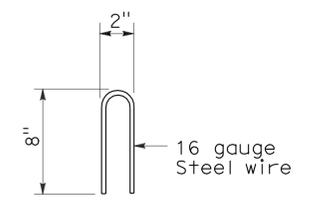
SECTION B-B



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 1)



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 2) (EXCAVATED SEDIMENT TRAP)



STAPLE DETAIL

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TEMPORARY WATER POLLUTION CONTROL DETAILS**  
**(TEMPORARY DRAINAGE INLET PROTECTION)**  
 NO SCALE

NSP T61 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T61

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	35	52

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT  
 August 15, 2008  
 PLANS APPROVAL DATE  
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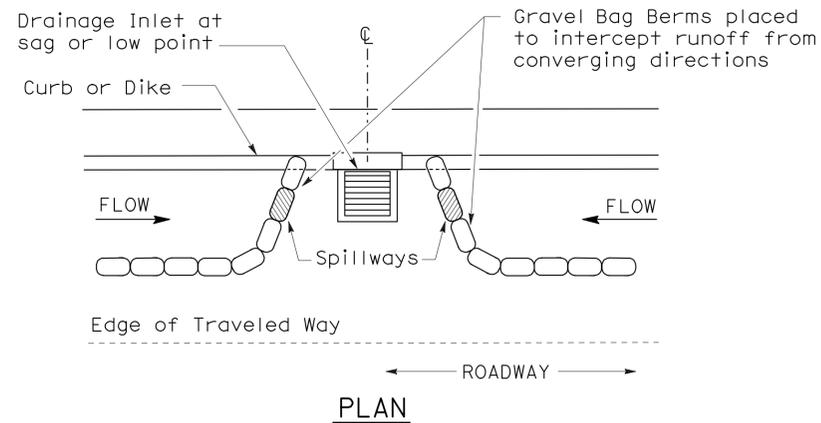
To accompany plans dated 3-12-12

2006 NEW STANDARD PLAN NSP T62

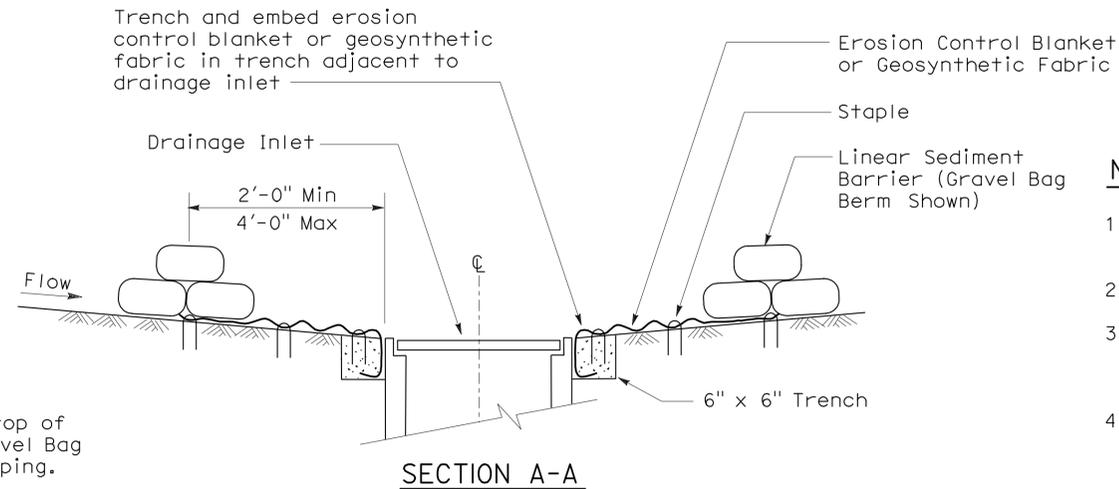
**GRAVEL BAG BERM (TYPE 3A) SPACING TABLE**

SLOPE OF ROADWAY (PERCENT)	1 to 3.9	4 to 5.9	6 to 7.9	8 to 10	10+
INTERVAL BETWEEN BERM	100'	75'	50'	25'	12'

For slope of less than 1%, install barriers only if erosion/sediment is prevalent



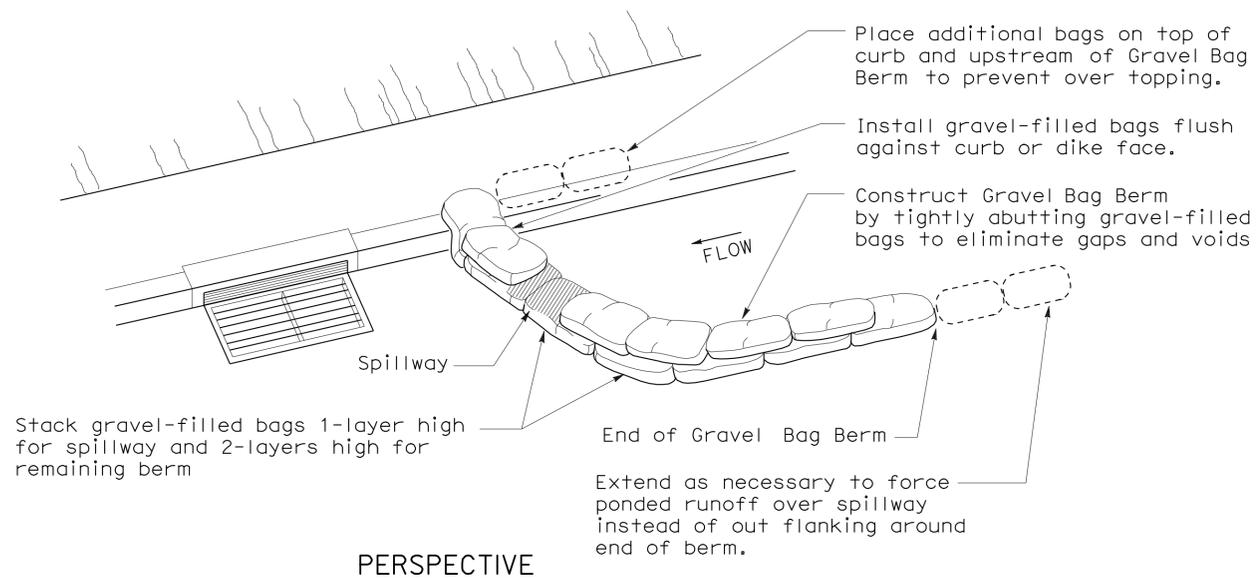
**PLAN**  
**CONFIGURATION FOR SAG POINT INLET**  
**(GRAVEL BAG BERM)**



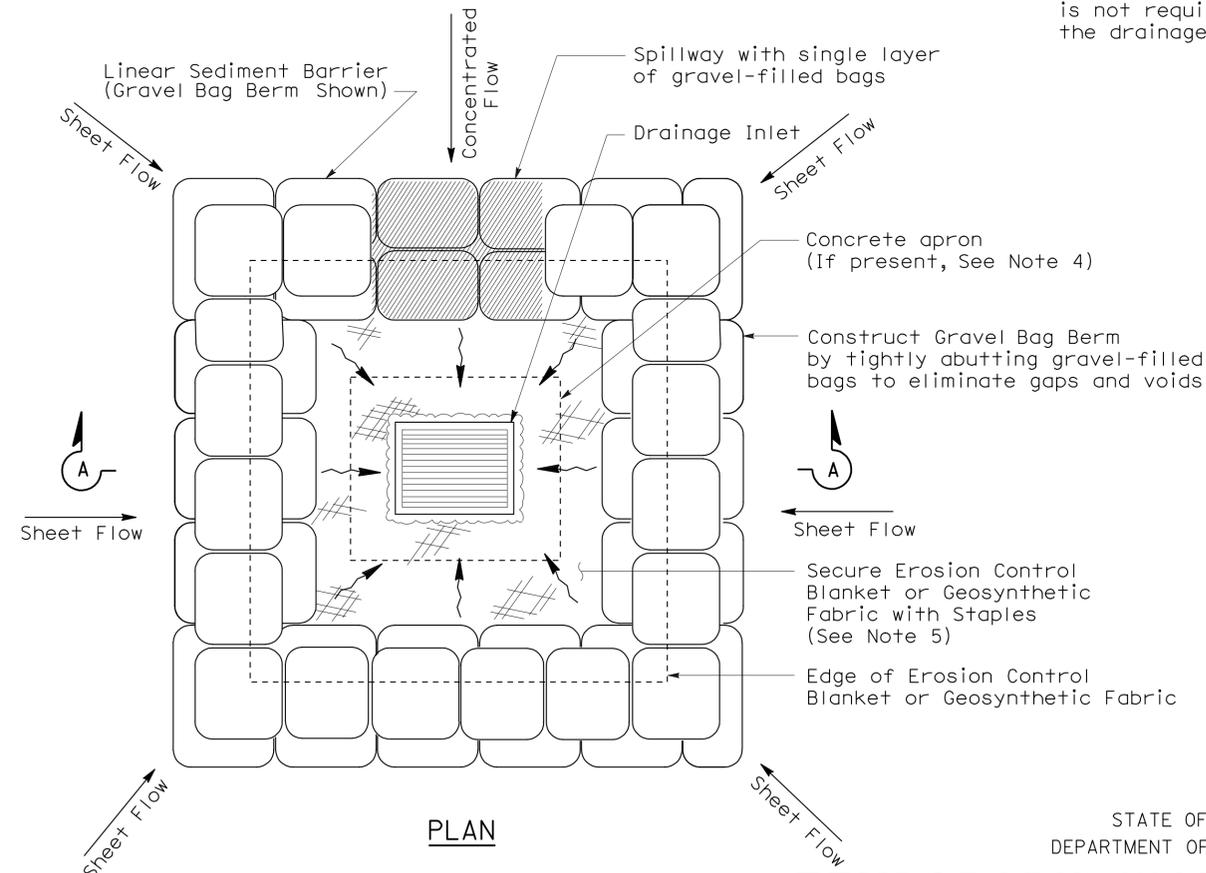
**SECTION A-A**

**NOTES:**

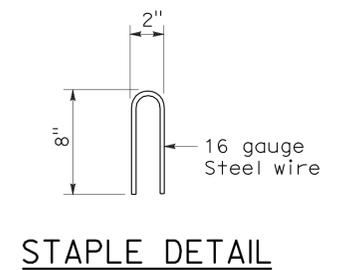
1. Place safety cones adjacent to drainage inlet protection.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 gravel bag berms upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
5. Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated or paved.



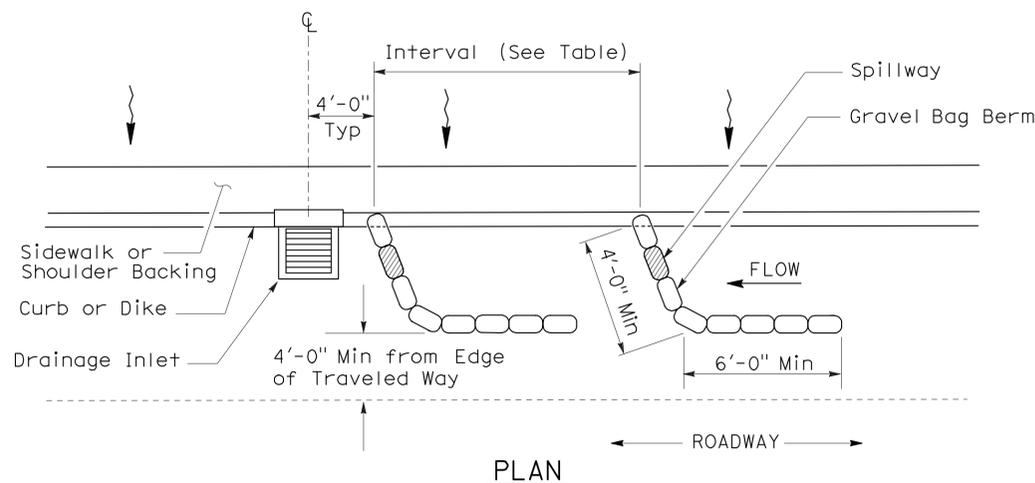
**PERSPECTIVE**



**PLAN**  
**TEMPORARY DRAINAGE**  
**INLET PROTECTION (TYPE 3B)**



**STAPLE DETAIL**



**PLAN**  
**TEMPORARY DRAINAGE**  
**INLET PROTECTION (TYPE 3A)**  
**(GRAVEL BAG BERM)**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TEMPORARY WATER POLLUTION CONTROL DETAILS**  
**(TEMPORARY DRAINAGE INLET PROTECTION)**

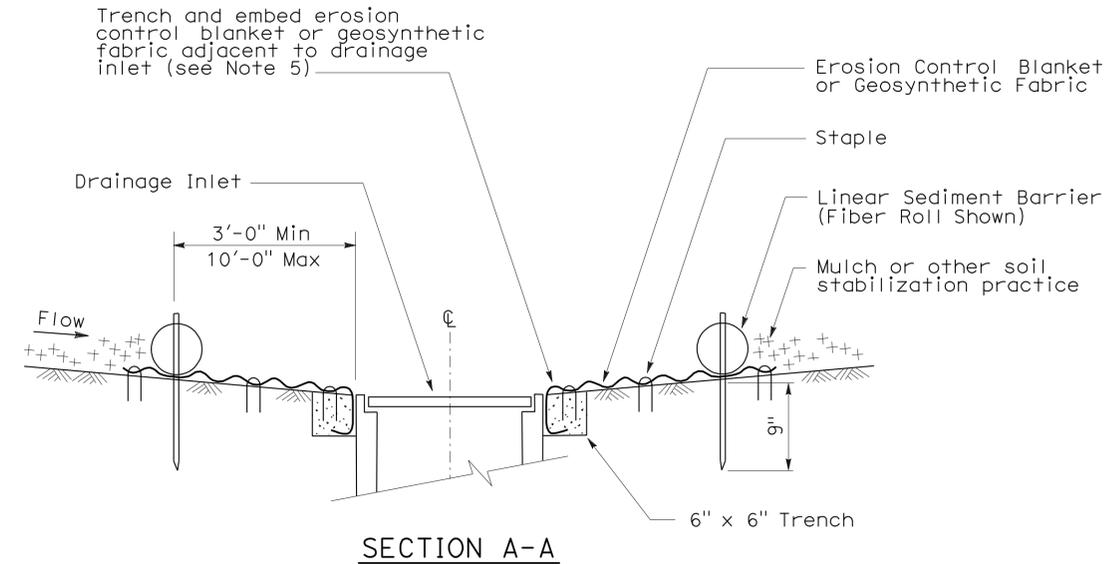
NO SCALE  
 NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS  
 THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	36	52

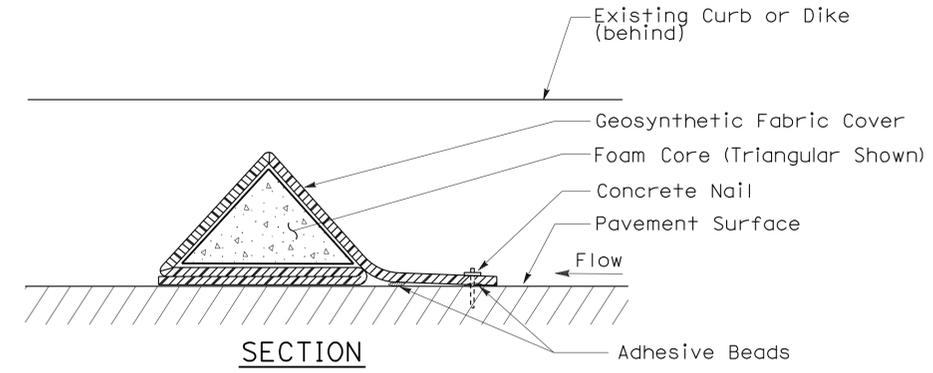
Robert B. Schott  
 LICENSED LANDSCAPE ARCHITECT  
 August 15, 2008  
 PLANS APPROVAL DATE  
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**FLEXIBLE SEDIMENT BARRIER SPACING TABLE**

SLOPE OF ROADWAY (PERCENT)	0 to 0.9	1 to 1.9	2 to 2.9	3 to 4	5+
INTERVAL BETWEEN BARRIERS	50'	35'	30'	25'	20'
ANGLE FROM FACE OF CURB	70°	70°	70°	45°	45°
SUGGESTED BARRIER LENGTH	6'	6'	6'	6'	6'



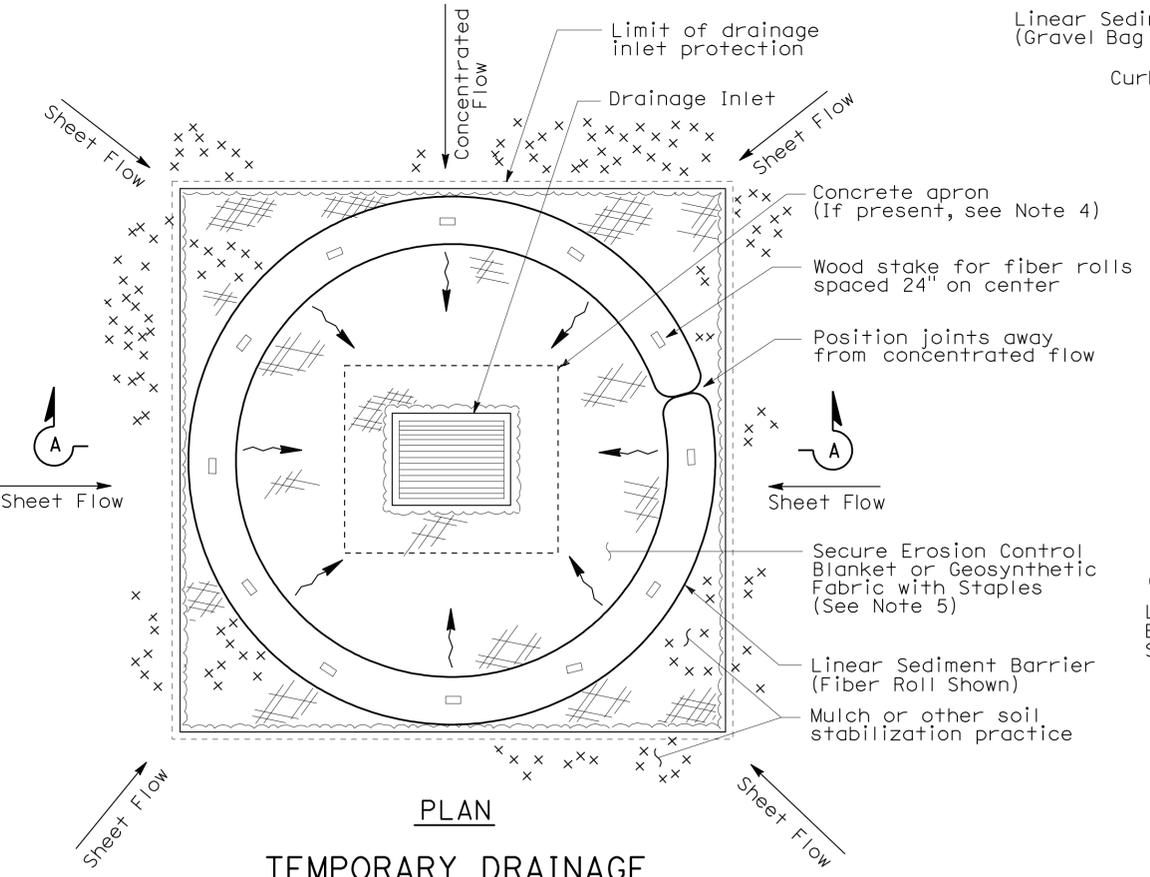
**SECTION A-A**



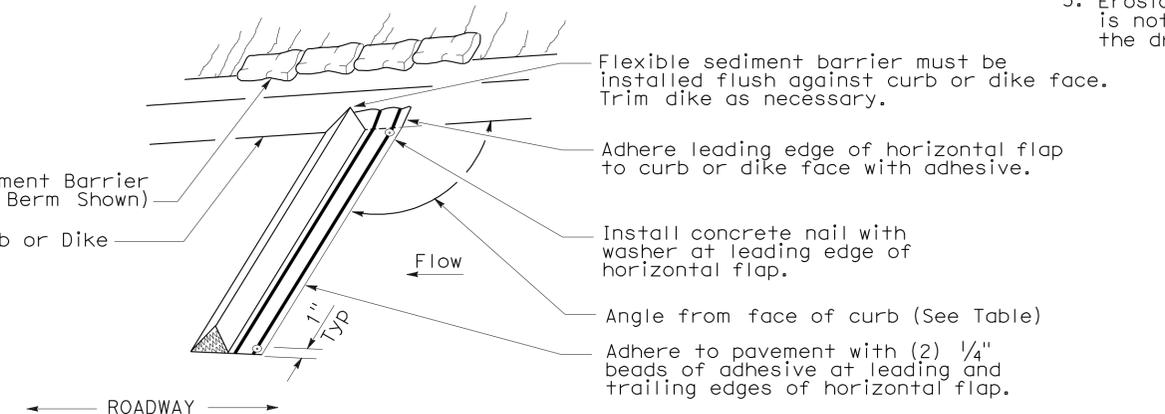
**SECTION FLEXIBLE SEDIMENT BARRIER DETAIL (FOAM BARRIER SHOWN)**

**NOTES:**

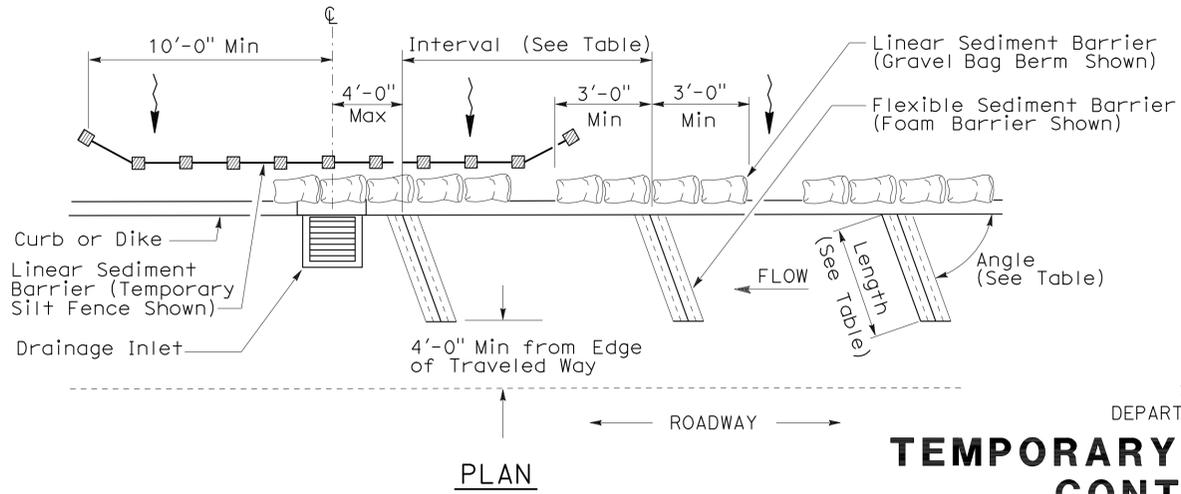
1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 flexible sediment barriers upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
5. Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated.



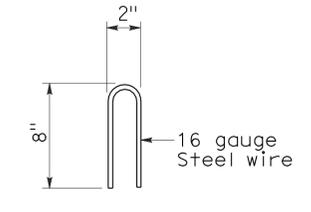
**PLAN TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4A)**



**PERSPECTIVE**



**PLAN TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4B) FLEXIBLE SEDIMENT BARRIER**



**STAPLE DETAIL**

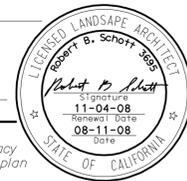
**STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)**

NO SCALE  
 NSP T63 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

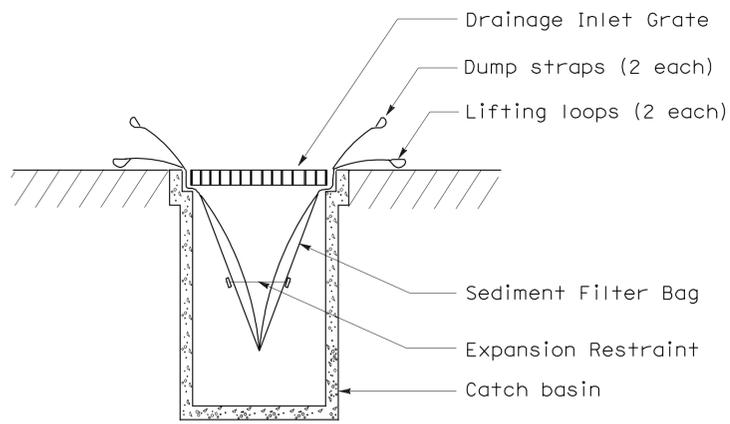
2006 NEW STANDARD PLAN NSP T63

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	37	52

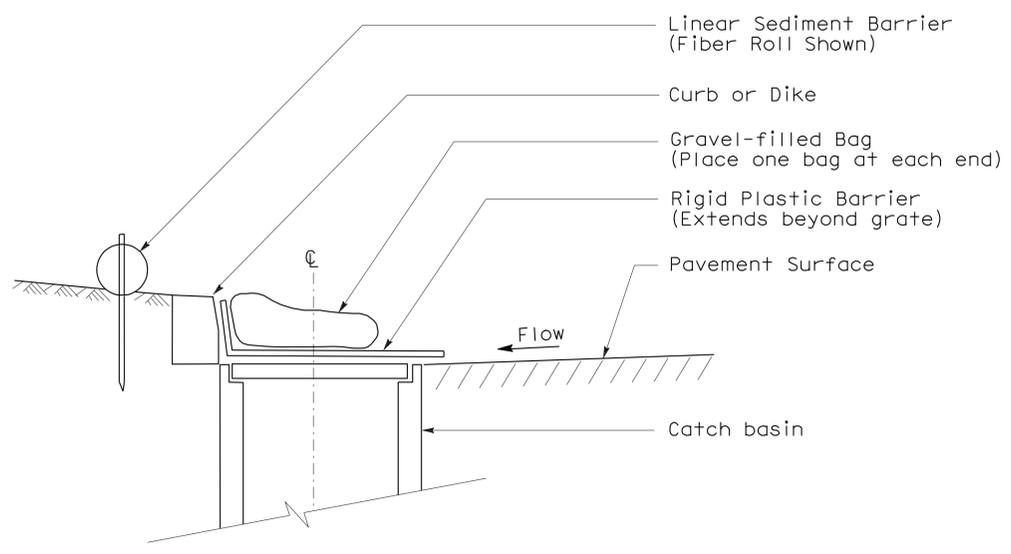
*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT  
 August 15, 2008  
 PLANS APPROVAL DATE  
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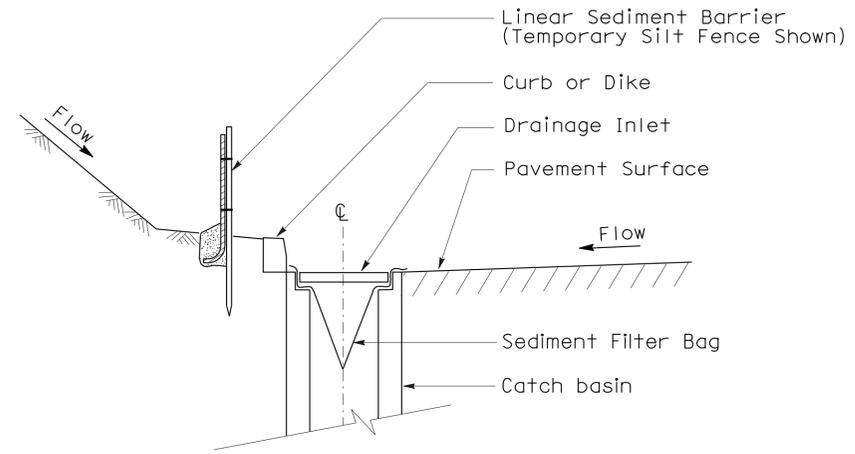
To accompany plans dated 3-12-12



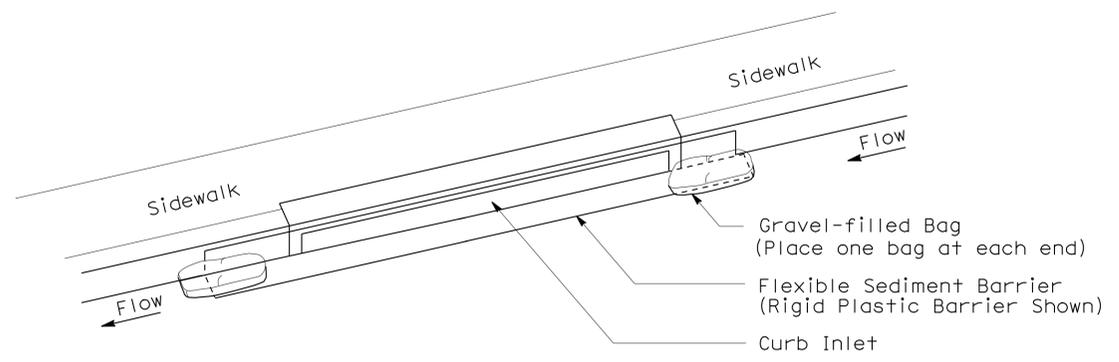
**SECTION B-B**  
**SEDIMENT FILTER BAG DETAIL**



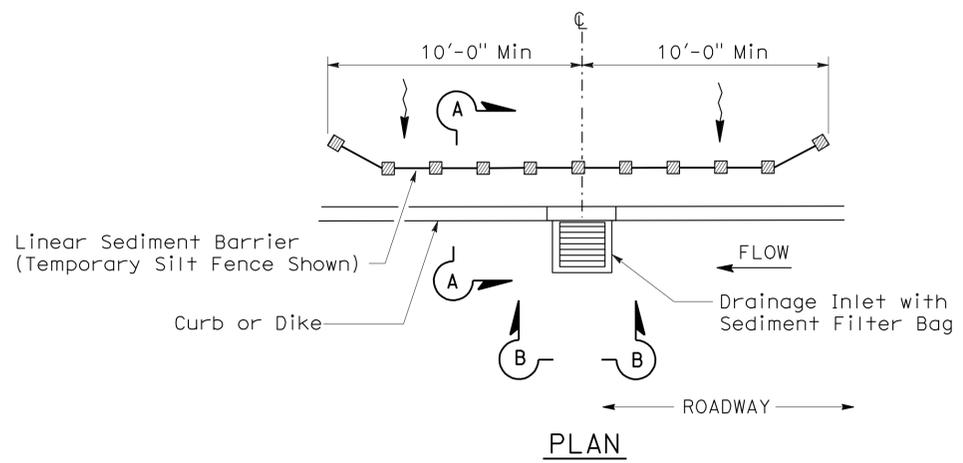
**SECTION**  
**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 6A)**  
**(CATCH BASIN WITH GRATE)**



**SECTION A-A**



**PERSPECTIVE**  
**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 6B)**  
**(CURB INLET WITHOUT GRATE)**



**PLAN**  
**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 5)**  
**(SEDIMENT FILTER BAG)**

**NOTES:**

1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)**

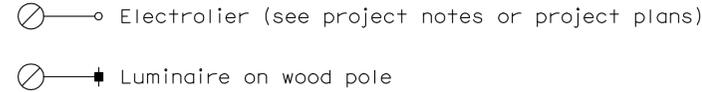
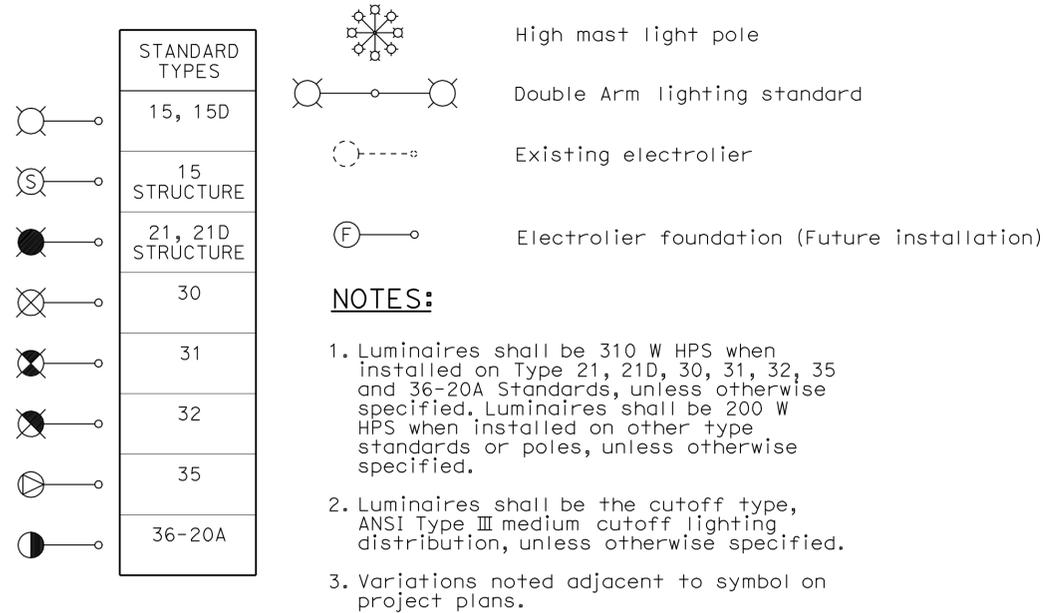
NO SCALE

NSP T64 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

**NEW STANDARD PLAN NSP T64**

2006 NEW STANDARD PLAN NSP T64

# 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, top attachment - 4 signal section
MAS-4B	mas-4B	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-4C	mas-4C	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-5A	mas-5A	Mast arm mounting vehicle signal faces, top attachment - 5 signal section
MAS-5B	mas-5B	Mast arm mounting vehicle signal faces, 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	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
03	But	99	25.9/26.2	38	52

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

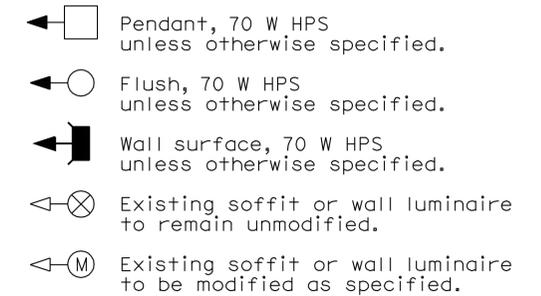
October 5, 2007  
PLANS APPROVAL DATE

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

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

To accompany plans dated 3-12-12

## 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
03	But	99	25.9/26.2	39	52

Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
 Jeffrey G. McRae  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA

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### 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

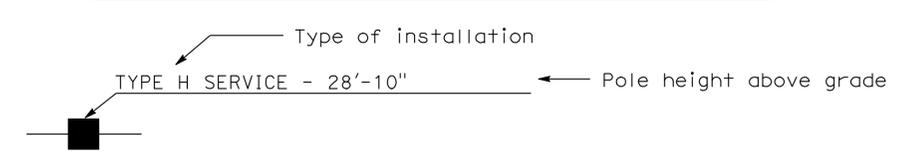
### SIGNAL EQUIPMENT

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

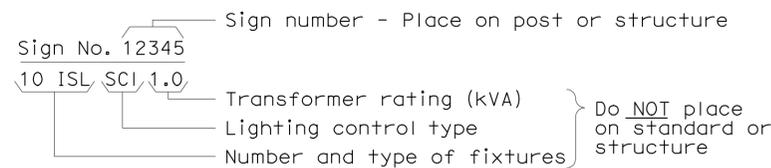
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

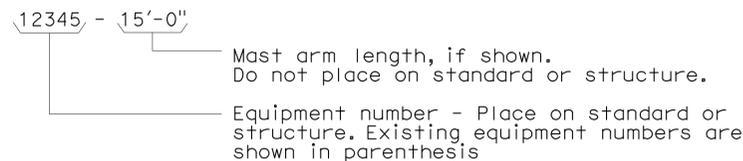
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

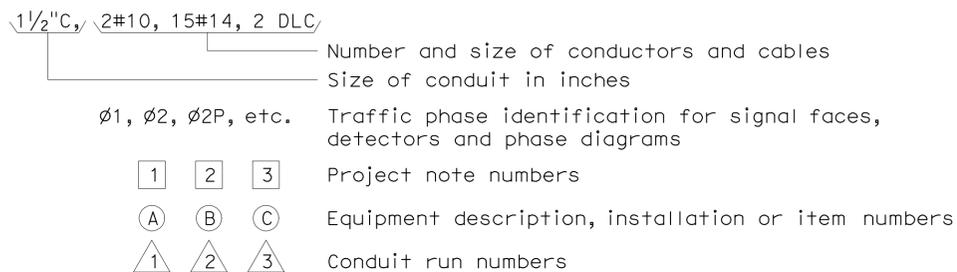
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



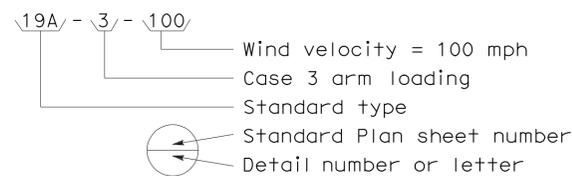
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



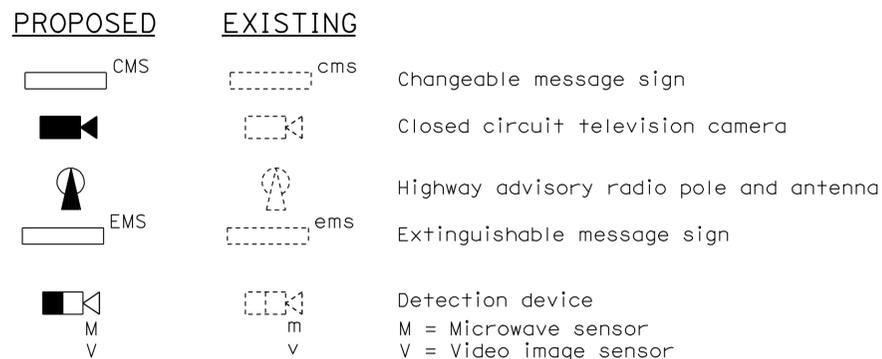
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



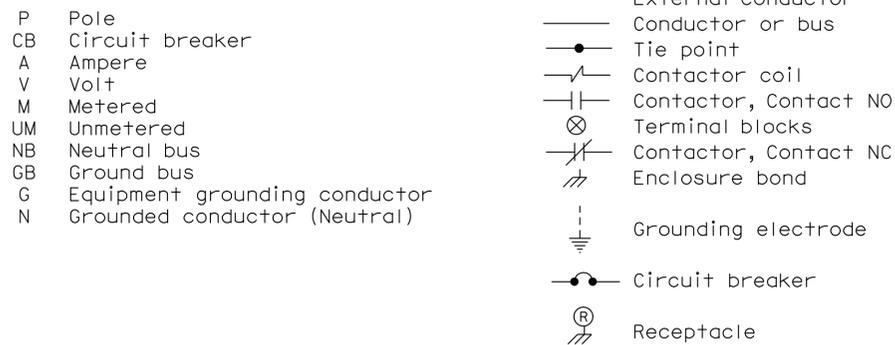
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



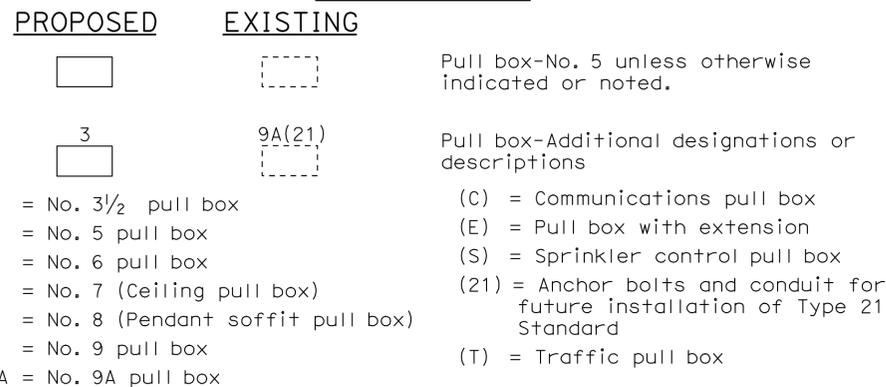
### MISCELLANEOUS EQUIPMENT



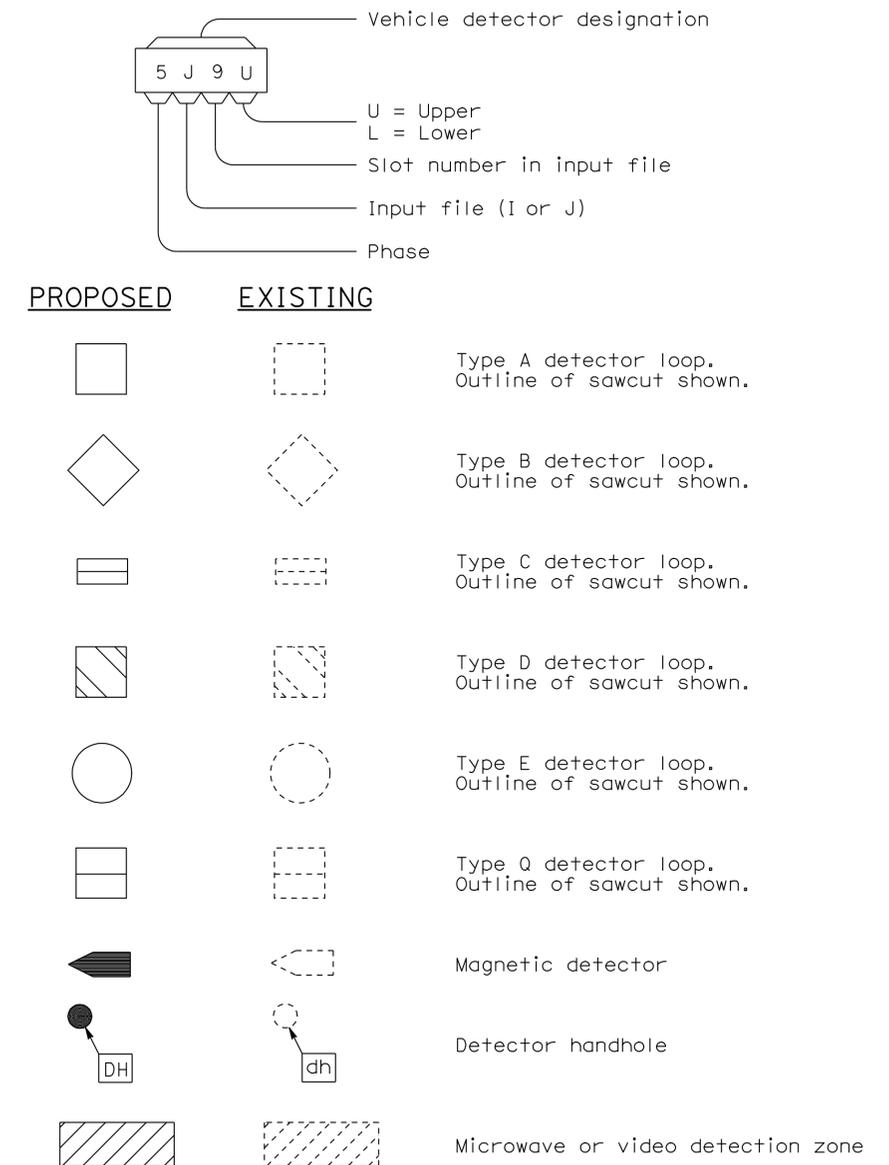
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

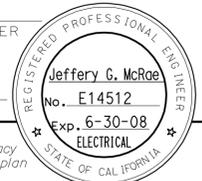
RSP ES-1C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1C  
DATED MAY 1, 2006 - PAGE 402 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	41	52

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

October 5, 2007  
PLANS APPROVAL DATE



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**NOTES-TYPE III SERVICE EQUIPMENT ENCLOSURES:**

1. Service equipment enclosure and metering equipment shall meet the requirements of the service utility. The meter area shall have a sealable, lockable, weathertight cover that can be removed without the use of tools.
2. Service equipment enclosures shall be factory wired and conform to NEMA standards.
3. Dimensions of service equipment enclosures shall meet the requirements of the service utility.
4. The dead front panels on Type III service equipment enclosures shall have a continuous stainless steel or aluminum piano hinge. The panel in front of the breakers shall be secured with a latch or captive screws. No live parts shall be mounted on the dead front panel.
5. The exterior door shall have provisions for padlocking. The padlock hole shall be a minimum diameter of  $\frac{1}{16}$ ".
6. Enclosures housing transformers of more than one kVA shall have effective screened ventilation louver of not less than 50 square inches. Screen shall be stainless steel No. 304, with a No. 10 size mesh. Framed screen shall be secured with at least four bolts.
7. Fasteners on the exterior of the enclosure shall be vandal-resistant and shall not be removable from the exterior. Exterior screws, nuts, bolts and washers shall be stainless steel.
8. Landing lugs for incoming service conductors shall be compatible with either copper or aluminum conductors sized to suit the conductors shown on the plan. Landing lugs shall be copper or tin-plated aluminum. Neutral bus shall be rated for 125 A and be suitable for copper or aluminum conductors unless otherwise specified. The terminal shall include but not be limited to:
  - a) Incoming terminals (landing lugs)
  - b) Neutral lugs
  - c) Solid neutral terminal strip
9. At least 6 standard single pole circuit breaker spaces,  $\frac{3}{4}$ " nominal, shall be provided for branch circuits. Circuit breaker interiors shall be copper. Interiors of enclosure shall accept plug-in or cable-in/cable-out circuit breakers.
10. Control wiring shall be 600 V, 14 stranded machine tool wire. Where subject to flexing, 19 strand wire shall be used.
11. Main bus shall be rated for 125 A and shall be tin-plated copper.
12. A plastic laminated wiring diagram shall be provided with brass mounting eyelets and attached to the inside of the enclosure and the wiring diagram shall be affixed to the interior with a UL or ETL approved method.

13. An engraved phenolic nameplate on the dead front panel indicating the function of each circuit or device shall be installed with stainless steel rivets or stainless steel screws:
  - a) Adjacent to the breaker or device with character size a minimum of  $\frac{1}{8}$ ".
  - b) At the top of the exterior door panel indicating State system number, voltage level and number of phases with character size a minimum of  $\frac{3}{16}$ ".
14. The plan shows the approximate location of devices within the enclosure. Components may be rearranged, however, the "working" clearances within the service equipment enclosure shall be maintained.
15. In unpaved areas a raised portland cement concrete pad 2'-0" x 4" x width of foundation shall be constructed in front of new service equipment enclosure installation. Pad shall be set to elevation of foundation.
16. Foundation shall extend 2" minimum beyond edge of service equipment enclosure.
17. Internal bus, where shown, is typical only. Alternative design of proposed service equipment enclosure shall be submitted to the Engineer for approval.
18. Plug-in circuit breakers may be mounted in the vertical or horizontal position. Cable-in/cable-out circuit breakers shall be mounted in the vertical position.
19. Type III-AF and Type III-BF service equipment enclosures shall have the meter viewing windows located on the front side of the service equipment enclosures.
20. Type III-AR and Type III-BR service equipment enclosures shall be similarly constructed as Type III-AF and Type III-BF respectively, except the meter viewing windows shall be located on the back side of the service equipment enclosures.
21. Minimum clearance shall be required for front and back of service equipment enclosure per National Electrical Code, Article 110.26, "Spaces About Electric Equipment (600 Volts, Nominal, or Less)."

To accompany plans dated 3-12-12

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

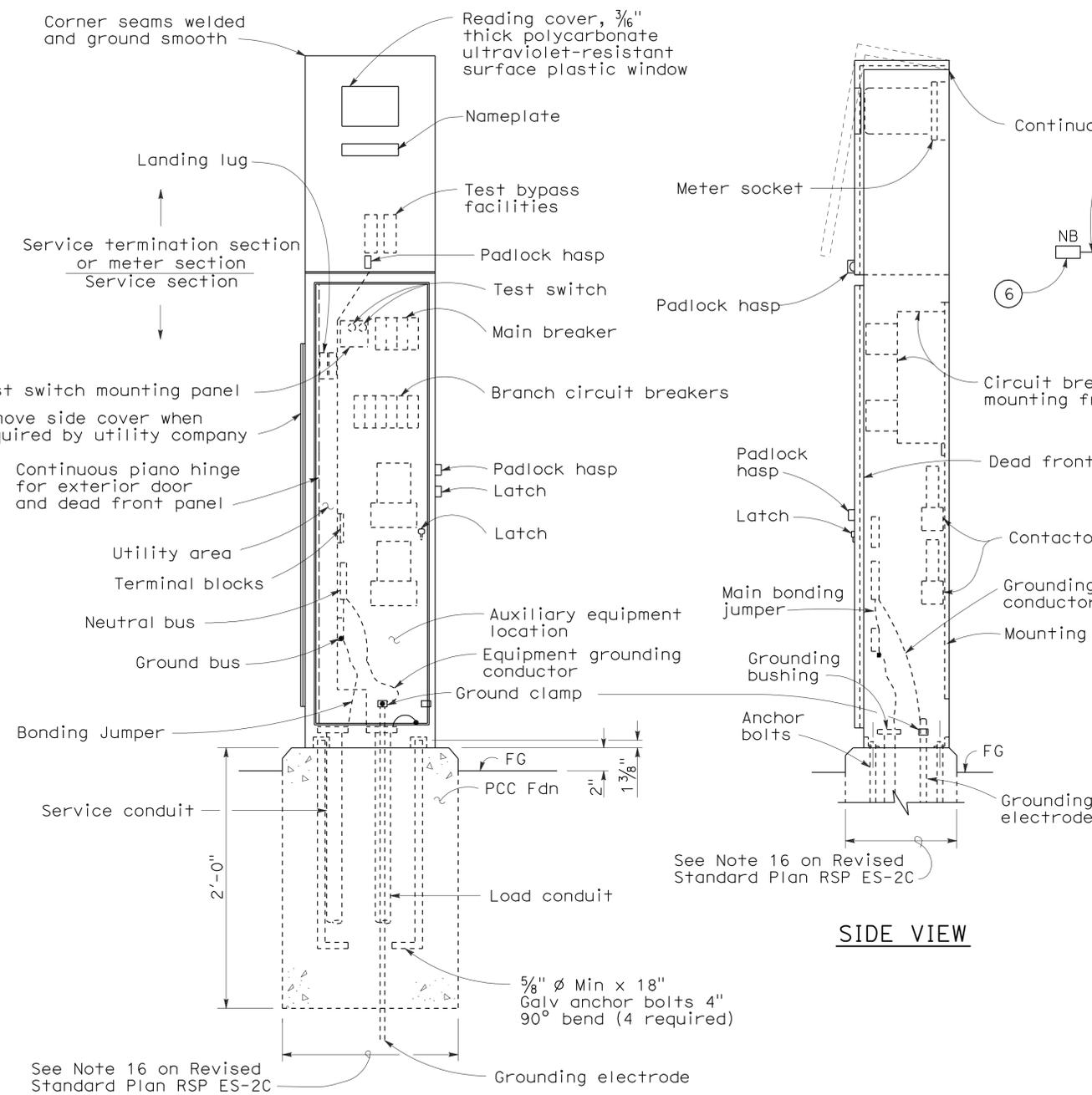
**ELECTRICAL SYSTEMS  
(SERVICE EQUIPMENT NOTES  
TYPE III SERIES)**

NO SCALE

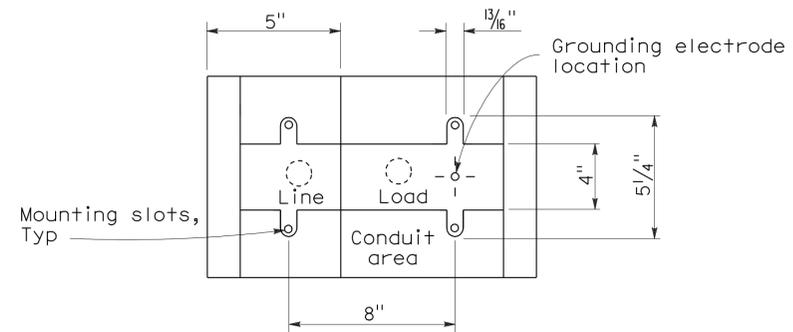
RSP ES-2C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2C  
DATED MAY 1, 2006 - PAGE 405 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-2C**

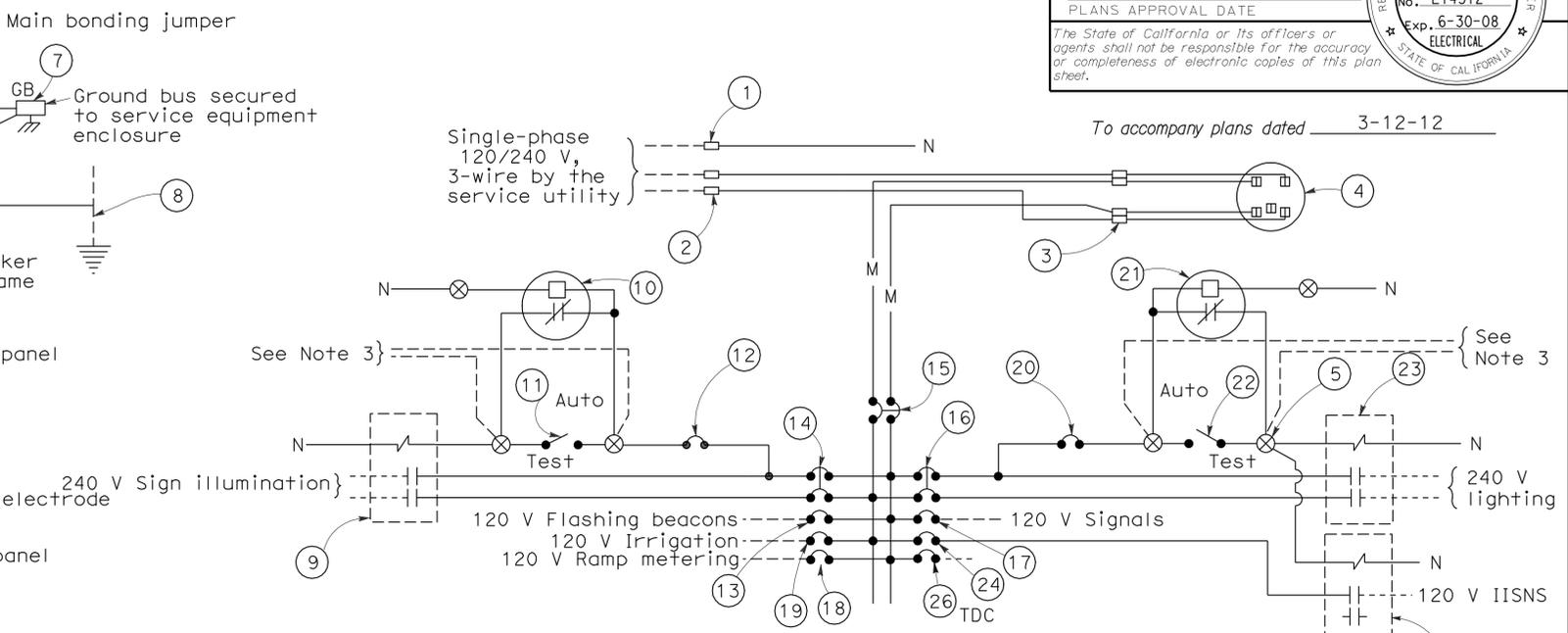
**2006 REVISED STANDARD PLAN RSP ES-2C**



**TYPE III-AF SERVICE EQUIPMENT ENCLOSURE (TYPICAL)**



**BASE FOR TYPE III-A SERVICE EQUIPMENT ENCLOSURE**



**120/240 V SERVICE WIRING DIAGRAM (TYPICAL)**

TYPE III-A SERVICE (120/240 V) EQUIPMENT LEGEND					
ITEM No.	COMPONENT	NAME PLATE DESCRIPTION	ITEM No.	COMPONENT	NAME PLATE DESCRIPTION
1	Neutral lug		14	30 A, 240 V, 2P, CB	Sign Illumination
2	Landing lug (Note 6)		15	100 A, 240 V, 2P, CB	Main Breaker
3	Test bypass facility		16	30 A, 240 V, 2P, CB	Lighting
4	Meter socket and support		17	50 A, 120 V, 1P, CB	Signals
5	Terminal blocks		18	30 A, 120 V, 1P, CB	Ramp Metering
6	Neutral bus		19	20 A, 120 V, 1P, CB	Irrigation
7	Ground bus		20	15 A, 120 V, 1P, CB	Lighting Control
8	Grounding electrode		21	Photoelectric unit (Note 7)	
9	30 A, 2PNO Contactor	Sign Illumination	22	15 A, 1P, Test switch	Lighting Test Switch
10	Photoelectric unit (Note 7)		23	60 A, 2PNO Contactor	Lighting
11	15 A, 1P, Test switch	Sign Illumination Test Switch	24	15 A, 120 V, 1P, CB	IISNS
12	15 A, 120 V, 1P, CB	Sign Illumination Control	25	30 A, 2PNO Contactor	IISNS
13	15 A, 120 V, 1P, CB	Flashing Beacon	26	20 A, 120 V, 1P, CB	Telephone Demarcation Cabinet

- NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)**
- Voltage ratings of service equipment shall conform to the service voltages indicated on the plans.
  - Unless otherwise indicated on the plans, service equipment items shall be provided for each service equipment enclosure as shown.
  - Connect to remote test switch mounted on lighting standards, sign post or structure when required.
  - Items No. 1 and 6 shall be isolated from the service equipment enclosure.
  - Meter sockets shall be 5 clip type.
  - The landing lug shall be suitable for multiple conductors.
  - Type I photoelectric control shall be used unless otherwise indicated on the plans.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (SERVICE EQUIPMENT AND  
 TYPICAL WIRING DIAGRAM,  
 TYPE III - A SERIES)**

NO SCALE

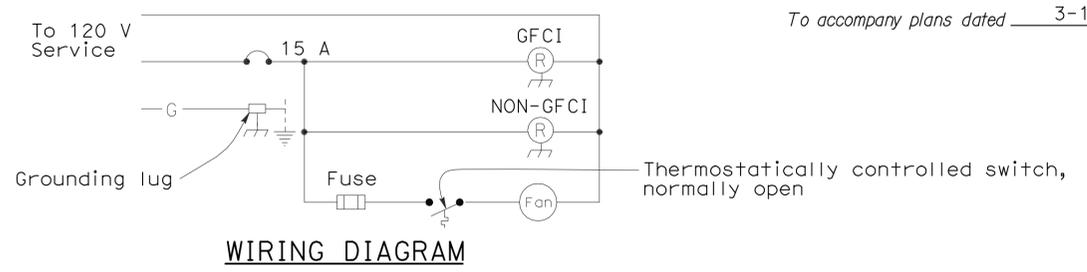
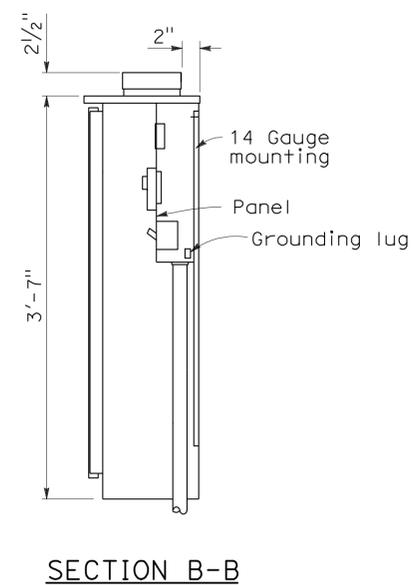
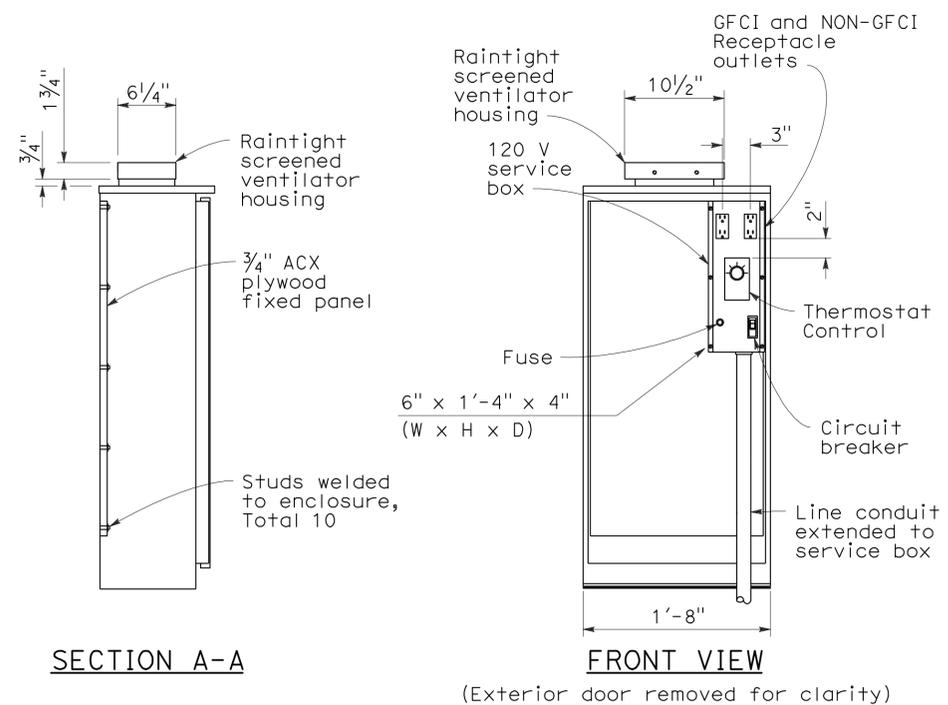
RSP ES-2D DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2D DATED MAY 1, 2006 - PAGE 406 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**2006 REVISED STANDARD PLAN RSP ES-2D**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	43	52

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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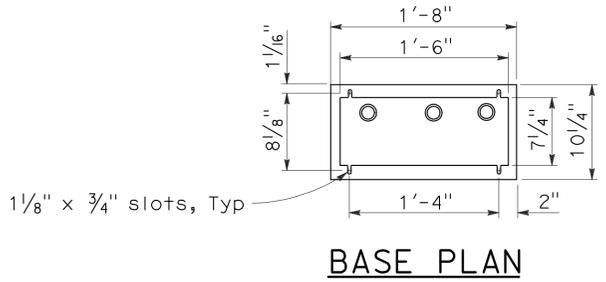
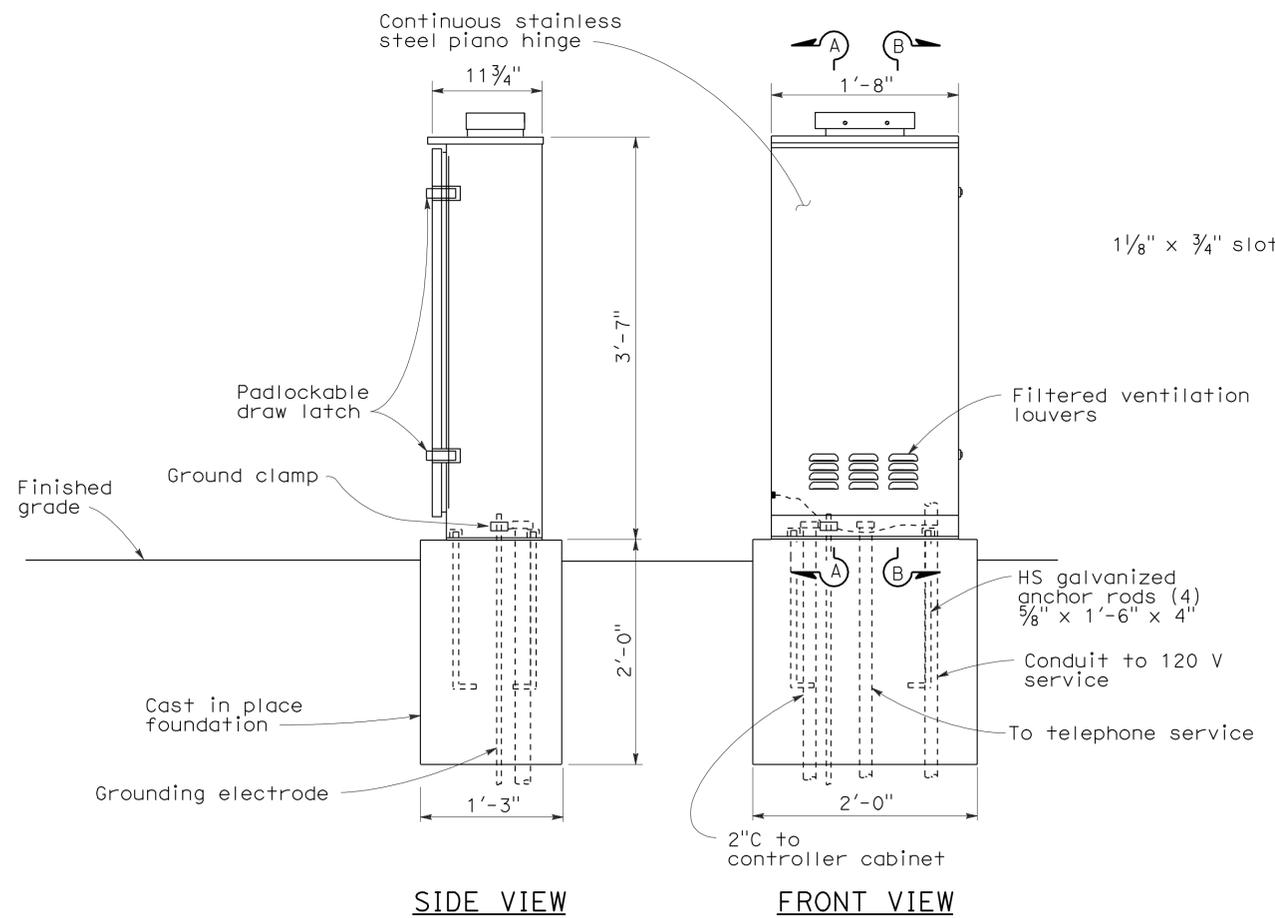
REGISTERED PROFESSIONAL ENGINEER  
**Jeffery G. McRae**  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA



To accompany plans dated 3-12-12

**NOTES:**

1. Telephone demarcation cabinet shall be furnished with a mounting panel, outlets, circuit breaker and deadfront plates in place. Dimensions are nominal.
2. An approved mastic or caulking compound shall be placed on the foundation prior to placing the cabinet to seal openings between the bottom of the cabinet and the foundation.
3. In unpaved areas, a raised PCC pad shall be placed in front of the telephone demarcation cabinet. Pad shall be 2'-0" x 1'-10" x 4" thick, with 2" above the finished grade.
4. All conduits shall be bonded to the enclosure.
5. Telephone demarcation cabinet:
  - a) Material shall be anodized aluminum (1/8" thick).
  - b) Fabrication shall conform to the requirements of the Standard Specifications.
  - c) The exterior door shall be side hung and secured with a padlockable draw latch, the padlock hole shall be a minimum diameter of 7/16" to receive a padlock.
  - d) Ventilation louvers shall be located on the door.
  - e) Fan shall be mounted in a ventilator housing.
  - f) Fan shall be thermostatically controlled and adjustable to turn on between 80°F and 130°F.
  - g) Fan circuit shall be fused at 175 percent of the fan motor capacity.
  - h) Fan capacity shall be at least 25 cubic feet per minute.
  - i) Fasten fixed mounting panels with nuts, lock and flat washers to 3/16" ø x 1" studs welded to enclosure.



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (TELEPHONE DEMARCATIION  
 CABINET, TYPE B)**

NO SCALE

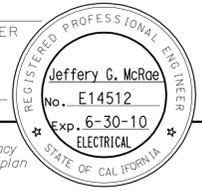
RSP ES-3E DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-3E  
 DATED MAY 1, 2006 - PAGE 414 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-3E**

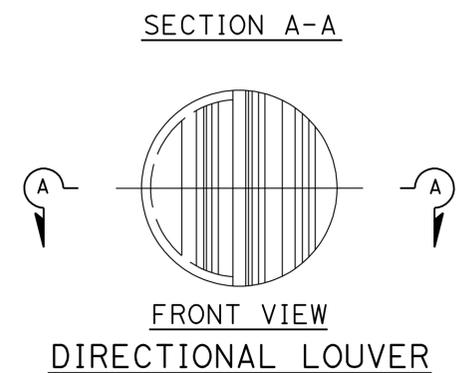
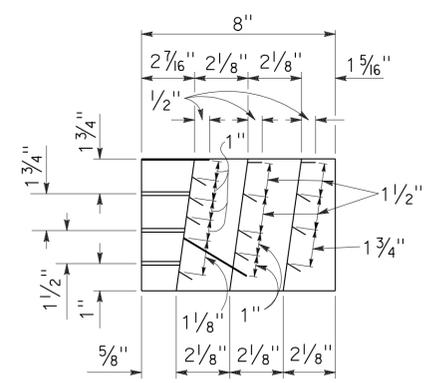
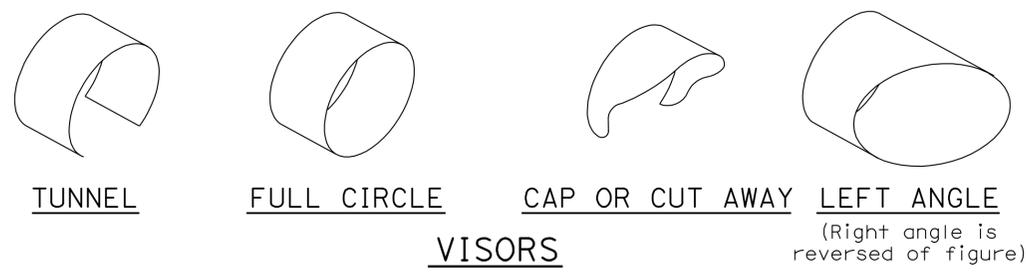
2006 REVISED STANDARD PLAN RSP ES-3E

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	44	52

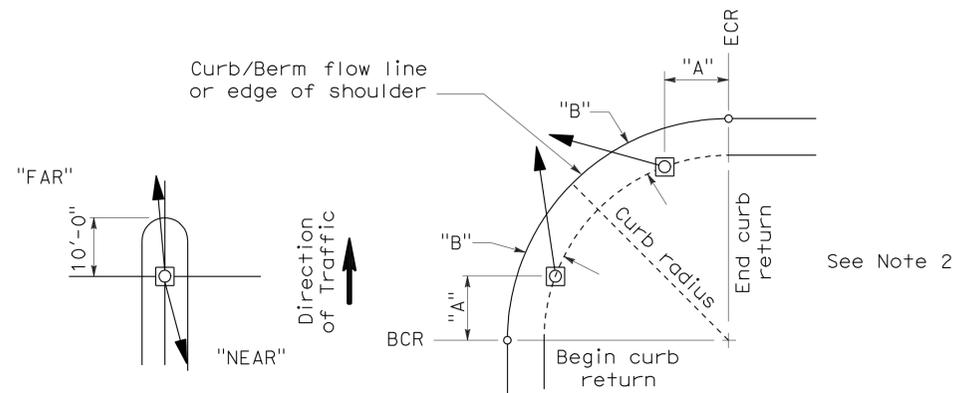
Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 June 6, 2008  
 PLANS APPROVAL DATE  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



To accompany plans dated 3-12-12

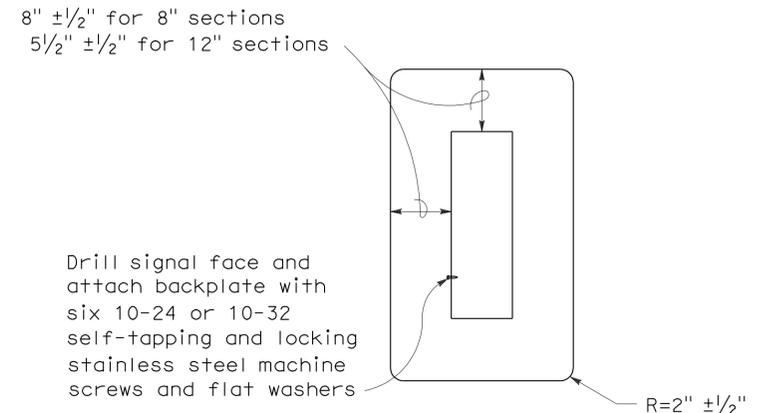


**DIRECTIONAL LOUVER**  
 Directional louvers shall be oriented as directed by the Engineer and secured in place with one plated brass machine screw and nut.



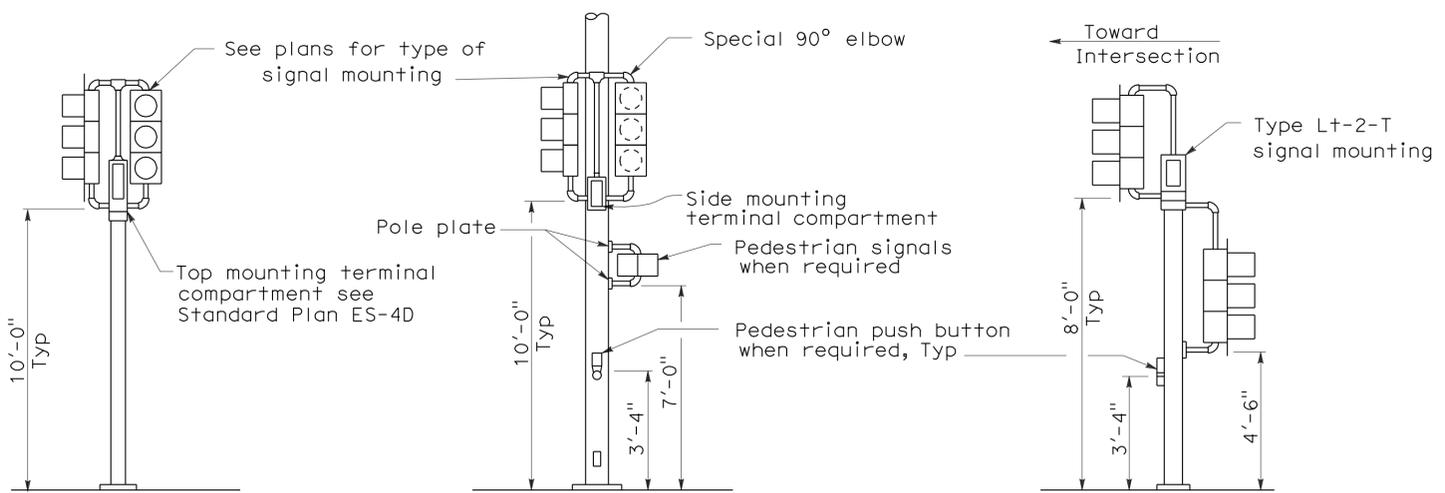
**NOTES:**

1. Typical signal pole placement unless dimensioned on plans.
2. For "A" and "B" dimensions, see Pole Schedule, or as directed by the Engineer.



**8" AND 12" SECTIONS**  
**BACKPLATE**  
 1/16" minimum thickness  
 3001-14 aluminum, or plastic when specified

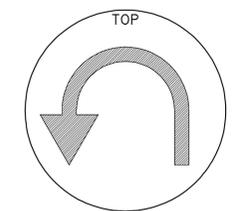
**SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS**



**TOP MOUNTED SIGNALS (TV)**  
 Type 1-A, 1-B, 1-C and 1-D standard as indicated on the plans

**SIDE MOUNTED SIGNALS (SV AND SP)**  
 Normally used on standards with luminaire or signal mast arm

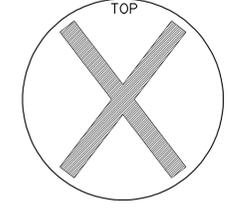
**LEFT TURN LANE SIGNAL**  
 Type 1-A, 1-B, 1-C and 1-D standard as indicated on plans



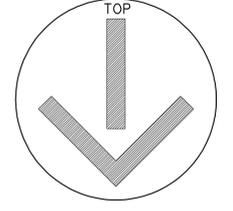
**U-TURN SIGNAL FACE**



**BICYCLE SIGNAL FACE**



**LANE CONTROL SIGNAL FACE**



**LANE CONTROL SIGNAL FACE**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)**

NO SCALE

RSP ES-4C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN ES-4C DATED MAY 1, 2006 - PAGE 420 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-4C**

2006 REVISED STANDARD PLAN RSP ES-4C

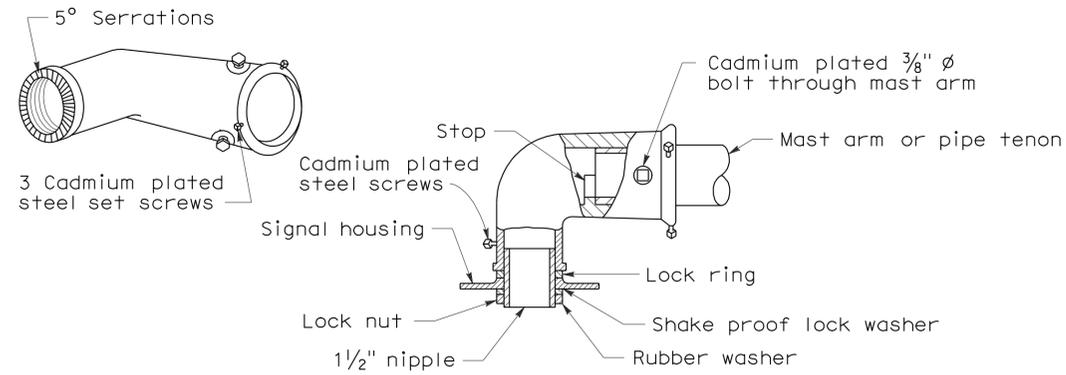
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	45	52

Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 No. E14512  
 Exp. 6-30-10  
 ELECTRICAL  
 STATE OF CALIFORNIA

June 6, 2008  
 PLANS APPROVAL DATE

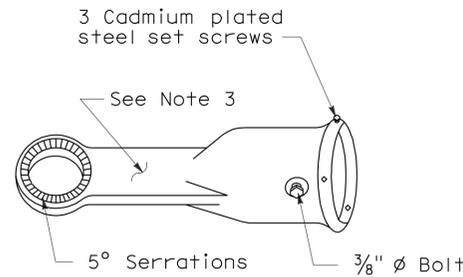
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 3-12-12



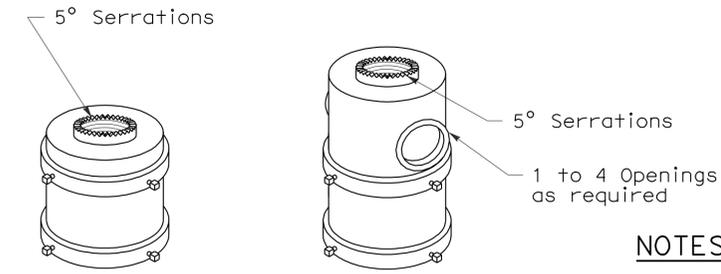
**MAST ARM MOUNTING - TYPE "MAT"**

For 2 NPS pipe, see Note 1.



**MAST ARM MOUNTING - TYPE "MAS"**

For 2 NPS pipe. See Note 1.

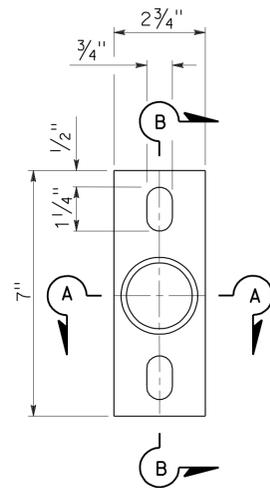


For one mounting For multiple mountings

**TOP MOUNTINGS**

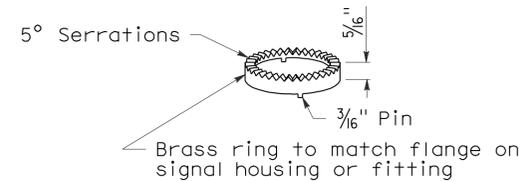
For 4 NPS pipe, see Note 2.

**SIGNAL SLIP FITTERS**



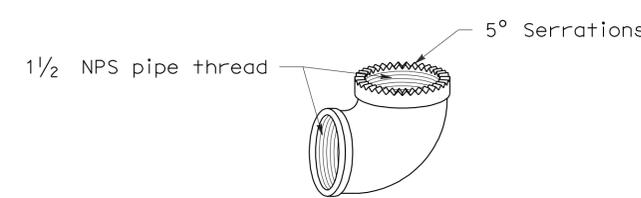
**POLE PLATE**

For side mountings



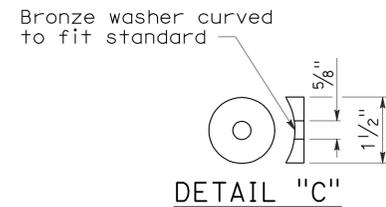
**LOCK RING**

Use where locking ring is not integral with signal housing or fitting.



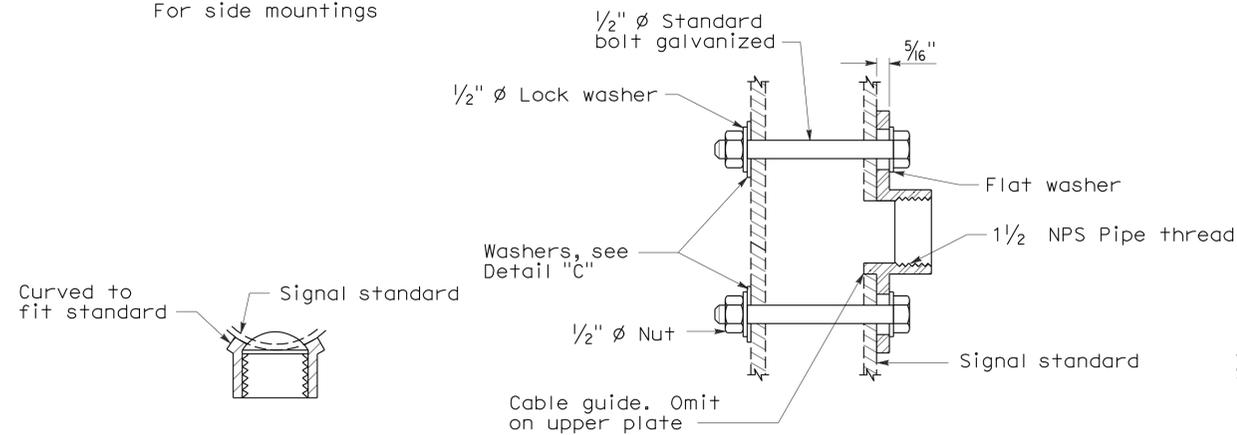
**SPECIAL 90° ELBOW**

One for each signal head, except those with special slip fitter mounting



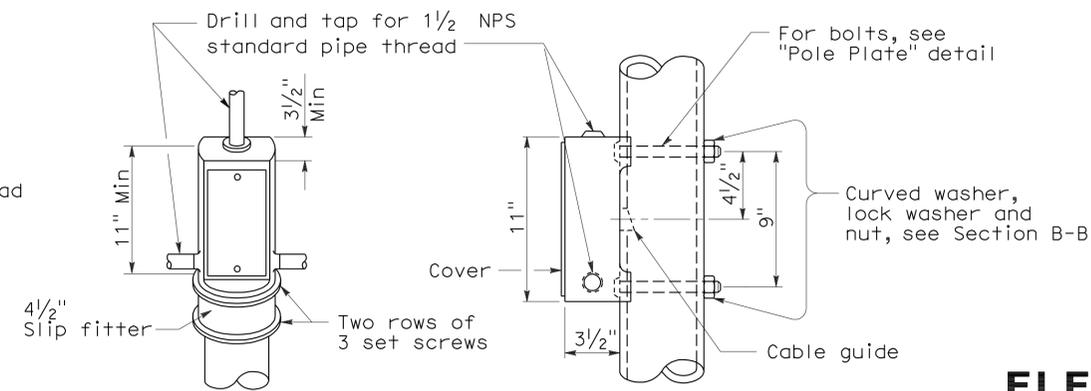
**DETAIL "C"**

**MISCELLANEOUS MOUNTING HARDWARE**



**SECTION A-A**

**SECTION B-B**



**TOP MOUNTING**

**SIDE MOUNTING**

**TERMINAL COMPARTMENTS**

**ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)**

NO SCALE

RSP ES-4D DATED June 6, 2008 SUPERSEDES STANDARD PLAN ES-4D DATED MAY 1, 2006 - PAGE 421 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-4D**

2006 REVISED STANDARD PLAN RSP ES-4D

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	46	52

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

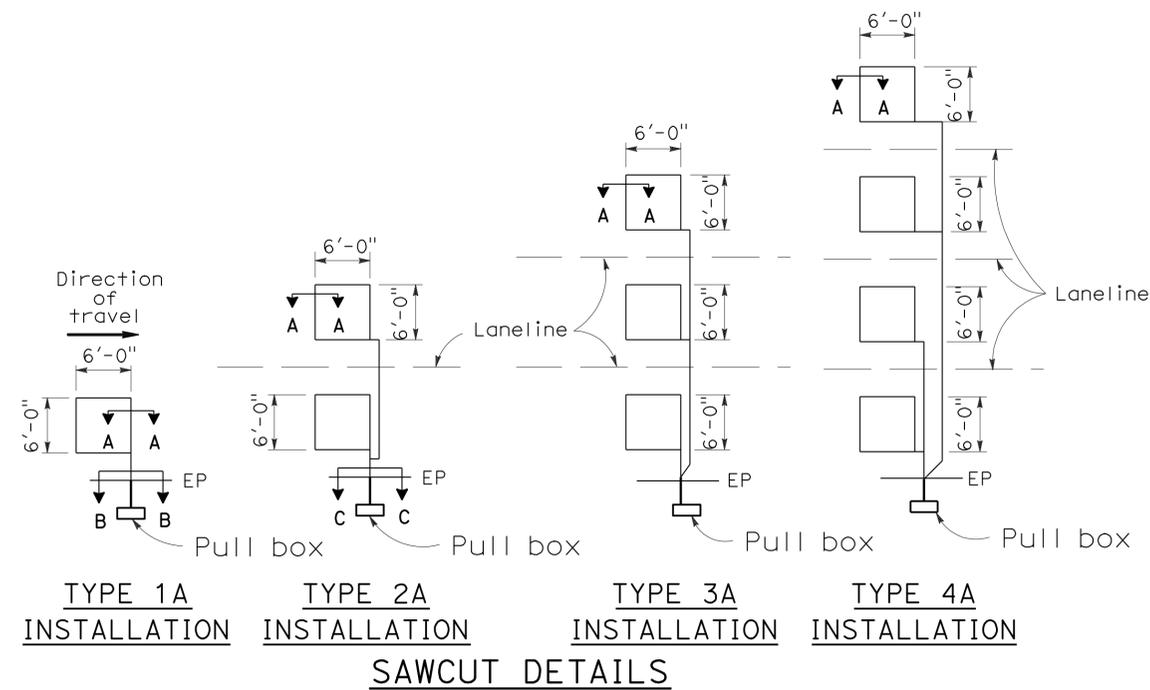
October 5, 2007  
 PLANS APPROVAL DATE

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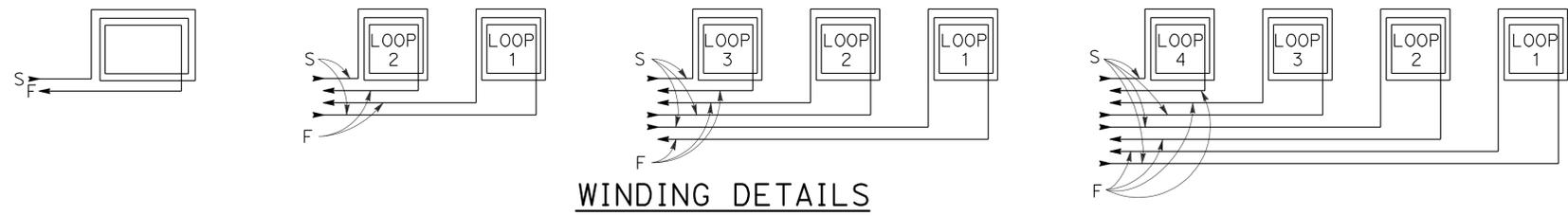
To accompany plans dated 3-12-12

## 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.

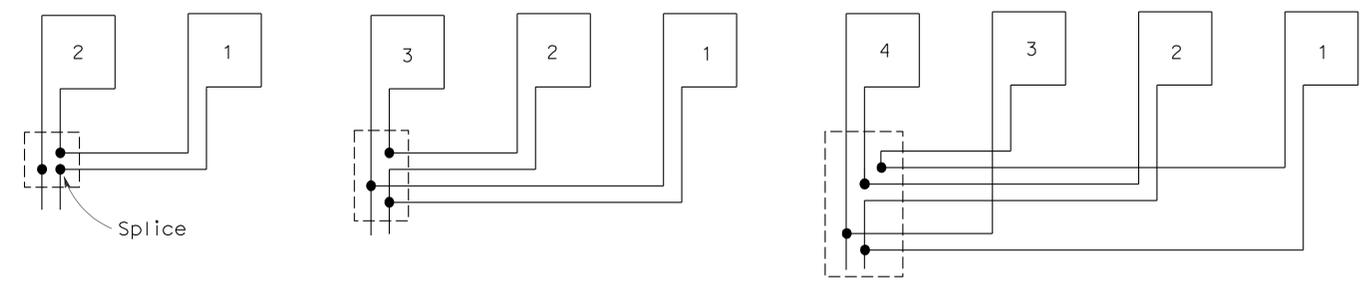


- SAWCUT DETAILS**  
(Type A loop detector configurations illustrated)
- 1A thru 4A = 1 Type A loop configuration in each lane.
  - 1B thru 4B = 1 Type B loop configuration in each lane.
  - 1C = 1 Type C loop configuration entering lanes as required.
  - 1D thru 4D = 1 Type D loop configuration in each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



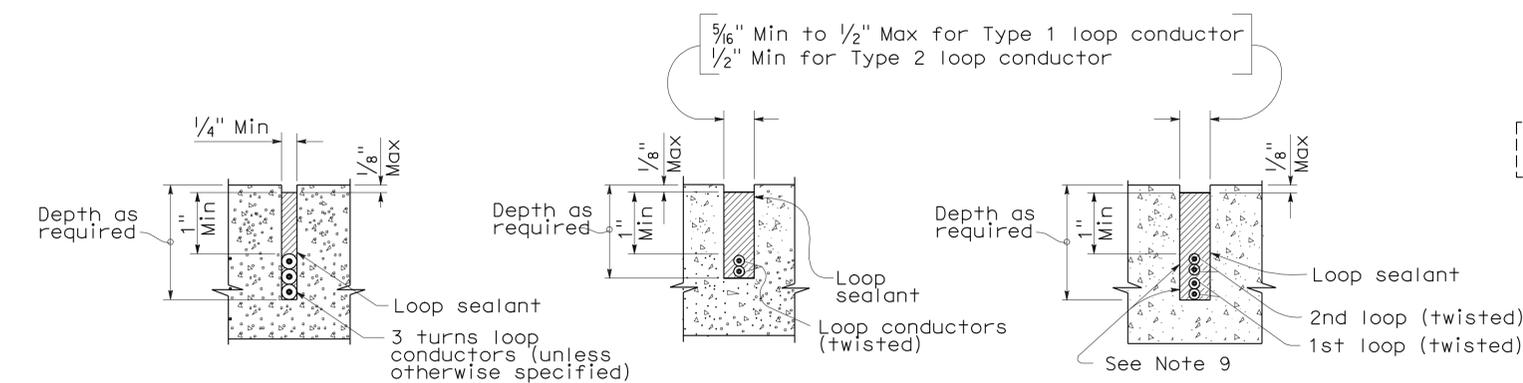
### WINDING DETAILS

See Notes 6 and 7



### TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



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

## ELECTRICAL SYSTEMS (DETECTORS)

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

NO SCALE

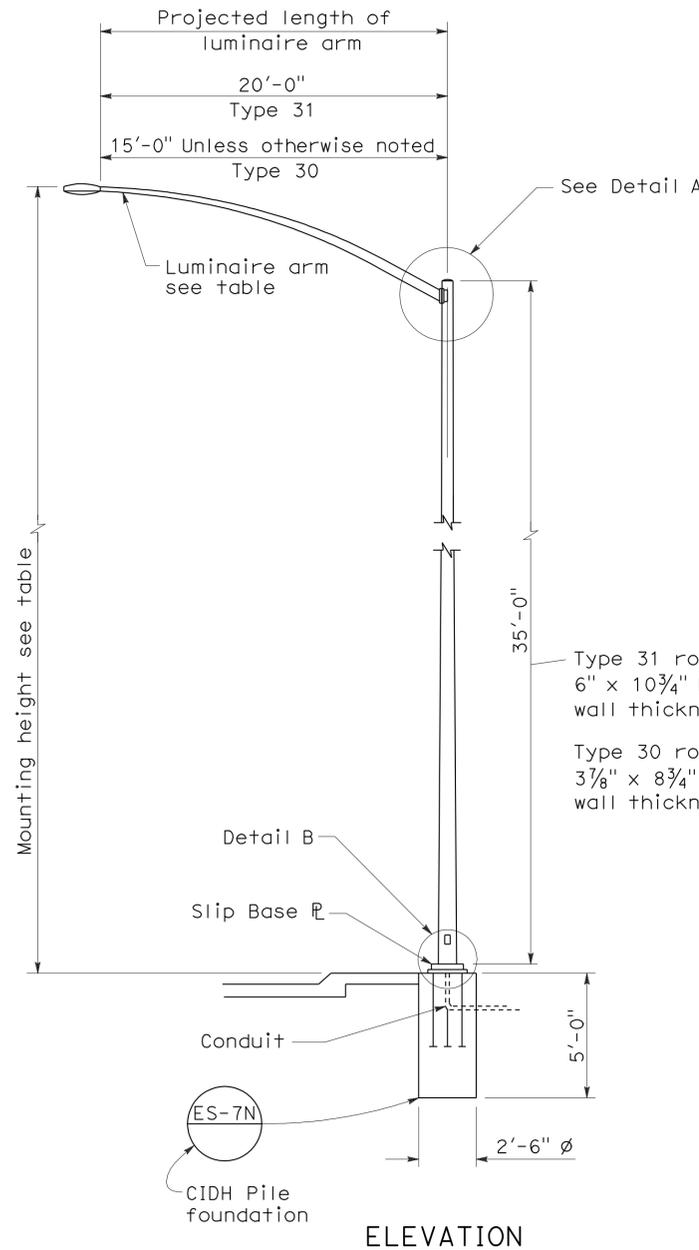
RSP ES-5A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-5A DATED MAY 1, 2006 - PAGE 423 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-5A

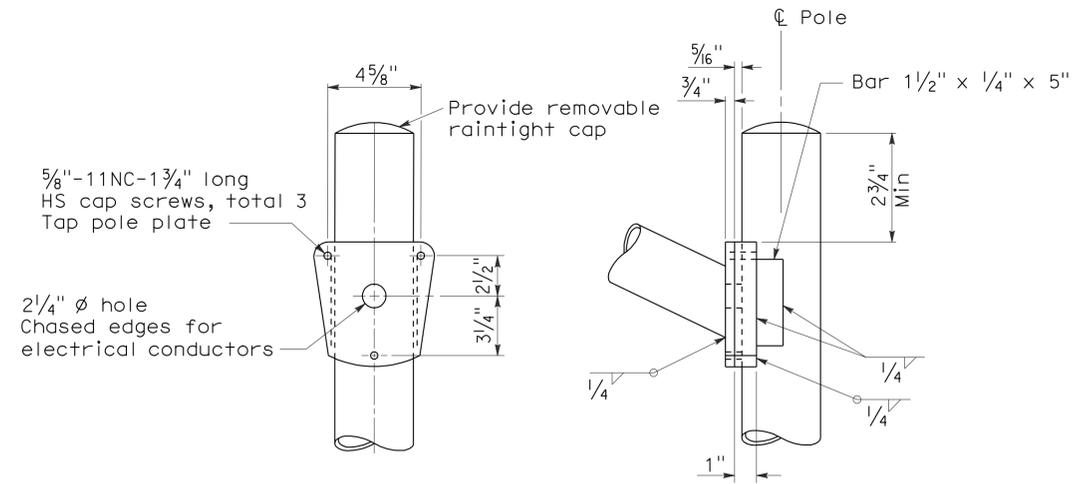
**LUMINAIRE ARM DATA**

PROJECTED LENGTH	THICKNESS	MINIMUM OD @ POLE	MOUNTING HEIGHT
* 6'-0"	0.1196"	3/4"	36'-9"±
8'-0"		3/2"	37'-3"±
10'-0"		3 3/4"	38'-0"±
12'-0"		3 3/4"	39'-0"±
15'-0"		4 1/4"	39'-6"±
** 20'-0"	0.1793"	5"	37'-0"±

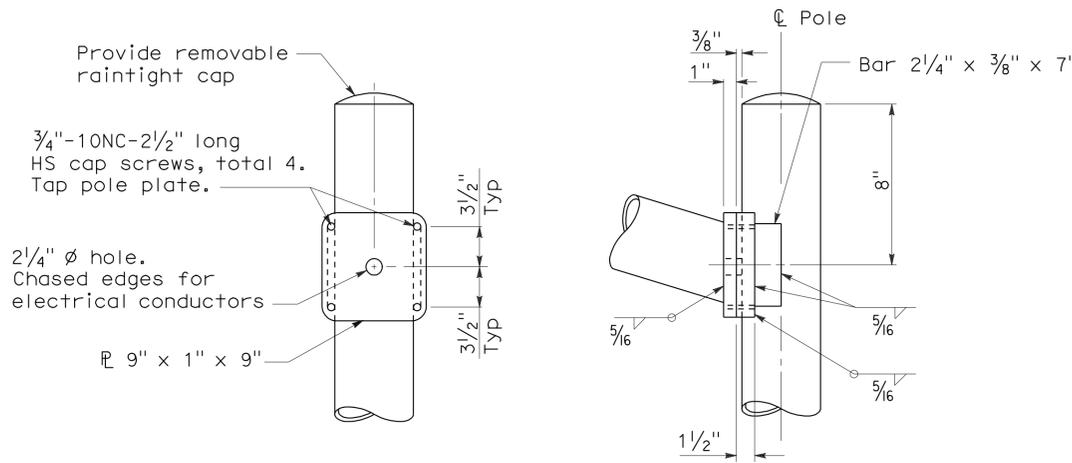
\* Type 30 - arm length 6'-0" - 15'-0" maximum  
 \*\* Type 31 - arm lengths 20'-0"



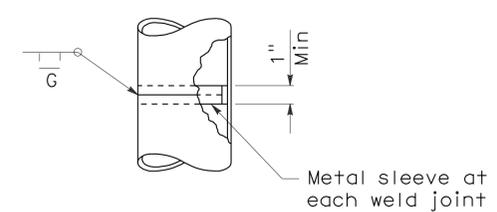
**ELEVATION**



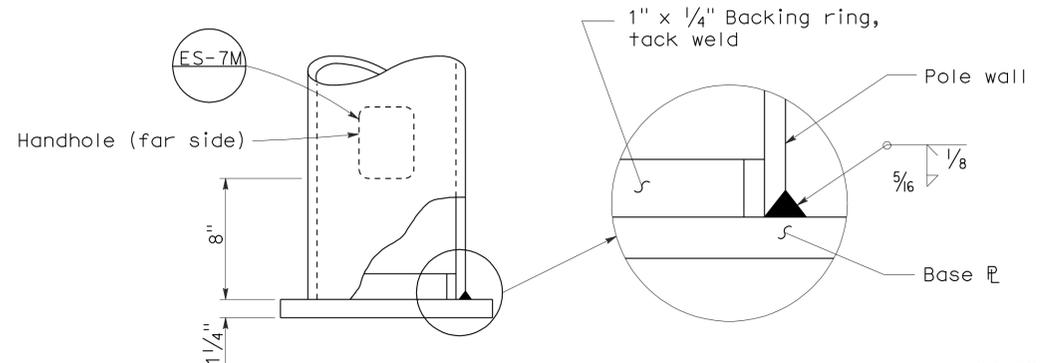
**DETAIL A - TYPE 30**



**DETAIL A - TYPE 31**



**POLE SPLICE**



**DETAIL B**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	47	52

Stanley P. Johnson  
 REGISTERED CIVIL ENGINEER

January 18, 2008  
 PLANS APPROVAL DATE

Stanley P. Johnson  
 No. C57793  
 Exp. 03-31-08  
 CIVIL  
 STATE OF CALIFORNIA

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

To accompany plans dated 3-12-12

**NOTES:**

- Sheet steel shall have a minimum yield of 48,000 psi.
- For slip base details see Standard Plan ES-6F.
- For Type 30 fixed base use Type 15 base plate, and foundation shown on Revised Standard Plan RSP ES-6A. Use 1 1/4" Dia x 3'-6" x 4" anchor bolts.
- For Type 31 fixed base use Type 32 base plate, anchor bolts and foundation on Standard Plan ES-6G.
- Handhole shall be located on downstream side of traffic unless noted otherwise on plans.
- For additional general notes refer to Standard Plan ES-7M.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
 (LIGHTING STANDARD  
 TYPES 30 AND 31)**

NO SCALE

RSP ES-6E DATED JANUARY 18, 2008 SUPERCEDES STANDARD PLAN ES-6E  
 DATED MAY 1, 2006 - PAGE 430 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-6E**

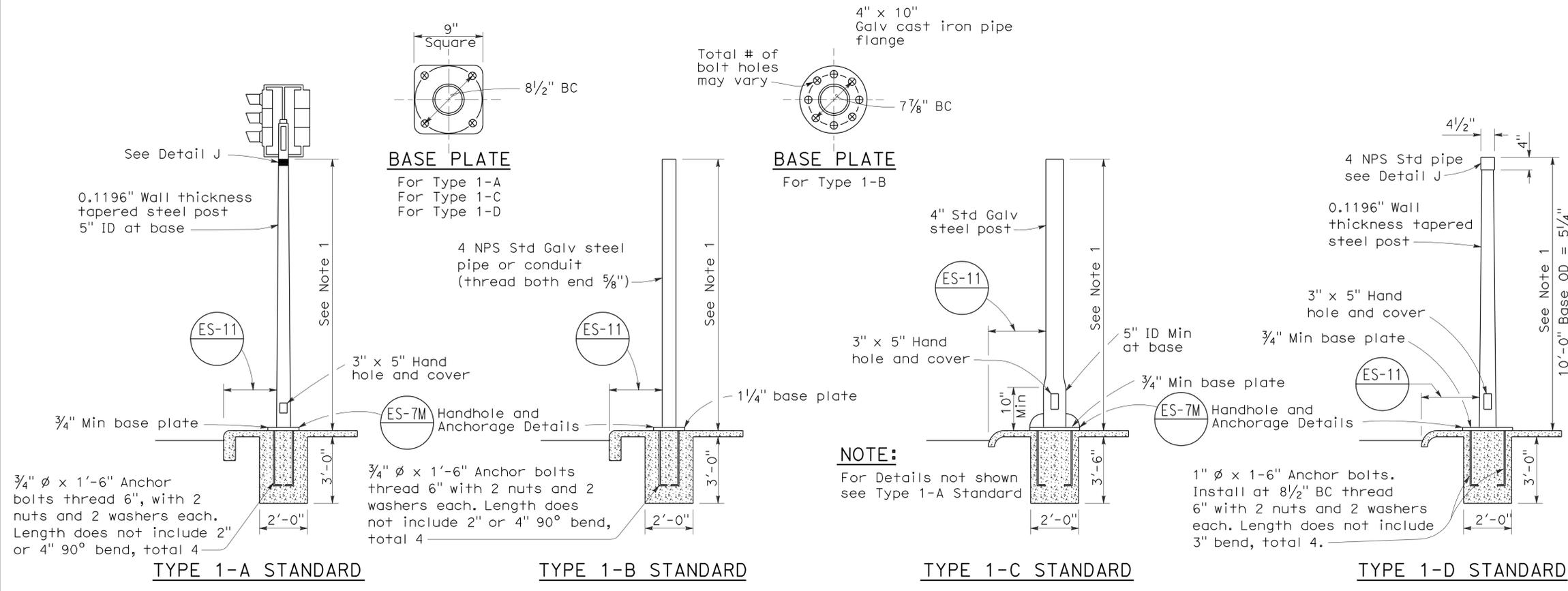
**2006 REVISED STANDARD PLAN RSP ES-6E**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	48	52

Stanley P. Johnson  
 REGISTERED CIVIL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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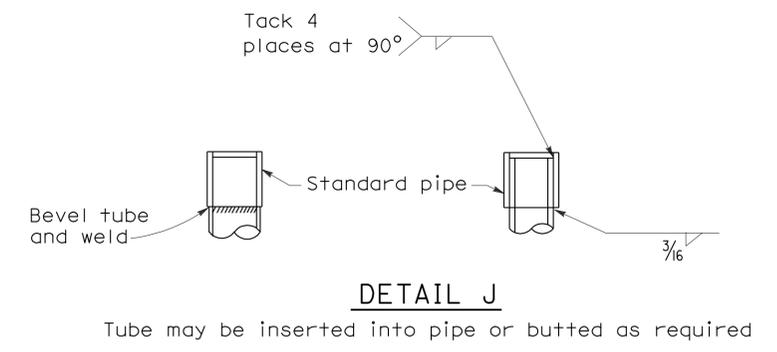
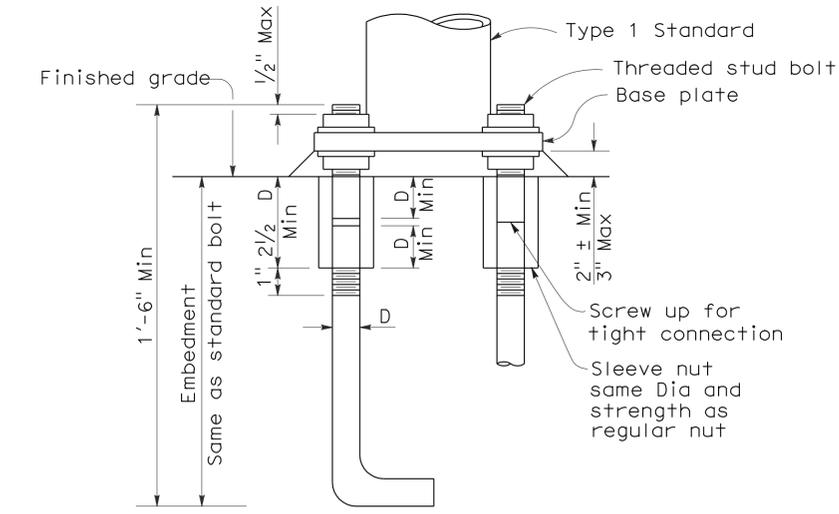
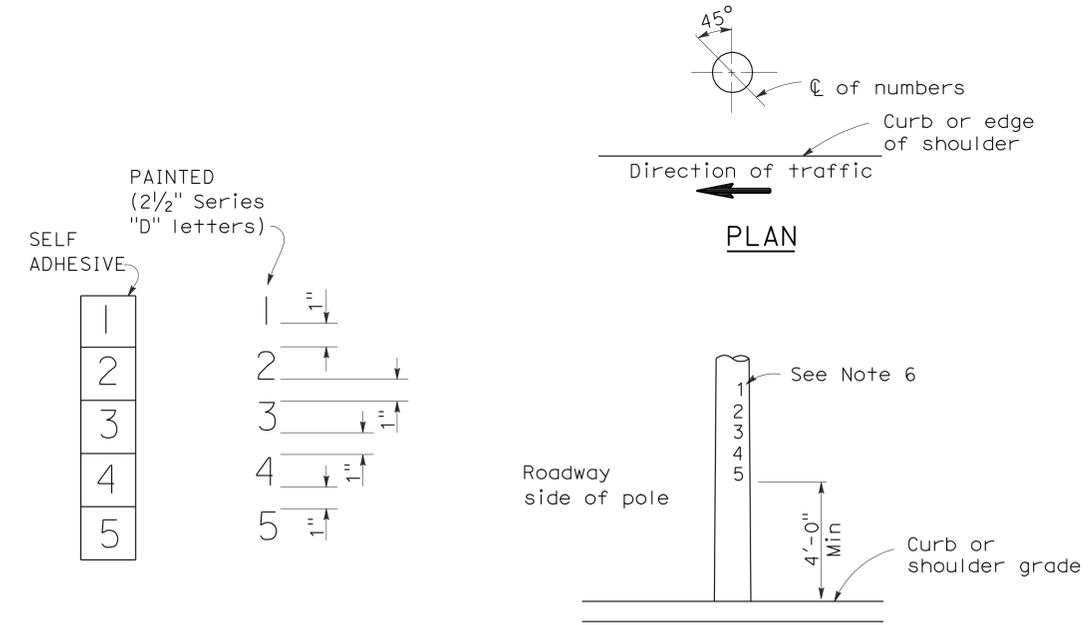
REGISTERED PROFESSIONAL ENGINEER  
 Stanley P. Johnson  
 No. C57793  
 Exp. 3-31-08  
 CIVIL  
 STATE OF CALIFORNIA

To accompany plans dated 3-12-12



- NOTES:**
- Standards shall be 10'-0" ± 2" for vehicle signals and 7'-0" ± 2" for pedestrian signals unless otherwise noted on plans.
  - Top of standards shall be 4 1/2" OD.
  - Conduits shall extend 2" maximum above finished surface of foundation and for Types 1-A, 1-C and 1-D shall be sloped toward handhole.
  - Anchor bolts shall be bonded to conduit or grounding conductor.
  - Conduit between standard and adjacent pull box shall be 2" minimum.
  - Paint numbers on roadway side facing traffic when electrolier or post is left of direction of traffic.

**TYPE 1 SIGNAL STANDARDS**



**NUMBER DETAIL**      **TYPICAL NUMBER FORMAT**

**LOCATION OF EQUIPMENT NUMBERS ON STANDARDS AND POSTS**

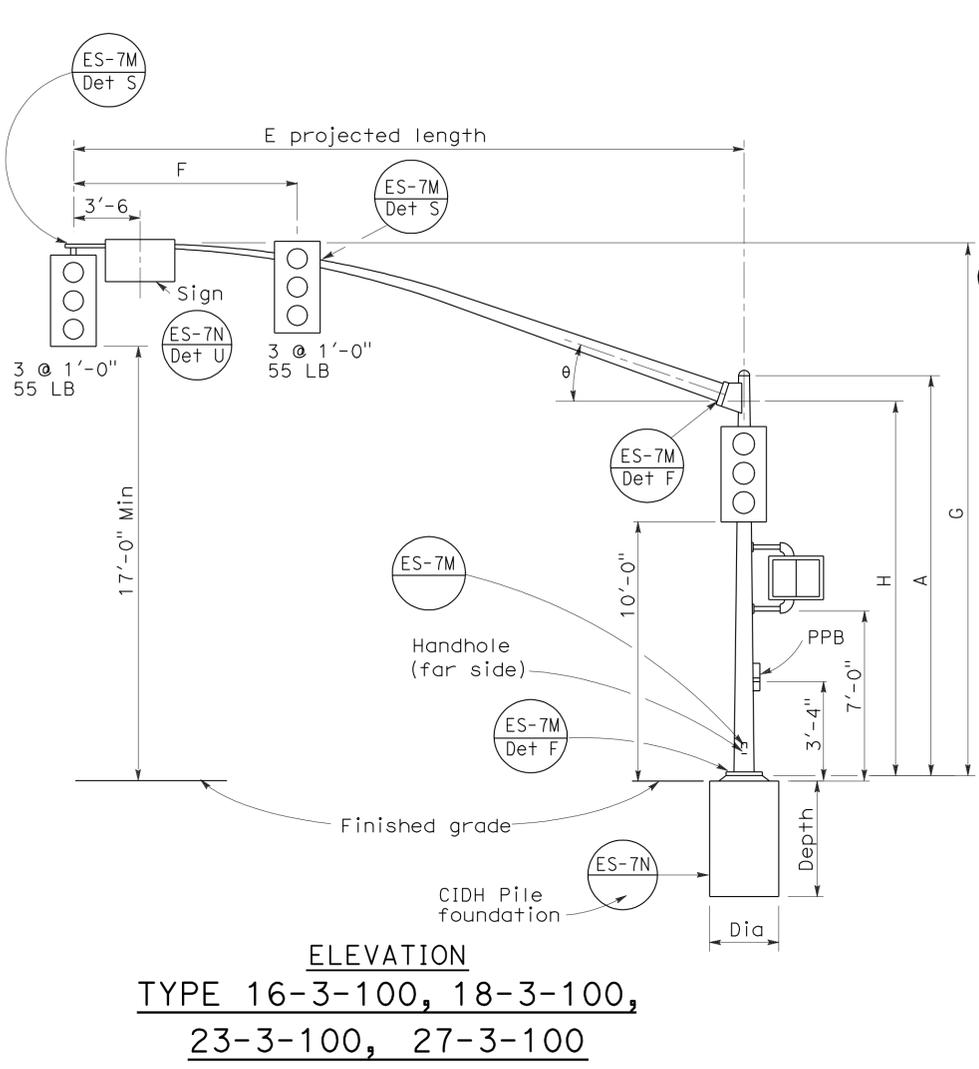
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD TYPE 1 STANDARD AND EQUIPMENT NUMBERING)**

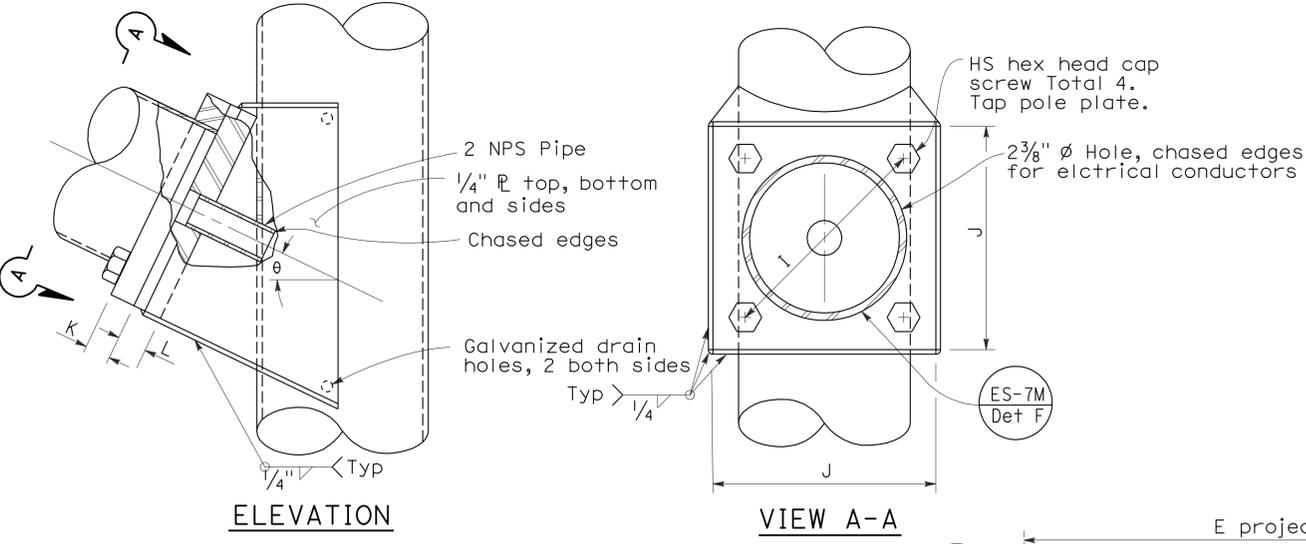
NO SCALE

RSP ES-7B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-7B DATED MAY 1, 2006 - PAGE 438 OF THE STANDARD PLANS BOOK DATED MAY 2006.

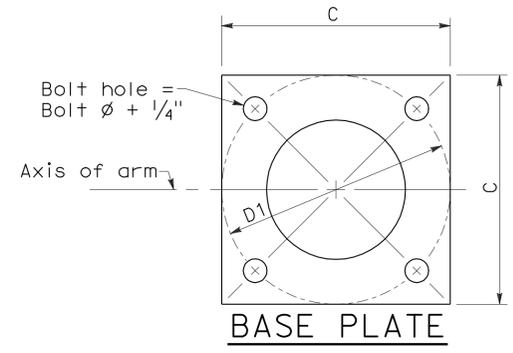
2006 REVISED STANDARD PLAN RSP ES-7B



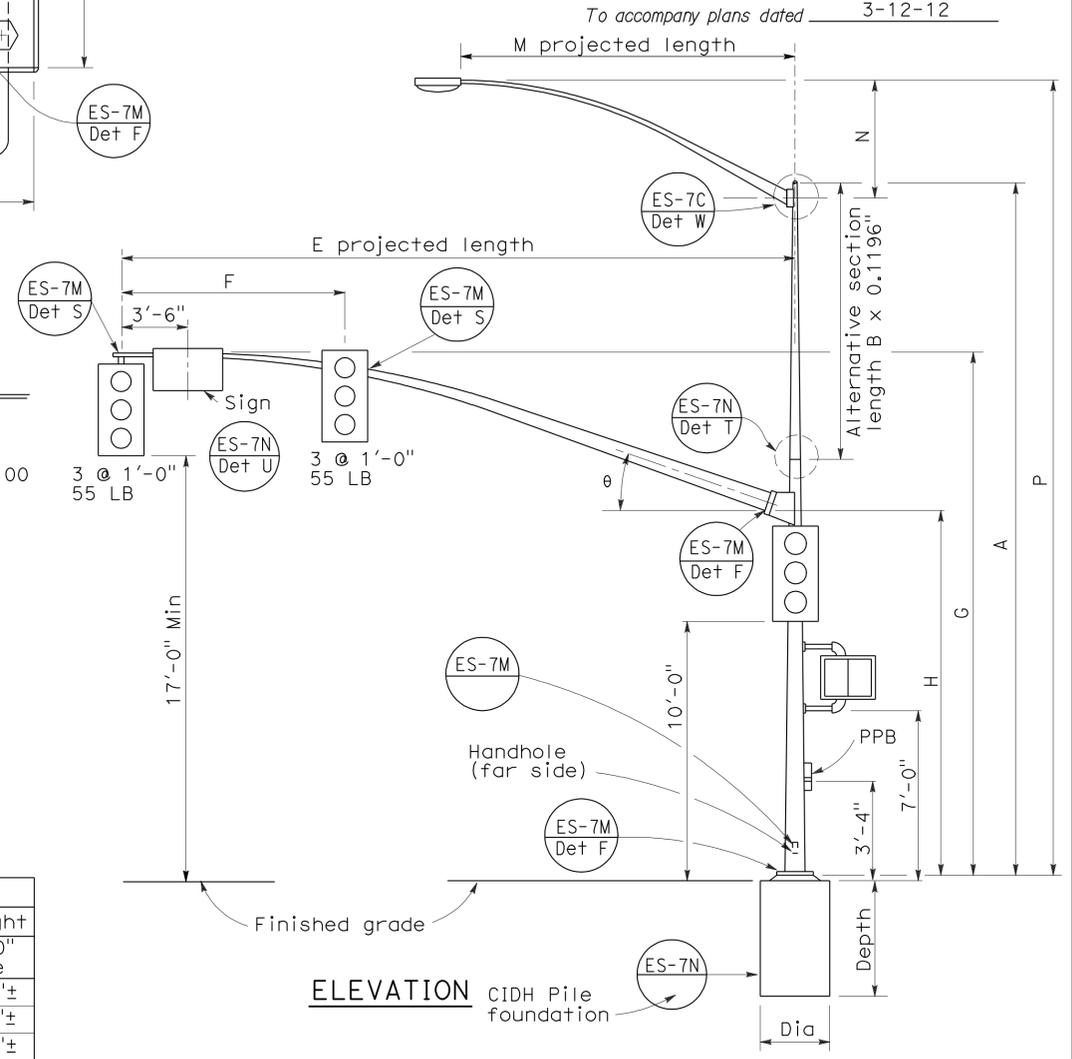
**ELEVATION**  
**TYPE 16-3-100, 18-3-100,**  
**23-3-100, 27-3-100**



**SIGNAL ARM CONNECTION DETAILS**



**BASE PLATE**



**ELEVATION**  
**TYPE 17-3-100, 24A-3-100,**  
**19-3-100, 26-3-100,**  
**19A-3-100, 26A-3-100, 24-3-100**

E Projected Length	F Min Spacing	G Mounting Height	H	Min OD At Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate Size	K Arm Thickness	L Pole Thickness	θ
15'-0"	8'-0"	21'-8"±	17'-6"	6 5/8"	0.1793"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°
20'-0"		21'-8"±		7"							
25'-0"		22'-8"±		7 5/8"							
30'-0"	12'-0"			8"							
35'-0"	14'-0"	23'-0"±	16'-0"	8 3/4"	0.2391"	13"	1'-1"	1 1/2"	1 3/4"	21°	
40'-0"				9 3/8"							
45'-0"	15'-0"	23'-8"±		10 1/16"							

M Projected Length	N Rise	Min OD at Pole	Thickness	P Mounting Height Pole	P Mounting Height Pole
6'-0"	2'-0"±	3 1/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3 1/2"		32'-0"±	37'-0"±
10'-0"	3'-3"±	3 7/8"	0.1196"	32'-9"±	37'-9"±
12'-0"	4'-3"±			33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"		34'-3"±	39'-3"±

Pole Type	Load Case	Wind Velocity mph	POLE DATA				BASE PLATE DATA				Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION						
			A Height	Min OD		Thickness	Alternative Section			C			D1 Bolt Circle	Thickness	Anchor Bolts Size	Diameter	Depth	Reinforced	
				Base	Top		B Length	Bottom	Top										
16-3-100	3	100	18'-6"	10 3/4"	8 1/4"	0.1793"	None	1'-6"	1'-5 1/2"	1 1/2"	2"ø x 42" x 6"	None	15'-0"	9'-0"	Yes				
17-3-100			30'-0"		6 5/8"		10'-0"									8"	7 5/8"	None	20'-0"
18-3-100			17'-0"		8 7/16"		None												
19-3-100			30'-0"	7 7/8"	10'-0"	9 1/4"	7 7/8"	None	25'-0"										
19A-3-100			35'-0"	7 3/16"	15'-0"	9 1/4"	7 3/16"												
23-3-100			17'-0"	9 5/8"	None			None	30'-0"										
24-3-100			30'-0"	7 7/8"	10'-0"	9 1/4"	7 7/8"												
24A-3-100			35'-0"	7 3/16"	15'-0"	9 1/4"	7 3/16"	None	35'-0"										
26-3-100			30'-0"	8"	10'-0"	9 3/8"	8"												
26A-3-100			35'-0"	7 5/16"	15'-0"	9 3/8"	7 5/16"	None	40'-0"										
27-3-100			17'-0"	9 3/4"	None														

□ Indicates arm length to be used unless otherwise noted on plans.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(SIGNAL AND LIGHTING STANDARD**  
**CASE 3 ARM LOADING**  
**WIND VELOCITY=100 MPH**  
**ARM LENGTHS 15' TO 45')**  
 NO SCALE

2006 REVISED STANDARD PLAN RSP ES-7E

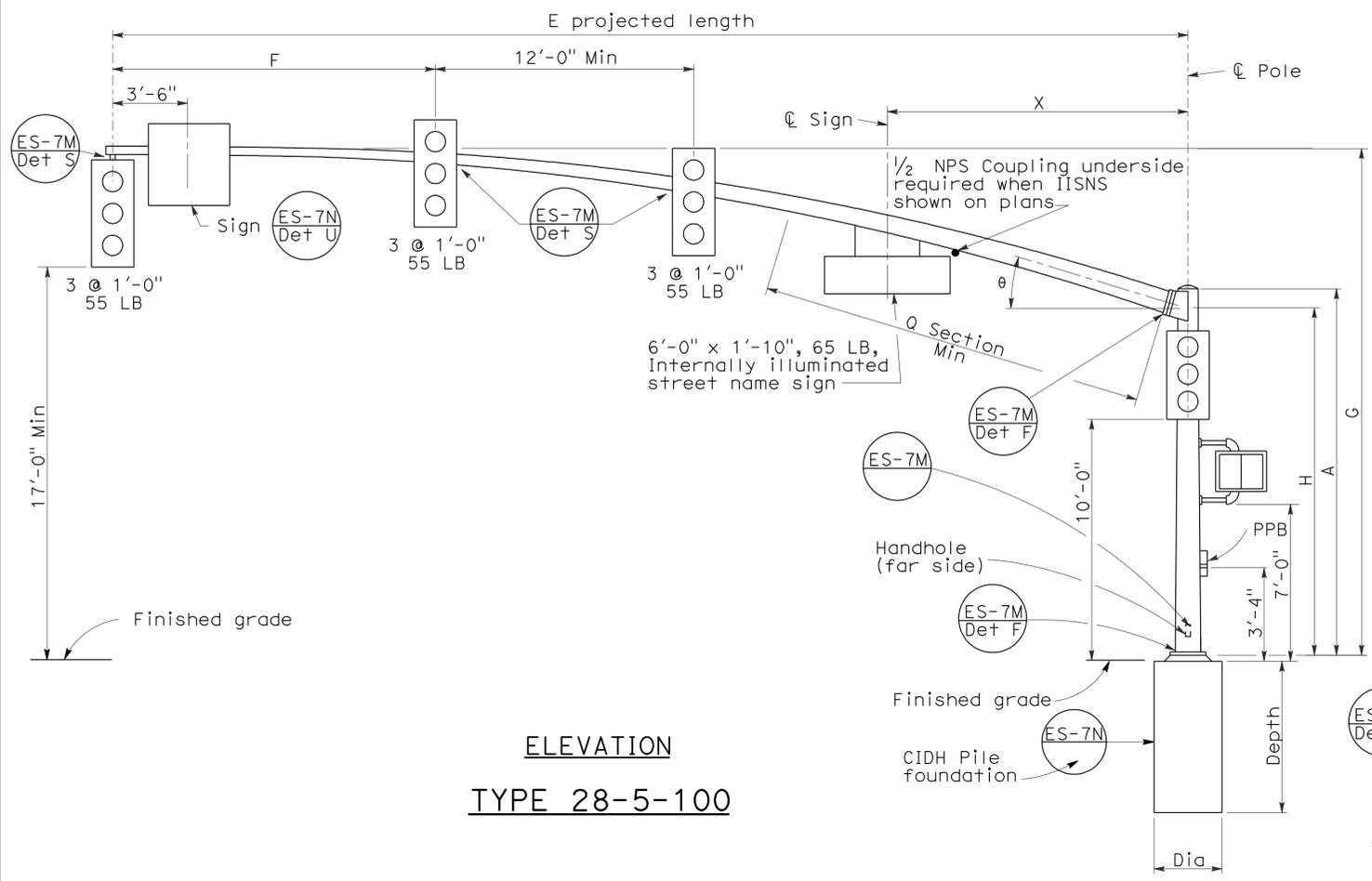
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	50	52

Stanley P. Johnson  
 REGISTERED CIVIL ENGINEER  
 No. C57793  
 Exp. 03-31-08  
 CIVIL  
 STATE OF CALIFORNIA

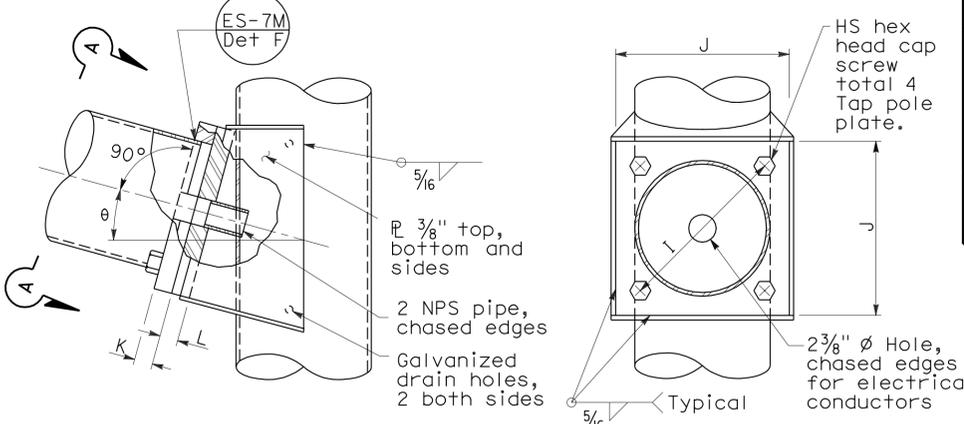
November 17, 2006  
 PLANS APPROVAL DATE

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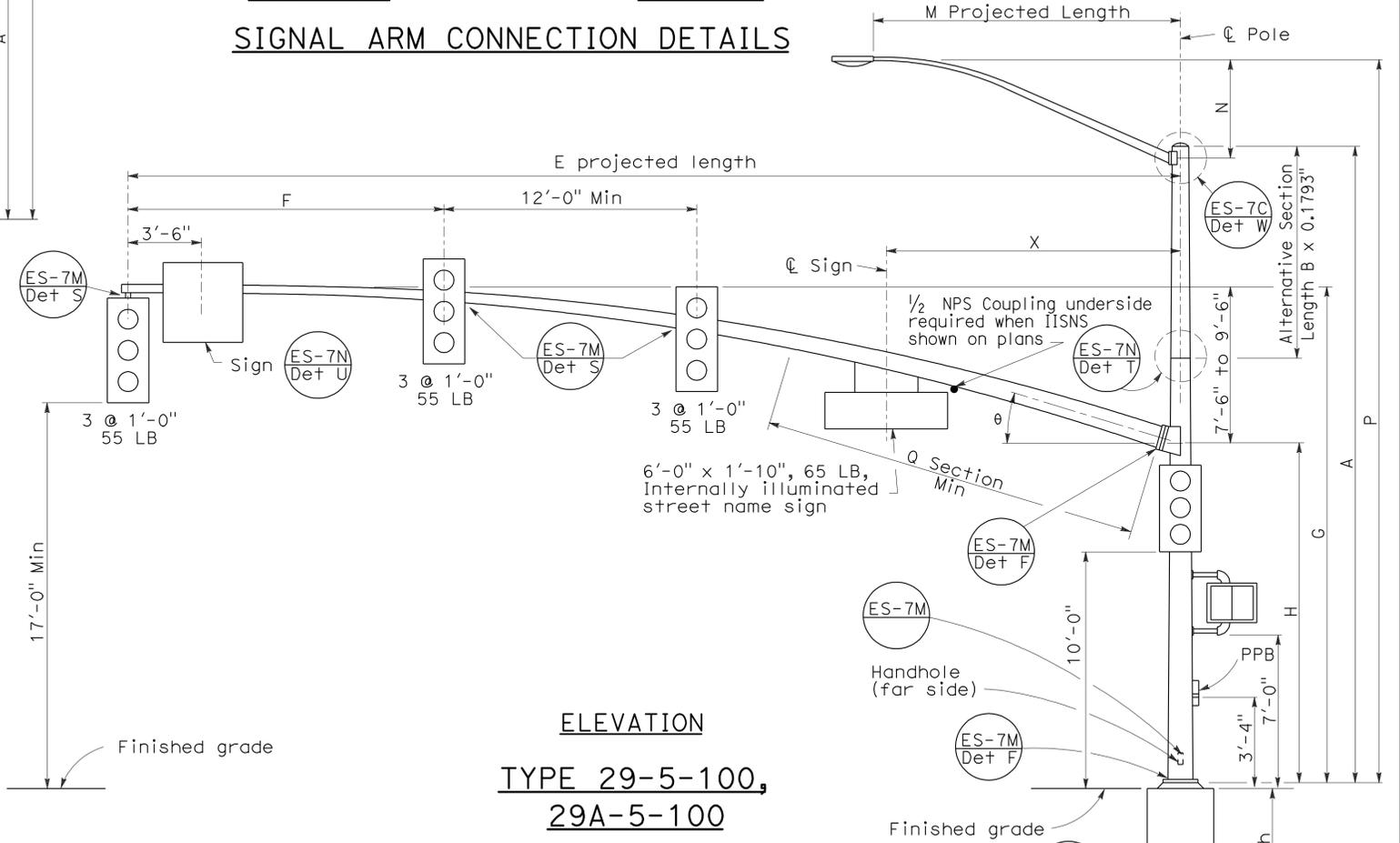
To accompany plans dated 3-12-12



**ELEVATION**  
**TYPE 28-5-100**

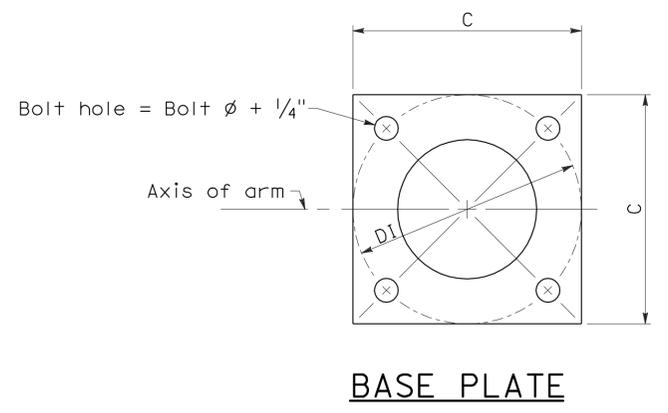


**ELEVATION**  
**VIEW A-A**  
**SIGNAL ARM CONNECTION DETAILS**



**ELEVATION**  
**TYPE 29-5-100,**  
**29A-5-100**

M Projected Length	N Rise	Min OD at Pole	Thickness	P Mounting Height
6'-0"	2'-0"±	3 1/4"	0.1196"	30'-0" Pole
8'-0"	2'-6"±	3 1/2"		31'-6"± Pole
10'-0"	3'-3"±	3 7/8"		32'-0"± Pole
12'-0"	4'-3"±			32'-9"± Pole
15'-0"	4'-9"±	4 1/4"		33'-9"± Pole
				34'-3"± Pole



**BASE PLATE**

E Projected Length	F Min Spacing	G Mounting Height	H	Min OD at Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate Size	K Arm Plate Thickness	L Pole Plate Thickness	θ	Q Section		X Max
												Length	Thickness	
50'-0" 55'-0"	15'-0"	23'-7"± to 25'-7"±	16'-0"	11 11/16" 1'-1/4"	0.1793"	16"	1 1/2"-6NC-3 1/4"	1'-4"	1 3/4"	1 3/4"	15°	18'-0" 23'-0"	0.2391"	14'-0"

Pole Type	Load Case	Wind Velocity mph	POLE DATA				BASE PLATE DATA				Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION							
			A Height	Min OD		Thickness	C	DI Bolt Circle	Thickness	Anchor Bolts Size			Dia	Depth	Reinforced					
				Base	Top											Alternative Section B Length	Bottom	Top		
28-5-100	5	100	17'-0"	14"	11 11/16"	21"	21"	2"	2" ø x 42" x 6"	6'-15'	15'-0"	50'-0", 55'-0"	3'-0"	9'-2"	Yes					
29-5-100			30'-0"		9 7/8"											10'-0"	11 1/4"	9 7/8"	23"	23"
29A-5-100			35'-0"		9 3/16"											15'-0"	9 3/16"	23"	23"	

□ Indicates arm length to be used unless otherwise noted on plans.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(SIGNAL AND LIGHTING STANDARD**  
**CASE 5 ARM LOADING**  
**WIND VELOCITY=100 MPH,**  
**ARM LENGTHS 50' TO 55')**  
 NO SCALE

RSP ES-7G DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN ES-7G  
 DATED MAY 1, 2006 - PAGE 443 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-7G**

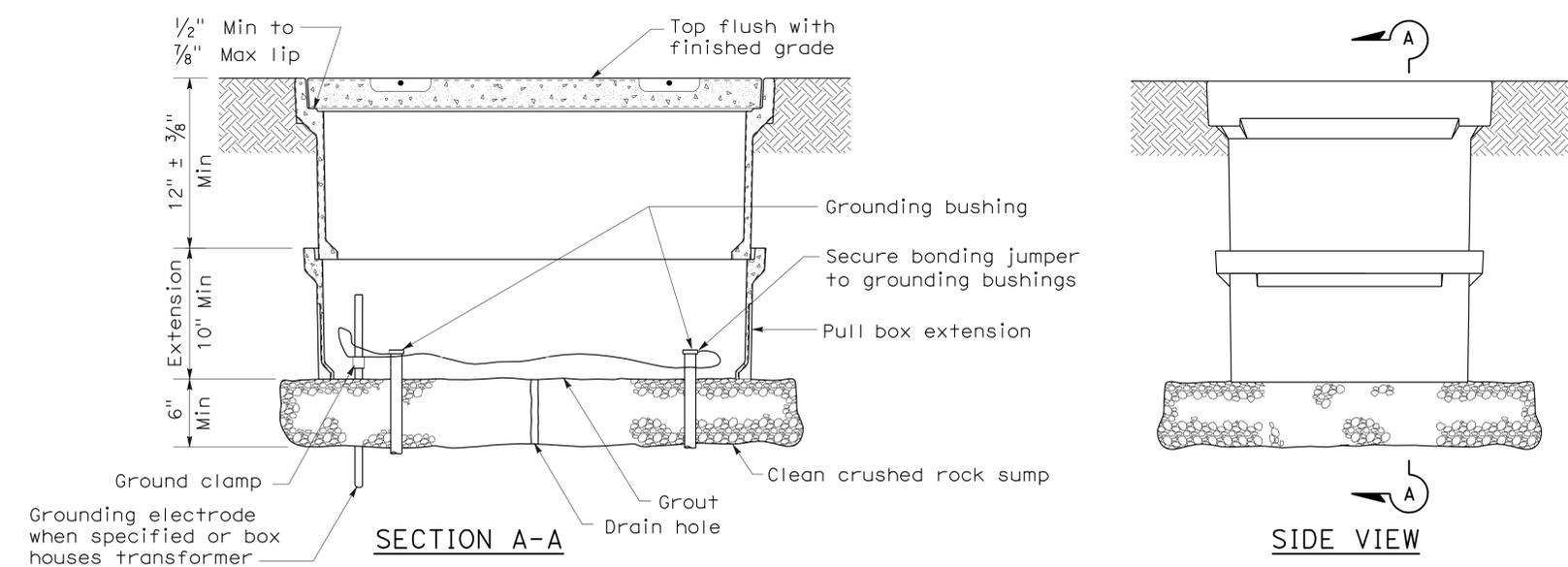
2006 REVISED STANDARD PLAN RSP ES-7G

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	51	52

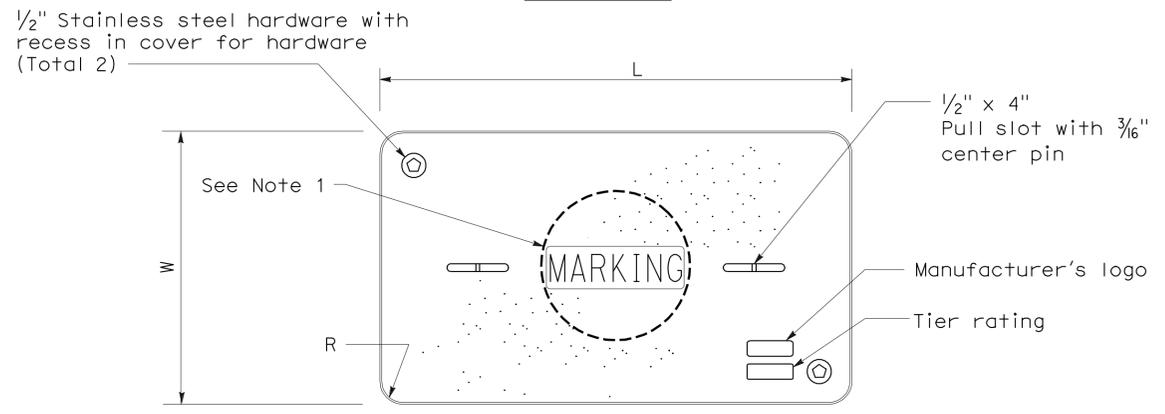
Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 January 20, 2012  
 PLANS APPROVAL DATE  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER  
 Jeffrey G. McRae  
 No. E14512  
 Exp. 6-30-12  
 ELECTRICAL  
 STATE OF CALIFORNIA

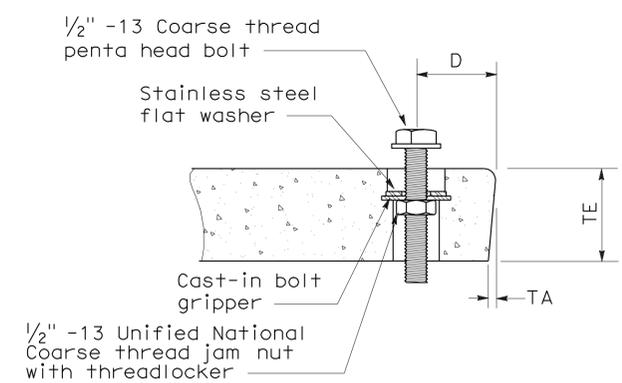
To accompany plans dated 3-12-12



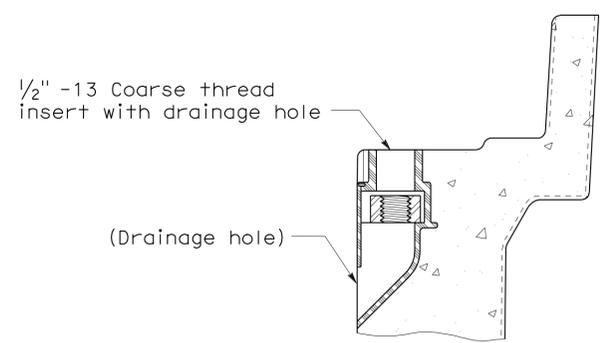
**INSTALLATION DETAILS**  
**DETAIL A**



**COVER TOP VIEW**



**TYPICAL COVER CAPTIVE BOLT**  
(Or similar)



**TYPICAL THREADED INSERT**  
(Or similar)

**NOTES ON PULL BOXES:**

1. Pull box covers must be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" sprinkler control circuits, 50 V or less; "CALTRANS" on all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service;
  - A) No. 3/2 pull box.
    - 1) "SIGNAL" - Traffic signal circuits with or without street or sign lighting circuits.
    - 2) "ST LIGHTING" - Street or sign lighting circuits where voltage is under 600 V.
  - B) No. 5, 6, 9 or 9A pull box.
    - 1) "TRAFFIC SIGNAL" - Traffic signal circuits with or without street or sign lighting circuits.
    - 2) "STREET LIGHTING" - Street or sign lighting circuits where voltage is under 600 V.
    - 3) "STREET LIGHTING-HIGH VOLTAGE" - Street or sign lighting circuits where voltage is above 600 V.
    - 4) "IRRIGATION" - Circuits to irrigation controller 120 V or more.
    - 5) "RAMP METER" - Ramp meter circuits.
    - 6) "COUNT STATION" - Count or speed monitor circuits.
    - 7) "COMMUNICATIONS" - Communication circuits.
    - 8) "TOS COMMUNICATIONS" - TOS communication line.
    - 9) "TOS POWER" -TOS power.
    - 10) "TDC POWER" - Telephone demarcation cabinet power.
    - 11) "CCTV" - Closed circuit television circuits.
    - 12) "TMS" - Traffic monitoring station circuits.
    - 13) "CMS" - Changeable message sign circuits.
    - 14) "HAR" - Highway advisory radio circuits.
2. The nominal dimensions of the opening in which the cover sets must be the same as the cover dimensions (L and W) plus 1/8" or greater.
3. Covers and boxes must be interchangeable with California Standard. When interchanged with a standard, the top surfaces must be flush within 1/8". Top outside radius of covers and pull boxes must have a 1/8" radius.
4. Pull box extension may be another pull box as long as the bottom edge of the pull box can fit into the cover opening.

DIMENSION TABLE										
PULL BOX	PULL BOX			COVER						
	Minimum Depth Box	Minimum Depth Extension	Maximum Weight	L	W	R	TE	TA	D	Maximum Weight
No. 3/2	12"	N/A	40 lb	1' - 3 3/8"	10 1/8"	1 3/8"	2"	1/8"	1 3/4"	30 lb
No. 5	12"	10"	55 lb	1' - 11 1/4"	1' - 1 3/4"	1 3/8"	2"	1/8"	1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 6 1/2"	1' - 5 1/2"	1 3/8"	2"	1/8"	2"	85 lb

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(PULL BOX)**  
NO SCALE

NSP ES-8A DATED JANUARY 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP ES-8A

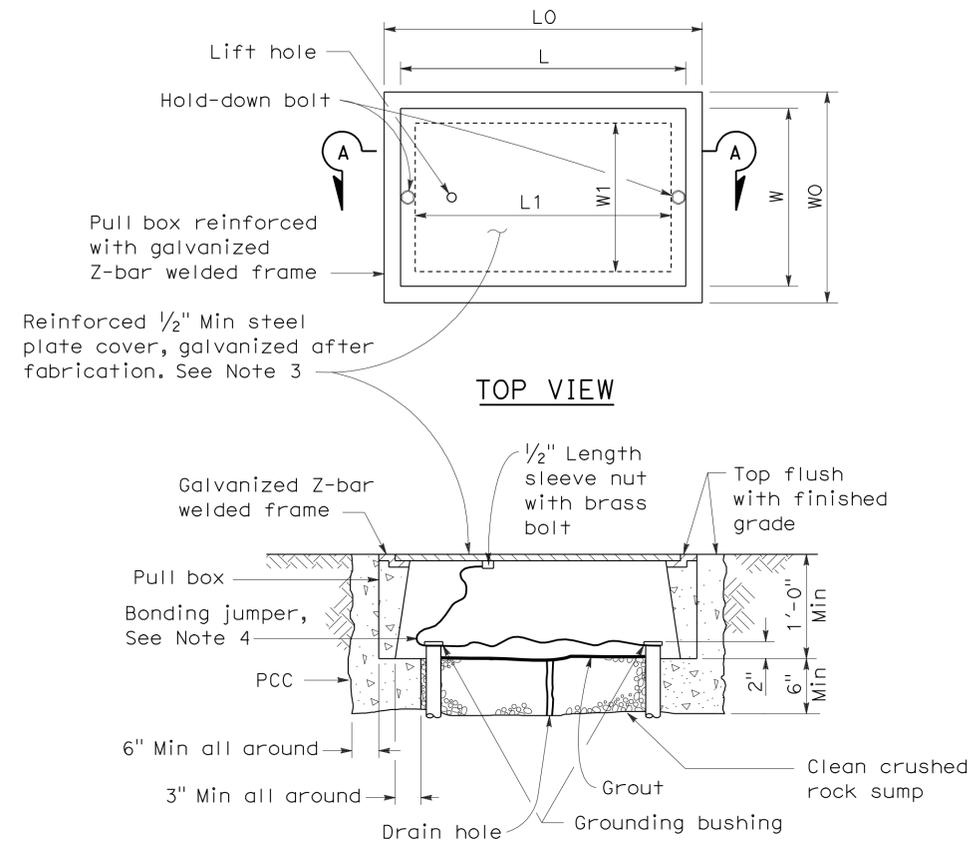
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	99	25.9/26.2	52	52

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 January 20, 2012  
 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 3-12-12

2006 NEW STANDARD PLAN NSP ES-8B



**No. 3 1/2(T), No. 5(T) AND No. 6(T) TRAFFIC PULL BOX**

**NOTES ON PULL BOXES:**

- Traffic pull box shall be provided with steel cover and special concrete footing. Steel cover shall have embossed non-skid pattern.
- Steel reinforcing shall be as regularly used in the standard products of the respective manufacturer.
- Pull box covers must be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" Sprinkler control circuits, 50 V or less; "CALTRANS" On all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service.
  - No. 3 1/2(T) pull box.
    - "SIGNAL" - Traffic signal circuits with or without street or sign lighting circuits.
    - "ST LIGHTING" - Street or sign lighting circuits where voltage is under 600 V.
  - No. 5(T) or 6(T) pull box.
    - "TRAFFIC SIGNAL" - Traffic signal circuits with or without street or sign lighting circuits.
    - "STREET LIGHTING" - Street or sign lighting circuits where voltage is under 600 V.
    - "STREET LIGHTING-HIGH VOLTAGE" - Street or sign lighting circuits where voltage is above 600 V.
    - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
    - "RAMP METER" - Ramp meter circuits.
    - "COUNT STATION" - Count or speed monitor circuits.
    - "COMMUNICATION" - Communication circuits.
    - "TOS COMMUNICATIONS" - TOS communications line.
    - "TOS POWER" - TOS power.
    - "TDC POWER" - Telephone demarcation cabinet power.
    - "CCTV" - Closed circuit television circuits.
    - "TMS" - Traffic monitoring station circuits.
    - "CMS" - Changeable message sign circuits.
    - "HAR" - Highway advisory radio circuits.
- Bonding jumper for metal covers shall be 3' long, minimum.
- The nominal dimensions of the opening in which the cover sets must be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes must be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces must be flush within 1/8".

PULL BOX	BOX						COVER				
	Minimum * Thickness	Minimum Depth Box and Extension	W0	L0	L1	W1	L **	W **	R	Edge Thickness	Edge Taper
No. 3 1/2(T)	1 1/2"	1'-0"	1'-5"± 1"	1'-8 7/8"±	1'-2 1/2"±	10 5/8"± 1"	1'-8"±	1'-1 3/4"±	0"	1/2"	None
No. 5(T)	1 3/4"	1'-0"	1'-11 1/2"± 1"	2'-5 1/2"±	1'-7"±	1'-1"± 1"	2'-3"±	1'-4"±	0"	1/2"	None
No. 6(T)	2"	1'-0"	2'-6"± 1"	2'-11 1/2"±	1'-11 1/2"±	1'-5"± 1"	2'-9"±	1'-8"±	0"	1/2"	None

\* Excluding conduit web      \*\* Top dimension

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (TRAFFIC RATED PULL BOX)**  
 NO SCALE

NSP ES-8B DATED JANUARY 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.