

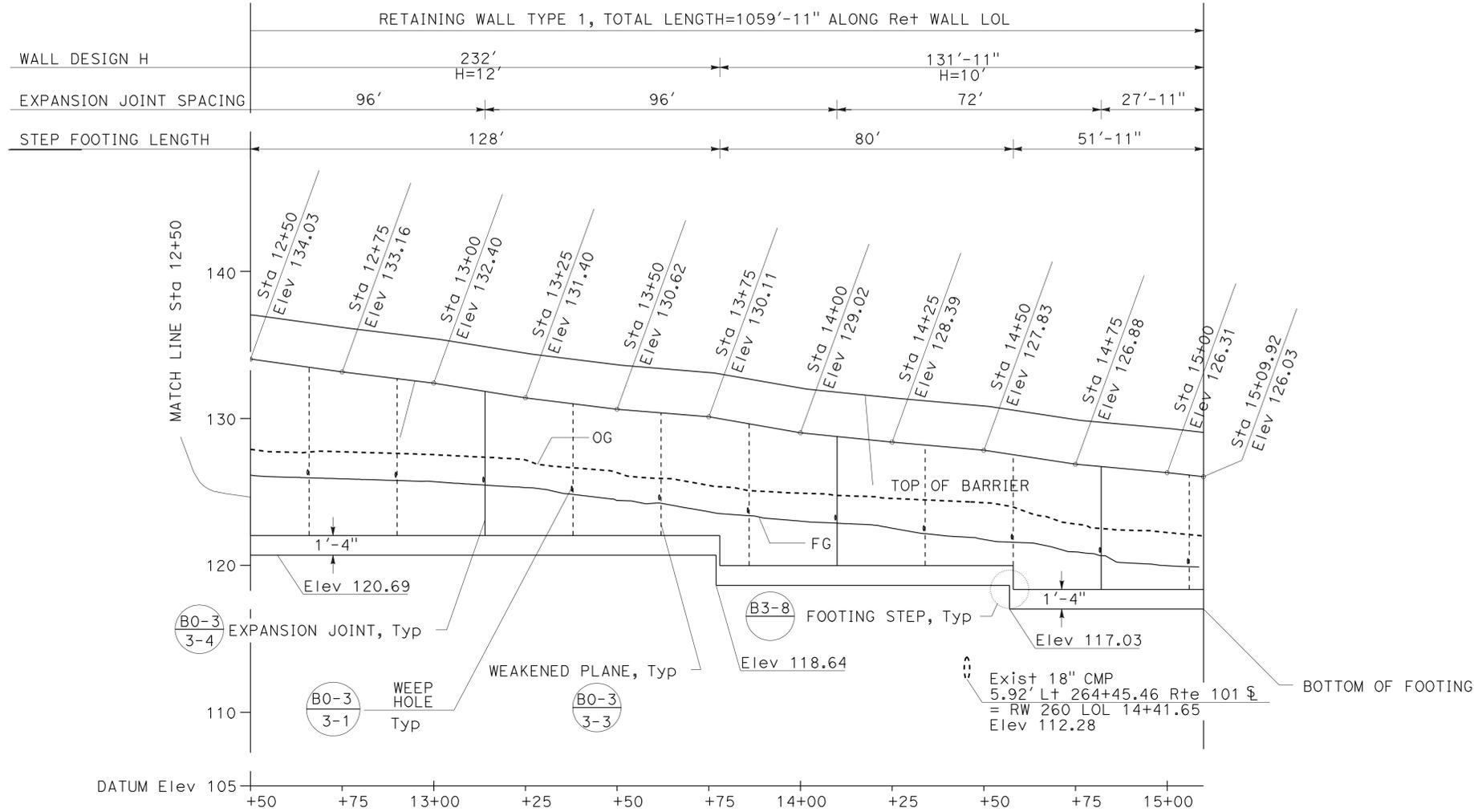
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	401	757

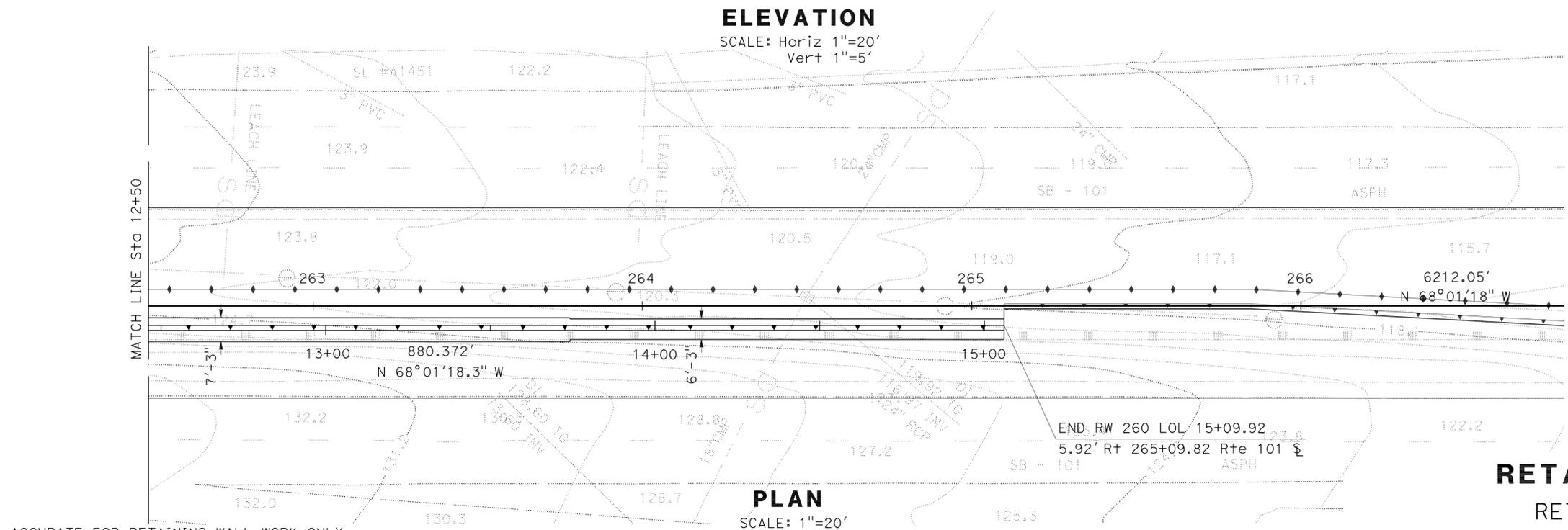
<i>O.C. Lee</i>	01-12-11
REGISTERED CIVIL ENGINEER	DATE
6-20-11	
PLANS APPROVAL DATE	

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: MINIMUM CONCRETE COVER FOR RETAINING WALL REINFORCEMENT SHALL BE 3"



**RETAINING WALL PLAN**

RETAINING WALL No. 260

SCALE AS SHOWN

**R-26**

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
<b>Caltrans</b>	J CHANG	R LEE	
	CHECKED BY	DATE REVISED	

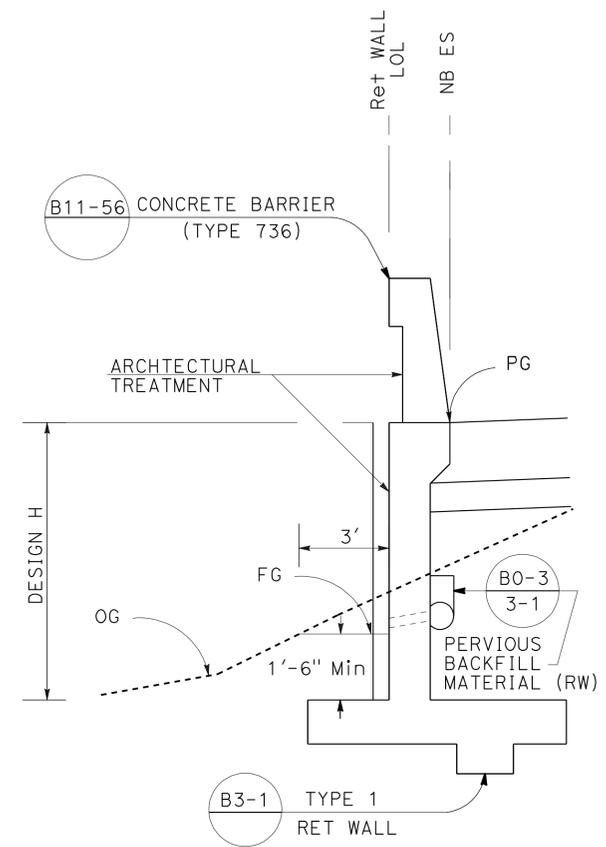
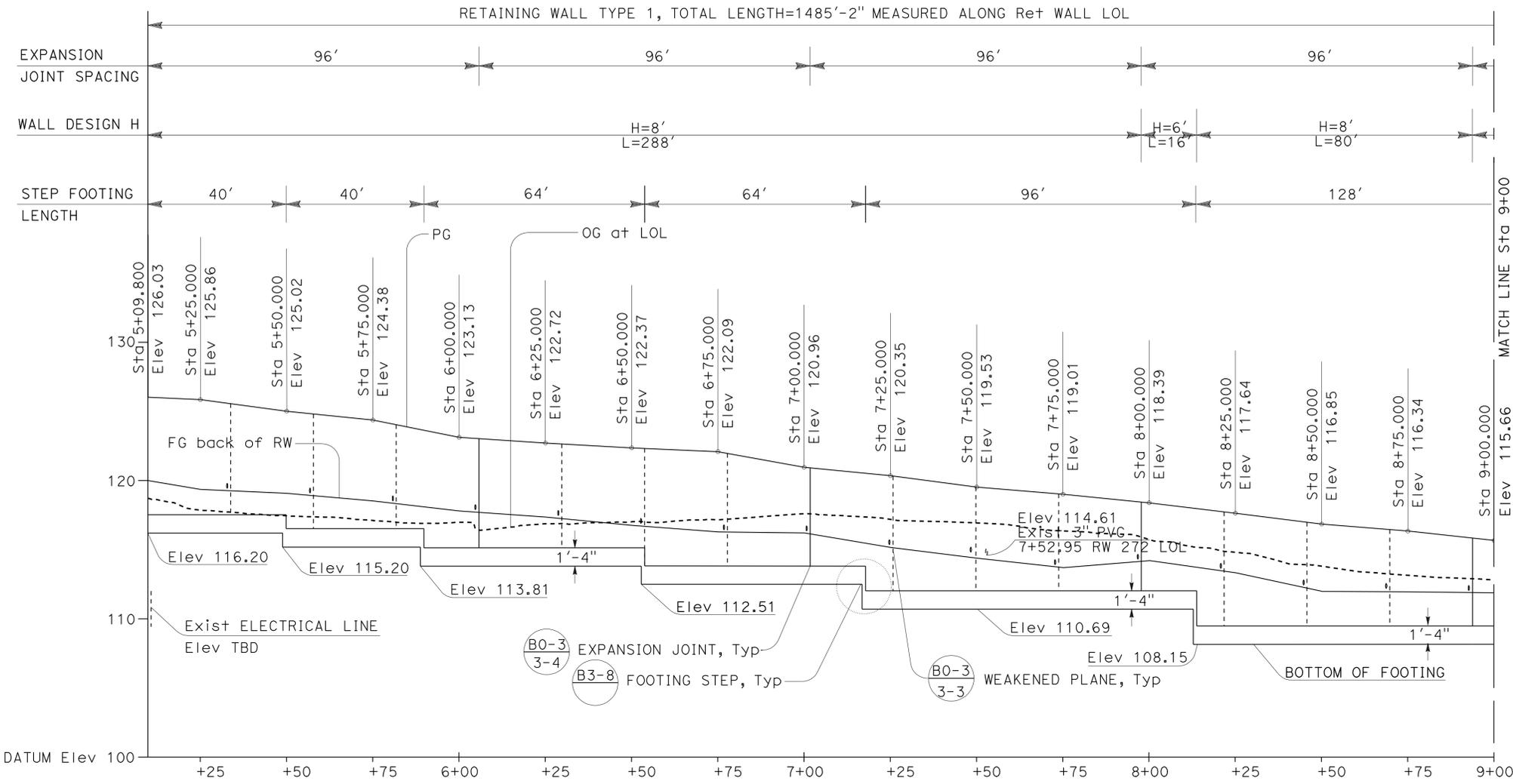
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	402	757

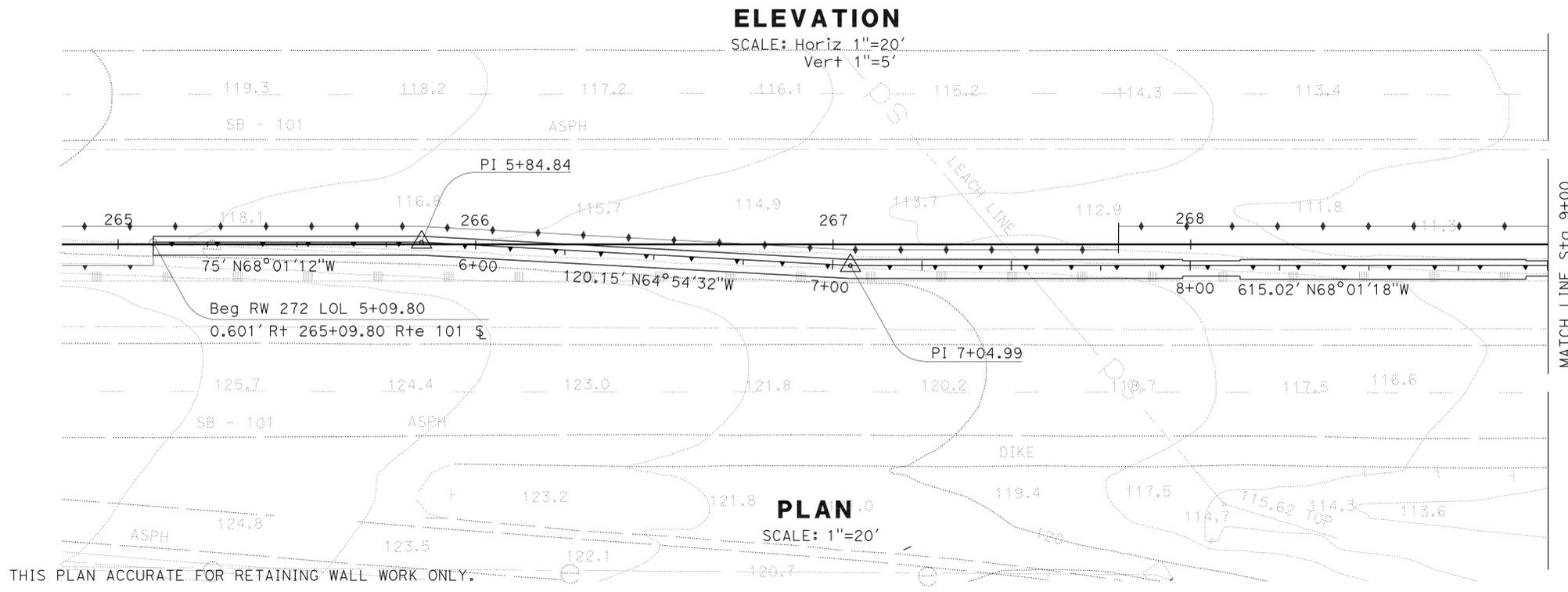
REGISTERED CIVIL ENGINEER	DATE
O.C. LEE	05-23-11
No. C28039	
Exp. 03/31/12	
CIVIL	

PLANS APPROVAL DATE: 6-20-11

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: MINIMUM CONCRETE COVER FOR RETAINING WALL REINFORCEMENT SHALL BE 3".



THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

**TYPICAL SECTION**  
NO SCALE

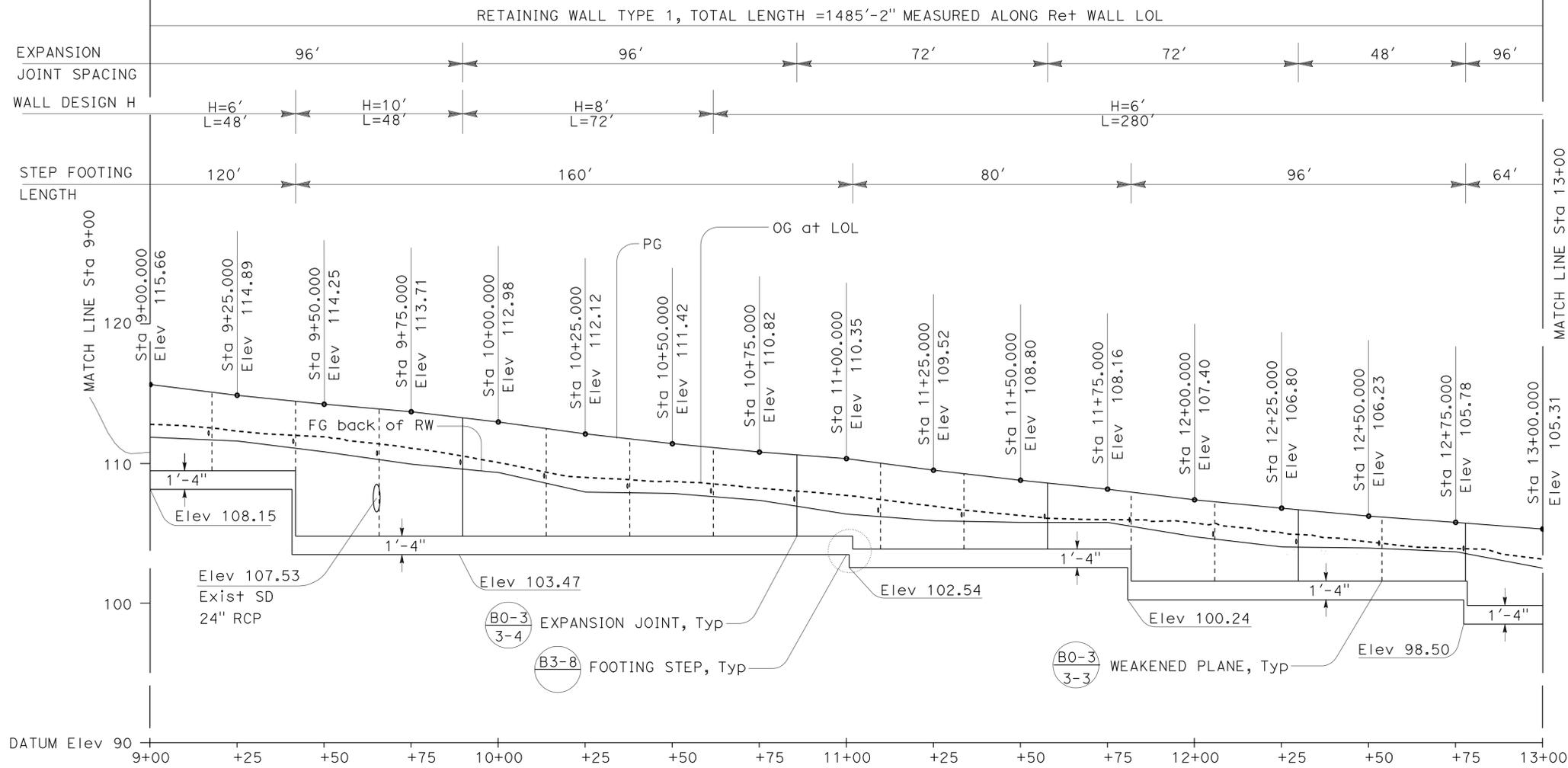
**RETAINING WALL PLAN**

RETAINING WALL No. 272  
SCALE AS SHOWN

**R-27**

FUNCTIONAL SUPERVISOR	OC LEE
DESIGNED BY	CHECKED BY
AINSLEY CHIANG	KAZ KAYODA
REVISOR	DATE

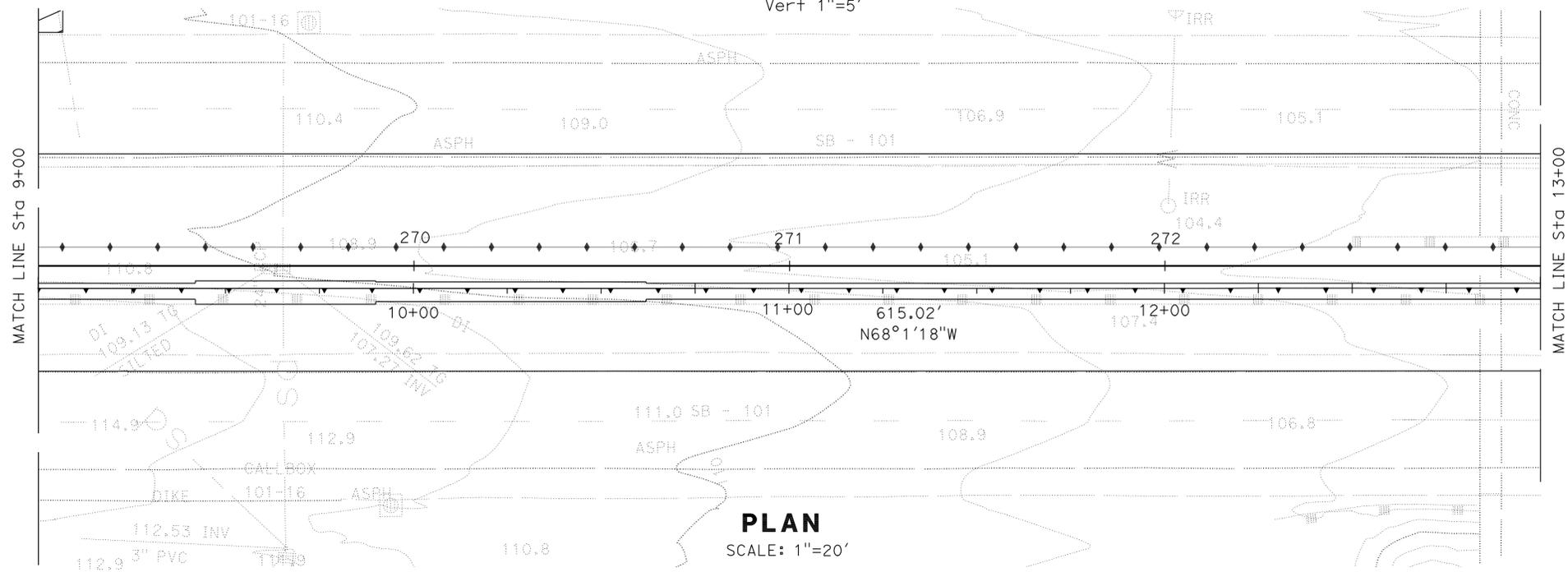
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	403	757
			05-23-11	REGISTERED CIVIL ENGINEER DATE	
			6-20-11	PLANS APPROVAL DATE	
			REGISTERED PROFESSIONAL ENGINEER O.C. LEE No. C28039 Exp. 03/31/12 CIVIL STATE OF CALIFORNIA		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



NOTE: MINIMUM CONCRETE COVER FOR RETAINING WALL REINFORCEMENT SHALL BE 3"

**ELEVATION**

SCALE: Horiz 1"=20'  
Vert 1"=5'



**PLAN**

SCALE: 1"=20'

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

**RETAINING WALL PLAN**

RETAINING WALL No. 272

SCALE AS SHOWN

**R-28**

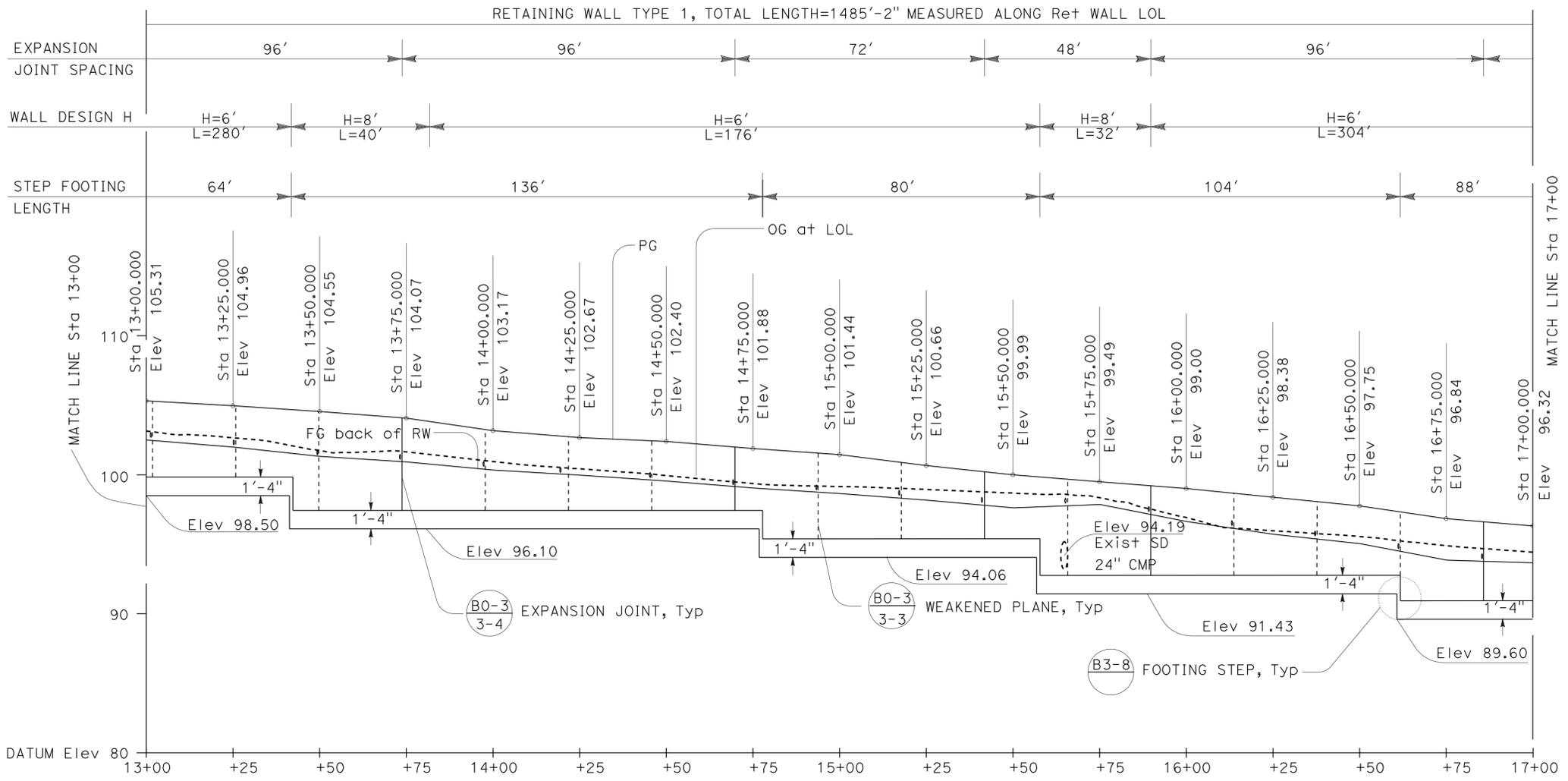
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	OC LEE
CALCULATED/DESIGNED BY	CHECKED BY
AINSLY CHANG	KAZ KAYODA
REVISOR	DATE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	404	757

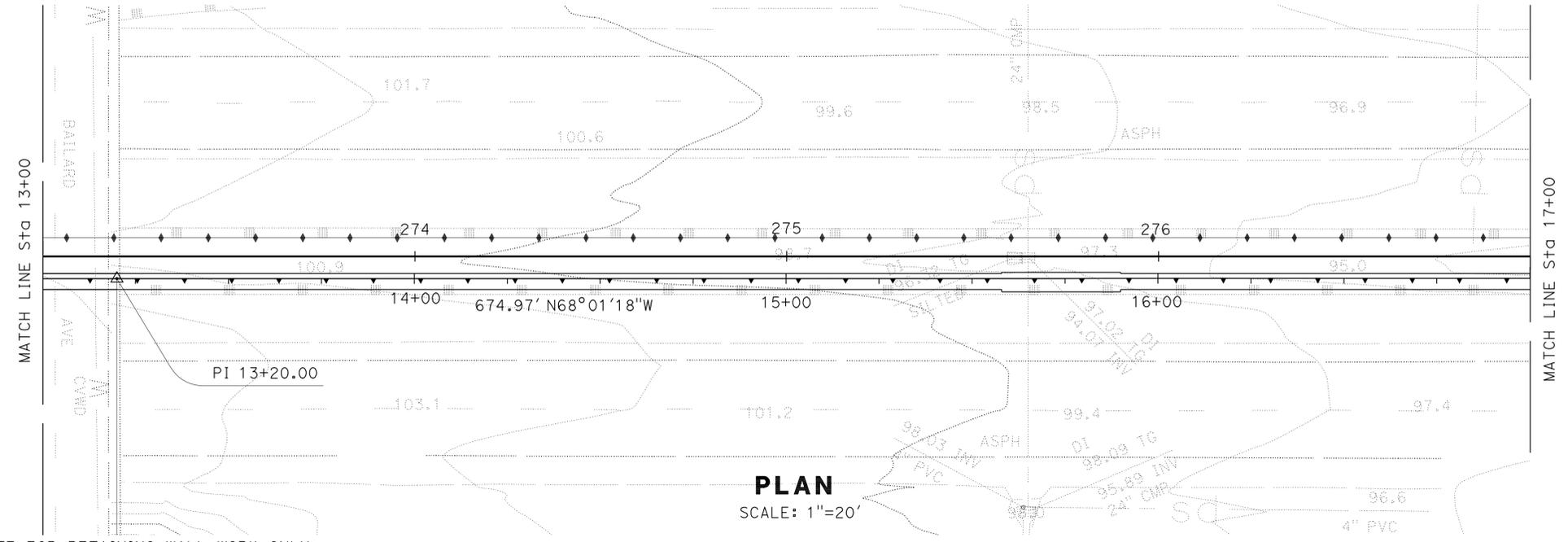
<i>O.C. Lee</i>	05-23-11
REGISTERED CIVIL ENGINEER	DATE
6-20-11	
PLANS APPROVAL DATE	

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.



**ELEVATION**  
SCALE: Horiz 1"=20'  
Vert 1"=5'

NOTE: MINIMUM CONCRETE COVER FOR RETAINING WALL REINFORCEMENT SHALL BE 3".



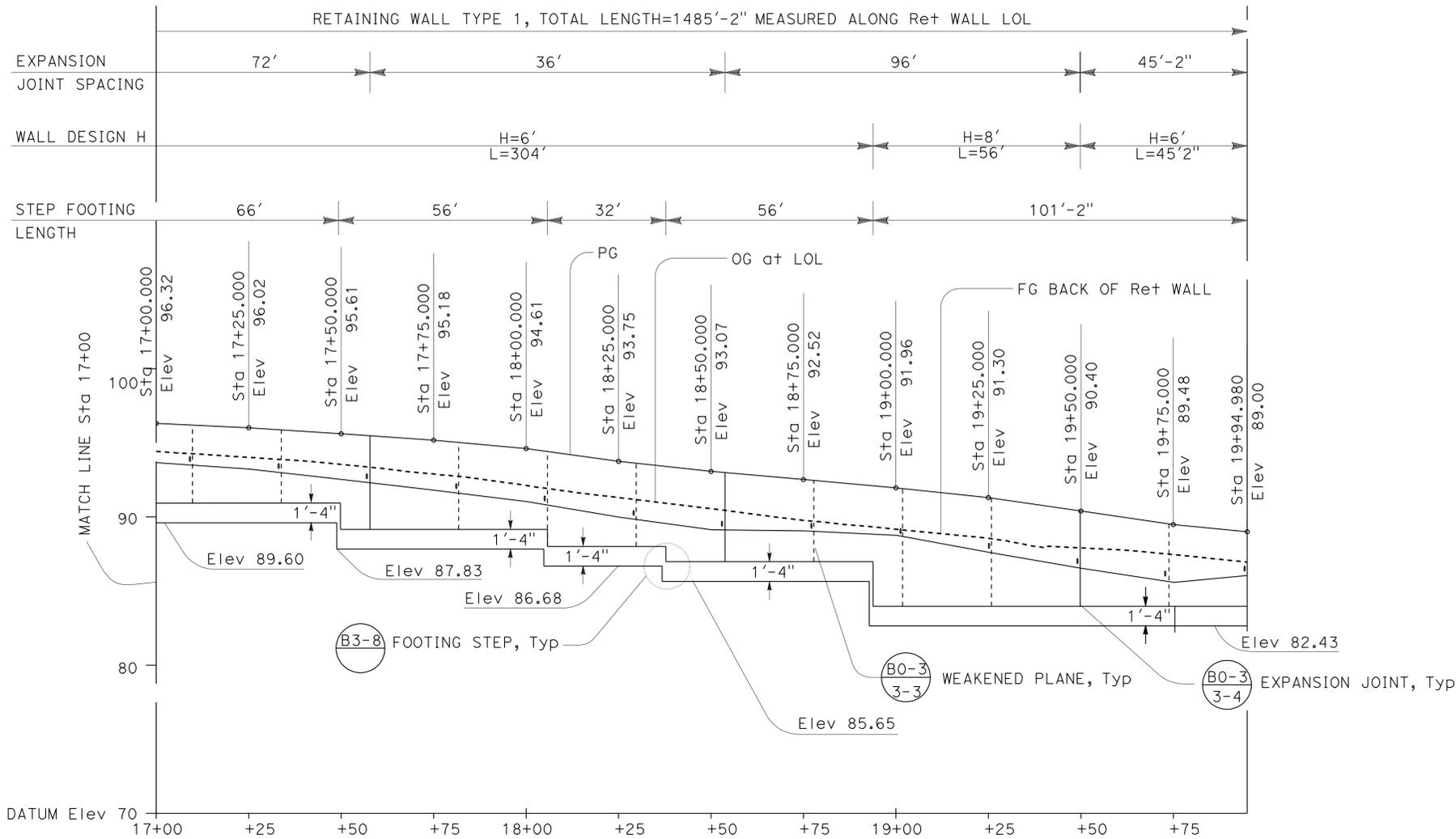
**PLAN**  
SCALE: 1"=20'

**RETAINING WALL PLAN**  
RETAINING WALL No. 272  
SCALE AS SHOWN

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

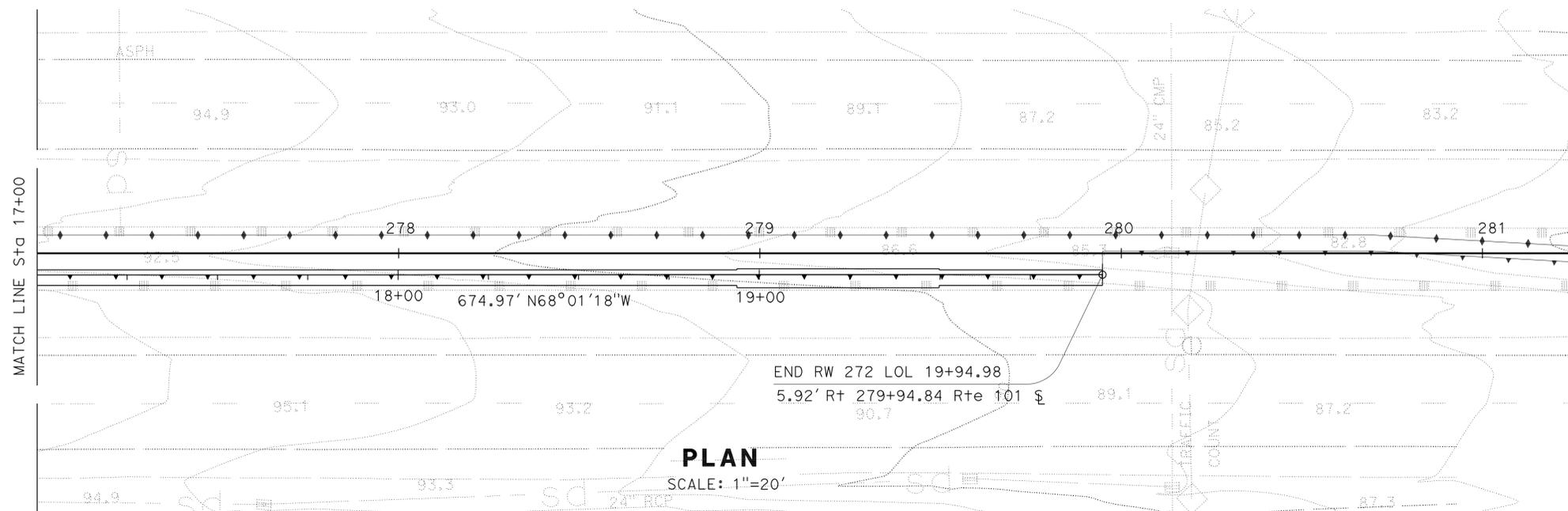
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: OC LEE  
 CALCULATED/DESIGNED BY: AINSLEY CHIANG  
 CHECKED BY: KAZ KAYODA  
 REVISED BY: AINSLEY CHIANG  
 DATE REVISED: KAZ KAYODA

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	405	757
			05-23-11	REGISTERED CIVIL ENGINEER DATE	
			6-20-11	PLANS APPROVAL DATE	
					
<small>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.</small>					



NOTE: MINIMUM CONCRETE COVER FOR RETAINING WALL REINFORCEMENT SHALL BE 3"

**ELEVATION**  
SCALE: Horiz 1"=20'  
Vert 1"=5'



**PLAN**  
SCALE: 1"=20'

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

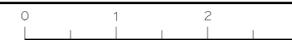
**RETAINING WALL PLAN**

RETAINING WALL No. 272

SCALE AS SHOWN

**R-30**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGN
	OC LEE	
CALCULATED/DESIGNED BY	CHECKED BY	
AINSLY CHANG	KAZ KAYODA	
REVISOR	DATE	



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	406	757

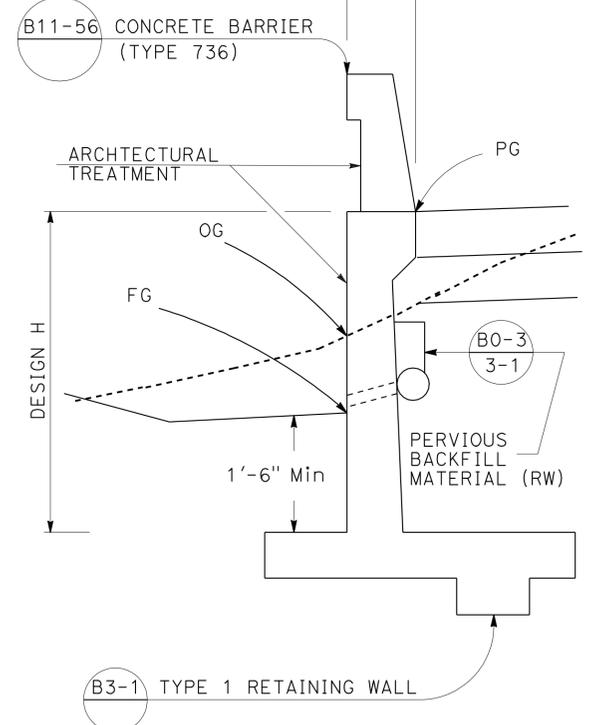
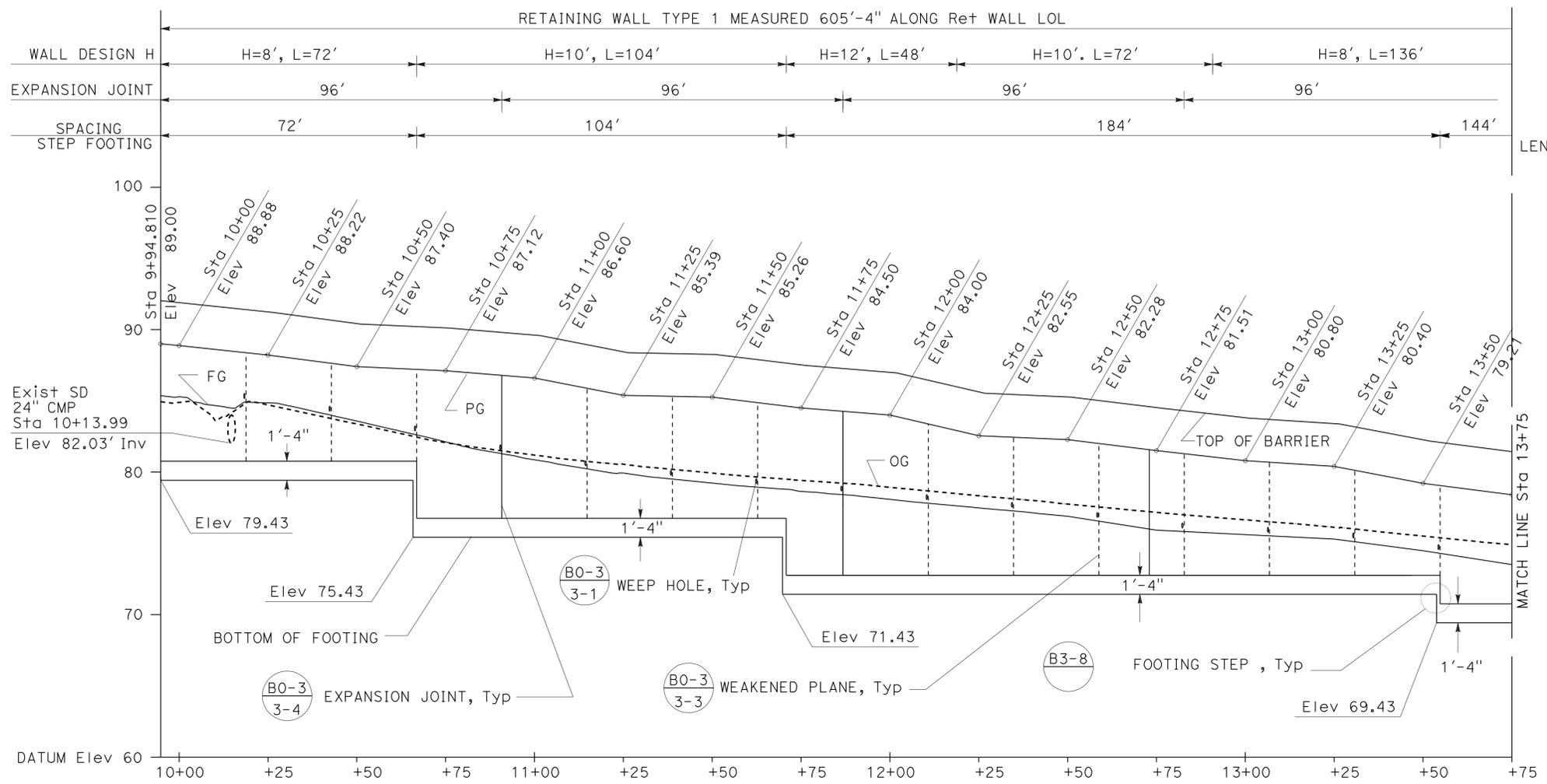
<i>Lee</i>	05-20-11
REGISTERED CIVIL ENGINEER	DATE
6-20-11	PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
O.C. LEE
No. C28039
Exp. 03/31/12
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.

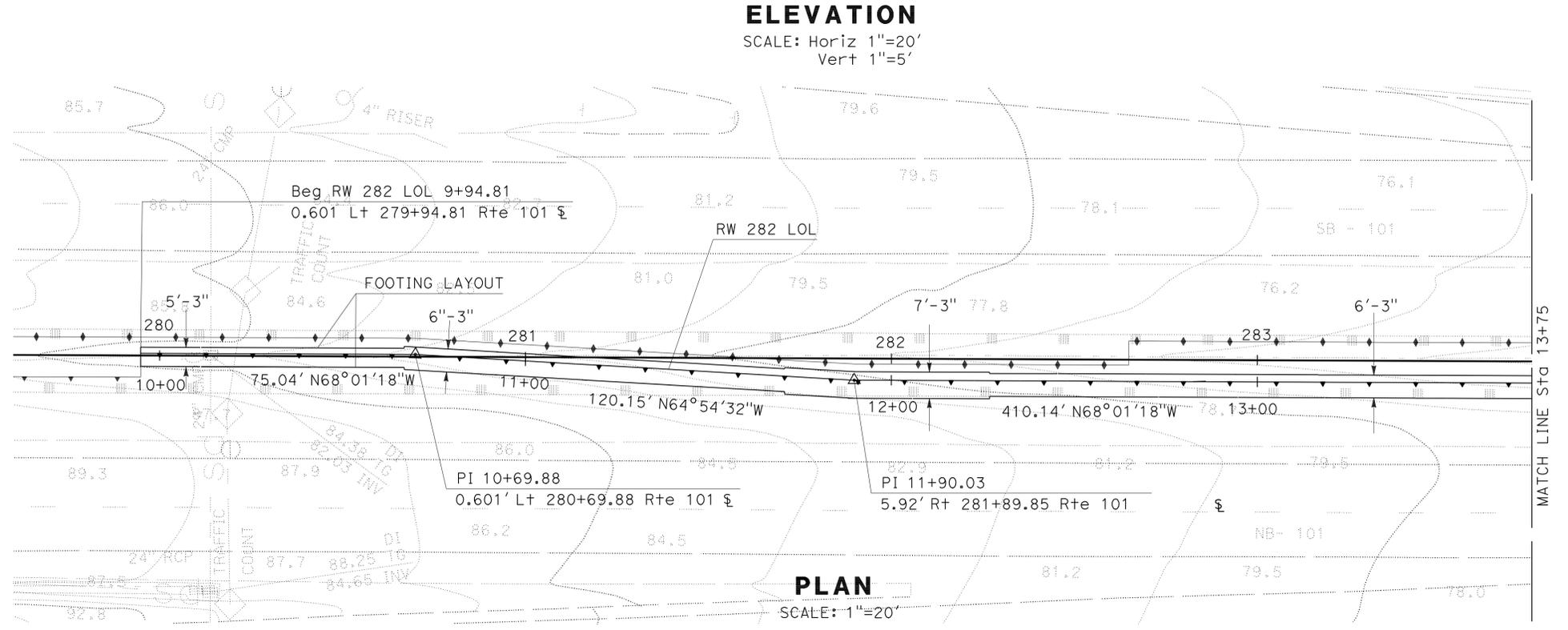
NOTE: MINIMUM CONCRETE COVER FOR RETAINING WALL REINFORCEMENT SHALL BE 3"



**TYPICAL SECTION**  
NO SCALE

**RETAINING WALL PLAN**  
RETAINING WALL No. 282

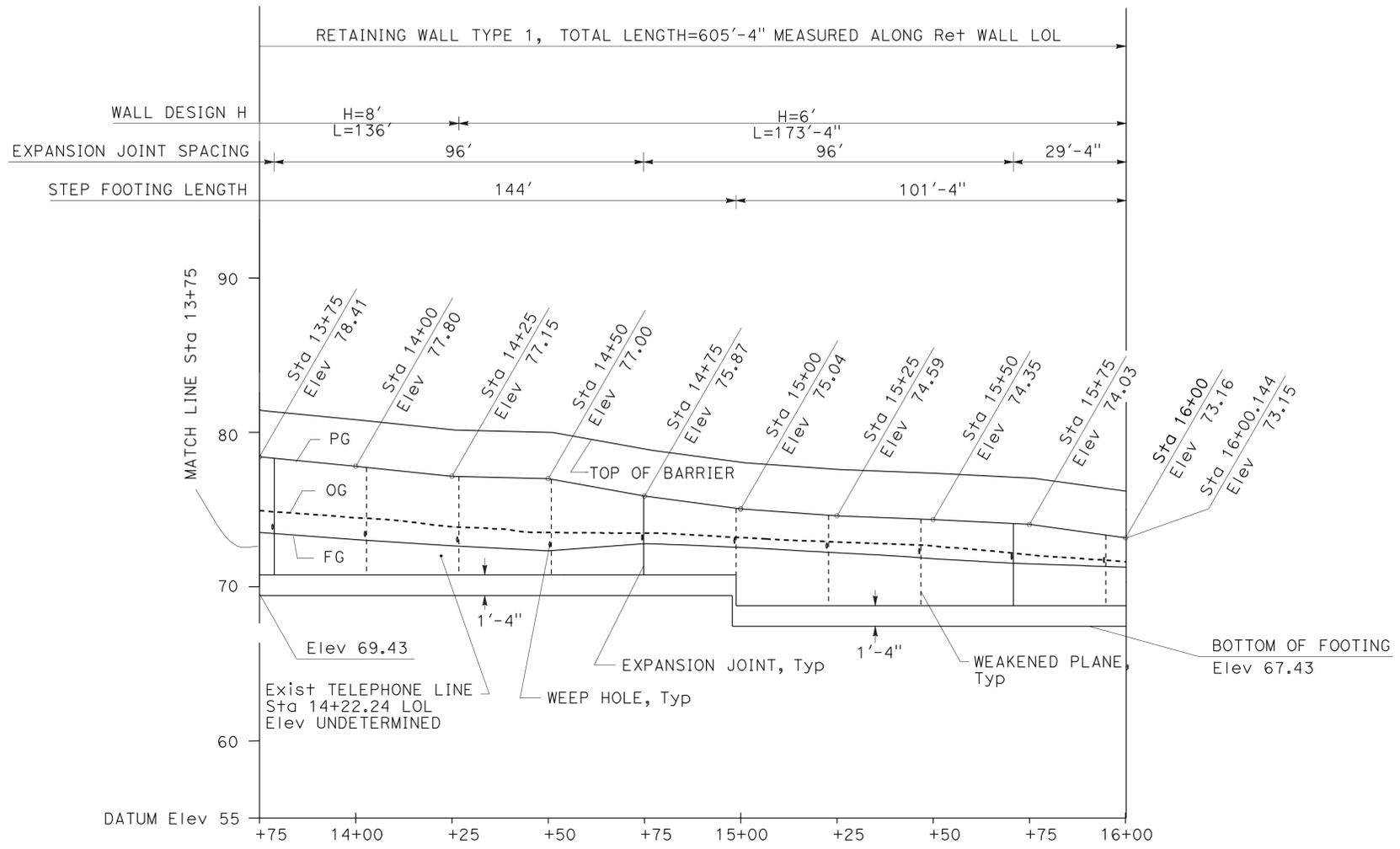
SCALE AS SHOWN **R-31**



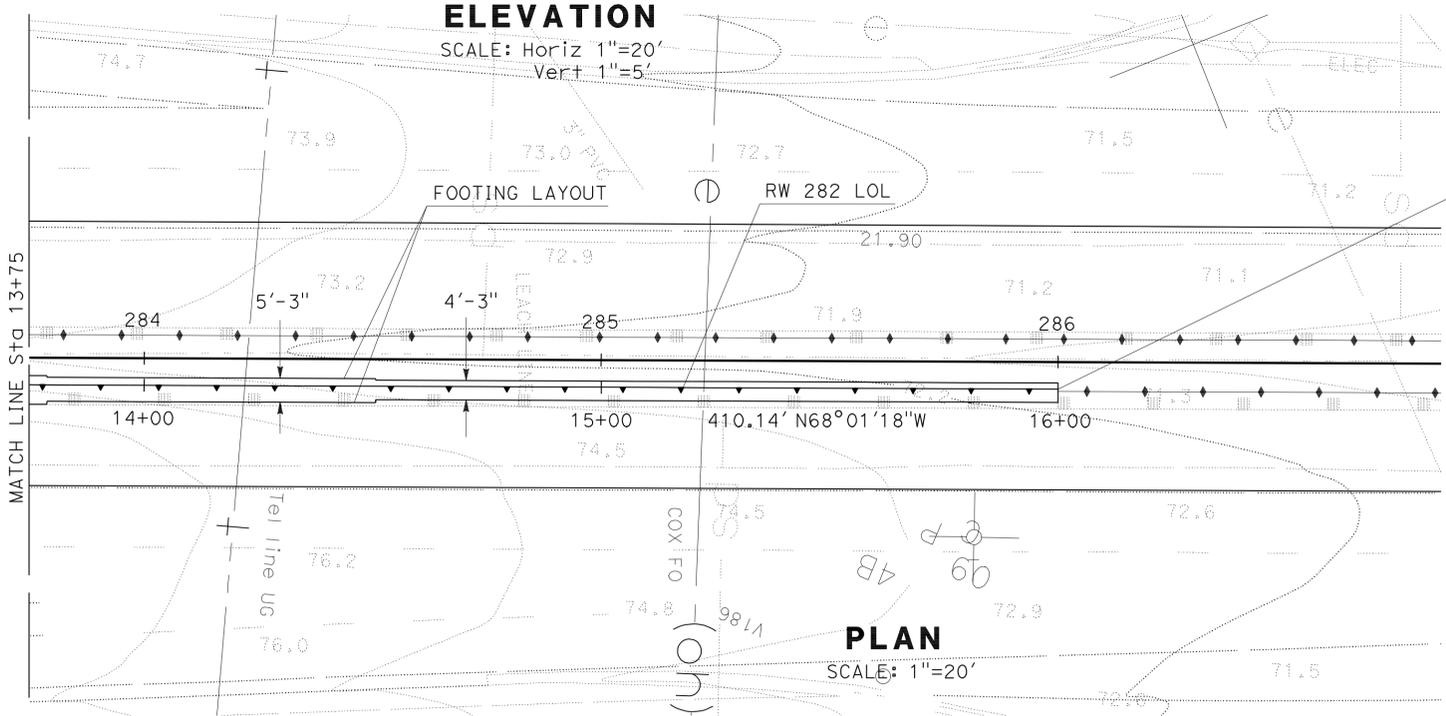
THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	OC LEE
CALCULATED/DESIGNED BY	CHECKED BY
ANTOINE NADER	RICKY LEE
REVISOR	DATE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	407	757
			01-12-11	REGISTERED CIVIL ENGINEER DATE	
			6-20-11	PLANS APPROVAL DATE	
					
<small>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.</small>					



NOTE: MINIMUM CONCRETE COVER FOR RETAINING WALL REINFORCEMENT SHALL BE 3'



**RETAINING WALL PLAN**  
 RETAINING WALL No. 282  
 SCALE AS SHOWN **R-32**

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: OC LEE  
 CALCULATED/DESIGNED BY: CHECKED BY:  
 ANTOINE NADER: RICKY LEE  
 REVISED BY: DATE REVISOR:

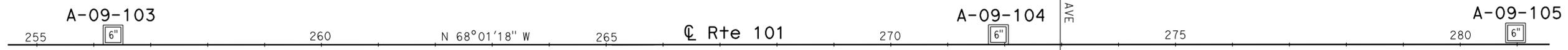
**BENCH MARK**

For Boring A-09-103  
 Datums: NAD '83 and NAVD '88  
 Well cap located at 17.54' Lt  
 Sta 256+33.38 @ Rte 101.  
 N 1966426.889  
 E 6111297.631  
 Elev 140.902'

For Boring A-09-104  
 Datums: NAD '83 and NAVD '88  
 Well cap located at 17.73' Lt  
 Sta 270+88.38 @ Rte 101.  
 N 1966971.246  
 E 6109948.303  
 Elev 107.096'

For Boring A-09-105  
 Datums: NAD '83 and NAVD '88  
 Well cap located at 20.50' Lt  
 Sta 280+96.68 @ Rte 101.  
 N 1967346.044  
 E 6109012.239  
 Elev 82.774

← To Ventura

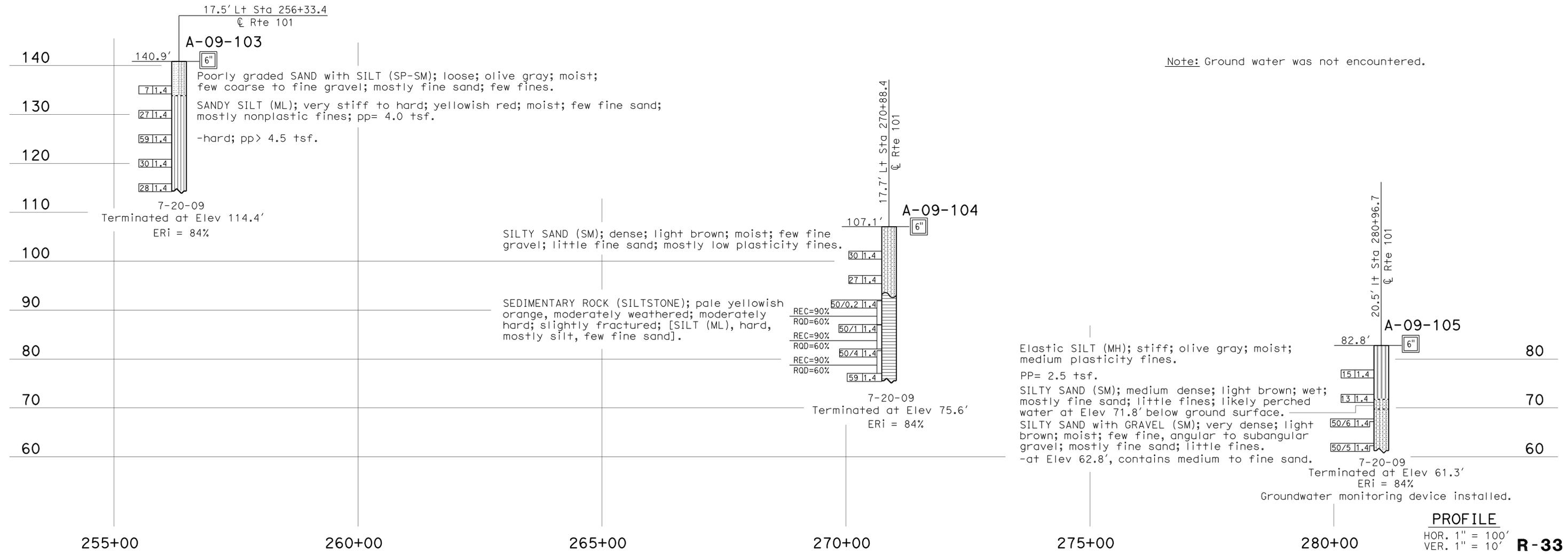


**PLAN**  
1" = 100'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	408	757

4-7-10  
 REGISTERED CIVIL ENGINEER  
 Harihar Shiwakoti  
 No. C76035  
 PLANS APPROVAL DATE  
 6-20-11  
 Exp. 6-30-10  
 CIVIL  
 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.

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2007).



**PROFILE**  
 HOR. 1" = 100'  
 VER. 1" = 10' **R-33**

<b>ENGINEERING SERVICES</b>		<b>GEOTECHNICAL SERVICES</b>		<b>STATE OF CALIFORNIA</b>		<b>DIVISION OF ENGINEERING SERVICES</b>		<b>BRIDGE NO.</b>		<b>RETAINING WALLS 260, 272, 282</b>	
FUNCTIONAL SUPERVISOR		DRAWN BY: C. Christian, I.G.-Remmen 11/09		FIELD INVESTIGATION BY:		STRUCTURE DESIGN		POST MILES		<b>LOG OF TEST BORINGS 1 OF 4</b>	
NAME: D. Jang		CHECKED BY: H. Liu		H. Shiwakoti		DESIGN BRANCH		0.0/2.2			
06S CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 07 EA 260701		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET OF	

USERNAME => s124496 DATE PLOTTED => 25-JUN-2011 TIME PLOTTED => 06:54  
 FILE => 726070qq033.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	409	757

4-7-10  
 REGISTERED CIVIL ENGINEER  
 6-20-11  
 PLANS APPROVAL DATE

Harinar Shiwakoti  
 No. C76035  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA

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

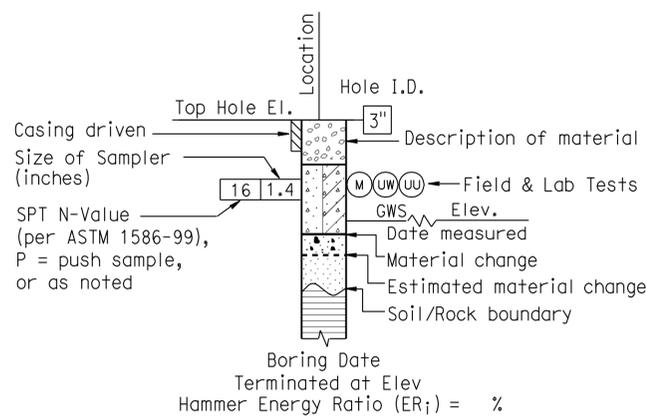
CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS				
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

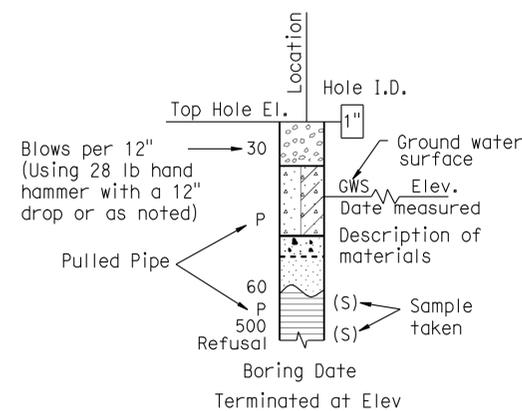
BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring
	R	Rotary drilled boring
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778-95)
	O	Other

Note: Size in inches.

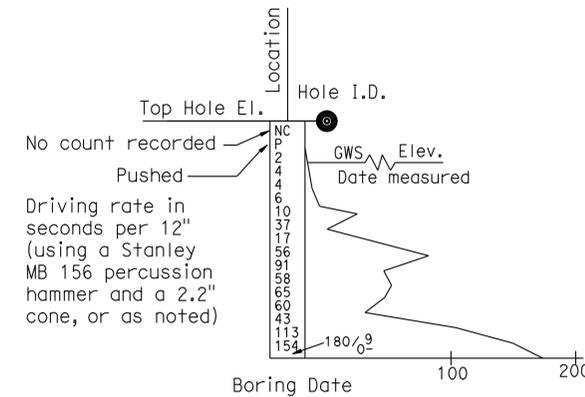
PLASTICITY OF FINE-GRAINED SOILS	
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



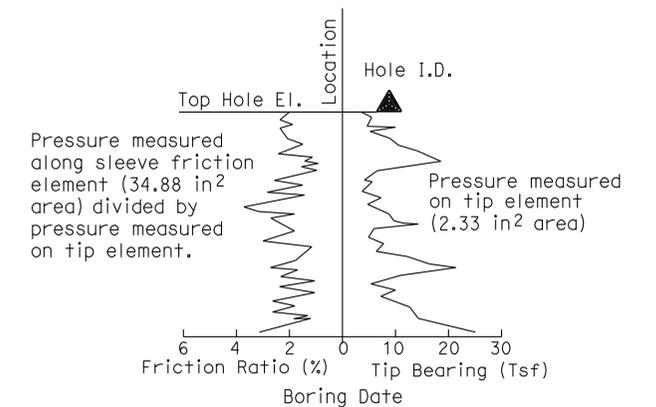
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

R-34

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. POST MILE 0.0/2.2	RETAINING WALLS 260, 272, 282 LOG OF TEST BORINGS 2 OF 4
PREPARED BY: I.G-Remmen 12/09		CU 07 EA 260701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET OF

GS LOTB SOIL LEGEND ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 FILE => 726070qq034.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	410	757

4-7-10  
 REGISTERED CIVIL ENGINEER  
 6-20-11  
 PLANS APPROVAL DATE  
 Harihar Shiwakoti  
 No. C76035  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

GROUP SYMBOLS AND NAMES					
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	Well-graded GRAVEL		CL		Lean CLAY
	Well-graded GRAVEL with SAND				Lean CLAY with SAND
	Poorly graded GRAVEL		CL		Lean CLAY with GRAVEL
	Poorly graded GRAVEL with SAND				SANDY lean CLAY
	Well-graded GRAVEL with SILT		CL-ML		SILTY CLAY
	Well-graded GRAVEL with SILT and SAND				SILTY CLAY with SAND
	Well-graded GRAVEL with CLAY (or SILTY CLAY)		CL-ML		SILTY CLAY with GRAVEL
	Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)				SANDY SILTY CLAY
	Poorly graded GRAVEL with SILT		ML		SILT
	Poorly graded GRAVEL with SILT and SAND				SILT with SAND
	Poorly graded GRAVEL with CLAY (or SILTY CLAY)		ML		SILT with GRAVEL
	Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)				SANDY SILT
	SILTY GRAVEL		OL		ORGANIC lean CLAY
	SILTY GRAVEL with SAND				ORGANIC lean CLAY with SAND
	CLAYEY GRAVEL		OL		ORGANIC lean CLAY with GRAVEL
	CLAYEY GRAVEL with SAND				SANDY ORGANIC lean CLAY
	SILTY, CLAYEY GRAVEL		OL		SANDY ORGANIC lean CLAY with GRAVEL
	SILTY, CLAYEY GRAVEL with SAND				GRAVELLY ORGANIC lean CLAY
	Well-graded SAND		CH		ORGANIC lean CLAY with SAND
	Well-graded SAND with GRAVEL				GRAVELLY ORGANIC lean CLAY with SAND
	Poorly graded SAND		CH		ORGANIC lean CLAY with GRAVEL
	Poorly graded SAND with GRAVEL				SANDY ORGANIC lean CLAY
	Well-graded SAND with SILT		MH		SANDY fat CLAY
	Well-graded SAND with SILT and GRAVEL				SANDY fat CLAY with GRAVEL
	Well-graded SAND with CLAY (or SILTY CLAY)		MH		GRAVELLY fat CLAY
	Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)				GRAVELLY fat CLAY with SAND
	Poorly graded SAND with SILT		OH		Elastic SILT
	Poorly graded SAND with SILT and GRAVEL				Elastic SILT with SAND
	Poorly graded SAND with CLAY (or SILTY CLAY)		OH		Elastic SILT with GRAVEL
	Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)				SANDY elastic SILT
	SILTY SAND		OH		SANDY elastic SILT with GRAVEL
	SILTY SAND with GRAVEL				GRAVELLY elastic SILT
	CLAYEY SAND		OH		GRAVELLY elastic SILT with SAND
	CLAYEY SAND with GRAVEL				ORGANIC fat CLAY
	SILTY, CLAYEY SAND		OH		ORGANIC fat CLAY with SAND
	SILTY, CLAYEY SAND with GRAVEL				ORGANIC fat CLAY with GRAVEL
	PEAT		OL/OH		SANDY ORGANIC fat CLAY
	PEAT				SANDY ORGANIC fat CLAY with GRAVEL
	COBBLES		OL/OH		GRAVELLY ORGANIC fat CLAY
	COBBLES and BOULDERS				GRAVELLY ORGANIC fat CLAY with SAND

FIELD AND LABORATORY TESTING	
(C)	Consolidation (ASTM D 2435)
(CL)	Collapse Potential (ASTM D 5333)
(CP)	Compaction Curve (CTM 216)
(CR)	Corrosivity Testing (CTM 643, CTM 422, CTM 417)
(CU)	Consolidated Undrained Triaxial (ASTM D 4767)
(DS)	Direct Shear (ASTM D 3080)
(EI)	Expansion Index (ASTM D 4829)
(M)	Moisture Content (ASTM D 2216)
(OC)	Organic Content-% (ASTM D 2974)
(P)	Permeability (CTM 220)
(PA)	Particle Size Analysis (ASTM D 422)
(PI)	Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
(PL)	Point Load Index (ASTM D 5731)
(PM)	Pressure Meter
(PP)	Pocket Penetrometer
(R)	R-Value (CTM 301)
(SE)	Sand Equivalent (CTM 217)
(SG)	Specific Gravity (AASHTO T 100)
(SL)	Shrinkage Limit (ASTM D 427)
(SW)	Swell Potential (ASTM D 4546)
(TV)	Pocket Torvane
(UC)	Unconfined Compression-Soil (ASTM D 2166)
(UU)	Unconfined Compression-Rock (ASTM D 2938)
(UW)	Unconsolidated Undrained Triaxial (ASTM D 2850)
(UW)	Unit Weight (ASTM D 4767)
(VS)	Vane Shear (AASHTO T 223)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N <sub>60</sub> (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE	
Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS	
Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE		
Description	Size	
Boulder	> 12"	
Cobble	3" to 12"	
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	411	757

4-7-10  
 REGISTERED CIVIL ENGINEER  
 6-20-11  
 PLANS APPROVAL DATE  
 Harihar Shiwakoti  
 No. C76035  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

**PERCENT CORE RECOVERY (REC) & ROCK QUALITY DESIGNATION (RQD)**

REC =  $\frac{\sum \text{Length of the recovered core pieces (inches)}}{\text{Total length of core run (inches)}} \times 100\%$

RQD =  $\frac{\sum \text{Length of intact core pieces} \geq 4''}{\text{Total length of core run (inches)}} \times 100\%$

Boring Date

**RELATIVE STRENGTH OF INTACT ROCK**

Term	Uniaxial Compressive Strength (PSI)
Extremely Strong	> 30,000
Very Strong	14,500 - 30,000
Strong	7,000 - 14,500
Medium Strong	3,500 - 7,000
Weak	700 - 3,500
Very Weak	150 - 700
Extremely Weak	< 150

**BEDDING SPACING**

Description	Thickness / Spacing
Massive	Greater than 10 ft
Very thickly bedded	3 to 10 ft
Thickly bedded	1 to 3 ft
Moderately bedded	3-5/8" to 1 ft
Thinly bedded	1-1/4" to 3-5/8"
Very thinly bedded	3/8" to 1-1/4"
Laminated	Less than 3/8"

**LEGEND OF ROCK MATERIALS**

- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

**ROCK HARDNESS**

Description	Criteria
Extremely Hard	Specimen cannot be scratched with a pocket knife or sharp pick; can only be chipped with repeated heavy hammer blows.
Very Hard	Specimen cannot be scratched with a pocket knife or sharp pick. Breaks with repeated heavy hammer blows.
Hard	Specimen can be scratched with a pocket knife or sharp pick with difficulty (heavy pressure). Heavy hammer blows required to break specimen.
Moderately Hard	Specimen can be scratched with pocket knife or sharp pick with light or moderate pressure. Core breaks with moderate hammer blows.
Moderately Soft	Specimen can be grooved 1/6" deep with a pocket knife or sharp pick with moderate or heavy pressure. Breaks with light hammer blow or heavy manual pressure.
Soft	Specimen can be grooved or gouged easily by a pocket knife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
Very Soft	Specimen can be readily indented, grooved or gouged with fingernail, or carved with a pocket knife. Breaks with light manual pressure.

**WEATHERING DESCRIPTORS FOR INTACT ROCK**

Description	Diagnostic features				General Characteristics	
	Chemical Weathering-Discoloration and/or oxidation		Mechanical Weathering-Grain boundary conditions (disaggregation) primarily for granitics and some coarse-grained sediments	Texture and Solutioning		
	Body of Rock	Fracture Surfaces		Texture	Solutioning	
Fresh	No discoloration, not oxidized.	No discoloration or oxidation.	No separation, intact (tight).	No change.	No solutioning.	Hammer rings when crystalline rocks are struck.
Slightly Weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull.	Minor to complete discoloration or oxidation of most surfaces.	No visible separation, intact (tight).	Preserved.	Minor leaching of some soluble minerals may be noted.	Hammer rings when crystalline rocks are struck. Body of rock not weakened.
Moderately Weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty," feldspar crystals are "cloudy."	All fracture surfaces are discolored or oxidized.	Partial separation of boundaries visible.	Generally preserved.	Soluble minerals may be mostly leached.	Hammer does not ring when rock is struck. Body of rock is slightly weakened.
Intensely Weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in-situ disaggregation, see grain boundary conditions.	All fracture surfaces are discolored or oxidized, surfaces friable.	Partial separation, rock is friable; in semiarid conditions granitics are disaggregated.	Texture altered by chemical disintegration (hydration, argillation).	Leaching of soluble minerals may be complete.	Dull sound when struck with hammer, usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures, or veinlets. Rock is significantly weakened.
Decomposed	Discolored or oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay.		Complete separation of grain boundaries (disaggregated).	Resembles a soil, partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete.		Can be granulated by hand. Resistant minerals such as quartz may be present as "stringers" or "dikes."

Combination descriptors (such as "slightly weathered to fresh") are permissible where equal distribution of both weathering characteristics is present over significant intervals or where characteristics present are "in between" the diagnostic feature. However, combination descriptors should not be used where significant, identifiable zones can be delineated. Only two adjacent descriptors may be combined. "Very intensely weathered" is the combination descriptor for "intensely weathered to decomposed."

**FRACTURE DENSITY**

Description	Observed Fracture Density
Unfractured	No fractures.
Very slightly fractured	Lengths greater than 3 feet.
Slightly fractured	Lengths from 1 to 3 feet with few lengths less than 1 foot or greater than 3 feet.
Moderately fractured	Lengths mostly in 4" to 1 foot range with most lengths about 8"
Intensely fractured	Lengths average from 1 to 4" with scattered fragmented intervals with lengths less than 4"
Very intensely fractured	Mostly chips and fragments with a few scattered short core lengths.

Combination descriptors (such as "Very intensely to intensely fractured") are used where equal distribution of both fracture density characteristics is present over a significant interval or exposure, or where characteristics are "in between" the descriptor definitions. Only two adjacent descriptors may be combined.

<b>ENGINEERING SERVICES</b>	<b>GEOTECHNICAL SERVICES</b>	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	<b>DIVISION OF ENGINEERING SERVICES</b> STRUCTURE DESIGN <b>DESIGN BRANCH</b>	BRIDGE NO. POST MILE 0.0/2.2	<b>RETAINING WALLS 260, 272, 282</b> <b>LOG OF TEST BORINGS 4 OF 4</b>
PREPARED BY: I.G-Remmen 12/09		CU 07 EA 260701	FILE => 726070qo036.dgn	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES

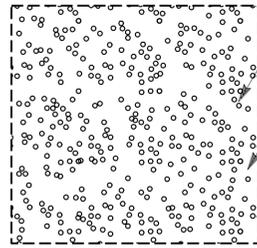
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3

GS LOTB ROCK LEGEND

USERNAME => s124496 DATE PLOTTED => 25-JUN-2011 TIME PLOTTED => 06:55

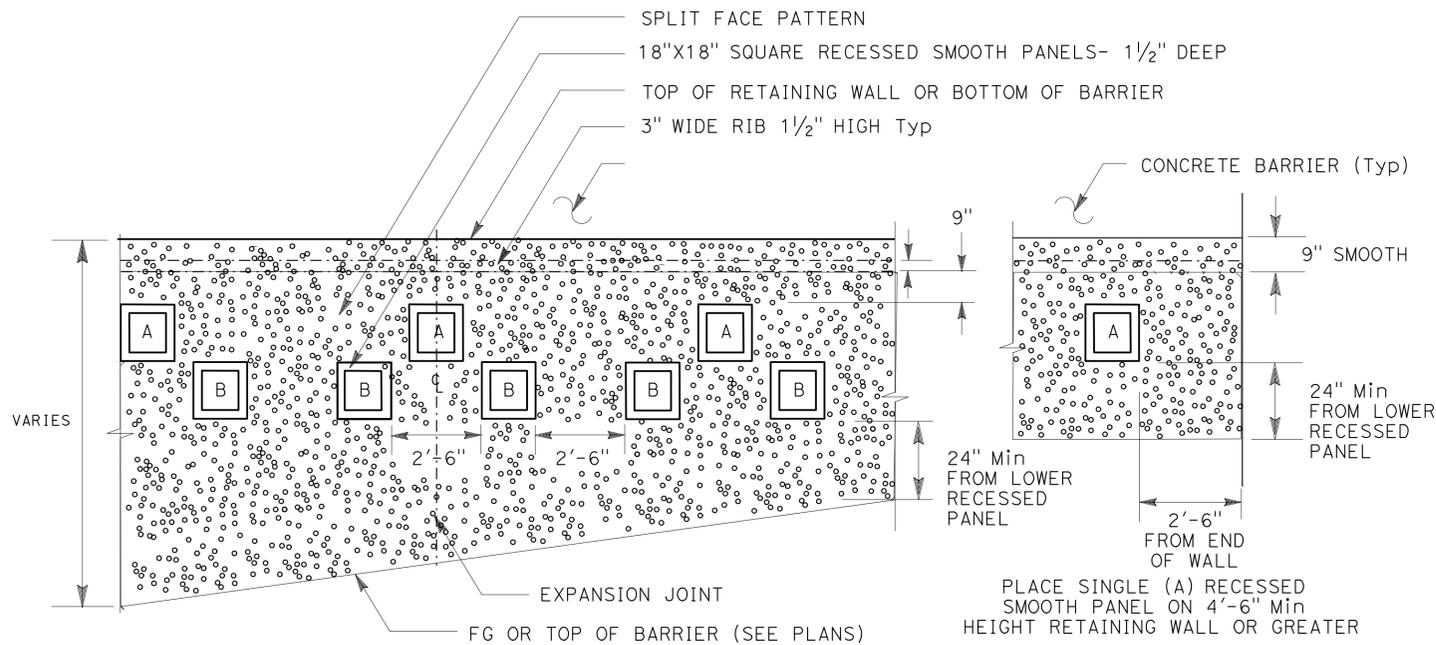
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	412	757

LICENSED LANDSCAPE ARCHITECT  
 JOSEPH MILLMAN  
 No. 10931  
 6-20-11  
 PLANS APPROVAL DATE  
 07/31/10  
 04/13/10  
 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.



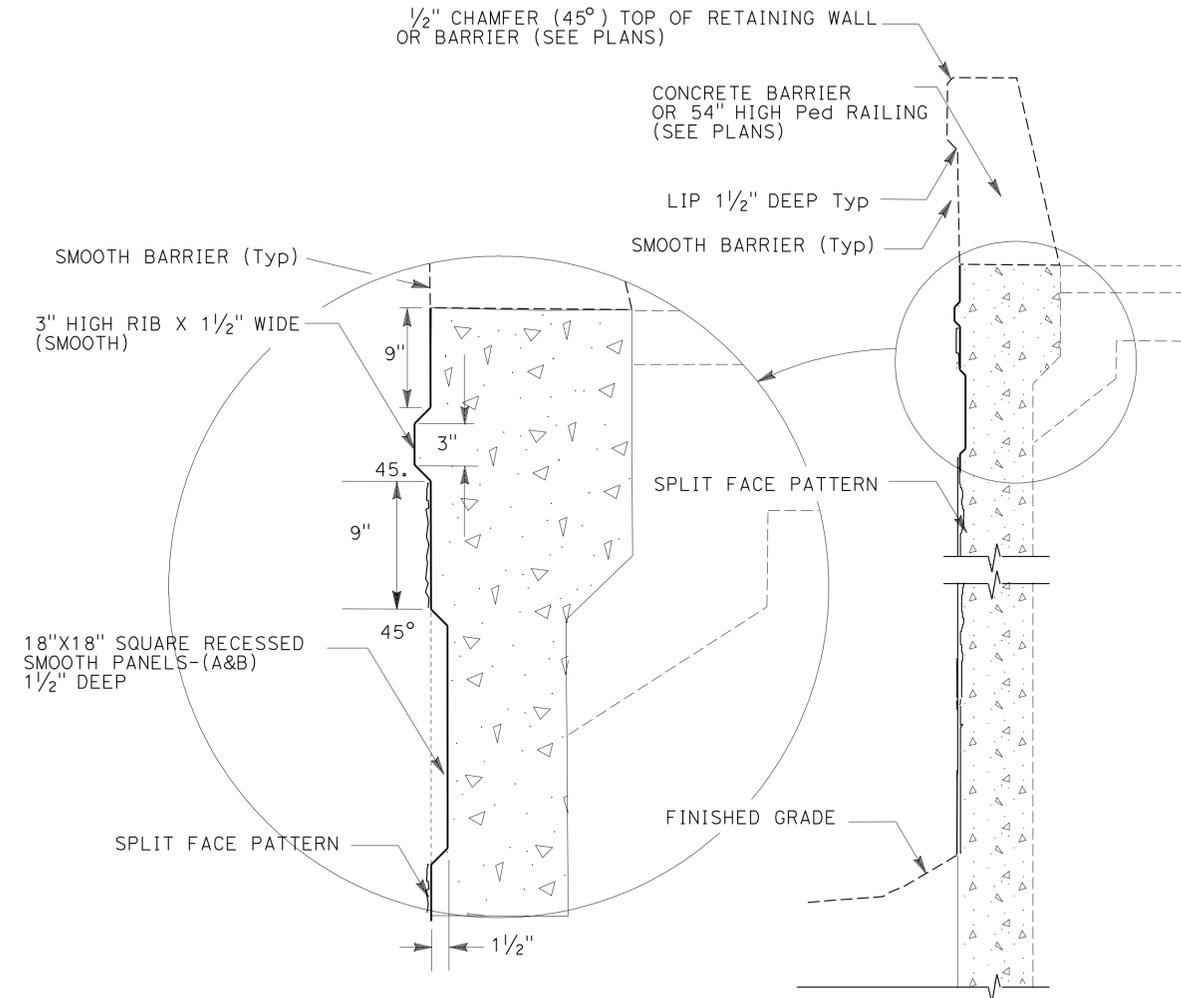
FEDERAL STANDARD COLOR # 33446 (SANDSTONE)  
 FORM LINER NATURAL LIMESTONE (SPLIT FACE) PATTERN (1/2" DEEP)

**SPLIT FACE PATTERN**



PLACE DOUBLE (A & B) RECESSED SMOOTH PANELS ON 6'-6" MINIMUM HEIGHT RETAINING WALL OR GREATER

**ELEVATION**  
**RETAINING WALL**  
**ARCHITECTURAL TREATMENT**  
 NOT TO SCALE



**SECTION**  
**RETAINING WALL**  
 NOT TO SCALE

**RETAINING WALLS #47 & #53**  
**ARCHITECTURAL TREATMENT**

NO SCALE

**R-37**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CHECKED BY  
 JOSEPH MILLMAN  
 KEITH SELLERS  
 REVISOR BY  
 DATE REVISOR

THIS PLAN ACCURATE FOR ARCHITECTURAL FINISH ONLY

USERNAME => frmikes1  
 DGN FILE => 726070qa037.dgn



UNIT 1851

PROJECT NUMBER & PHASE

0700004901

LAST REVISION  
 01-12-11  
 DATE PLOTTED => 01-AUG-2011  
 TIME PLOTTED => 14:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	413	757

LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 PLANS APPROVAL DATE

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 LANDSCAPE ARCHITECTURE

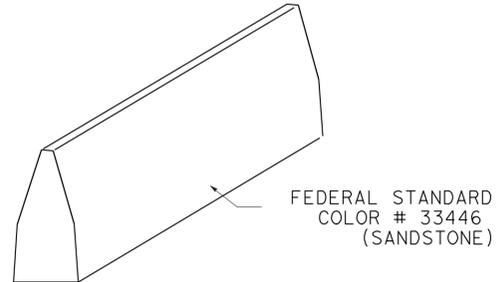
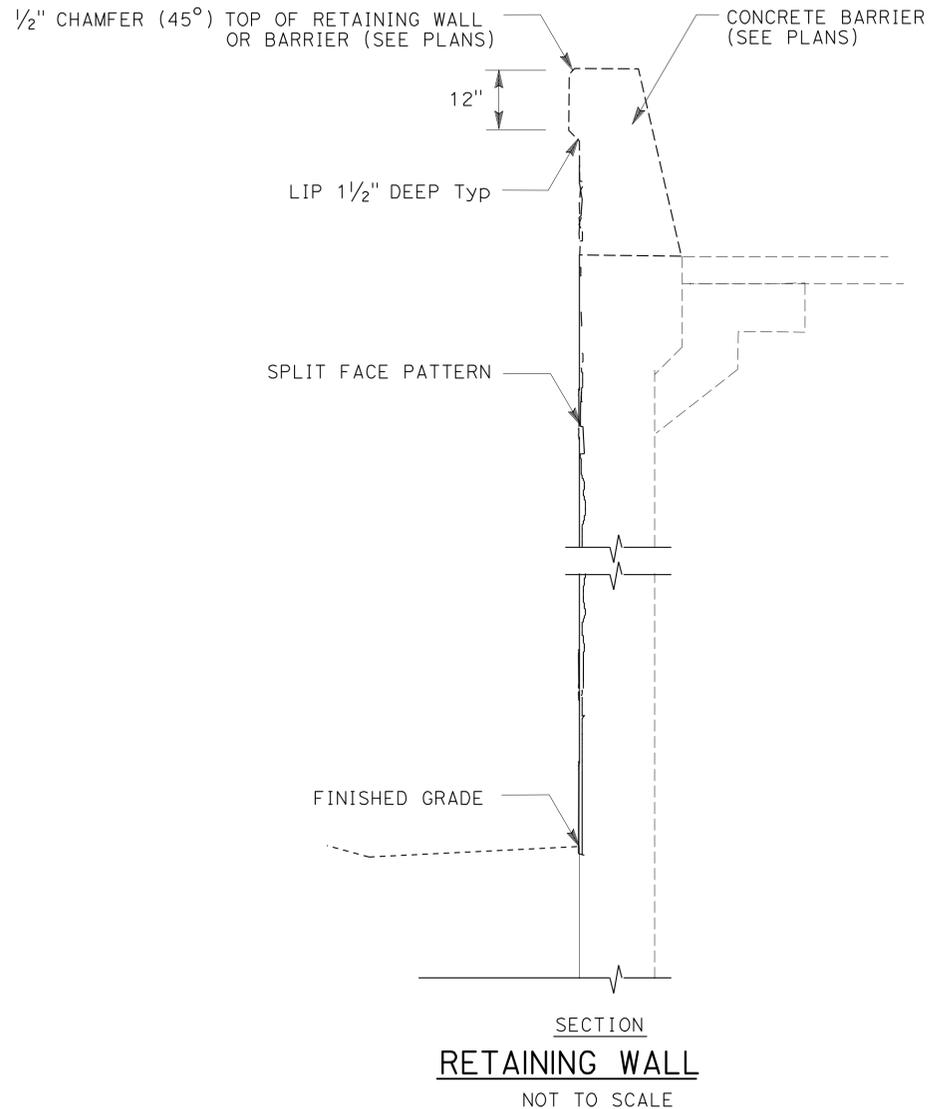
SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE

DESIGNED BY  
 JOSEPH MILLMAN

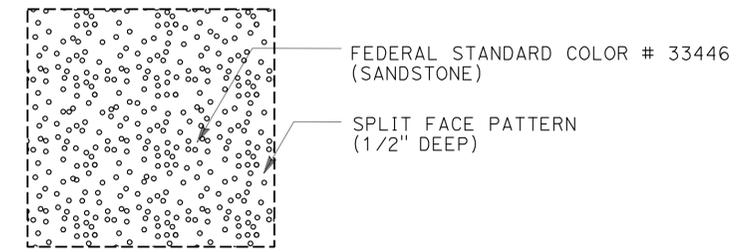
CHECKED BY  
 KEITH SELLERS

REVISOR  
 JOSEPH MILLMAN

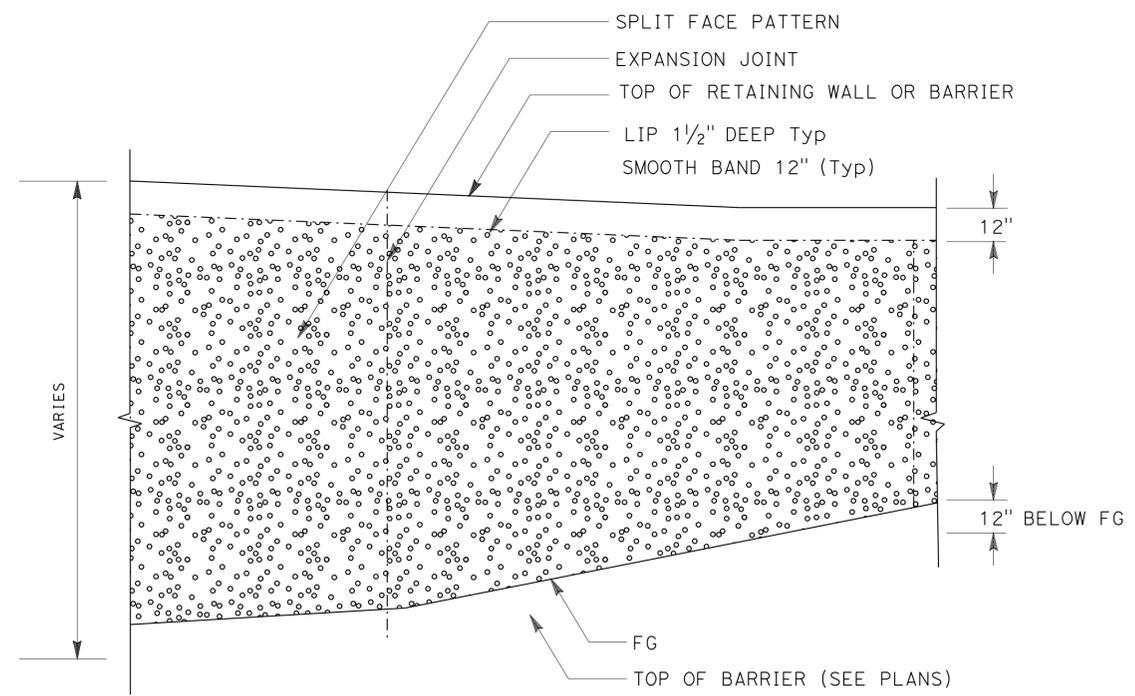
DATE  
 6-20-11



**CONCRETE BARRIER (COLORED CONCRETE)**  
 (TYPICAL TO TYPES 60, 60 TRANS, 60C, 60SC, 60W (MODIFIED) AND 736)



**SPLIT FACE PATTERN**



**ELEVATION**  
**RETAINING WALL**  
**ARCHITECTURAL TREATMENT**  
 NOT TO SCALE

**RETAINING WALLS #260, #272 & #282**  
**ARCHITECTURAL TREATMENT**

NO SCALE

**R-38**

THIS PLAN ACCURATE FOR ARCHITECTURAL FINISH ONLY



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	414	757

*Keith Sellers*  
LICENSED LANDSCAPE ARCHITECT

6-20-11  
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.

**ABBREVIATIONS**

AMEND — amendment	Max ——— maximum
B & B — balled and burlapped	Min ——— minimum
Dia ——— diameter	NCN ——— no common name
EA ——— each	No. ——— number
LB ——— pound	Pkt ——— packet
Oz ——— ounce	PLT ESTB — plant establishment
Ft ——— foot/feet	Pvmt ——— pavement
SQFT — square feet	R/W ——— right of way
SQYD — square yard	SF ——— state furnished
CF ——— cubic feet	TRVD ——— traveled

**PLANT LIST AND PLANTING SPECIFICATIONS**

PLANT GROUP	PLANT No.	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY EACH	HOLE SIZE (INCH)		BASIN TYPE	IRON SULFATE ①	SOIL AMEND ①	COMMERCIAL FERTILIZER ①		BASIN MULCH	STAKING	PLANTING LIMITS							REMARKS	
							Dia	DEPTH				PLANTING	PLT ESTB			CONC BARRIER	MINIMUM DISTANCE (Ft) FROM					ON CENTER (Ft)		
																	TRVD WAY	PVMT	FENCE	WALL	PAVED DITCH			EARTH DITCH
A	1		AGAVE ATTENUATA	SOFT-LEAVED AGAVE	No. 1	48	⑧	②	II	—	0.5 CF	—	—	0.5 CF	—	3	—	3	3	3	3	3	3	SUCCULENT
	2		CAREX TUMULICOLA	BERKELEY SEDGE	No. 1	260			II	—	0.5 CF	—	—	0.5 CF	—	2	—	2.5	2	2	2	2.5	2	NATIVE
	3		CEANOTHUS ARBOREUS	FELT LEAF CEANOTHUS	No. 1	38			II	—	0.5 CF	—	—	0.5 CF	—	8	—	10	8	8	8	10	6	NATIVE SHRUB
	4		CEANOTHUS CONCHA	CEANOTHUS	No. 1	192			II	—	0.5 CF	—	—	0.5 CF	—	8	—	10	8	8	8	10	6	NATIVE SHRUB
	5		ENCELIA CALIFORNICA	COAST SUNFLOWER	No. 1	343			II	—	0.5 CF	—	—	0.5 CF	—	3	—	3	3	3	3	5	3	NATIVE SHRUB
	6		FICUS PUMILA	CREEPING FIG	No. 1	111			III	—	0.5 CF	1 Pkt	1.7oz	0.5 CF	⑥	—	—	—	—	—	10	12	3	VINE ⑨
	7		PRUNUS ILICIFOLIA	HOLLY LEAF CHERRY	No. 1	70			II	—	0.5 CF	—	—	0.5 CF	—	10	—	15	15	10	10	12	6.5	NATIVE SHRUB
	8		PANDORA JASMINOIDES	BOWER VINE	No. 1	29			III	—	0.5 CF	1 Pkt	1.7oz	0.5 CF	⑥	—	—	—	—	—	6	8	10	VINE ⑨
	9		PARTHENOCISSUS TRICUSPIDATA	BOSTON IVY	No. 1	100			III	—	0.5 CF	1 Pkt	1.7oz	0.5 CF	⑥	—	—	—	—	—	4	15	20	VINE
	10		RHAMNUS CALIFORNICA	COFFEEBERRY	No. 1	292			II	—	0.5 CF	—	—	0.5 CF	—	8	—	15	15	10	10	12	8	NATIVE SHRUB
	11		RHAPHIOLEPSIS INDICA 'SPRINGTIME'	INDIAN HAWTHORN	No. 1	136			II	—	0.5 CF	1 Pkt	1.7oz	0.5 CF	—	6	—	10	6	6	10	12	4	SHRUB
	12		RHAPHIOLEPSIS UMBELLATA	YEDDO HAWTHORN	No. 1	240			II	—	0.5 CF	1 Pkt	1.7oz	0.5 CF	—	8	—	8	8	8	8	8	5	SHRUB
	13		RHUS INTEGRIFOLIA	LEMONADE BERRY	No. 1	150			II	—	0.5 CF	—	—	0.5 CF	—	10	—	15	10	10	10	12	6.5	NATIVE SHRUB
	14		YUCCA WHIPPLEI	OUR LORDS CANDLE	No. 1	14			II	—	0.5 CF	—	—	0.5 CF	—	3	—	3	3	3	3	3	3	NATIVE
M	15		LEYMUS CONDENSATUS 'CANYON PRINCE'	WILD RYE	LINER	2467			—	—	0.1 CF	—	—	0.10 CF	—	3	—	3	3	3	3	5	2.5	NATIVE GRASS
U	16		CUPRESSUS MACROCARPA	MONTEREY CYPRESS	No. 15	31			II	—	3.0 CF	—	—	4.00 CF	—	20	30	—	20	20	20	22	④	NATIVE TREE
	17		CERCIS OCCIDENTALIS	WESTERN REDBUD	No. 15	15			II	—	3.0 CF	—	—	4.00 CF	—	15	—	15	15	15	15	15	④	NATIVE TREE
	18		CEDRUS ATLANTICA	ATLAS CEDAR	No. 15	5			II	—	3.0 CF	—	—	4.00 CF	—	20	30	—	20	20	20	22	④	TREE

**APPLICABLE WHEN CIRCLED:**

- ① - Quantities shown are "per plant" unless shown as SQFT or SQYD application rates.
- ② - Sufficient to receive root ball.
- ③ - Does not apply to mulch areas.
- ④ - As shown on plans.
- ⑤ - Unless otherwise shown on plans.
- ⑥ - See std detail.
- ⑦ - See Special Provisions.
- ⑧ - 2 times root ball size.
- ⑨ - Space Vines (Plant #6 & 8) 20 feet from Soundwall Access Doors.

**LEGEND**

- MULCH 4" DEEP (496 CY)
- MULCH IN MEDIAN 6" DEEP (1520 CY) FROM Sta 235+50 TO 293+00
- MAINTAIN EXISTING PLANTED AREAS

- ROCK BLANKET
- BOULDERS
- EROSION CONTROL (HYDROSEED) 249720 SQFT
- ROADSIDE CLEARING

**NOTE:**

Underlined portions of botanical name indicate abbreviations used on Planting Plans.

**PLANT LIST  
PL - 1**

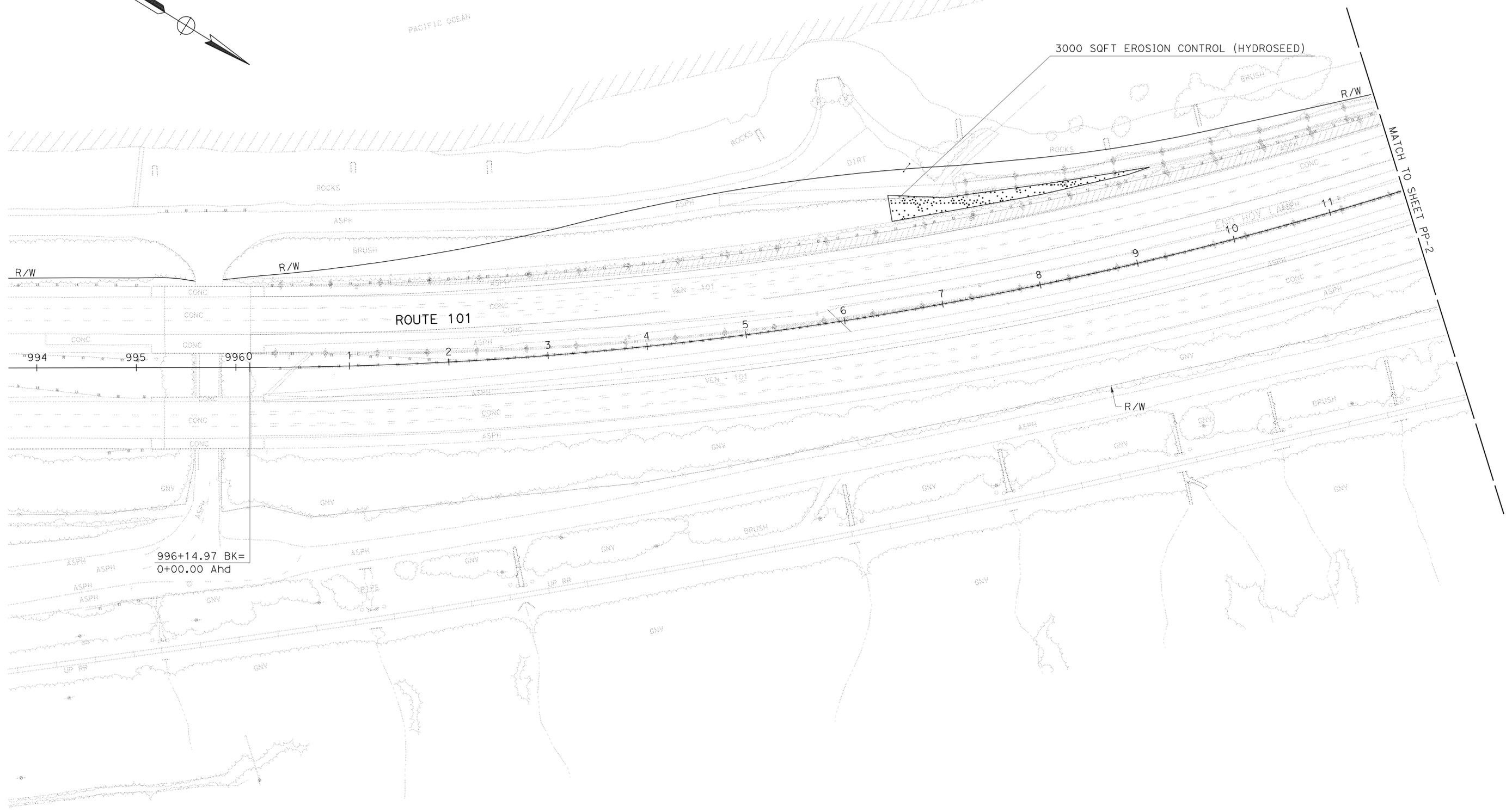
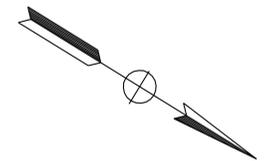


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	415	757

*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 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.

- NOTES:
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
  - FOR PLANTING PLANS: EROSION CONTROL (HYDROSEED) AREAS TO RECEIVE TEMPORARY WATER ACCORDING TO THE SPECIAL PROVISIONS



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE

CALCULATED, DESIGNED BY  
 CHECKED BY

KEITH SELLERS  
 JOSEPH MILLMAN

REVISED BY  
 DATE REVISED

THIS PLAN ACCURATE FOR LANDSCAPE WORK ONLY.

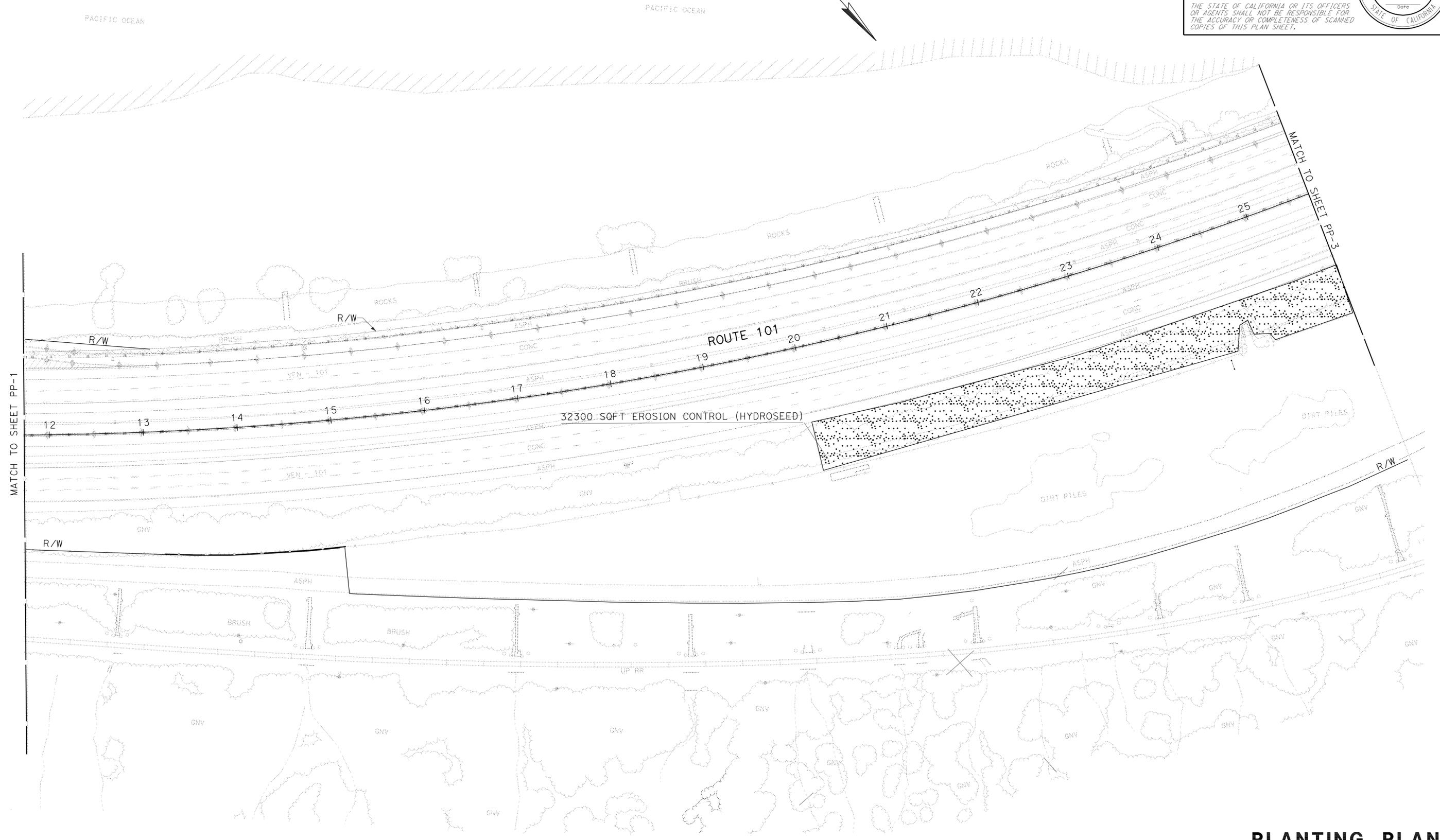
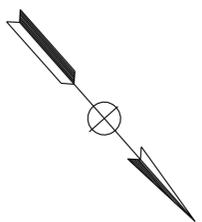
**PLANTING PLAN**  
**PP-1**

SCALE: 1"=50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	416	757

*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 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:  
 1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT  
**PATTY WATANABE**

CALCULATED-DESIGNED BY  
**KEITH SELLERS**

CHECKED BY  
**JOSEPH MILLMAN**

REVISED BY  
 DATE REVISED

THIS PLAN ACCURATE FOR LANDSCAPE WORK ONLY.

SCALE: 1"=50'

**PLANTING PLAN  
 PP-2**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	417	757

**Keith Sellers**  
 LICENSED LANDSCAPE ARCHITECT  
 No. 5288  
 6-20-11  
 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.

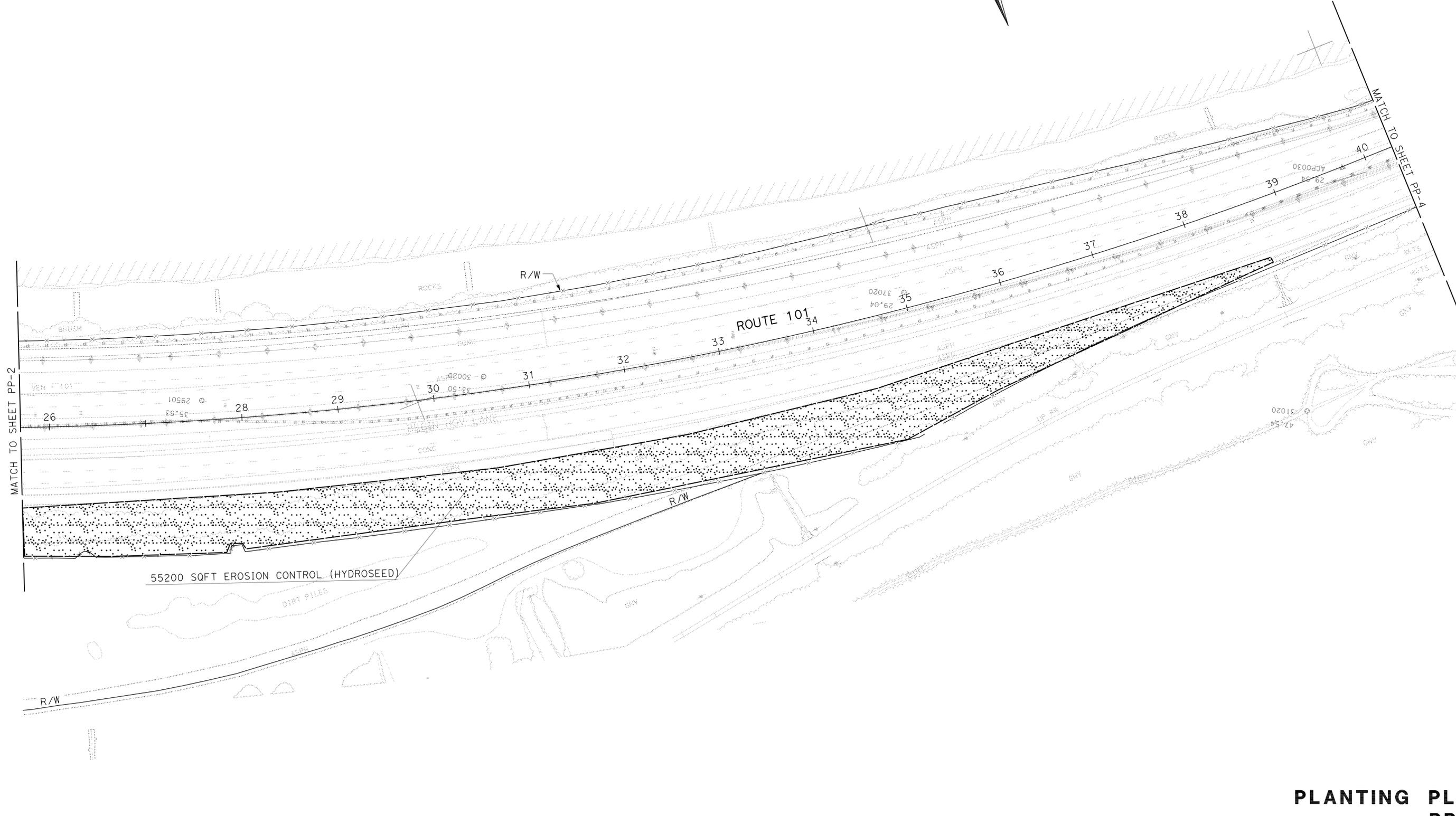


**NOTE:**

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	SENIOR LANDSCAPE ARCHITECT	CALCULATED/DESIGNED BY	REVISED BY
<b>Caltans</b> LANDSCAPE ARCHITECTURE	PATTY WATANABE	CHECKED BY	DATE REVISED
KEITH SELLERS	JOSEPH MILLMAN		



THIS PLAN ACCURATE FOR LANDSCAPE WORK ONLY.

SCALE: 1"=50'

**PLANTING PLAN  
PP - 3**

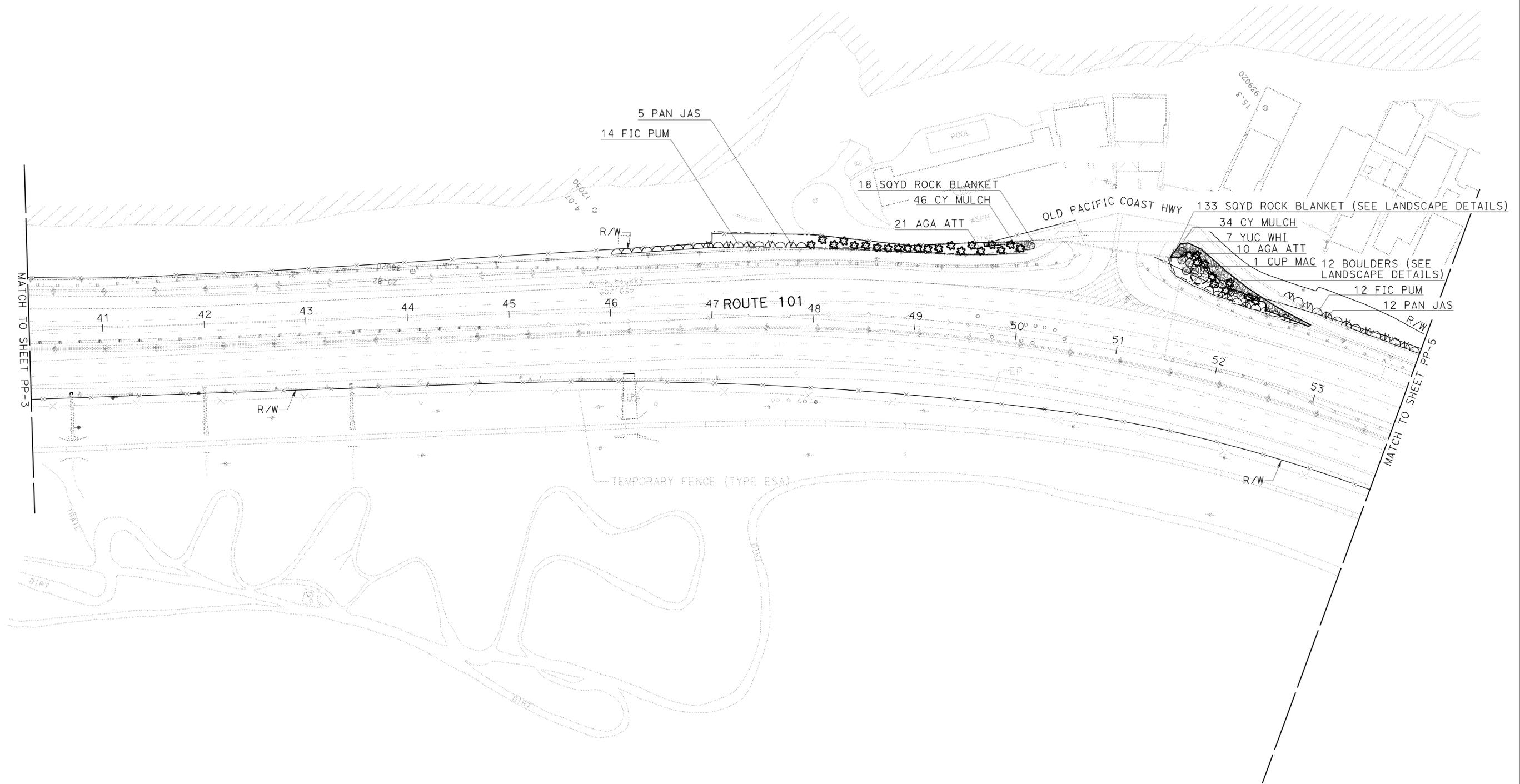


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	418	757

<i>Keith Sellers</i>	
LICENSED LANDSCAPE ARCHITECT	
6-20-11	PLANS APPROVAL DATE
<small>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.</small>	

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
**PATTY WATANABE**  
 CALCULATED/DESIGNED BY  
**KEITH SELLERS**  
 CHECKED BY  
**JOSEPH MILLMAN**  
 REVISED BY  
 DATE REVISED

THIS PLAN ACCURATE FOR LANDSCAPE WORK ONLY.

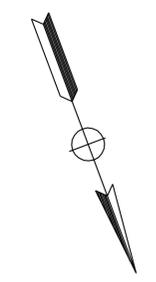
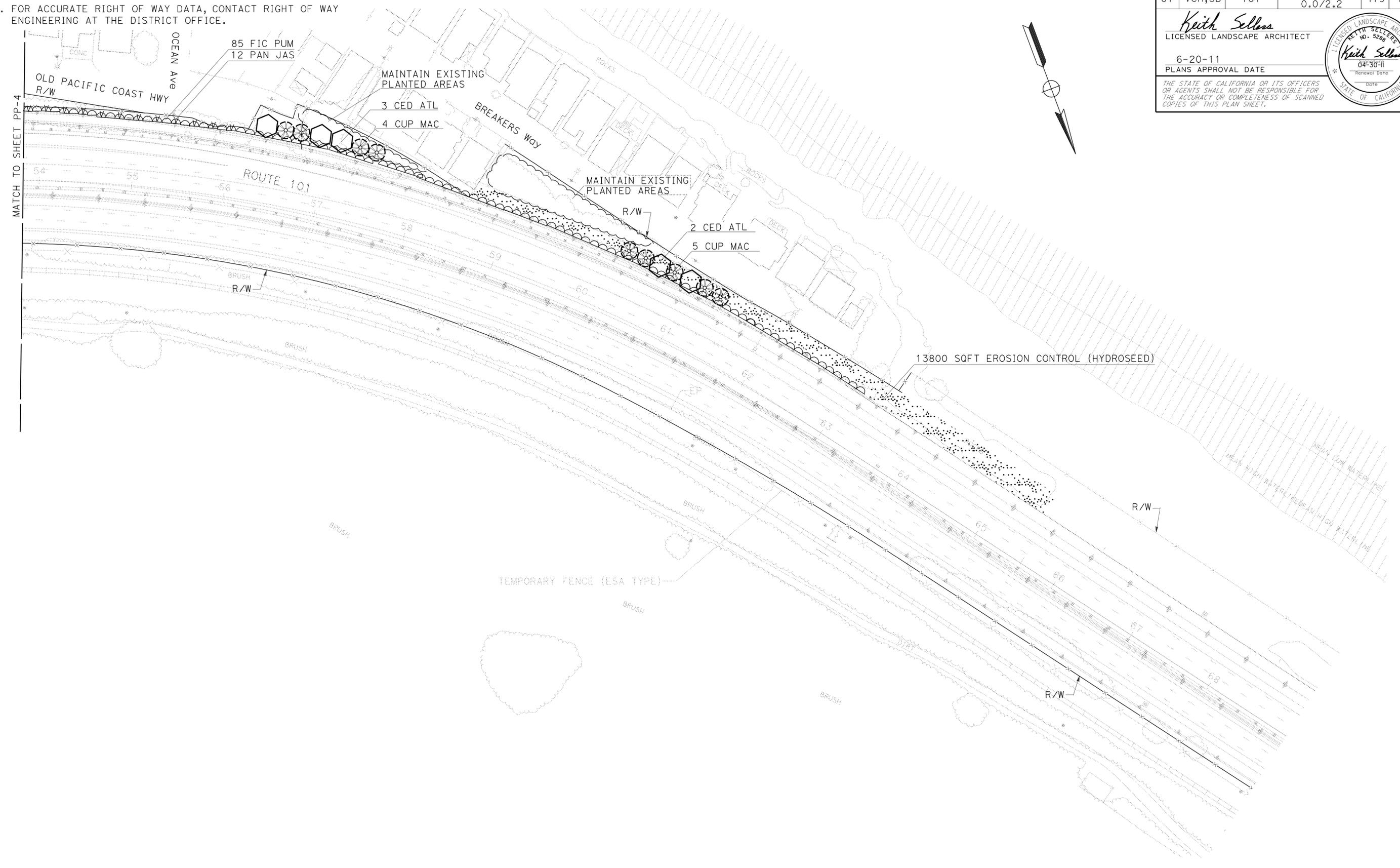
SCALE: 1"=50'

**PLANTING PLAN  
PP-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE

REVISOR	DATE	REVISION
KEITH SELLERS		
JOSEPH MILLMAN		
CALCULATED/DESIGNED BY	CHECKED BY	
PATTY WATANABE		

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



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	419	757

*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 No. 5268  
 04-30-11  
 Renewal Date

6-20-11  
 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.



THIS PLAN ACCURATE FOR LANDSCAPE WORK ONLY.

**PLANTING PLAN**  
**PP-5**

SCALE: 1"=50'

LAST REVISION:      DATE PLOTTED => 25-JUN-2011      00-00-00      TIME PLOTTED => 07:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	420	757

<i>Keith Sellers</i> LICENSED LANDSCAPE ARCHITECT	
6-20-11 PLANS APPROVAL DATE	
<small>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.</small>	

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

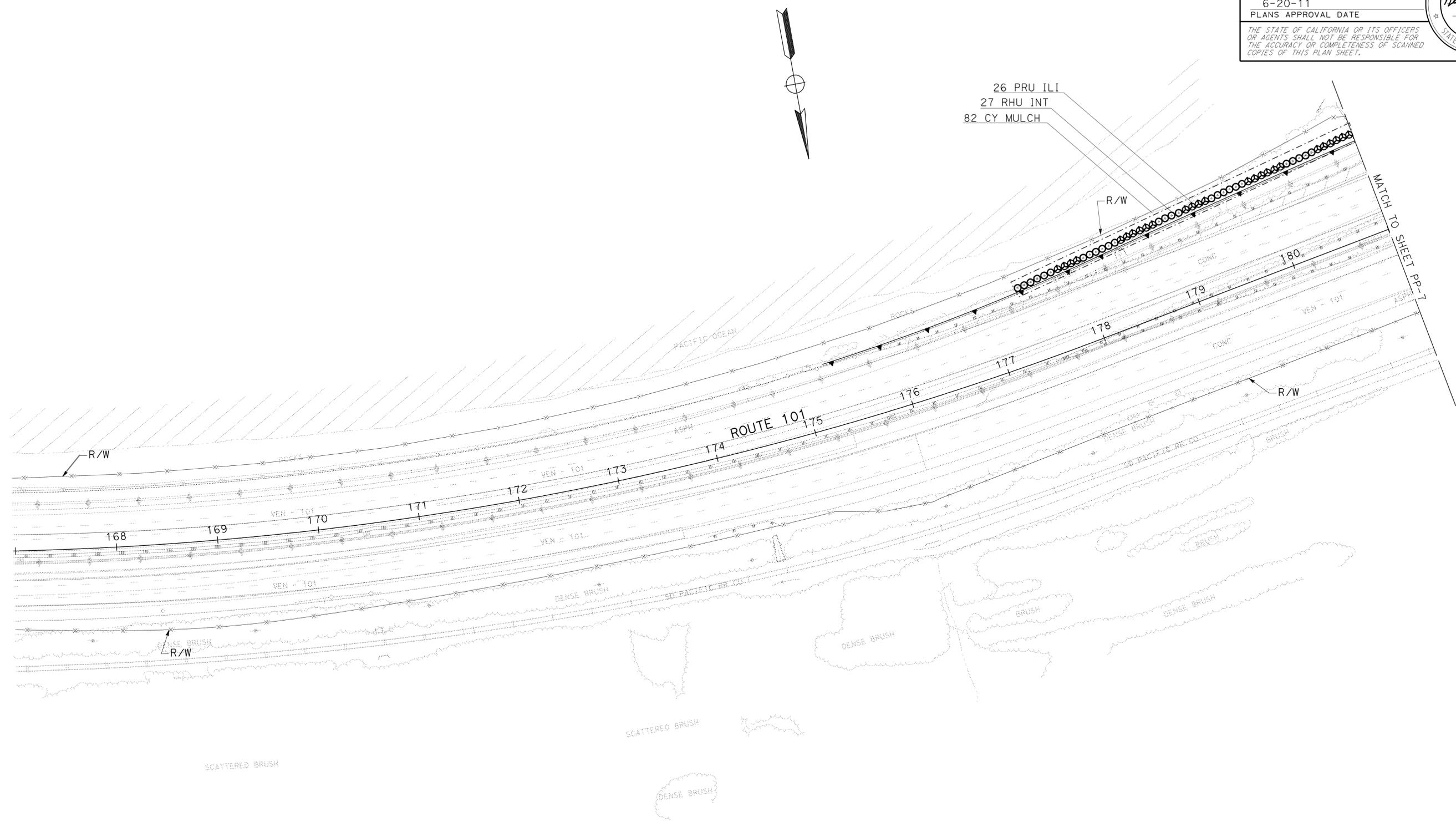
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT  
**PATTY WATANABE**

CALCULATED/DESIGNED BY  
 CHECKED BY

KEITH SELLERS  
 JOSEPH MILLMAN

REVISED BY  
 DATE REVISED



THIS PLAN ACCURATE FOR LANDSCAPE WORK ONLY.

**PLANTING PLAN  
 PP - 6**

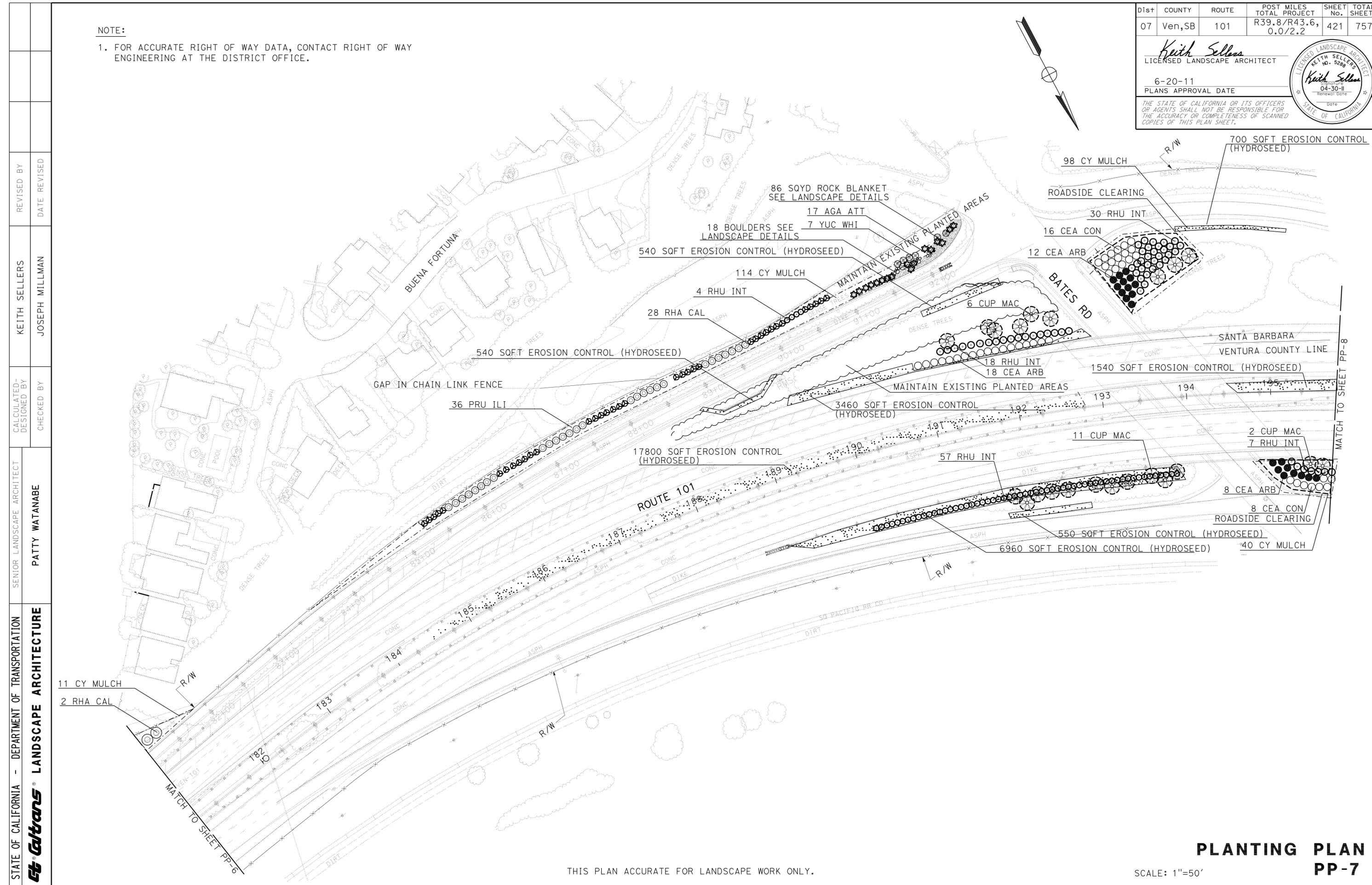
SCALE: 1"=50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	421	757

*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 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:  
 1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	SENIOR LANDSCAPE ARCHITECT	REVISOR	DATE
<b>Caltrans</b> LANDSCAPE ARCHITECTURE	PATTY WATANABE	KEITH SELLERS	JOSEPH MILLMAN
	CALCULATED/DESIGNED BY	CHECKED BY	

THIS PLAN ACCURATE FOR LANDSCAPE WORK ONLY.

SCALE: 1"=50'

**PLANTING PLAN  
PP-7**

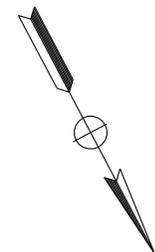
LAST REVISION DATE PLOTTED => 25-JUN-2011 00-00-00 TIME PLOTTED => 07:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	422	757

*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 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.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CALCULATED/DESIGNED BY  
 KEITH SELLERS  
 CHECKED BY  
 JOSEPH MILLMAN  
 REVISED BY  
 DATE REVISED

THIS PLAN ACCURATE FOR LANDSCAPE WORK ONLY.

SCALE: 1"=50'

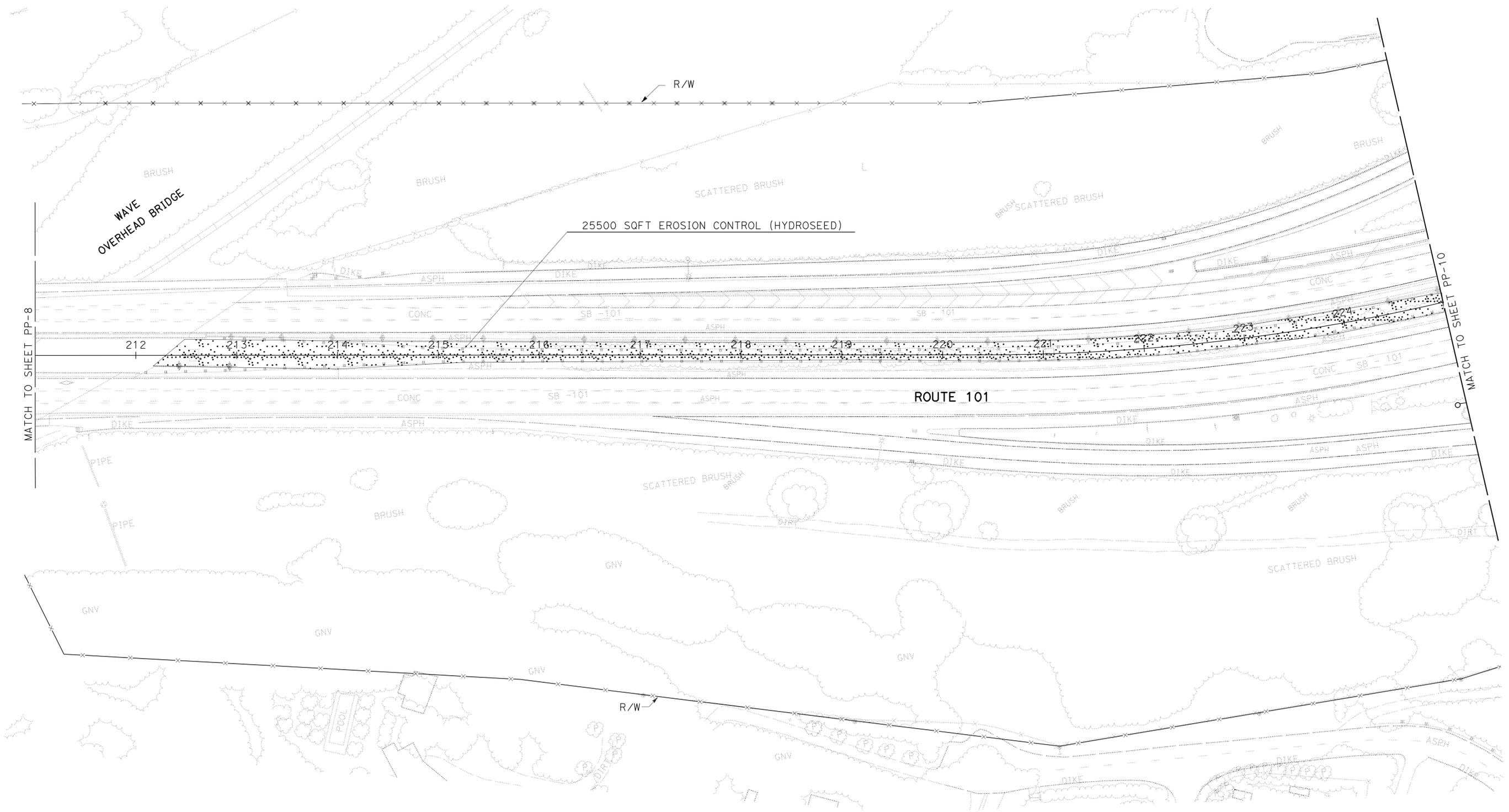
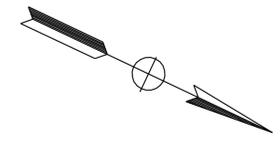
**PLANTING PLAN  
PP-8**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	423	757

Keith Sellers  
 LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 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:  
 1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY  
 ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CALCULATED, DESIGNED BY  
 KEITH SELLERS  
 CHECKED BY  
 JOSEPH MILLMAN  
 REVISED BY  
 DATE REVIS

THIS PLAN ACCURATE FOR LANDSCAPE WORK ONLY.

**PLANTING PLAN**  
**PP-9**

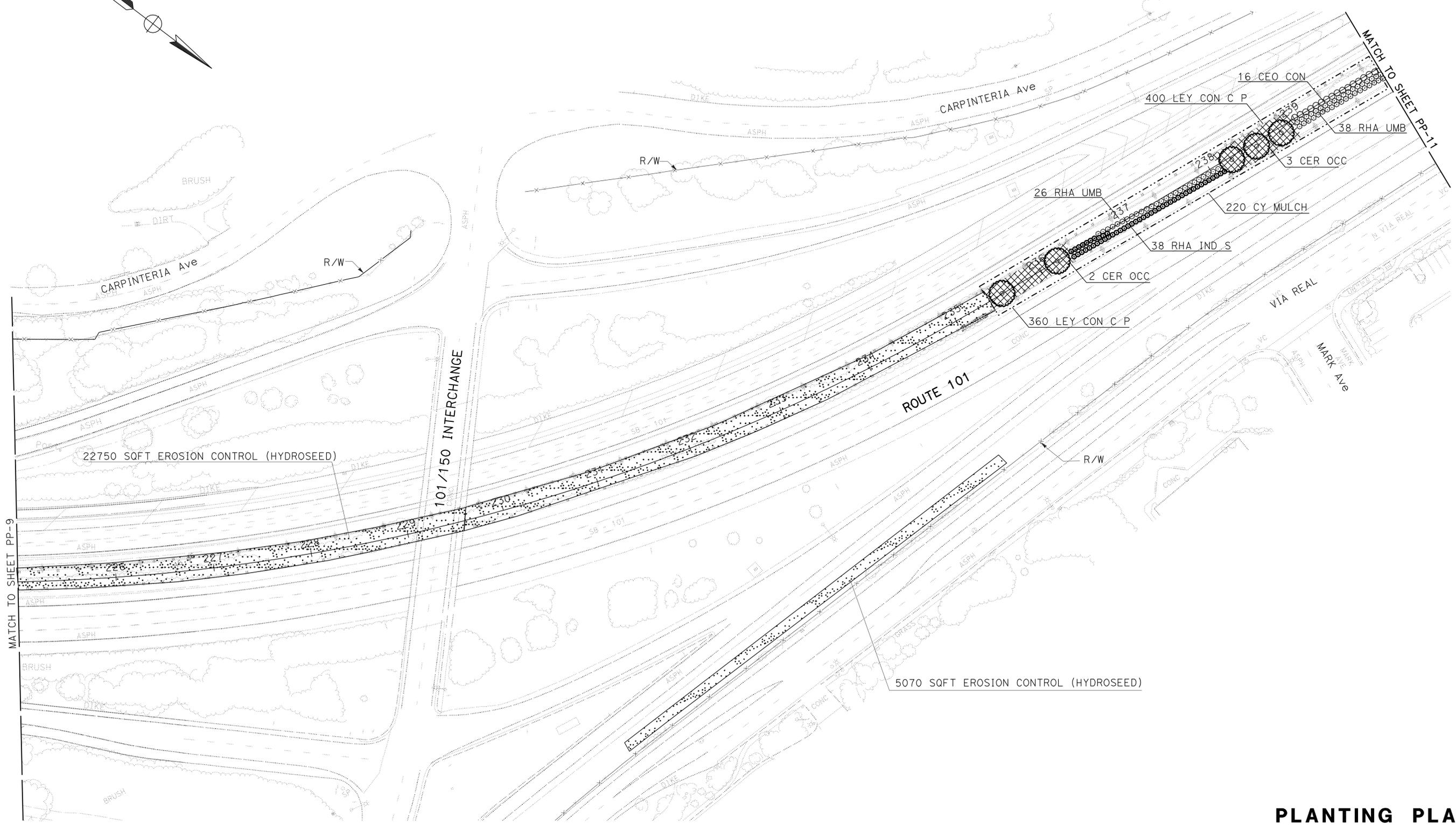
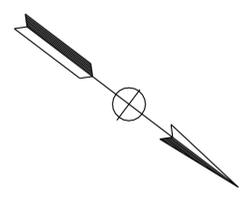
SCALE: 1"=50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	424	757

Keith Sellers  
 LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 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:  
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	LANDSCAPE ARCHITECTURE	SENIOR LANDSCAPE ARCHITECT	DESIGNED BY	REVISOR
Keith Sellers	Patty Watanabe	Joseph Millman	Joseph Millman	Joseph Millman

THIS PLAN ACCURATE FOR LANDSCAPE WORK ONLY.

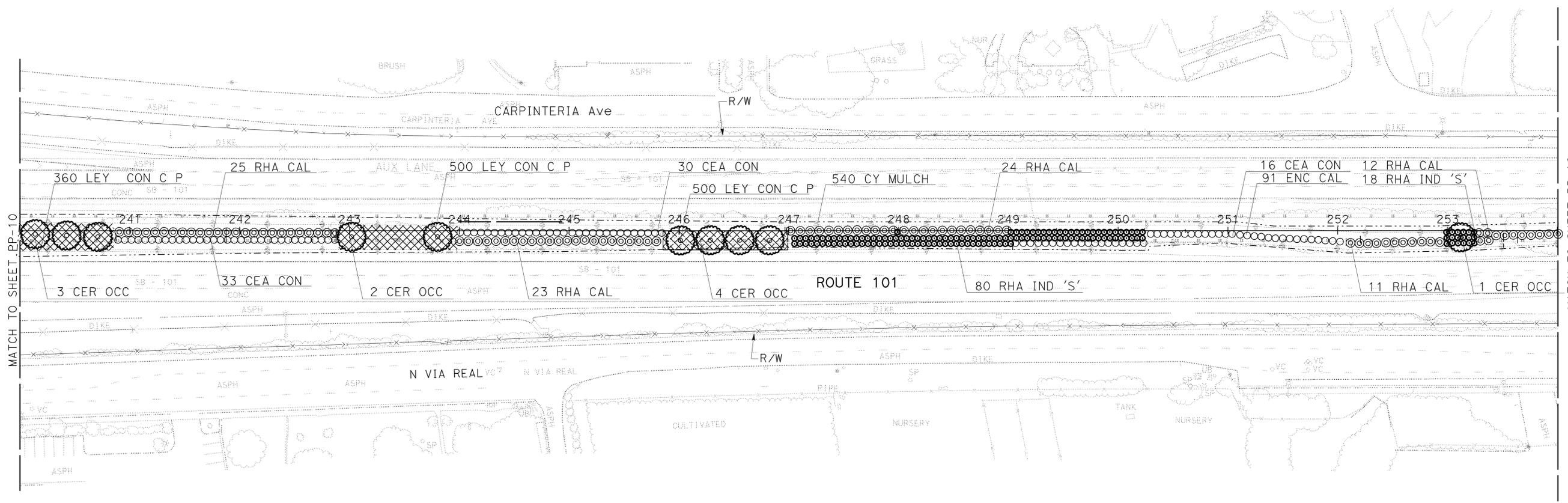
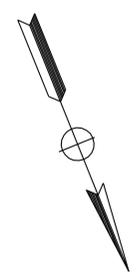
**PLANTING PLAN**  
**PP-10**

LAST REVISION | DATE PLOTTED => 25-JUN-2011 | 00-00-00 | TIME PLOTTED => 07:56

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	425	757

*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 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:  
 1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CALCULATED, DESIGNED BY  
 KEITH SELLERS  
 CHECKED BY  
 JOSEPH MILLMAN  
 REVISED BY  
 DATE REVIS

MATCH TO SHEET PP-10

MATCH TO SHEET PP-12

THIS PLAN ACCURATE FOR LANDSCAPE WORK ONLY.

**PLANTING PLAN  
 PP-11**

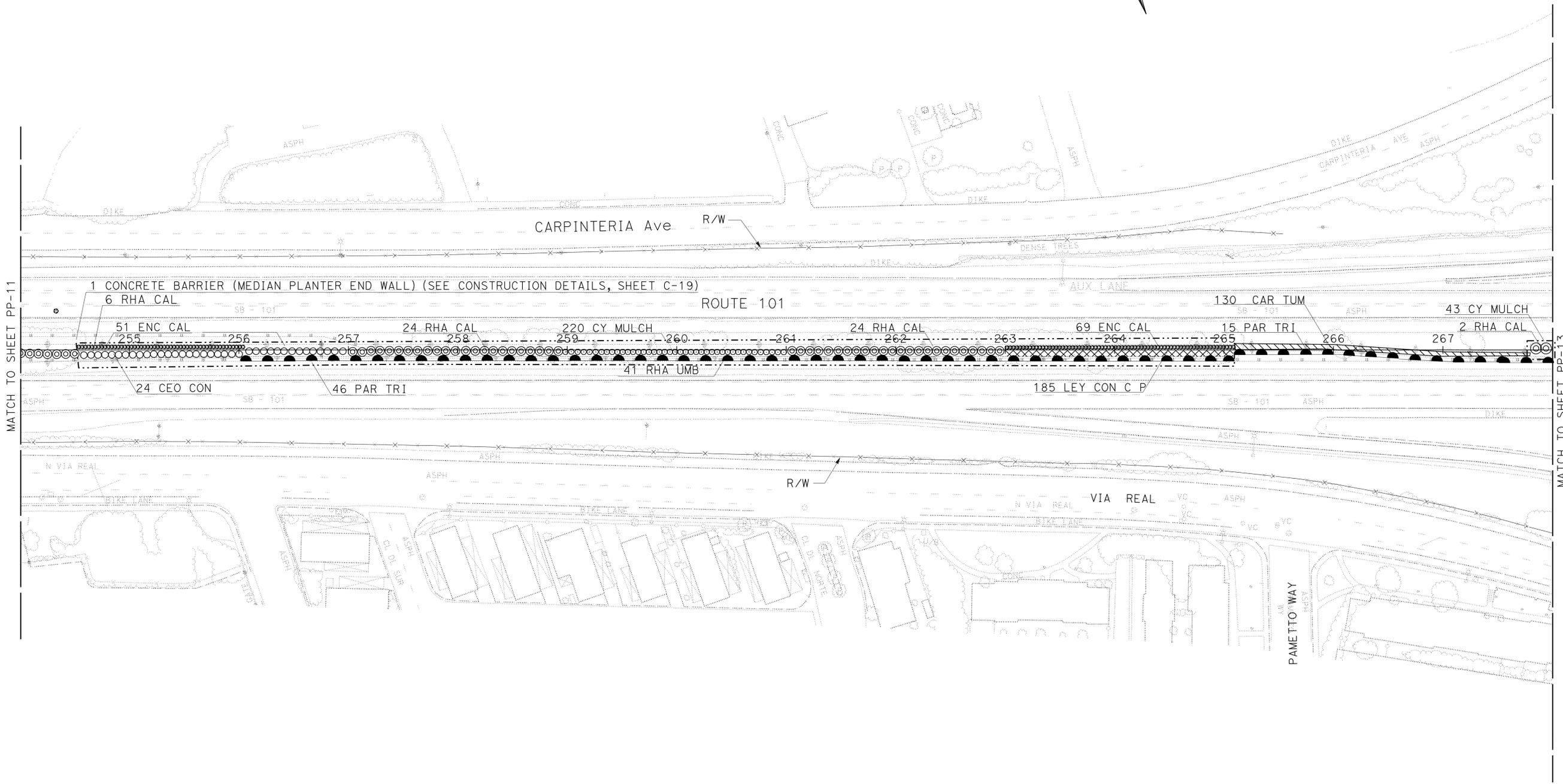
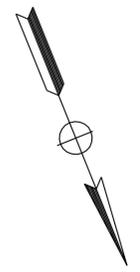
SCALE: 1"=50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	426	757

*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 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:  
 1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CALCULATED/DESIGNED BY  
 KEITH SELLERS  
 CHECKED BY  
 JOSEPH MILLMAN  
 REVISED BY  
 DATE  
 REVISOR  
 DATE

THIS PLAN ACCURATE FOR LANDSCAPE WORK ONLY.

**PLANTING PLAN**  
**PP-12**  
 SCALE: 1"=50'

LAST REVISION    DATE PLOTTED => 25-JUN-2011  
 00-00-00    TIME PLOTTED => 07:56

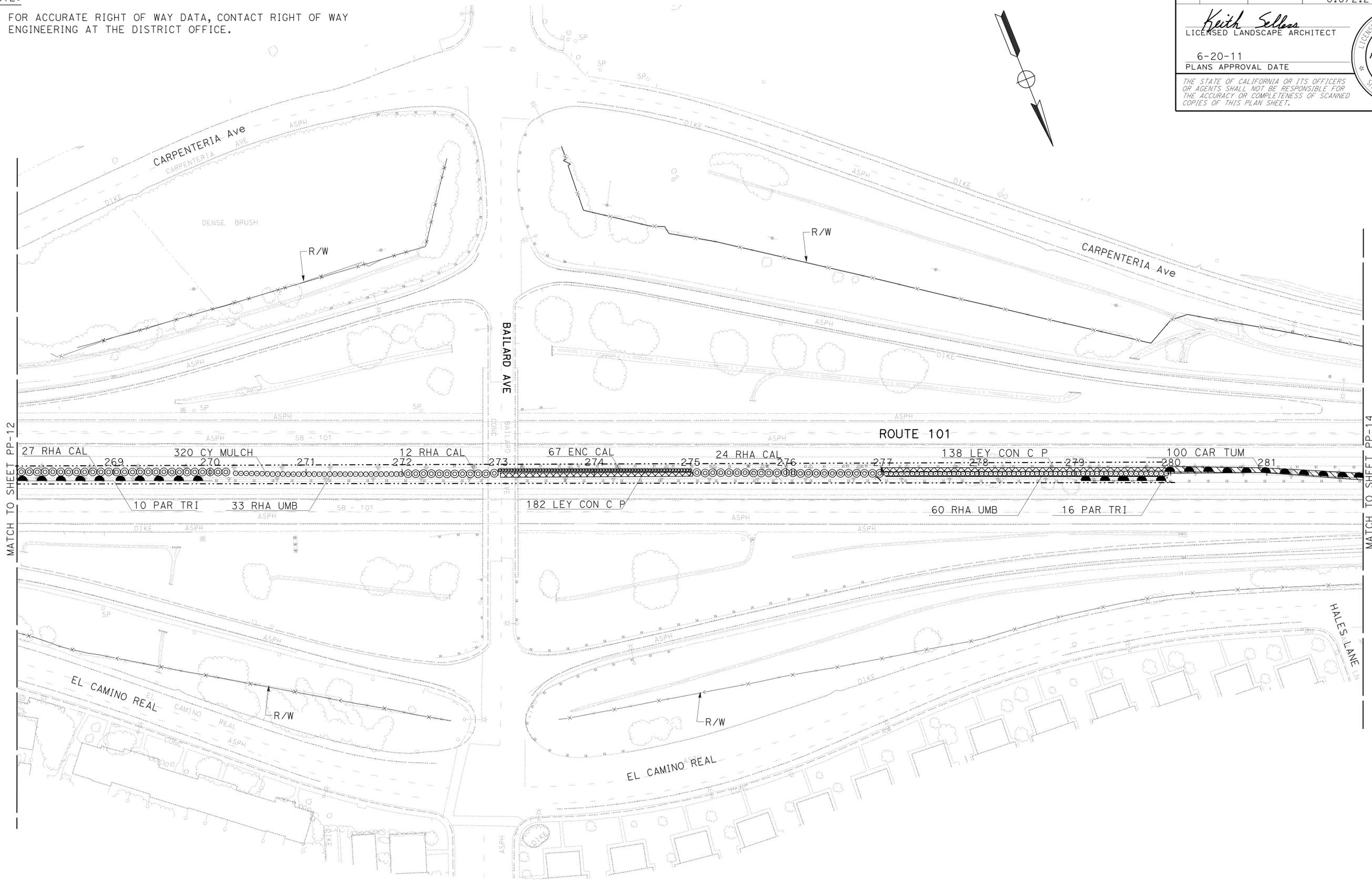
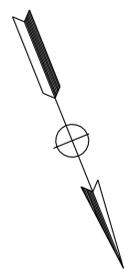
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	427	757

*Keith Sellers*  
LICENSED LANDSCAPE ARCHITECT

6-20-11  
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:  
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT: PATTY WATANABE  
CALCULATED/DESIGNED BY: PATTY WATANABE  
CHECKED BY: PATTY WATANABE

KEITH SELLERS  
JOSEPH MILLMAN

REVISED BY: KEITH SELLERS  
DATE REVISED: JOSEPH MILLMAN

THIS PLAN ACCURATE FOR LANDSCAPE WORK ONLY.

**PLANTING PLAN  
PP-13**

SCALE: 1"=50'

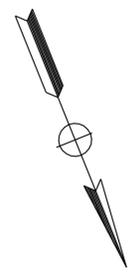
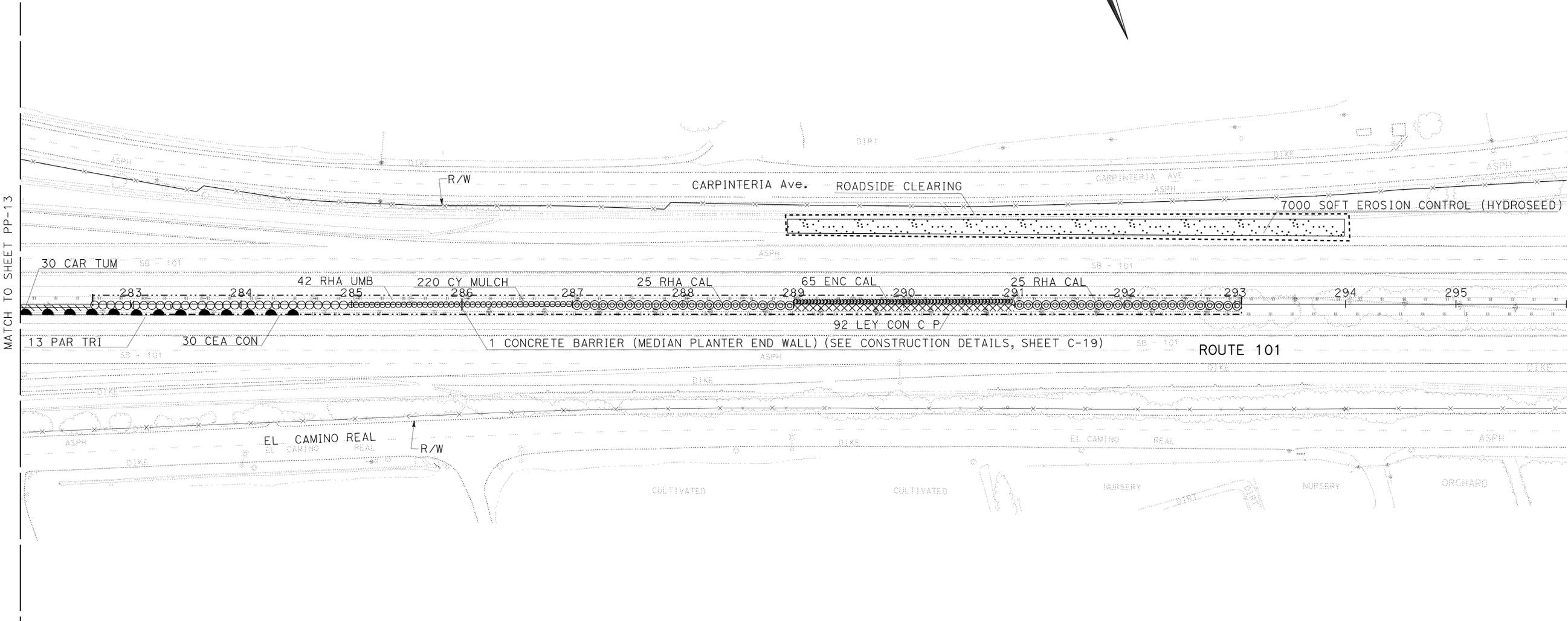
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	428	757

*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 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:  
 1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	LANDSCAPE ARCHITECTURE	SENIOR LANDSCAPE ARCHITECT	CALCULATED/DESIGNED BY	REVISOR
<b>Caltrans</b>	<b>LANDSCAPE ARCHITECTURE</b>	PATTY WATANABE	CHECKED BY	DATE
			KEITH SELLERS	JOSEPH MILLMAN



THIS PLAN ACCURATE FOR LANDSCAPE WORK ONLY.

**PLANTING PLAN**  
**PP-14**  
 SCALE: 1"=50'

LAST REVISION: 00-00-00    DATE PLOTTED => 25-JUN-2011    TIME PLOTTED => 07:57

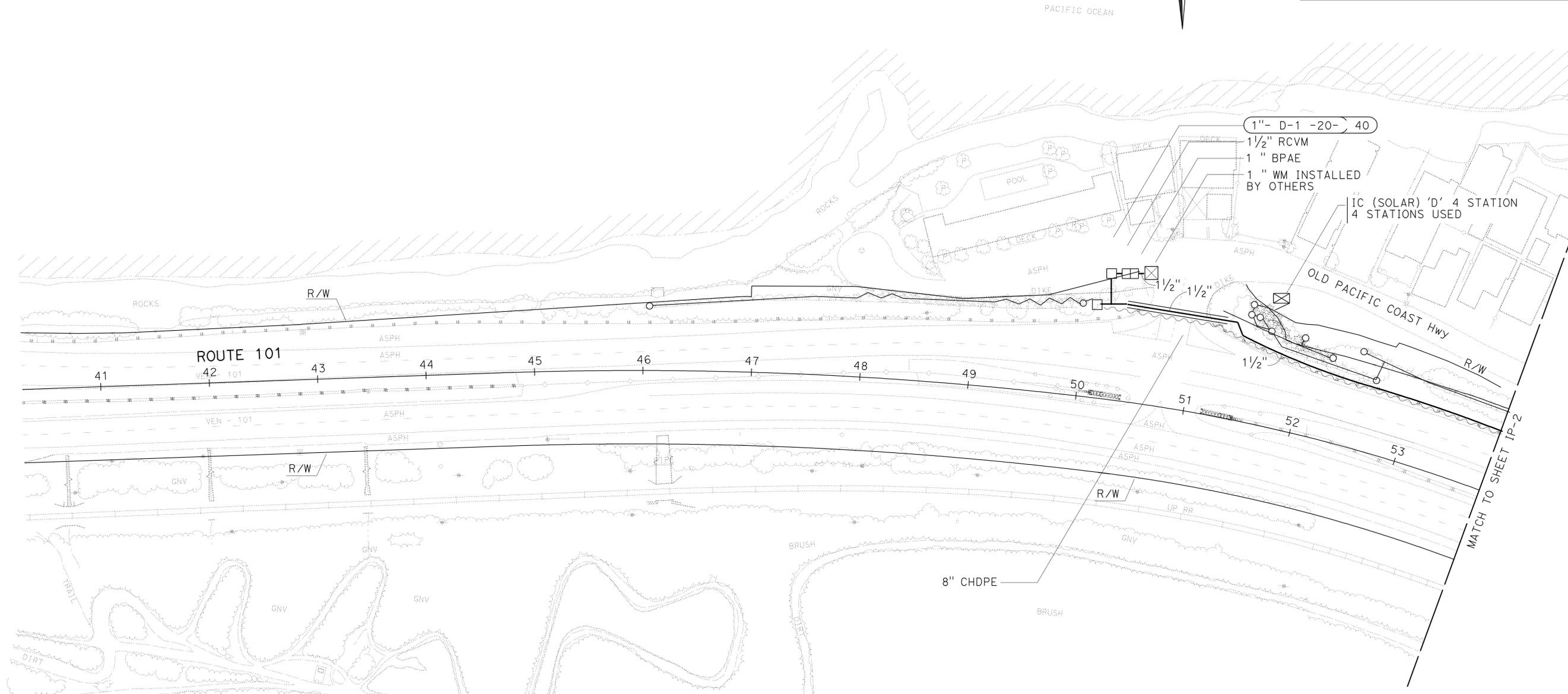
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	429	757

*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 Signature: *Keith Sellers*  
 04-30-11  
 04-20-10  
 DATE

6-20-11  
 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:  
 1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CALCULATED/DESIGNED BY  
 KEITH SELLERS  
 CHECKED BY  
 JOSEPH MILLMAN  
 REVISED BY  
 04/20/10  
 DATE REVISED  
 04/20/10

THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.

IRRIGATION PLAN  
 IP - 1

SCALE: 1"=50'

BORDER LAST REVISED 7/2/2010

USERNAME => trphits  
 DGN FILE => 726070+1001.dgn



UNIT 1851

PROJECT NUMBER & PHASE

0700004901

LAST REVISION | DATE PLOTTED => 25-JUN-2011  
 00-00-00 | TIME PLOTTED => 07:57

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CALCULATED/DESIGNED BY  
 KEITH SELLERS  
 CHECKED BY  
 JOSEPH MILLMAN  
 REVISED BY  
 04/20/10  
 DATE REVISED  
 04/20/10

**NOTE:**

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



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	430	757

Keith Sellers  
 LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 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.



THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.

**IRRIGATION PLAN  
 IP-2**

SCALE: 1"=50'

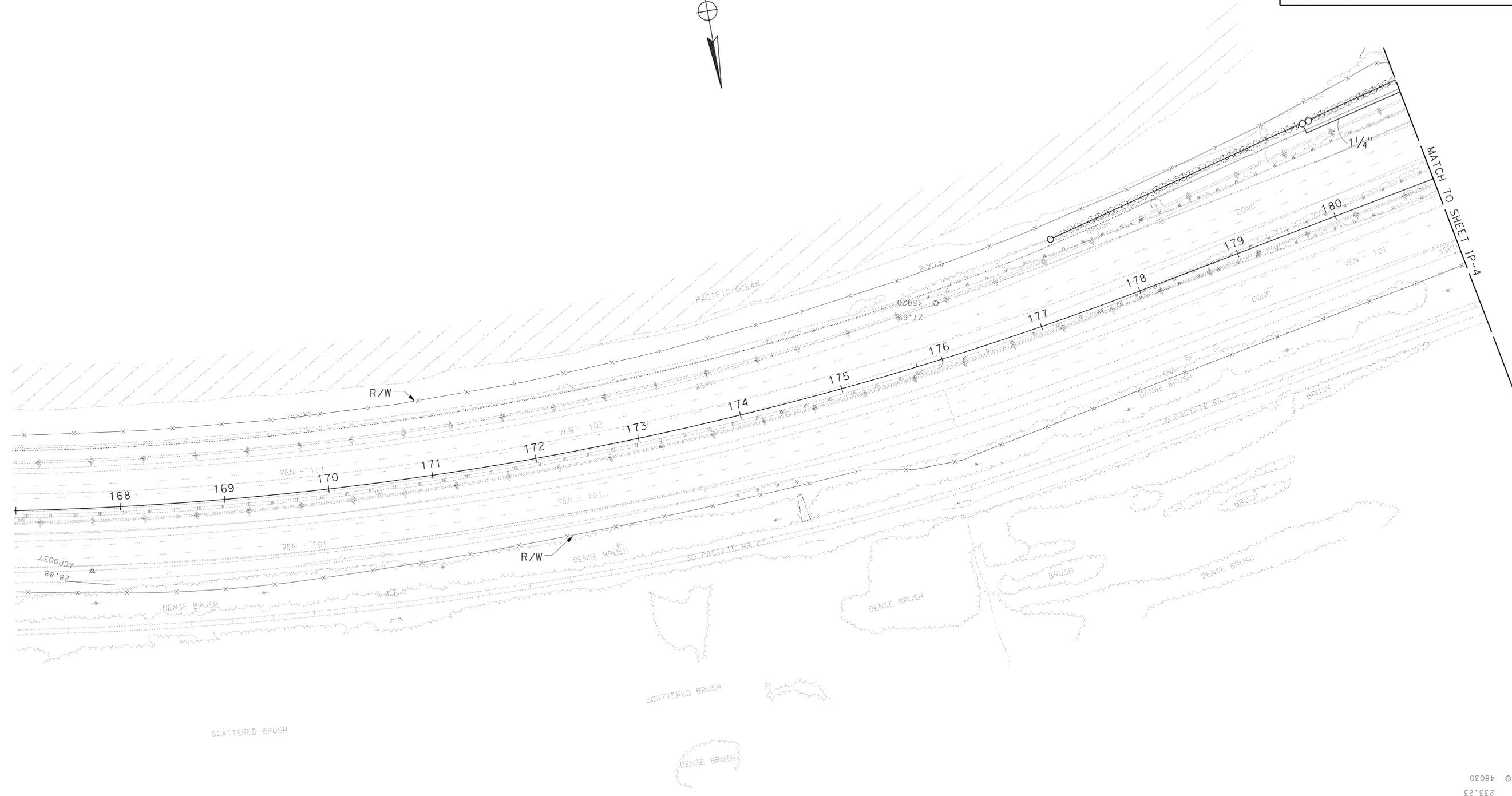
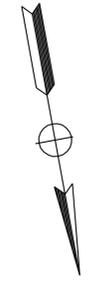
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	431	757

*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 Signature: *Keith Sellers*  
 04-30-11  
 Renewal Date: \_\_\_\_\_  
 Date: \_\_\_\_\_

6-20-11  
 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:  
 1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CALCULATED/DESIGNED BY  
 KEITH SELLERS  
 CHECKED BY  
 JOSEPH MILLMAN  
 REVISED BY  
 DATE REVISD

THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.

IRRIGATION PLAN  
 IP-3  
 SCALE: 1"=50'

BORDER LAST REVISED 7/2/2010

USERNAME => trphils  
 DGN FILE => 726070+1003.dgn



UNIT 1851

PROJECT NUMBER & PHASE

07000004901

LAST REVISION: 00-00-00  
 DATE PLOTTED => 25-JUN-2011  
 TIME PLOTTED => 07:57

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	432	757

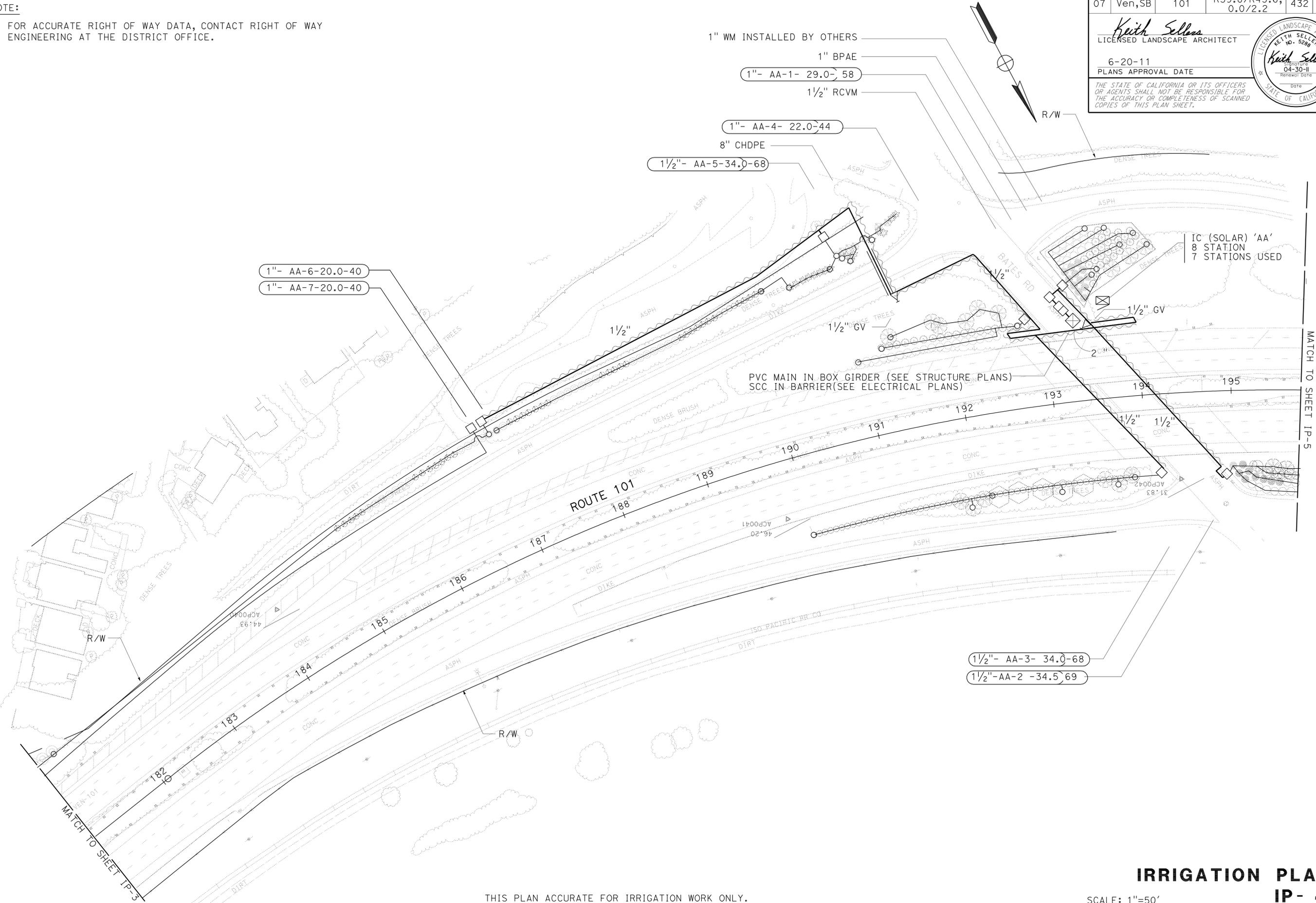
Keith Sellers  
 LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



**NOTE:**

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	LANDSCAPE ARCHITECTURE	SENIOR LANDSCAPE ARCHITECT	CALCULATED/DESIGNED BY	KEITH SELLERS	REVISOR BY
		PATTY WATANABE	CHECKED BY	JOSEPH MILLMAN	DATE REVISED



THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.

SCALE: 1"=50'

**IRRIGATION PLAN  
IP- 4**

**NOTE:**

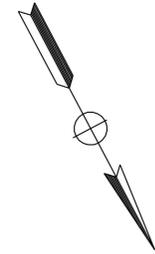
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	433	757

*Keith Sellers*  
LICENSED LANDSCAPE ARCHITECT

6-20-11  
PLANS APPROVAL DATE

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



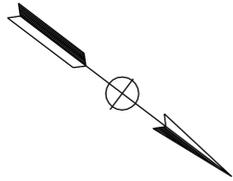
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 KEITH SELLERS  
 JOSEPH MILLMAN  
 REVISED BY  
 DATE REVISED

THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.

**IRRIGATION PLAN**  
**IP- 5**  
 SCALE: 1"=50'

LAST REVISION: 00-00-00      DATE PLOTTED => 25-JUN-2011      TIME PLOTTED => 07:58

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



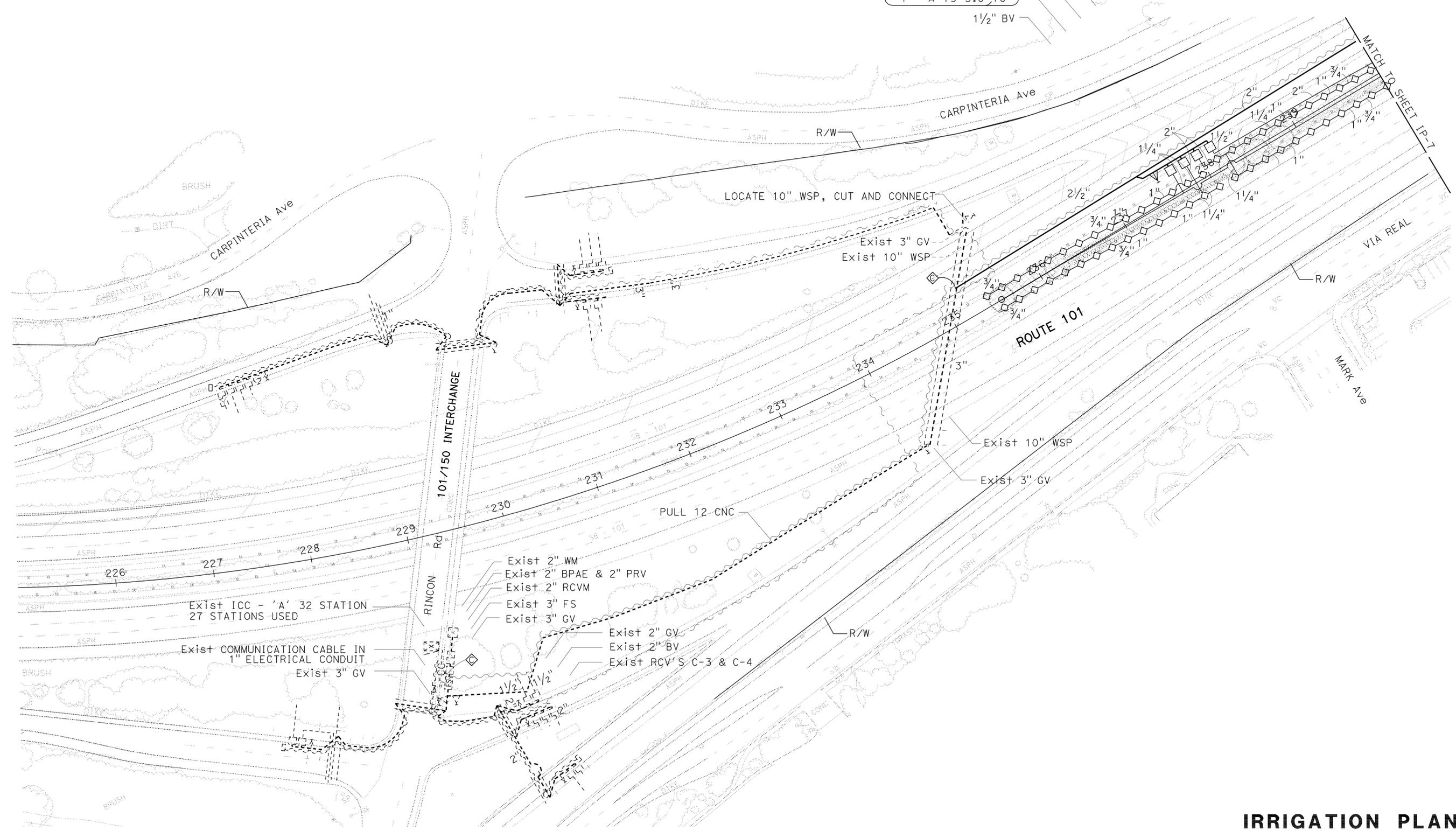
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	434	757

*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 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.

- 1 1/2" - A-22- 33.0
- 1 1/2" - A-21- 34.0
- 1 1/2" - A-20- 32.0
- 1" - A-19- 5.0 - 10
- 1 1/2" BV

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CHECKED BY  
 KEITH SELLERS  
 JOSEPH MILLMAN  
 REVISOR BY  
 DATE REVISOR



THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.

**IRRIGATION PLAN**  
**IP-6**

SCALE: 1" = 50'

LAST REVISION    DATE PLOTTED => 25-JUN-2011    TIME PLOTTED => 06:57

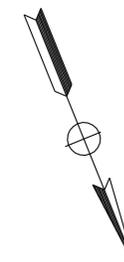
NOTE: FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	435	757

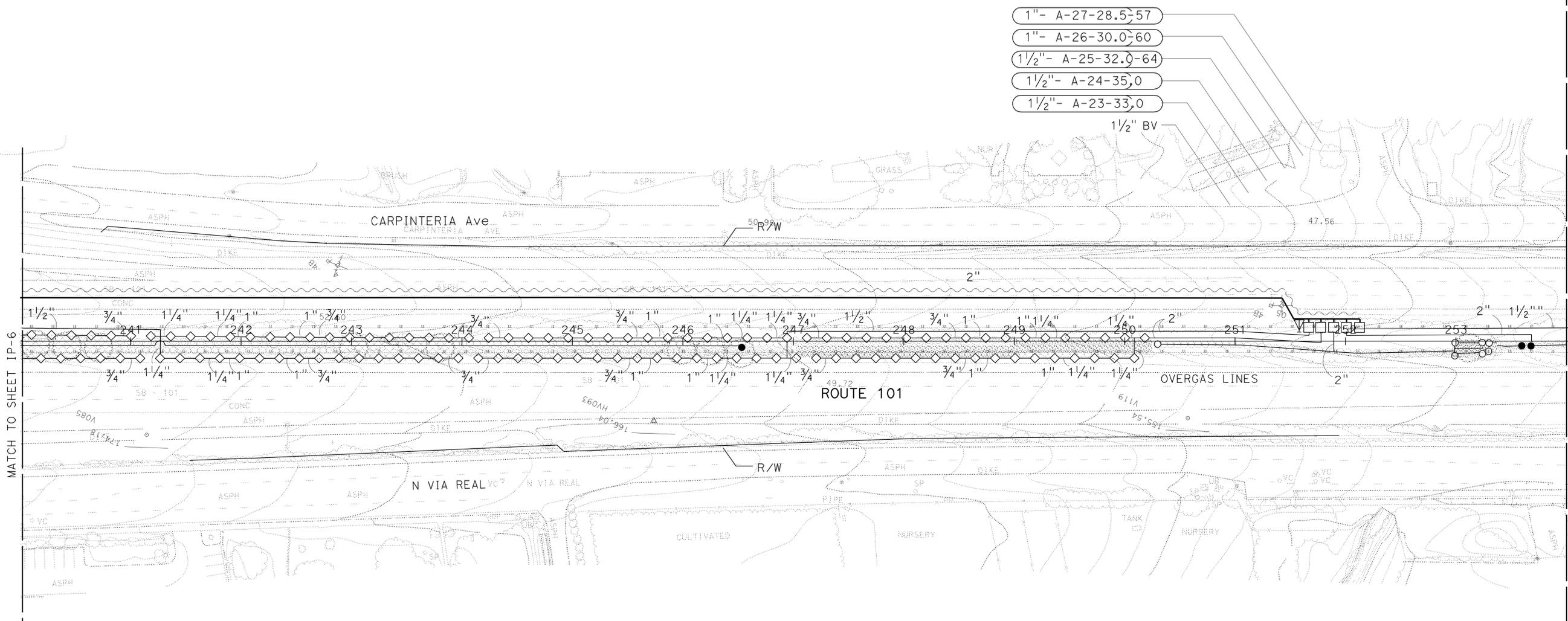
*Keith Sellers*  
LICENSED LANDSCAPE ARCHITECT

6-20-11  
PLANS APPROVAL DATE

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 KEITH SELLERS  
 REVISOR  
 JOSEPH MILLMAN  
 CHECKED BY  
 PATTY WATANABE



MATCH TO SHEET IP-6

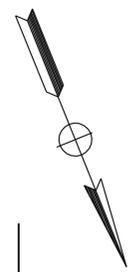
MATCH TO SHEET IP-8

THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.

**IRRIGATION PLAN**  
**SCALE: 1" = 50'**  
**IP - 7**

LAST REVISION DATE PLOTTED => 25-JUN-2011 00-00-00 TIME PLOTTED => 06:58

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



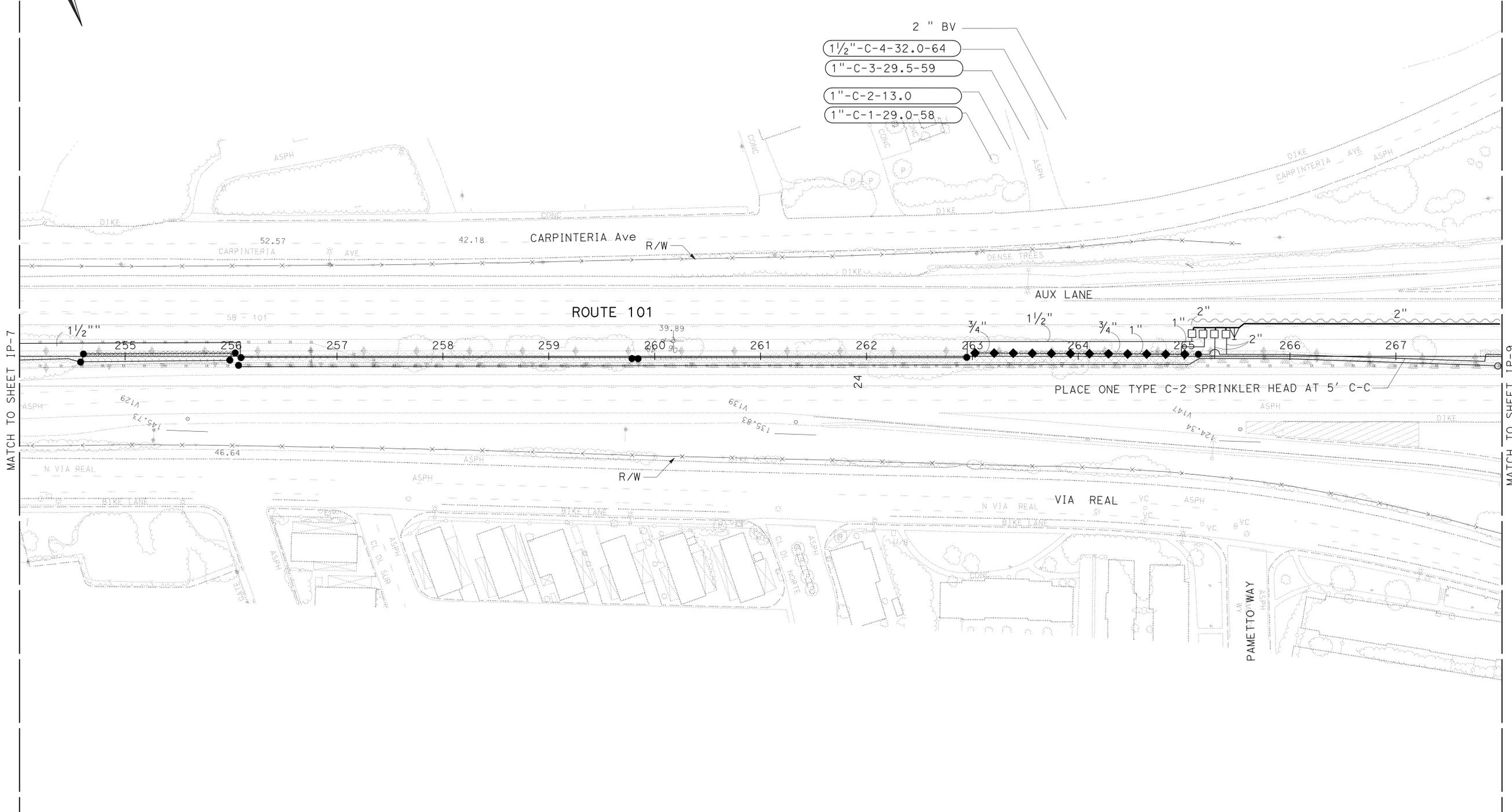
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	436	757

*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 Signature: *Keith Sellers*  
 04-30-11  
 Renewal Date: \_\_\_\_\_  
 Date: \_\_\_\_\_

6-20-11  
 PLANS APPROVAL DATE

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CALCULATED/DESIGNED BY  
 KEITH SELLERS  
 CHECKED BY  
 JOSEPH MILLMAN  
 REVISED BY  
 DATE REVISED



THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.

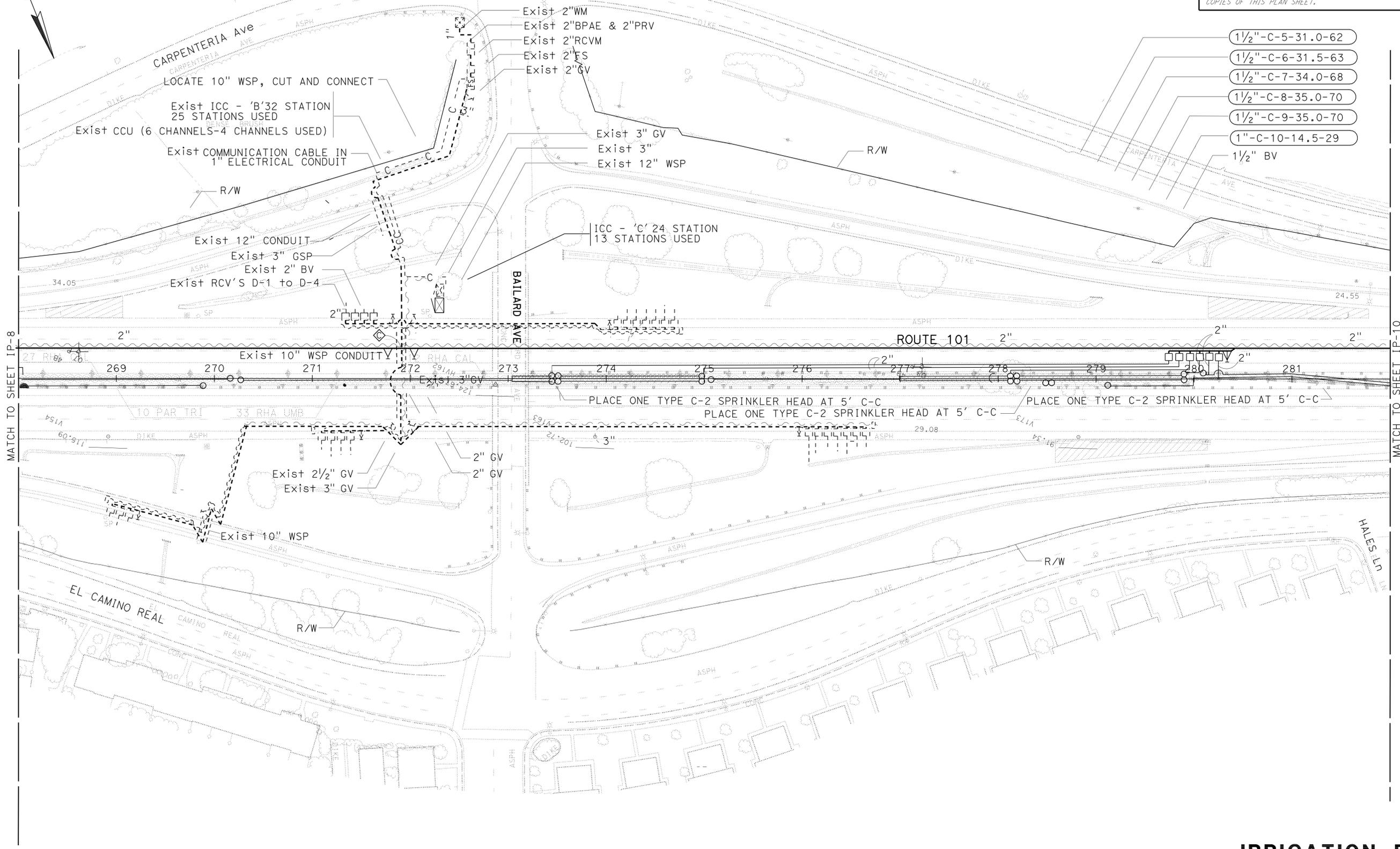
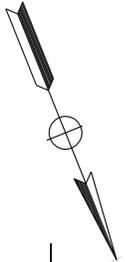
**IRRIGATION PLAN**  
**IP-8**

SCALE: 1" = 50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	437	757

Keith Sellers  
 LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 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.



- 1 1/2" - C-5-31.0-62
- 1 1/2" - C-6-31.5-63
- 1 1/2" - C-7-34.0-68
- 1 1/2" - C-8-35.0-70
- 1 1/2" - C-9-35.0-70
- 1" - C-10-14.5-29
- 1 1/2" BV

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CALCULATED/DESIGNED BY  
 KEITH SELLERS  
 CHECKED BY  
 JOSEPH MILLMAN  
 REVISED BY  
 DATE REVIS

LAST REVISION | DATE PLOTTED => 25-JUN-2011  
 00-00-00 | TIME PLOTTED => 06:58

THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.

**IRRIGATION PLAN**  
**IP - 9**

SCALE: 1" = 50'

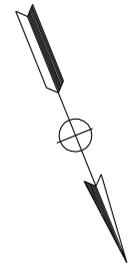
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	438	757

*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 6-20-11  
 PLANS APPROVAL DATE

*Keith Sellers*  
 Signature  
 04-30-11  
 Renewal 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.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE

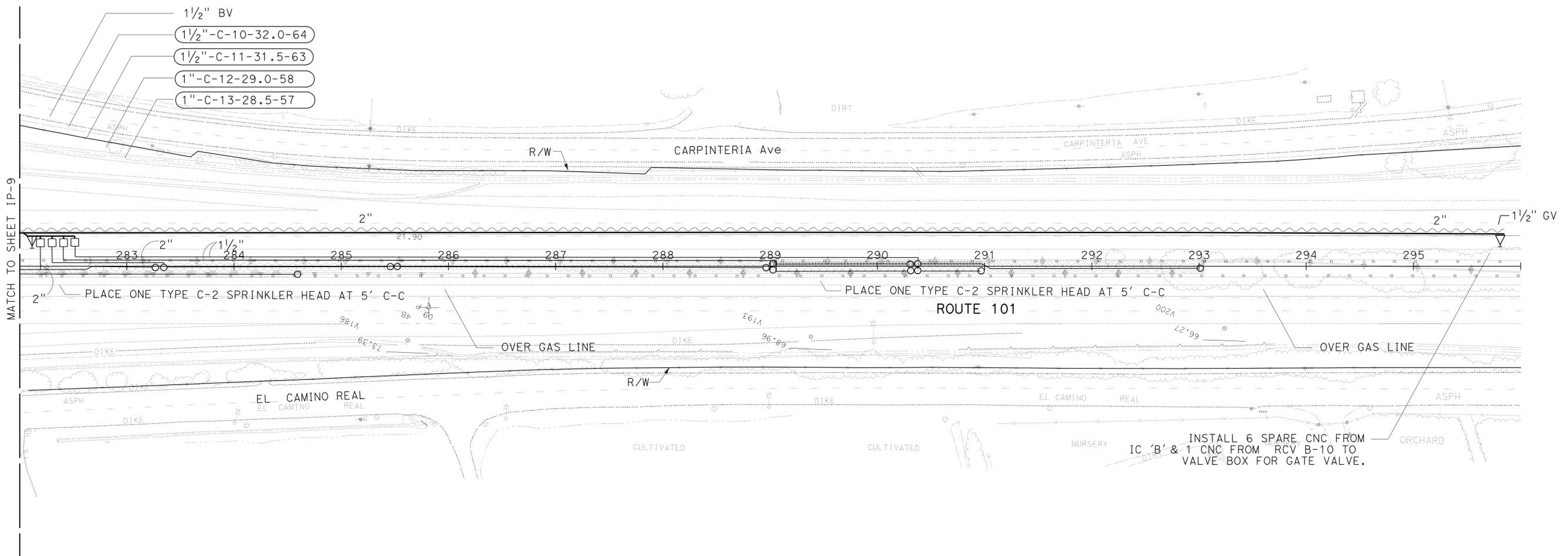
SENIOR LANDSCAPE ARCHITECT  
**PATTY WATANABE**

CALCULATED, DESIGNED BY  
**PATTY WATANABE**

CHECKED BY  
**PATTY WATANABE**

KEITH SELLERS  
 JOSEPH MILLMAN

REVISOR  
 DATE



THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.

**IRRIGATION PLAN**  
**IP - 10**

SCALE: 1" = 50'

**SPRINKLER SCHEDULE**

SYMBOL	TYPE	DESCRIPTION	SPRAY PATTERN	OPERATING PRESSURE (POUNDS PER SQUARE INCH) (PSI)	PRESSURE COMPENSATING	PLUS / MINUS 5% ②			RADIUS (IN FEET)(F)	WIDTH X LENGTH (IN FEET)(F)	MATERIAL	INLET CONNECTION (NPT) (DN IN INCHES (IN))	ADJUSTABLE DISCHARGE	RISER							REMARKS			
						DISCHARGE								MATERIAL										
						GALLONS PER SECOND G/s	GALLONS PER MINUTE G/min	GALLONS PER HOUR G/h						TYPE	PLASTIC	GALVANIZED	SIZE (IPS) (IN INCHES (IN))	HEIGHT (IN INCHES (IN))	FLOW SHUTOFF DEVICE	SWING JOINT (TYPE) ⑤		RISER SUPPORT	SPRINKLER PROTECTOR (TYPE)	
o	C-2	FLOOD BUBBLER	---	15-70	X	---	0.25	---	5.0	---	PL	1/2"	---	V	X	---	1/2"	12"	---	---	---	---	---	③
◇	B-5	ROTARY STREAM	H	15-70	---	---	1.0	---	13-18	---	PL	1/2"	X	V	X	---	1/2"	12"	---	III	---	---	---	

**X IN BOX DENOTES REQUIREMENT**  
 APPLICABLE WHEN CIRCLED BELOW:

**ABBREVIATIONS**

ADJ	adjustable	G/h	gallons per hour
BR/PL	brass/bronze	G/min	gallons per minute
BR/PL	brass/bronze/plastic	G/s	gallons per second
PL	plastic	FT	feet
CS	center strip	IN	inch
DN	diameter nominal	NPT	national pipe thread
EST	end strip	PC	part circle
FC	full circle	PL	plastic
FP	full part circle	QC	quarter circle
HP	half part circle	SST	side strip
IPS	iron pipe size	TC	third circle
PSI	pounds per square inch	TQ	three quarter circle
		TT	two thirds circle

1 - See Special Provisions.  
 ② - If a pressure compensating device is specified, the discharge and radii shown reflect its use.  
 ③ - Pressure Compensating full circle bubbler.  
 4 - Vinyl-coated cast iron housing.  
 5 - Swing Joints required adjacent to shoulders, curbs, sidewalks, and dikes.  
 6 - Unless otherwise shown on plans.

- NOTE:**
- IRRIGATION LINES SHALL BE 3/4" NOMINAL UNLESS OTHERWISE NOTED OR SIZED BY CHART.
  - CNC SHALL TYPICALLY FOLLOW SUPPLY LINE (MAIN) IN DIRECTION OF ARROW, NOT SHOWN CONTINUOUSLY FOR CLARITY.
  - CONNECT CNC FROM CONTROLLER TO VALVES.
  - LOCATE RCV MANIFOLDS ADJACENT TO CL GATE WHERE POSSIBLE.
  - ADD TWO EXTRA CNC TO LAST RCV'S ON MAINLINE.

PVC SCHEDULE 40	
PIPE SIZING FOR C-2 (0.5 GPM) SYSTEMS	
NUMBER OF SPRINKLERS	SIZE OF PIPE
1 -- 16	3/4"
17 -- 24	1"
25 -- 44	1 1/4"
45 -- 60	1 1/2"
61 -- 100	2"

**IRRIGATION SYMBOL**

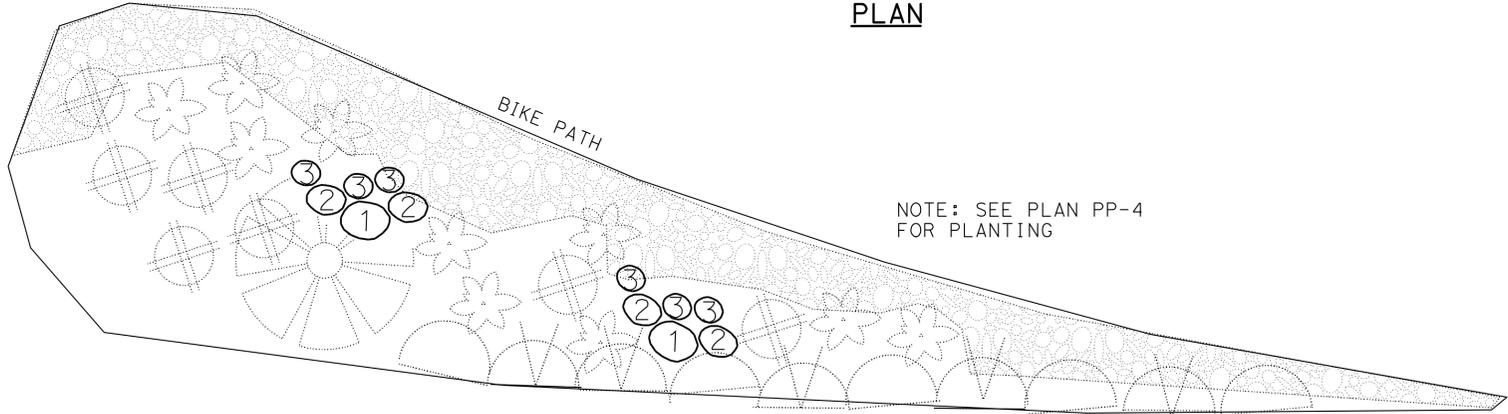
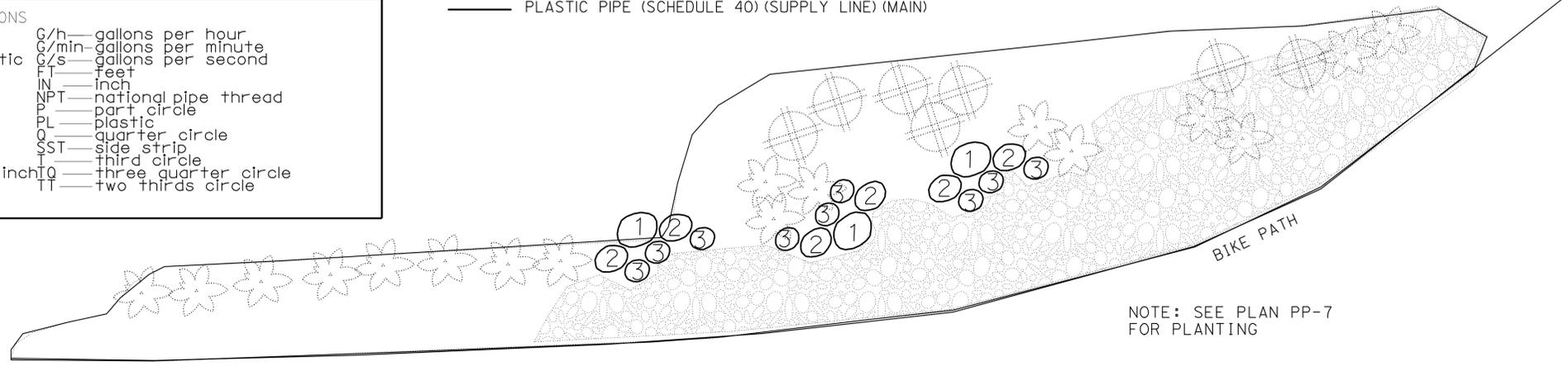
- PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) (LATERAL)
- PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) (MAIN)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	439	757

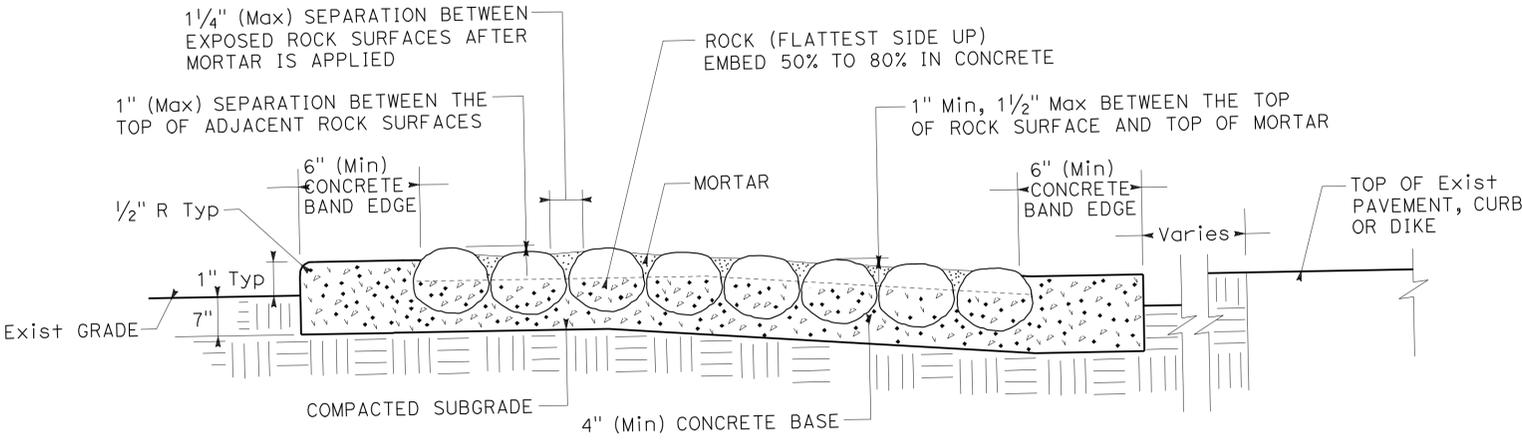
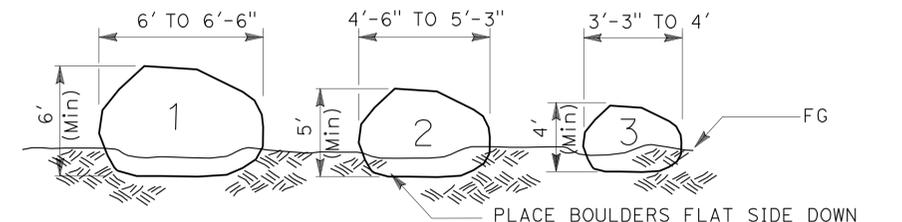
*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 Signature: 04-30-11  
 Renewal Date: 04-13-10  
 STATE OF CALIFORNIA

6-20-11  
 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.



**PLAN BOULDERS AND ROCK BLANKET**  
 SCALE 1/8"=1'-0"



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT: PATTY WATANABE

CHECKED BY: JOSEPH MILLMAN

DESIGNED BY: KEITH SELLERS

DATE REVISION: 04/02/10

DATE REVISOR: 04/02/10

**SPRINKLER SCHEDULE AND LANDSCAPE DETAILS LD-1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	440	757

*Keith Sellers*  
 LICENSED LANDSCAPE ARCHITECT  
 Signature: *Keith Sellers*  
 No. 5288  
 04-30-11  
 Renewal Date: 04-13-10  
 DATE: 6-20-11  
 PLANS APPROVAL DATE

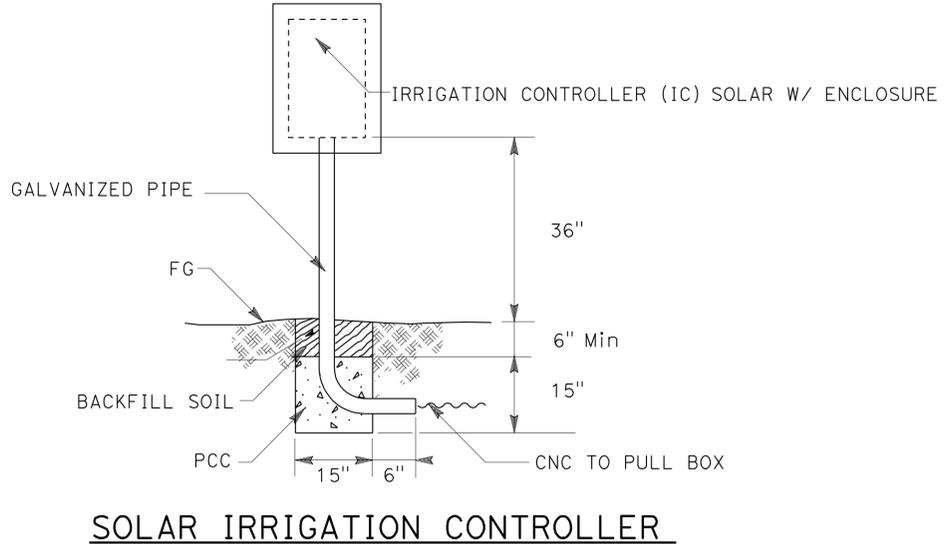
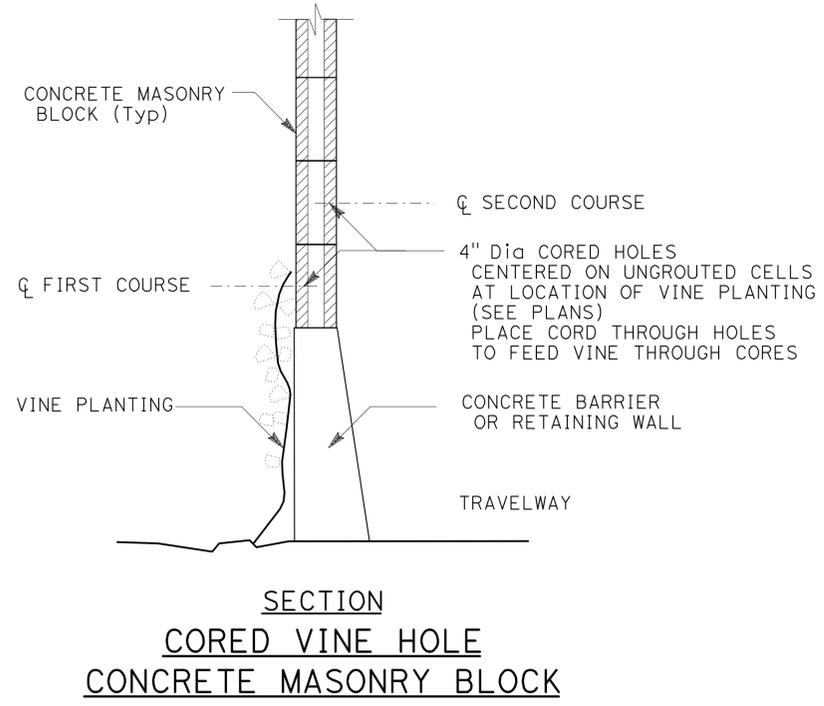
THE STATE OF CALIFORNIA OR ITS OFFICERS  
 OR AGENTS SHALL NOT BE RESPONSIBLE FOR  
 THE ACCURACY OR COMPLETENESS OF SCANNED  
 COPIES OF THIS PLAN SHEET.

IRRIGATION CROSSOVERS							
LINE	STATION	SIDE		CONDUIT TYPE ③		(N)	(N)
		R+	L+	SIZE (INCH) 8"	LENGTH (LF)	WATER LINE CROSSOVER SIZE (INCH)	SPRINKLER CONTROL CROSSOVER SIZE (INCH)
MUSSEL SHOALS ON AND OFF	51+00	X	X	120		1 1/2	1
SB ON-RAMP BATES RD	92+00	X		55		1 1/2	1
TOTAL				175			

(N) - NOT A SEPARATE PAY ITEM  
 FOR INFORMATION ONLY  
 X - DENOTES REQUIREMENT

**CONDUIT TYPE**  
 (Applicable when circled below and shown  
 under the 'CONDUIT TYPE' column heading)

- BITUMINOUS COATED CORRUGATED STEEL PIPE (0.064 INCH THICK)
- CORRUGATED STEEL PIPE (0.064 INCH THICK)
- ③ CORRUGATED HIGH DENSITY POLYETHYLENE PIPE
- ALTERNATIVE CONDUIT

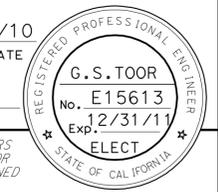


**CROSSOVER TABLE AND IRRIGATION DETAILS  
LD-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 KEITH SELLERS  
 JOSEPH MILLMAN  
 REVISOR BY  
 DATE REVISED  
 04/02/10  
 04/02/10  
 CALCULATED BY  
 DESIGNED BY  
 CHECKED BY  
 USERNAME => s124496  
 DGN FILE => 7260701n002.dgn  
 RELATIVE BORDER SCALE  
 IS IN INCHES  
 0 1 2 3  
 UNIT 1851  
 PROJECT NUMBER & PHASE  
 07000004901

LAST REVISION  
 02-03-11  
 DATE PLOTTED => 25-JUN-2011  
 TIME PLOTTED => 06:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	441	757
			12/16/10 REGISTERED ELECTRICAL ENGINEER DATE		
			6-20-11 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.

**LEGENDS:** (SHEETS E-1 TO E-7)

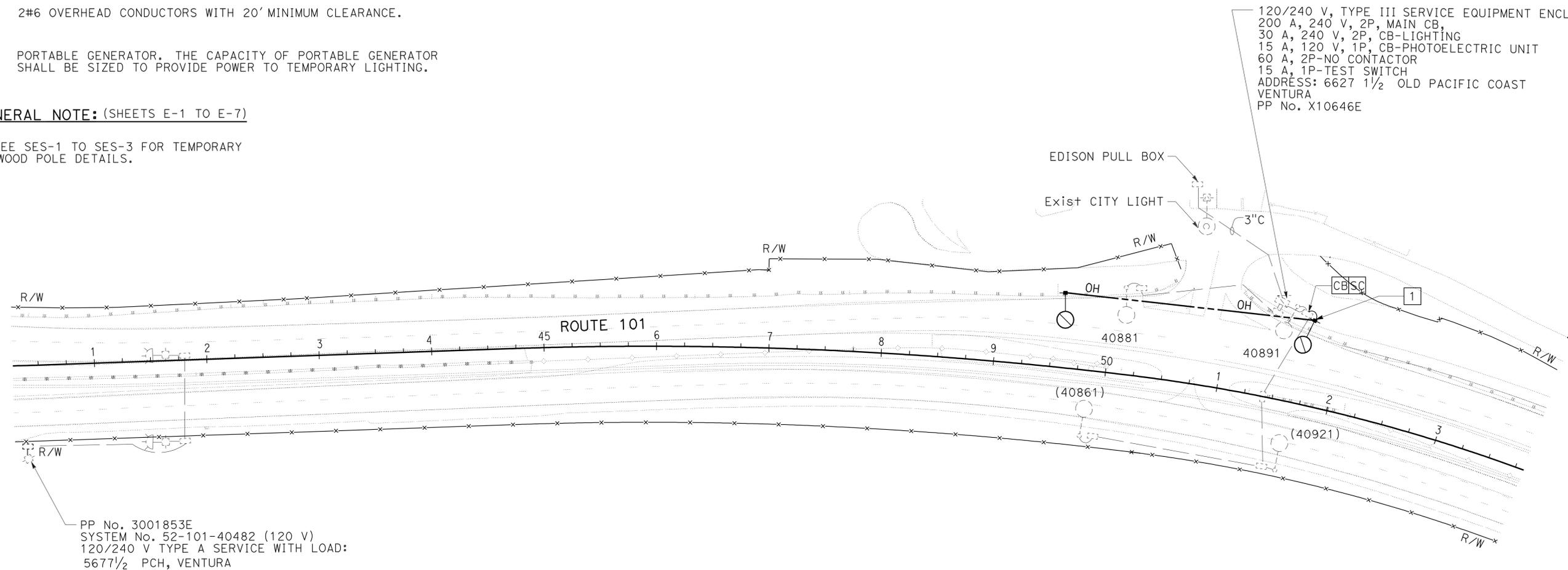
- 40' WOOD POLE WITH 15' LUMINAIRE ARM AND 310 W HPS LUMINAIRE.
- 40' WOOD POLE.
- OH** --- 2#6 OVERHEAD CONDUCTORS WITH 20' MINIMUM CLEARANCE.
- G** PORTABLE GENERATOR. THE CAPACITY OF PORTABLE GENERATOR SHALL BE SIZED TO PROVIDE POWER TO TEMPORARY LIGHTING.

**PROJECT NOTE:** (THIS SHEET)

- 1** INSTALL 41C RISER, 2#6.

**GENERAL NOTE:** (SHEETS E-1 TO E-7)

- 1. SEE SES-1 TO SES-3 FOR TEMPORARY WOOD POLE DETAILS.



PP No. 3001853E  
 SYSTEM No. 52-101-40482 (120 V)  
 120/240 V TYPE A SERVICE WITH LOAD:  
 5677 1/2 PCH, VENTURA

120/240 V, TYPE III SERVICE EQUIPMENT ENCLOSURE WITH:  
 200 A, 240 V, 2P, MAIN CB,  
 30 A, 240 V, 2P, CB-LIGHTING  
 15 A, 120 V, 1P, CB-PHOTOELECTRIC UNIT  
 60 A, 2P-NO CONTACTOR  
 15 A, 1P-TEST SWITCH  
 ADDRESS: 6627 1/2 OLD PACIFIC COAST  
 VENTURA  
 PP No. X10646E

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO  
 CALCULATED/DESIGNED BY: CHECKED BY:  
 JAMSHED A. HYDER GARY TOOR  
 REVISED BY: DATE REVISED:

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING  
 (TEMPORARY)**  
 SCALE: 1" = 50'

**E-1**

LAST REVISION | DATE PLOTTED => 01-AUG-2011  
 08-31-10 TIME PLOTTED => 14:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	442	757

<i>G.S. Toor</i>	12/16/10
REGISTERED ELECTRICAL ENGINEER	DATE
6-20-11	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
G.S. TOOR
No. E15613
Exp. 12/31/11
ELECT

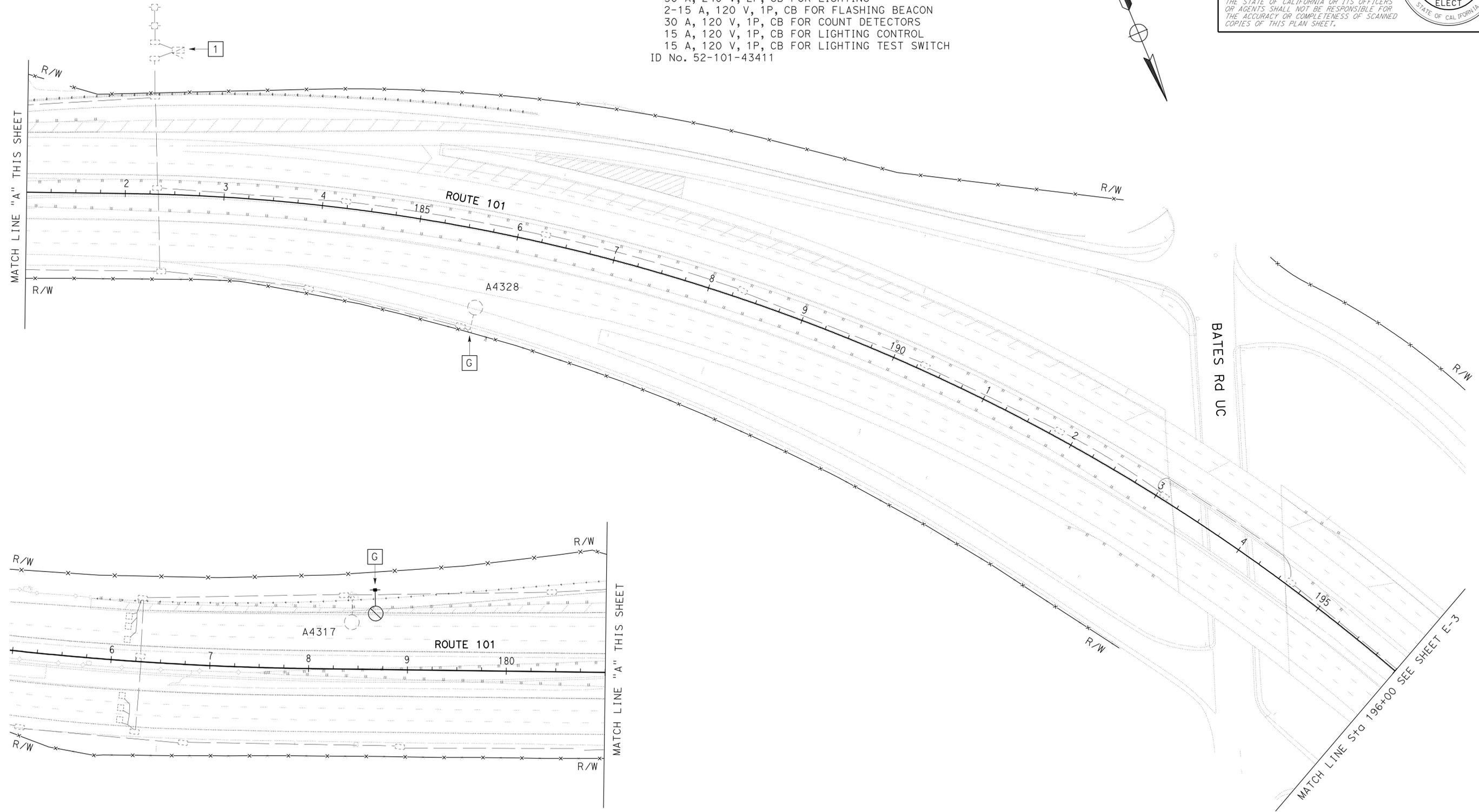
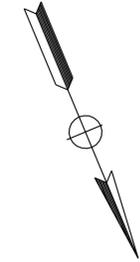
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTE:**

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

**PROJECT NOTE: (THIS SHEET)**

- 1 EXISTING 120/240 V TYPE III-BF SERVICE EQUIPMENT ENCLOSURE WITH THE FOLLOWING:
    - 100 A, 240 V, 2P, CB, MAIN BREAKER
    - 50 A, 240 V, 2P, CB FOR LIGHTING
    - 2-15 A, 120 V, 1P, CB FOR FLASHING BEACON
    - 30 A, 120 V, 1P, CB FOR COUNT DETECTORS
    - 15 A, 120 V, 1P, CB FOR LIGHTING CONTROL
    - 15 A, 120 V, 1P, CB FOR LIGHTING TEST SWITCH
- ID No. 52-101-43411



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
<b>Caltrans</b> TRAFFIC DESIGN	OSWALD ELIZONDO	CHECKED BY	DATE REVISED
		PARESH PATEL	
		GARY TOOR	

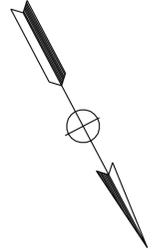
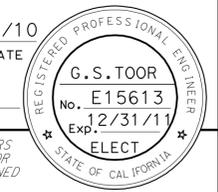
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING (TEMPORARY)**  
SCALE: 1" = 50'

**E-2**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	443	757
			REGISTERED ELECTRICAL ENGINEER DATE		
			12/16/10		
			PLANS APPROVAL DATE		
			6-20-11		
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.					

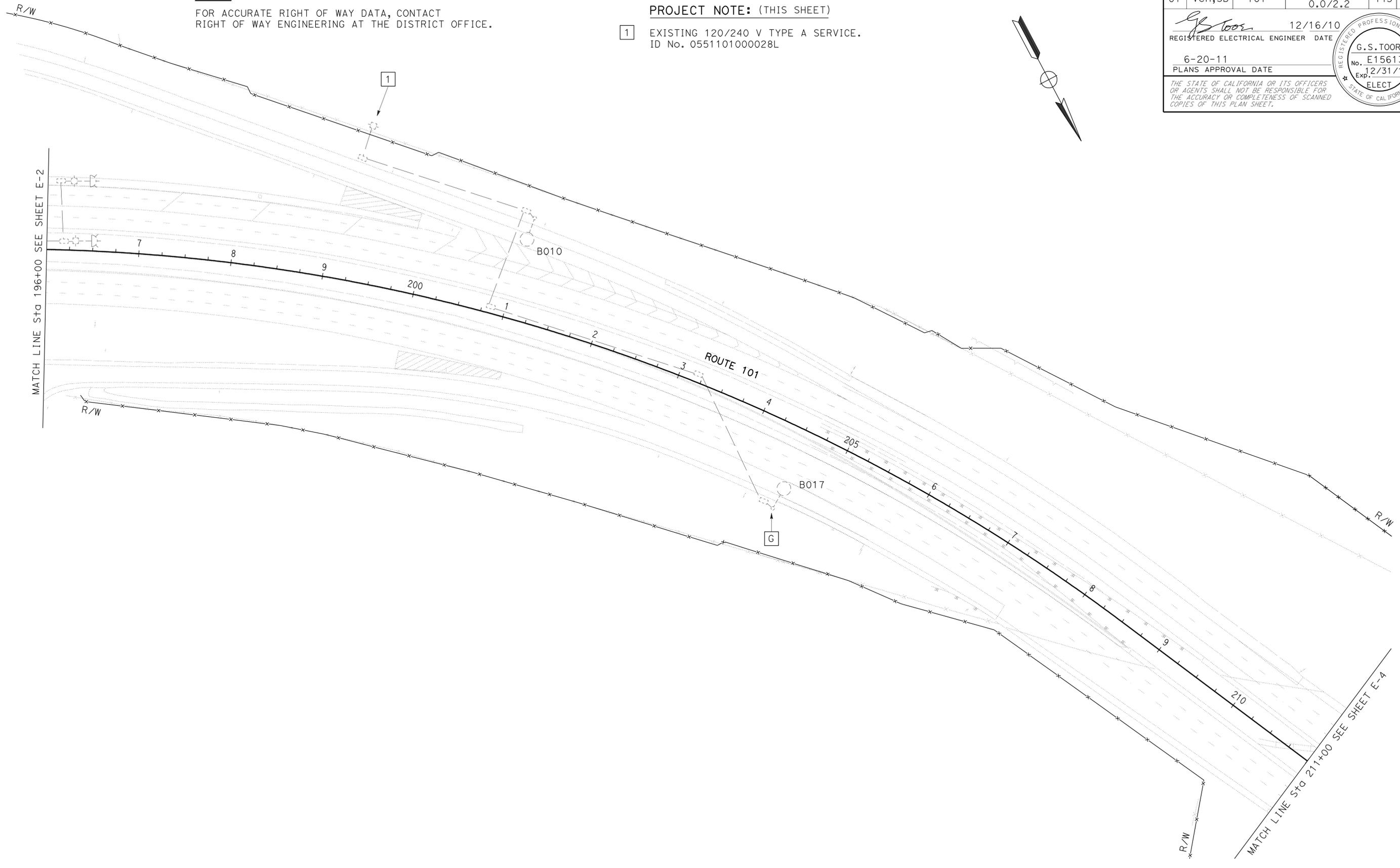


**NOTE:**  
FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

**PROJECT NOTE: (THIS SHEET)**  
1 EXISTING 120/240 V TYPE A SERVICE.  
ID No. 0551101000028L

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

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO  
CALCULATED/DESIGNED BY: CHECKED BY:  
PARESH PATEL GARY TOOR  
REVISED BY: DATE REVISED:



THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING  
(TEMPORARY)**  
SCALE: 1" = 50'

**E-3**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	444	757

<i>G. S. Toor</i>	12/16/10
REGISTERED ELECTRICAL ENGINEER	DATE
6-20-11	
PLANS APPROVAL DATE	

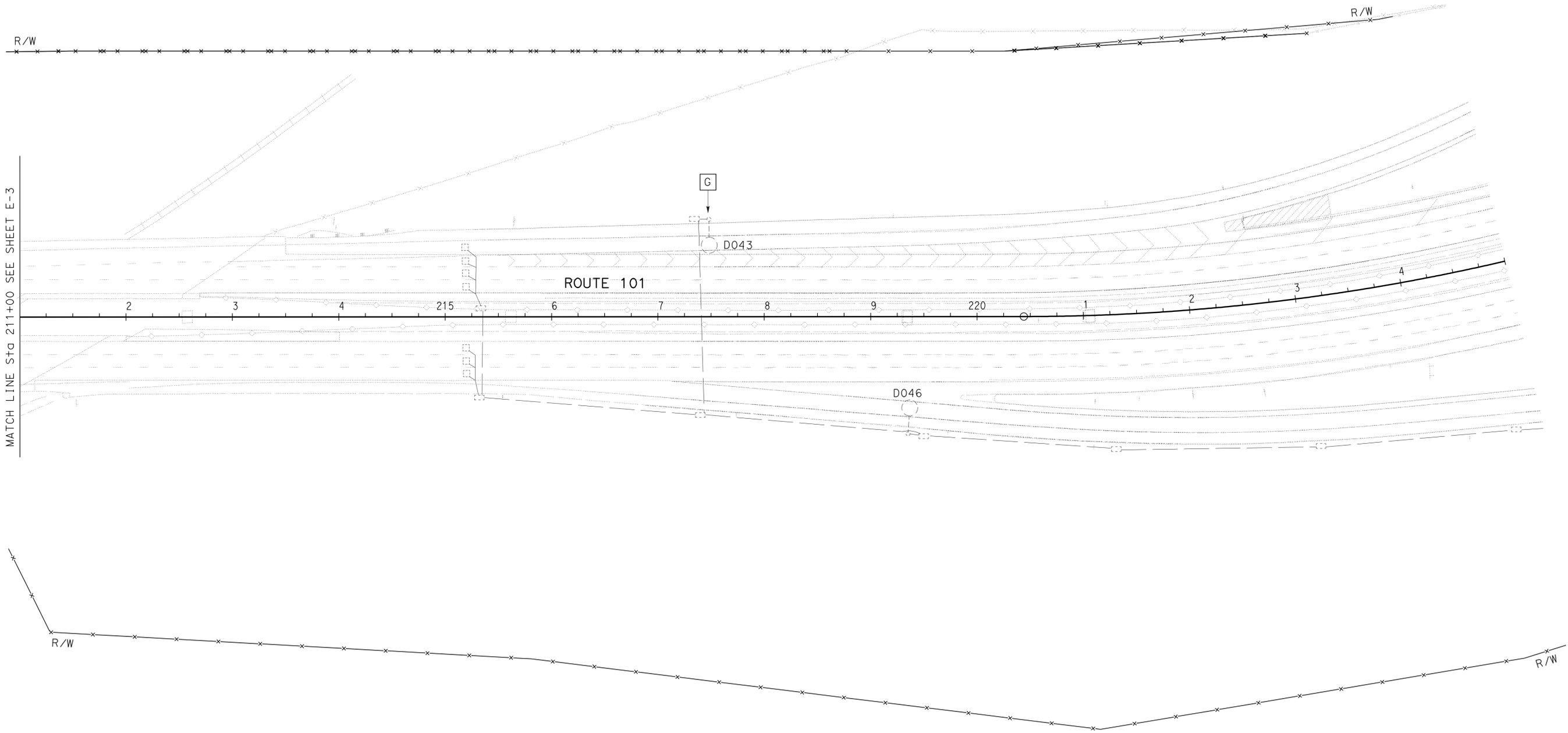
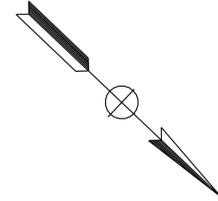
  

REGISTERED PROFESSIONAL ENGINEER
G. S. TOOR
No. E15613
Exp. 12/31/11
ELECT
STATE OF CALIFORNIA

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

**NOTE:**

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
<b>Caltrans</b> TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR OSWALD ELIZONDO
CALCULATED, DESIGNED BY CHECKED BY
PARESH PATEL GARY TOOR
REVISED BY DATE REVISED

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING  
(TEMPORARY)**  
SCALE: 1" = 50'

**E-4**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	445	757

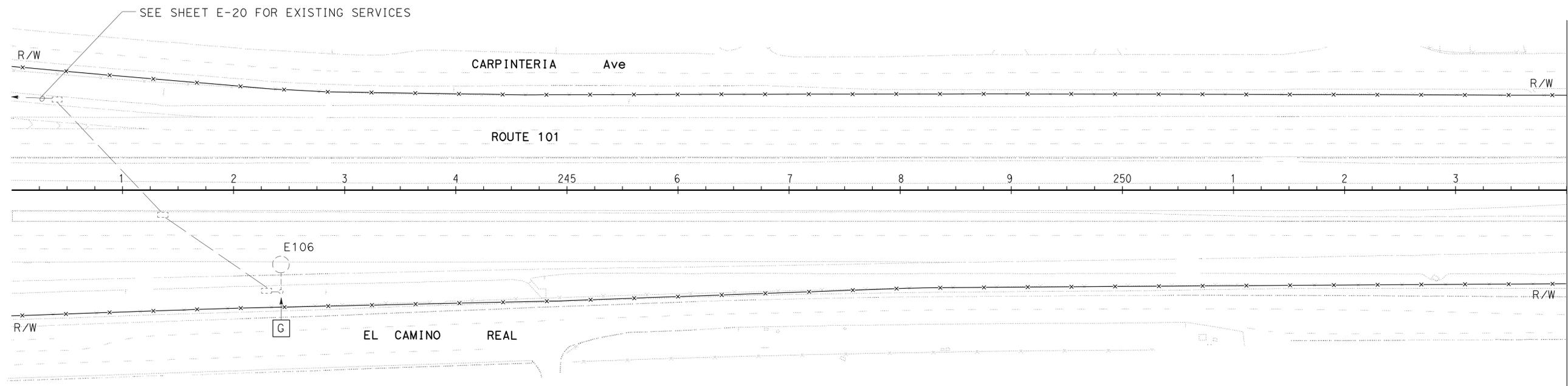
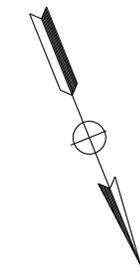
12/16/10  
 REGISTERED ELECTRICAL ENGINEER DATE  
 6-20-11  
 PLANS APPROVAL DATE

G.S. TOOR  
 No. E15613  
 Exp. 12/31/11  
 ELECT

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

**NOTE:**

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO  
 CALCULATED/DESIGNED BY: CHECKED BY:  
 PARESH PATEL GARY TOOR  
 REVISED BY: DATE REVISED:

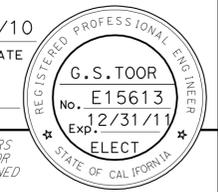
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING  
(TEMPORARY)**  
SCALE: 1" = 50'

**E-5**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	446	757
			12/16/10		
			REGISTERED ELECTRICAL ENGINEER DATE		
			6-20-11		
			PLANS APPROVAL DATE		
<small>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.</small>					

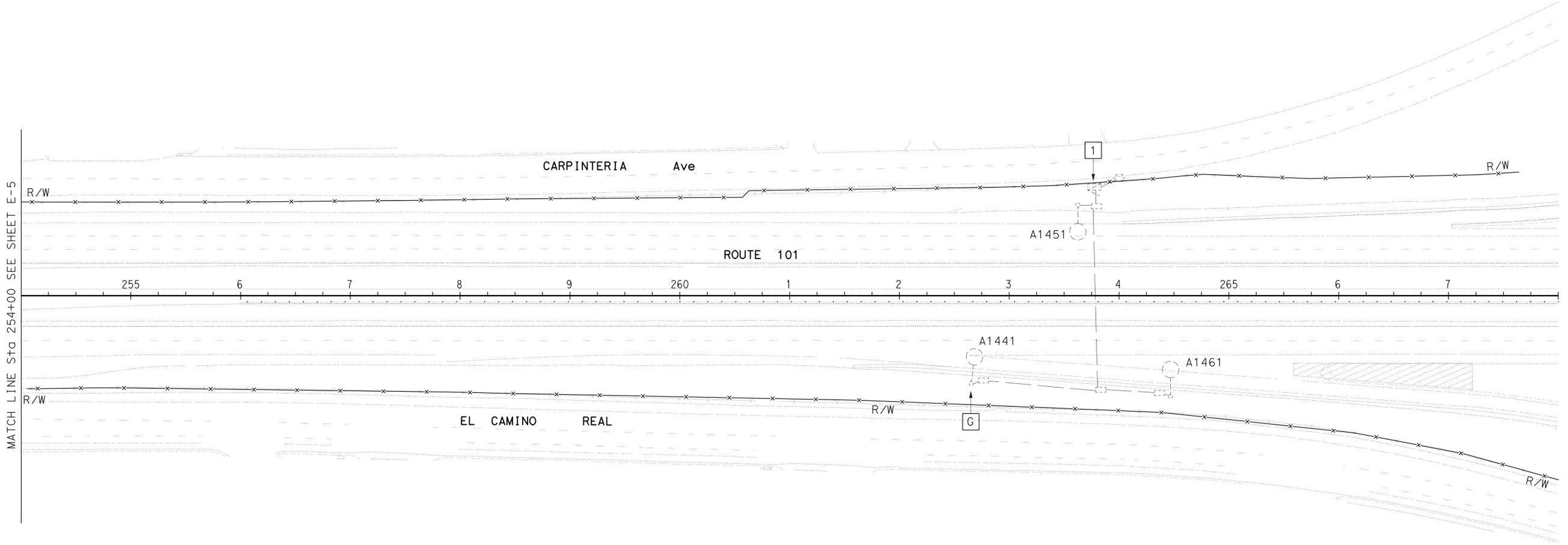


**NOTE:**  
FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

**PROJECT NOTE: (THIS SHEET)**

1 EXISTING 120/240 V TYPE III-BF SERVICE  
EQUIPMENT ENCLOSURE WITH THE FOLLOWING:  
100 A, 240 V, 2P, CB, MAIN BREAKER  
40 A, 240 V, 2P, CB, FOR LIGHTING  
15 A, 120 V, 1P, CB, FOR LIGHTING CONTROL  
20 A, 120 V, 1P, CB, SPARE  
40 A, 240 V, 2P, CB, SPARE  
ID No. 05511010001451

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
<b>Caltrans</b> TRAFFIC DESIGN	OSWALD ELIZONDO	CHECKED BY	DATE REVISED
		PARESH PATEL	
		GARY TOOR	



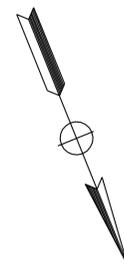
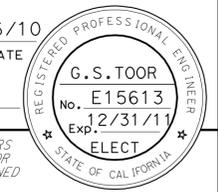
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING  
(TEMPORARY)**  
SCALE: 1" = 50'

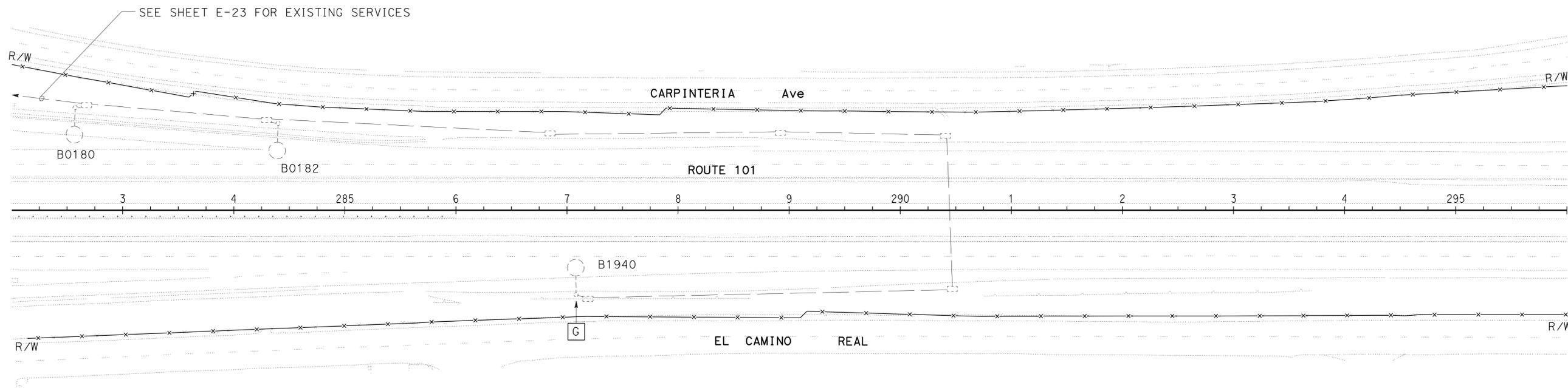
**E-6**

LAST REVISION | DATE PLOTTED => 25-JUN-2011 08-31-10 TIME PLOTTED => 06:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	447	757
			<i>G.S. Toor</i> 12/16/10 REGISTERED ELECTRICAL ENGINEER DATE		
			6-20-11 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.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO  
 CALCULATED/DESIGNED BY: GARY TOOR  
 PARESH PATEL  
 REVISOR: GARY TOOR  
 REVISIONS: REVISOR, DATE, REVISIONS

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING  
 (TEMPORARY)**  
 SCALE: 1" = 50'

**E-7**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	448	757

12/16/10  
 REGISTERED ELECTRICAL ENGINEER DATE  
 G.S. TOOR  
 No. E15613  
 Exp. 12/31/11  
 ELECT  
 STATE OF CALIFORNIA  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTE:**

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

**LIGHTING LEGEND:** (SHEETS E-8, E-11, E-14 AND E-17)

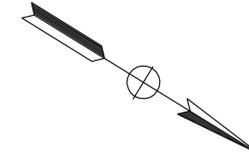
- ⊙ INSTALL ORNAMENTAL POLE ELECTROLIER FOR BIKE PATH ON CIDH PILE FOUNDATION (ES-6A), WITH 100 W HPS LUMINAIRE. SEE SE-1 FOR DETAILS.

**GENERAL NOTES: (SHEET E-8 TO E-24):**

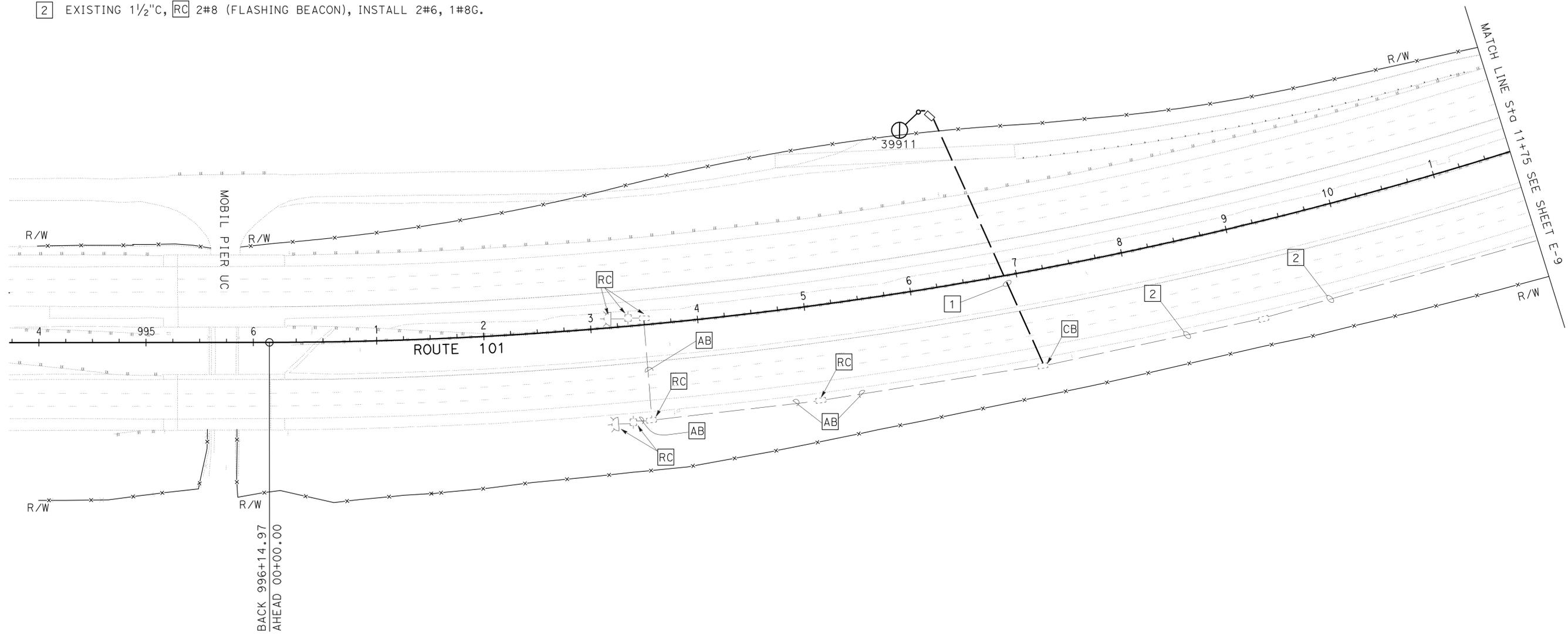
1. SEE E-25 AND E-26 FOR WIRING DIAGRAM.
2. ALL NEW ROADWAY LUMINAIRES SHALL BE LED TYPE.
3. REPLACE EXISTING LUMINAIRES WITH LED TYPE.

**PROJECT NOTES: (THIS SHEET)**

- 1 INSTALL 2"C, 2#6, 1#8G.
- 2 EXISTING 1½"C, RC 2#8 (FLASHING BEACON), INSTALL 2#6, 1#8G.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR OSWALD ELIZONDO  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 JAMSHED A. HYDER  
 GARY TOOR  
 REVISED BY  
 DATE REVISED



**REMOVE FLASHING BEACON  
MODIFY LIGHTING**

SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**E-8**

LAST REVISION DATE PLOTTED => 01-AUG-2011  
 08-31-10 TIME PLOTTED => 14:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	449	757

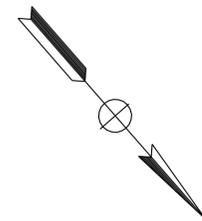
  

<i>G. S. Toor</i>	12/16/10
REGISTERED ELECTRICAL ENGINEER	DATE
6-20-11	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
G. S. TOOR
No. E15613
Exp. 12/31/11
ELECT

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

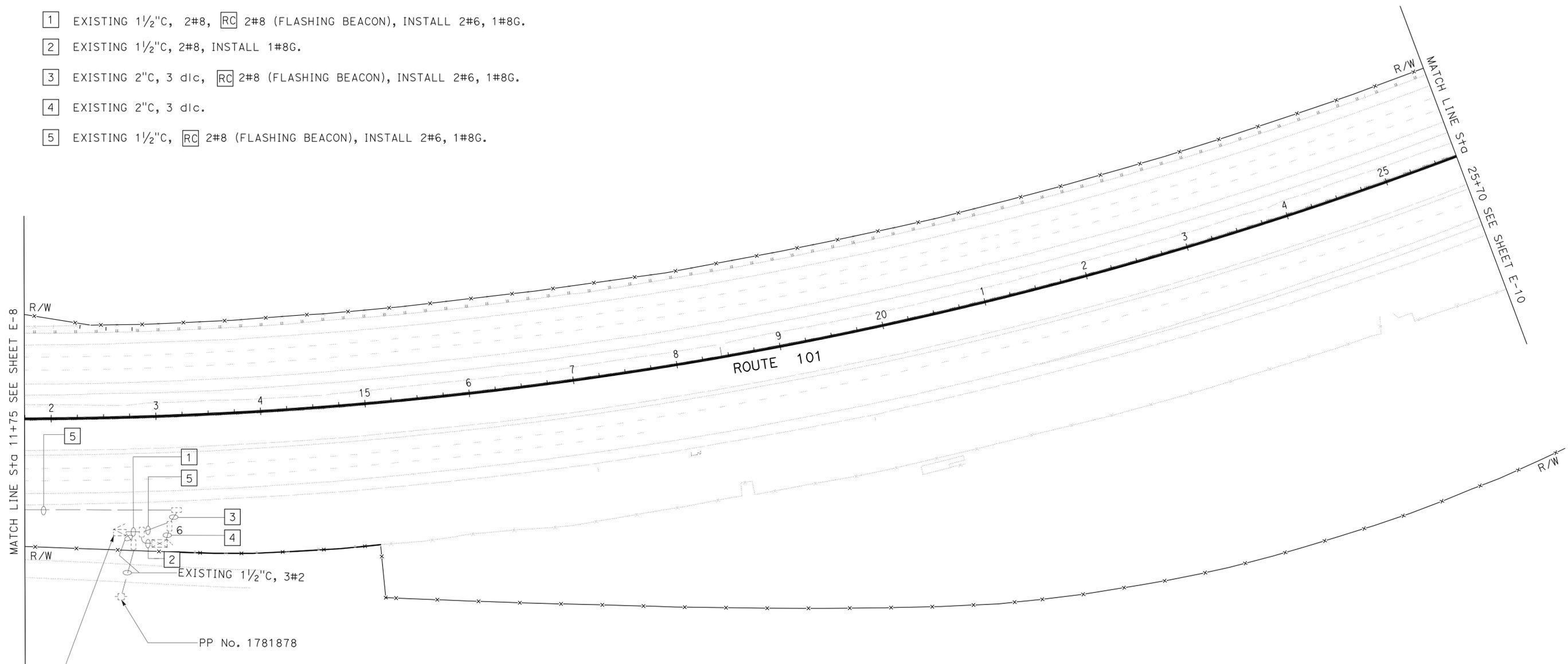


**NOTE:**

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

**PROJECT NOTES: (THIS SHEET)**

- 1 EXISTING 1½"C, 2#8, RC 2#8 (FLASHING BEACON), INSTALL 2#6, 1#8G.
- 2 EXISTING 1½"C, 2#8, INSTALL 1#8G.
- 3 EXISTING 2"C, 3 dlc, RC 2#8 (FLASHING BEACON), INSTALL 2#6, 1#8G.
- 4 EXISTING 2"C, 3 dlc.
- 5 EXISTING 1½"C, RC 2#8 (FLASHING BEACON), INSTALL 2#6, 1#8G.



EXISTING 120/240 V TYPE III-AF SERVICE EQUIPMENT ENCLOSURE WITH THE FOLLOWING:  
100 A, 240 V, 2P, CB, MAIN BREAKER. ID No. 62+101+40028

- RC 1-15 A, 120 V, 1P, CB FOR INCANDESCENT LAMP.
- RC 1-15 A, 120 V, 1P, CB FOR FLASHING BEACON
- 1-30 A, 120 V, 1P, CB FOR COUNT DETECTORS.
- ADD 1-30 A, 240 V, 2P, CB FOR BIKE PATH LIGHTING.

**REMOVE FLASHING BEACON  
MODIFY LIGHTING**  
SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO  
 CALCULATED/DESIGNED BY: CHECKED BY:  
 JAMSHED A. HYDER GARY TOOR  
 REVISED BY: DATE REVISED:

USERNAME => frmikes1  
DGN FILE => 726070ua009.dgn



UNIT 1878

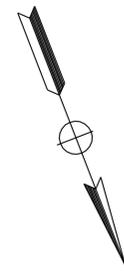
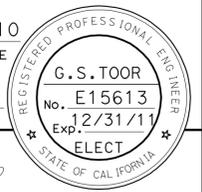
PROJECT NUMBER & PHASE

07000004901

**E-9**

LAST REVISION: DATE PLOTTED => 01-AUG-2011  
 08-31-10 TIME PLOTTED => 14:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	450	757
			 12/16/10 REGISTERED ELECTRICAL ENGINEER DATE		
			6-20-11 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.		



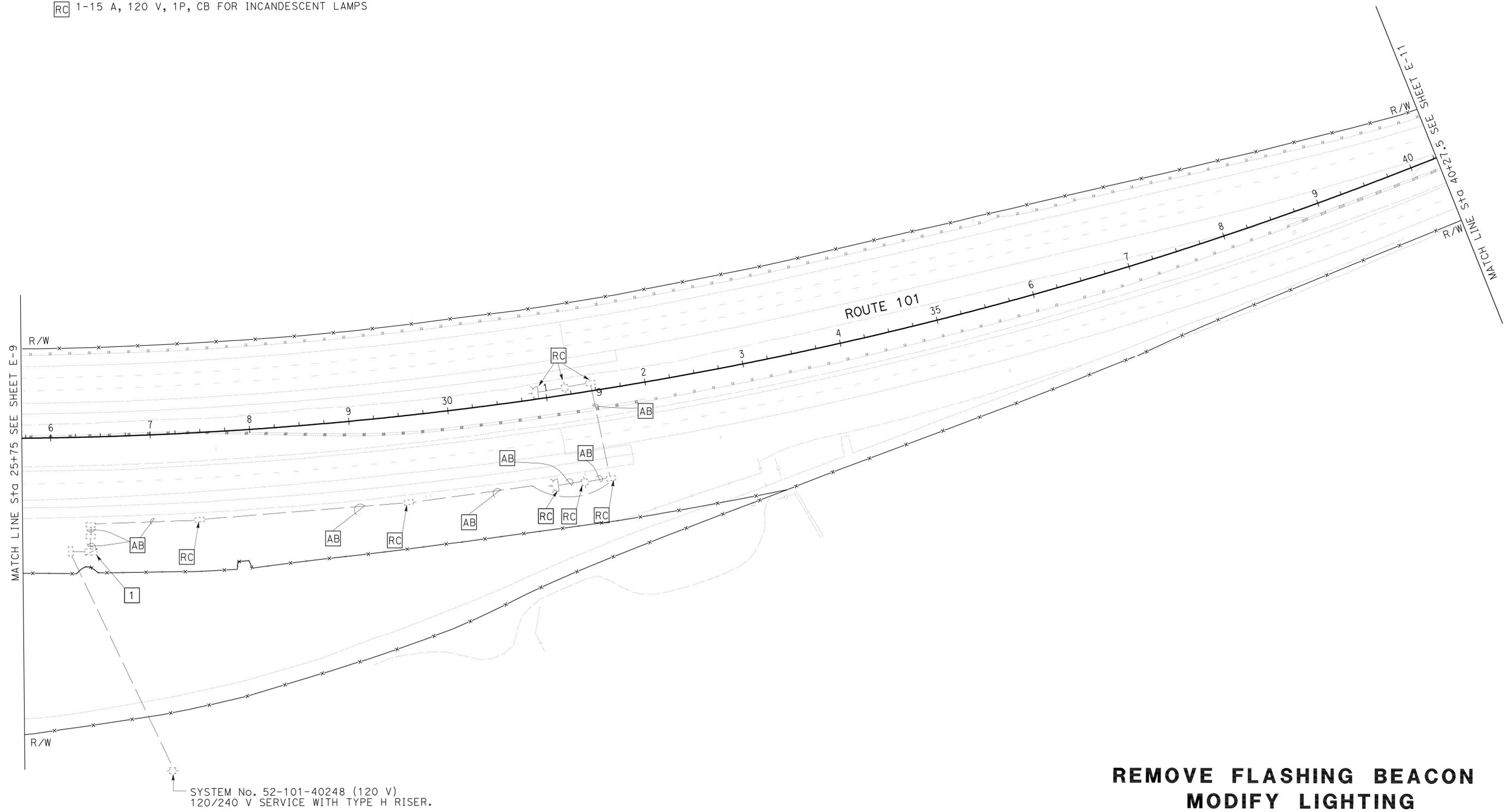
**NOTE:**

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

**PROJECT NOTES: (THIS SHEET)**

- 1 EXISTING 120/240 V TYPE A SERVICE WITH THE FOLLOWING:  
100 A, 240 V, 2P, CB, MAIN BREAKER
- RC 1-15 A, 120 V, 1P, CB FOR FLASHING BEACON
- RC 1-15 A, 120 V, 1P, CB FOR INCANDESCENT LAMPS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR
<b>Caltrans</b> TRAFFIC DESIGN	OSWALD ELIZONDO	JAMSHED A. HYDER	GARY TOOR
	CHECKED BY	DATE	REVISION



**REMOVE FLASHING BEACON  
MODIFY LIGHTING**

SCALE: 1" = 50'

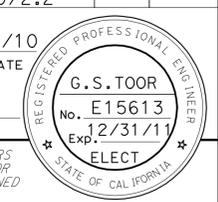
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**E-10**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	451	757

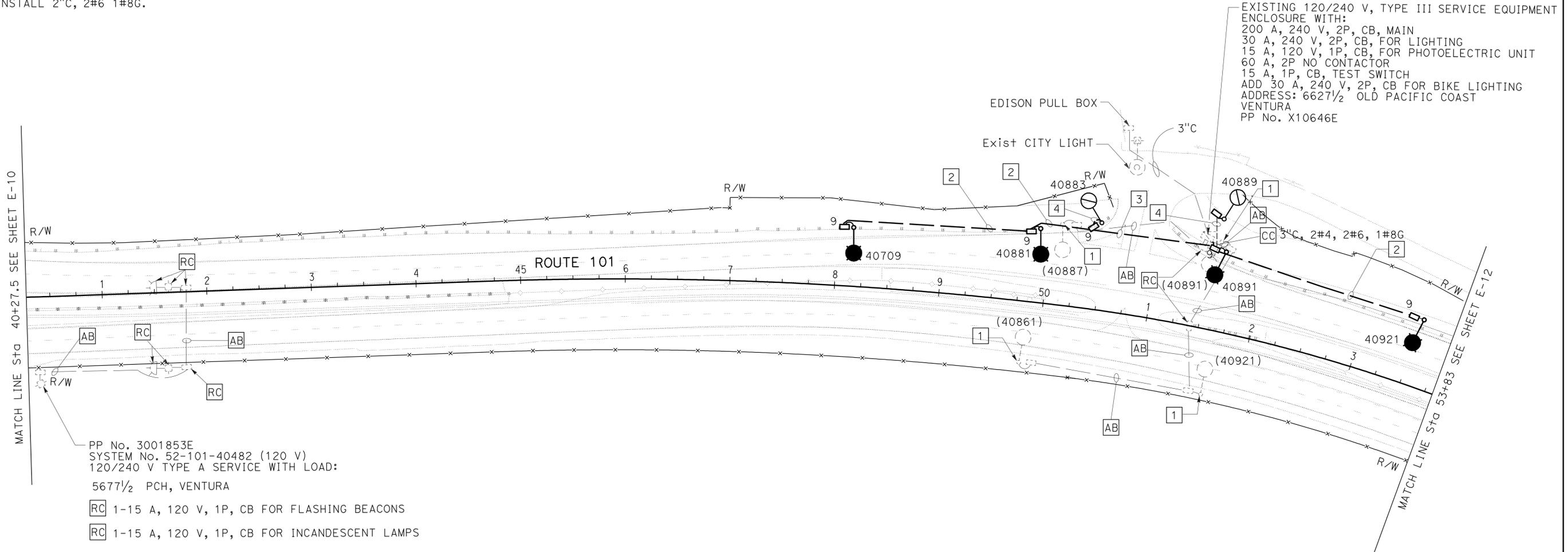
 12/16/10 REGISTERED ELECTRICAL ENGINEER DATE		
6-20-11 PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		

**NOTE:**

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

**PROJECT NOTES: (THIS SHEET)**

- 1 [RC] ELECTROLIER, AND ADJACENT PULL BOX.
- 2 INSTALL 2"C, 2#4, 1#8G, IN CONCRETE BARRIER.
- 3 INSTALL 3"C, 2#4, 2#6 1#8G.
- 4 INSTALL 2"C, 2#6 1#8G.



PP No. 3001853E  
 SYSTEM No. 52-101-40482 (120 V)  
 120/240 V TYPE A SERVICE WITH LOAD:  
 5677 1/2 PCH, VENTURA

- [RC] 1-15 A, 120 V, 1P, CB FOR FLASHING BEACONS
- [RC] 1-15 A, 120 V, 1P, CB FOR INCANDESCENT LAMPS

**REMOVE FLASHING BEACON  
 MODIFY LIGHTING**  
 SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

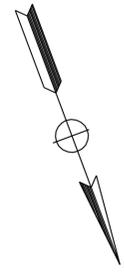
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED, DESIGNED BY	REVISOR BY
<b>Caltrans</b> TRAFFIC DESIGN	OSWALD ELIZONDO	CHECKED BY	JAMSHED A. HYDER
			GARY TOOR

LAST REVISION DATE PLOTTED => 01-AUG-2011  
 08-31-10 TIME PLOTTED => 14:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	452	757

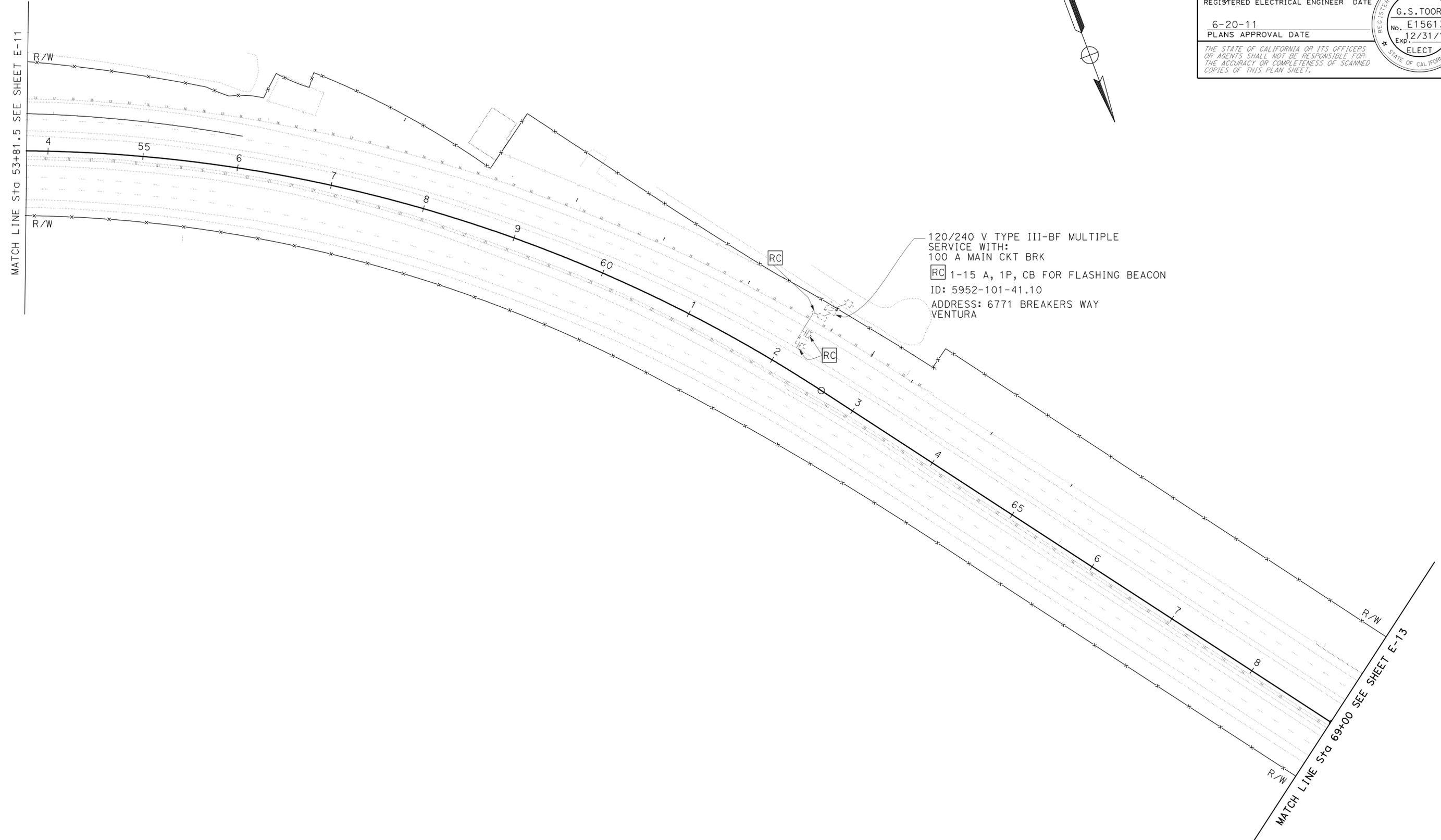
*G.S. Toor* 12/16/10  
 REGISTERED ELECTRICAL ENGINEER DATE  
 6-20-11  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
G.S. TOOR
No. E15613
Exp. 12/31/11
ELECT
STATE OF CALIFORNIA



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

MATCH LINE Sta 53+81.5 SEE SHEET E-11



MATCH LINE Sta 69+00 SEE SHEET E-13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
<b>Caltrans</b> TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR OSWALD ELIZONDO
CALCULATED/DESIGNED BY CHECKED BY
JAMSHED A. HYDER GARY TOOR
REVISED BY DATE REVISED

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**REMOVE FLASHING BEACON**  
 SCALE: 1" = 50'  
**E-12**

LAST REVISION    DATE PLOTTED => 01-AUG-2011  
 08-31-10    TIME PLOTTED => 14:35

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

FUNCTIONAL SUPERVISOR  
OSWALD ELIZONDO

CALCULATED/DESIGNED BY  
CHECKED BY

JAMSHED A. HYDER  
GARY TOOR

REVISED BY  
DATE REVISED

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

**PROJECT NOTES: (THIS SHEET)**

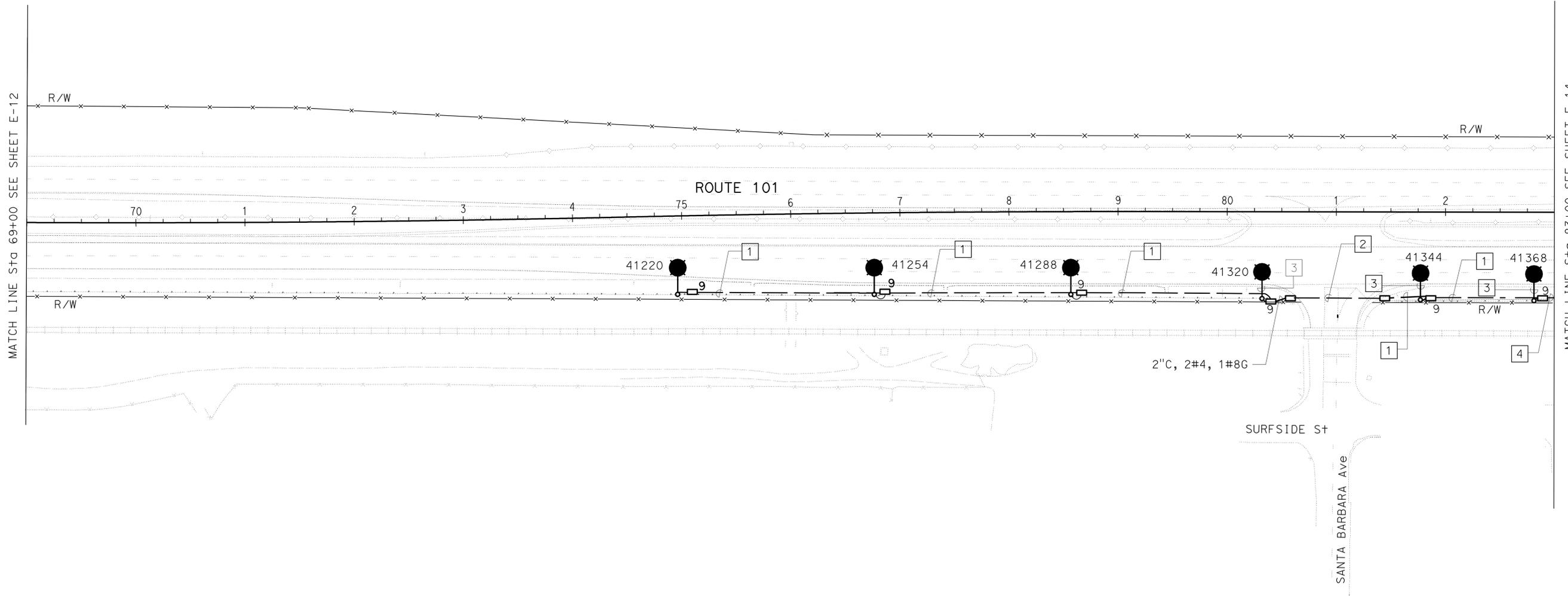
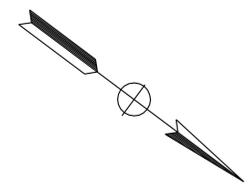
- 1 INSTALL 2"C, 2#4, 1#8G IN CONCRETE BARRIER.
- 2 INSTALL 3"C, 2#4, 1#8G.
- 3 PROVIDE 15' LUMINAIRE ARM.
- 4 INSTALL 2"C, 2#4, 1#8G IN CONCRETE BARRIER.  
SEE SHEET E-14 FOR CONTINUATION.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	453	757

12/16/10  
 REGISTERED ELECTRICAL ENGINEER DATE  
 6-20-11  
 PLANS APPROVAL DATE

G.S. TOOR  
 No. E15613  
 Exp. 12/31/11  
 ELECT

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



THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING**  
 SCALE: 1" = 50'

**E-13**

LAST REVISION | DATE PLOTTED => 25-JUN-2011  
 08-31-10 TIME PLOTTED => 06:40

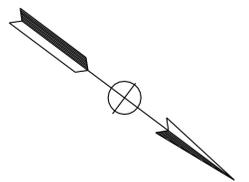
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	454	757

<i>G. S. Toor</i>		12/16/10
REGISTERED ELECTRICAL ENGINEER	DATE	
6-20-11	PLANS APPROVAL DATE	
<small>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.</small>		

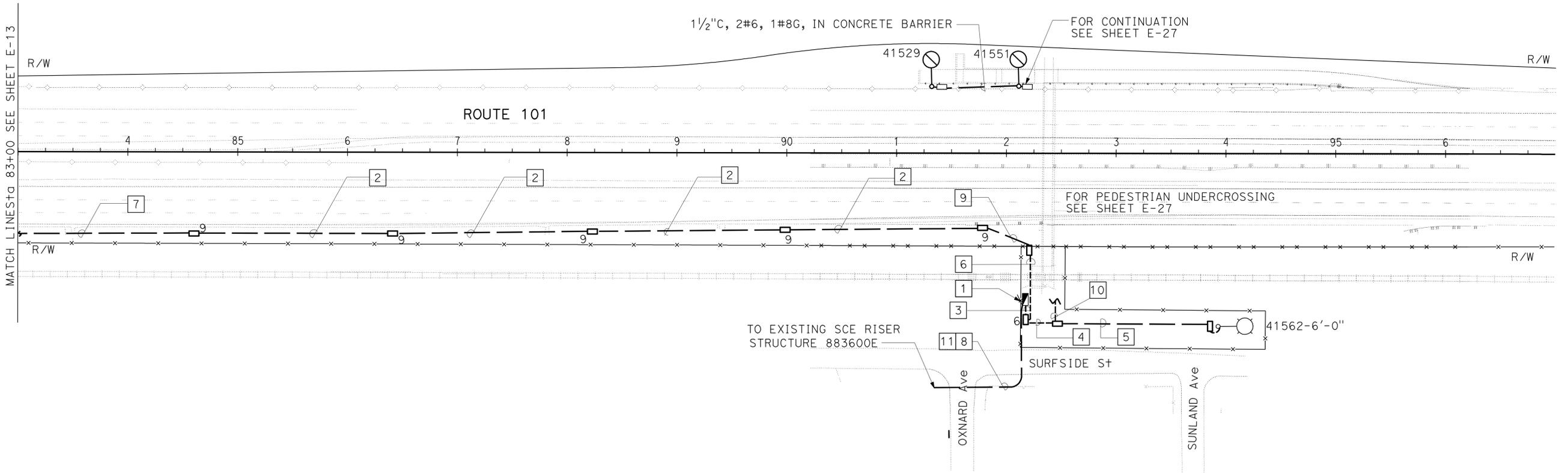
REGISTERED PROFESSIONAL ENGINEER	
G.S. TOOR	
No. E15613	
Exp. 12/31/11	
ELECT	



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

**PROJECT NOTES: (THIS SHEET)**

- |  |  |
|--|--|
| <p>1 INSTALL 120/240 V, TYPE III-BF SERVICE EQUIPMENT ENCLOSURE WITH:<br/>100 A, 240 V, 2P, CB, MAIN BREAKER<br/>2-30 A, 240 V, 2P, CB FOR LIGHTING<br/>1-30 A, 240 V, 2P, CB FOR SPARE<br/>1-20 A, 120 V, 1P, CB FOR SPARE<br/>7011<math>\frac{1}{2}</math> W. SURFSIDE ST<br/>LA CONCHITA<br/>I.D. No. 07521010041561</p> <p>2 INSTALL 2"C, 2#4, 1#8G, IN CONCRETE BARRIER.</p> <p>3 INSTALL 2-3"C, 2#4, 5#6, 1#8G.</p> <p>4 INSTALL 2"C, 5#6, 1#8G.</p> <p>5 INSTALL 2"C, 2#6, 1#8G.</p> <p>6 INSTALL 2"C, 2#4, 1#8G, ALONG OUTSIDE OF PEDESTRIAN UNCROSSING FOUNDATION. COORDINATE WITH PRIME CONTRACTOR PRIOR TO CONDUIT INSTALLATION.</p> <p>7 INSTALL 2"C, 2#4, 1#8G, IN CONCRETE BARRIER. SEE SHEET E-13 FOR CONTINUATION.</p> <p>8 INSTALL 3"C PER SCE REQUIRMENT, CONDUCTORS TO BE INSTALLED BY SCE.</p> | <p>9 INSTALL 2"C, 2#4, 1#8G. PROTECT EXISTING FIBER OPTIC CONDUIT.</p> <p>10 INSTALL 2"C, 5#6, IN CONCRETE BARRIER. SEE SHEET E-27 FOR CONTINUATION.</p> <p>11 INSTALL CONDUITS IN UNION PACIFIC RAILROAD EASEMENT AREA AS DIRECTED BY THE ENGINEER.</p> |
|--|--|



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** **TRAFFIC DESIGN**  
 FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO  
 CALCULATED/DESIGNED BY: [blank]  
 CHECKED BY: [blank]  
 JAMSHED A. HYDER  
 GARY TOOR  
 REVISED BY: [blank] DATE REVISED: [blank]

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING**  
SCALE: 1" = 50'

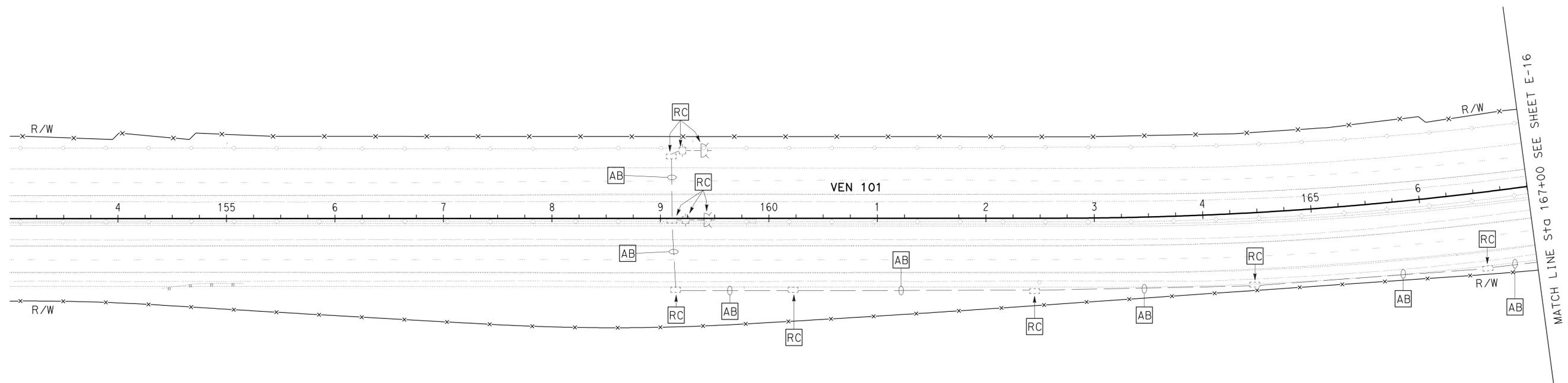
**E-14**

LAST REVISION DATE PLOTTED => 01-AUG-2011  
 08-31-10 TIME PLOTTED => 14:36

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	455	757
			12/16/10 REGISTERED ELECTRICAL ENGINEER DATE 6-20-11 PLANS APPROVAL DATE		
			G.S. TOOR No. E15613 Exp. 12/31/11 ELECT		
<small>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.</small>					

**NOTE:**

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
<b>Caltrans</b> TRAFFIC DESIGN	OSWALD ELIZONDO	CHECKED BY	DATE
		PARESH PATEL	REVISOR
		GARY TOOR	DATE

**REMOVE FLASHING BEACON**

SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**E-15**

LAST REVISION | DATE PLOTTED => 25-JUN-2011  
08-31-10 | TIME PLOTTED => 06:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	456	757
			12/16/10 REGISTERED ELECTRICAL ENGINEER DATE		
			6-20-11 PLANS APPROVAL DATE		
REGISTERED PROFESSIONAL ENGINEER <b>G.S. TOOR</b> No. E15613 Exp. 12/31/11 ELECT					
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



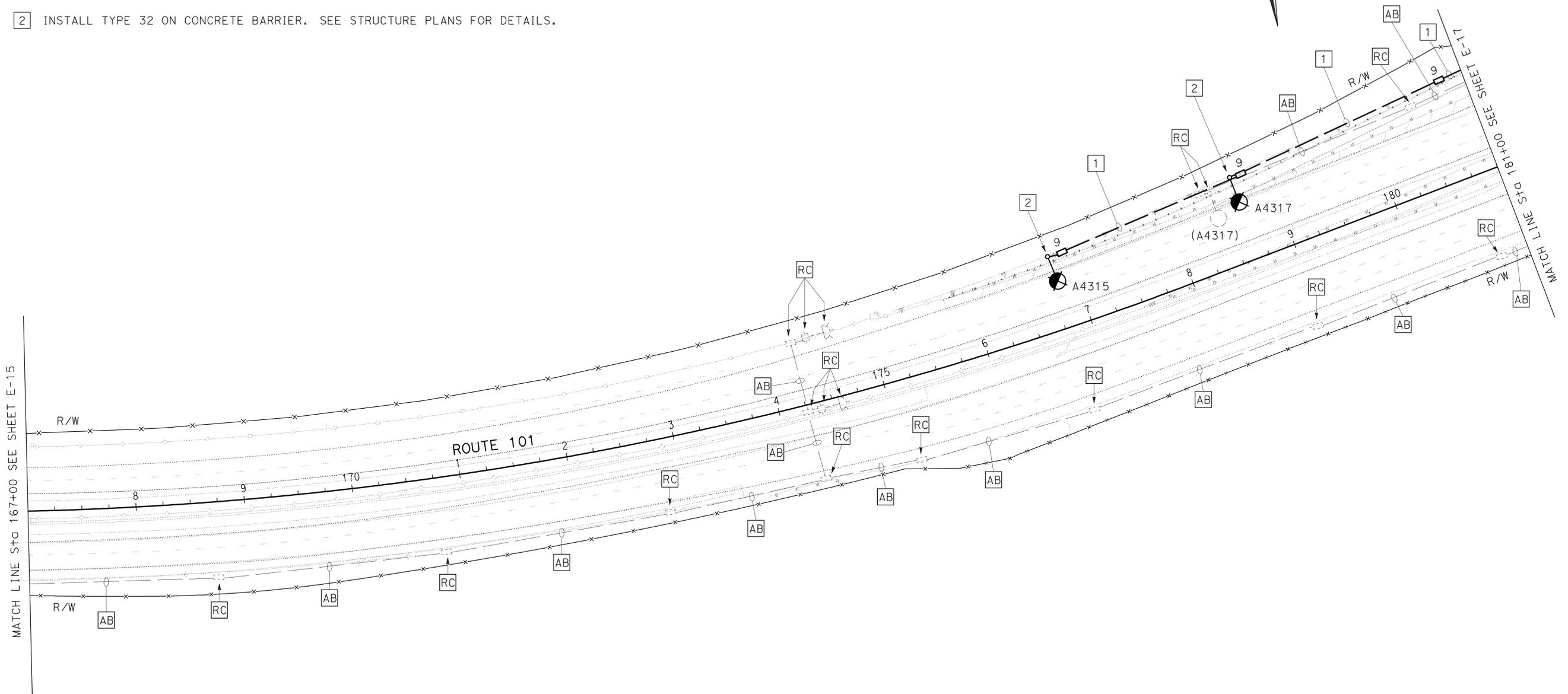
**NOTE:**

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

**PROJECT NOTE:** (THIS SHEET)

- 1 INSTALL 2"C, 2#8, 1#8G (LIGHTING) IN CONCRETE BARRIER.
- 2 INSTALL TYPE 32 ON CONCRETE BARRIER. SEE STRUCTURE PLANS FOR DETAILS.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
<b>Caltrans</b> TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR OSWALD ELIZONDO
CALCULATED/DESIGNED BY CHECKED BY
PARESH PATEL GARY TOOR
REVISED BY DATE REVISED

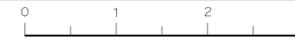


**REMOVE FLASHING BEACON  
MODIFY LIGHTING**

SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**E-16**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	457	757

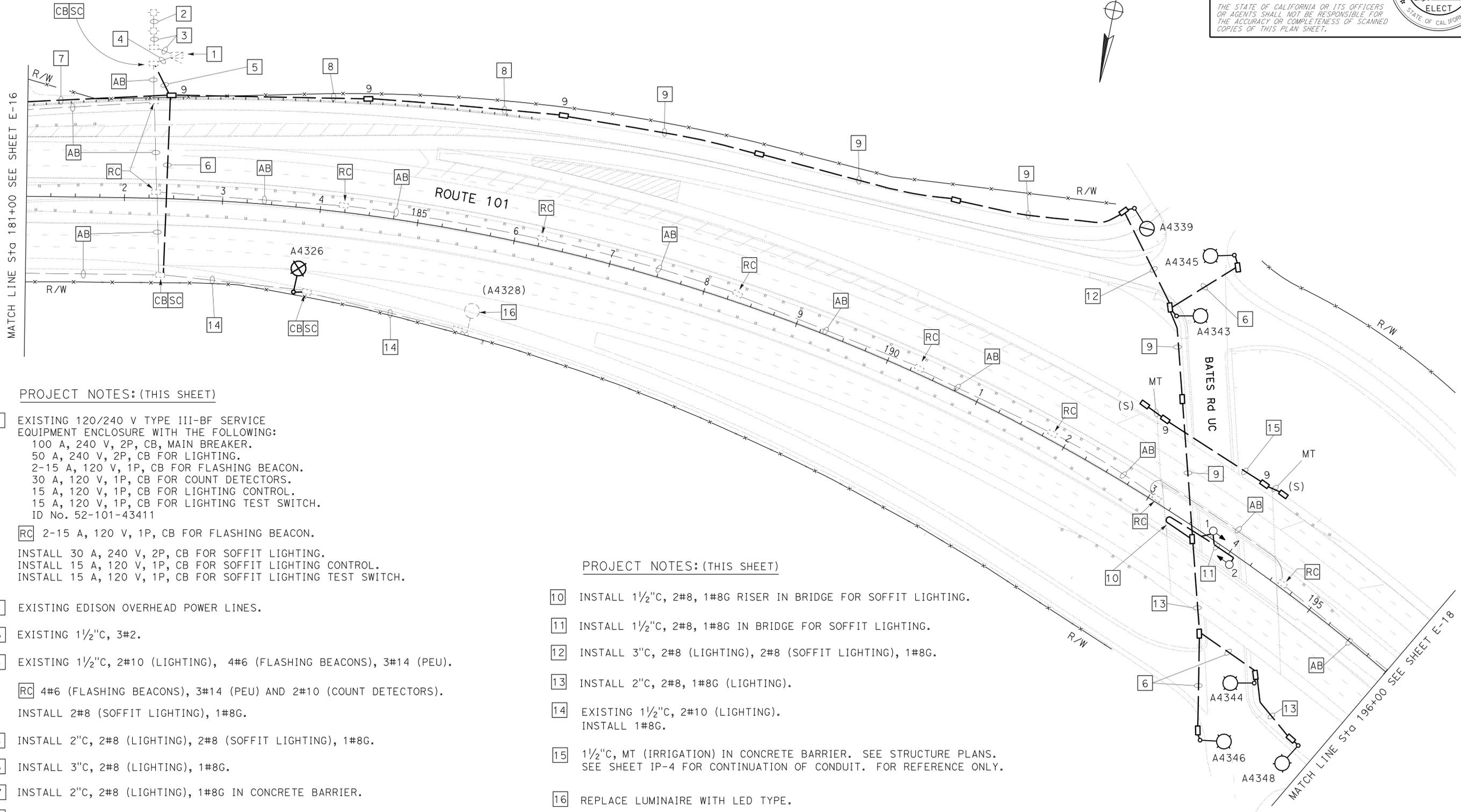
  

REGISTERED ELECTRICAL ENGINEER		DATE
G.S. TOOR		12/16/10
No. E15613		
Exp. 12/31/11		
ELECT		

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

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



**PROJECT NOTES: (THIS SHEET)**

- 1 EXISTING 120/240 V TYPE III-BF SERVICE EQUIPMENT ENCLOSURE WITH THE FOLLOWING:  
100 A, 240 V, 2P, CB, MAIN BREAKER.  
50 A, 240 V, 2P, CB FOR LIGHTING.  
2-15 A, 120 V, 1P, CB FOR FLASHING BEACON.  
30 A, 120 V, 1P, CB FOR COUNT DETECTORS.  
15 A, 120 V, 1P, CB FOR LIGHTING CONTROL.  
15 A, 120 V, 1P, CB FOR LIGHTING TEST SWITCH.  
ID No. 52-101-43411
- RC 2-15 A, 120 V, 1P, CB FOR FLASHING BEACON.  
INSTALL 30 A, 240 V, 2P, CB FOR SOFFIT LIGHTING.  
INSTALL 15 A, 120 V, 1P, CB FOR SOFFIT LIGHTING CONTROL.  
INSTALL 15 A, 120 V, 1P, CB FOR SOFFIT LIGHTING TEST SWITCH.
- 2 EXISTING EDISON OVERHEAD POWER LINES.
- 3 EXISTING 1/2"C, 3#2.
- 4 EXISTING 1/2"C, 2#10 (LIGHTING), 4#6 (FLASHING BEACONS), 3#14 (PEU).  
RC 4#6 (FLASHING BEACONS), 3#14 (PEU) AND 2#10 (COUNT DETECTORS).  
INSTALL 2#8 (SOFFIT LIGHTING), 1#8G.
- 5 INSTALL 2"C, 2#8 (LIGHTING), 2#8 (SOFFIT LIGHTING), 1#8G.
- 6 INSTALL 3"C, 2#8 (LIGHTING), 1#8G.
- 7 INSTALL 2"C, 2#8 (LIGHTING), 1#8G IN CONCRETE BARRIER.
- 8 INSTALL 2"C, 2#8 (LIGHTING), 2#8 (SOFFIT LIGHTING), 1#8G IN CONCRETE BARRIER.
- 9 INSTALL 2"C, 2#8 (LIGHTING), 2#8 (SOFFIT LIGHTING), 1#8G.

**PROJECT NOTES: (THIS SHEET)**

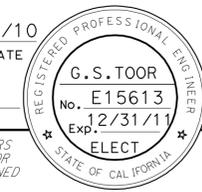
- 10 INSTALL 1/2"C, 2#8, 1#8G RISER IN BRIDGE FOR SOFFIT LIGHTING.
- 11 INSTALL 1/2"C, 2#8, 1#8G IN BRIDGE FOR SOFFIT LIGHTING.
- 12 INSTALL 3"C, 2#8 (LIGHTING), 2#8 (SOFFIT LIGHTING), 1#8G.
- 13 INSTALL 2"C, 2#8, 1#8G (LIGHTING).
- 14 EXISTING 1/2"C, 2#10 (LIGHTING).  
INSTALL 1#8G.
- 15 1/2"C, MT (IRRIGATION) IN CONCRETE BARRIER. SEE STRUCTURE PLANS.  
SEE SHEET IP-4 FOR CONTINUATION OF CONDUIT. FOR REFERENCE ONLY.
- 16 REPLACE LUMINAIRE WITH LED TYPE.

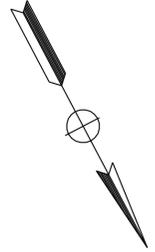
**SPRINKLER CONTROL CONDUIT (BRIDGE)  
REMOVE FLASHING BEACON  
MODIFY LIGHTING**

SCALE: 1" = 50'

**E-17**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO  
 CALCULATED/DESIGNED BY: GARY TOOR  
 CHECKED BY: PARESH PATEL  
 REVISED BY: GARY TOOR  
 DATE REVISED:

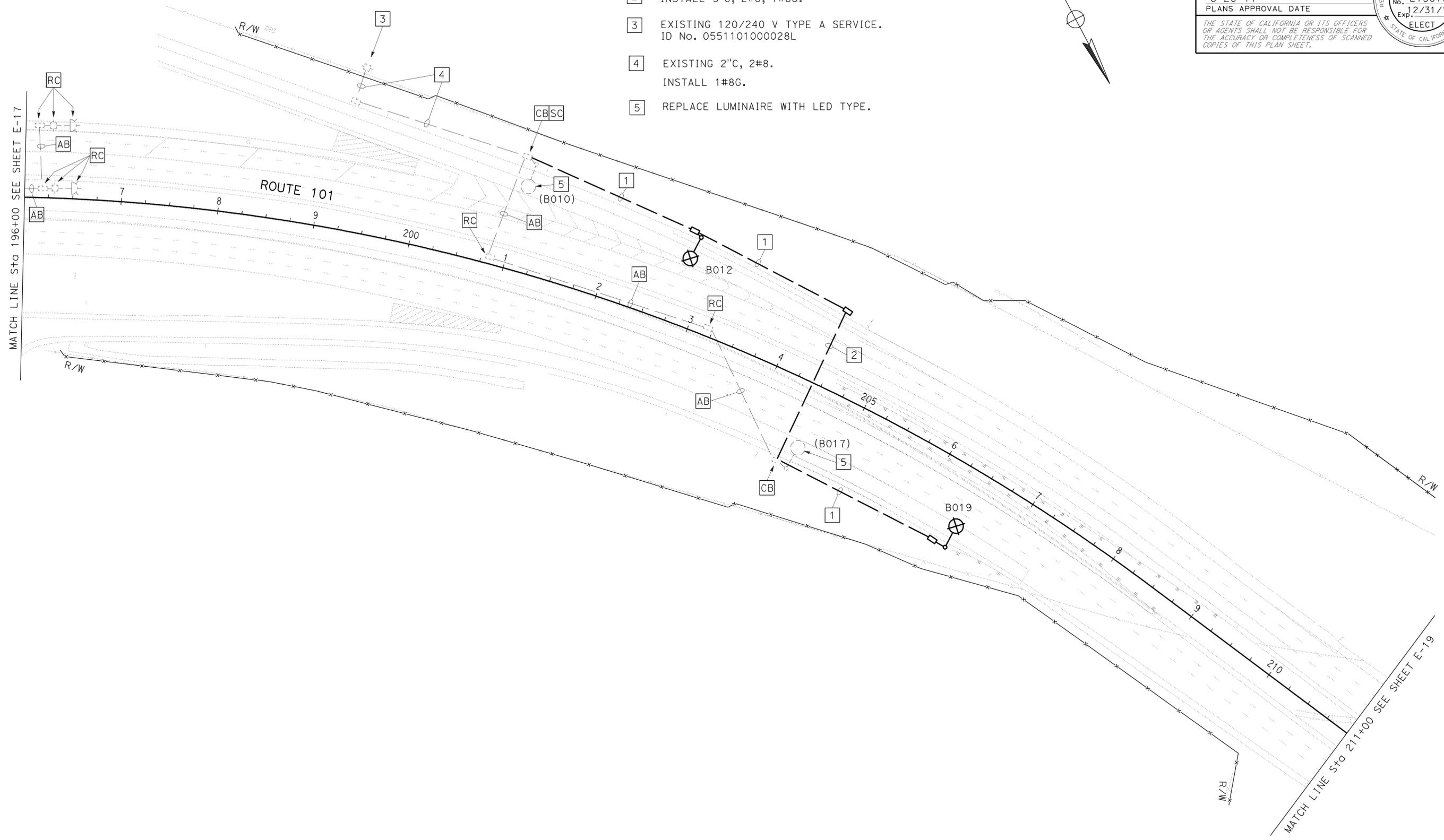
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	458	757
			 12/16/10 REGISTERED ELECTRICAL ENGINEER DATE		
			6-20-11 PLANS APPROVAL DATE		
					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



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

**PROJECT NOTES: (THIS SHEET)**

- 1 INSTALL 2"C, 2#8, 1#8G.
- 2 INSTALL 3"C, 2#8, 1#8G.
- 3 EXISTING 120/240 V TYPE A SERVICE.  
ID No. 0551101000028L
- 4 EXISTING 2"C, 2#8.  
INSTALL 1#8G.
- 5 REPLACE LUMINAIRE WITH LED TYPE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO  
 CALCULATED/DESIGNED BY: CHECKED BY:  
 PARESH PATEL GARY TOOR  
 REVISED BY: DATE REVISED:

**REMOVE FLASHING BEACON  
 MODIFY LIGHTING**

SCALE: 1" = 50'

**E-18**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

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

FUNCTIONAL SUPERVISOR  
 OSWALD ELIZONDO

CALCULATED, DESIGNED BY  
 CHECKED BY

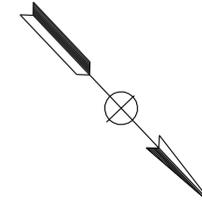
PARESH PATEL  
 GARY TOOR

REVISED BY  
 DATE REVISED

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

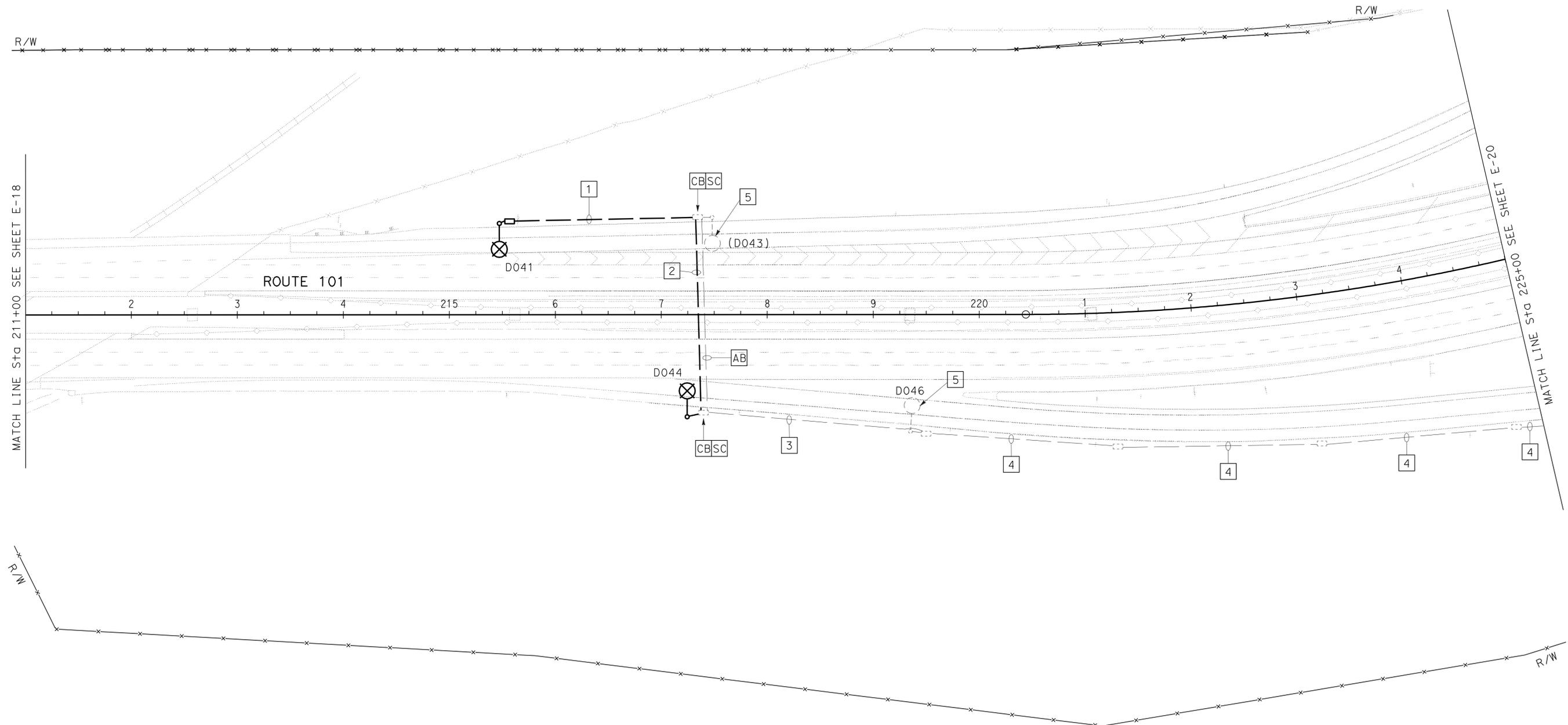
**PROJECT NOTES: (THIS SHEET)**

- 1 INSTALL 1 1/2"C, 2#8, 1#8G.
- 2 INSTALL 3"C, 2#8, 1#8G.
- 3 EXISTING 1 1/2"C, 4#6.  
INSTALL 1#8G.
- 4 EXISTING 1 1/2"C, 4#6.  
INSTALL 1#8G.
- 5 REPLACE LUMINAIRE WITH LED TYPE.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	459	757

12/16/10  
 REGISTERED ELECTRICAL ENGINEER DATE  
 G.S. TOOR  
 No. E15613  
 Exp. 12/31/11  
 ELECT  
 6-20-11  
 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.



**MODIFY LIGHTING**  
 SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO  
 CALCULATED/DESIGNED BY: CHECKED BY:  
 PARESH PATEL GARY TOOR  
 REVISED BY: DATE REVISED:

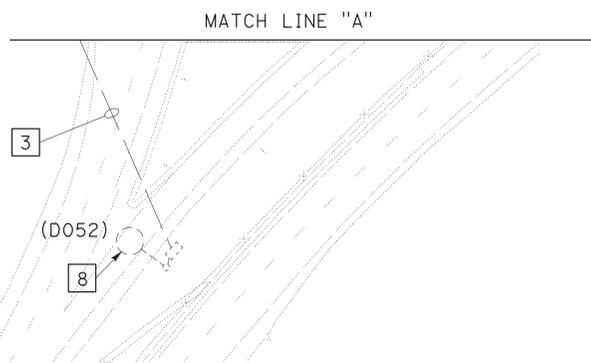
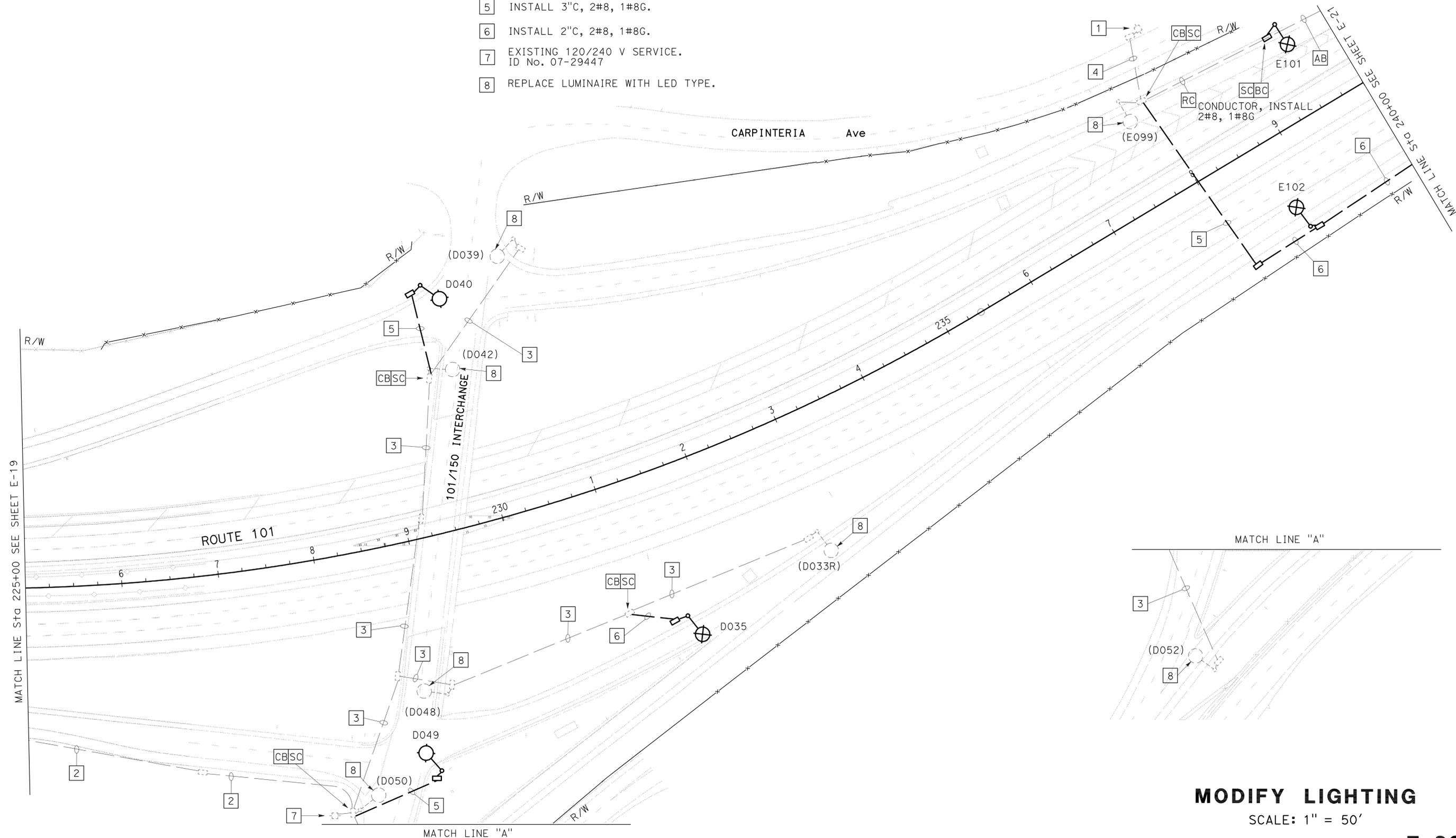
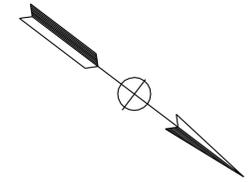
**NOTE:**  
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

**PROJECT NOTES: (THIS SHEET)**

- 1 EXISTING 120/240 SERVICE. ID No.
- 2 EXISTING 1 1/2" C, 4#6. INSTALL 1#8G.
- 3 EXISTING 1 1/2" C, 2#8. INSTALL 1#8G.
- 4 EXISTING 1 1/2" C, 2#10. INSTALL 1#8G.
- 5 INSTALL 3" C, 2#8, 1#8G.
- 6 INSTALL 2" C, 2#8, 1#8G.
- 7 EXISTING 120/240 V SERVICE. ID No. 07-29447
- 8 REPLACE LUMINAIRE WITH LED TYPE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	460	757

12/16/10  
 REGISTERED ELECTRICAL ENGINEER DATE  
 G.S. TOOR  
 No. E15613  
 Exp. 12/31/11  
 ELECT  
 STATE OF CALIFORNIA  
 REGISTERED PROFESSIONAL ENGINEER  
 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.



**MODIFY LIGHTING**  
 SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

LAST REVISION DATE PLOTTED => 25-JUN-2011 08-31-10 TIME PLOTTED => 06:40

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

FUNCTIONAL SUPERVISOR  
 OSWALD ELIZONDO

CALCULATED/DESIGNED BY  
 CHECKED BY

PARESH PATEL  
 GARY TOOR

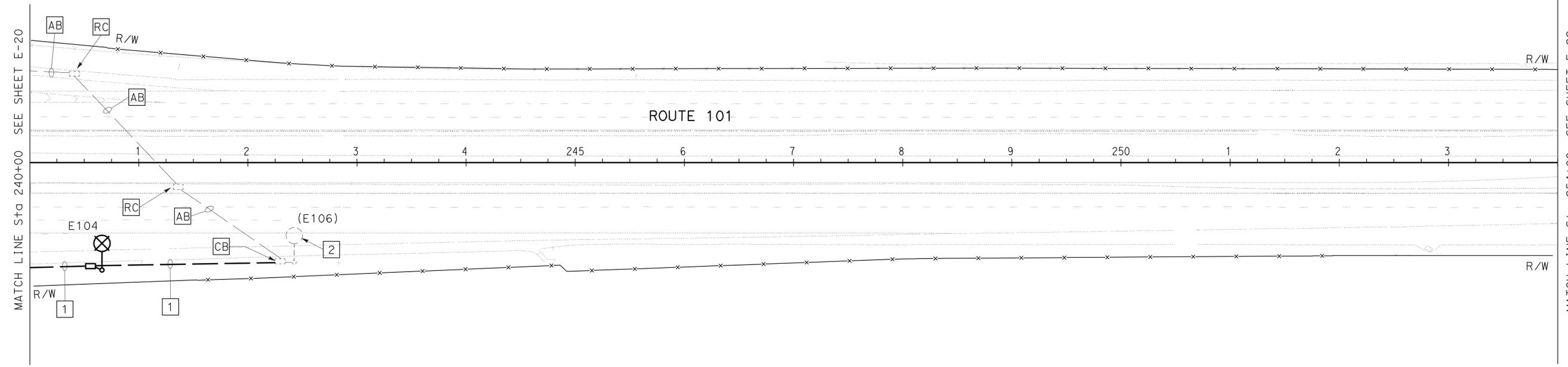
REVISED BY  
 DATE REVISED

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

- PROJECT NOTE: (THIS SHEET)**
- 1 INSTALL 2"C, 2#8, 1#8G.
  - 2 REPLACE LUMINAIRE WITH LED TYPE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	461	757

*G.S. Toor* 12/16/10  
 REGISTERED ELECTRICAL ENGINEER DATE  
 6-20-11  
 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.



**MODIFY LIGHTING**  
 SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**E-21**

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

FUNCTIONAL SUPERVISOR  
 OSWALD ELIZONDO

CALCULATED, DESIGNED BY  
 CHECKED BY

PARESH PATEL  
 GARY TOOR

REVISED BY  
 DATE REVISED

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

**PROJECT NOTES: (THIS SHEET)**

- 1 EXISTING 120/240 V TYPE III-BF SERVICE EQUIPMENT ENCLOSURE WITH THE FOLLOWING:  
 100 A, 240 V, 2P, CB MAIN BREAKER.  
 40 A, 240 V, 2P, CB FOR LIGHTING.  
 15 A, 120 V, 1P, CB FOR LIGHTING CONTROL.  
 20 A, 120 V, 1P, CB SPARE.  
 40 A, 240 V, 2P, CB SPARE.  
 ID No. 05511010001451
- 2 EXISTING 3"C, 3#2.
- 3 EXISTING 2"C, 2#8. ADD 1#8G.
- 4 EXISTING 1 1/2"C, 2#8. ADD 1#8G.
- 5 INSTALL 3"C, 2#8, 1#8G.
- 6 INSTALL 2"C, 2#8, 1#8G.
- 7 REPLACE LUMINAIRE WITH LED TYPE.

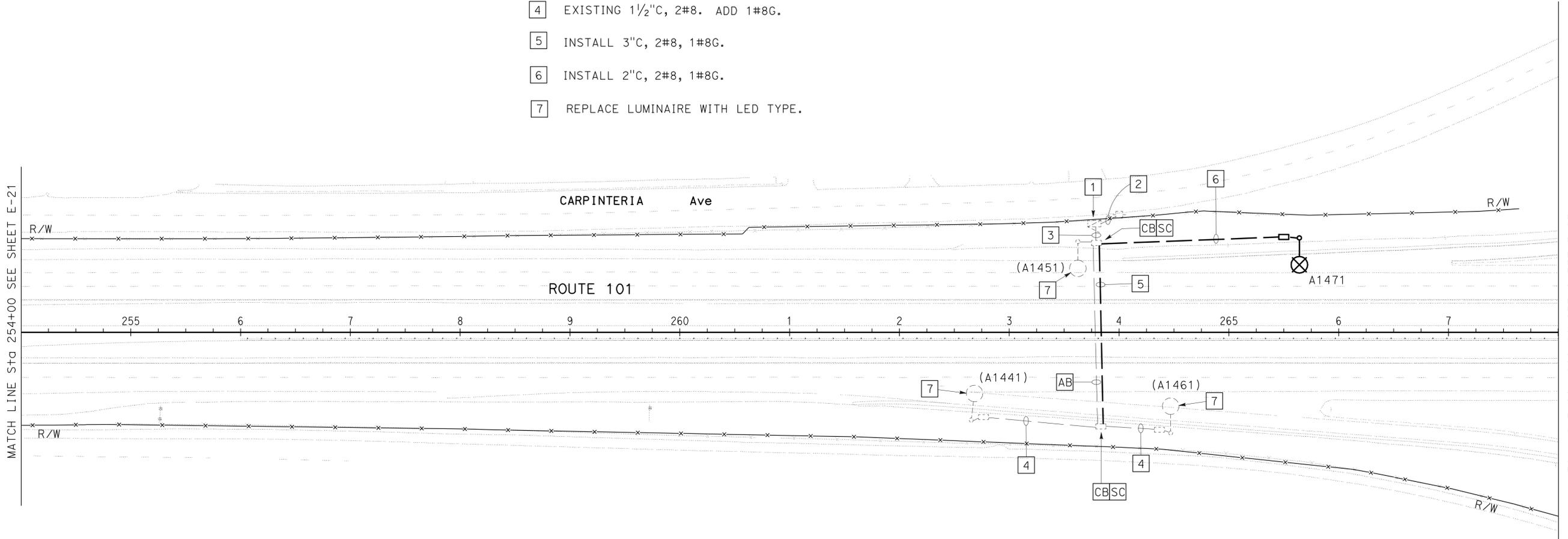
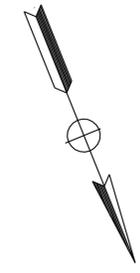
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	462	757

12/16/10  
 REGISTERED ELECTRICAL ENGINEER DATE

6-20-11  
 PLANS APPROVAL DATE

G.S. TOOR  
 No. E15613  
 Exp. 12/31/11  
 ELECT

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



**MODIFY LIGHTING**  
 SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	463	757

<i>G.S. Toor</i>	12/16/10
REGISTERED ELECTRICAL ENGINEER	DATE
6-20-11	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
G.S. TOOR
No. E15613
Exp. 12/31/11
ELECT

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

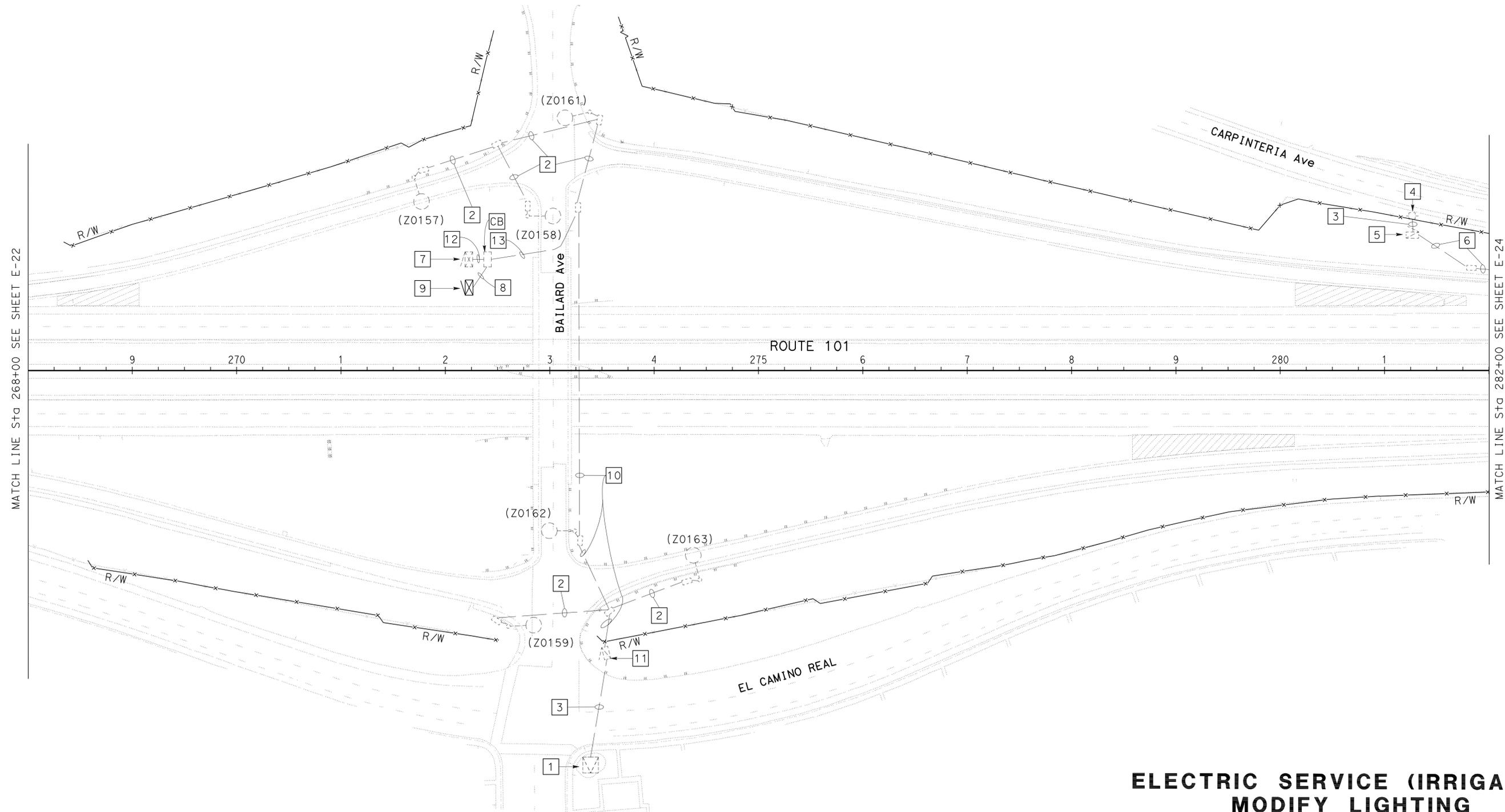


**NOTE:**

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

**PROJECT NOTES: (THIS SHEET)**

- 1 EXISTING 120 V SCE VAULT, ID No. 05511010001600.
- 2 EXISTING 1 1/2" C, 2#8. ADD 1#8G.
- 3 EXISTING 2" C, 3#2.
- 4 EXISTING SCE POWER POLE.
- 5 EXISTING 120/240 V TYPE III-BF SERVICE EQUIPMENT ENCLOSURE WITH THE FOLLOWING:  
100 A, 240 V, 2P, CB MAIN BREAKER.  
40 A, 240 V, 2P, CB FOR LIGHTING.  
15 A, 120 V, 1P, CB FOR LIGHTING CONTROL.  
40 A, 240 V, 2P, CB SPARE.  
20 A, 120 V, 1P, CB SPARE.  
ID No. 05511010001791
- 6 EXISTING 1 1/2" C, 2#8, 2#10, ADD 2#10(ICC), 1#8G.
- 7 EXISTING IRRIGATION CONTROLLER ENCLOSURE CABINET.
- 8 INSTALL 1 1/2" C, 2#8.
- 9 NEW IRRIGATION CONTROLLER ENCLOSURE CABINET. SEE IRRIGATION PLAN IP-9.
- 10 EXISTING 1 1/2" C, 2#8, 2#10, ADD 2#10(ICC), 1#8G.
- 11 INSTALL 20 A, 120 V, 1P, CB FOR IRRIGATION.
- 12 INSTALL 1 1/2" C, 2#10.
- 13 EXISTING 1 1/2" C, 2#8, 2#10, ADD 2#10(ICC).



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO  
 CALCULATED/DESIGNED BY: PARESH PATEL  
 CHECKED BY: GARY TOOR  
 REVISIONS: (None listed)  
 REVISOR: (None listed)  
 DATE: (None listed)

**ELECTRIC SERVICE (IRRIGATION)  
MODIFY LIGHTING**  
SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**E-23**

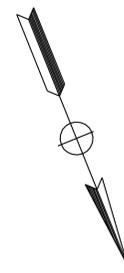
LAST REVISION: DATE PLOTTED => 27-JUN-2011  
 08-31-10 TIME PLOTTED => 14:42

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	464	757

12/16/10  
 REGISTERED ELECTRICAL ENGINEER DATE  
 6-20-11  
 PLANS APPROVAL DATE

G.S. TOOR  
 No. E15613  
 Exp. 12/31/11  
 ELECT

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



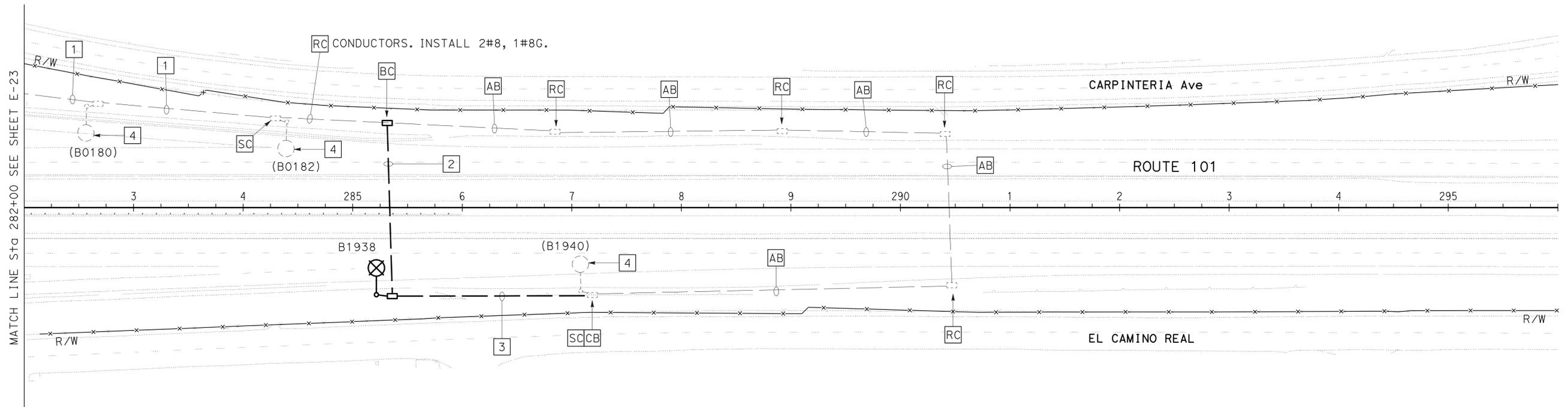
**NOTE:**

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

**PROJECT NOTES: (THIS SHEET)**

- 1 EXISTING 1 1/2" C, 2#8. INSTALL 1#8G.
- 2 INSTALL 3" C, 2#8, 1#8G.
- 3 INSTALL 2" C, 2#8, 1#8G.
- 4 REPLACE LUMINAIRE WITH LED TYPE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR  
 OSWALD ELIZONDO  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 PARESH PATEL  
 GARY TOOR  
 REVISED BY  
 DATE REVISED

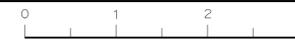


THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**MODIFY LIGHTING**

SCALE: 1" = 50'

**E-24**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	465	757

12/16/10  
 REGISTERED ELECTRICAL ENGINEER DATE  
 6-20-11  
 PLANS APPROVAL DATE

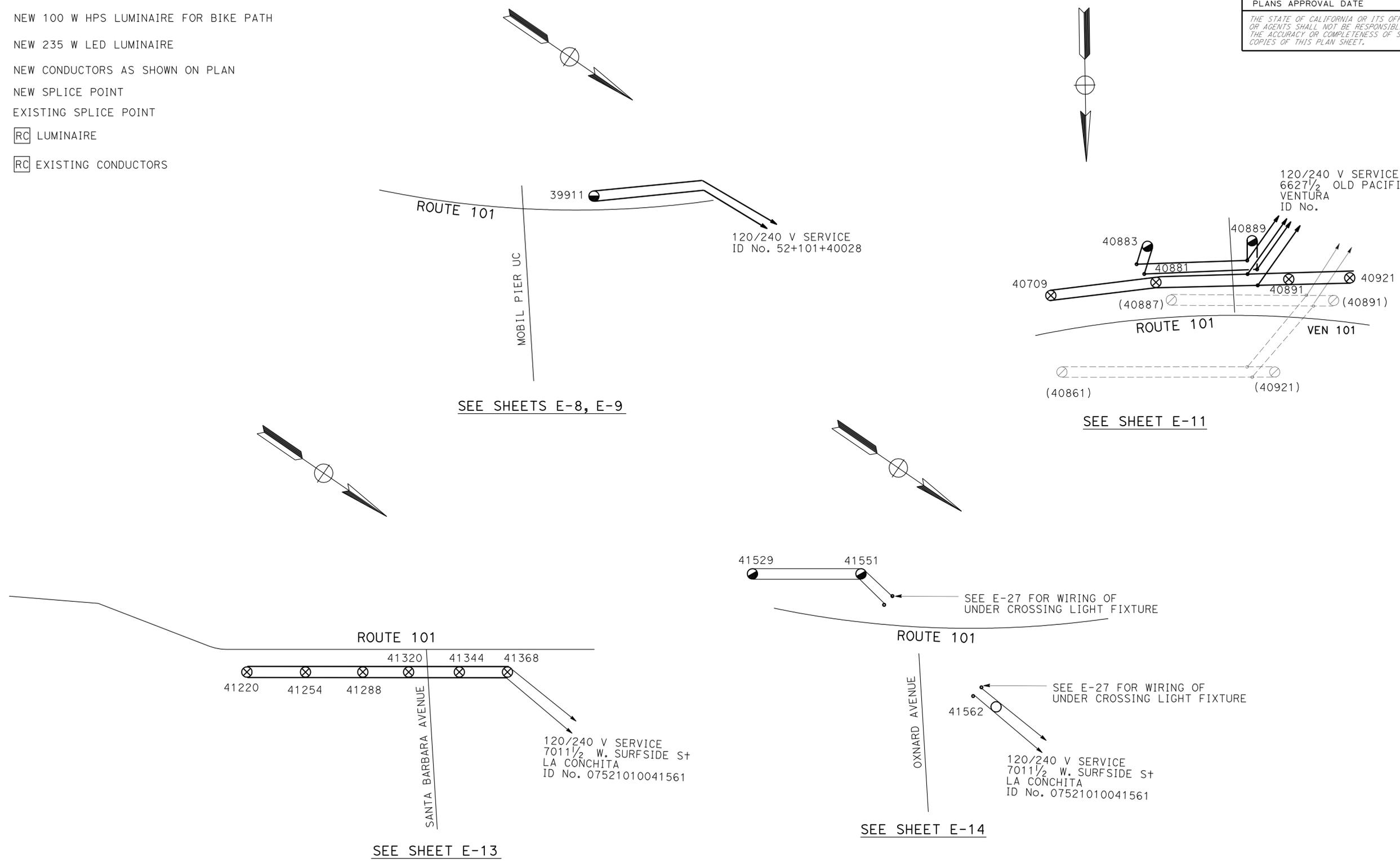
G.S. TOOR  
 No. E15613  
 Exp. 12/31/11  
 ELECT

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

**LEGEND: (THIS SHEET)**

- NEW 165 W LED LUMINAIRE
- NEW 100 W HPS LUMINAIRE FOR BIKE PATH
- ⊗ NEW 235 W LED LUMINAIRE
- NEW CONDUCTORS AS SHOWN ON PLAN
- NEW SPLICE POINT
- EXISTING SPLICE POINT
- RC LUMINAIRE
- RC EXISTING CONDUCTORS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO  
 CALCULATED/DESIGNED BY: JAMSHED A. HYDER  
 CHECKED BY: GARY TOOR  
 REVISED BY: DATE REVISIONS:



**LIGHTING AND MODIFY LIGHTING**  
**(WIRING DIAGRAM)**  
 NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	466	757

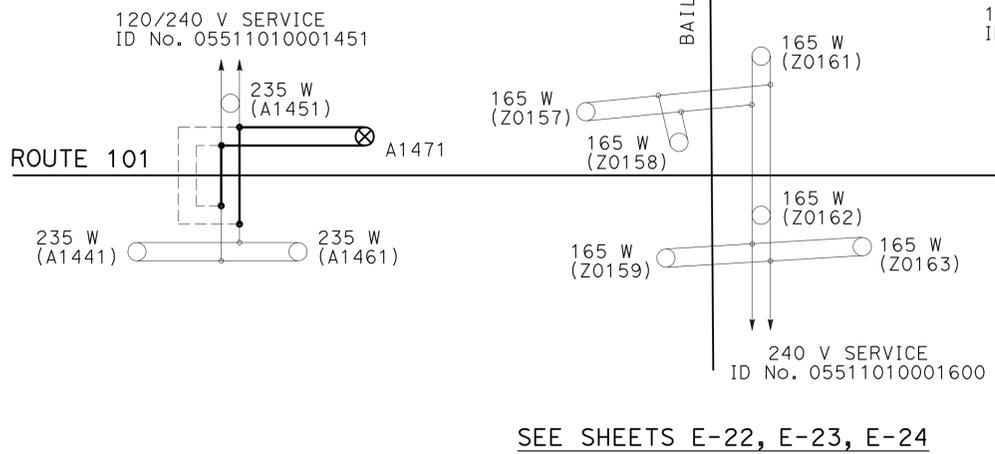
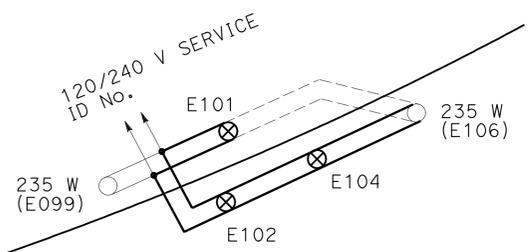
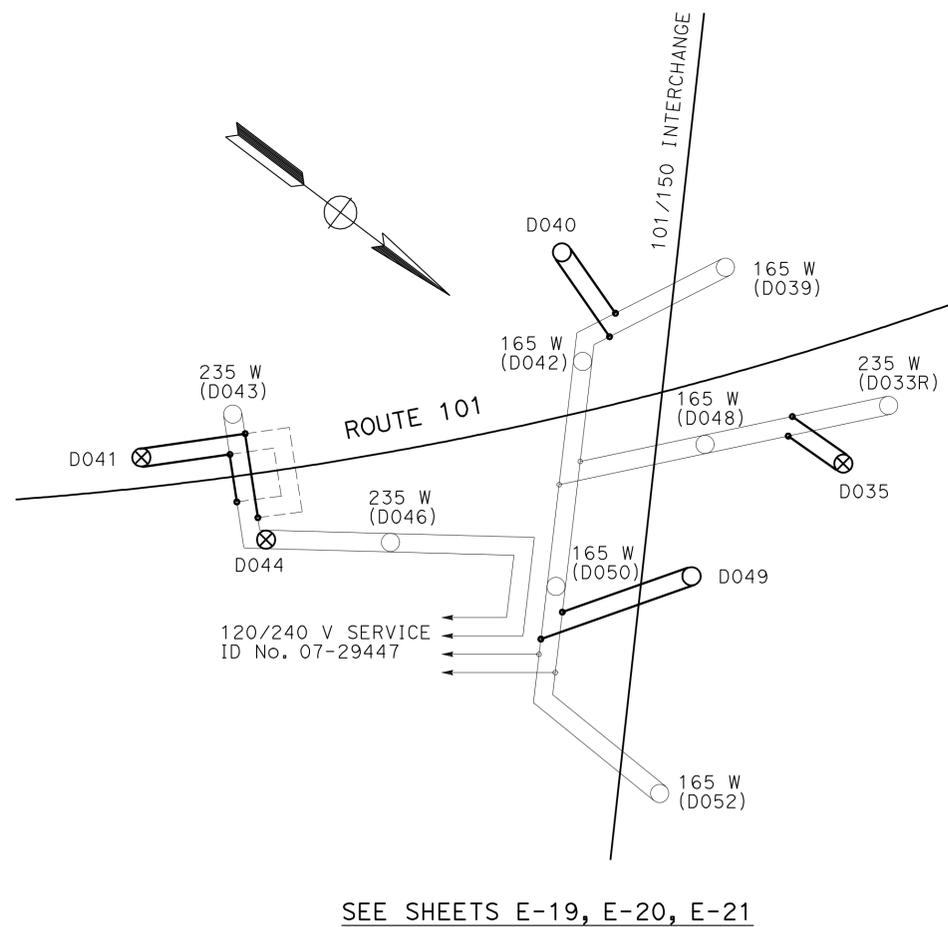
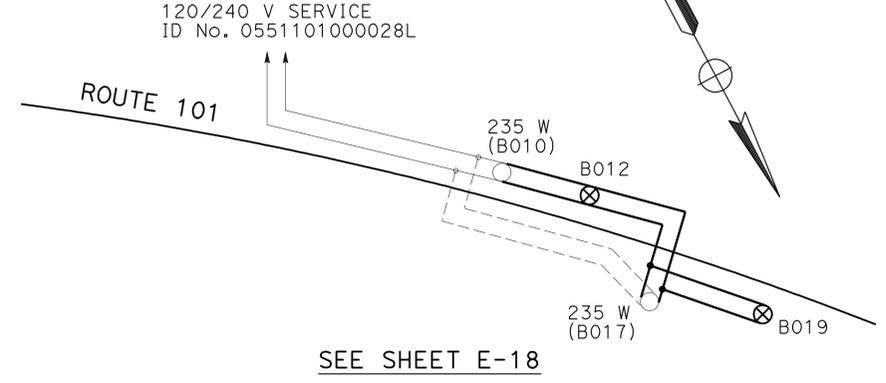
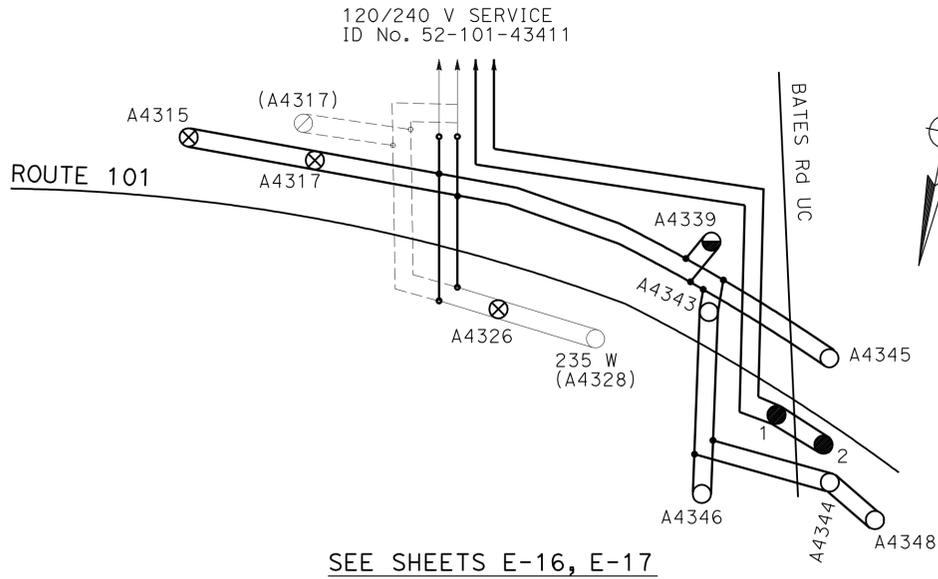
12/16/10  
 REGISTERED ELECTRICAL ENGINEER DATE  
 6-20-11  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
 G.S. TOOR  
 No. E15613  
 Exp. 12/31/11  
 ELECT

**LEGEND: (THIS SHEET)**

- EXISTING LUMINAIRE TO BE REPLACED WITH LED
- NEW 165 W LED LUMINAIRE
- NEW 100 W HPS LUMINAIRE FOR BIKE LANE
- ⊗ NEW 235 W LED LUMINAIRE
- NEW 70 W HPS SOFFIT
- EXISTING CONDUCTORS TO REMAIN
- NEW CONDUCTORS, #8
- NEW SPLICE POINT
- EXISTING SPLICE POINT
- ⊗ RC LUMINAIRE
- RC CONDUCTORS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR OSWALD ELIZONDO  
 CALCULATED/DESIGNED BY CHECKED BY  
 PARESH PATEL GARY TOOR  
 REVISED BY DATE REVISED  
 REVISIONS: x, x, x, x, x



**LIGHTING AND MODIFY LIGHTING  
(WIRING DIAGRAM)**

NO SCALE

**E-26**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	467	757

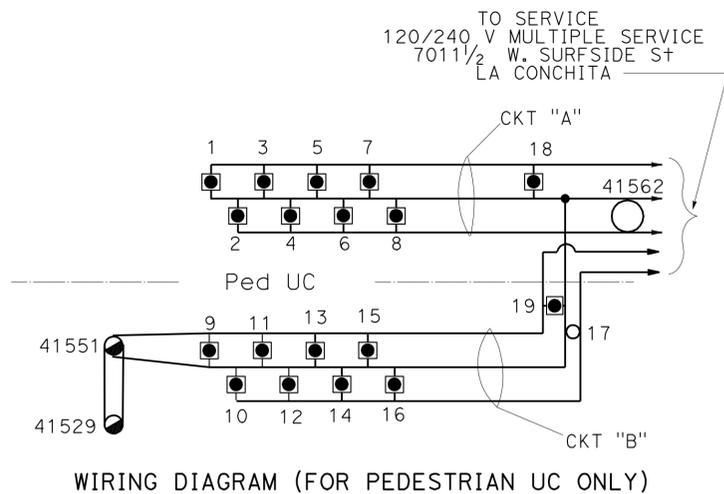
12/16/10  
 REGISTERED ELECTRICAL ENGINEER DATE  
 G.S. TOOR  
 No. E15613  
 Exp. 12/31/11  
 ELECT  
 STATE OF CALIFORNIA  
 6-20-11  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**WIRING DIAGRAM LEGEND (FOR PEDESTRIAN UC ONLY)**

- 200 W HPS LAMP WITH INTEGRAL BALLAST AND PEC (FOR REFERENCE ONLY)
- INSTALL F48T12/CW LAMP AND 1-LAMP 1500 MA BALLAST
- SPLICE
- INSTALL 70 W LAMP
- 100 W LUMINAIRE FOR BIKE PATH (FOR REFERENCE ONLY)
- NEW CONDUCTORS AS SHOWN ON PLAN

**NOTES (THIS SHEET ONLY)**

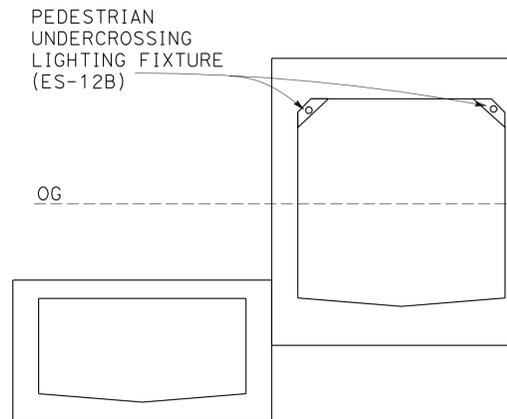
1. STRAP CONDUIT AT 3' INTERVAL Max.
2. LOCATION OF LIGHTING FIXTURES ARE APPROXIMATE.
3. LIGHTING FIXTURES SHALL BE INSTALLED TO ALLOW FOR A MINIMUM DISTANCE OF ONE FOOT TO ANY JOINT.



**WIRING DIAGRAM (FOR PEDESTRIAN UC ONLY)**

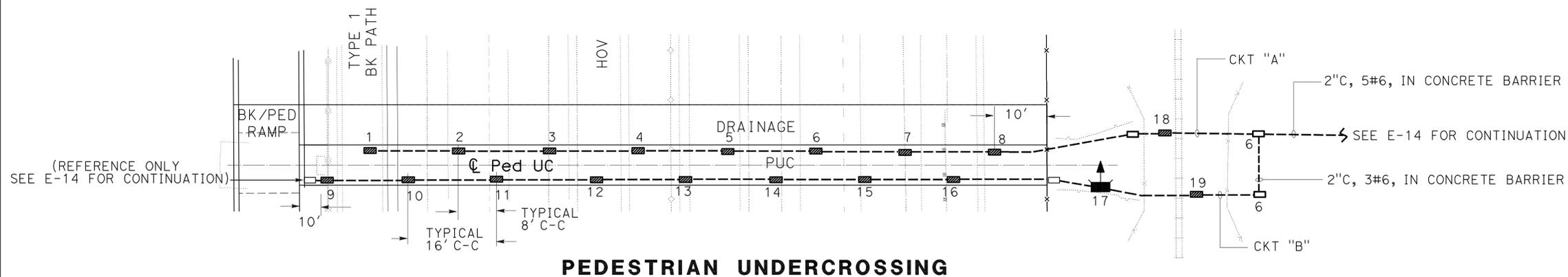
**NOTE:**

LUMINAIRE 41529, 41551, AND 41562 ARE SHOWN AS REFERENCE ONLY. SEE E-25 WIRING DIADRAM.



**PUC/CULVERT CROSS SECTION**

NO SCALE



**PEDESTRIAN UNDERCROSSING**

**LEGEND (FOR PEDESTRIAN UC ONLY)**

- INSTALL 1 1/2" C, 3#6, UNLESS OTHERWISE NOTED.
- INSTALL PEDESTRIAN UNDERCROSSING LIGHTING FIXTURE COMPLETE WITH BALLAST AND 48" T-12 REFLECTORIZED RAPID START FLUORESCENT LAMP WITH 36 DEGREE OPERATURE (ES-12B) (TOTAL 18).

**LIGHTING**  
NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**E-27**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	468	757

REGISTERED ELECTRICAL ENGINEER: Jackie Tan  
 DATE: 10/28/10  
 PLANS APPROVAL DATE: 6-20-11

REGISTERED PROFESSIONAL ENGINEER  
 JACKIE TAN  
 No. E015611  
 Exp. 12/31/11  
 ELECTRICAL  
 STATE OF CALIFORNIA

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

**ABBREVIATIONS:** (E-29 TO E-32)

- 4P18 - 4-PAIR 18 CABLE
- 2P18 - 2-PAIR 18 CABLE
- VCS - VEHICLE CLASSIFICATION STATION
- CCR - CAMERA CONTROL RECEIVER
- AT & SF - ATCHISON TOPEKA AND SOUTHERN PACIFIC
- CIA - CONTROLLER INTERFACE ASSEMBLY
- DEMARC - DEMARCATION
- PDA - POWER DISTRIBUTION ASSEMBLY
- PR - PAIR
- RCVR - RECEIVER
- RMS - RAMP METERING SYSTEM
- RX - RECEIVE
- SCE - SOUTHERN CALIFORNIA EDISON
- TWP - TWISTED PAIR CABLE
- TX - TRANSMIT
- XMTR - TRANSMITTER

**GENERAL NOTES:** (E-28 TO E-32)

- 1- ALL PULL BOXES SHALL BE INSTALLED IN THE UNPAVED AREA IMMEDIATELY ADJACENT TO THE PAVED SHOULDER, BEHIND MBGR OR AS SHOWN IN THE PLANS. CONDUIT SHALL BE DIRECTED FROM THE SHOULDER TO THE BOXES WITH 22-1/2 DEGREE BENDS.
- 2- REFER TO CONDUCTOR SCHEDULES AND NOTES ON SHEETS FOR CONDUIT SIZES AND CONDUCTOR TYPES.
- 3- VISIBLE TRAFFIC MANAGEMENT SYSTEM ELEMENTS SUCH AS CONTROLLER CABINETS, VCS AND CCTV CAMERA POLES, AND CMS TRUSS AND POST SHALL BE PAINTED.

**LEGEND:** (E-28 TO E-32)

 TRANSFORMER TO BE INSTALLED BY SCE

CONDUCTOR TYPE	FUNCTION	QUANTITY
RG-6A/U COAXIAL CABLE	CAMERA VIDEO INTERFACE CABLE	1
EIA-232 (5#22) CABLE	CAMERA CONTROL CABLE	1
3#18	POWER CABLE	1

**CLOSED CIRCUIT TELEVISION CAMERA (LOCATION VE398)  
 CHANGEABLE MESSAGE SIGN VE398  
 (LEGEND AND NOTES)**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

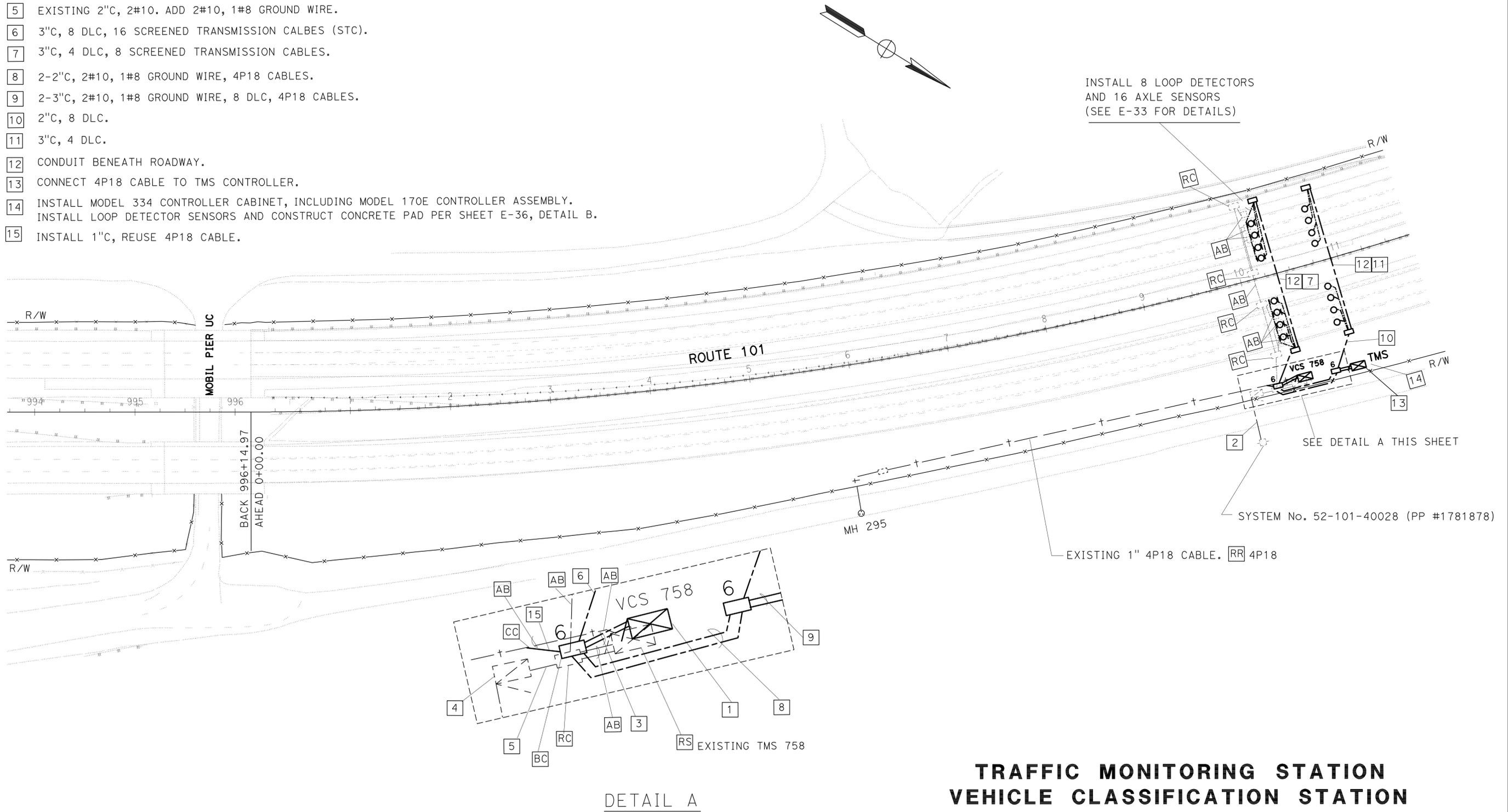
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	469	757

REGISTERED ELECTRICAL ENGINEER DATE 10/28/10  
 Jackie C. Tan  
 6-20-11  
 PLANS APPROVAL DATE  
 No. E015611  
 Exp. 12/31/11  
 ELECTRICAL  
 STATE OF CALIFORNIA

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

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

- 1 INSTALL MODEL 334 CABINET FOR VCS, INCLUDING MODEL 170E CONTROLLER ASSEMBLY. INSTALL TELEPHONE BRIDGE AND LOOP DETECTOR SENSORS. TERMINATE 4P18 CABLE. CONSTRUCT CONCRETE PAD PER SHEET E-36 DETAIL B.
- 2 EXISTING 1/2"C, 3#8.
- 3 INSTALL 2-3"C. ADD 1-4P18 CABLE, 8 DLC, 16 SCREENED TRANSMISSION CABLES (STC), 2#10, 1#8 GROUND WIRE, 1-4P18 (REUSED).
- 4 EXISTING TYPE III-AF SERVICE EQUIPMENT ENCLOSURE (120/240 V). ADD 1-30 A, 120 V, 1P CB FOR VCS.
- 5 EXISTING 2"C, 2#10. ADD 2#10, 1#8 GROUND WIRE.
- 6 3"C, 8 DLC, 16 SCREENED TRANSMISSION CALBES (STC).
- 7 3"C, 4 DLC, 8 SCREENED TRANSMISSION CABLES.
- 8 2-2"C, 2#10, 1#8 GROUND WIRE, 4P18 CABLES.
- 9 2-3"C, 2#10, 1#8 GROUND WIRE, 8 DLC, 4P18 CABLES.
- 10 2"C, 8 DLC.
- 11 3"C, 4 DLC.
- 12 CONDUIT BENEATH ROADWAY.
- 13 CONNECT 4P18 CABLE TO TMS CONTROLLER.
- 14 INSTALL MODEL 334 CONTROLLER CABINET, INCLUDING MODEL 170E CONTROLLER ASSEMBLY. INSTALL LOOP DETECTOR SENSORS AND CONSTRUCT CONCRETE PAD PER SHEET E-36, DETAIL B.
- 15 INSTALL 1"C, REUSE 4P18 CABLE.



**TRAFFIC MONITORING STATION  
VEHICLE CLASSIFICATION STATION**

SCALE: 1" = 50'

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

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.  
FOR LEGENDS AND GENERAL NOTES SEE SHEET E-28.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** OFFICE OF ITS  
 FUNCTIONAL SUPERVISOR JACQUELINE C. TAN  
 CALCULATED/DESIGNED BY CHECKED BY  
 BOB TIEU JACQUELINE C. TAN  
 REVISOR BY DATE REVISED  
 BT 06/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	470	757

10/28/10  
REGISTERED ELECTRICAL ENGINEER DATE

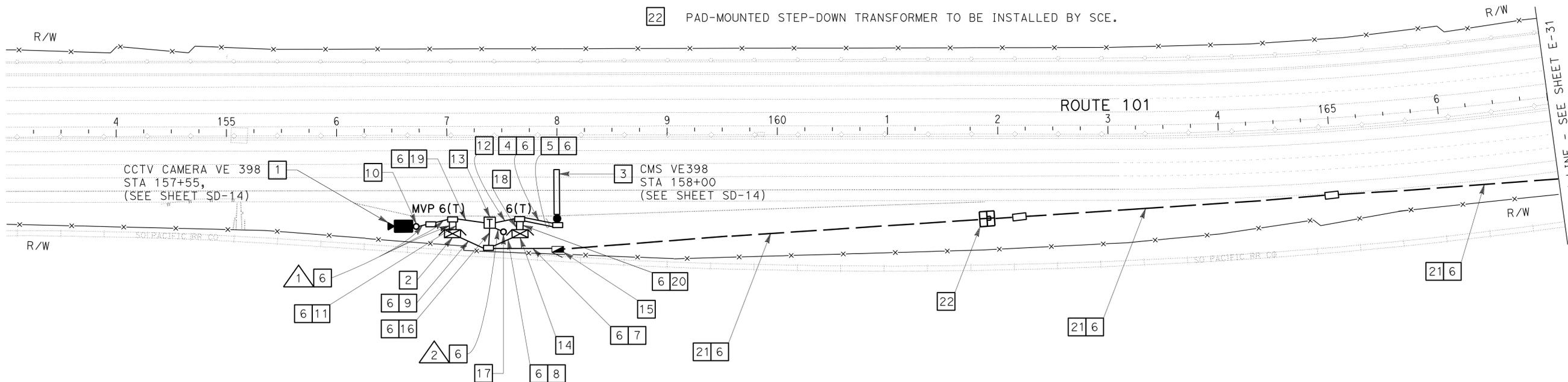
6-20-11  
PLANS APPROVAL DATE

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. E015611  
Exp. 12/31/11  
ELECTRICAL  
STATE OF CALIFORNIA

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

- 1 INSTALL CCTV CAMERA ASSEMBLY AND PAN/TILT UNIT. SEE SHEET E-39 FOR DETAILS.
- 2 INSTALL MODEL 334-TV CONTROLLER CABINET INCLUDING CAMERA CONTROL RECEIVER, TRANSMITTER. SEE SHEET E-36, DETAIL B FOR FOUNDATION AND E-37 FOR CABINET EQUIPMENT DETAILS.
- 3 INSTALL STATE-FURNISHED MODEL 500 CMS PANEL AND SUPPORTED HARDWARE ON NEW SIGN STRUCTURE.
- 4 INSTALL 2"C, STATE-FURNISHED CMS CABLES.
- 5 INSTALL 3"C, 4#4, 1#6 GROUND WIRE.
- 6 TRENCH AND INSTALL CONDUIT IN SOIL.
- 7 INSTALL 2-3"C, 4#4 (CMS PANEL), 2#8 (CAMERA), 2#10 (TDC), 1#6 GROUND WIRE, 2#8 (CMS).
- 8 INSTALL 3"C, 4#4, 2#8, 1#6 GROUND WIRE.
- 9 INSTALL 2"C, 2#8, 1#6 GROUND WIRE.
- 10 INSTALL CCTV 25 POLE.
- 11 INSTALL 1/2"C, 1 CAT-5E CABLE.
- 12 INSTALL 1/2"C, 2P18.
- 13 INSTALL TYPE C TELEPHONE DEMARCATION CABINET. NEW TELEPHONE CIRCUIT FOR CCTV CAMERA & CMS TO BE INSTALLED BY SERVING UTILITY.
- 14 INSTALL STATE-FURNISHED MODEL 334C CHANGEABLE MESSAGE SIGN CONTROLLER CABINET INCLUDING STATE-FURNISHED MODEL 170E CONTROLLER ASSEMBLY. SEE E-36, DETAIL B FOR FOUNDATION AND E-38 FOR CABINET EQUIPMENT DETAILS. INSTALL A 12-PAIR TERMINAL BLOCK.
- 15 INSTALL 120/240 V, 100 A, TYPE III-BF METERED SERVICE EQUIPMENT ENCLOSURE WITH:  
(1) 240 V, 2P, 100 A CB FOR MAIN DISCONNECT.  
(1) 120 V, 1P, 20 A CB FOR TELEPHONE DEMARCATION CABINET.  
(1) 120 V, 1P, 30 A CB FOR CCTV CAMERA.  
(1) 120 V, 1P, 30 A CB FOR RMS (FUTURE USE).  
(1) 120 V, 1P, 40 A CB FOR CMS PANEL.  
(1) 120 V, 1P, 30 A CB FOR CMS CONTROLLER CABINET.
- 16 INSTALL 2"C, 2#10 FOR TELEPHONE DEMARCATION CABINET.
- 17 VERIZON POINT OF SERVICE, MANHOLE #320.
- 18 INSTALL 3"C, 2P18.
- 19 INSTALL 3"C, 1 CAT-5E CABLE.
- 20 INSTALL 3"C, 2#8, 1#6 GROUND WIRE, STATE-FURNISHED CMS CABLES.
- 21 INSTALL 4"C, MT (CONDUCTORS TO BE INSTALLED BY SCE).
- 22 PAD-MOUNTED STEP-DOWN TRANSFORMER TO BE INSTALLED BY SCE.



CONDUIT AND CONDUCTOR SCHEDULE (THIS SHEET ONLY)			
CONDUCTOR TYPE	FUNCTION	RUN	
		1	2
2P22 CABLE	VOICE/DATA		
SEE TABLE 1, E-28	CCTV WIRING	1	
T-1 PHONE LINE	SHORT HAUL VIDEO		1
CONDUIT SIZE		3"	3"

**CLOSED CIRCUIT TELEVISION CAMERA (LOCATION VE398)  
CHANGEABLE MESSAGE SIGN VE398**

SCALE: 1" = 50'

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

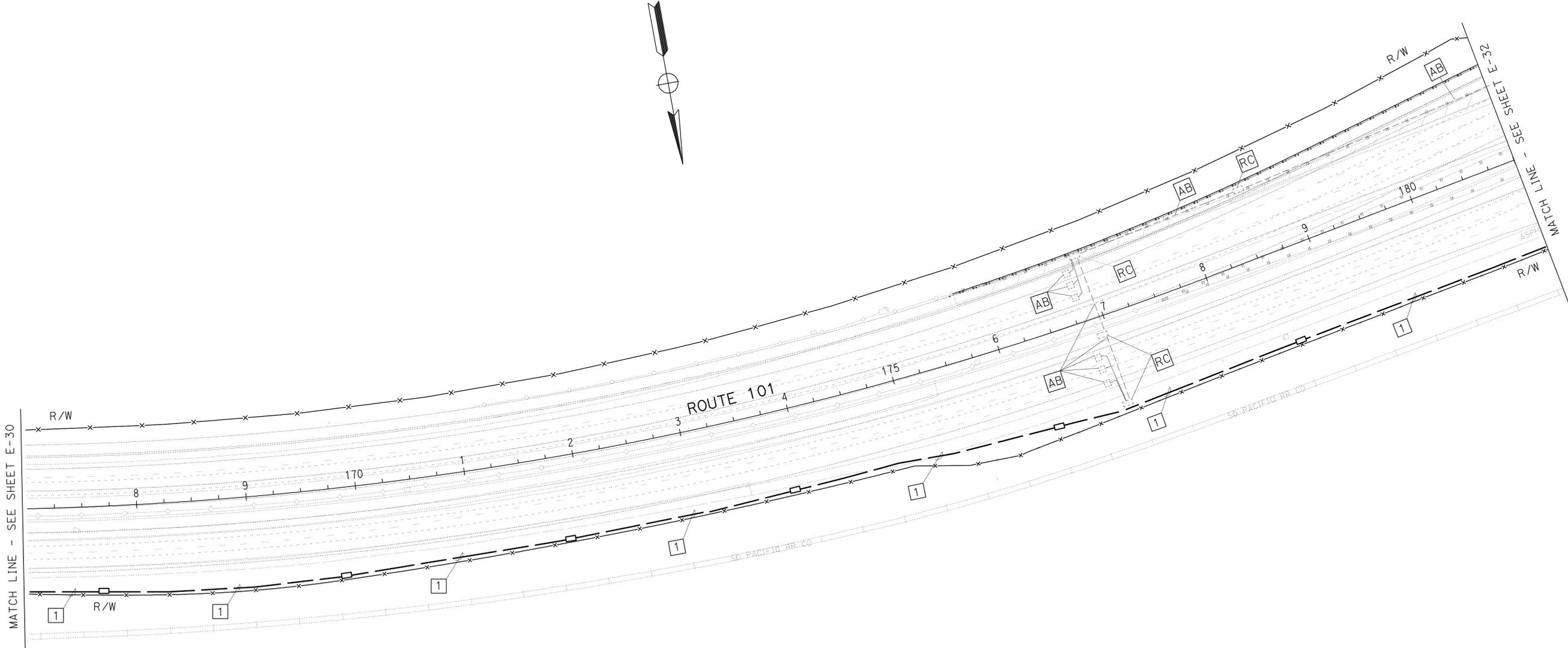
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.  
FOR LEGENDS AND GENERAL NOTES SEE SHEET E-28.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	471	757

REGISTERED ELECTRICAL ENGINEER: Jackie Tan  
 DATE: 10/28/10  
 No. E015611  
 Exp. 12/31/11  
 ELECTRICAL  
 PLANS APPROVAL DATE: 6-20-11  
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.

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

- 1 INSTALL 4" C, MT IN SOIL (CONDUCTORS TO BE INSTALLED BY SCE).



**CLOSED CIRCUIT TELEVISION CAMERA (LOCATION VE398)  
 CHANGEABLE MESSAGE SIGN VE398**

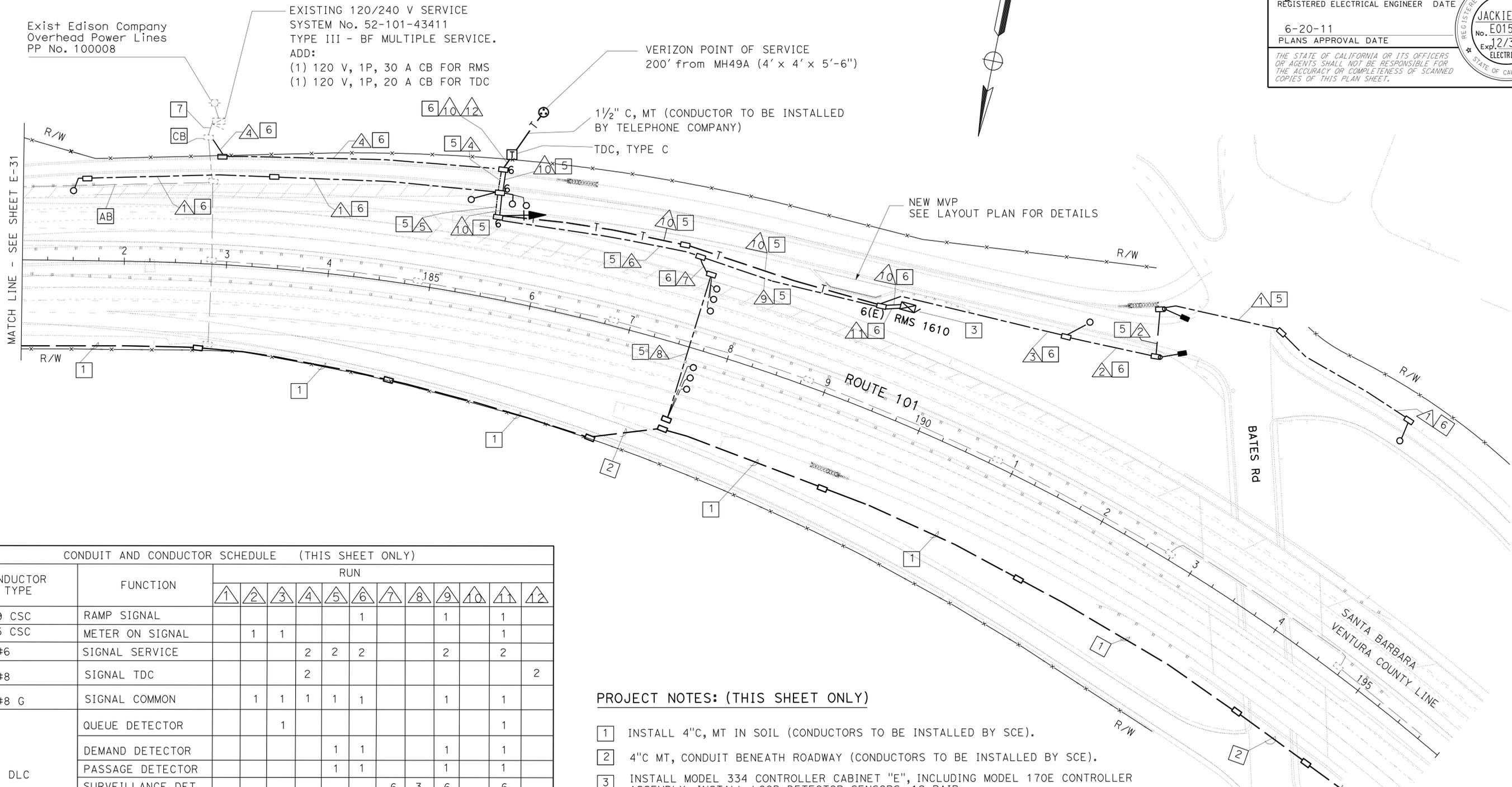
SCALE: 1" = 50'

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

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.  
 FOR LEGENDS AND GENERAL NOTES SEE SHEET E-28.

**E-31**

LAST REVISION: DATE PLOTTED => 27-JUN-2011 TIME PLOTTED => 15:01



CONDUIT AND CONDUCTOR SCHEDULE (THIS SHEET ONLY)		RUN											
CONDUCTOR TYPE	FUNCTION	1	2	3	4	5	6	7	8	9	10	11	12
9 CSC	RAMP SIGNAL						1			1		1	
5 CSC	METER ON SIGNAL		1	1									1
#6	SIGNAL SERVICE				2	2	2			2		2	
#8	SIGNAL TDC				2								2
#8 G	SIGNAL COMMON		1	1	1	1	1			1		1	
DLC	QUEUE DETECTOR			1									1
	DEMAND DETECTOR					1	1			1		1	
	PASSAGE DETECTOR					1	1			1		1	
	SURVEILLANCE DET.								6	3	6		6
	COUNT DETECTOR	1	1	1		1	1			1		2	
4#18	TELEPHONE										1		
1" INNERDUCT													
CONDUIT SIZE		3"	3"	3"	3"	2"	2"	3"	3"	3"	3"	3"	3"

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

- 1 INSTALL 4"C, MT IN SOIL (CONDUCTORS TO BE INSTALLED BY SCE).
- 2 4"C MT, CONDUIT BENEATH ROADWAY (CONDUCTORS TO BE INSTALLED BY SCE).
- 3 INSTALL MODEL 334 CONTROLLER CABINET "E", INCLUDING MODEL 170E CONTROLLER ASSEMBLY. INSTALL LOOP DETECTOR SENSORS, 12 PAIR TERMINAL BLOCK. CONSTRUCT CONCRETE PAD PER SHEET E-36 DETAIL A.
- 4 INSTALL 3"C, MT, TYPE H SERVICE RISER AND CONDUIT ON NEW POLE. UTILITY COMPANY TO INSTALL CONDUCTORS.
- 5 CONDUIT BENEATH ROADWAY.
- 6 TRENCH AND INSTALL CONDUIT IN SOIL.
- 7 EXISTING 1 1/2"C, ADD 2#6, 1#8 GROUND WIRE.

**RAMP METERING SYSTEM**  
**CLOSED CIRCUIT TELEVISION CAMERA (LOCATION VE398)**  
**CHANGEABLE MESSAGE SIGN VE398**

SCALE: 1" = 50'

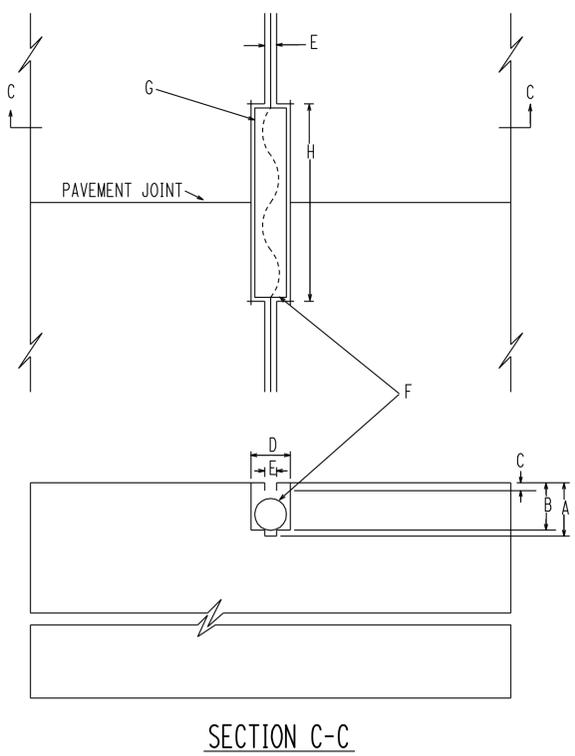
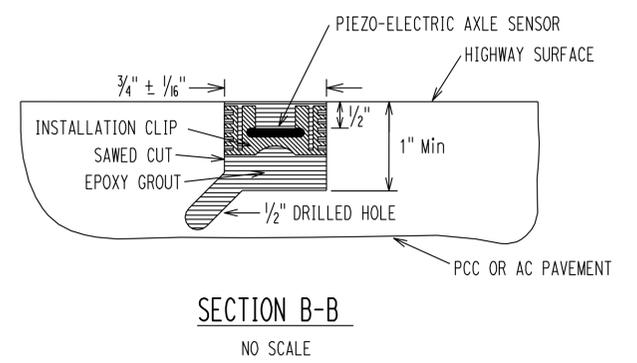
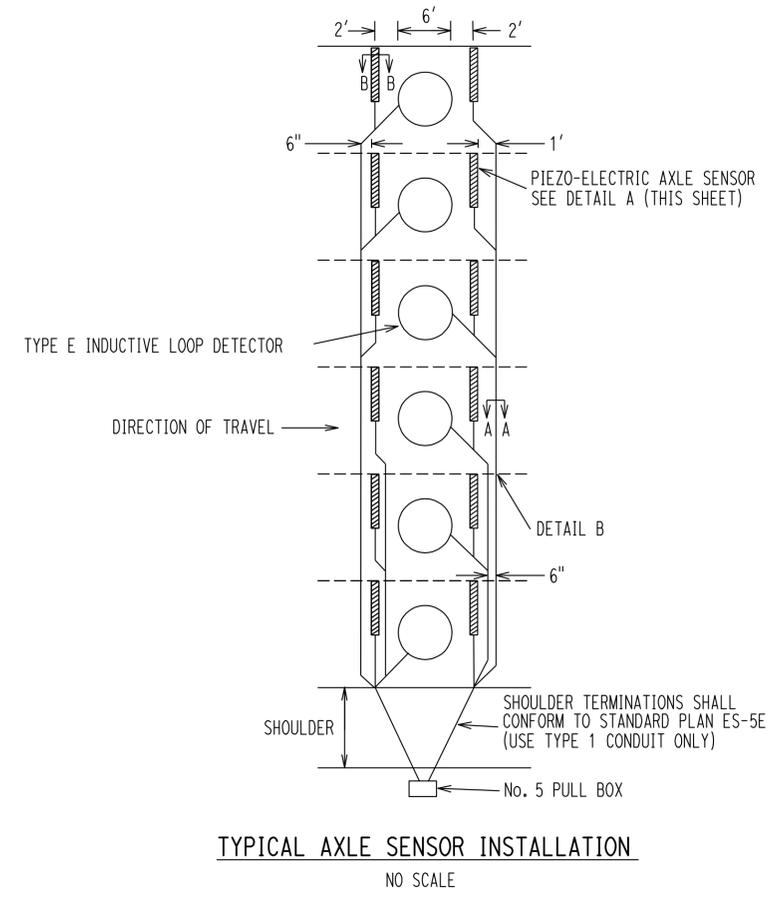
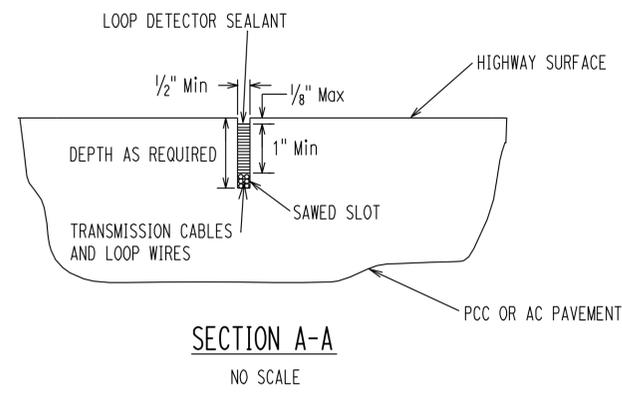
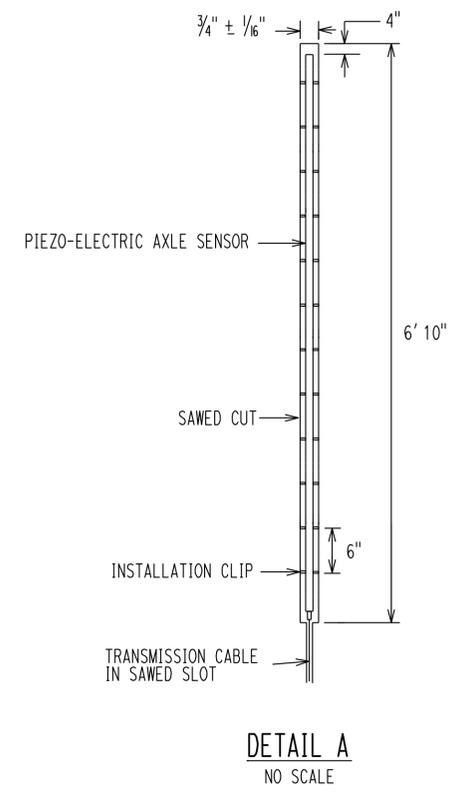
**E-32**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** OFFICE OF ITS  
 FUNCTIONAL SUPERVISOR  
 JACQUELINE C. TAN  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 BOB TIU  
 JACQUELINE C. TAN  
 REVISIONS BY  
 DATE REVISIONS  
 BT  
 06/11

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

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY. FOR LEGENDS AND GENERAL NOTES SEE SHEET E-28.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	473	757
REGISTERED ELECTRICAL ENGINEER			DATE		
JACQUELINE C. TAN			10/28/10		
No. E015611			Exp. 12/31/11		
ELECTRICAL			STATE OF CALIFORNIA		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



DETAIL B (TYPICAL LEAD-IN AT PAVEMENT JOINT)  
 NO SCALE

- A. SAW CUT DEPTH TO ACCOMODATE SPECIFIED NUMBER OF CONDUCTORS WITH A MINIMUM OF 1" FROM TOP OF WIRE TO PAVEMENT SURFACE (3-1/4" Max).
- B. SLOT SAW-CUT DEPTH TO ACCOMODATE 1" TYPE 3 CONDUIT WITH 1/2" MINIMUM FROM TOP OF CONDUIT TO PAVEMENT SURFACE.
- C. 1/2" MINIMUM BETWEEN TOP OF CONDUIT AND PAVEMENT SURFACE.
- D. SAW-CUT WIDTH TO ACCOMODATE 1" TYPE 3 CONDUIT WITH 1/8" CLEARANCE.
- E. SAW-CUT 1/2" WIDE.
- F. 1" TYPE 3 CONDUIT, 6" LONG. PLUG BOTH ENDS WITH CAULKING COMPOUND TO KEEP OUT EPOXY.
- G. CONDUCTORS WITH 1/2" MINIMUM SLACK INSIDE CONDUIT.
- H. SAW-CUT LENGTH OF SLOT 1/8" LONGER THAN CONDUIT.

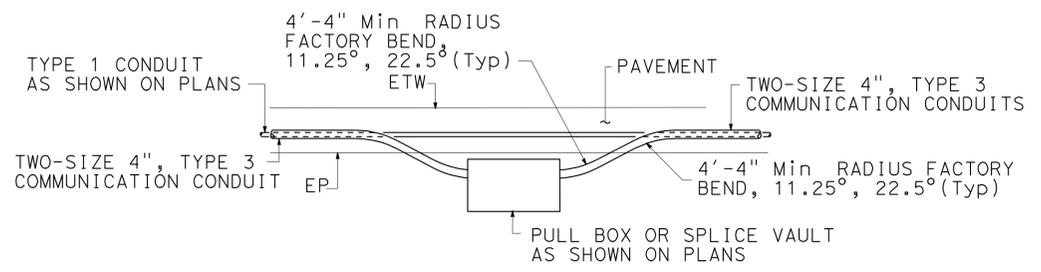
## AXLE SENSOR INSTALLATION PROCEDURE

1. MARK THE POSITION OF THE AXLE SENSORS AS DIRECTED BY THE ENGINEER. AXLE SENSOR CHANNELS MUST BE PERPENDICULAR TO TRAFFIC.
2. MARK THE POSITION OF THE LOOP DETECTORS. THE DETECTORS SHALL BE CENTERED IN THE LANE AND BETWEEN THE AXLE SENSORS.
3. MARK THE HOME RUN CUTS AS SHOWN IN THE AXLE SENSOR INSTALLATION DETAIL.
4. USING A CONCRETE SAW, CUT THE AXLE SENSOR CHANNELS 3/4" WIDE BY 1" DEEP IN A SINGLE PASS. CUTS SHALL BE STRAIGHT AND TRUE.
5. CUT THE LOOP DETECTORS AND HOME RUNS.
6. DRILL 1/2" HOLES, 1" DEEP, AT A 45 DEGREE ANGLE AT THE BOTTOM CORNERS OF EACH AXLE SENSOR CHANNEL. HOLES SHALL BE 1' APART AND ON ALTERNATING SIDES OF THE CHANNEL.
7. WASH OUT THE CHANNELS AND ALL SAW CUTS THOROUGHLY WITH HIGH PRESSURE WATER. DRY COMPLETELY WITH AN AIR COMPRESSOR. IN PCC PAVEMENT ONLY, WIPE OUT THE CHANNELS WITH LACQUER THINNER AND CLEAN COTTON RAGS.
8. PLACE 4" DUCT TAPE STRIPS ON THE PAVEMENT AROUND THE CHANNELS.
9. ENSURE THAT EACH SENSOR IS STRAIGHT AND FLAT. BEND EACH END DOWN SLIGHTLY AND PLACE THE INSTALLATION CLIPS ON THE SENSOR.
10. BLOCK OFF THE CABLE END OF THE CHANNEL WITH DUCT SEAL TO PREVENT THE GROUT FLOWING OUT OF THE CHANNEL.
11. INSERT SENSOR EPOXY CARTRIDGE INTO CAULKING GUN. ATTACH STATIC MIXING TUBE ONTO CARTRIDGE.
12. WHILE WEARING PROTECTIVE GLOVES, HALF FILL THE CHANNEL WITH SENSOR EPOXY. ENSURE THAT THE BOTTOM OF THE CHANNEL IS COMPLETELY COVERED, AND THAT THE HOLES DRILLED IN STEP 6 ARE FILLED.
13. PLACE THE SENSOR IN THE CHANNEL WITH THE BRASS ELEMENT 1/2" BELOW THE ROAD SURFACE, WITH NO VOIDS BENEATH THE SENSOR.
14. COMPLETELY FILL THE CHANNEL WITH SENSOR EPOXY. SMOOTH OUT THE EPOXY ON TOP OF THE SENSOR TO ROAD LEVEL, WITH NO TROUGH ON TOP.
15. WHEN SENSOR EPOXY HAS BEGUN TO SET, REMOVE THE DUCT TAPE FROM THE PAVEMENT. REMOVE THE DUCT SEAL FROM THE END OF THE CHANNEL.
16. INSTALL THE LOOP DETECTORS.
17. INSTALL ALL LEAD-IN CABLES IN THE HOME RUN SLOTS, INSTALLING TYPE 3 CONDUIT AT THE EXPANSION JOINT CROSSINGS. PULL CABLES THROUGH STUB-OUT CONDUIT AND COIL IN PULL BOX.
18. SEAL ALL SAW CUTS. ELASTOMERIC SEALANT ONLY SHALL BE USED IN ALL CUTS CONTAINING SCREENED TRANSMISSION CABLE.
19. REMOVE ANY HIGH SPOTS IN THE SENSOR EPOXY WITH A HAND GRINDER.
20. CLEAN UP THE SITE. WHEN ALL SEALANTS ARE COMPLETELY CURED, LANES MAY BE OPENED TO TRAFFIC.

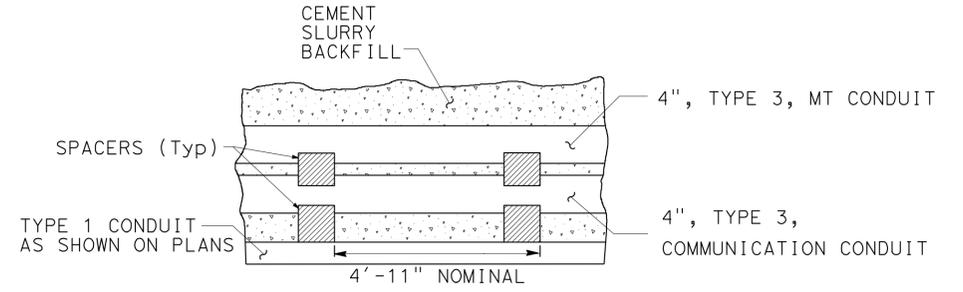
## VEHICLE CLASSIFICATION STATION (DETAILS) NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	474	757

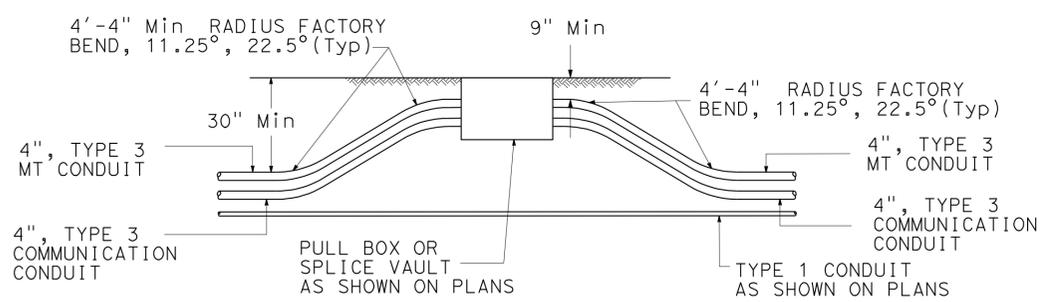
REGISTERED ELECTRICAL ENGINEER DATE 10/28/10  
 JACKIE TAN No. E015611 Exp. 12/31/11  
 PLANS APPROVAL DATE 6-20-11  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



**OUTSIDE SHOULDER PULL BOX INSTALLATION (TOP VIEW)**



**CONDUIT SPACER PLACEMENT (SIDE VIEW)**



**PULL BOX FOR SOIL AREA TRENCHING (ELEVATION)**

**CLOSED CIRCUIT TELEVISION CAMERA (LOCATION VE398)  
 CHANGEABLE MESSAGE SIGN VE398  
 (TRENCH DETAILS)**

NO SCALE

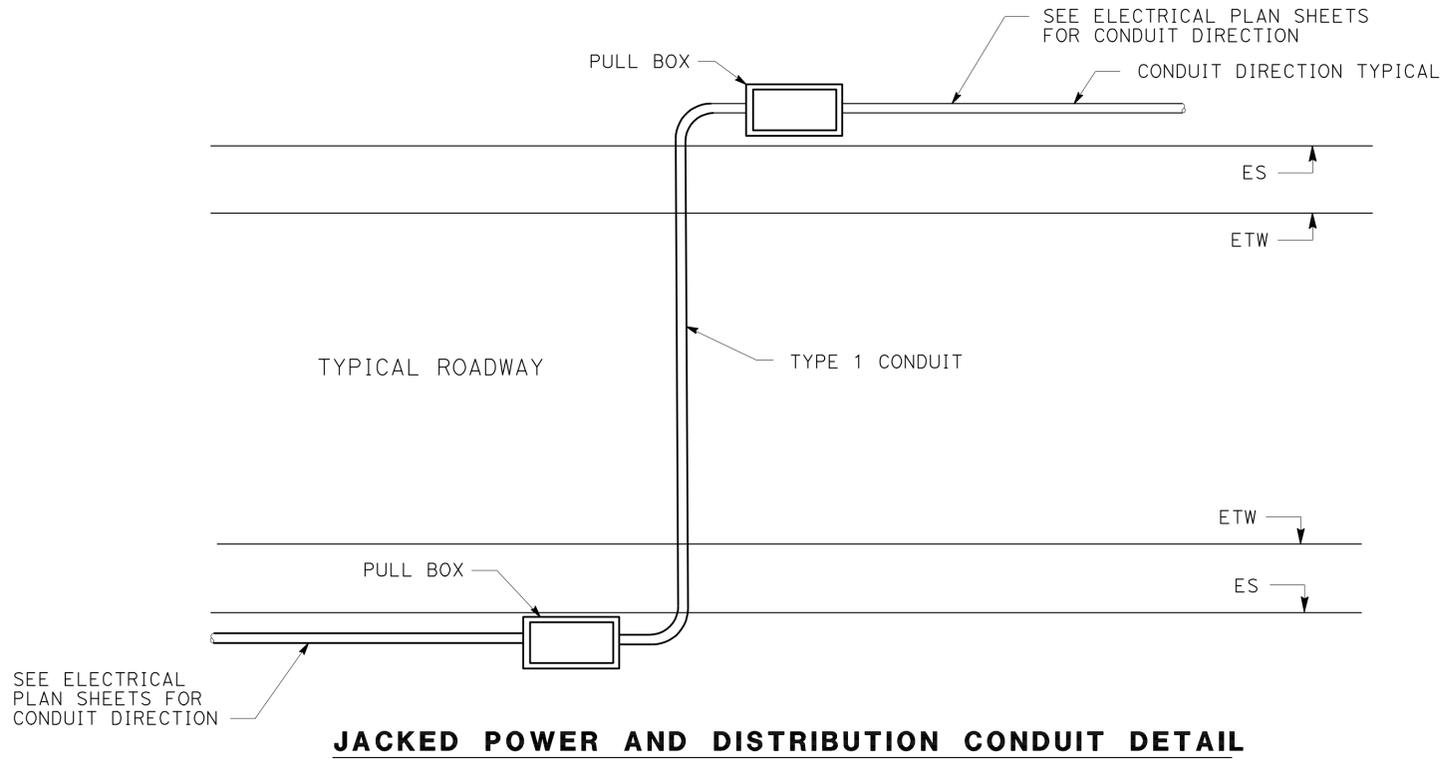
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

LAST REVISION DATE PLOTTED => 27-JUN-2011 TIME PLOTTED => 15:01

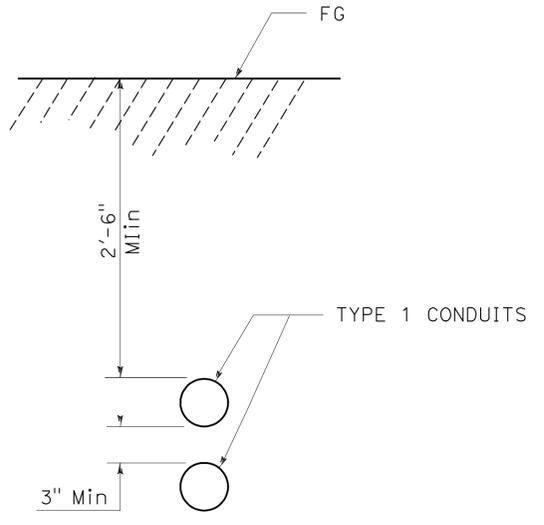
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** OFFICE OF ITS  
 FUNCTIONAL SUPERVISOR JACQUELINE TAN  
 HENRY TRINH JACQUELINE TAN  
 REVISIONS BY DATE  
 HT 06/11  
 CALCULATED/DESIGNED BY CHECKED BY  
 USER: trr1chf

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	475	757

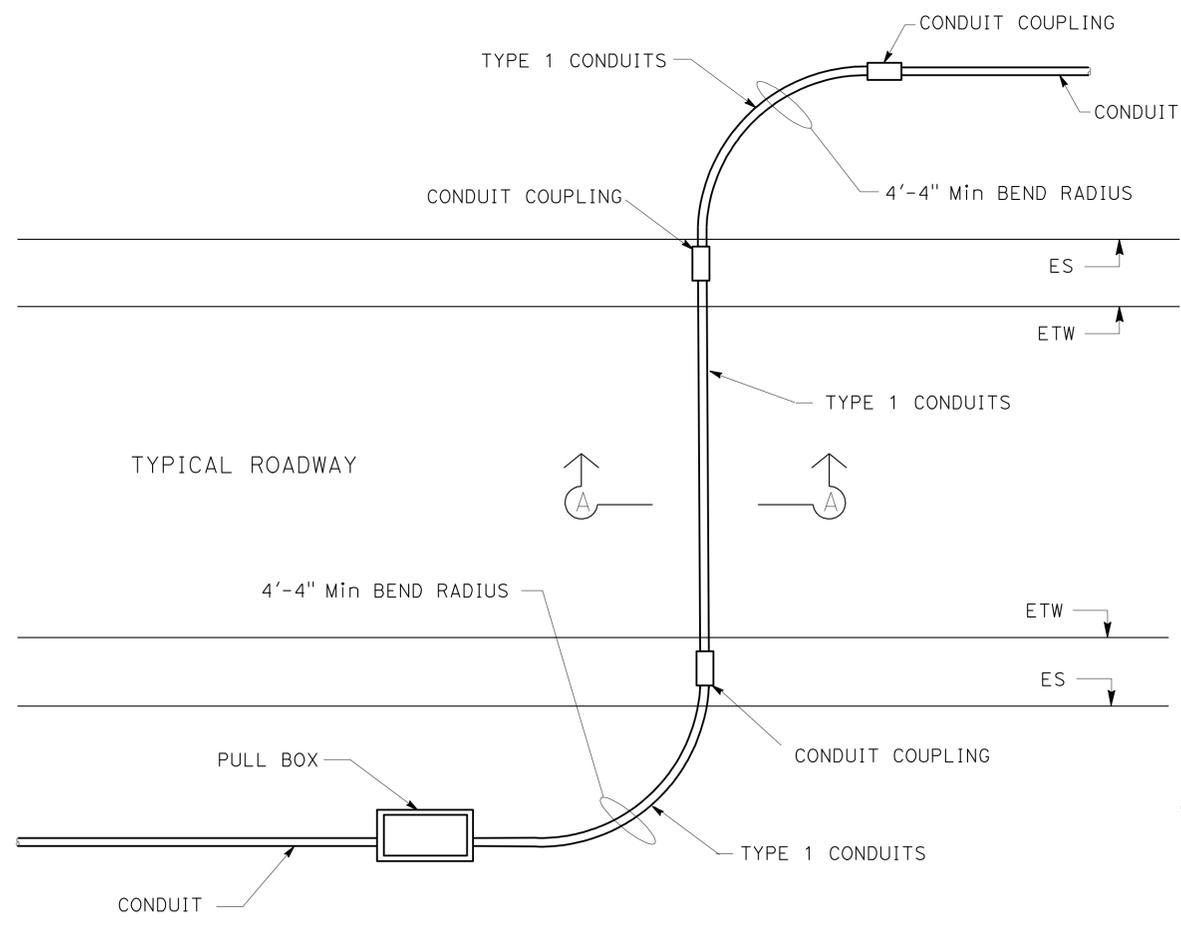
REGISTERED ELECTRICAL ENGINEER DATE 10/28/10  
 JACKIE TAN  
 No. E015611  
 Exp. 12/31/11  
 ELECTRICAL  
 STATE OF CALIFORNIA  
 6-20-11  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



**JACKED POWER AND DISTRIBUTION CONDUIT DETAIL**



**SECTION A-A**



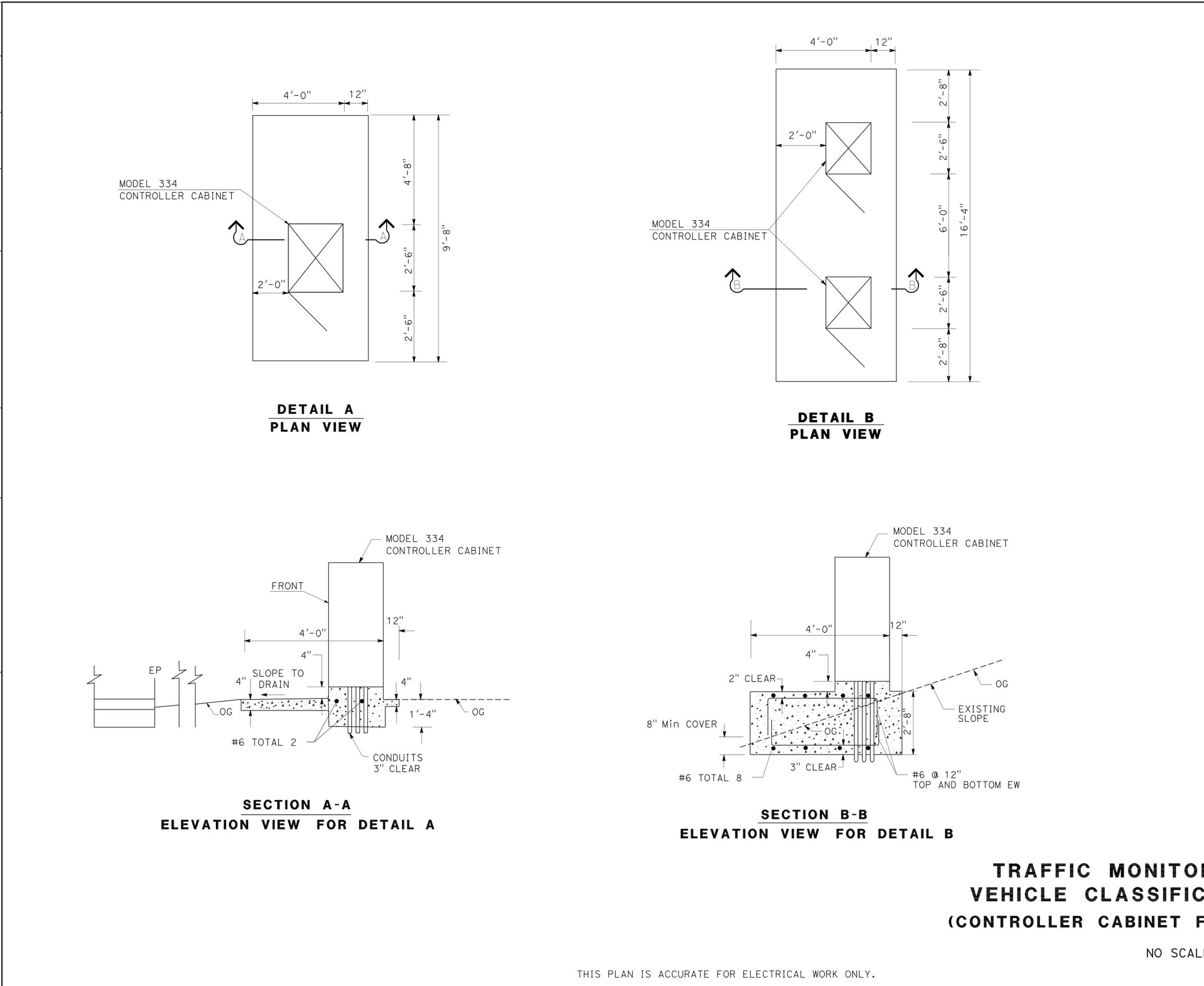
**JACKED CONDUIT DETAIL**

**NOTE: (THIS SHEET ONLY)**  
 1. SEE ELECTRICAL PLAN SHEETS E-29 TO E-32 FOR LOCATIONS WHERE THESE DETAILS APPLY.

**CLOSED CIRCUIT TELEVISION CAMERA (LOCATION VE398)  
 CHANGEABLE MESSAGE SIGN VE398  
 (JACKED CONDUIT DETAILS)**

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	476	757

10/28/10  
 REGISTERED ELECTRICAL ENGINEER DATE  
 Jackie Tan  
 6-20-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 JACKIE TAN  
 No. E015611  
 Exp. 12/31/11  
 ELECTRICAL  
 STATE OF CALIFORNIA

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

**TRAFFIC MONITORING STATION  
 VEHICLE CLASSIFICATION STATION  
 (CONTROLLER CABINET FOUNDATION DETAILS)**

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

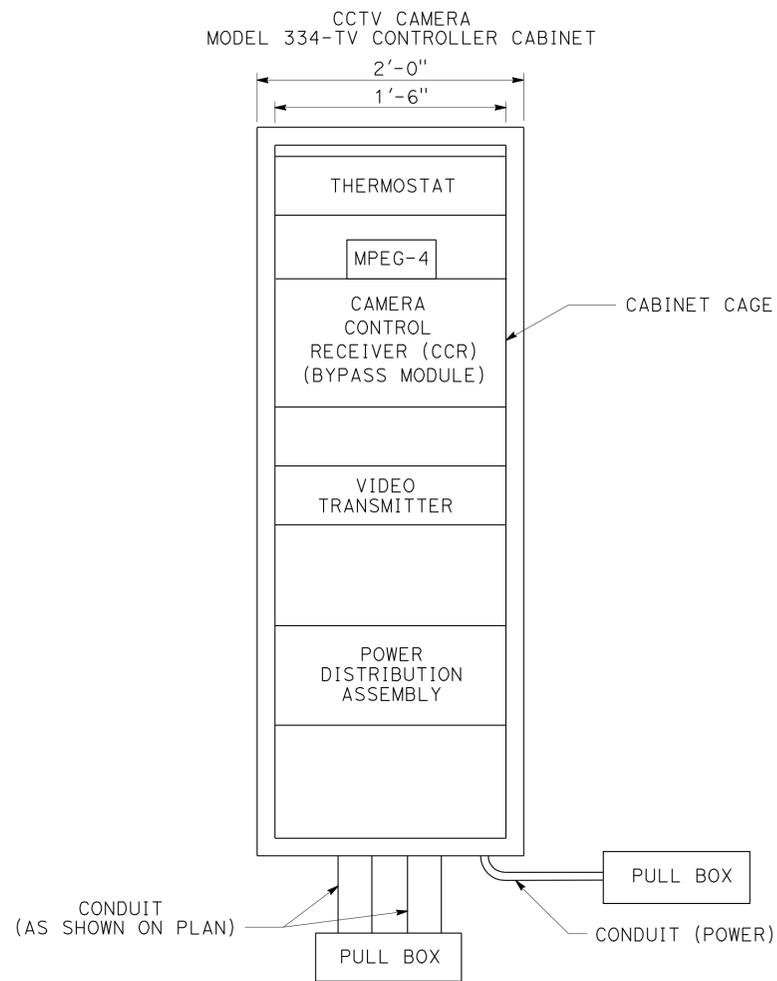
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	477	757

REGISTERED ELECTRICAL ENGINEER DATE 10/28/10  
 JACKIE TAN  
 No. E015611  
 Exp. 12/31/11  
 ELECTRICAL  
 STATE OF CALIFORNIA

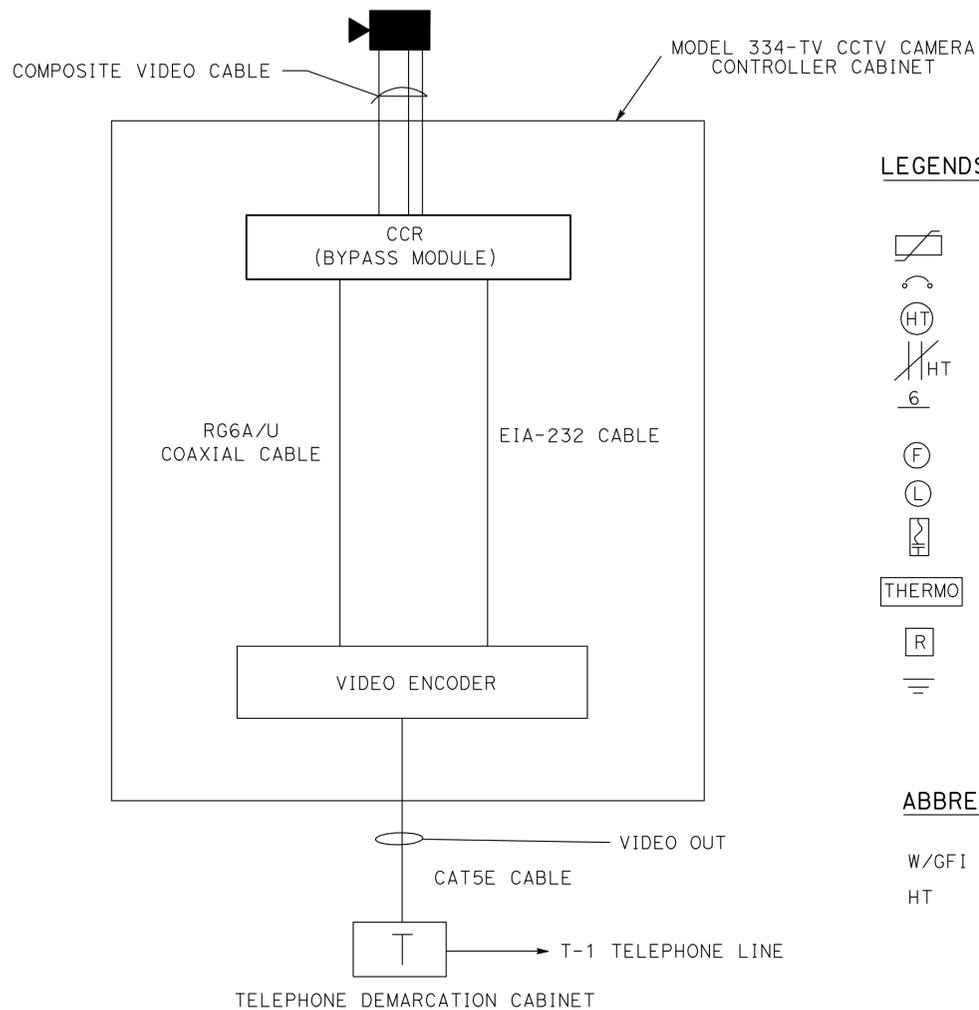
6-20-11  
 PLANS APPROVAL DATE

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** OFFICE OF ITS  
 FUNCTIONAL SUPERVISOR JACQUELINE TAN  
 HENRY TRINH JACQUELINE TAN  
 REVISIONS BY DATE  
 HT 06/11  
 CALCULATED/DESIGNED BY CHECKED BY



**MODEL 334-TV CONTROLLER CABINET EQUIPMENT LAYOUT**

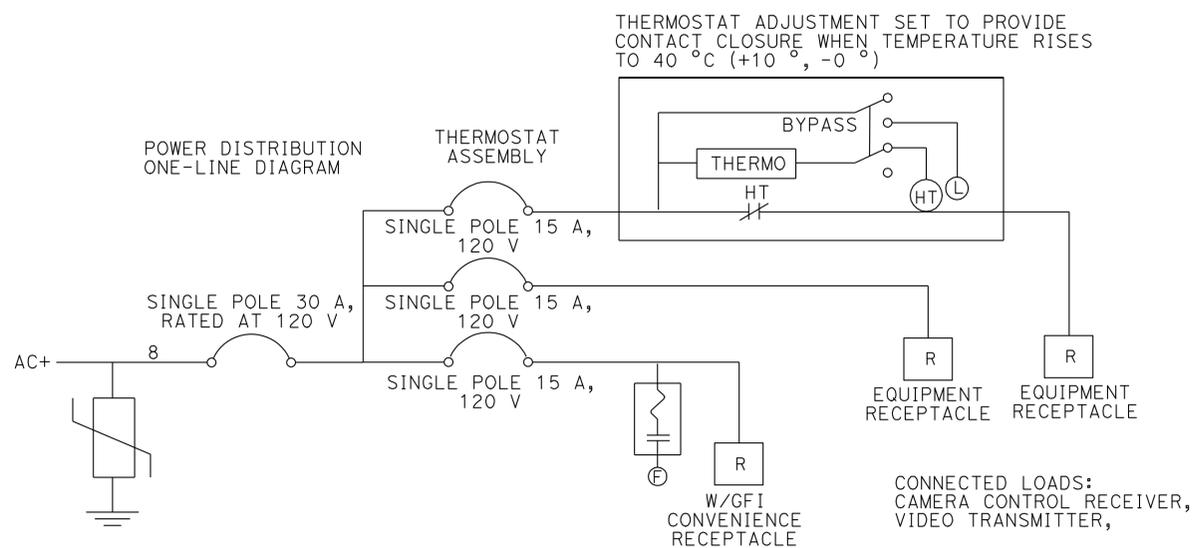


**LEGENDS: (SHEET E-37 THROUGH E-38)**

- SURGE PROTECTOR
- CIRCUIT BREAKER
- HIGH TEMPERATURE RELAY COIL
- RELAY CONTACT NORMALLY CLOSED
- WIRE SIZE, IF NOT INDICATED SHALL BE #12 AWG
- FAN
- INDICATOR LAMP
- THERMOSTATIC CONTROL
- ADJUSTABLE CALIBRATED THERMOSTAT
- DUPLEX RECEPTACLE
- EQUIPMENT GROUND

**ABBREVIATIONS: (SHEET E-37 THROUGH E-38)**

- W/GFI WITH GROUND FAULT INTERRUPTOR
- HT HIGH TEMPERATURE



**POWER DISTRIBUTION ASSEMBLY**

**MODEL 334-TV CONTROLLER CABINET WIRING DETAIL**

**CLOSED CIRCUIT TELEVISION CAMERA (MODEL 334-TV CONTROLLER CABINET DETAILS)**

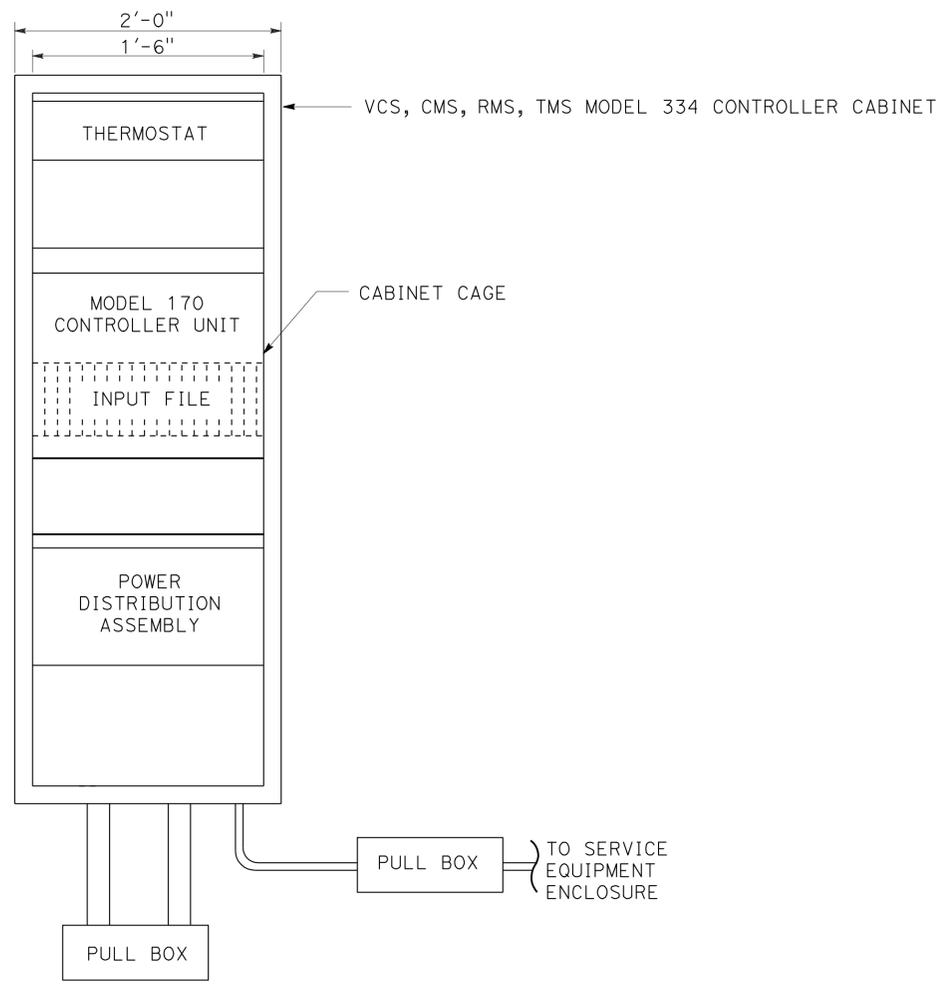
NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY. FOR LEGENDS AND ABBREVIATIONS SEE SHEET E-28.

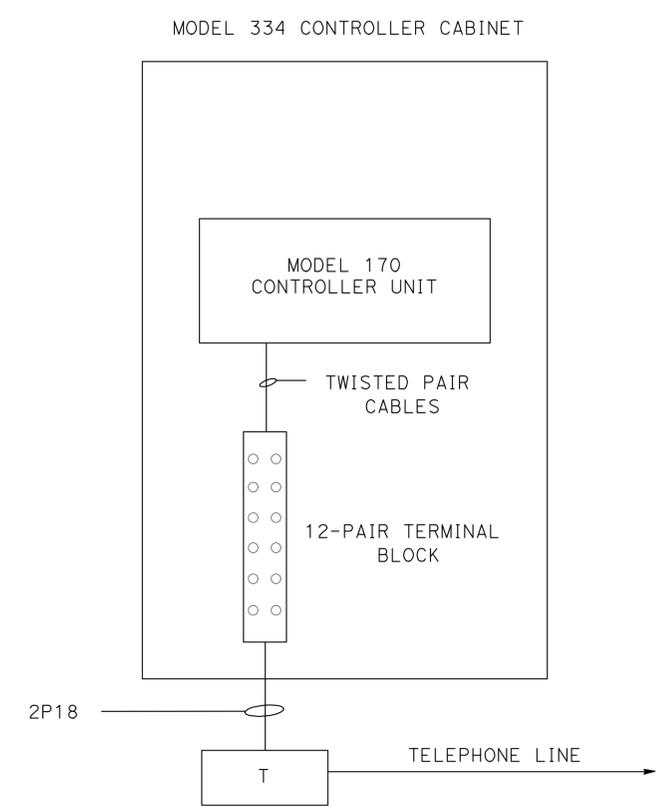
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	478	757

10/28/10  
 REGISTERED ELECTRICAL ENGINEER DATE  
 Jackie Tan  
 No. E015611  
 Exp. 12/31/11  
 ELECTRICAL  
 STATE OF CALIFORNIA

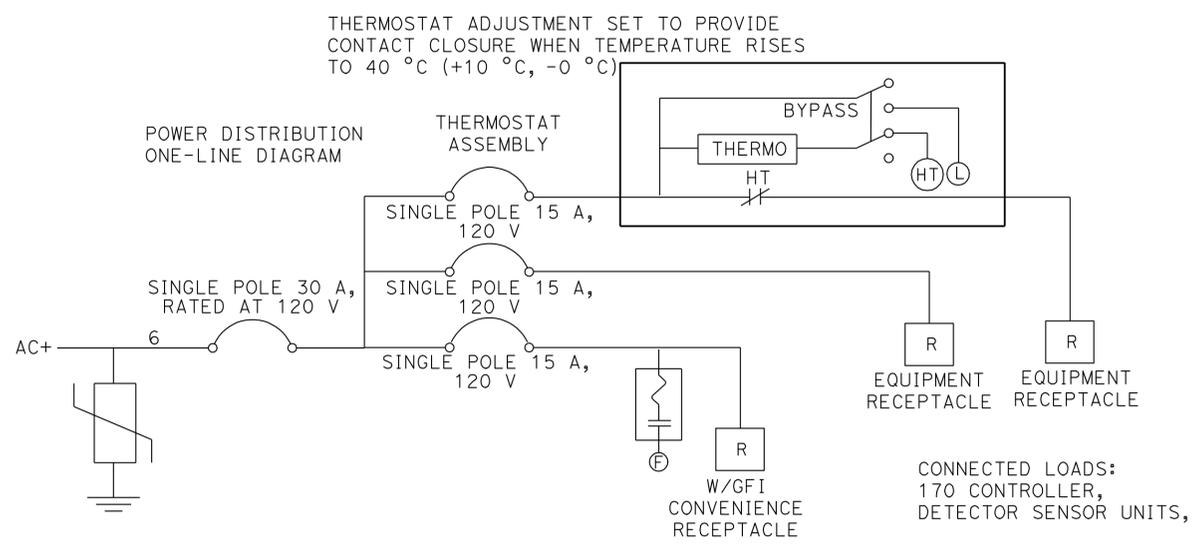
6-20-11  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS  
 OR AGENTS SHALL NOT BE RESPONSIBLE FOR  
 THE ACCURACY OR COMPLETENESS OF SCANNED  
 COPIES OF THIS PLAN SHEET.



**MODEL 334 CONTROLLER  
CABINET EQUIPMENT LAYOUT FOR RMS**



**MODEL 334 CONTROLLER  
CABINET WIRING DETAIL FOR RMS**



**POWER DISTRIBUTION ASSEMBLY**

**VEHICLE CLASSIFICATION STATION  
RAMP METERING SYSTEM  
TRAFFIC MONITORING STATION  
CHANGEABLE MESSAGE SIGN  
(MODEL 334 CONTROLLER CABINET DETAILS)**

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 OFFICE OF ITS  
 FUNCTIONAL SUPERVISOR  
 JACQUELINE TAN  
 HENRY TRINH  
 JACQUELINE TAN  
 REVISOR BY  
 DATE REVISOR  
 HT  
 06/11  
 CALCULATED/DESIGNED BY  
 CHECKED BY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	479	757

10/28/10  
REGISTERED ELECTRICAL ENGINEER DATE

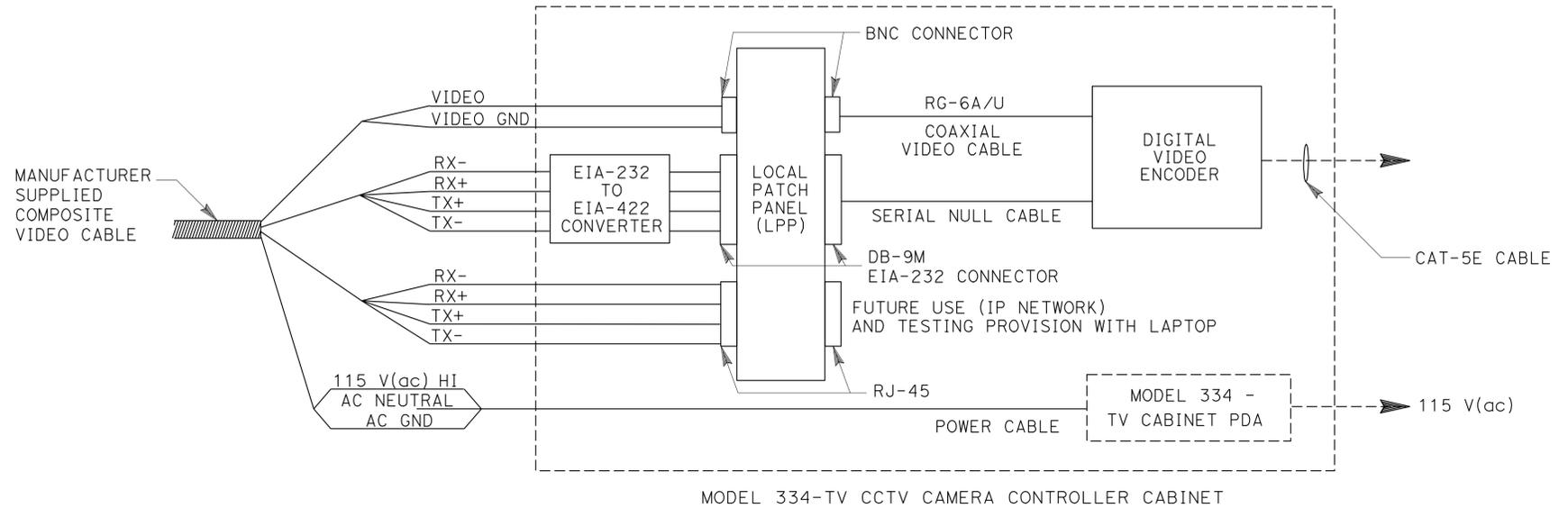
6-20-11  
PLANS APPROVAL DATE

JACKIE TAN  
No. E015611  
Exp. 12/31/11  
ELECTRICAL

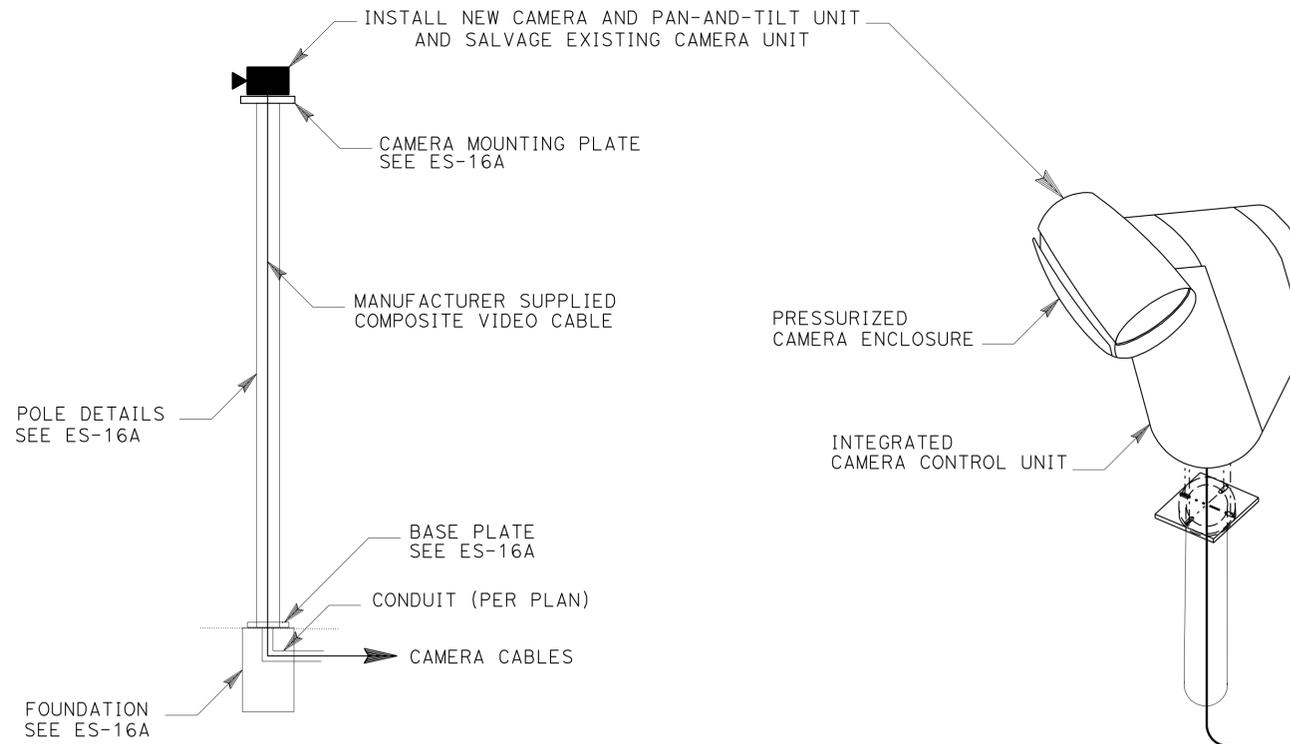
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES: (THIS SHEET ONLY)**

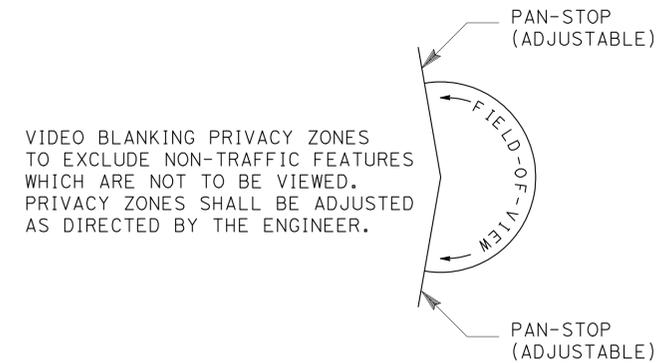
1. THE CONTRACTOR SHALL PROVIDE CABLE LENGTH FROM THE CAMERA ASSEMBLY TO THE LOCAL PATCH PANEL INCLUDING CONNECTORS AS SHOWN IN THIS SHEET.
2. THE CONTRACTOR SHALL PROVIDE ALL CABLES FROM THE LOCAL PATCH PANEL TO THE DIGITAL VIDEO ENCODER AND PDA.
3. ALL CABLES SHALL BE ALUMINUM SHIELDED TO PREVENT CROSS TALK.
4. IN THE CCTV CAMERA CONTROLLER CABINET, THE NUMBER IDENTIFIES THE SPECIFIC CONDUCTOR TO BE USED FOR THE INDICATED FUNCTION.
5. CONNECT ALL DRAIN WIRES OF SHIELDED-CONDUCTORS TO CABINET GROUND AT THE LOCAL PATCH PANEL.
6. INSTALL CONNECTORS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
7. WATERPROOF ALL CONNECTORS AND CABLES USING WATER-TIGHT GROMMETS, SEALING COMPOUNDS AND TAPE.
8. AS REQUIRED, CONTRACTOR SHALL INSTALL ADAPTER MOUNTING PLATES TO MOUNT CCTV CAMERA ON POLE.



**EXISTING TYPICAL WIRING DIAGRAM**



**TYPICAL CAMERA WITH PAN-AND-TILT UNIT**



**ADJUSTABLE PAN-STOP DETAIL**

**CLOSED CIRCUIT TELEVISION CAMERA (WIRING DIAGRAM WITH PAN-AND-TILT UNIT)**

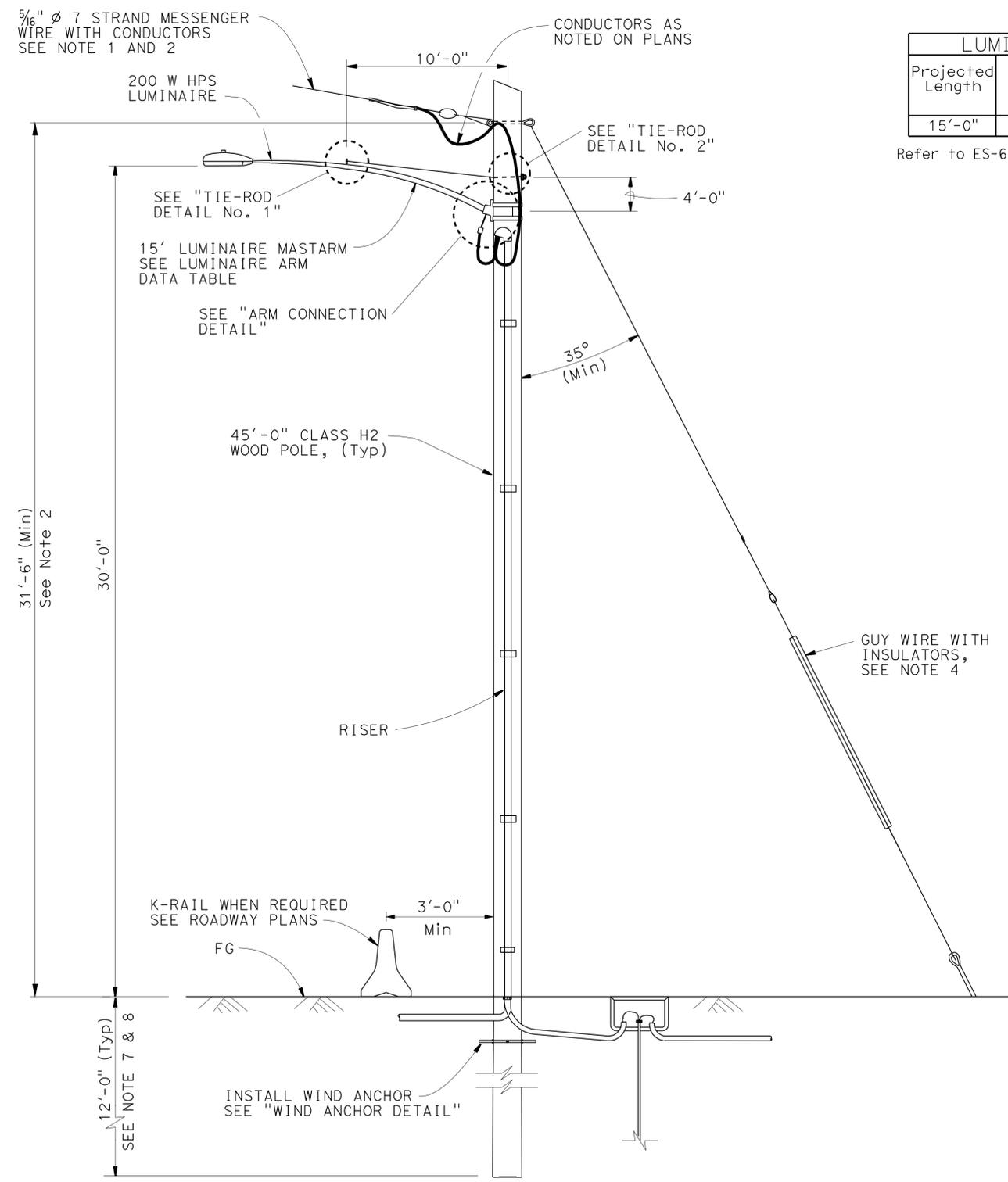
NO SCALE

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6 0.0/2.2	480	757

6-24-11  
 REGISTERED CIVIL ENGINEER DATE  
 6-20-11  
 PLANS APPROVAL DATE  
 No. C61500  
 Exp. 6/30/13  
 CIVIL  
 STATE OF CALIFORNIA

LUMINAIRE ARM DATA			
Projected Length	N Rise	Min OD At Pole	Thickness
15'-0"	4'-9"	4 1/4"	0.1196"

Refer to ES-6A for Luminaire arm details



**TYPICAL WOOD POLE SUPPORT WITH LUMINAIRE**

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

**GENERAL NOTES:**

**SPECIFICATIONS**

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals dated 2001.

**LOADING**

Wind Loadings: 85 MPH

**UNIT STRESSES**

Timber Poles: Fb = 1850 Tapered treated round pole  
Fv = 110 psi ASTM D2899 Standard  
E = 1500 x 10<sup>3</sup> psi

**TREATMENT**

To conform with Section 86 Standard Specifications

**SPECIFICATIONS**

Caltrans Standard Specifications May 2006  
ANSI Wood Poles  
Utility Grade Wires

**NOTES:**

- All overhead cables shall be slack spanned with 20'-0" minimum overhead clearance.
- Conductors shall be suspended from span-wire as follows:  
A) Main run 5/16" span-wire with 4.5%± sag. No spare conductors allowed except as noted.
- Overhead line construction not specifically covered here shall conform with the provisions of General Order No. 95 of Public Utilities Commission.
- Wood poles shall be stabilized using guy wires, breast blocks or rakes at each dead end, corner, drop or line deviation more than 15° from straight line. The direction of the guy shall counteract the resultant of unbalanced force applied to pole. Where space or conflict prevent guy installation, a diagonal brace shall be used. The brace shall be wood and shall be connected to the pole by means to satisfy structural and electrical requirements. The direction of the brace shall counteract the resultant of unbalanced horizontal force of 4000 pounds (Min) applied to the pole.
- Guy shall be attached to pole opposite of messenger wire with a guy hook if possible, otherwise place as nearly as practical to the center of conductors load, or 3'-0" Max otherwise.
- All attachments shall be mounted with stainless steel straps or other manufacturers methods without drilling holes in pole, except as shown. Drilling through pole will require the Engineer's approval.
- Foundation design is based on AASHTO 2001 article 13.6 Broms' approximate procedure assuming a cohesionless material. The angle of internal friction, used is 30° and unit weight of soil used is 120 lb/ft<sup>3</sup>. The Contractor to verify actual soil condition.
- If pole is located on a steep slope add 2 feet extra for embedment.
- See Sheets SES-2 and SES-3 for details.
- For details not shown, see "2006 STANDARD PLANS" and "2006 REVISED STANDARD PLANS"
- All Temporary Wood Poles support OH Conductors as shown on "Electrical" Plans. Attach luminaire mast arm and/or combination of attachments as specified at locations where indicated on Electrical Sheets.

NO SCALE

BRANCH CHIEF JAMES SAGAR

DESIGN	BY J MAGANA	CHECKED T MARCHENKO
DETAILS	BY D W JUSTICE Jr	CHECKED J MAGANA
QUANTITIES	BY	CHECKED

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
DESIGN AND TECHNICAL SERVICES  
SPECIAL DESIGNS BRANCH

BRIDGE NO.	N/A
POST MILE	Varies

TEMPORARY WOOD POLE  
LIGHTING SYSTEM DETAILS

SES-1

(ENGLISH) SPECIAL DESIGNS BRANCH BORDER SHEET (REV. 7-1-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 3619  
PROJECT NUMBER & PHASE: 0700000490-1 CONTRACT NO.: 07-260701

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
5-11-11		

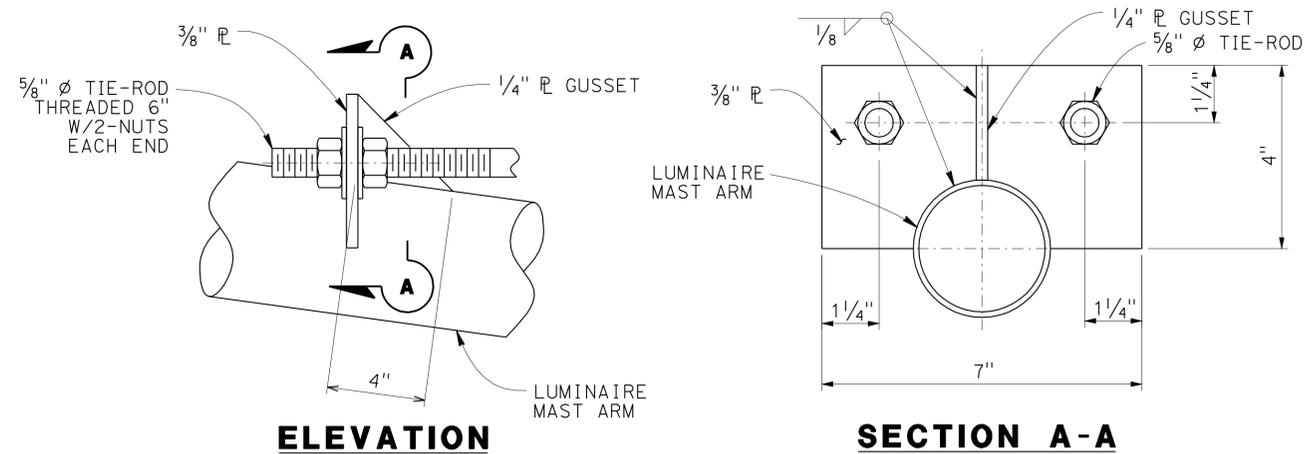
FILE => spec\_des\_br\_prj\2011sd\07-260701\07-260701\_ses1.dgn

USERNAME => s124496 DATE PLOTTED => 27-JUN-2011 TIME PLOTTED => 15:00

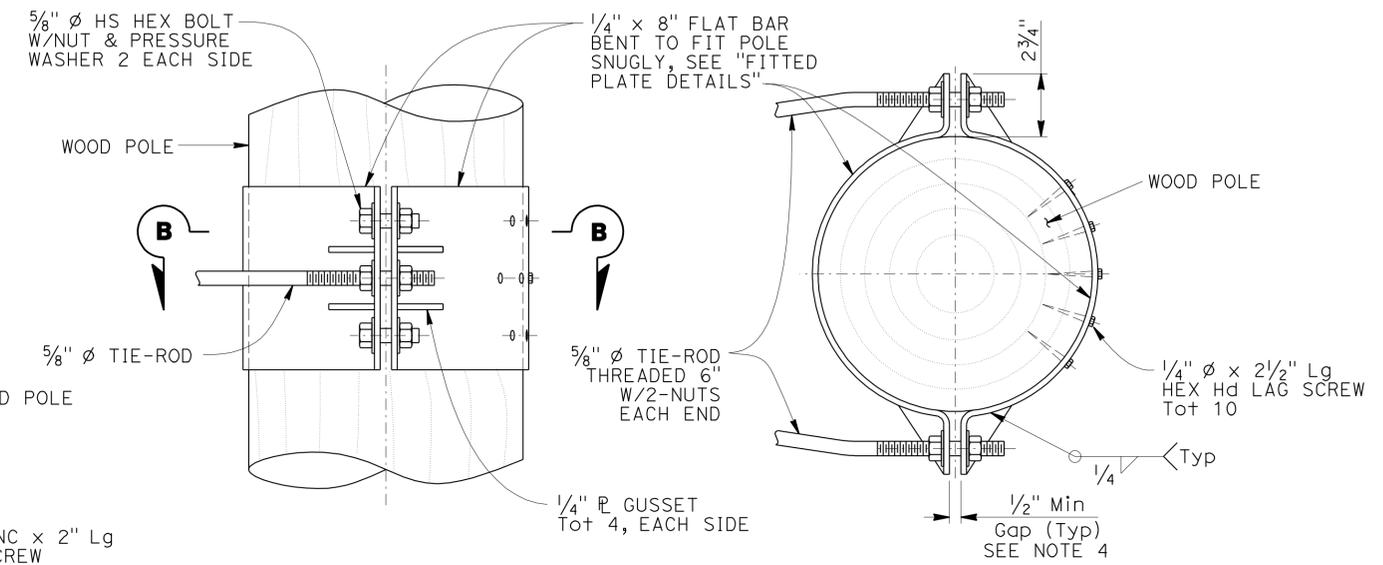
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	481	757
			6-24-11	REGISTERED CIVIL ENGINEER DATE	
			6-20-11	PLANS APPROVAL DATE	
			No. C61500	REGISTERED PROFESSIONAL ENGINEER	
			Exp. 6/30/13	JOEL MAGANA	
			CIVIL	STATE OF CALIFORNIA	
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					

**NOTES:**

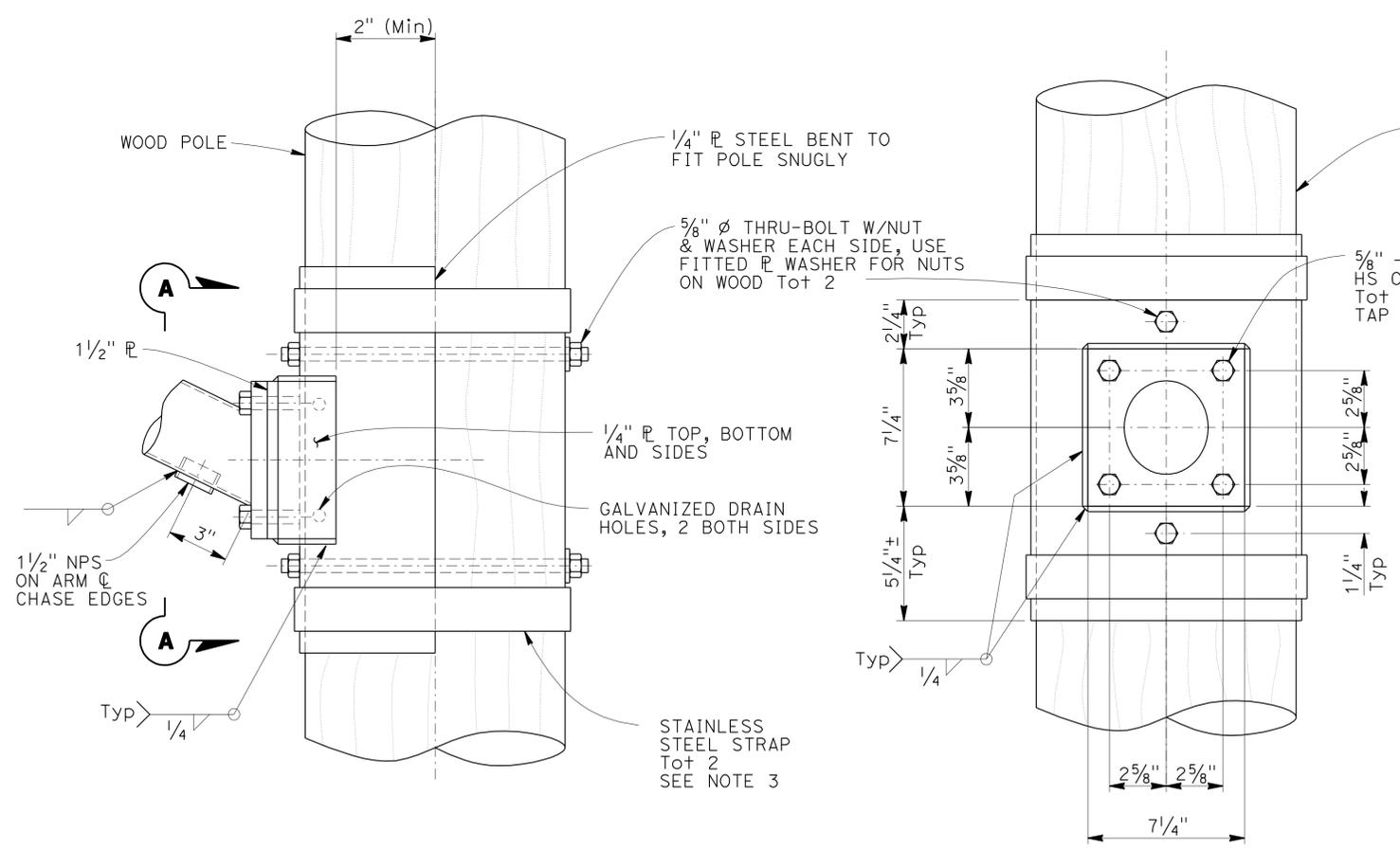
1. All hardware and steel shall be galvanized after fabrication.
2. Arm Base connection details shall be in compliance with Standard Plans Detail Sheet ES-6A with noted modifications.
3. 2000 LB Min capacity strap system shall be used for top and bottom of plate.
4. The Contractor to verify pole dimensions at Tie-Rod attachment height. Fabricate 8" flat bar with "L" Dimension to maintain an open gap between encasement in finished installation.



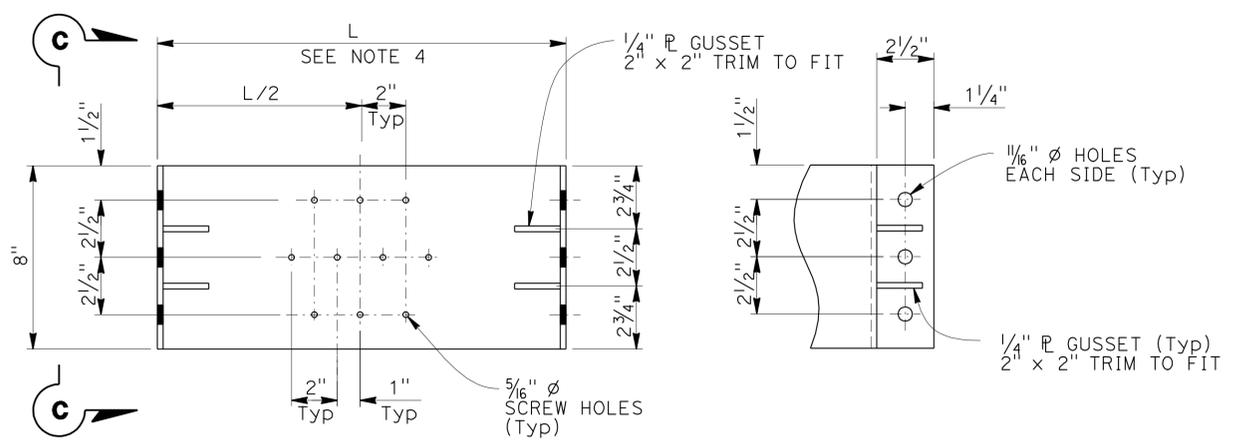
**TIE-ROD DETAIL No.1**



**TIE-ROD DETAIL No. 2**



**ARM CONNECTION DETAIL**



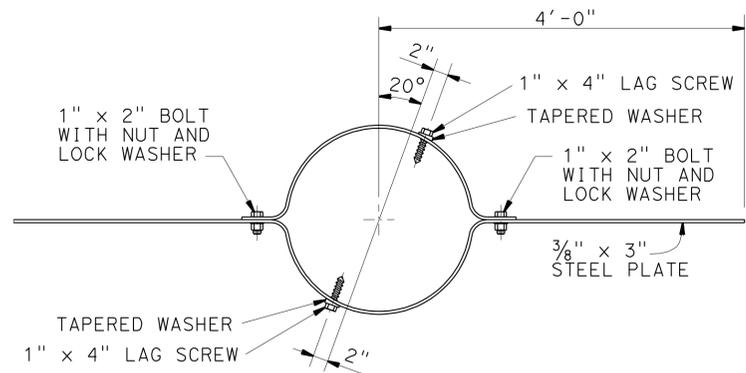
**FITTED PLATE DETAILS**

Note: 2 Required (1 w/screw holes, 1 without)

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

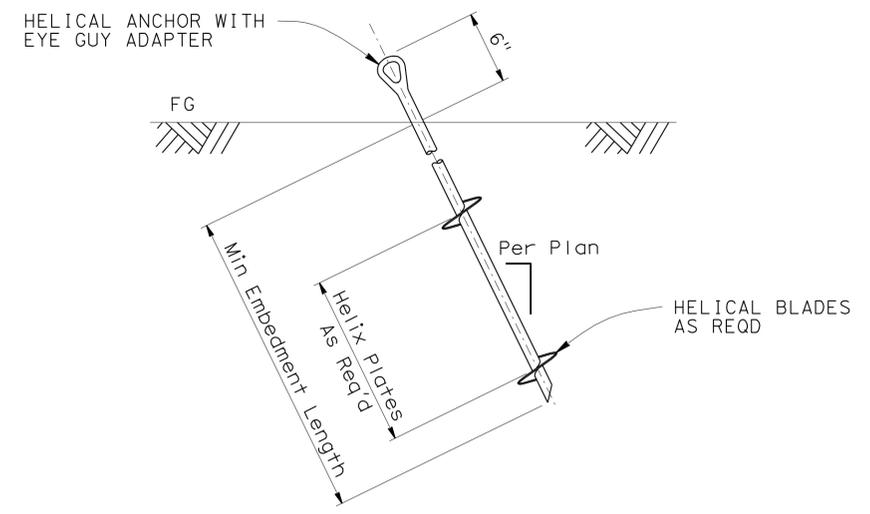
BRANCH CHIEF JAMES SAGAR	DESIGN	BY J MAGANA	CHECKED T MARCHENKO	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO.	N/A	TEMPORARY WOOD POLE WOOD POLE MOUNTING DETAILS	SES-2
	DETAILS	BY D W JUSTICE Jr	CHECKED J MAGANA			POST MILE	Varies		
	QUANTITIES	BY	CHECKED			UNIT	3619		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	482	757
			6-24-11	DATE	
REGISTERED CIVIL ENGINEER			DATE		
6-20-11			PLANS APPROVAL DATE		
No. C61500			Exp. 6/30/13		
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.					



**WIND ANCHOR**

To be installed perpendicular to mast arms and 2'-0" Min below grade



**ALTERNATIVE GUY WIRE INSTALLATION DETAIL**

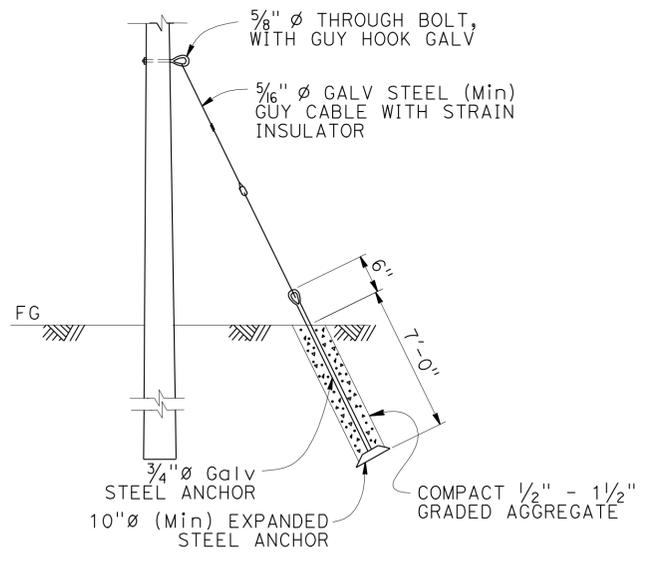
(See Helical Anchor Specifications Table)

HELICAL ANCHOR SPECIFICATIONS					
Anchor Location	Type	Helix Plate Diameter*	Allowable Min Tension Cap., "Q <sub>a</sub> "	Embedment Length (Min)	Installation Torque (Min)**, "T"
Typical	Tension	10"	1900 Lbs	7'-0"	400 Ft-LBs

SPECIFICATION NOTES:

- During installation the torque will be continuously monitored and recorded. If a drop in torque is recorded, the anchor must then continue to be inserted past the soft soil layer until Minimum Installation Torque is achieved.
- Anchors and Hardware to be installed per the manufacturers specifications.

\* Number of helical plates is not specified; Contractors choice.  
 \*\* Adjust accordingly if required, See Note 3.



**GUY WIRE INSTALLATION DETAIL**

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

**NOTES:**

- Contractor to verify soil condition, slope, and adjust anchoring to satisfy basic design requirements per Note 7 on SES-1 sheet.
- Use of alternative Guy Wire Installation Detail requires that the soil bearing capacity be verified by the installation Contractor.
- Installation Contractor shall determine the most appropriate value for k<sub>t</sub> based on soil conditions and shall adjust the Min Installation Torque based on the revised k<sub>t</sub>. A k<sub>t</sub> value of 10 was assumed for the Min Installation Torque shown in the table.  
  
The Helical Installation torque Formula is Q<sub>u</sub> = k<sub>t</sub>\*T where,  

$$Q_u = Q_a * FS = \text{Ultimate Helical Anchor Capacity (LBs)}$$

$$FS = \text{Factor of Safety} = 2.0$$

$$Q_a = \text{Allowable Helical Anchor Capacity (LBs)}$$

$$k_t = \text{Empirical Torque Factor (ft}^{-1}\text{)}$$

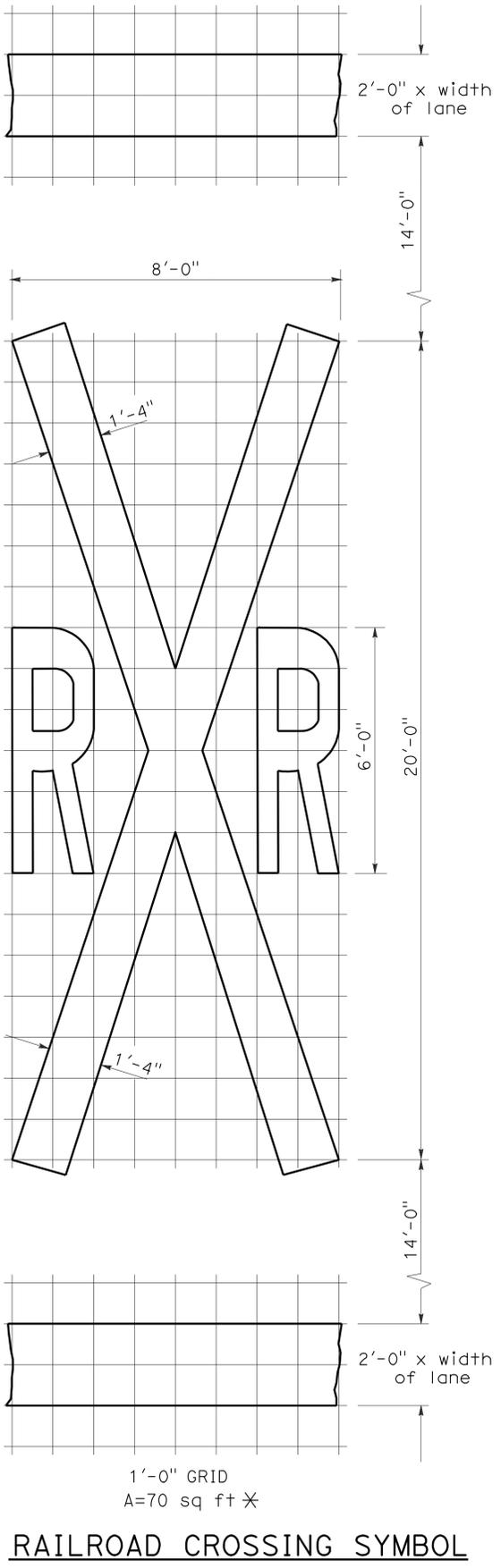
$$T = \text{Min Installation Torque (Ft-LBs)}$$
- Requests made by Helical Anchor Installation Contractor to reduce the minimum embedment length and/or Helix diameter require Engineer's approval.
- The Contractor shall locate and mark all of the substructures and utilities. Installation of anchors underneath utilities or subsurface structures is prohibited. Horizontal clearances of anchors shall be determined by Inspector during construction.

NO SCALE

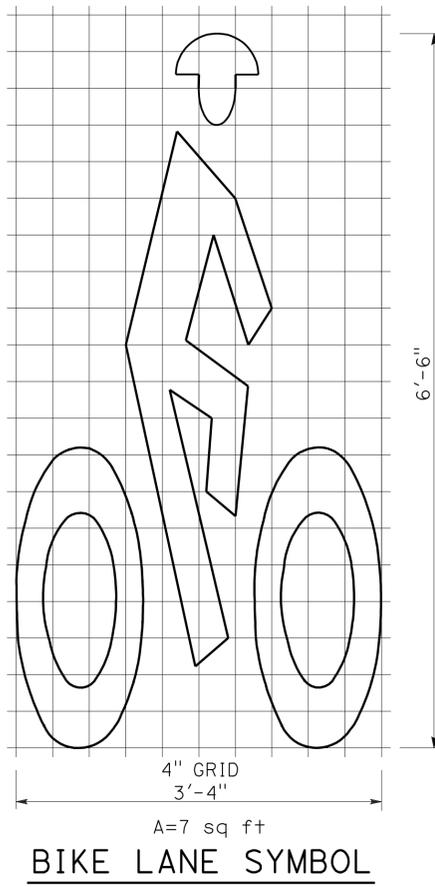
BRANCH CHIEF JAMES SAGAR	DESIGN	BY J MAGANA	CHECKED T MARCHENKO	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO.	N/A	TEMPORARY WOOD POLE WOOD POLE DETAILS	SES-3			
	DETAILS	BY D W JUSTICE Jr	CHECKED J MAGANA			POST MILE	Varies					
	QUANTITIES	BY	CHECKED									
(ENGLISH) SPECIAL DESIGNS BRANCH BORDER SHEET (REV. 7-1-09)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	UNIT: 3619	PROJECT NUMBER & PHASE: 0700000490-1	CONTRACT NO.: 07-260701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
										5-10-11		

USERNAME => s124496 DATE PLOTTED => 27-JUN-2011 TIME PLOTTED => 15:01

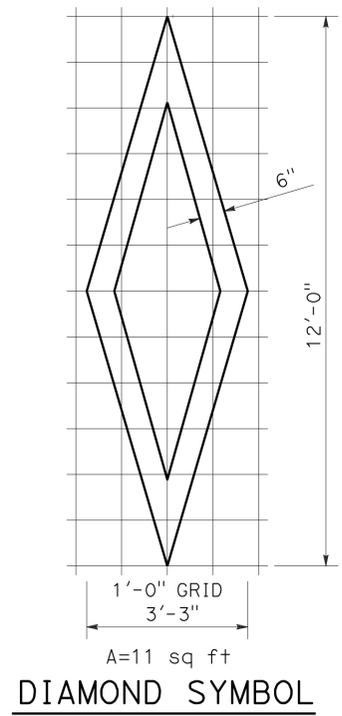
To accompany plans dated 6-20-11



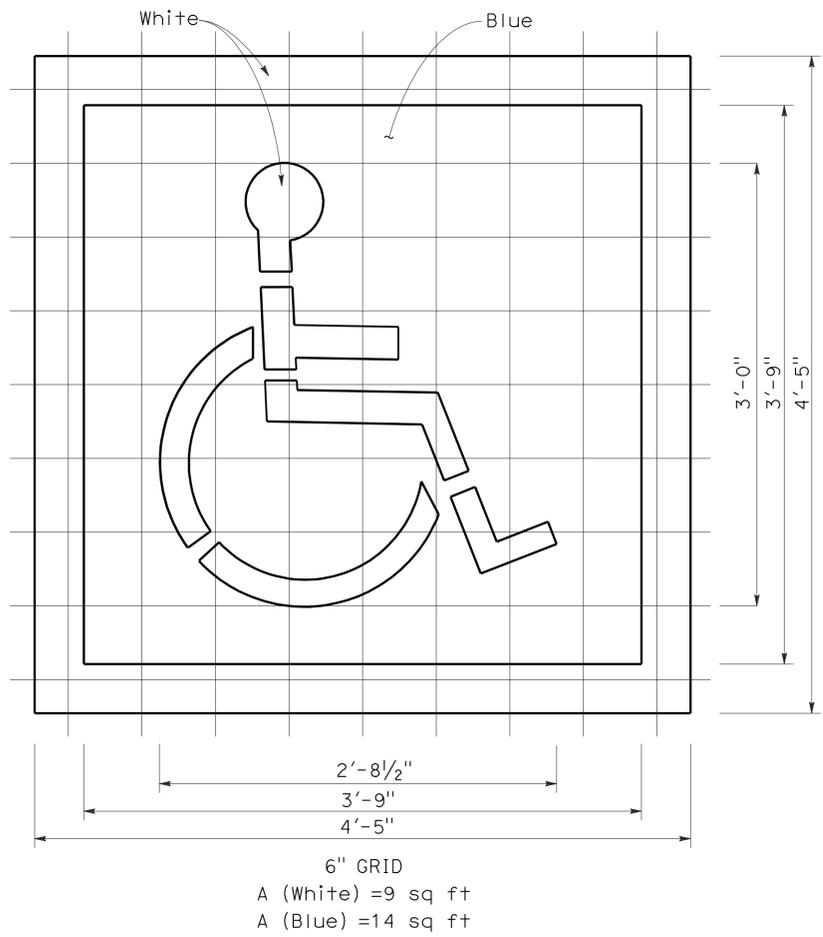
**RAILROAD CROSSING SYMBOL**  
 \*70 sq ft DOES NOT INCLUDE THE 2'-0" x VARIABLE WIDTH TRANSVERSE LINES.



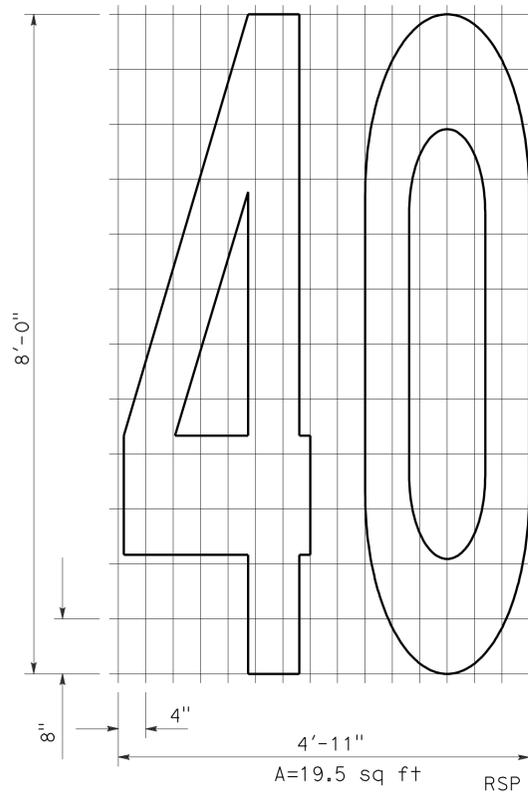
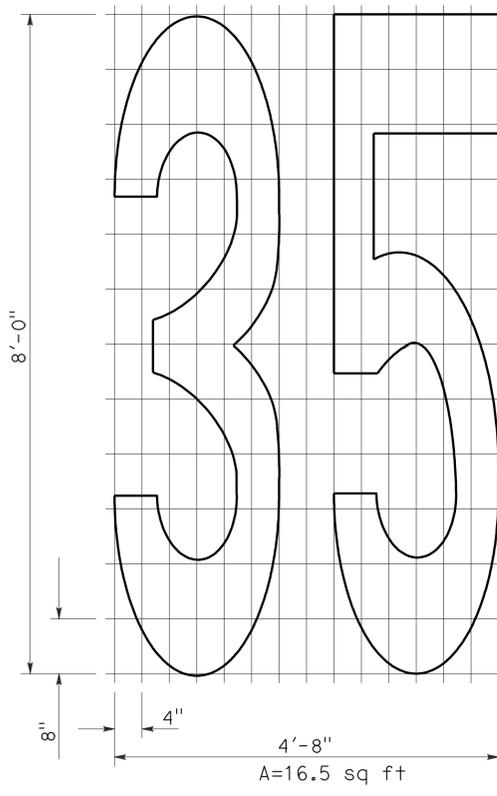
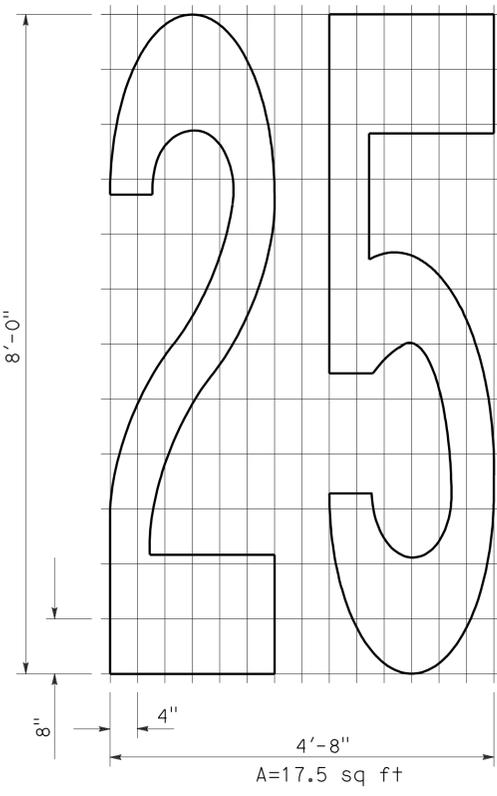
**BIKE LANE SYMBOL**



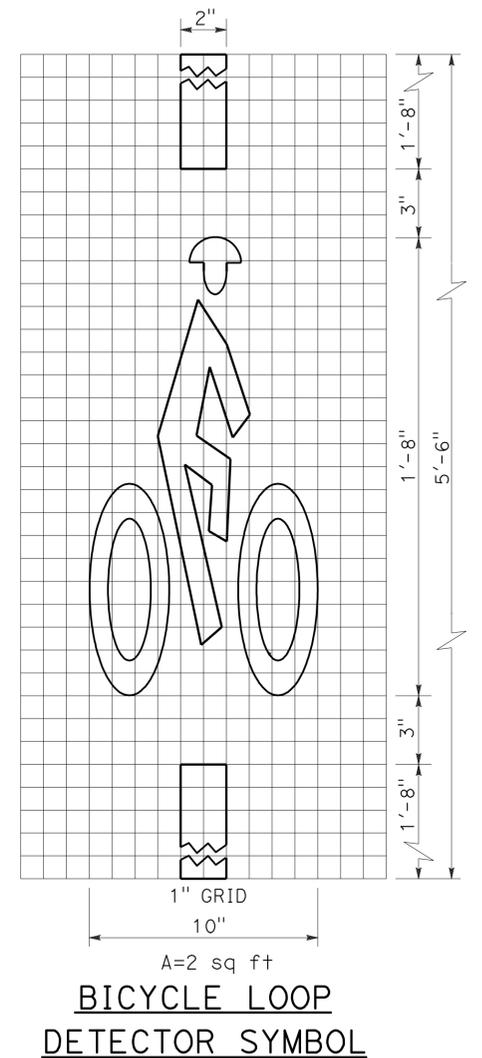
**DIAMOND SYMBOL**



**INTERNATIONAL SYMBOL OF ACCESSIBILITY MARKING**



**NUMERALS**



**BICYCLE LOOP DETECTOR SYMBOL**

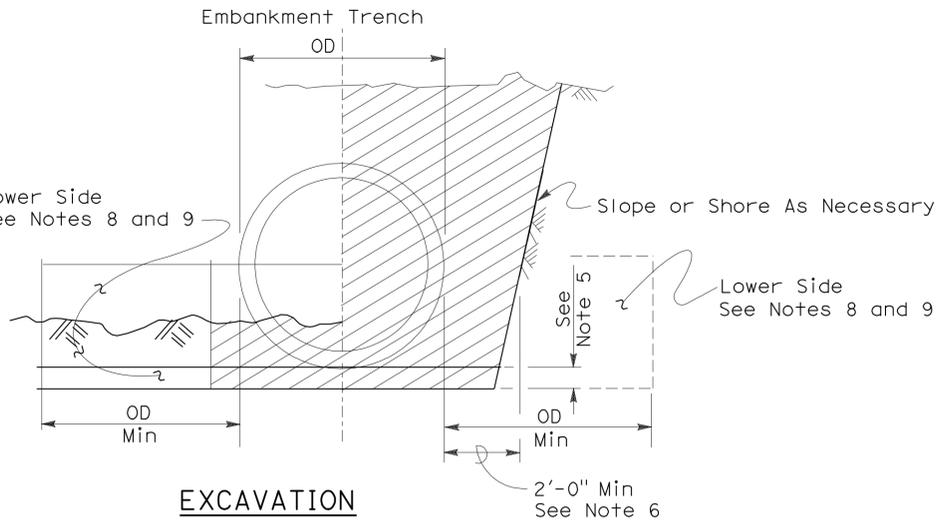
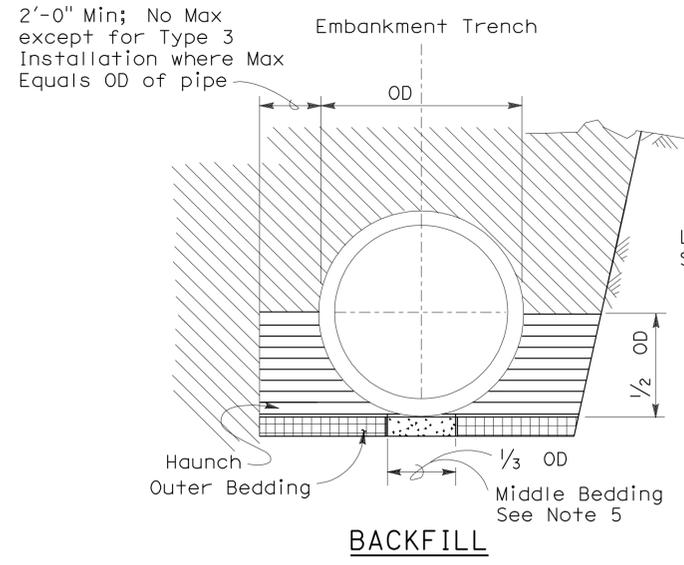
**NOTE:**  
 1. Minor variations in dimensions may be accepted by the Engineer.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS SYMBOLS AND NUMERALS**

NO SCALE

2006 REVISED STANDARD PLAN RSP A24C

To accompany plans dated 6-20-11



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

**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.

2006 REVISED STANDARD PLAN RSP A62DA

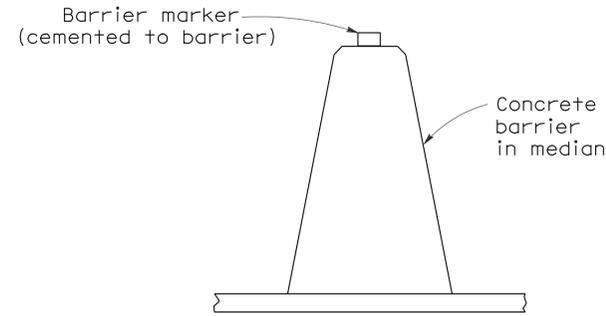
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	485	757

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

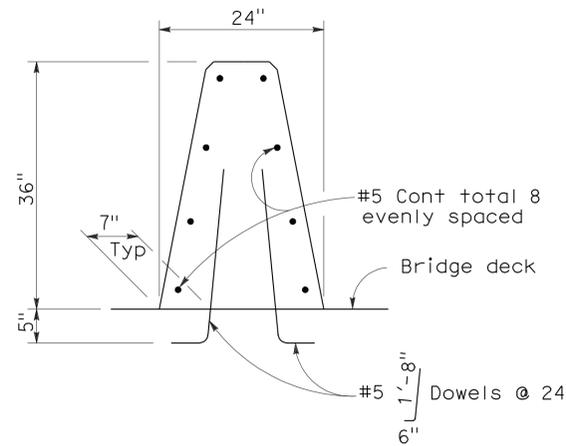
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 6-20-11



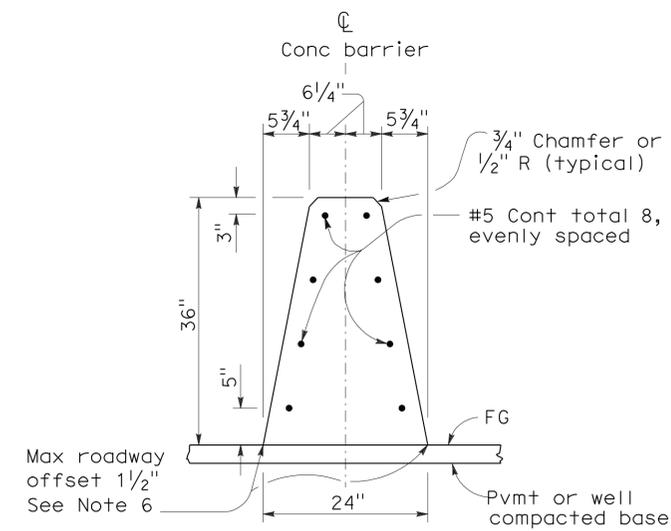
### CONCRETE BARRIER TYPE 60 DELINEATION

See Notes 7 and 8



### CONCRETE BARRIER TYPE 60A

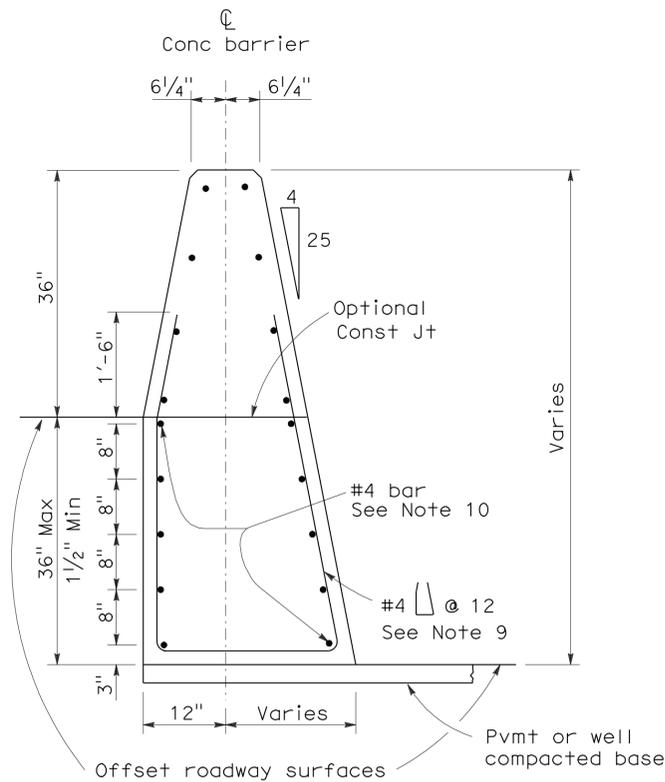
Details similar to Type 60 except as noted.



### CONCRETE BARRIER TYPE 60

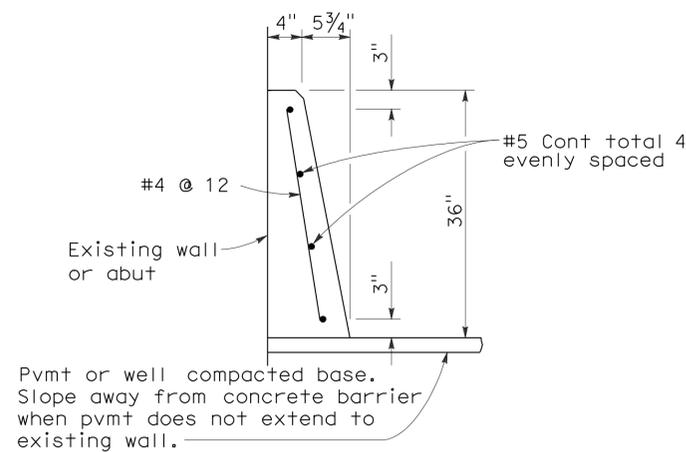
#### NOTES:

- See Standard Plan A76B for details of Concrete Barrier Type 60 end anchors, connection to structures and transitions to Concrete Barrier Type 50 and Concrete Barrier Type 60S.
- See Standard Plan A76C for Concrete Barrier Type 60 transitions at bridge column and sign pedestals.
- Where glare screen is required on Concrete Barrier Type 60, use Concrete Barrier Type 60G.
- Where the concrete barrier is added to the face of existing concrete structure, match existing weep holes.
- Expansion joints in concrete barrier shall be located at all deck, pavement and principal wall joints. Expansion joint filler material shall be the same size as joint or 1/2" minimum.
- Where roadway offset is greater than 1 1/2", see Concrete Barrier Type 60C.
- Barrier delineation to be used when required by the Special Provisions.
- Spacing of barrier markers to match spacing of raised pavement markers on the adjacent median edgeline pavement delineation.
- Reinforcing stirrup not required for roadway offsets less than 1'-0".
- For roadway surfaces offset greater than 1 1/2" to 3", no rebars required. For roadway surfaces offset greater than 3" to 8" use two #4 rebars at 3" above the lower roadway surface. For roadway surfaces offset greater than 8" to 12", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at 8" above the lower roadway surface. For roadway surfaces offset greater than 12" to 36", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at every 8" increment vertical spacing above the first two #4 rebars.



### CONCRETE BARRIER TYPE 60C

Details similar to Type 60 except as noted. Concrete barrier end anchor when necessary. 36" roadway surfaces offset shown.



### CONCRETE BARRIER TYPE 60D

### CONCRETE BARRIER TYPE 60

NO SCALE

RSP A76A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A76A DATED MAY 1, 2006 - PAGE 29 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A76A**

2006 REVISED STANDARD PLAN RSP A76A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	486	757

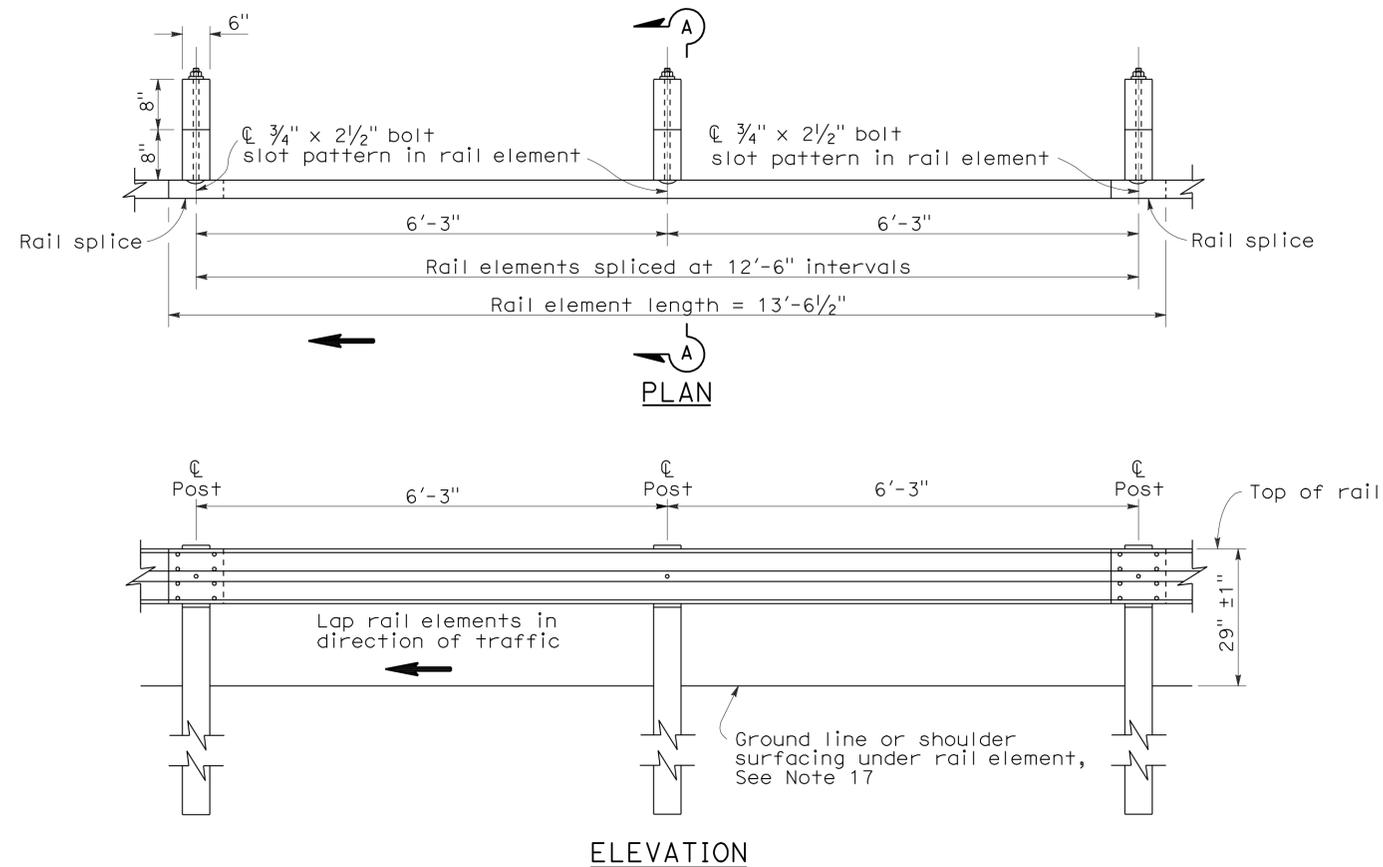
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

May 20, 2011  
PLANS APPROVAL DATE

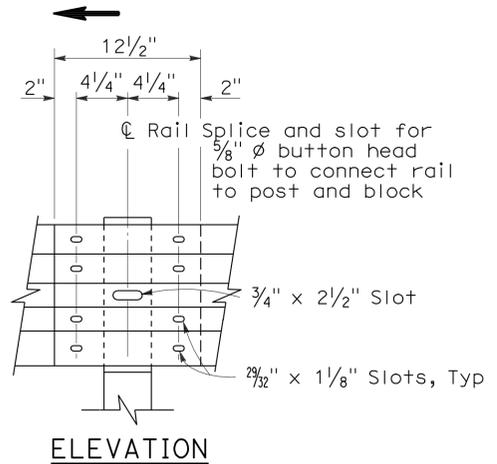
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 6-20-11

2006 REVISED STANDARD PLAN RSP A77A1

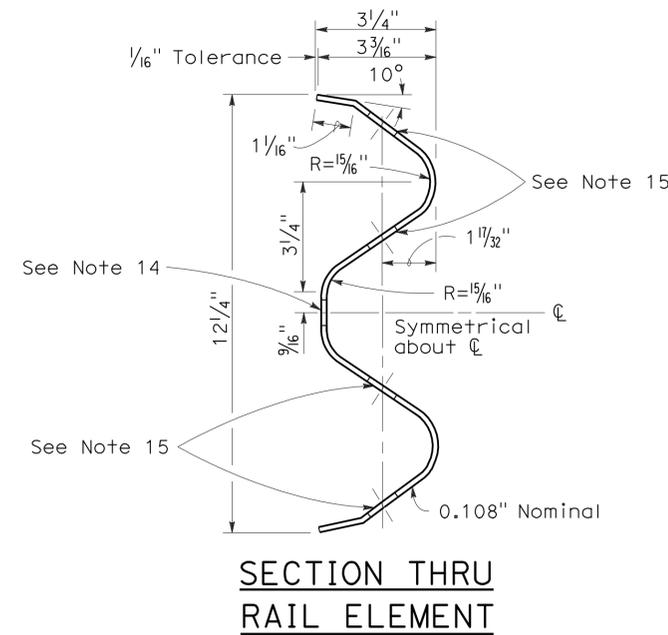


**METAL BEAM GUARD RAILING WITH WOOD POST AND BLOCKS**

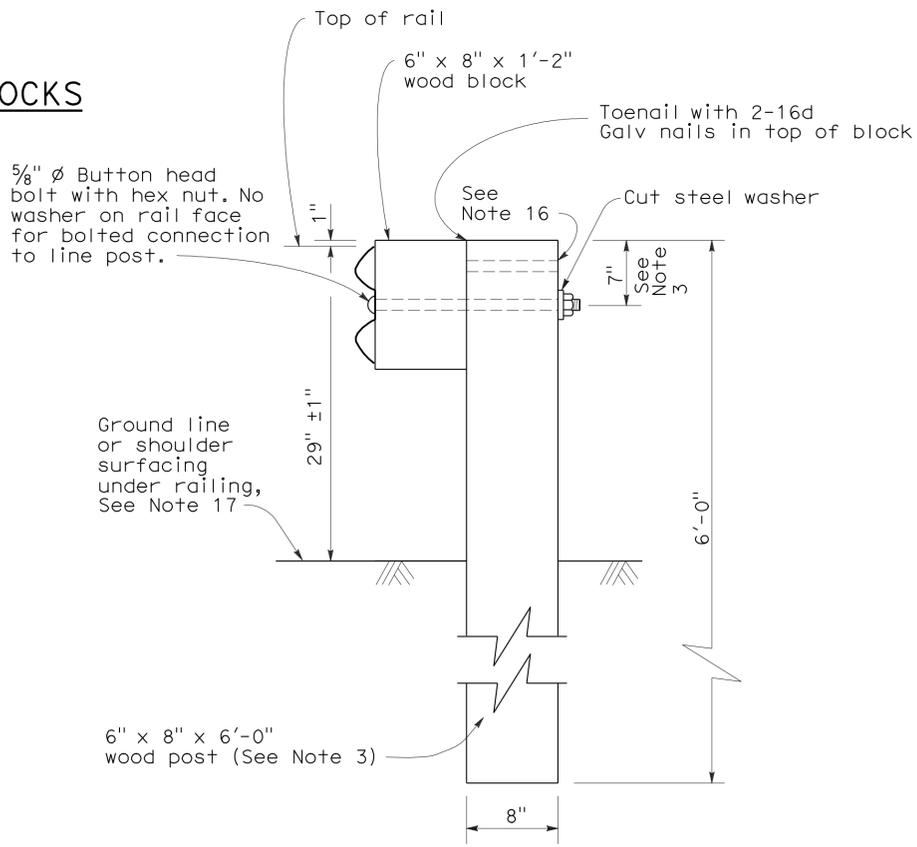


**RAIL ELEMENT SPLICE DETAIL**

- Connect the overlapped end of the rail elements with 5/8"  $\phi$  x 1 3/8" button head oval shoulder splice bolts inserted into the 2 3/32" x 1 1/8" slots and bolted together with 5/8"  $\phi$  recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



**SECTION THRU RAIL ELEMENT**



**SECTION A-A  
TYPICAL WOOD LINE  
POST INSTALLATION**

See Note 4

**NOTES:**

- For details of steel post installations, see Standard Plan A77A2.
- For details of standard hardware used to construct guard railing, see Standard Plan A77B1.
- For details of wood posts and wood blocks used to construct guard railing, see Standard Plan A77C1.
- For additional installation details, see Standard Plan A77C3.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- For guard railing typical layouts, see the A77E, A77F and A77G Series of Standard Plans.
- For terminal system end treatment details, see the A77L Series of Standard Plans. To connect railing to terminal system end treatment, transition the top of railing height at a ratio of 120:1 to terminal system end treatment height plus one 12'-6" standard railing section at the transitioned height for a horizontal connection to the end treatment.
- For guard railing end anchor details, see Standard Plans A77H1 and A77I2.
- For details of guard railing transition to bridge railing, see Standard Plan A77J4.
- For additional details of guard railing connection to bridge railings, see Standard Plans A77J1, A77J2 and A77K1.
- For guard railing connection details to abutments and walls, see Standard Plan A77J3.
- Direction of adjacent traffic indicated by  $\rightarrow$ .
- For typical guard railing delineation and dike positioning details, see Standard Plan A77C4.
- Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
- Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
- Additional hole in uppermost portion of line post is for potential future adjustments of railing height. See Standard Plan A77C1.
- Install posts in soil.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
STANDARD RAILING SECTION  
(WOOD POST WITH  
WOOD BLOCK)**

NO SCALE

RSP A77A1 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77A1  
DATED MAY 1, 2006 - PAGE 41 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77A1**

To accompany plans dated 6-20-11

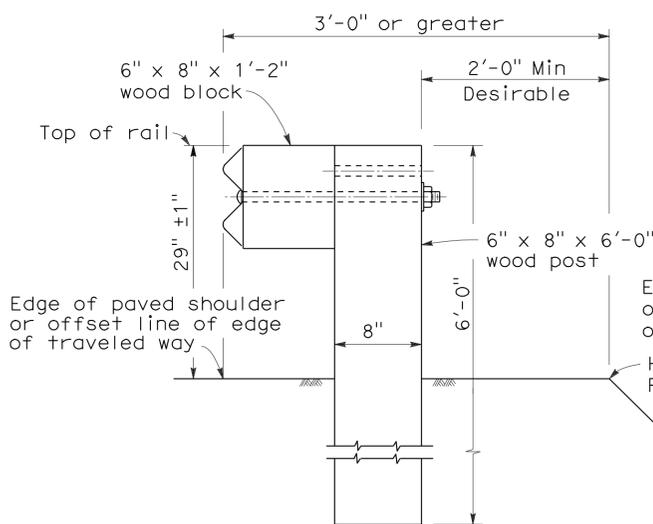
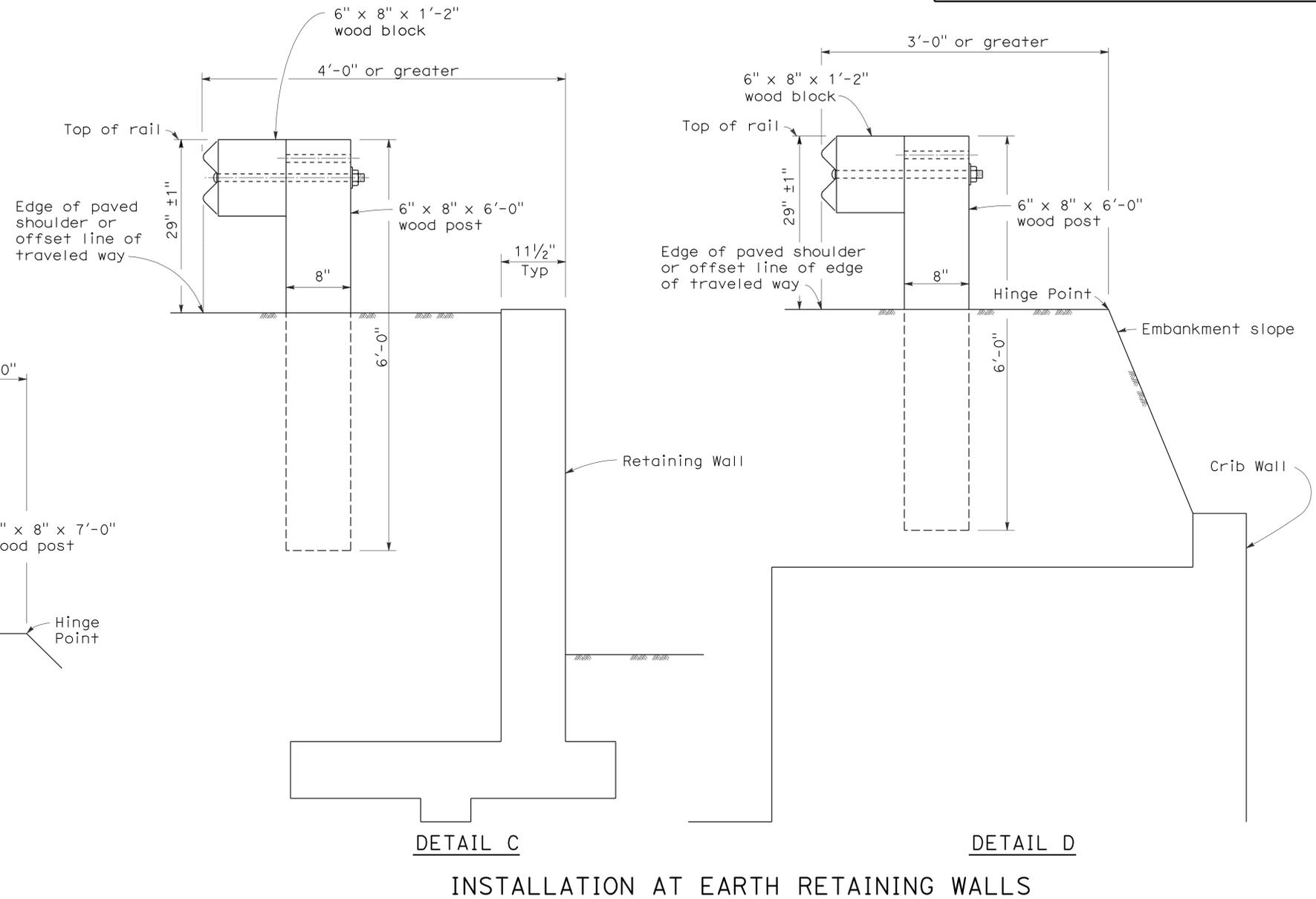
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	487	757

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

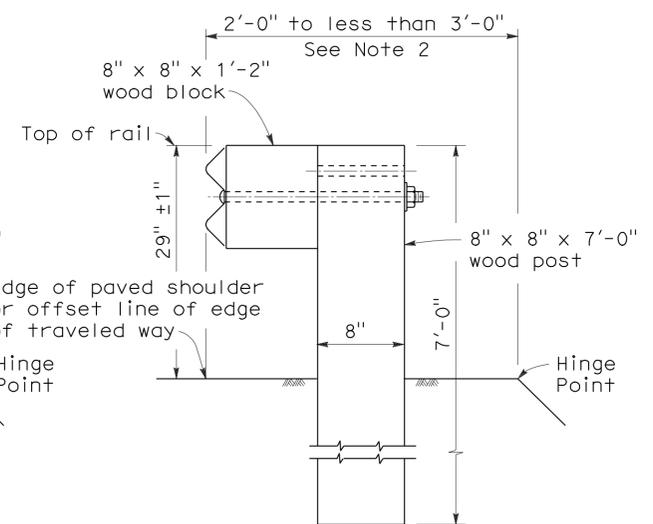
May 20, 2011  
PLANS APPROVAL DATE

*Randell D. Hiatt*  
No. C50200  
Exp. 6-30-11  
CIVIL  
STATE OF CALIFORNIA

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

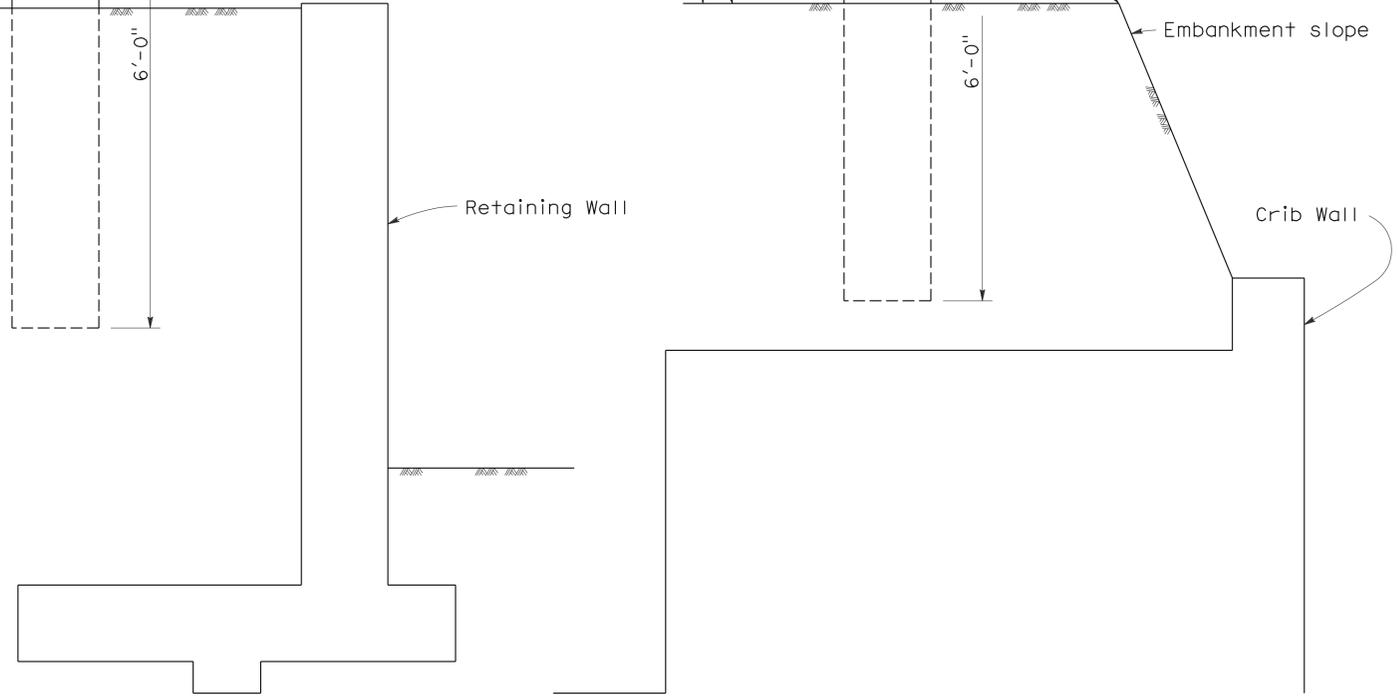


**DETAIL A**  
**TYPICAL ROADWAY**  
**INSTALLATION**  
See Note 1



**DETAIL B**  
**NARROW ROADWAY**  
**INSTALLATION**  
See Note 1

**POST EMBEDMENT**



**DETAIL C**  
**INSTALLATION AT EARTH RETAINING WALLS**

**DETAIL D**

**NOTES:**

1. These installation details also applicable to steel line post installations. For Detail A, C, and D, where steel line post installations are constructed, W6 x 9 steel post, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For Detail B, where steel line post installations are constructed, W6 x 9 steel post, 7'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For additional installation details, see Standard Plans A77A1 and A77A2.
2. Where the distance between the face of the rail and the hinge point is less than 2'-0", see the Project Plans for special details.
3. For dike positioning with guard railing installations, see Standard Plan A77C4.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING**  
**TYPICAL LINE POST**  
**EMBEDMENT AND**  
**HINGE POINT OFFSET DETAILS**

NO SCALE

RSP A77C3 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77C3  
DATED MAY 1, 2006 - PAGE 46 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77C3**

2006 REVISED STANDARD PLAN RSP A77C3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	488	757

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

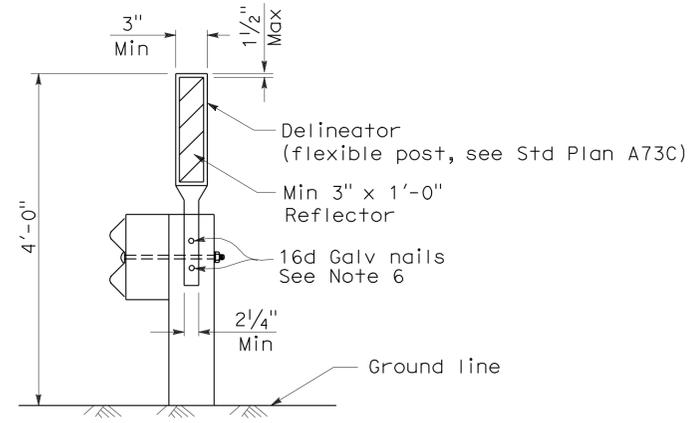
May 20, 2011  
PLANS APPROVAL DATE

*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.*

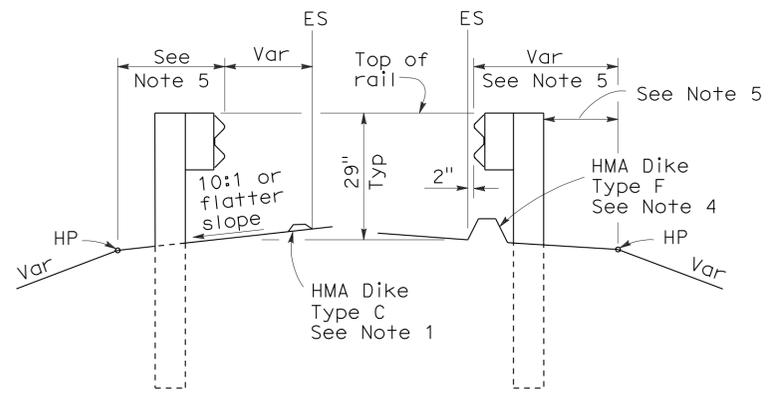
To accompany plans dated 6-20-11

**NOTES:**

1. When necessary to place dike in front of face of guard railing, only Type C dike may be used. For dike details, see Standard Plan A87B.
2. For standard railing post embedment, see Standard Plans A77C3.
3. Guard railing delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under guard railing, the maximum height of the dike or curb shall be 4". Mountable dike should not be used. For dike and curb details, see Standard Plans A87A and A87B.
5. For details of typical distance between the face of rail and hinge point, see Standard Plan A77C3.
6. For steel line posts, use 1/4" - 20 self-tapping screws in 0.22" diameter holes or 1/4" bolts in 3/32" diameter holes.



**GUARD RAILING DELINEATION**  
See Note 3



**DIKE POSITIONING**  
See Note 1

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL RAILING DELINEATION  
AND DIKE POSITIONING DETAILS**

NO SCALE

RSP A77C4 DATED MAY 20, 2011 SUPERSEDES RSP A77C4 DATED JUNE 6, 2008 AND STANDARD PLAN A77C4 DATED MAY 1, 2006 - PAGE 47 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77C4**

**2006 REVISED STANDARD PLAN RSP A77C4**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	489	757

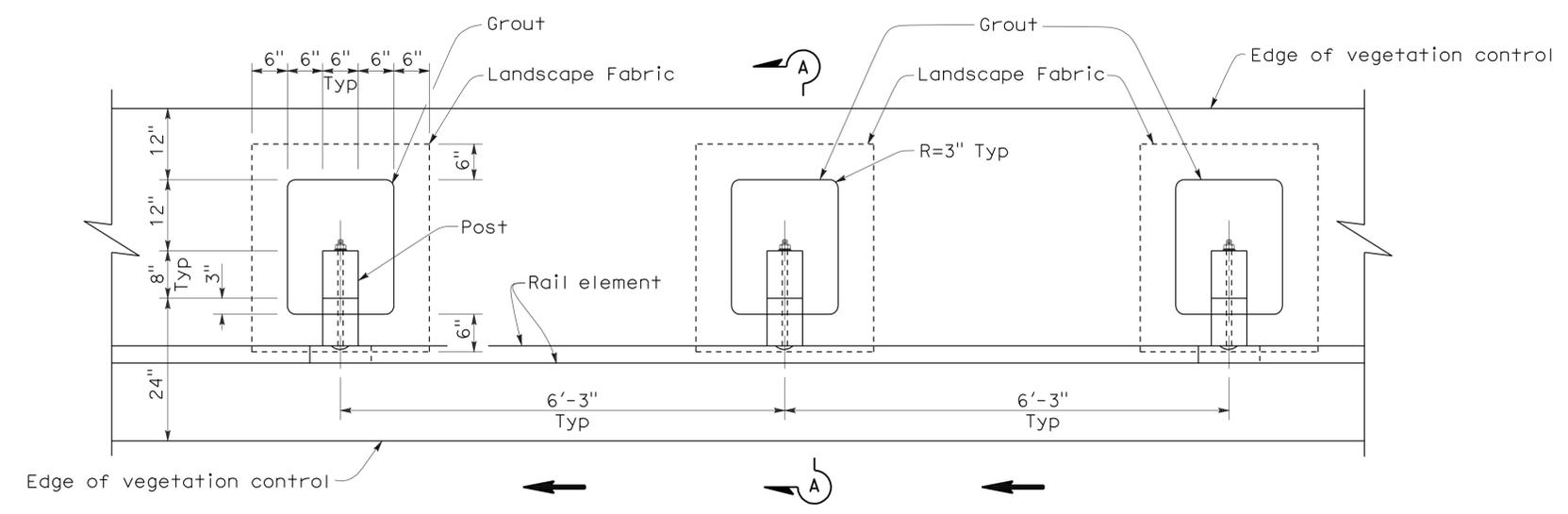
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

October 20, 2006  
PLANS APPROVAL DATE

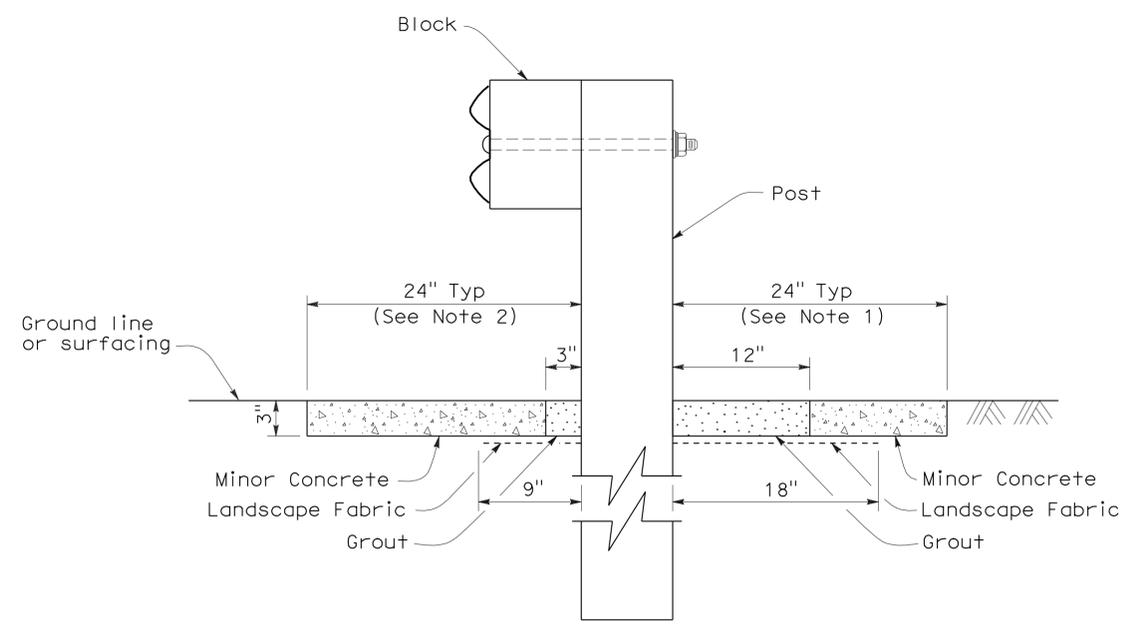
*Randell D. Hiatt*  
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-07  
CIVIL  
STATE OF CALIFORNIA

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 6-20-11



PLAN



SECTION A-A

**NOTES:**

1. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
3. Direction of adjacent traffic indicated by ←.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL VEGETATION CONTROL  
STANDARD RAILING SECTION**

NO SCALE

NSP A77C5 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD  
PLANS BOOK DATED MAY 2006.

**NEW STANDARD PLAN NSP A77C5**

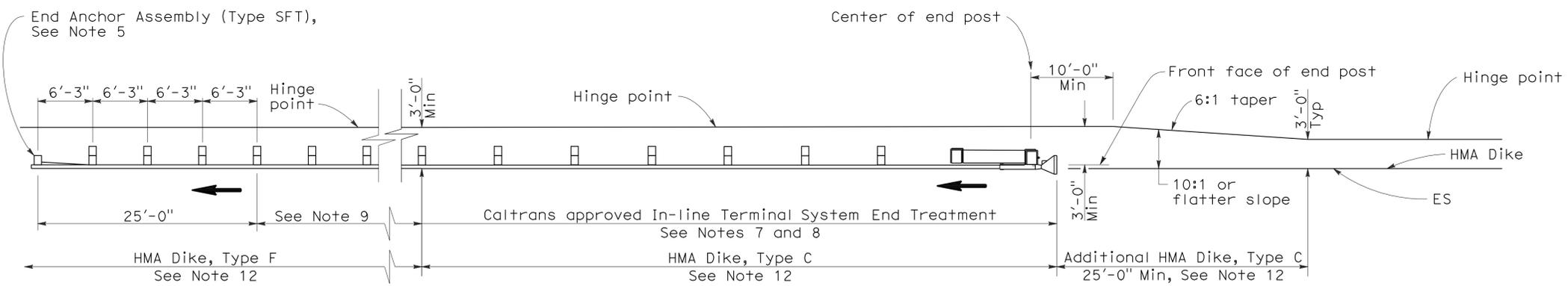
2006 NEW STANDARD PLAN NSP A77C5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	490	757

RANDALL D. HIATT  
 REGISTERED CIVIL ENGINEER  
 No. C50200  
 Exp. 6-30-09  
 CIVIL  
 STATE OF CALIFORNIA

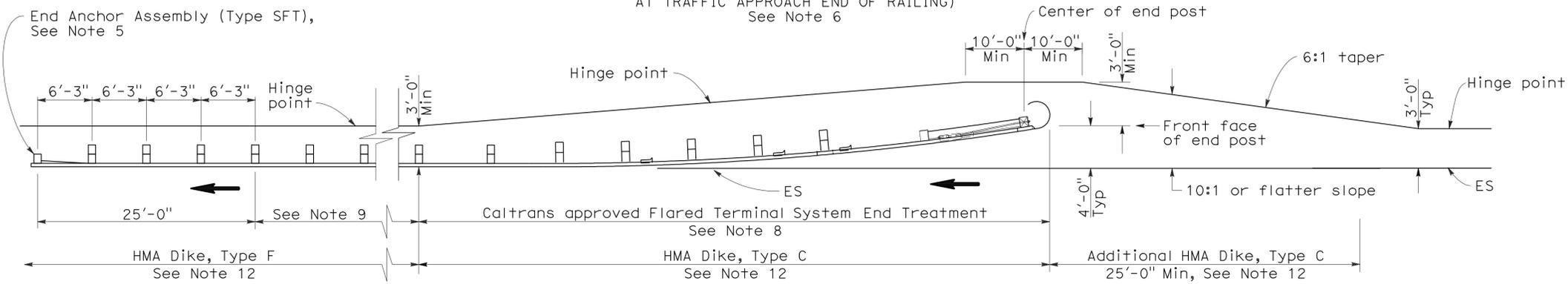
June 6, 2008  
 PLANS APPROVAL DATE

To accompany plans dated 6-20-11



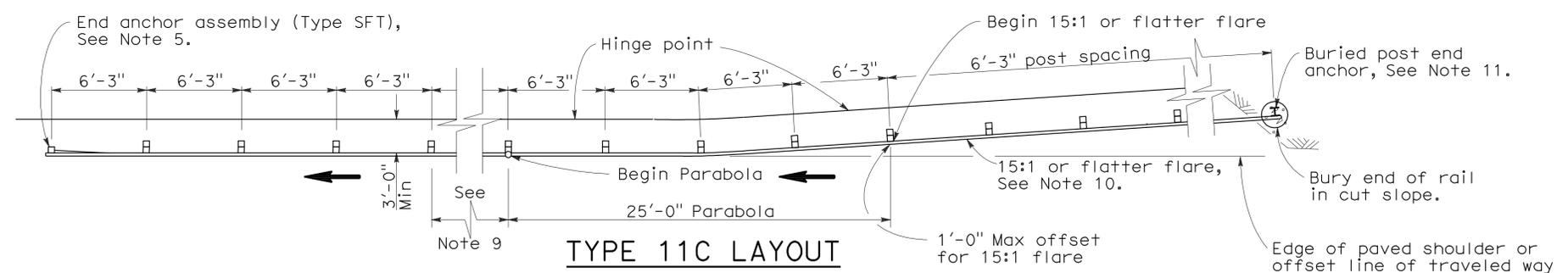
**TYPE 11A LAYOUT**

(EMBANKMENT GUARD INSTALLATION WITH IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING) See Note 6



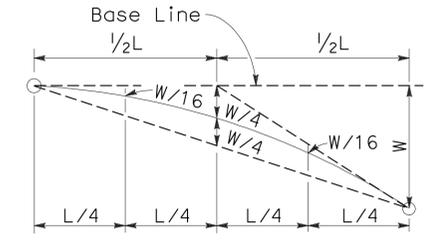
**TYPE 11B LAYOUT**

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING) See Note 6

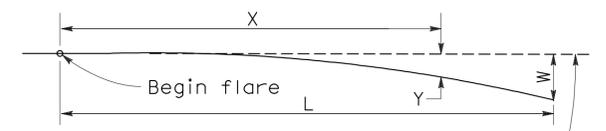


**TYPE 11C LAYOUT**

(EMBANKMENT GUARD RAILING INSTALLATION WITH BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING) See Notes 6 and 12



**TYPICAL PARABOLIC LAYOUT**

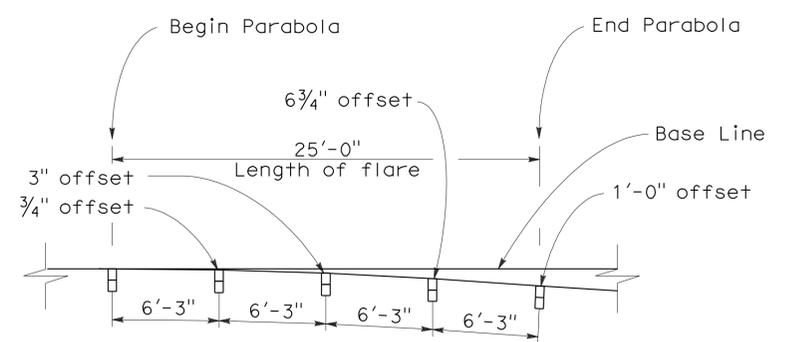


Base Line (Edge of paved shoulder or offset line of edge of traveled way)

$$Y = \frac{WX^2}{L^2}$$

Y = Offset from base line  
 W = Maximum offset  
 X = Distance along base line  
 L = Length of flare

**PARABOLIC FLARE OFFSETS**



**TYPICAL FLARE OFFSETS FOR 1 FOOT MAX END OFFSET**

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1, and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- Layout Types 11A, 11B or 11C are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11C Layout, see Standard Plan A77I2.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING**  
**TYPICAL LAYOUTS FOR**  
**EMBANKMENTS**  
 NO SCALE

RSP A77E1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E1  
 DATED MAY 1, 2006 - PAGE 48 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77E1**

2006 REVISED STANDARD PLAN RSP A77E1

**NOTES:**

1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
2. Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
4. A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing section with post spacing of 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
5. Direction of adjacent traffic indicated by → .

6. For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
7. Type of crash cushion to be used will be shown on the Project Plans.
8. Type 15A layout is typically used on multilane freeways or expressways to shield fixed objects in the area between separated one-way roadbeds.
9. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
10. The 15:1 or flatter flare is measured off of the edge of the traveled way.
11. W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	491	757

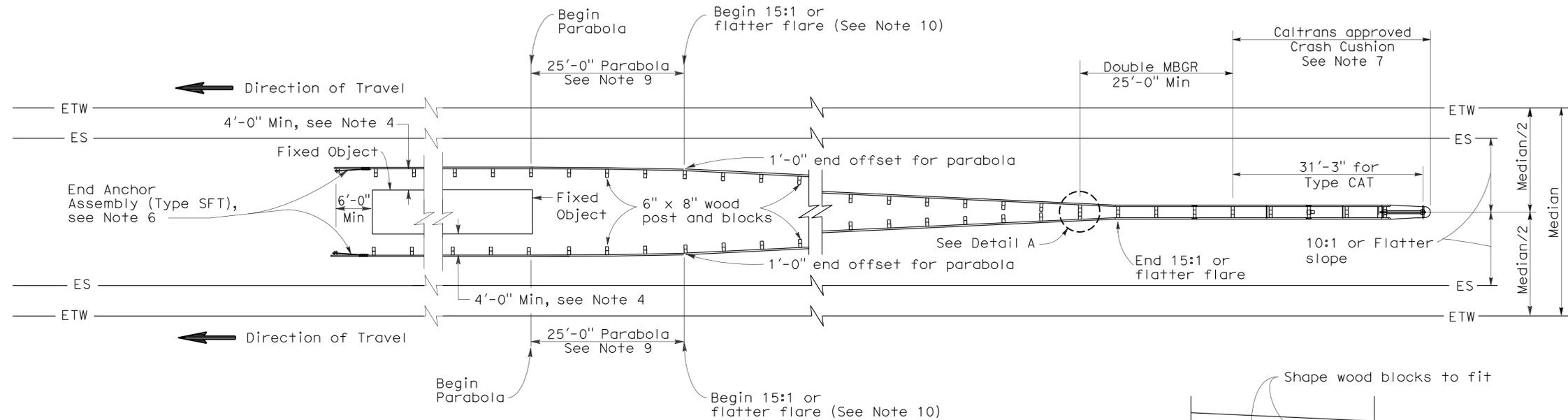
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

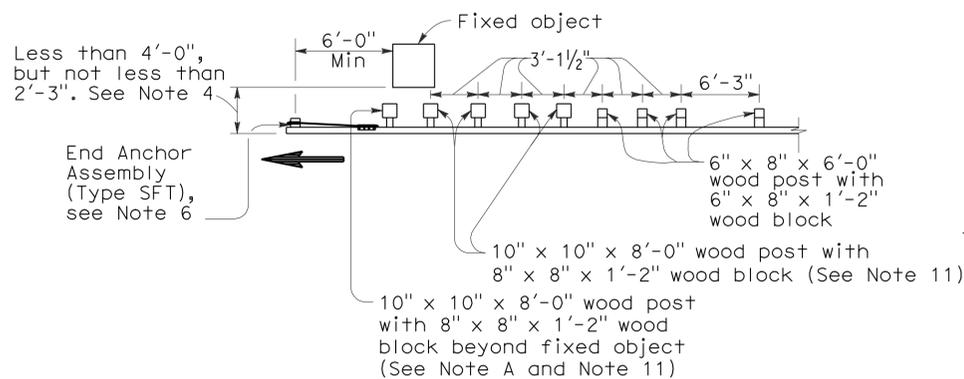
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 6-20-11

2006 REVISED STANDARD PLAN RSP A77G2



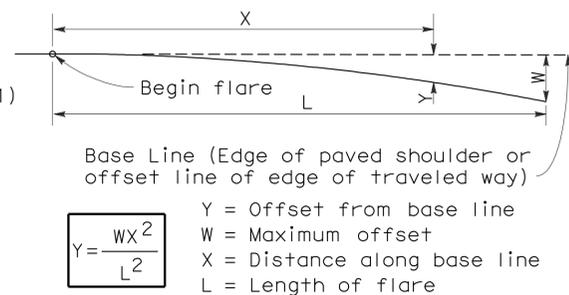
**TYPE 15A LAYOUT**  
See Note 9



**NOTE A:** For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed objects.

**STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT**

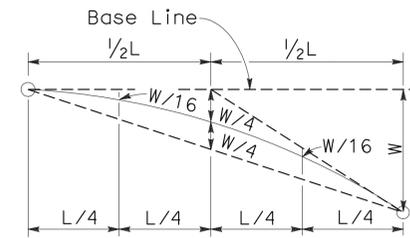
Use strengthened railing sections with Type 15A layout where minimum clearance between the face of the guard railing and the fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



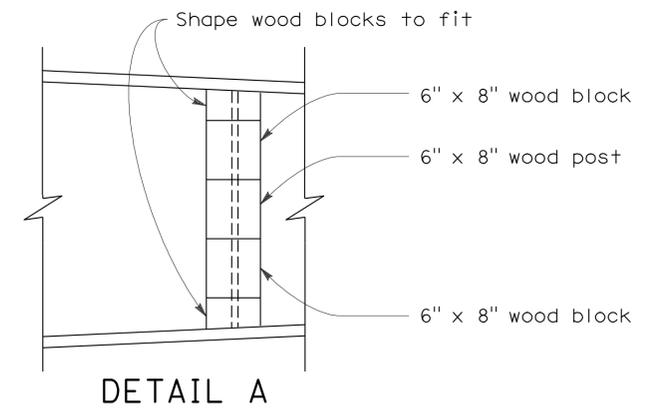
**PARABOLIC FLARE OFFSETS**

$$Y = \frac{WX^2}{L^2}$$

Y = Offset from base line  
W = Maximum offset  
X = Distance along base line  
L = Length of flare



**TYPICAL PARABOLIC LAYOUT**



**DETAIL A**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
FIXED OBJECTS  
BETWEEN SEPARATE ROADBEDS  
(ONE-WAY TRAFFIC)**

NO SCALE

RSP A77G2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G2  
DATED MAY 1, 2006 - PAGE 60 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77G2**

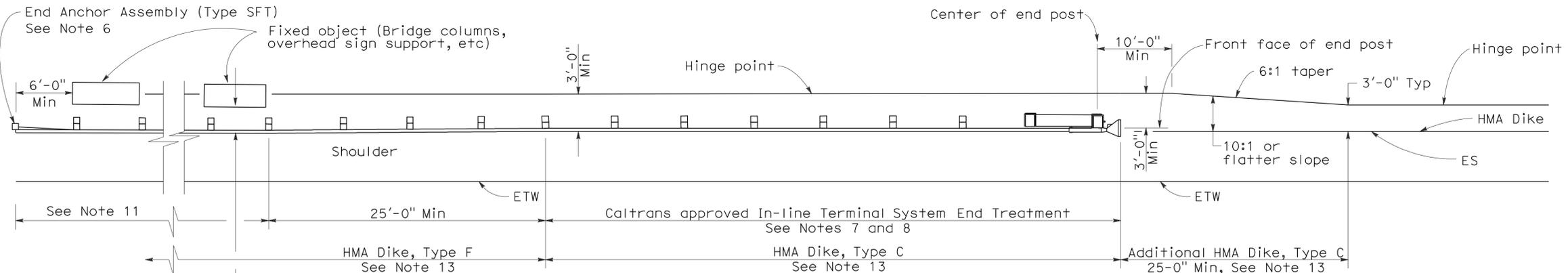
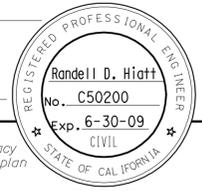
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	492	757

**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

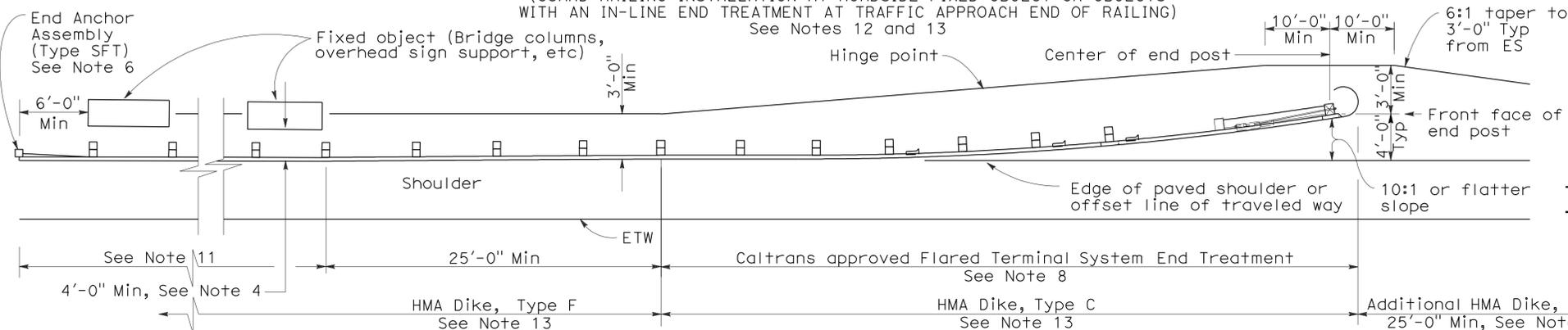
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 6-20-11



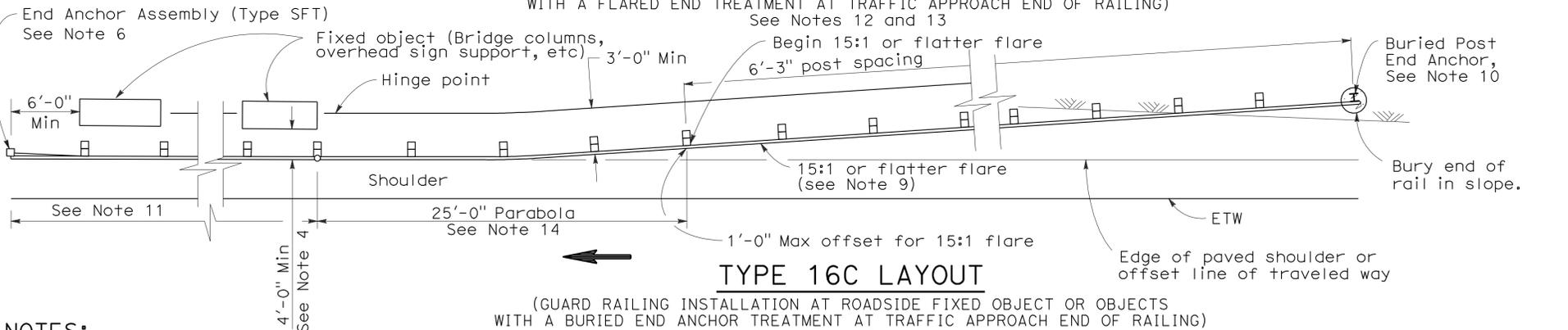
**TYPE 16A LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 7 and 8



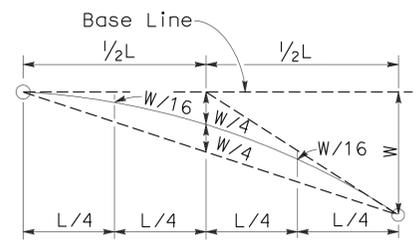
**TYPE 16B LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 12 and 13

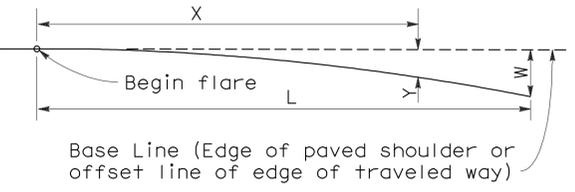


**TYPE 16C LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 12 and 13



**TYPICAL PARABOLIC LAYOUT**

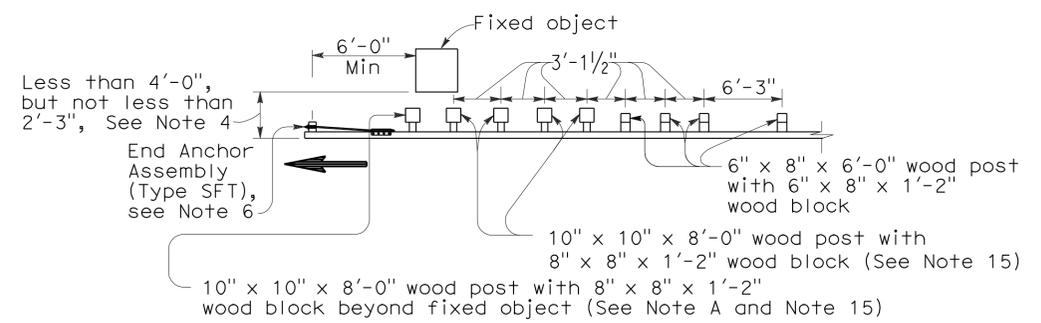


Y = Offset from base line  
W = Maximum offset  
X = Distance along base line  
L = Length of flare

**PARABOLIC FLARE OFFSETS**

**NOTES:**

- Line post, blocks and hardware to be used are shown on Revised Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing of 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by  $\rightarrow$ .
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- The 15:1 or flatter flare used with Type 16C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the Buried Post End Anchor used with Type 16C Layout, see Standard Plan A77I2.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3" except as specified in Note 4.
- Layout Types 16A, 16B or 16C are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for only one direction of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".



**NOTE A:**

For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed objects.

**STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT**

Use strengthened railing sections with Types 16A, 16B or 16C Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS**

NO SCALE  
RSP A77G3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G3  
DATED MAY 1, 2006 - PAGE 61 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77G3**

2006 REVISED STANDARD PLAN RSP A77G3

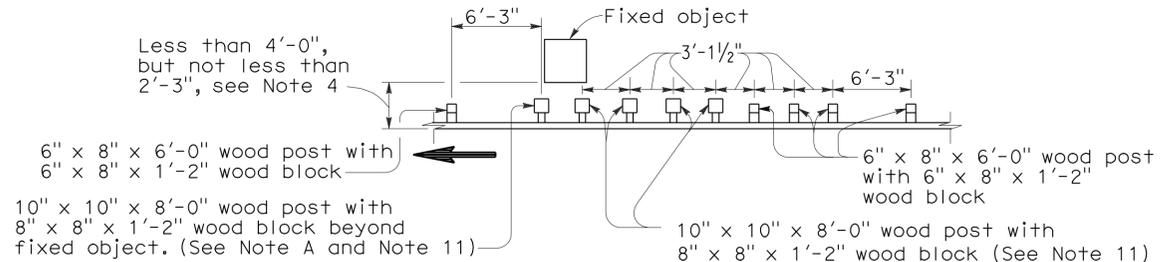
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	493	757

*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.

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

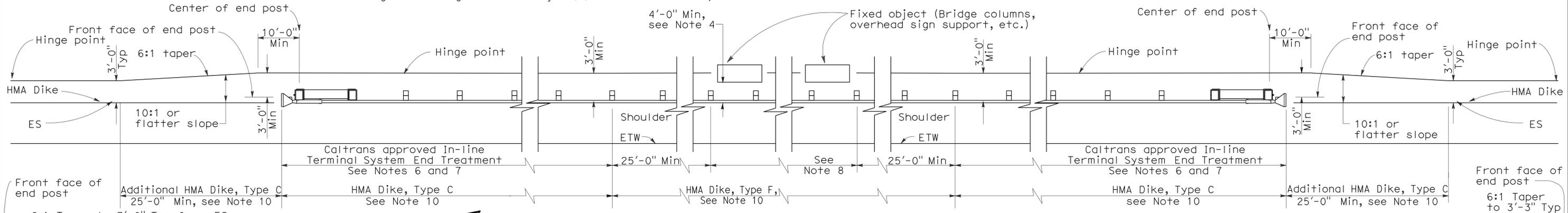


**NOTE A:** For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

**STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT**

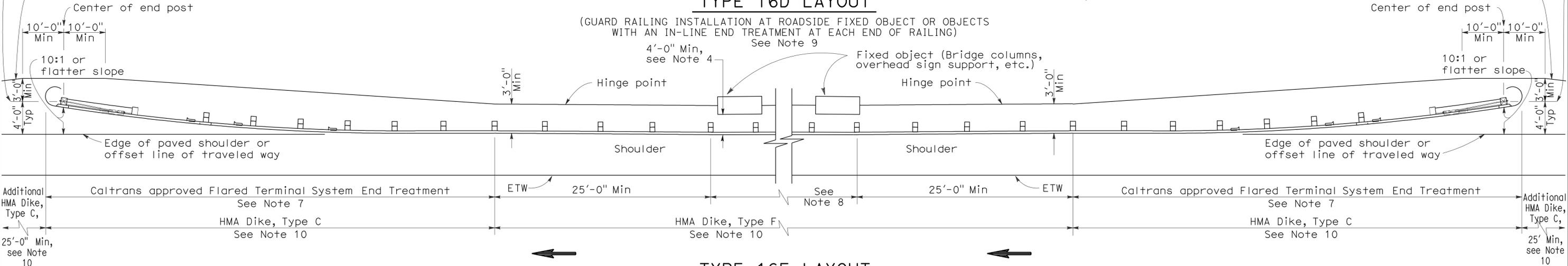
Use strengthened railing sections with Layout Types 16D or 16E where minimum clearance between the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.

To accompany plans dated 6-20-11



**TYPE 16D LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AT EACH END OF RAILING)



**TYPE 16E LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AT EACH END OF RAILING)

- NOTES:**
- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
  - Guard railing post spacing to be 6'-3", except as otherwise noted.
  - Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
  - A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
  - Direction of adjacent traffic indicated by →.
  - In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
  - The type of terminal system to be used will be shown on the Project Plans.
  - As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
  - Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans, are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
  - Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
  - W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic block may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail."

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS**  
NO SCALE

RSP A77G4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G4 DATED MAY 1, 2006 - PAGE 62 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77G4

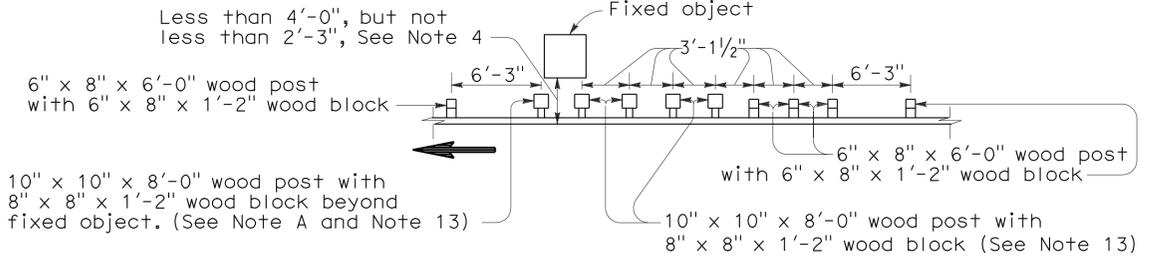
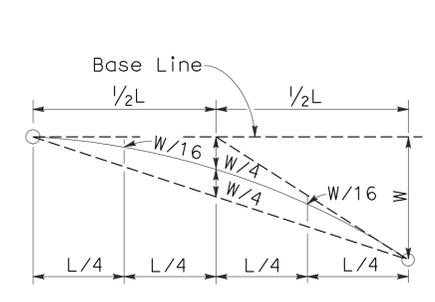
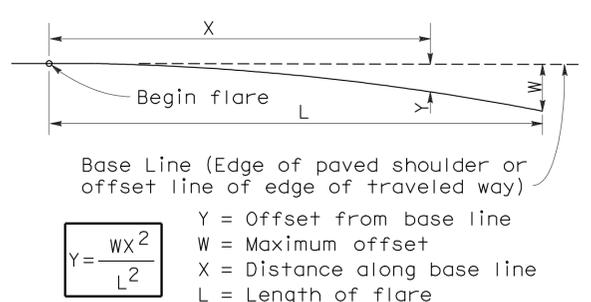
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	494	757

**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 6-20-11



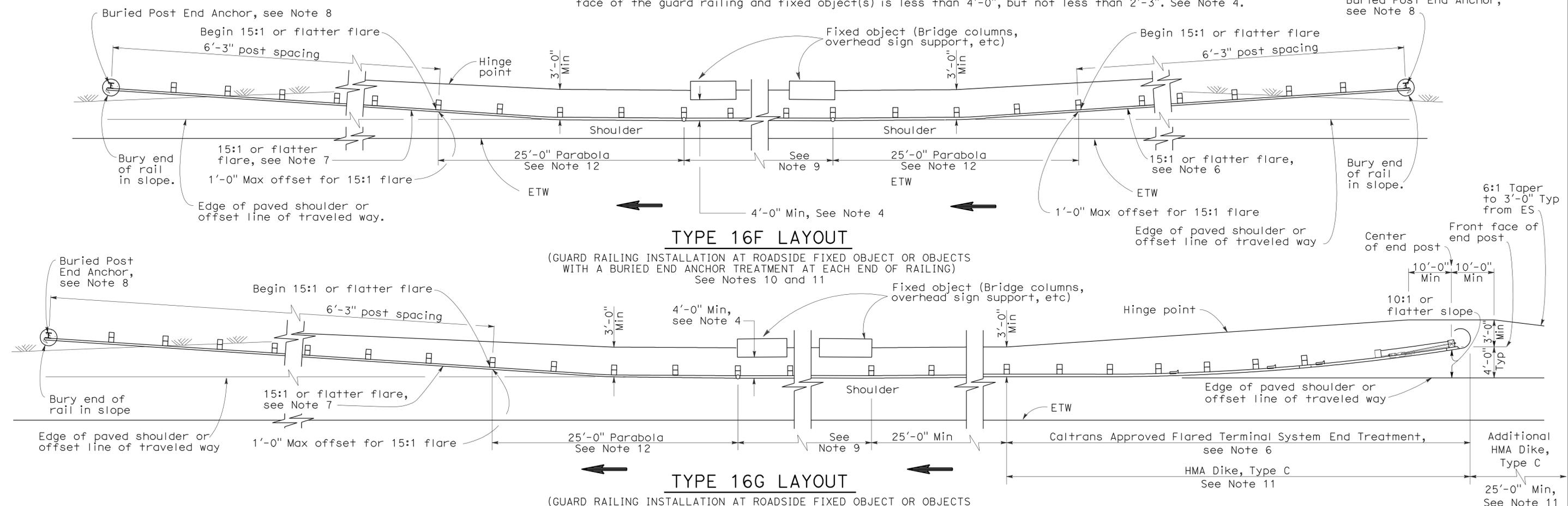
**NOTE A:** For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

**PARABOLIC FLARE OFFSETS**

**TYPICAL PARABOLIC LAYOUT**

**STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT**

Use strengthened railing sections with Layout Types 16F or 16G where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



**TYPE 16F LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AT EACH END OF RAILING) See Notes 10 and 11

**TYPE 16G LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AND A BURIED END ANCHOR TREATMENT AT THE ENDS OF RAILING) See Notes 10 and 11

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 8" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by →.
- The type of terminal system to be used will be shown on the Project Plans.
- The 15:1 or flatter flare for the buried post anchor is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the Buried Post End Anchor details, see Standard Plan A77I2.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans, are typically used on highways where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
ROADSIDE FIXED OBJECTS**

NO SCALE

RSP A77G5 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G5  
DATED MAY 1, 2006 - PAGE 63 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77G5**

2006 REVISED STANDARD PLAN RSP A77G5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	495	757

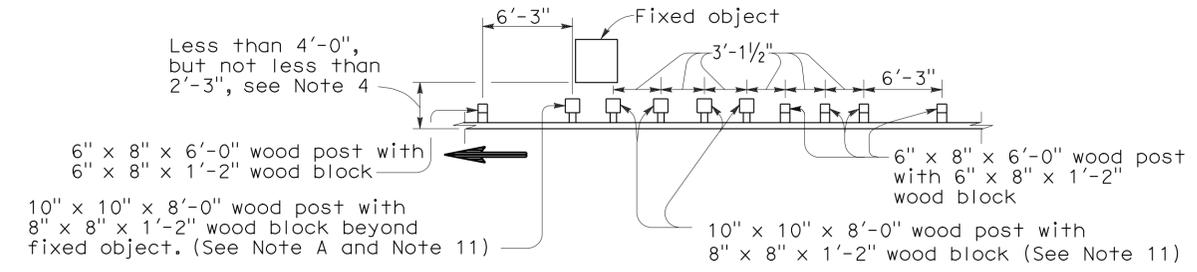
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

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

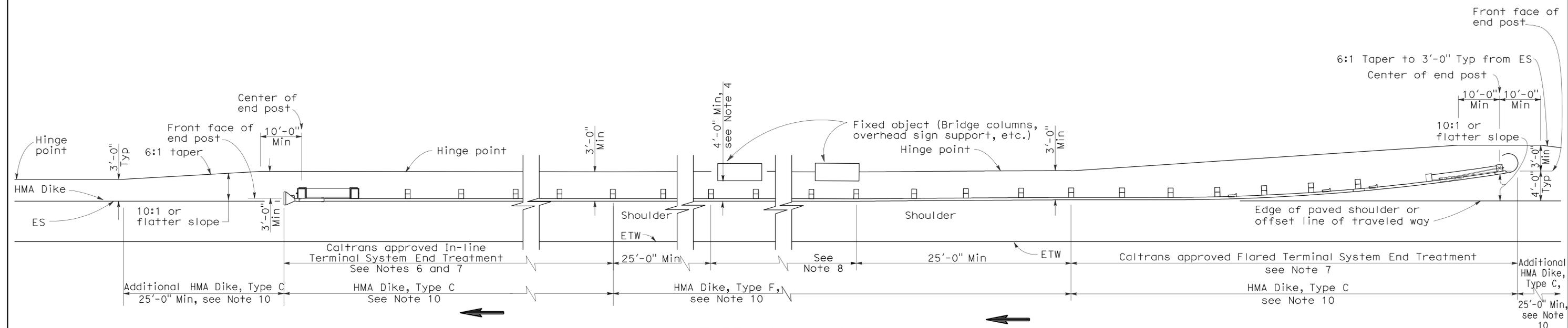
To accompany plans dated 6-20-11



Note A. For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

**STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT**

Use strengthened railing sections with Layout Type 16H where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



**TYPE 16H LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AND AN IN-LINE TREATMENT AT THE ENDS OF RAILING) See Note 9

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object, located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by → .

- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans, typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
ROADSIDE FIXED OBJECTS**  
NO SCALE

RSP A77G6 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G6  
DATED MAY 1, 2006 - PAGE 64 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77G6**

2006 REVISED STANDARD PLAN RSP A77G6

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	496	757

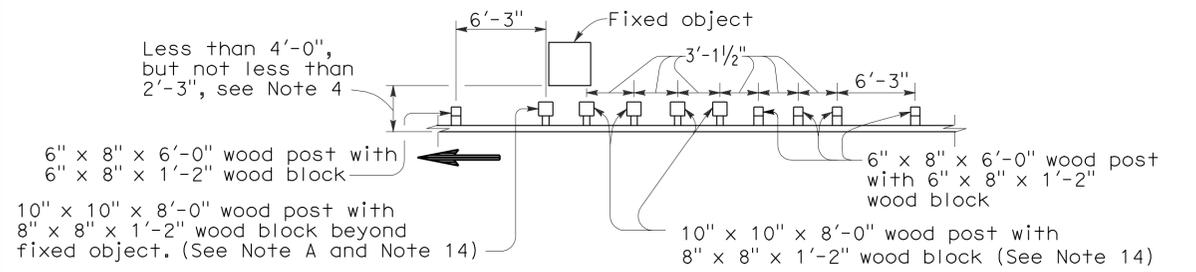
**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

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.*

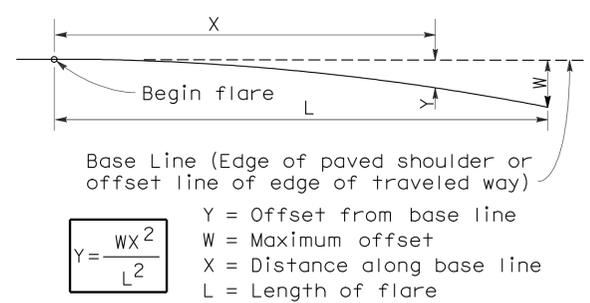
To accompany plans dated 6-20-11

2006 REVISED STANDARD PLAN RSP A77G7

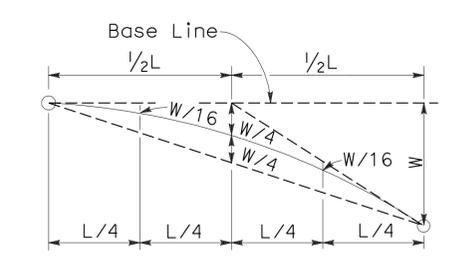


Note A. For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

**STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT**

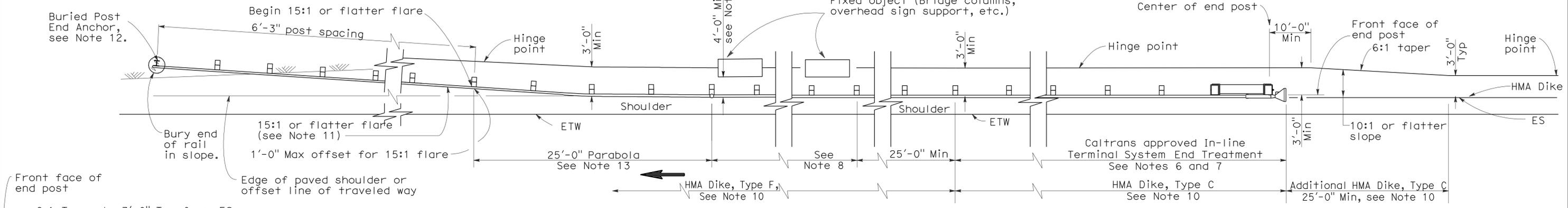


**PARABOLIC FLARE OFFSETS**



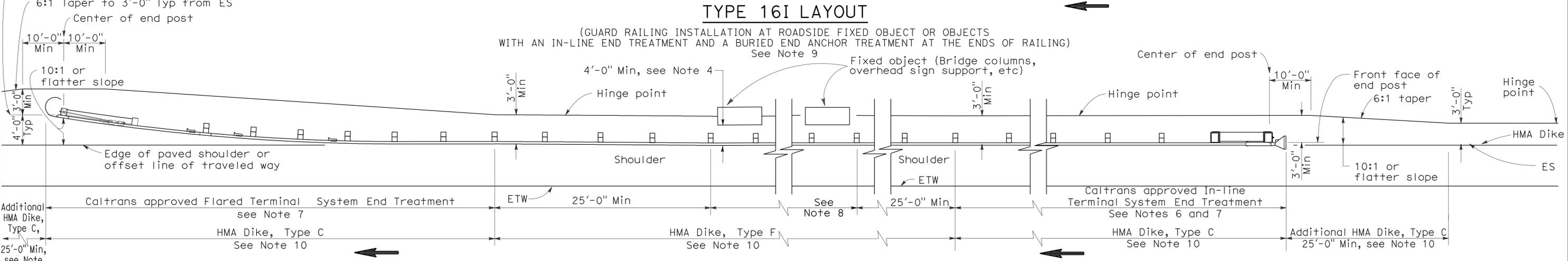
**TYPICAL PARABOLIC LAYOUT**

Use strengthened railing sections with Layout Types 16I or 16J Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



**TYPE 16I LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AND A BURIED END ANCHOR TREATMENT AT THE ENDS OF RAILING) See Note 9



**TYPE 16J LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AND A FLARED END TREATMENT AT THE ENDS OF RAILING) See Note 9

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by →.

- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans, are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- The 15:1 or flatter flare for the buried post anchor is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".

- For details of Buried Post End Anchor details, see Standard Plan A77I2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard RSP Plan A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING**  
**TYPICAL LAYOUTS FOR**  
**ROADSIDE FIXED OBJECTS**  
NO SCALE

RSP A77G7 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G7  
DATED MAY 1, 2006 - PAGE 65 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77G7**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	497	757

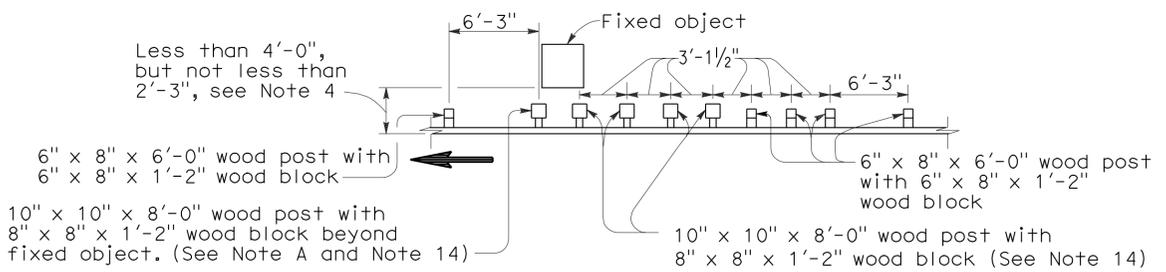
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

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

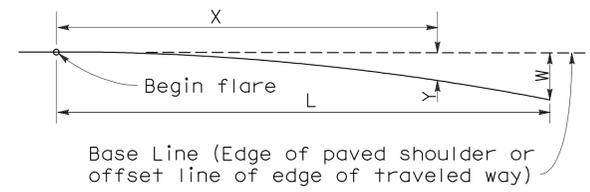
To accompany plans dated 6-20-11



Note A. For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

**STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT**

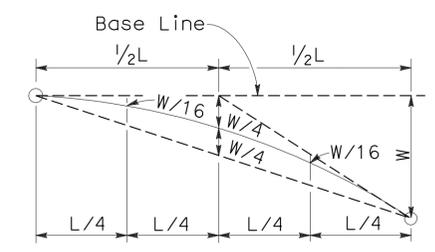
Use strengthened railing sections with Layout Types 16K or 16L Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



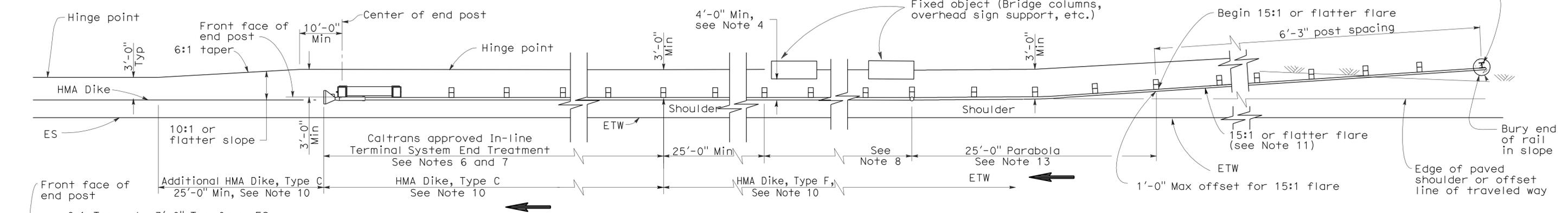
Y = Offset from base line  
W = Maximum offset  
X = Distance along base line  
L = Length of flare

$$Y = \frac{WX^2}{L^2}$$

**PARABOLIC FLARE OFFSETS**

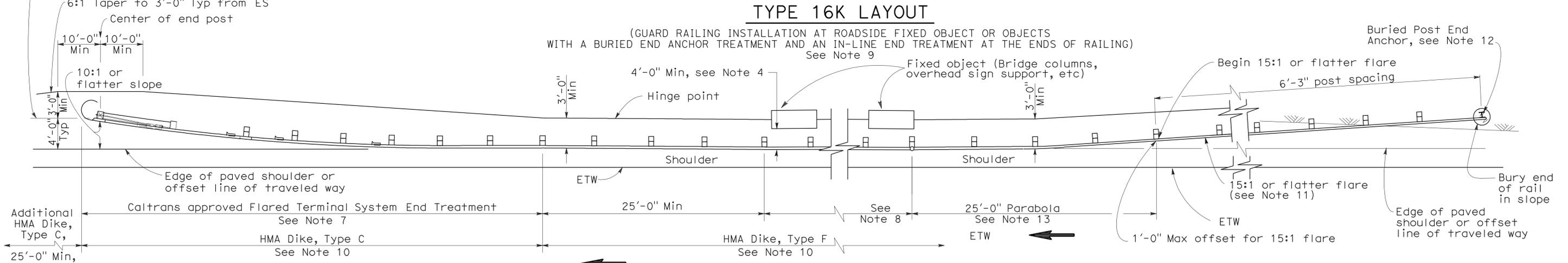


**TYPICAL PARABOLIC LAYOUT**



**TYPE 16K LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AND AN IN-LINE END TREATMENT AT THE ENDS OF RAILING) See Note 9



**TYPE 16L LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AND A FLARED END TREATMENT AT THE ENDS OF RAILING) See Note 9

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by →.

- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- The 15:1 or flatter flare for the buried post anchor is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".

- For details of Buried Post End Anchor details, see Standard Plan A77I2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard RSP Plan A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
ROADSIDE FIXED OBJECTS**

NO SCALE  
RSP A77G8 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G8  
DATED MAY 1, 2006 - PAGE 66 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77G8**

2006 REVISED STANDARD PLAN RSP A77G8

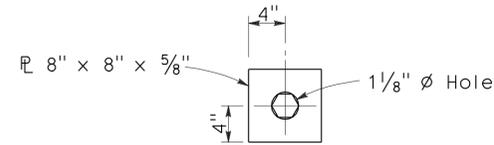
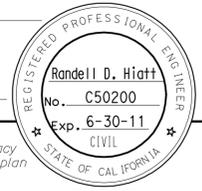
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven, SB	101	R39.8/R43.6, 0.0/2.2	498	757

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

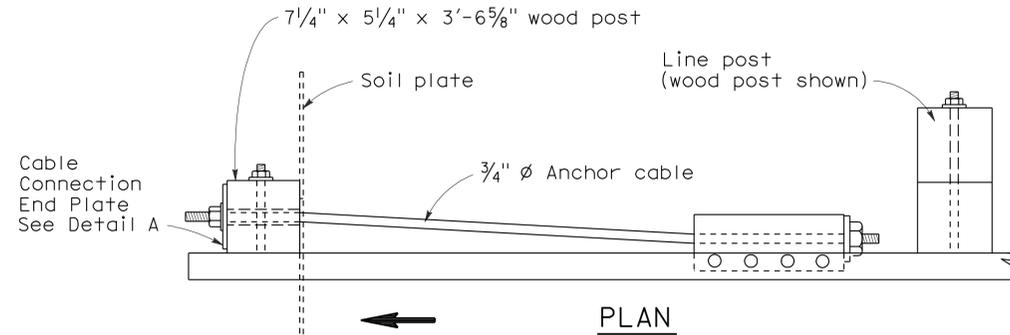
May 20, 2011  
PLANS APPROVAL DATE

*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.*

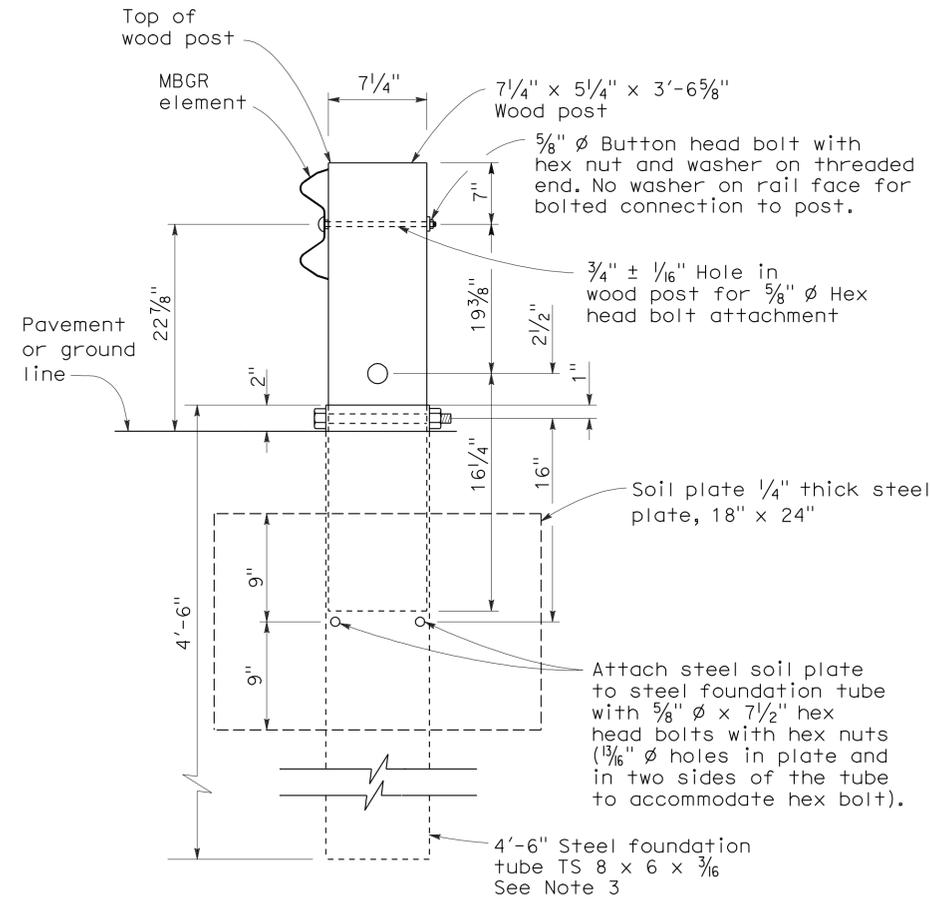
To accompany plans dated 6-20-11



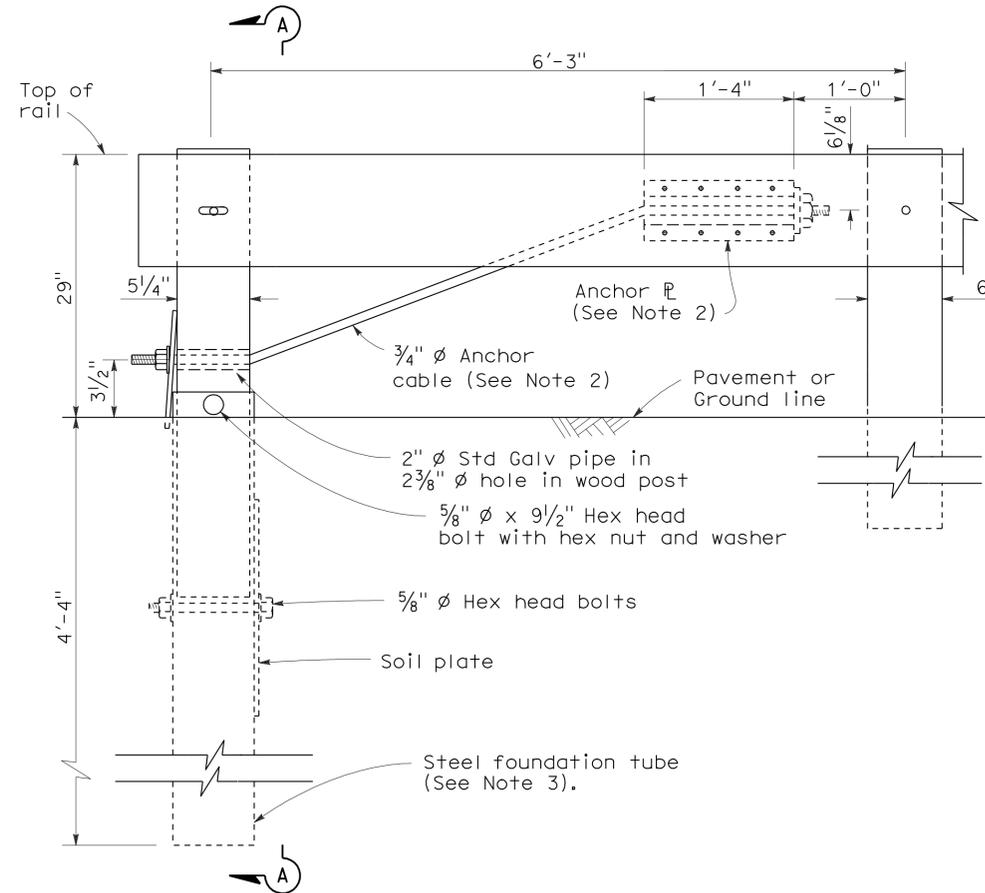
**DETAIL A**  
**CABLE CONNECTION**  
**END PLATE**



**PLAN**



**SECTION A-A**



**ELEVATION**  
**END ANCHOR**  
**ASSEMBLY (TYPE SFT)**  
See Note 1

**NOTES:**

1. See the A77E, A77F and A77G series of Standard Plans for typical use of End Anchor Assembly (Type SFT).
2. For details of the anchor plate and 3/4" cable, see Standard Plan A77H3.
3. A 6'-0" length steel foundation tube, TS 8 x 6 x 3/16, without a soil plate, may be furnished and installed in place of the 4'-6" length steel foundation tube and soil plate shown. Minimum embedment of the 6'-0" length tube shall be 5'-9". A 5/8" diameter hex head bolt and nut shall be installed in the hole in the 6'-0" length tube to keep the wood post from dropping into the tube.
4. Direction of traffic indicated by →.
5. Install line post, steel foundation tube and soil plate in soil.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL RAILING**  
**END ANCHOR ASSEMBLY**  
**(TYPE SFT)**

NO SCALE

RSP A77H1 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77H1  
DATED MAY 1, 2006 - PAGE 67 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77H1**

2006 REVISED STANDARD PLAN RSP A77H1

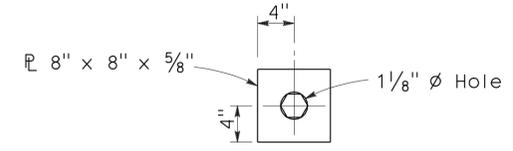
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ven,SB	101	R39.8/R43.6, 0.0/2.2	499	757

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

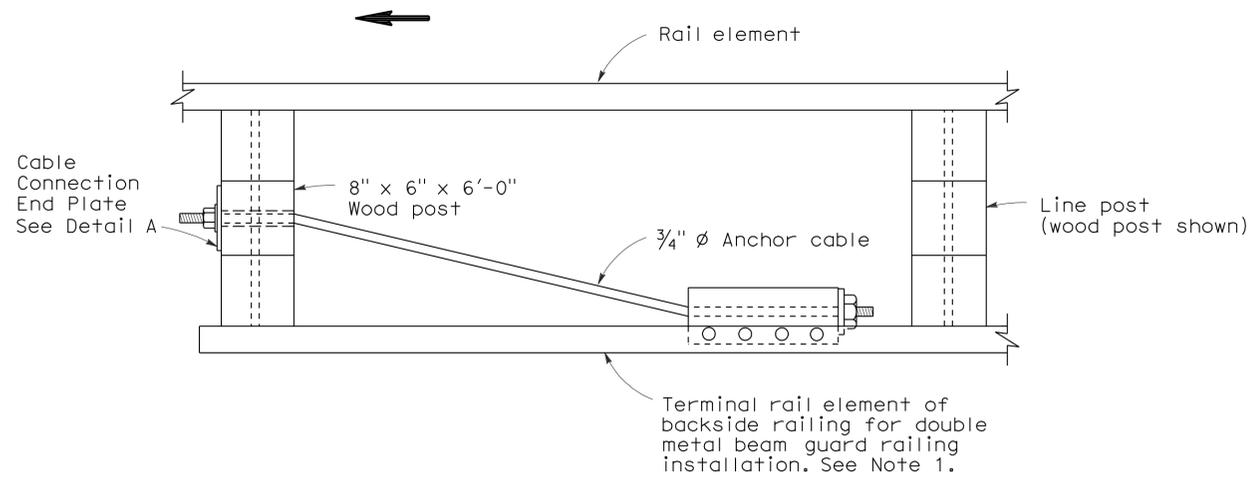
May 20, 2011  
PLANS APPROVAL DATE

*Randell D. Hiatt*  
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-11  
CIVIL  
STATE OF CALIFORNIA

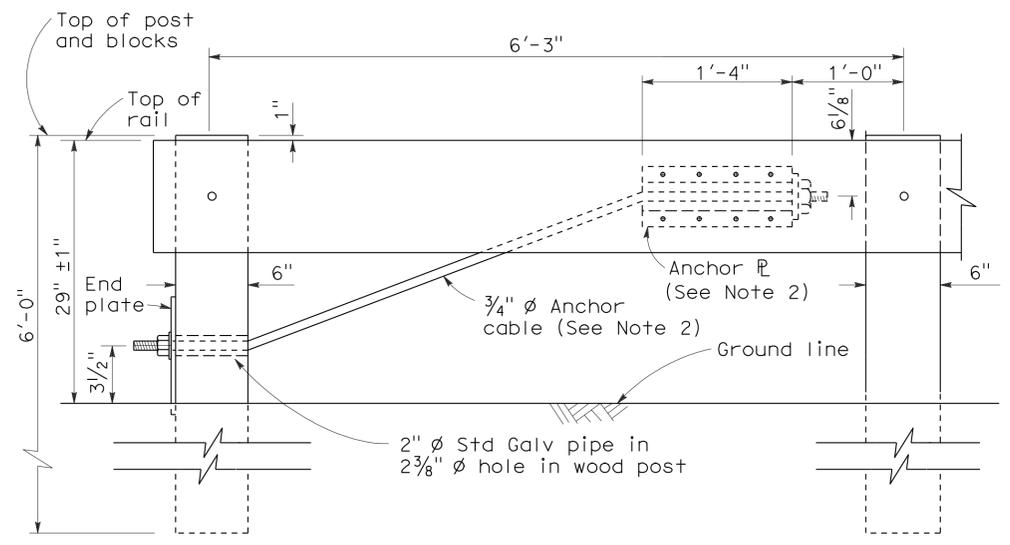
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



**DETAIL A**  
**CABLE CONNECTION**  
**END PLATE**



**PLAN**



**ELEVATION**  
**RAIL TENSIONING**  
**ASSEMBLY**  
See Note 1

**NOTES:**

1. See Standard Plan A77F3 and Standard Plan A77G1 for typical use of rail tensioning assembly.
2. For details of the anchor plate and 3/4" cable, see Standard Plan A77H3.
3. Direction of traffic indicated by →.

To accompany plans dated 6-20-11

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL RAILING**  
**RAIL TENSIONING ASSEMBLY**

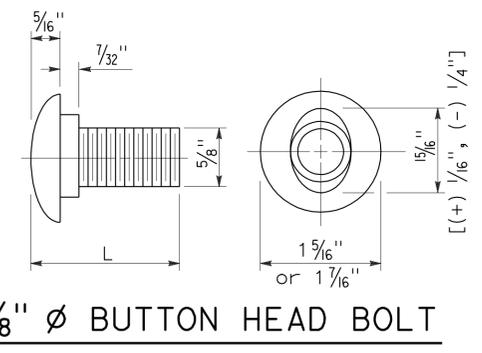
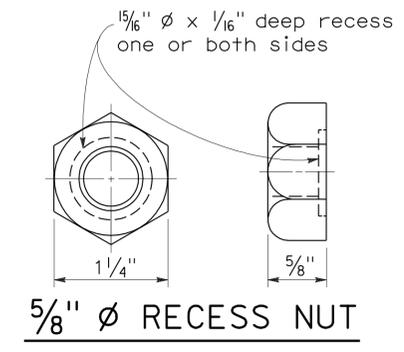
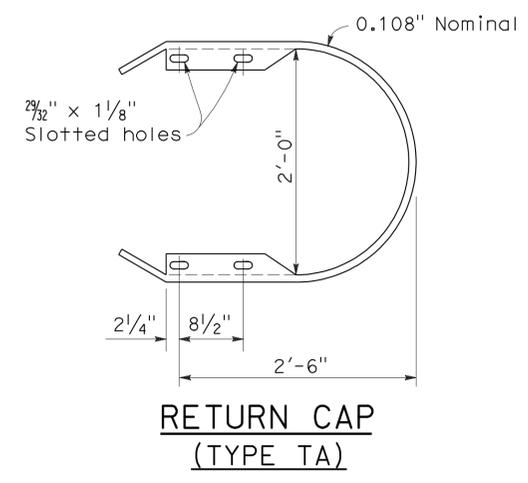
NO SCALE

RSP A77H2 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77H2  
DATED MAY 1, 2006 - PAGE 68 OF THE STANDARD PLANS BOOK DATED MAY 2006.

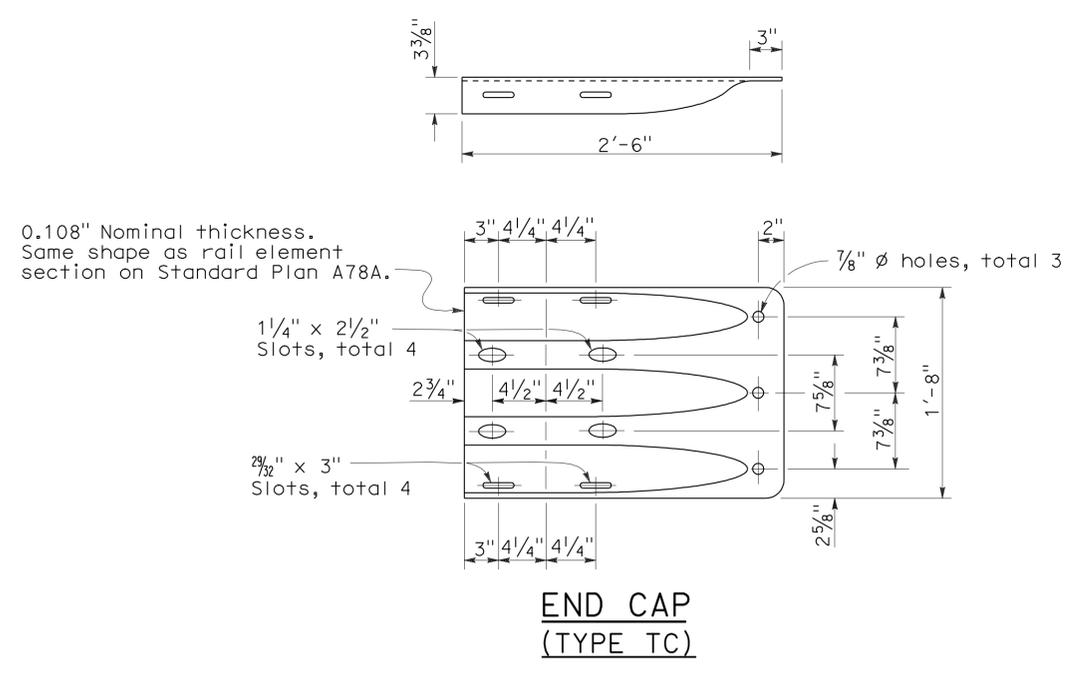
**REVISED STANDARD PLAN RSP A77H2**

2006 REVISED STANDARD PLAN RSP A77H2

To accompany plans dated 6-20-11



L	THREAD LENGTH
1 1/4"	full thread length
2"	full thread length
9/2"	4" Min thread length
18"	4" Min thread length



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**THRIE BEAM BARRIER  
STANDARD HARDWARE DETAILS**

NO SCALE

RSP A78C1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A78C1  
DATED MAY 1, 2006 - PAGE 85 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A78C1